

FIELD MANUAL

**SPECIAL FORCES
OPERATIONAL
TECHNIQUES**

HEADQUARTERS, DEPARTMENT OF THE ARMY

FEBRUARY 1971

FIELD MANUAL

No. 31-20

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 12 February 1971**SPECIAL FORCES OPERATIONAL TECHNIQUES**

	Paragraph	Page
CHAPTER 1. GENERAL.....	1-1, 1-2	1-1
2. INTELLIGENCE AND SECURITY		
Section I. General	2-1—2-3	2-1
II. Area Study/Area Intelligence/Area Assessment.....	2-4—2-7	2-1
III. Intelligence Production within the UWOA.....	2-8—2-10	2-4
IV. Counterintelligence within the UWOA.....	2-11, 2-12	2-4
V. Security within the UWOA	2-13—2-15	2-5
CHAPTER 3. PSYCHOLOGICAL OPERATIONS IN THE UNCONVENTIONAL WARFARE OPERATIONAL AREA		
Section I. General	3-1, 3-2	3-1
II. Planning.....	3-3—3-7	3-2
III. Propaganda Production and Use.....	3-8—3-17	3-5
CHAPTER 4. INFILTRATION AND EXFILTRATION		
Section I. Infiltration.....	4-1—4-7	4-1
II. Exfiltration	4-8—4-10	4-6
III. Infiltration Checklist	4-11—4-16	4-6
CHAPTER 5. ORGANIZATION AND DEVELOPMENT OF THE UNCONVENTIONAL WARFARE OPERATIONAL AREA		
Section I. Planning the Initial Organization of the Unconventional Warfare Operational Area.....	5-1—5-6	5-1
II. Organizational Development of the UWOA.....	5-7—5-9	5-7
III. Organization of Resistance Force Support Systems	5-10—5-12	5-12
IV. Administration, Law, and Order	5-13—5-15	5-17
V. Training of the Resistance Force.....	5-16—5-19	5-19
CHAPTER 6. AIR OPERATIONS		
Section I. General	6-1—6-5	6-1
II. Drop Zone Selection and Reporting.....	6-6—6-14	6-4
III. Marking Drop Zones.....	6-15—6-21	6-15
IV. FreeFall Parachute Operations.....	6-22—6-25	6-21
V. Reception Committees	6-26—6-28	6-25
VI. AirLanded Operations.....	6-29—6-31	6-26
VII. Landing Zone (Water).....	6-32	6-34
VIII. Landing Zones for Rotary Wing Aircraft	6-33—6-38	6-42
IX. Miscellaneous Air Operations	6-39—6-48	6-50
X. Checklist for Air Operation.....	6-49	6-61
CHAPTER 7. COMBAT EMPLOYMENT OF RESISTANCE FORCES		
Section I. General	7-1—7-7	7-1
II. The Raid.....	7-8—7-15	7-6
III. The Ambush.....	7-16—7-20	7-11
IV. Guerrilla Force Defensive Measures.....	7-21—7-26	7-17
V. Operations in Support of Conventional Forces.....	7-27—7-32	7-19
CHAPTER 8. WATERBORNE OPERATIONS IN CONVENTIONAL WARFARE		
Section I. U.S. Navy in Support of Special Forces Operations.....	8-1—8-3	8-1
II. Landing Operations.....	8-4—8-9	8-2
III. Small Boat Handling.....	8-10, 8-11	8-6

* This manual supersedes FM 31-20, 30 December 1965.

IV.	Underwater Operations.....	8-12—8-15	8-7
		Paragraph	Page
CHAPTER 9.	LOGISTICS,		
Section I.	The External Logistic System.....	9-1—9-10	9-1
II.	Catalog Supply System.....	9-11—9-15	9-4
III.	Planning Considerations in Establishing Supply Systems	9-16—9-18	9-5
IV.	The Internal Logistic System	9-19—9-25	9-7
CHAPTER 10.	COMMUNICATIONS		
Section I.	General	10-1—10-3	10-1
II.	Communication Training.....	10-4, 10-5	10-3
III.	Antennas and Communication Security.....	10-6,	10-4,
		10-7	10-8
CHAPTER 11.	MEDICAL ASPECTS OF SPECIAL FORCES OPERATIONS IN UNCONVENTIONAL WARFARE		
Section I.	Considerations.....	11-1,11-2	11-1
II.	Organization for Unconventional Warfare.....	11-3—11-5	11-1
III.	Development of Medical Support in Unconventional Warfare Operational Areas	11-6—11-13	11-3
IV.	Intelligence.....	11-14— 11-16	11-6
CHAPTER 12.	STABILITY OPERATIONS		
Section I.	Introduction.....	12-1—12-3	12-1
II.	Intelligence.....	12-4, 12-5	12-1, 12-2
III.	Infiltration	12-6	12-2
IV.	Communication	12-7—12-10	12-3
V.	Operations.....	12-11— 12-14	12-5
VI.	Training.....	12-15— 12-19	12-8
VII.	Populace and Resources Control.....	12-20, 12-21	12-10
VIII.	Field Engineering.....	12-22— 12-24	12-10
IX.	Medical Requirements for Stability Operations	12-25— 12-27	12-12
APPENDIX A.	REFERENCES.....		A1
B.	FIELD EXPEDIENT PRINTING METHODS		B1
C.	MESSAGE FORMATS.....		C1
D.	AREA STUDY GUIDE FOR UNCONVENTIONAL WARFARE.....		D1
E.	AREA ASSESSMENT		E1
F.	CATALOG SUPPLY SYSTEM		F1
G.	EXAMPLES OF MASTER TRAINING PROGRAM FOR RESISTANCE FORCES		G1
H.	PILOT BALLOON (PIBAL) WINDS ALOFT WIND DRIFT SYSTEM		H1
INDEX.		Index-1

CHAPTER 1

GENERAL

1- 1. Purpose and Scope

a. This manual presents Special Forces operational techniques which support doctrine contained in FM 31-21 and FM 31-21A. The manual together with its classified supplement, FM 31-20A, describes intelligence operations; psychological operations (PSYOP); infiltration; communications; combat service support; clandestine operations; field training exercises; resistance force combat operations; and Special Forces employment in stability operations. This manual is applicable in nuclear and non-nuclear warfare.

b. This manual should be used jointly with FM 31-21, FM 31-21A, and FM 31-20A.

1- 2. Recommendations and Comments

Users of this manual are encouraged to submit recommended changes or comments to improve the manual. Comments should be keyed to the specific page, paragraph, and line: of the text for which the change is recommended. Reasons should be provided for each comment, to insure understanding and complete evaluation. Comments should be prepared using DA Form 2028 (Recommended Changes to Publications) and forwarded direct to the Commandant, United States Army Institute for Military Assistance, Fort Bragg, N.C. 28307.

CHAPTER 2

INTELLIGENCE AND SECURITY

Section I. General

2-1. General

This chapter provides information and guidance to Special Forces operational detachments in planning for unconventional warfare (UW) operations analyzing areas of operation through area study and area assessment; and discusses intelligence collection, counterintelligence, and security aspects of concern to an operational detachment during the organization, buildup, and combat employment phases of developing and unconventional warfare operational area (UWOA).

2-2. Clandestine and Counterintelligence Operations

See FM 31-20A and FM 31-21A.

2-3. Intelligence Considerations in an Unconventional Warfare Operational Area (UWOA)

a. Intelligence, counterintelligence and security operations become of extreme significance to the survival, effectiveness, and success of Special Forces elements operating in areas controlled by the enemy and in association with elements of the population which the enemy probably regard as criminals or traitors. Unconventional warfare requires a much broader understanding and ability in all aspects of intelligence than would be necessary for conventional

combat operations. Guerrilla operations require thorough knowledge and careful application of all the combat intelligence and security techniques common to infantry operations. However, the distance of both targets and enemy units from the guerrilla base usually imposes a heavy reliance on clandestine nets of the auxiliary and underground for intelligence and security information. These nets must be supported improved or expanded, and sometimes even created by the Special-Forces detachment. Other UW missions require support or direct participation in clandestine activities. Therefore, in addition to its ability to employ sound, conventional, combat intelligence techniques, Special Forces personnel must possess a - basic; understanding of clandestine organization, operations, and techniques. For application of operational intelligence techniques see FM 30-17, FM 30-18, FM 31-20A, FM 31-21A, and Defense Intelligence Agency Manual (DIAM) 58-11.

b. Once deployed, the Special Forces detachment is ideally situate to contribute to the overall theater intelligence plan. By using resistance force sources subordinate to the: area command, it can assemble and relay to the Special Forces operational base (SFOB) intelligence information of value to the unified and component commanders; however, security of the Special Forces detachment and the resistance efforts restrict radio traffic, thus limiting the amount of intelligence information which can be relayed.

Section II. AREA STUDY/AREA INTELLIGENCE/ AREA ASSESSMENT

2-4. General

Special Forces operational detachments (SFOD) committed into operational areas to support the U.S. Army's role in any intensity of conflict will find, in the majority of cases, that activities in the area are customarily supported and accompanied by extensive political and economic activities. These may be overt

or clandestine, conducted by individuals or groups integrated or acting in concert with recognized resistance forces. In order to improve their chances for success, Special Forces detachments require a greater degree of preparation in predeployment intelligence than conventional Army combat units. To accomplish this, SFOD's conduct general area studies of assigned countries and specific intelligence studies of areas of

operations. Although area studies are normally prepared and provided by special research agencies, the detachments assemble their own studies, organized into a more appropriate format for operational use.

2-5. Area Study

This is detailed background of an area, region, or country selected for operations. For a sample area study guide and format, see appendix D.

a. Operational Use in Unconventional Warfare.

(1) *General.* The Special Forces group intelligence section procures the necessary intelligence documents from which the detachment's general area studies are prepared. Coordination through prescribed intelligence is effected with all appropriate theater intelligence agencies for the continuous procurement of timely intelligence. Several methods of area study preparation are feasible.

(2) Methods of preparation.

(a) *Preparation by operational detachments.* This method has the advantage of the detachments' learning more about their area of interest through extensive research required in preparation. Although this method appears to be more time consuming, and the detachment spends considerable effort during normal training studying a general country or region, once placed in isolation, the detachment can quickly assimilate the data for their respective areas of operation based on mission requirements. The major disadvantage is that unit-training requirements limit the time available for operational detachments to prepare a detailed comprehensive general area study.

(b) *Preparation by the group S2.* The entire preparation may be made by the Special Forces Group S2 on the basis of available information concerning the operational missions and areas of operations.

(c) *Preparation by area specialist teams (AST's).* These teams are assigned operational responsibilities for specific geographic areas on relationships to the unit's mission.

(d) Preparation through a combination of these methods with revision by the group S2 based on the latest available intelligence.

b. Area Study Preparation Methods. If the detachment prepares its own study, the detachment commander has the advantage of assigning specific areas of interest to selected personnel in keeping with their particular specialty. For example:

(1) The detachment operations and intelligence sergeants can conduct extensive research and study on the political structure of the area of operations, groups in opposition to the recognized government, and order of battle of a real or potential enemy.

(2) The detachment engineer sergeant and the combat demolition specialist can prepare studies on the major lines of communication and bridges throughout the country by gathering pictures and data on bridge structures, rail yards, tunnels, and highway nets. This includes information on both primary and secondary roads; surfaces; gradients, and traffic capabilities during all sorts of weather.

(3) By assigning both members of a specific specialty within a detachment to a specific area of interest, the detachment commander is assured of having personnel with intimate knowledge of the operational area in the event the split-team concept must be used. In either case, the detachment will have depth within each specialist's area of responsibility.

(4) Once these studies have been completed and the detachment personnel responsible for specific sections have prepared their summaries, extensive briefings and orientations are conducted for the remainder of the detachment. These are continued daily until the detachment commander and responsible SFOB staff members are satisfied that each member of the detachment is intimately familiar with the assigned area and its peoples.

2-6. Operational Area Intelligence and Briefback

a. Operational Area Intelligence Study. This is detailed intelligence of a specific: area of operation. It includes information acquired from all sources which include:

- (1) Selected personnel exfiltrated from objective area.
- (2) Existing resistance elements.
- (3) Recent operations conducted in the area.
- (4) Reaction to active propaganda programs.
- (5) Conduct of intelligence operations.

b. The "Asset." When a detachment is selected for commitment into a specific UWOA, it will be placed in isolation at the SFOB. At this time, the operational area intelligence briefing will be given. Information contained in this briefing is the latest and best available from all agencies and sources, and is the basis for operational planning. During these intelligence briefings, one source of information referred to as an "asset" may be introduced. The preferable asset is a person native to the assigned area

of operations who has recently been exfiltrated from that area, thoroughly interrogated for intelligence information, and who volunteered or was recruited to assist in the Special Forces mission. As such, the asset would have a comprehensive background knowledge of the objective area; also, it is desirable that he be a member of the resistance movement. If the situation warrants, and it is considered necessary, he may be infiltrated back into the operational area with the detachment to assist in contacting members of the resistance movement. For a sample format of an area intelligence study guide see appendix D.

c. *Brief back*. The purpose of a briefback is to provide assurance to the Special Forces group commander, his staff and representatives of the SFOB, to include other interested agencies and services, that all aspects of the assigned mission are understood and that the detachment is ready for deployment. Once the detachment has completed its preparation for deployment, and concluded its studies of the area in relation to its operational mission, it presents the briefback to demonstrate its operational readiness in regards to:

- (1) Detachment functioning.
 - (a) Teamwork.
 - (b) Attitude.
 - (c) Morale.
 - (d) Use of available time.
 - (e) Rehearsals of initial classes.
 - (f) Equal distribution of loads among detachment members.
 - (g) Rigging of equipment.
 - (h) Responsibilities in each phase of operation.
- (2) Detachment knowledge.
 - (a) Area study.
 - (b) Background of movement and leaders.
 - (c) Mission of the SFOD.
 - (d) Enemy situation.

- (e) Infiltration plan.
- (f) Alternate plans.
- (g) Contact plans.
- (h) Emergency plans.
- (i) Emergency resupply.
- (j) Automatic resupply.
- (k) Evasion and escape (E&E) operations.
- (l) Concepts of operations.
- (m) Detachment brevity code systems.
- (n) Location of sensitive items of equipment in the event of injury (SOI, SSI, crystals, radio equipment, explosives).

(3) Brief back format. A recommended format is presented in appendix D.

(4) Training aids. Maximum use of simply constructed training aids, i.e., maps, overlays, blackboards, and sand tables, if applicable, should be used to support brief back.

2-7. Area Assessment

a. Area assessment is the collection of specific information by the Special Forces detachment which commences immediately upon entering the area of operations. It is a continuous process which confirms, corrects, refutes, or adds to previous intelligence acquired before commitment. The area assessment is also the basis for changing detachment operational and logistical plans which were made before commitment into the area.

b. Assessment may assume two degrees of urgency—immediate and subsequent. Matters of immediate urgency are included in the "initial" assessment; the "principal" assessment is a continuous collection of information conducted until exfiltration or evacuation from the operational area. An explanation and recommended format for initial and principal area assessments are presented in appendix F.

c. Major changes in the area study indicated by area assessments will be furnished to the SFOB during the course of normal communications. These changes provide the latest intelligence information to the AST's.

Section III. INTELLIGENCE PRODUCTION WITHIN THE UWOA

2-8. General

The very nature and locale of UW operations require that Special Forces and supported resistance forces have accurate, timely information and intelligence in planning and conducting operations, securing bases, and preventing compromise by enemy forces. Intelligence systems in the UWOA, although primarily geared to support Special Forces and unconventional warfare forces in planning support functions and the underground in planning and conducting subversive operations to disrupt enemy activities, are also organized to support and answer EEI of higher headquarters.

2-9. Intelligence Information Agencies

See FM 31-21.

2-10. Intelligence Requirements

Through its three primary agencies available for producing intelligence information—the guerrilla force, the auxiliary, and the underground—the area command can support its intelligence requirements for the following:

a. Intelligence to Support Internal Operations. The intelligence system of the area command is designed for and oriented towards the support of its own requirements. As a result, most of the intelligence is produced for use of the guerrilla, auxiliary, and underground elements.

b. Intelligence Information to Support Higher Headquarters. The area command may be required to provide theater with information and intelligence pertaining to

- (1) Order of battle data.
- (2) Information to support PSYOP.
- (3) Targets of opportunity.
- (4) Post strike assessments.
- (5) Information on political, sociological, and economic matters.
- (6) Intelligence: information to support specific air, ground, and naval operations.
- (7) Technical intelligence information.
- (8) Identification, location, and affiliation of all known or suspected supporters and sympathizers to the government in power.

c. Other Intelligence Tasks. Special Forces detachments, although not primarily intelligence collection agencies, may be required to support or to accomplish information gathering tasks of a special nature required at higher headquarters. When the detachments receive such tasks, they may be presented to the area command by the detachment for execution by the auxiliary or underground as appropriate. Security or policy considerations, however, may not always allow indigenous participation in satisfying special intelligence requirements. See FM 31-20A and FM 31-21A.

Section IV. COUNTERINTELLIGENCE WITHIN THE UWOA

2-11. General

a. Another basic function of the area command is the establishment of a sound counterintelligence system, designed to neutralize or reduce the effectiveness of the enemy's intelligence gathering systems and prevent penetration of the resistance force intelligence systems by enemy agents and informants.

b. For detailed information on intelligence nets and counterintelligence operations see FM 30-17, FM 30-18, FM 31-20A, FM 31-21A, and DIAM 58-11.

2-12. Counterintelligence Considerations

a. *Screening of Personnel and Potential Recruits.*

(1) Active and passive security measures used to safeguard information, installations, and communications must be supplemented by an active counterintelligence program designed to neutralize enemy intelligence systems and to prevent or uncover enemy penetration.

(2) Personnel trained in counterintelligence carefully screen all members of the resistance force as a protective measure against enemy penetration.

b. *Surveillance of the Local Population.* Counterintelligence programs include continual checks of the civilian population in order to uncover enemy agents. One of the most potent dangers to the guerrilla is that segment of the population which does not

support the guerrilla force. Such groups, willingly or by coercion, act as informants and provide intelligence for the enemy. Thorough indoctrination of all personnel in safeguarding information and resisting interrogation is mandatory.

c. Penetration of Enemy Intelligence Systems. Counterintelligence measures are also used to determine enemy counter guerrilla techniques and operations and to identify enemy intelligence personnel and indigenous informants. Such information may be obtained from defectors or through penetration of enemy intelligence and counterintelligence organizations.

d. Internal Security. Information concerning present or planned UW operations is disseminated only on a need-to-know basis within the UWOA or elsewhere in the theater. Specific safeguards appropriate to UWOA's include:

(1) Only a minimum number of administrative and operational records are developed and maintained. They are cached, and the cache locations are known only to those personnel who need to know.

(2) References to names and places may be coded. The key to the code is disseminated on a need-to-know basis only.

(3) Unnecessary records are destroyed. A frequent review of records to determine their necessity is required.

(4) Due to stringent security requirements resistance personnel must rely on their memory to a greater extent than conventional personnel.

e. Physical Security.

(1) Strict physical security measures are enforced. The following are the basic minimum measures required:

(a) Camouflage discipline.

(b) Isolation of units from each other and from the civilian population,. Contact with civilians is held to the minimum and is accomplished solely by designated individuals or groups.

(c) Proper selection and rigid supervision of courier routes between headquarters and units.

(d) Controlled entry and exit from campsites and installations.

(e) Control of movement between guerrilla bases.

(2) Requirements for security are continually impressed on resistance personnel. Commanders at all levels constantly strive to improve security measures. Particular attention is devoted to those units and elements which have recently been inactive or which are located in relatively safe areas.

(3) Premature or unnecessary movement of guerrilla units may expose guerrillas to greater risks than those which would result from remaining concealed. Unnecessary moves disrupt guerrilla operations and tend to reduce security to exposing guerrillas to the enemy or informants. The decision to move should be made only on actual threat of enemy counter guerrilla operations.

Section V. SECURITY WITHIN THE UWOA

2-13. General

a. See FM 31-20A, FM 31-21, and FM 31-21A.

b. Security procedures of the area command are designed to prevent the enemy from identifying organizational structures or missions and to prevent the enemy from neutralizing or destroying the resistance organization. Such measures include both active and passive measures to increase overall security.

2-14. Principles of UWOA Security

a. *Security System.*

(1) General. Guerrilla units normally employ an inner and outer zone in establishing a security system. Specific delineation of security responsibilities must be made and coordination

procedures established if more than one resistance element is involved.

(2) Inner security zone (fig. 2-1). This zone is the responsibility of the guerrilla force, and its security system depends on standard military practice, i.e., patrols, outguards and outposts, a guardpost system, detection and warning devices, and camouflage and deception techniques.

(3) Outer security zone (fig 2-2). Normally, the auxiliary and the underground are responsible for furnishing guerrilla forces timely information of enemy activity within this zone. Such supplementary warning systems should not be relied on fully by the guerrilla force. The auxiliary and underground elements may be required to harass and delay the enemy, thus allowing the guerrilla force time to disperse.

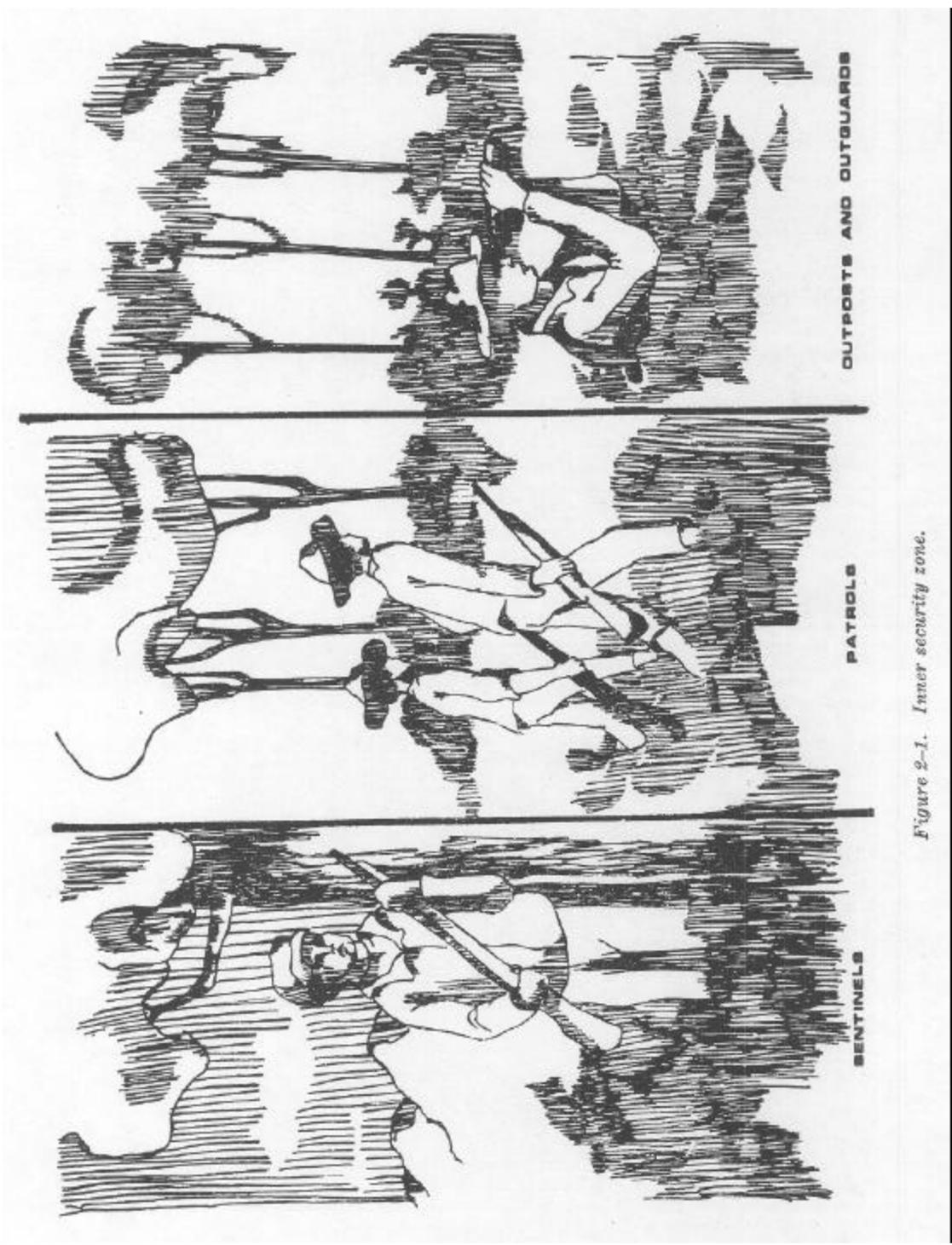


Figure 2-1. Inner security zone.

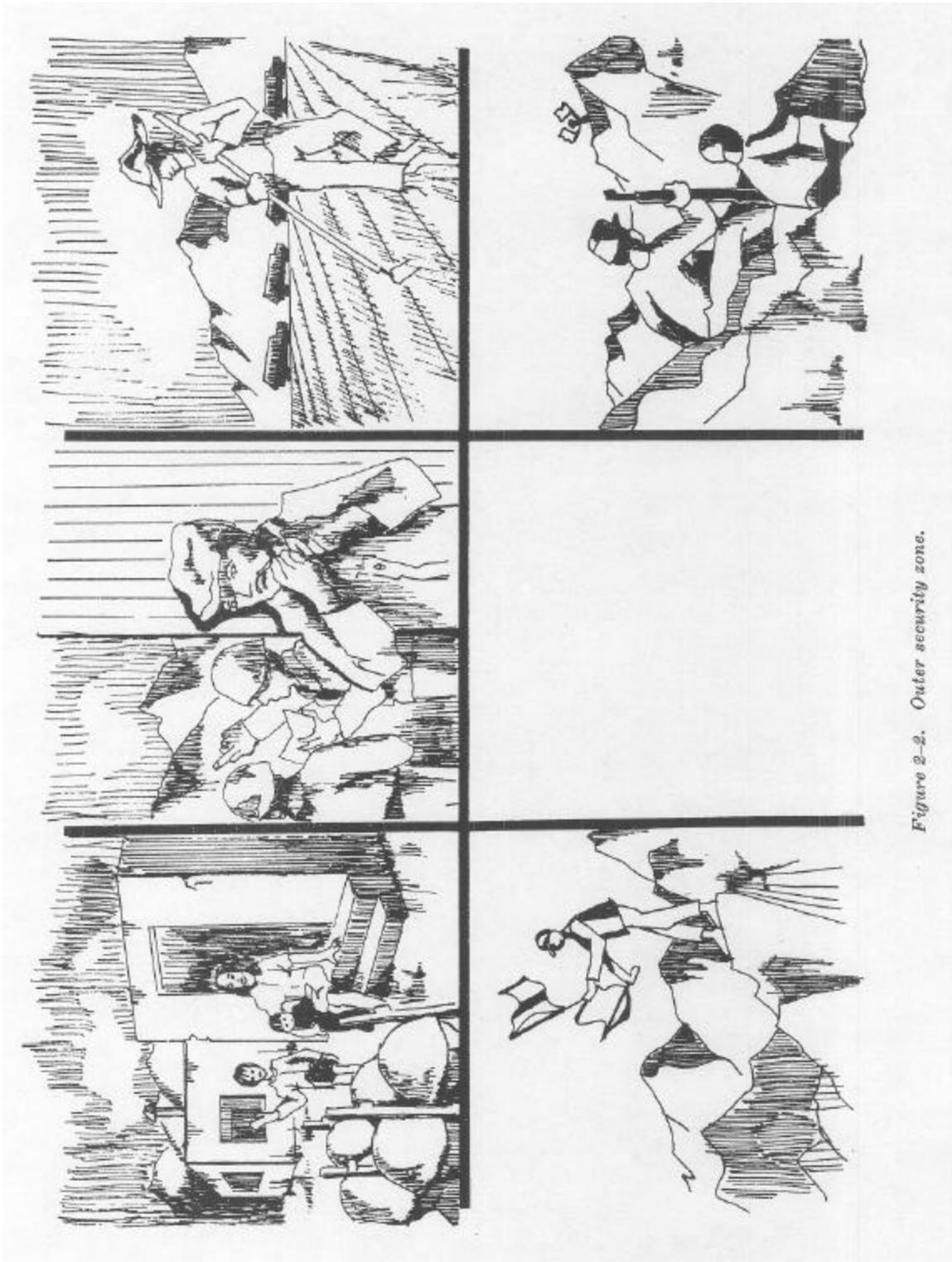


Figure 2-2. Outer security zone.

FM 31-20*b. Dispersion and Tactical Security.*

(1) Guerrilla forces must avoid concentrating on the march, in camps, or in bivouacs. Even though the tactical and logistical situations may favor concentrating the guerrilla force, security requirements dictate that the guerrilla force organize into smaller units and tactically disperse. A large force may be concentrated to conduct a specific operation; but upon completion of the operation it quickly reverts to the original organizational and dispersion pattern.

(2) The principle of dispersion should be applied to command as well as to tactical and support elements.

(3) In the event of large-scale enemy operations against the guerrilla force, the area commander may be forced to divide units into even smaller elements to achieve greater dispersion or to facilitate escape. This extreme dispersion will reduce the effectiveness of command control, lower the morale of the guerrilla force, and hinder the ability of the auxiliaries to render support. Accordingly, excessively dispersed units must be reassembled as quickly as possible. Operational plans must provide for such contingencies to include post-operation assembly areas (rallying points).

c. Mobility of Units and Installations.

(1) Guerrilla installations and forces must maintain a high degree of mobility. Emergency evacuation plans for guerrilla installations and forces should include actions to eliminate all traces of guerrilla activity prior to departure from an area.

(2) Mobility maybe facilitated by preparing equipment to be moved in one-man loads and by caching less mobile equipment.

d. Camouflage, Cover, and Deception. Another principle of security is the use of cover and camouflage and the execution of deception

operations. These operations are planned to conceal the nature and extent of guerrilla operations and to provide the enemy with misleading or false information. Such operations are an integral part of all resistance activities.

e. March Security.

(1) Tactical security on the march is based on knowledge of the enemy's location and strength. The intelligence section of the area commands provides this vital information for security of movement and operations.

(2) Units are briefed on the local enemy situation, primary and alternate routes, dispersal and reassembly areas along the way, and security measures to be observed en route. Areas through which the guerrilla force plans to pass may require assistance from the auxiliary to provide security for the guerrilla force.

(3) The guerrilla, forces employ standard march security techniques such as advance, rear, and flank guards. Preselected bivouacs are reconnoitered by patrols prior to the arrival of guerrilla units. As feasible, contact is established with local auxiliary units in order to obtain the latest information on enemy forces in the area.

2-15. Security Role of the Auxiliary and the Underground

a. The auxiliary and the underground supplement the security measures of the guerrilla force by uncovering enemy activity and joy identifying potential dangers to the guerrilla force. In addition, they establish warning systems designed to provide timely information of the approach of enemy units. They maintain surveillance over collaborators and attempt to elicit information from enemy personnel, local officials, and the police. The auxiliary usually operates in the outer security zone.

b. See FM 31-20A and FM 31-21A.

CHAPTER 3

PSYCHOLOGICAL OPERATIONS IN THE UNCONVENTIONAL WARFARE OPERATIONAL AREA

Section I. GENERAL

3-1. General

a. Unconventional warfare operations are dependent, in varying degrees, on a successful PSYOP campaign. PSYOP, properly applied, can create unity, maintain morale, and add to the determination of resistance forces. It can develop sympathy for the resistance and acceptance of its methods and objectives among uncommitted segments of the population by introducing doubts as to the correctness or eventual success of the enemy.

b. Special Forces personnel must have a thorough understanding and appreciation of PSYOP. While their capability to employ sophisticated techniques in an operational area is limited, they may request assistance from U.S. civilian and military PSYOP activities operating at theater and national levels. Information on preinfiltration PSYOP, initiated by theater UW command, is provided in predeployment briefings. Additional support may be requested through the SFOB after infiltration. Requests are acted on and coordinated at the theater UW command headquarters. Whether or not PSYOP support is requested, deployed Special Forces can make a positive contribution to existing national and theater-level PSYOP programs since they will be in a position to observe their effect and contribute to PSYOP intelligence. These contributions will be in their own self-interest since PSYOP originating outside the operational area will create attitudes which influence the success and survival of the Special Forces detachment.

c. In an operational area, Special Forces conduct PSYOP within their capability and according to the means available. Means will vary from primitive to modern, depending on the level

of development in the nation or region. By their presence in a country, however, Special Forces personnel will have impact on both military and civilian elements of the population. Two factors which contribute to a favourable psychological impact are: tangible evidence of U.S. interest and support, and an evident appreciation by those U.S. representatives of the objectives and problems of the resistance organization and its supporters. Special Forces activities, and especially the conduct of the individual, contribute greatly to offsetting unfavorable attitudes held by neutral or superficially hostile elements of the population. The detachment commander must have a thorough knowledge of PSYOP fundamentals and capabilities, and the imagination to adapt to the operational environment in which he is deployed. He must be prepared to advise the area commander on PSYOP programs, to train selected resistance members in the application of PSYOP, and to initiate PSYOP programs of his own.

d. PSYOP has application in all phases of guerrilla warfare and in all other aspects of UW, including evasion and escape and subversion. The psychological effect of every action or activity on all segments of the population is an important planning consideration. Some operations, in fact, will be undertaken chiefly for their psychological impact on one or more of the target groups discussed below.

3-2. Psyop Methods and Techniques

a. PSYOP methods and techniques are discussed in detail in FM 33-1 and FM 33-6.

b. For PSYOP in support of subversion, see FM 31-21A.

Section II. PLANNING

3-3. General Concept

Psychological operations are directed toward target audiences (hostile, neutral, and friendly), external as well as internal to the area of operations, in support of U.S. sponsored unconventional warfare. PSYOP precede, develop concurrently with, and follow UW operations. Strategic PSYOP are conducted to support overall theater operations concurrently with tactical PSYOP which support operations within the UWOA. Consolidation PSYOP are usually planned for later phases of the campaign.

3-4. Specific Concepts

a. Strategic. On order of theater commander, theater PSYOP elements intensify PSYOP campaigns to persuade the local population to receive U.S. personnel favorably. A coordinated effort is begun at the JUWTF level well in advance of deployment into the UWOA. This effort (phase I, Psychological Preparation) assists in developing initial contacts within the UWOA (phase II, Initial Contact). Strategic PSYOP support continues throughout subsequent phases of the operation. For a discussion of specific phases of UW see FM 31-21.

b. Tactical. Predeployment preparation includes appropriate PSYOP training, including national policy guidance for PSYOP. In the UWOA, the face-to-face persuasion technique is the most appropriate medium; however, detachments may request audio and visual support from the SFOB. All guerrilla personnel should receive some PSYOP and civic action training; selected personnel should be given extensive training in PSYOP. Detachment commanders closely monitor the guerrilla-conducted PSYOP effort and advise the SFOB on PSYOP opportunities as they develop.

c. Psychological Operations by Resistance Force. Combat actions initiated by the Special Forces commander will have psychological as well as military objectives. Examples are operations which tend to unify and increase the morale of the guerrillas or which manifest their support of the people. When they are psychologically exploited, such operations tend to reinforce civilian beliefs in the strength of the guerrilla force and its political and military objectives. From the practical side these operations should destroy targets or produce sources of food and information required for the survival of

the guerrilla force. Evidence that the strength of the guerrilla force is growing tends to lower enemy morale and increases requirements for countermeasures. Operations initiated primarily for their psychological effects may include:

(1) Ambushes and raids, sniper campaigns, and interdiction operations.

(2) Assisting the civilian populace by sharing medical services and supplies, and providing sanctuary to civilian supporters of the resistance.

(3) Encouraging portions of the civilian populace to resist regulations, laws, or restrictions imposed by enemy authorities.

(4) Organization of supporting elements in all target groups by conducting meetings with intensive education or indoctrination of those elements.

(5) Providing manpower and skills to assist the local populace in repairing or building needed structures, harvesting crops, maintaining schools and churches, and organizing social activity groups when the operational situation permits.

(6) As feasible, the Special Forces detachment personnel may reinforce operations by direct contact with the local civilians to provide additional evidence that the guerrillas are supported by the United States and that all are working in the interest of the populace.

(7) Organization of front organizations within target groups of populace, conducting clandestine meetings and rallies, and intensive education and indoctrination sessions.

3-5. Intelligence

a. The acquisition and skillful use of PSYOP intelligence is essential to PSYOP effectiveness. PSYOP intelligence determines the receptiveness, vulnerabilities, and actual and potential behavior of target audiences before, during, and after PSYOP are directed toward them. It must provide the means to identify and analyze potential audiences, to determine effective message content, to select and employ suitable media and methods, and to assess effectiveness.

b. The requirements for PSYOP intelligence are formulated in detail. A collection plan is prepared and requests are made through appropriate channels

(normally intelligence channels) immediately after the assignment of missions. Where feasible, information received is processed, employing a PSYOP journal, worksheet, and situation map and a PSYOP intelligence estimate is prepared.

c. Initial intelligence studies include historical, cultural, and biographical data and material relating to sociological, political, religious, economic, communications, transportation, and military aspects of the operational area. While such studies provide vital and useful background information, they rarely provide sufficient detail to permit effective PSYOP in remote areas typical of Special Forces operations. Additional intelligence is necessary, and it is often impossible to acquire it until after commitment of the Special Forces detachment into an area.

3-6. The Target Audience

a. The target audience is the segment of the populace to which the psychological message is directed. Certain propaganda and information efforts are designed to maintain already existing favorable attitudes and behavior. Special Forces PSYOP efforts are aimed at producing specific, desirable actions and normally are conducted to overcome attitudes which condition target audiences against taking the desired actions.

b. Understanding the nature of the target audiences and their places in the sequence of PSYOP activities is essential to Special Forces success in remote area operations. The message, the media, and the method employed are built around and derived from the target audience.

c. In remote areas where Special Forces conduct operations, potential target audiences can be of a radically different cultural composition. Extremely small and separate segments of the populace living in isolated villages in the same operational area can possess contradictory customs, different religions, and be dependent on conflicting economic necessities. Several competing tribes can inhabit a single operational area, and diversity within the same tribe is not uncommon. Although communities are separated by only a few miles, they may have no common interest and no common, cultural orientation with adjoining villages or the major cities of their native countries. Completely different languages/dialects may be spoken. Propaganda which might be effective in metropolitan areas can be entirely inappropriate for dissemination in remote

areas of the same country. Despite these difficulties, such social and regional differences can be effectively overcome by face-to-face propaganda teams locally recruited, trained, and employed. The local, decentralized application of PSYOP with such teams is the key to success in such areas.

d. The PSYOP intelligence effort to define and analyze target audiences begins on entry into the UWOA. Target audiences will be selected based on information obtained by personal observations and discussions between members of the Special Forces detachment. Environmental conditions affecting potential target audiences and audience attitudes toward these conditions are charted and analyzed. Based on these analyses, estimates are made of target audience susceptibilities to PSYOP and of the abilities of target audience members to control and influence others.

e. This last requirement provides the key to many Special Forces PSYOP in operational areas: It is obvious that appeals by modern, mass communications media are ineffective in areas where no radios exist and the literacy rate is low. Groups of the populace may be so organized as to preclude many types of mass appeal, unless a divisive response is sought. Where effective control and influences in villages or tribal units is vested by custom and mutual consent in one or several individuals, such persons may well constitute the one and only potential target audience for PSYOP designated to unify their populace groups.

f. Generally, face-to-face communication is the most productive medium available in Special Forces operations. It enables the psychological operator to design his appeals for specific targets and to judge, by direct observation, the response to, and effect of, his propaganda appeals. Thus, he can respond immediately to audience reaction.

3-7. Target Groups

a. General. In a UW environment there are four major target groups:

- (1) Group 1—Enemy military forces.
- (2) Group 2—The populace.
- (3) Group 3—Guerrillas.
- (4) Group 4—Auxiliaries and underground.

b. *Group 1—Enemy Military Forces.* Enemy military forces are either of the same nationality as the populace or they represent an adjacent or occupying foreign power. PSYOP programs are

FM 31-20

directed against these groups to cause members to feel isolated, improperly supported, doubtful of the outcome of the struggle, and unsure of the morality of their cause. Aggressive guerrilla or underground activities, particularly at night, induce feelings of inadequacy, insecurity, and fear in the enemy soldier. These feelings, properly exploited, may make the enemy soldier responsive to appeals urging surrender, malingering, disaffection, or desertion. Procedures employed include emphasizing inadequacies of his leaders, supplies, or equipment and the constant danger of death. By focusing on the enemy soldier's fears and frustrations, PSYOP serves to lower his morale and reduce his effectiveness, particularly when it is employed in conjunction with the pressures generated by sustained combat. The enemy soldier's feeling of isolation and his receptivity to U.S.-sponsored PSYOP appeals are further increased by the demonstrated success and obvious growth of the resistance organization as well as through leaflets and broadcast messages which stress popular support of their objectives. When tactically justified, the enemy soldier is told why and how he should defect and is given repeated assurances concerning his safety and welcome. When he is captured or defects to the guerrillas, any earlier promises of safety and good treatment must be kept. Proof of good treatment is passed on to enemy units by photographs or leaflets, or by having him make loudspeaker appeals to his former comrades. Clandestine resistance elements also inform enemy units, by rumor and surreptitious contact, of the well-being of defected or captured personnel. The successful defection of an enemy soldier may induce those remaining behind to consider similar action. PSYOP of this type have psychological impact on the enemy and on the resistance as well. The enemy soldier is made to feel that his comrades are wavering and do not support enemy goals. Resistance forces begin to realize that the enemy is weakening and that their own chances for success are increasing. The overall PSYOP objective is to reduce the combat efficiency of the enemy military forces.

c. Group 2—The Populace.

(1) Enemy supporters include those civilians in an operational area who collaborate willingly with the enemy, those who collaborate with the enemy under duress, and those civilians whose actions may be passive but whose sympathies are with the occupying power. PSYOP programs directed against this group are carefully oriented.

The broad psychological objectives, however, are the same as for those directed against enemy military forces. A program to instill doubt and fear is conducted in conjunction with a positive political action program. Campaigns are conducted to identify, isolate, and discredit the collaborators or to weaken the collaborators' belief in the strength and power of the enemy military forces. Punitive action against collaborators may result in reprisals and a consequent loss of broad civilian support; however, such action is threatened and sometimes initiated against known collaborators by the guerrillas and other elements of the resistance. PSYOP programs against this group are designed to curtail their support of the enemy forces and elicit their support of the resistance forces.

(2) Resistance supporters include that part of the civilian population which is sympathetic toward the goals of the movement but who are not active members of some element of the resistance force (i.e., the guerrillas, auxiliary, or underground). PSYOP programs, aimed and directed at this target audience, stress appeals for the populace to support or cooperate passively with the resistance organization in achieving common objectives. Resistance movements require support of the populace to be successful.

(3) In the initial stage of hostilities, the populace may be neutral or even actively opposed to the resistance effort because of fear or uncertainty about the aims of the movement or its eventual success. Under the best of conditions, therefore, the populace is caught between the demands and controls of the enemy force as well as those of the resistance. Accordingly, PSYOP programs stress that the guerrillas and underground share the political and social goals of the populace, that these goals will be successful, and that the United States is supporting the resistance forces and their political and social goals. Special Forces personnel in the operational area have access to exploitable information on the immediate situation and on the attitudes and behavior of the local populace. The Special Forces commander provides such information to higher headquarters so that specific, predetermined, and coordinated PSYOP programs can be carried out in support of the UW effort. The SFOB commander may provide the Special Forces operational detachment with additional PSYOP advisory support as well as capabilities on which to plan and implement a detailed and integrated PSYOP program. Further support may be in the

form of dissemination of leaflets or radio broad casts from outside the UWOA, but it must be remembered that SFOB support will be limited, and the detachment commander's most effective weapon will be face-to-face communication. The primary objective of PSYOP, aimed at this group, is to impress on them that they, the resistance force, and the United States have a common goal, and that success is directly dependent on this group's support. This is the group that will serve as the primary recruiting source for personnel for groups 3 and 4.

d. Group 3—Guerrillas. PSYOP programs aimed at this target group, stress that the presence of Special Forces personnel provides the guerrilla force with tangible evidence that the United States supports the general objectives of the resistance movement. Since the guerrilla bears the brunt of enemy attention and counteractions, any acceptable activities that enhance his prestige or raise his morale should be used, e.g., guerrilla newspapers,

transistor radios to monitor friendly broad casts, award programs, and promotions. Other programs stress the reliance of guerrillas on, and their rapport with, the populace for support.

e. Group 4—Auxiliaries and Underground. The efforts of this group receive suitable recognition and they are urged to continue their activities aiding the guerrilla force; however, caution is exercised to avoid compromising individuals by unwittingly revealing them as members of the resistance force. The primary objective of PSYOP aimed at this target group is to convince all personnel that the ultimate success of the resistance movement depends on their unwavering support. PSYOP conducted by the auxiliaries strive to maintain the people's morale, and thereby ensure continued popular support for the guerrillas. Propaganda also discredits anal can be used to deceive the enemy. Most propaganda is by face-to-face communication, but auxiliaries also distribute posters, leaflets, and pamphlets.

Section III. PROPAGANDA — PRODUCTION AND USE

3-8. Persuasion

a. The basis of success in using propaganda against any target group is persuasion. Successful persuasion requires the propagandist to understand the target group. Because of the many diverse geographical areas and national origins which may be faced by Special Forces personnel, only general guidelines can be furnished to assist in planning and conducting a persuasion campaign.

b. The first step is to conduct an estimate of the psychological situation. This requires the identification of the factors which affect the target group: first, the outside pressures such as an occupying force and second, the internal influences such as the way in which the people live. Special Forces personnel must understand how and why the target group feels about many factors, both internal and external, which influence their lives. Chances for a successful persuasion effort are improved when these influences on the lives of the people are known.

c. There are a number of methods which can be used to develop an understanding of the people to be persuaded. The best overall approach is to combine as many of these methods as possible.

(1) *Area studies.* If there are area studies or similar reports available dealing with the area or

group of people with whom Special Forces are concerned, these documents will provide a good background on the subject. Many studies may be too general in nature to be accurate with regard to a particular group. Other studies may not be objective and thus present a biased picture of the group.

(2) *Interviews.* In dealings with the group's interests, Special Forces will be able to sound out some of the views that the group holds. This method can provide some indication of group attitudes. The area of interest will be disguised and any suggestion of "correct" answers to questions will be avoided. It is likely that; the person being questioned will tend to give answers that he thinks are expected of him.

(3) *Observation.* Careful observation of the daily activities in the group will provide some confirmation of the conclusions reached as a result of analysis of available reports and of interviews with target group representatives. Attention is paid not only to the more obvious activities, but also to some of the more subtle ways members of the group demonstrate their views. Who is listened to most often, and under what circumstances, and the location of items connected with various aspects of daily life tend to indicate group attitude. In interpreting group activities, an open mind is

FM 31-20

important so that previously conceived conclusions are not confirmed to the exclusion of other truths. The group should not be judged in terms of American values or an interpretation of attitudes made from an American point of view.

(4) *Previously assigned personnel.* It is desirable to discuss the situation with a predecessor, and this discussion can be very beneficial in providing a basic understanding of the strengths and weaknesses of the people as well as persuasive methods that have worked well in the past. Evaluation of previous conclusions, however, should be made to discover errors. Under any circumstance, each Special Forces representative should make an evaluation of the groups with which he deals.

(5) *Validity of conclusions.* Conclusions previously made should be treated as tentative in nature. By doing this, a constant reevaluation can be made as necessary because some conclusions may be based on tenuous, unconfirmed information.

d. There are a number of approaches to the problem of persuasion. The best one involves changing, if necessary, the predisposition of a target group to react in a particular way to things they sense in their environment; in other words, their attitudes. Having discovered the existing attitudes of the group, an examination is made to define characteristics of the attitudes so that changes or modification can be made. The ultimate purpose is to influence the behavior of the group.

e. In any given situation there are certain desirable actions for various groups to take. Understanding the overall situation as it applies to any particular group allows better preparation of potentially successful lines of persuasion. These lines of persuasion are based on the environmental factors currently influencing the target group and on current attitudes toward pertinent subjects. These lines of persuasion are then used to influence the group to adopt those desired actions.

3-9. Guides for Persuasion

Having established the goals of the persuasion effort (actions desired) the next step is to accomplish these goals. How these goals can be accomplished depends greatly on the nature of the situation and the characteristics of the target group. Nevertheless, certain guidelines can be established, although they may not apply to all situations. The guidelines are:

a. Use an Indirect Approach. When modifying attitudes to affect behavior, first work on those who are relatively weak and less frequently aroused. In most cases, these attitudes will offer less resistance to change than stronger, more frequently aroused attitudes. Eventually, the stronger attitudes may have to be modified; but by changing the weaker attitudes first, the stronger attitudes may be made weaker. This course of action has the best chance of success in bringing about the psychological operator's desired behavior of the target group.

b. Use a Variety of Approaches. As many lines of persuasion as possible which have a foundation in environmental factors influencing the target and in the attitudes of the target will be used. People possess current attitudes because these attitudes meet current needs. Even within a single target group, individual needs may differ. Consequently, by using as many supporting ideas as possible, there is a better chance of touching on a meaningful line of persuasion for all the members of the target group. The lines of persuasion will be consistent with established policy and the current situation, relate to something of contemporary interest, and be credible (believable) to the target group.

c. Use Group Identification. One of the most powerful forces that can be employed is group pressure. The use of group pressure must be carefully thought out to preclude its backfiring. Each situation is analyzed in this regard. The essential feature of this device, however, is that the target group is made aware that other groups, which it respects, favors the advocated action or perhaps that a significant element of the target group itself favors the action. It is important that any such assertions have some real basis so that the target group will believe the assertion.

3-10. Complexity

In highly complex situations, it is necessary to persuade several different groups before the real target is ready to take the desired action. In this case, it is necessary to decide which groups are to be persuaded first and by what means. It may be necessary to use different methods to support verbal lines of persuasion to induct: the target to make the desired response.

3-11. The Message

a. The message is the impulse, or meaning, the sender seeks to pass on to the receiver. While the

message is literally received in the sense of being seen, heard, or read by the target audience, this literal reception is no guarantee of its effectiveness. At its terminus, the message competes for the attention of the recipient with numerous other stimuli and events. To produce the desired response, which is the objective of the PSYOP action, each message is created with a distinct purpose in mind and is skillfully designed to accomplish that purpose. In developing the message, assurance is made that it is not based on the social values and experiences of the writer, but on those of the target audience.

b. Messages have substance and form. Themes are the substantive content, the communicative intent of the message. A theme is a line of persuasion through which psychological objectives are achieved by shaping the future behavior of a target audience to support, or simply permit, accomplishment of strategic and tactical objectives consistent with national policy. In-group themes develop unified in-group awareness in a target audience and transfer out-group hostility to the opposition in a psychological campaign. Inevitability themes exploit successes and failures to persuade target audiences that it is opportune to join friendly forces and futile to resist them for they are "the wave of the future." Legitimacy themes persuade target audiences that friendly programs and actions are justified by historical continuity, traditional/legal bases, or "the will of the people," and that opposition claims to this are unjustified. Themes are central lines in PSYOP material or messages and all appeals are built around them.

3-12. Media

a. Media are the means by which messages are presented. Effective response, as well as literal reception of messages, depends on their wise choice and employment. This choice is made after careful consideration of the target audience and the theme and form of the message. Mere convenience or availability does not justify and should not influence the use of a particular media. Communication by media of proven effectiveness in the area of operations and to which the target audience is already accustomed and conditioned is likely to be the most effective. But the probable effectiveness of new innovations will not be overlooked.

b. The absence of an elaborate loudspeaker or printing apparatus need not be a handicap to PSYOP

in remote areas because face-to-face communications may prove the most effective means, whether other media are available or not.

c. Forms of entertainment which are traditional or popular in the area of operations are excellent potential media. They usually draw full audience attention, are well received, and lend themselves to the communication of PSYOP messages. Such forms as pantomime, dance, and music employ universal sounds and symbols. When Special Forces detachments sponsor such performances the good will and favorable attitudes created can lead to desired actions. Caution should be exercised to avoid having the audience identify with the Special Forces detachment and not the host government.

d. Gifts can be used to carry propaganda messages. Such items as soap, matches, salt, needles and thread,, seeds, clothing, and other items of value make suitable gifts which are acceptable for general distribution. These gifts should be printed on or be wrapped in a piece of paper containing a propaganda message or symbol which conveys the meaning desired. In selecting the gifts, be sure that the gifts are useful and that the use of symbols or messages do not antagonize the receiver. For example, it may be in poor taste to have a piece of soap wrapped in a leaflet containing a copy of the recipient's national flag. The sender must be aware of countermeasures which the enemy may take, such as giving gifts of food which is poisonous and attributing the gifts to the friendly forces.

3-13. Media and Target Audience

It should be recognized that employment of sophisticated media in backward areas can be ineffective where target audiences are unaccustomed to their use; and that clear and intelligible messages can be misunderstood. Nevertheless, the mere possession and public use of modern communication devices can raise the prestige of the use in the eyes of remote area target audiences. In the use of any media, it is imperative that it be considered carefully so that it does not create an unintended effect on the target audience. There are certain rules for face-to-face communication which have been developed by experience.

a. Avoid dogmatism at all times. The ideas of others are respected in successful communication.

b. Stress accord and approval. A sincere approval of a people's values develops a strong basis for further communications.

FM 31-20

c. Avoid minor disagreements if possible. People like to win discussions, and it is often better to overlook minor disagreement in order to develop stronger rapport and a basis for friendship.

d. Follow and use the audience's line of reasoning at all times. Special Forces personnel, working with people of other cultures, must understand different values and experiences involved. People's concepts of time or right and wrong may differ from the outlook of Americans. They may not understand why U.S. personnel continue trying to accomplish a difficult task.

e. Be reasonable.

f. Use symbols and language patterns understood by the target audience. To be thoroughly understood, Special Forces personnel must use symbols and language patterns which are understood by the target audience in order to produce the desired behavior.

3-14. Assessment of Effectiveness

a. The effectiveness of PSYOP must be determined to provide a basis for future operations. In Special Forces operations, partial or complete estimates of PSYOP effectiveness can be based on conferences, conversations, and personal observations conducted by Special Forces personnel. The most significant indicator of the effectiveness of the UW operation, to include the PSYOP effort, is the degree to which the people support the resistance force. This support can be measured by the amount of intelligence, recruits, food, and materials furnished by the people.

b. This level of support (effectiveness) must be considered in the light of the freedom of action available to the target audience. Where PSYOP missions require a series of actions over a long period of time, the desired audience behavior normally will be extremely difficult to discern and estimate. In these instances, PSYOP intelligence requirements for assessing effectiveness are extensive and continuing. Assessments provide the basis for adjusting and improving methods, developing and revising plans, and setting new PSYOP objectives.

3-15. Propaganda Development

Themes (lines of persuasion) and symbols selected for use in propaganda are based on results of target analysis. Themes will be consistent with policy, existing conditions, and other actions of the sponsor.

Psychological themes are subjects, topics, or lines of persuasion, used to achieve a psychological objective through exploitation of existing target susceptibilities. They are a bridge between a psychological opportunity, as revealed in the intelligence estimate, and the behavior pattern which the propagandist is attempting to secure. They are selected on the basis of policy, intelligence, historical and cultural background, and receptivity of the audience. Good themes are consistent, timely, and credible (believable). Themes and symbols should be meaningful to the audience, in terms of its views of reality, rather than in terms of what the propagandist views as truth and reality.

3-16. Productions and Dissemination Techniques

The form and content of the actual propaganda product will largely depend on the consideration discussed in the preceding paragraph. The communication media, selected to carry these themes and symbols will also depend on the target's frame of reference or field of experience as well as upon the resources and capabilities of the propagandists. The operational detachment commander will, in most cases, be forced to resort to his imagination and ingenuity in determining the most meaningful and effective means of communicating the propaganda message to the target audience. Some means and media that can be considered are

a. Graphic and Visual Materials. These can be printed material reproduced on mimeograph or similar lightweight reproduction equipment such as jellyrolls and other, field expedients, reproduction equipment (see appendix B) or by underground press facilities. Hand produced materials such as letters, posters, wall signs, markings, photographs, and symbolic devices such as displays or physical mockups of resistance symbols are used.

b. Loudspeakers and Other Forms of Public Address Systems. These may be brought into the UWOA from outside sources, locally procured, or fabricated. Bulk power requirements and security frequently restrict the use of this means.

c. Radio, Both Clandestine and From Outside the UWOA. The technical problems of establishing and operating a clandestine radio, as well as security, restricts the use of this means. If the target can receive radio broadcasts, the use of clandestine radio broadcast systems can be highly effective.

d. Face-to-Face Communications. In view of the limited public communication media accessible in the UWOA, much of the communication of propaganda messages is through face-to-face exchange. In effect, all members of the Special Forces operational detachment and the resistance forces are used as active propagandists within the limits of security. Depending on the situation and the target audience, face-to-face communications can be the most effective means of communicating propaganda messages.

e. Other Techniques. Though the task is difficult, PSYOP communication is accomplished among semiliterate and illiterate target groups in varying degrees. The target audience interprets the message in terms of previous experience and learned response; therefore, it is necessary to understand the experience of the target audience before the intended meaning is communicated. Lack of experience with Western forms of communication is overcome by techniques of presentation that fit audience

experience. As an example, the photograph does not communicate meaning to many groups and yet through other approaches, communication is accomplished. Drawing on the ground, cutouts of paper and other materials, and scale models may assist in overcoming an inability to understand a photograph. The key to communicating at this level of literacy is the technique of presentation which uses the symbols, language, and experience of the target audience to express an idea in a way that they understand.

3-17. Summary

To be successful, the Special Forces soldier must, at all times, in addition to his other duties, be an effective psychological operator. He must influence behavior by the expression of ideas through available media and symbols understood by his target audience. These ideas must be credible and fulfill psychological needs of the audience, or favorably resolve psychological conflicts.

CHAPTER 4

INFILTRATION AND EXFILTRATION

Section I. INFILTRATION

4-1. General

a. The success of a Special Forces operational detachment's infiltration into a designated UWOA depends, primarily, on detailed planning and preparation. Procedures and techniques of employing any one of the four general methods of infiltration will be dependent on certain factors being present that will enhance the success of the mission.

b. See FM 31-21, and FM 31-21A.

4-2. Factors in Selecting Method of Infiltration

a. Mission. A prime consideration in determining the means of infiltration is the operational mission of the alerted detachment. The mission may require rapid deployment into the operational area, thereby dictating the most expeditious method of infiltration.

b. Enemy Situation. Enemy capabilities and security measures affect the means selected for infiltration; for example, a heavily guarded border may preclude land infiltration. Similarly, a strongly defended and patrolled coastline may eliminate water as a possible means. Also, the capability of the enemy air defense systems will reduce air delivery potential.

c. Weather. Certain weather conditions may adversely affect air or water infiltration, yet these same conditions may favor land infiltration. Seasonal bad weather with storms, high winds, or protracted periods of reduced visibility would be an example.

d. Topography. Land formations must be considered in deciding on the method of infiltration to be used. Land infiltration will have a better chance for success if the chosen routes pass through mountainous, swampy, or heavily forested areas. On

the other hand, the presence of mountains could force aircraft to fly at higher altitudes resulting in greater exposure to enemy detection and air defense systems.

e. Hydrography. Hydrographic factors, i.e., tides, depth of offshore water, beach gradients, currents, and the location of reefs and sandbars, influence the selection of water as a means of infiltration.

f. Personnel. The number of personnel to be infiltrated and their lack of training may be limiting factors. Although the training given Special Forces operational detachment personnel is usually sufficient to prepare them for any means of infiltration, other individual who may accompany them may require special training on a short-term basis prior to infiltration.

g. Accompanying Supplies. The type and quantity of supplies that must be infiltrated with the operational detachment may dictate the method of infiltration.

h. Distance. The distance to the objective area must be considered in selection of infiltration means.

i. Equipment Available. The operational capabilities of air and watercraft available for infiltration and the amount and types of special equipment, i.e., waterproof kits, or air delivery containers, are major factors to be considered. Available types of air or watercraft will determine the number of personnel and the amount of equipment that can be deployed in a single sortie.

4-3. Reporting Detachment Infiltration

a. Infiltration of the detachment into its operational area is not complete until the Initial Entry Report is made to the SFOB. The Initial Entry Report is submitted as soon as possible after infiltration, whether or not contact has been made with the local resistance.

FM 31-20

b. The following data is the minimum required for the Initial Entry Report.

(1) Proword. Designated in accordance with the SOL the proword designates the type of report being submitted.

(2) Paragraph A. Code Word. Designated in accordance with the SOL the code word identifies the operational detachment making the report.

(3) Paragraph B. Location. Complete military coordinates to nearest 1,000 meters of the headquarters element.

(4) Paragraph C. Casualties. Report last name and whether fatality or injury. Also, report missing personnel.

(5) Paragraph D. Contact. Report whether contact was made with local resistance.

(6) Paragraph E. Strength. Report strength of resistance force as known at time of report.

(7) Paragraph F. Additional Information. Detachment may include a request to cancel the emergency resupply drop.

4-4. Air Infiltration

a. *Advantages and Disadvantages.* See FM 31-21.

b. *General.* Air delivery by parachute is one of the principal means available for the infiltration of SFOD's. In most instances standard troop carrier aircraft are well equipped and satisfy airdrop requirements. Some situations may dictate a requirement for aircraft capable of parachute delivery of personnel and equipment from high altitudes using freefall parachute techniques or static line-stabilization-chute descent to low altitude. In addition, assault-type aircraft as well as amphibious and utility types used by the several services may be available in varying numbers. Some situations may require that these aircraft have the capability of using relatively short, unprepared airstrips and conduct airlanding operations during infiltration. Under certain circumstances, longer-range tactical aircraft may be used. The following characteristics and capabilities are representative of the type of aircraft support desired for UW operations

(1) Parachute a minimum of 24 persons with necessary impedimenta.

(2) Operate at varying altitudes during darkness or adverse weather conditions.

(3) Possess the required navigational aids to allow the aircrew to locate and deliver personnel and

equipment on small DZ's with no terminal guidance or ground contact.

(4) Sufficient combat radius; to reach the operational area and return to a friendly base.

(5) Land and takeoff from short, unprepared airstrips.

(6) Under certain circumstances, land and takeoff from water.

(7) Possess the capabilities of parachute delivery of personnel and equipment from high altitudes.

(8) Dimensions, flight characteristics, and data on U.S. Army and U.S. Air Force aircraft are found in TM 57-210.

c. *Specific Considerations.*

(1) Drop Zone (DZ) selection. DZ requirements for clandestine parachute entry differ from those for normal airborne operations. Security of the entry operation and subsequent survival of those infiltrated are the overriding considerations. Obviously ideal DZ's may be under either continuous or periodic surveillance by security forces or by technical means. Therefore, populated areas and areas considered occupied or patrolled by enemy security forces must be avoided. These considerations, in combination with the topography of the remaining area, may dictate the use of small, rough terrain DZ's of deliberate tree landings in densely forested or jungle areas. Use of such DZ's may require special equipment and training in specialized techniques.

(2) Drop zone identification and authentication procedures. Although proper identification and authentication of the primary DZ selected for the initial infiltration is the joint responsibility of the aircraft commander and the U.S. Army Special Forces detachment commander, there are other factors that must be discussed

(a) For the initial infiltration, the decision to proceed with the drop, or abort, in the event of improper markings or authentication signals being displayed, is the responsibility of the joint commanders for the overall mission and is normally contained in the operation order. In a deep penetration there are two techniques that may be employed:

1. A complete abort of the mission and return to the operational base.

2. Abort the primary DZ and proceed to a preselected, alternate DZ, and drop using a "blind drop procedure" explained below.

(b) Whatever the decision, it must be known to the aircraft commander and the U.S. Army Special Forces detachment commander. Each member of the aircrew and the remainder of the operational detachment will also be notified of the impending changes.

(3) *Jump procedures.*

(a) The Air Force will assume primary responsibility for determining the point of exit of personnel from the aircraft whenever a visual ground signal is not available. In instances such as this and when using a "blind drop" technique, the drop will be made on a computed air release point (CARP) or on a visible preselected release point.

(b) The Army jumpmaster will assume responsibility for determining the point of exit of personnel from the aircraft whenever visual ground marking systems are being used. In this procedure, the "green light" or a verbal command from the pilot to the jumpmaster will signify the aircraft is approaching the designated DZ and the aircraft is at proper drop altitude and all conditions are safe to jump. The command to exit will be given by the jumpmaster directly over the visual ground marking devices.

d. *Blind-Drop Procedures.*

(1) Blind drop refers to the technique of infiltrating personnel by parachute on a DZ devoid of reception personnel. Examples of situations in which this technique would be employed are:

(a) Special Forces elements are operating in a unilateral role; e.g., operations against selected targets without the support of a resistance force.

(b) A resistance element of sufficient size and nature to warrant exploitation is known to be in the area; however, prior contact has not been established.

(c) The enemy situation precludes normal marking and recognition signals.

(2) Once the DZ is selected in the operational area, the Air Force has responsibility for flight planning, initial point (IP) selection, and crew procedures throughout the flight. Normally, the drop will be made on a CARP or a visible, preselected release point. If freefall techniques are employed and the ground is not visible, the high altitude, freefall release system is used.

e. *Freefall Operations.* When enemy air defense discourages normal infiltration by air, parachute entry from high altitudes may be necessary. Whenever this

type of operation is planned in hostile areas protected by enemy radar and other detection devices, a system of jamming or disrupting these systems must be established. An important consideration is the availability of aircrews trained in working under arduous conditions in depressurized aircraft at jump altitudes in excess of 40,000 feet. Once freefall parachutists have exited the aircraft, they maintain a stable freefall position in the air, falling to a designated altitude before opening their parachutes. When necessary, dropping personnel may employ tracking procedures to glide to a preselected opening point based on map aerial photographic reconnaissance. Once parachutes are open, personnel manipulate their parachutes to assemble in the air to ensure landing close to each other on the ground. Assembly aids include special marking devices and materials, visible at night, applied to pack trays, backpacks, and other designated equipment. Other operational characteristics of the freefall parachute technique are presented in chapter 6.

f. *Equipment/Supplies/Reception Committee.*

The detachment must have in its possession the equipment with which to accomplish initial tasks. These items normally consist of radios, individual arms, and operational TOE equipment which may include medical kits, photographic equipment, binoculars, compasses, TA clothing and equipment in keeping with climatic conditions in the operational area, food, and survival equipment. The presence of a reception committee on the DZ influences the amount of accompanying equipment and supplies as well as the initial actions of the detachment. When a reception committee is available, sterilization of the DZ and disposal of parachute equipment is a lesser problem than when a "blind" infiltration is conducted. When serviced by a reception committee, additional equipment and supplies, beyond immediate requirements, may be dropped with the detachment. The equipment and supplies to accompany the detachment may be dropped using one of the following techniques

(1) *Air delivery containers.* All detachment equipment and supplies are rigged in air delivery containers. They may be dropped as door bundles or by some mechanical means. This technique permits the individual parachutist to jump unencumbered by excess equipment; however, it may result in the loss of equipment if containers are not recovered. This technique should be used only when an adequate reception committee is assured, or in low-level drops

FM 31-20

(500-700 ft) where dispersion is less of a problem and there is little time to release a rucksack in the air. Detailed information on container sizes is listed in TM 55-450-15 and TM 10-500.

(2) *Individual Load's*. Essential items such as radios are jumped on detachment members while less important items are rigged in air-delivery containers as outlined above. All detachment equipment and supplies, however, may be jumped as individual loads. This restricts the amount that can be dropped but reduces the chance of loss of items through failure to recover containers. This technique is best suited for "blind" infiltration or when the availability of a reception committee is doubtful. The present method of dropping individual loads consists of packing all items in a rucksack to be released and suspended a safe distance below the jumper, the rucksack landing before the jumper.

g. Control and Assembly Procedures.

(1) *Control procedures*. The detachment commander places himself in the optimum position in the stick to control his detachment. Recognition signals are formulated for each situation that may arise to include emergency abort procedures, ground-assembly procedures, contact procedures with the resistance force, and others as required. Rehearsals are conducted to insure that team recognition signals are clearly understood and properly employed. Electronic equipment used by the detachment in assembly and recognition procedures should be checked carefully prior to departure to ensure proper functioning as well as having adequate power sources available.

(2) *Assembly procedures*. Each member of the detachment is thoroughly briefed on assembly procedures. This includes the location of an assembly point, actions of the individual when approached by guerrillas, i.e., exchange of recognition signals, and the location of primary and alternate assembly points should individual jumpers fail to make contact with the reception committee. The primary assembly point should be referenced to an easily recognized terrain feature, located 200 to 300 yards off the DZ, and provide sufficient concealment to allow individuals to remain undetected until such time as they can be recovered. An alternate assembly point must satisfy the same criteria as the primary as regards recognition and concealment; but it should be located 3 to 5 miles from the DZ. In addition, each detachment member is carefully instructed concerning disposal of individual parachute equipment and the techniques of erasing

signs of the drop.

h. Emergency Procedures. Consideration is given to the possibility of in-flight emergencies, particularly in deep-penetration flights. The detachment receives a preflight (briefing on the route to be flown and is informed periodically of flight progress. Before enplaning, simple ground assembly plans for such contingencies are established. Should such an emergency arise, the detachment commander, considering the instructions contained in his operation plan and the relative distances to both the infiltration DZ and friendly territory, decides either to continue to the original destination or attempt exfiltration: An emergency plan should also be provided for use in case of enemy contact on the ADZ.

i. Final Ground Procedures. Once on the ground, personnel move to selected assembly area and establish security. The infiltrated personnel then attempt to make contact with the local resistance or continue with the assigned mission if it is of a unilateral nature. On the basis of the detachment commander's assessment of the area after infiltration, he is then in a position to recommend the desirability of organizing the area and committing additional Special Forces units.

4-5. Water Infiltration

a. Advantages and Disadvantages. See FM 31-21.

b. General. Water infiltration either by undersea craft or surface craft may frequently be employed in UWOAs having exposed coastlines, coastal river junctions and harbors. Water infiltration using seaplane landings on large bodies of water, rivers, or coastal waters may be possible; and, in such cases, planning by the detachment commander considers the ship-to-shore movement and subsequent land movement characteristics of a normal water infiltration operation. For a further discussion see chapter f.

c. Considerations for Water Infiltration.

(1) *Craft limitations*. The characteristics and limitations of the landing craft largely determine the landing techniques. Another consideration, however, is the capability of the naval support craft to carry and off-load the landing craft to be used for the ship-to-shore movement phase of the operation.

(2) *Equipment/supplies/reception committee*. Adequate waterproofing should be provided to protect supplies and equipment from the effects of salt water. As in air operations, the presence of a reception

committee influences the action of the detachment before and after the landing, and the amount of equipment and supplies that the detachment can transport unassisted. When fleet type submarines are used, all items are packaged in a specific size and configuration that will enable them to be passed through the narrow access openings into the pressure hull. Size, configuration, and packaging must be coordinated with the ship's personnel prior to embarking.

(3) Ship-to-shore Assignment of boat teams, distribution of equipment and supplies, methods of debarkation, and means of navigation to the landing beach are carefully planned. In addition, consideration is given to methods of recognizing the reception committee and disposing of the landing craft.

(4) Rehearsals. As in air operations complete rehearsals must be conducted frequently. In water infiltration operations the major advantage lies in the fact that continuous rehearsals and debarking procedures can be conducted en route to the operational area.

(5) Disembarking techniques. See chapter 8.

4-6. Land Infiltration

Land infiltration is conducted similar to that of a long-range patrol into enemy territory. Generally, guides are required. If guides are not available, the detachment must have detailed intelligence of the route, particularly if borders are to be crossed. Routes are selected to take maximum advantages of cover and concealment and to avoid enemy outposts, patrols, and installations. The location and means of contacting selected individuals who will furnish assistance are provided to the detachment. These individuals may be used as local guides and sources of information, food, and shelter. Equipment and supplies to be carried will necessarily be restricted to individual arms and equipment and communication equipment.

4-7. Stay-Behind Infiltration

a. General.

(1) This method of infiltration is the easiest to accomplish and one of the most valuable when the enemy has the potential of occupying the area with armed forces.

(2) Stay-behind infiltration involves the positioning of Special Forces operational detachments within their proposed operational areas prior to the initiation of enemy advances through, or

occupation of, the general areas. This technique enables the Special Forces elements to organize a nucleus of resistance forces or to preposition themselves for employment in a unilateral role.

(3) Stay-behind operations should be considered when the attitude of the civil populace indicates it will support stay-behind operations.

b. *Clandestine and Covert Operations.* See FM 31-21A.

c. *Advantages of Stay-Behind Infiltration.*

(1) Operation may be preplanned and rehearsed prior to hostilities.

(2) Less support is required.

(3) Personnel are familiar with operational area.

(4) A high degree of security is possible.

(5) Previously established civilian contacts may be exploited.

(6) Caches of supplies and equipment can be established.

(7) Personnel are familiar with operational targets.

(8) Current intelligence is available.

d. *Disadvantages of Stay-Behind Infiltrations.*

(1) Proximity to enemy combat troops during occupation of the operational areas.

(2) Freedom of movement and communications are initially greatly restricted.

(3) Informers may compromise detachment members as a result of pre-hostility contacts.

e. *Other Considerations.* Stringent precautions must be taken to preserve security, particularly that of the refuge areas or other safe sites to be used during the initial period of occupation. Information concerning locations and identities within the organization are kept on a need-to-know basis. Contacts between the various elements involved in a stay-behind operation are held to a minimum; however, when required, maximum use is made of a clandestine communication system. To enhance the success of a stay-behind infiltration, primary consideration should be given to initial pre-positioning of personnel in rural areas. Highly trained, selected personnel may be propositioned in urban areas to function as intelligence agents and to establish and maintain contact with underground elements. When stay-behind operations are attempted, the detachment may be completely dependent on the indigenous organization for security, the contacts required for expansion, and the buildup of the effort.

FM 31-20

Section II. EXFILTRATION

4-8. General

Exfiltration is the clandestine extraction or evacuation of personnel, documents, or equipment from an operational area.

4-9. Methods

Exfiltration may be accomplished by air, water, or land.

a. Air. Air exfiltration may be accomplished in two ways

(1) Aircraft landing in the operational areas either by land or water landing zones (LZ's). (For details on LZ operations see chap 6.)

(2) By an air recovery system (skyhook) designed to extract persons or objects from the ground without landing the aircraft. This method requires special equipment and specially trained aircrews, and is discussed in general in paragraph 4-10, and in detail in chapter 6.

b. Water. Water exfiltration may be either surface or undersea naval craft, as in infiltration, or it may be initiated from within the operational area using locally available water transportation. See chapter 8 for beach landing operations.

c. Land. Land exfiltration is the least desirable method and would be employed only in exceptional circumstances. Here, however, major emphasis is placed on employing evasive tactics and techniques,

and combat patrol procedures in close proximity to enemy lines.

4-10. Air-Ground Pickup (Skyhook)

a. General. Skyhook is another recovery technique within the capabilities of Special Forces groups and Air Force support units. Skyhook techniques may be used to exfiltrate or evacuate personnel and equipment from areas inaccessible to aircraft landings.

b. Missions. Operational missions may include evacuation or exfiltration of

- (1) Seriously ill or injured U.S. personnel.
- (2) Guides or assets who can brief operational elements and reinfiltate with operational detachments.
- (3) Priority and valuable cargo and equipment from remote areas,, that might normally require days or weeks of hazardous travel to bring out.
- (4) Downed aircrews.
- (5) Bodies subject to possible desecration such as heroes and martyrs.
- (6) Personnel engaged in underwater operations against selected targets following mission accomplishment.
- (7) Prisoners who possess useful information.
- (8) Operational elements committed into selected areas on a unilateral operation.

Section III. INFILTRATION CHECKLIST

4-11. General

The checklist (para 4-12-4-16) is provided to assist operational detachments, commanders, staffs, and other personnel with the various aspects of an operation to insure success for assigned missions. It is realized that this checklist, does not cover complete details for all types of missions that may be assigned Special Forces operational detachments, but it does attempt to give broad coverage in many problem areas that may be overlooked by personnel in the complex and hectic planning and preparation that normally follows a mission alert.

4-12. 4-12. Air Infiltration

a. Planning at the Special Forces Operational

Base (SFOB).

- (1) Selection of DZ's.
- (2) Alternate DZ's.
- (3) Assembly plans (to include actions in the event of injury on DZ).
- (4) Assembly areas (primary and alternate).
- (5) Primary contact plan.
- (6) Alternate contact plan.
- (7) Pertinent information concerning time of loading, time of drop, stick assignments, equipment assignments, and designation of jumpmaster and alternate.
- (8) Communication procedures (en route and after drop).
- (9) In-flight abort plan:

- (a) Line of flight.
- (b) Check points en route.
- (c) Safe areas.
- (d) Contingent plans.
- (10) Initial report.
- b. *Actions Prior to Drop.*
 - (1) Departure from isolation area to marshalling area at scheduled time.
 - (2) Final briefing of detachment.
 - (3) Jumpmaster inspection of aircraft.
 - (4) Final briefing of pilot.
 - (5) Inspection of personnel.
 - (6) Inspection of equipment.
 - (7) Meeting station time.
 - (8) Orientation during flight.
 - (9) Jump commands.
 - (10) Final check with pilot for proper DZ recognition signals.
 - (11) Execute drop.

c. *Action on DZ.*

- (1) Noise discipline.
- (2) Light discipline.
- (3) Rapid assembly.
- (4) Assembly plan followed.
 - (a) Equipment accounted for.
 - (b) Personnel accounted for.
- (5) Actions in the event of injury.
- (6) Time on DZ.
- (7) Action if there is no reception party.

4-13. Sea Infiltration

a. *Planning at the SFOB.*

- (1) Selection of landing site.
- (2) Selection of alternate landing site.
- (3) Selection of landing craft.
- (4) Landing site reconnaissance (reports, maps, aerial photos).
- (5) Authentication signal.
- (6) Contact plan.
- (7) Alternate contact plan.
- (8) Contingent plans.
- (9) Communications (en route and after landing).
- (10) Initial report.
- (11) Pertinent information concerning time of loading, departure, and debarking.
- (12) Training (loading, unloading, stowing

equipment).

- (13) Type of launching (wet or dry).
- (14) Rehearsals.
- (15) Equipment preparation.
- (16) Equipment waterproofing.
- (17) Equipment identification marking.
- (18) Embarkation procedures.
- (19) Sea movement plan to designated operational area.
- (20) Navigational checks.
- (21) Landing procedures.
- (22) Disposal of landing craft.
- (23) Land movement to secure area.

b. *Actions Prior to Embarking.*

- (1) Movement from isolation area to embarking site on time.
- (2) Briefing of detachment,.
- (3) Inspection of watercraft.
- (4) Final briefing with watercraft commander.
- (5) Inspection of personnel.
- (6) Ship assignments (to include bunks, messing, restricted areas, naval customs).
- (7) Assignment of boat landing teams.
- (8) Distribution of equipment and supplies.
- (9) Inspection of equipment.
- (10) Meeting embarkation time.

c. *Actions En Route to Operational Area.*

- (1) Orientation during movement.
- (2) Continuous rehearsals on debarking procedures.
- (3) Continuous rehearsals on landing procedures, contact plans, assembly procedures, and actions in the event of no reception committee.
- (4) Maintain physical training program.
- (5) Keep detachment informed of latest changes and up-to-date intelligence.

d. *Action During Ship-to-Shore Movement.*

- (1) Noise discipline.
- (2) Light discipline.
- (3) Debarking rapidly and, efficiently.
- (4) Debarkation plan followed.
- (5) Equipment and personnel accounted for.
- (6) Launching.
- (7) Paddling (crew procedures and steering).

FM 31-20

- (8) Maintaining course.
- (9) Dispatching of security and swimmer reconnaissance teams outside of surf.
- (10) Signal "all clear" by security party.
- (11) Landing procedures.

e. *Action at Landing Site.*

- (1) Noise discipline.
- (2) Light discipline.
- (3) Unloading rapidly and efficiently.
- (4) Landing plan followed:
 - (a) Equipment accounted for.
 - (b) Personnel accounted for.
 - (c) Actions in the event of injury sustained during landing.
- (5) Disposal of landing craft.
- (6) Time on landing site.
- (7) Action if there is no reception committee.

4-14. Land Infiltration

a. *Planning at the SFOB*

- (1) Selection of point-of-departure.
- (2) Alternate point-of-departure.
- (3) Coordination:
 - (a) Movement in friendly area.
 - (b) Departure from friendly area.
 - (c) Fire support.
 - (d) Guides.
- (4) Route selection.
- (5) Reconnaissance.
- (6) Equipment preparation.
- (7) Movement to departure point.
- (8) Movement through departure point.
- (9) Medical coverage.
- (10) Location of assets and identities.
- (11) Asset contact procedures.
- (12) Communications (in friendly area, after departure from friendly lines).
- (13) Caches en route.
- (14) Guides en route.
- (15) Safe areas en route.
- (16) Control measures.
- (17) Contact areas (primary and alternates).
- (18) Contact procedures.

b. *Action Prior to Departure.*

- (1) Movement from isolation to departure point on time.
- (2) Final briefing of detachment.
- (3) Reconnaissance of departure point.
- (4) Inspection of personnel and equipment.
- (5) Coordination with friendly unit.

- (6) Challenges and password.
- (7) Guides.
- (8) Meeting departure time.
- (9) Formation for departure.

c. *Action After Departure.*

- (1) Departure from friendly area.
- (2) Actions at rallying points.
- (3) Noise discipline.
- (4) Light discipline.
- (5) Actions on enemy contact.
- (6) Actions at danger areas.
- (7) Navigation.
- (8) Control during movement.
- (9) Security during movement.
- (10) Security during halts and at refuge areas.
- (11) Communications en route, between personnel, with point of departure).
- (12) Surveillance of contact areas.
- (13) Action at contact points.
- (14) Proper recognition signal with contacts and assets.
- (15) Security during contact periods.

4-15. Stay-Behind Infiltration.

a. *Planning at Command Level.*

- (1) Organizational structure of stay-behind element.
- (2) Development of assets.
- (3) Pre-positioning of assets.
- (4) Selection of secure areas.
- (5) Selection of alternate secure areas.
- (6) Selection of operational base areas.
- (7) Pre-positioning of caches.
- (8) Assessment of resistance potential.
- (9) Logistical support from within base area.
- (10) Target selections.
- (11) Target reconnaissance.
- (12) Target priorities.
- (13) Communication plan (before, during, and after execution of stay-behind infiltration).

b. *Preparation Prior to Enemy Occupation.*

- (1) Preparation of detachment.
- (2) Reconnaissance of safe areas.
- (3) Contacting assets.
- (4) Pre-positioning of equipment in selected caches.
- (5) Development of target intelligence.
- (6) Selection of routes to safe areas and caches.
- (7) Selection DZ's and LZ's.
- (8) Development of local intelligence and auxiliary nets.

(9) Pre-positioning and establishing communication equipment and procedures.

c. Execution-Commencement of Hostilities.

(1) Movement to safe areas (clandestinely or covertly).

(2) Proper security procedures.

(3) Security of areas.

(4) Establishment of communications with SFOB.

(5) Execution of initial/target interdiction or destruction as required.

4-16. Other Considerations Applicable to All Methods of Infiltration

a. Contact Plan.

(1) Contact made by minimum or selected, personnel. (Air infiltration-all personnel must be prepared to initiate contact if man-to-man coverage is available on DZ.)

(2) Proper security procedures.

(3) Signals (i.e., code words, light signal, visual signal) correct.

(4) Noise discipline during contact.

(5) Minimum time used.

(6) Actions if contact area, signal, or person is suspected of being compromised.

(7) Alternate plan.

b. Infiltration and Contact Site.

(1) Sterilization plan put into effect.

(2) Insure security of site is adequate and in effect.

(3) Execute continuous surveillance of infiltration or contact site for a significant period of

time.

(4) Execute deception plans if required.

c. Movement to Safe Area.

(1) Noise discipline.

(2) Light discipline.

(3) Front and rear security.

(4) Selection of rallying points.

(5) Detachment's reaction to resistance leader's orders.

(6) Resistance force reaction to detachment's presence and initial requirements and actions.

(7) Detachment commander's observation and checks used during movement.

(8) Detachment commander attempts to keep detachment oriented, during route movement, as to location and immediate actions to be instigated in the event of enemy interference.

(9) Location of heavy equipment in column.

(10) Rapid movement.

(11) Rotation of heavy equipment among detachment members.

(12) Placement of security during halts.

(13) Plans for reassembly with resistance force in event of separation.

(14) Responses to detachment commander's orders.

(15) Immediate-action drills to surprise ambush.

(16) Medical checks of detachments members during march, check of physical condition.

(17) Initial assessment begins.

(18) Establish initial communications with SFOB. Contact acknowledged indicates successful completion of infiltration phase.

CHAPTER 5

ORGANIZATION AND DEVELOPMENT OF THE UNCONVENTIONAL WARFARE OPERATIONAL AREA

Section I. PLANNING THE INITIAL ORGANIZATION OF THE UNCONVENTIONAL WARFARE OPERATIONAL AREA**5-1. General**

a. The organization of an unconventional warfare operational area (UWOA) involves early compartmentation of the command structure and the subsequent buildup of the resistance force. The detachment's thorough knowledge, through extensive area studies of the operational area, provide political, social, economic, and military information of the area, and an understanding of the ethnic groupings, customs, taboos, religions, and other essential data that will affect the organization, command and control, selection of leaders, and disciplinary measures to be enforced within the resistance force.

b. See FM 31-21 and FM 31-21A.

5-2. Selection of Operational Detachments

When the UWOA has been designated by a unified or specified commander, any Special Forces element may be selected for initial infiltration. Some factors influencing the selection as to type and size are

a. *Character of the Resistance Movement Within the Area.* The size and composition of the resistance movement may not be known; or it may be known to be extremely small and unorganized but with a potential for expansion under proper guidance and logistical support. In either event, the immediate infiltration of an operational detachment to begin the initial organization and development of the resistance movement may be necessary. On the other hand, the resistance movement may be highly organized and, except for logistical support and coordination of resistance force activities, will require little additional assistance from Special Forces units. Situations may develop whereby a known leader of the resistance movement is of such importance or caliber that a senior Special Forces

officer and a staff will be required to effect the necessary coordination and future development of the force. At this time, an appropriate command and control detachment may be chosen for infiltration.

b. *Environment and Tactical Situations.* The terrain, the enemy situation, complex political problems, or the ethnic groupings within the resistance movement may require two or more detachments to be infiltrated simultaneously. If the UWOA is relatively large and compartmented for security, it may be preferable to have several detachments placed in the area initially to form two independent sector commands and to organize, develop, train, equip, direct, and coordinate the efforts of scattered resistance forces. Regardless of the number of detachments initially infiltrated into a specified area, infiltration of additional operational detachments may be necessary because of increased operations, expansion of existing guerrilla elements, or for political reasons.

c. *Subdivided "A" Detachment.* The operational detachment "A" may be subdivided into two similar teams which retain a mixture of the basic skills. Subdivision of deployed detachments would be appropriate where the size and state of training of a guerrilla force make it desirable to split the force and subdivide the operational area into two sectors, when enemy pressure: forces dispersal of the guerrilla force by subunit for separate movement to areas of temporary refuge, or to exploit an unforeseen resistance potential in an adjacent area. Initial deployment as a subdivided detachment would be appropriate to:

(1) Compartment a sensitive operation for security reasons.

(2) Situations which require special Forces presence to provide liaison and communications only.



NOTE: BOTH OPERATIONAL DETACHMENTS CONDUCT OPERATIONS UNDER CONTROL OF SFOB.

Figure 5-1. Two independent sector commands.

(3) Supervise reception and distribution of logistic support.

d. Special Assessment Teams. Under certain circumstances, initial infiltration may be made by a small, carefully selected provisional team composed of individuals possessing specialized skills or by a part of the "A" detachment scheduled for the area and commonly referred to as a "pilot team." The mission of this team is to assess the area and to establish contact with indigenous leaders. The team determines whether the area is feasible for development. After evaluation of the area assessment by the SFOB, and upon recommendations of the assessment team, additional Special Forces elements may be infiltrated. The assessment team may remain with the infiltrated operational element or be exfiltrated as directed.

e. Provisional Operational Detachment. To accommodate a particular task or mission, or because of an unusual requirement in an area, a provisional or composite operational detachment may be formed from elements or combinations of elements of operational detachments "A," "B," or "C." Because of the probability of having to decimate several organic operational detachments to form this type of unit, planners or commanders should consider this solution only after weighing all ramifications carefully. When the requirement exists to conduct special operations using Special Forces personnel only, on a unilateral mission (i.e., attacks against selected targets), commanders must then provide elements based on mission requirements.

f. Unilateral Missions. Only the number of Special Forces personnel required to perform the unilateral mission are infiltrated. This number will vary depending on the type and duration of the mission. In some instances, this element may be infiltrated into UWOA's already containing Special Forces detachments; however, operational control and final disposition of the element rests with the SFOB upon successful completion of the mission.

g. See FM 31-21A.

5-3. Command, Control, and Support

a. General. The size of the resistance force which may be organized and employed effectively by a Special Forces detachment will vary among different ethnic groups. It may be affected by political factions and, in some instances, depend on the general level of education and previous military experience of the guerrillas. The capability and

motivation of resistance leaders and the degree to which they will accept guidance are important factors. As a general rule, however, an operational "A" detachment should be able to organize, equip, train, and direct the operations of battalion-size forces. Command and control measures to be employed in an operational area will differ from those normally employed when working with conventional forces. Internal communications in the operational area will not normally involve radio or other sophisticated electronic gear, and the span of control will not be centralized with well-organized and established chains of command. Special Forces detachments normally concern themselves with the establishment of communications to ensure adequate command, control, and support for operations that are widespread, varied, and in most instances, sporadic.

b. Possible UWOA-SFOB Communications. Once committed into the UWOA operational detachments may have the use of one channel of communication for both operational control and logistical support or, if deemed advisable and in accordance with SOP's, have two channels of communications—one for logistical support and one for operational command and control. Communications between the Special Forces detachment and the SFOB can be organized in any one of several ways.

(1) Operational detachments committed individually are directly responsible to the SFOB for all operations; however, the detachment contacts the logistical support element direct to request necessary supplies and materials.

(2) All Special Forces operational detachments communicate directly with the SFOB and have no established lateral link with each other. The SFOB relays required information between operational detachments.

(3) When an operational detachment "B" is present in the UWOA, subordinate operational detachments "A" may communicate directly with the SFOB on administrative and supply matters but with the "B" detachment on operational matters. Emergency communications on all matters may be conducted between all operational detachments and the SFOB.

(4) When an operational detachment "B" is present in the UWOA, subordinate operational detachments communicate with the "B" detachment on all matters. Emergency communications,

FM 31-20

however, may be conducted between all operational detachments and the SFOB.

(5) In a well-established, sophisticated UWOA, only the operational detachment "C" routinely communicates directly with the SFOB. The chain of command structure from "C" to "B" to "A" detachments is respected. However, emergency communications may be conducted between all detachments and the "C" detachment or between all detachments and the SFOB.

c. Area Command, Control, and Support.

(1) Normally, a guerrilla force will communicate with its respective area command and not directly with the SFOB.

(2) Dispersion, to reduce the vulnerability of resistance elements to enemy countermeasures, normally precludes continuous, direct control of subordinates in an area command. Command direction may be accomplished by periodic meetings or by messenger. Accordingly, specific guidance to subordinate units is contained in operation orders to cover extended periods of time.

(3) Maximum use is made of SOP's which include long-term guidance on such matters as psychological operations, security, intelligence, guerrilla/civilian relations, target complexes, logistical support, evasion and escape, and emergency procedures.

(4) For command, control, and support of resistance forces supporting conventional forces operations see FM 31-21.

5-4. Special Forces Objectives in the UWOA

a. General. A well-organized UWOA ensures close coordination between operational detachments and resistance elements. After infiltration, the major task facing operational detachments will be to develop all resistance elements into an effective operational force to achieve the unified commander's guerrilla warfare objectives. There are several techniques that may be completed separately or concurrently as the organization and development of the area progresses. Other tasks to be accomplished are discussed in FM 31-21 and FM 31-21A.

b. Special Forces-Resistance Force Relations.

(1) The detachment commander must impress on the resistance leaders that all personnel involved have a common goal against a common enemy and that it is to their mutual benefit for the guerrillas to accept sponsorship and operational guidance from the United States.

(2) Once the guerrillas have been convinced of

the advantages of close cooperation, the Special Forces detachment commander develops a command structure in conjunction with the resistance leaders. This structure, called the area command, is a combined organization designed to integrate the Special Forces detachment and the resistance organizations in a UWOA. Details of organization, roles and missions, size of the resistance organization, and the relationship between the Special Forces and the resistance forces are discussed in FM 31-21, FM 31-21A, and FM 31-20A.

(3) In some situations, the nucleus of resistance elements may be recruited from exiled or liberated personnel currently located in friendly held territory. These personnel and units may be infiltrated using normal infiltration techniques as discussed in chapter 4.

5-5. Considerations in Establishing Relations

a. Although the military advantages of close cooperation among various elements of the resistance force are obvious, political considerations may encourage guerrilla units to resist Special Forces efforts to unify them. Opposition may stem from many causes such as personal antagonisms, religious beliefs, or ethnic differences. It is essential that the detachment commander and his subordinates have a knowledge and appreciation of these attitudes and of the personalities concerned. He must know how extensive the initial psychological preparation was, including any promises made and commitments to be honored. Without specific guidance from competent U.S. officials, it is beyond the authority of the detachment commander to make political commitments in the name of the U.S. Government. Guidance in political matters will normally emanate from the unified commander through the SFOB. At some point prior to the linkup with conventional U.S. forces, political responsibilities may be assumed by Army Civil Affairs, and at that time a Civil Affairs liaison officer may be assigned to Special Forces within the UWOA.

b. Perhaps the most delicate part of a detachment commander's responsibility is insuring that competent indigenous personnel occupy key positions. If leaders and staff members of the resistance organization do not appear qualified to fill positions held, the detachment commander should endeavor to increase their effectiveness. Increasing the effectiveness of these personnel will normally increase the influence of the detachment commander. If all efforts in this direction fail and

the future effectiveness of the resistance force is in doubt, the detachment commander should discreetly attempt to influence the selection of new leaders. It is mandatory, however, that the Special Forces commander exercise extreme caution in this potentially explosive area, lest he jeopardize his mission or even the survival of his detachment.

c. The detachment commander and several members of the Special Forces unit should have at least a working knowledge of the local language. The selection and use of an interpreter must be approached with caution because

(1) The detachment commander will have considerable difficulty gaining the confidence of the guerrillas who either may dislike or distrust the interpreter.

(2) An interpreter is in a very powerful position since he is the only individual who knows what both sides are saying.

d. major factor in the control and influence of resistance elements requires that all members of the Special Forces detachment display a high degree of professional competence in unconventional warfare operations.

5-6. General Area Organization

a. General. The establishment of a good working and command relationship between the Special Forces detachments and the resistance elements in the area is the initial requirement of the operational detachment. A sound working and command relationship helps to develop a high degree of cooperation and some degree of control over the resistance force. Control over the resistance force is insured when resistance leaders are receptive to orders and requirements necessary to accomplish mission requirements.

b. Major Considerations. The command structure and the physical organization of the area are priority tasks of the Special Forces commander. In some situations, the organization of the area may be well established; but in others, organizations may be incomplete or lacking. In all cases, some improvement in physical area organization will probably be necessary. Organization of the UWOA is dictated by a number of requirements, but it depends more on local conditions than on any fixed set of rules. Major factors to be considered are

- (1) Effectiveness of the area command.
- (2) Degree of guerrilla force organization.

(3) Extent of cooperation between resistance force and local civilians.

(4) Enemy activity.

(5) Topography.

(6) Degree of development desired in the sector/desired area.

c. Internal Area Organization. The shape, size, and ultimate organization of the UWOA will be influenced, in varying degrees, by political boundaries, natural terrain features, location of enemy installations, possible targets, indigenous population density, anticipated resistance potential, and existing attitudes of the populace. Regardless of the size of the area, the area command organizes its operational elements into any area complex to achieve dispersion, control, and flexibility.

(1) *The area complex.*

(a) An area complex consists of guerrilla operational base(s) safe areas, and various supporting elements and facilities. Normally included in the area complex are security and intelligence systems, communication system, mission support sites (MSS), supply installations, training areas, DZ's, LZ's (landing zones), reception sites, and evasion and escape (E&E) mechanisms as required.

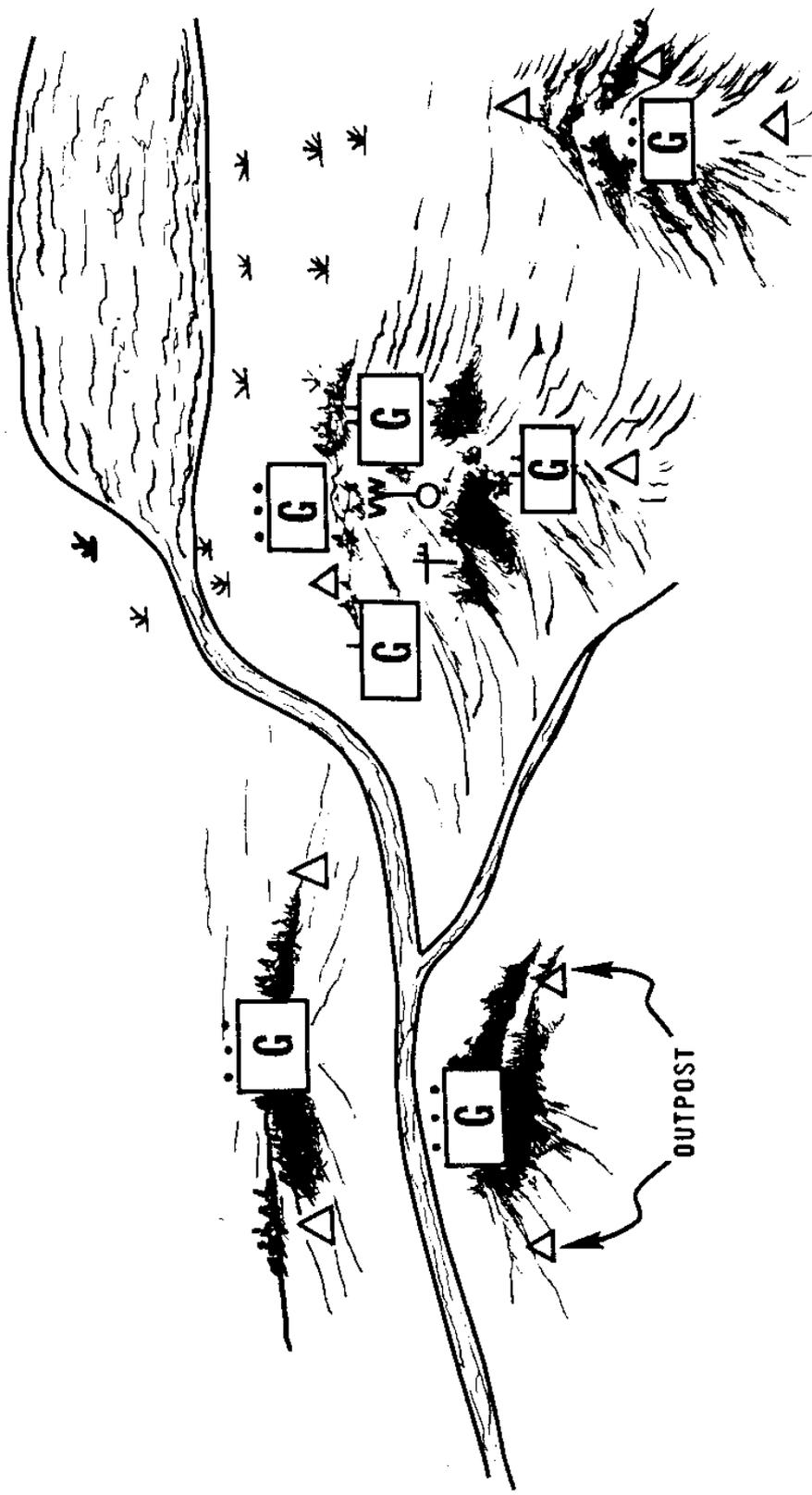
(b) The complex is not a continuous pattern of tangible installations but a series of intangible lines of communications emanating from the guerrilla bases) connecting all other resistance elements. The main guerrilla force base is the hub of a spider-like complex which is never static, but constantly changing. The command group is normally located in the guerrilla base.

(2) *The guerrilla base.*

(a) A guerrilla base is a temporary site wherein command and control headquarters, installations, facilities, and operational units are located. There is usually more than one guerrilla base in the sector/area.

(b) From one base, lines of communication connect other bases and various elements of the area complex. Installations and facilities normally found at a guerrilla base are command posts, training areas, supply caches, communications, and medical facilities. Both occupants and facilities must be capable: of rapid displacement with little or no warning.

(3) *Locations.* By virtue of their knowledge of the terrain, guerrillas can recommend the best areas for locating various base elements. Remote, inaccessible areas are ideal for the physical location of guerrillas; however, the lack of these remote areas should not prevent the organization and development of



Δ - OUTPOST - PART OF INNER SECURITY ZONE.

Figure 5-2. Guerrilla base.

Text key para: 5-6c(2)(a)

operational base areas. All approaches to base areas and facilities should be well guarded and concealed, with the approaches to selected base facilities such as communication centers, caches, and certain supply depots revealed only on a need-to-know basis. Alternate base areas must always be

established to give mobility and flexibility to a guerrilla force, as well as provide them with safe areas and sanctuaries as a relief from enemy pressure and offensive operations. Alternate bases must have the same characteristics and requirements as the primary base.

Section II. ORGANIZATIONAL DEVELOPMENT OF THE UWOA

5-7. General

a. Under close supervision and guidance in the early phases of development and, based on tentative organizational plans, limited recruiting and training of personnel previously spotted and selected by resistance leaders may be conducted in remote areas. Based on the detachment's mission requirements and the extent of training of the existing resistance force, small-scale operations may be continued and intensified, but they should facilities be the type of clandestine action engaged in earlier by the guerrillas. Most of the guerrilla actions undertaken should be widely dispersed but of the simple harassment type-cutting of telephone wires, putting tire puncturing devices on roads and highways, contaminating gasoline and oil in vehicles and exposed storage facilities, and attacks on small, remote outposts and facilities of the enemy. Of paramount importance is the fact that the enemy is in full control and that no activity should be undertaken that will bring the enemy down in force on the guerrilla organization to wipe it out or at least to destroy a substantial part of its effectiveness.

b. A considerable part of the activity of this period may be directed toward creating a political and psychological climate that will induce resisters, or potential resisters, to risk their lives for the "common cause." Under a strong leadership exerted by the area command these resistance groups will ultimately grow larger and become better equipped and better trained. "Natural leaders," such as former military personnel, clergymen, local office holders, and neighborhood spokesmen, will emerge, providing the area command with a potential resource on which to plan the growth and expansion of the resistance force and the operational area.

c. Regardless of the degree of organization of the resistance force, primary consideration should be given to insuring that certain basic functions and operations should either be in existence and improved on, or organized and put into effect immediately. These functions are not established

separately, but may be established concurrently and developed as required. The organization established to perform them directly affects the following functions:

- (1) Unit organization.
- (2) Security and intelligence systems.
- (3) Communication systems.
- (4) Administrative systems.,
- (5) Logistical support systems.
- (6) Establishment of training programs and
- (7) Planning and execution of combat operations.
- (8) Expansion of the resistance force.

d. See FM 31-20A and FM 31-21A.

5-8. Unit Organization

a. General. The most important single point to be made about guerrilla organizations is that they cannot be categorically described according to fixed tables. Primary considerations are guerrilla force missions and tactics, which in turn are strongly influenced by available manpower and material assets. It is true, however, that direction and control area made easier when units are organized along military lines, specifically as the strength of each unit increases. At the same time, a too-rigid adherence to military form would reduce the flexibility which guerrilla organizations must have. Generally there are two approaches to this problem of organization:

(1) From the beginning, the effort is coordinated by a high command and by regional or district commands as dictated by geographic and other factors. For a discussion of the area command see FM 31-21 and FM 31-21A.

(2) The effort begins with the independent, uncoordinated activities of relatively small guerrilla units. As these separate efforts grow in size and scope, district and higher commands develop of necessity.

(3) In either case, a high degree of unit autonomy is necessitated by difficulties of communication, rugged terrain, and security requirements of dispersion and mobility.

FM 31-20

b. Principles of Organization.

(1) *Command and control.* Simplicity, flexibility, and divisibility are essential. Leaders must delegate authority to capable and loyal subordinates. From the highest to the lowest member of the unit, each man must know to whom he is responsible and who is responsible to him. No man should be responsible to more than one superior. No superior officer should have more subordinate units than he can effectively direct and coordinate the activities of.

(2) *Basic organization.* The basic structure of TOE of the unit must correspond to the conditions of the terrain, the climate, and the area command's objectives. The Special Forces commander and the resistance leader should consider the following when organizing guerrilla units

(a) Self-containment is essential in a guerrilla unit. Each unit must have its own communication system, must be able to obtain its own local supplies, must conduct its own reconnaissance, and establish a means of procuring additional information and intelligence as its operations require.

(b) Strong fire power and offensive armament capable of inflicting great losses within a short period of time (speed, effectiveness, destruction) are imperative.

(c) Heavy weapon units should be easily divisible into sections that can provide support to subordinate elements of the organization.

(d) Smaller units should have independence of action.

(e) The merging of small units into the larger organization should be done without causing disharmony.

(f) Knowledge of the location and activities of other units must be confined to the one or two persons charged with internal liaison responsibility.

c. Factors Affecting the Size of Units. The force for which any subordinate guerrilla leader may be responsible very likely will be composed of fewer than 75 men, perhaps as few as 15 to 20. In the latter stages of development and with the increase of operations, this force will rarely exceed battalion size with personnel numbering from 200 to 500. The following factors are important influences on the units' size:

(1) *Area.* The size and physical aspects of the area of operations and the availability of suitable bases will limit the number of guerrillas that can be

employed successfully, as well as restrict the types of operations.

(2) *Missions.* A guerrilla unit should include no more men than are necessary for the accomplishment of its overall mission. No more than one or two primary missions should be given to a small unit at any one time.

(3) *Political considerations.* Although the leader is the focal point of the resistance effort, the mission objectives of the theater commander and the Special Forces detachment should always be foremost. Political ambitions should never influence the leader to buildup his organization beyond the point of efficiency and for the sake of sheer numbers. When this situation occurs, the detachment commander, as an example, through judicious use of supplies, can control its expansion. The detachment commander should influence and make the guerrilla leaders aware of the fact that their political stature is more enhanced by success in operations than by the mere number of his followers.

(4) *Enemy control.* Where controls are rigid and the enemy is strong, security, mobility, and dispersion are strong factors favoring small-unit organization.

(5) *Available personnel.* The size of guerrilla units depends on the availability of men who willingly volunteer. Included in the preliminary planning phase is the spotting of potential volunteers for replacement reserves as well as for immediate service. In determining the availability of men, the area command must consider the ratio of men to be recruited to the total male population of a town or village. The wholesale disappearance of the town's able-bodied men would, at the least, arouse the enemy's suspicions and provoke reprisals against the remaining populace.

(6) *Supply and support capability.* Guerrillas should not be assembled in such numbers that supplying and supporting them becomes a major problem. Sufficient food and water resources should exist within the base area itself or should be available from readily accessible sources, i.e., local auxiliary or support units. The equipment of the guerrillas must be based, at least initially, on what is available and not on what the guerrilla wants or needs. The enemy may be the principal source of supply until such time as the detachment commander can make a proper assessment of the area and establish a sound logistical and resupply procedure. If the guerrilla commander allows his organization to become burdened with too many

personnel to feed, shelter, or equip, he may be forced to make moves or take actions that are tactically unsound. See chapter 9 for a discussion of logistics and logistical support function.

(7) *Social custom.* If a family or tribal unit is strong in the country where guerrilla warfare is being waged, it may be difficult to persuade guerrilla personnel that their wives and children should be left behind. Native traditions may have a bearing on the suitability of certain tactics, weapons, and disciplinary principles and these factors in turn may affect the size of the unit as well as the planning for future development, operations, and support.

5-9. The Auxiliary and the Underground

a. General. A resistance organization is not complete and cannot be considered fully effective without an internal support organization. Some, or all, of the necessary support functions can be organized on a regional district, or sector basis, depending on the degree to which guerrilla units are organized. Clandestine systems function in response to the requirements of the area/sector command to which they are responsible. The method of operation for each function is determined by their leader, and the members of the internal support system take their orders from him. The pattern of their organization will depend on their function, and the enemy opposition capabilities with which they have to contend in their area of operation. All functions should be compartmented from each other as well as from the guerrilla unit or group of units which they support. The following are some types of support functions, clandestine or covert in nature, that the guerrilla unit may need to supplement their own capabilities:

- (1) Air or maritime reception support committees.
- (2) Systems for internal acquisition of supplies.
- (3) Systems for the acquisition of operational information and intelligence.
- (4) Establishment of medical facilities for "hospitalization," treatment, and rehabilitation of sick and wounded.
- (5) Counterintelligence systems to counter enemy penetration attempts and provide external and internal security.
- (6) Systems and procedures for recruitment of personnel.
- (7) Compartmented communication systems for various support functions.

b. The Auxiliary. The auxiliary is the support

element of the resistance organization, whose organization and operations are clandestine in nature and whose members do not openly indicate their sympathy or involvement with the resistance movement.

(1) *Membership.* It is possible for segments of the population to continue participating in the life of their community, to all appearances concerned only with their normal occupations, and at the same time engage in resistance operations in varying degrees. Such personnel are in fact leading two lives, and their success in guerrilla warfare depends on their ability to keep that side of their lives secret from their fellow citizens as well as from the enemy. The "farmer by day, fighter by night," commonly referred to as a "part-time guerrilla" often is the forerunner to the full-time guerrilla, who later will disappear from the public scene to live in guerrilla encampments and undertake more extensive operations. On the other hand, some "part-time guerrillas" may remain in that status for the duration of hostilities. They would, in such instances, either augment the main resistance force in its operation or engage in various activities in support of a guerrilla force. Functions or tasks are assigned to groups or individuals according to their capability, their dependability, and the degree to which they are willing and able to participate. Those who unwittingly furnish support, or are coerced into doing so, are not considered auxiliaries. The normal daily activities of many auxiliaries can serve as a cover for their resistance support mission. Functions which require travel or transportation might be accomplished by such persons as foresters, farmers, fishermen, truckers, or transportation workers. Other functions, such as security and warning, require a plausible reason for remaining at a given location. Shepherds, housewives, and shopkeepers are examples in this category. Some members of the community may sympathize strongly with the resistance but be under such close surveillance by the enemy that they would be of small value as an auxiliary. Open contact with former political leaders or workers employed in sensitive enemy activities, for example, might prove more dangerous than profitable.

(2) *Organization.* When several guerrilla units are active in an operational area, the area command may deem it necessary and advisable to form intermediate support commands at province and regional level and, in some instances, down as low as village or community (sector) level. This system of intermediate commands helps eliminate the danger that operational units will cross each other's established operational boundaries to seek

FM 31-20

support, hamper each other's operations, and waste time and resources in an unprofitable duplication of effort. When regional or district auxiliary organizations become necessary, guidance is given from the area command as to how each staff will function, although the conduct of the actual operation remains the responsibility of the intermediate commander. Certain staff functions of the intermediate auxiliary unit may be taken over by one or another of the higher echelons for economy and efficiency, i.e., centralized control for the collection of intelligence. Intermediate support or auxiliary organizations can commence at any political or territorial level or at several levels simultaneously, and is either centralized (fig 5-3) or

decentralized (fig 5-4). The basic organization at each level usually takes the form of a command committee (fig 5-5), which controls and coordinates auxiliary activities within its area of responsibility. The command committee resembles the command group and the staff of a conventional military unit. Members of the command committee are assigned specific duties. At the lowest level, one individual may perform two or three of these duties. These subordinate elements are compartmented to minimize the possibility or effects of compromise.

(3) For other roles and missions of the auxiliary see FM 31-21, FM 31-21A, and FM 31-20A.

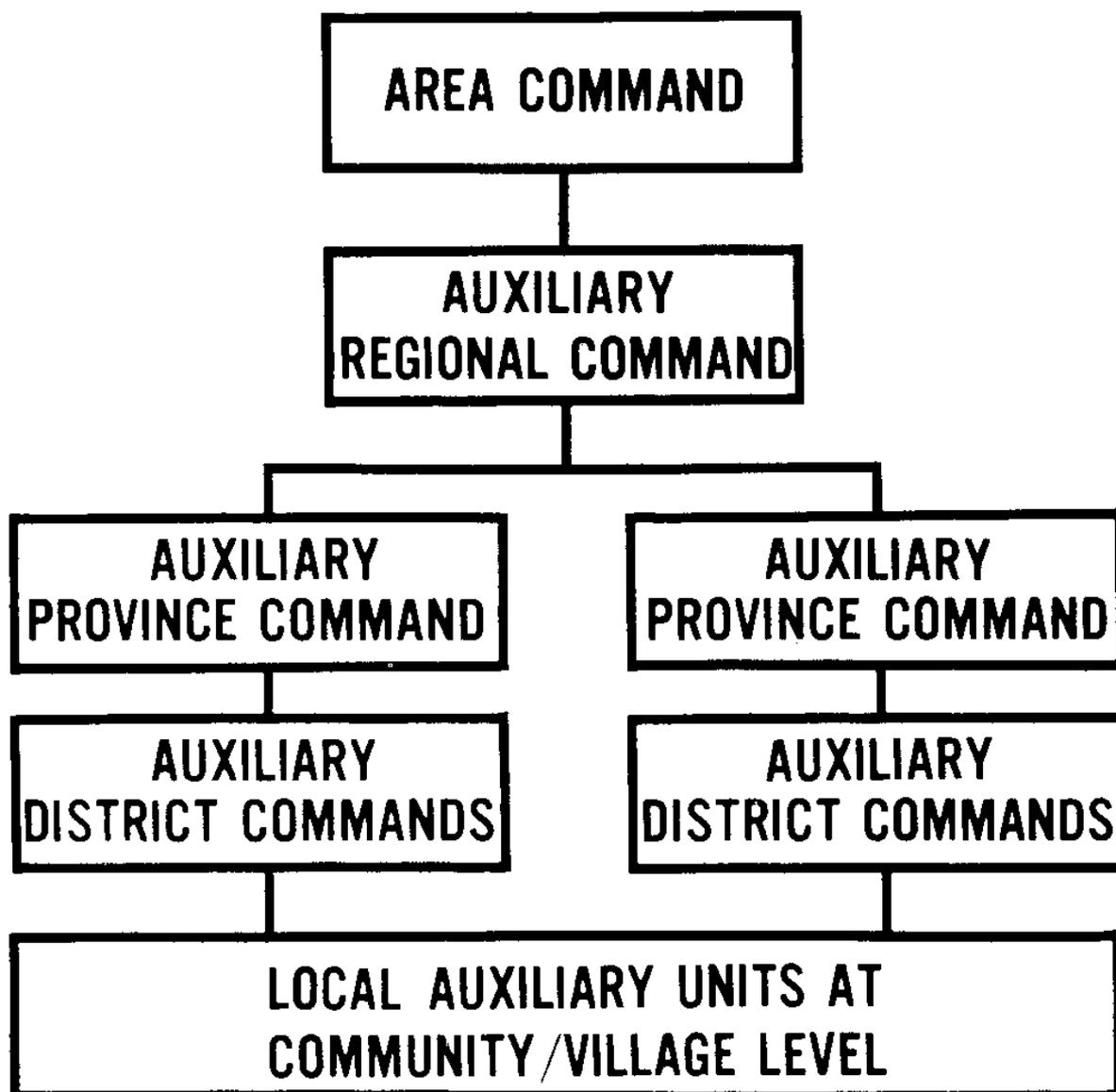


Figure 5-3. Centralized auxiliary organization.

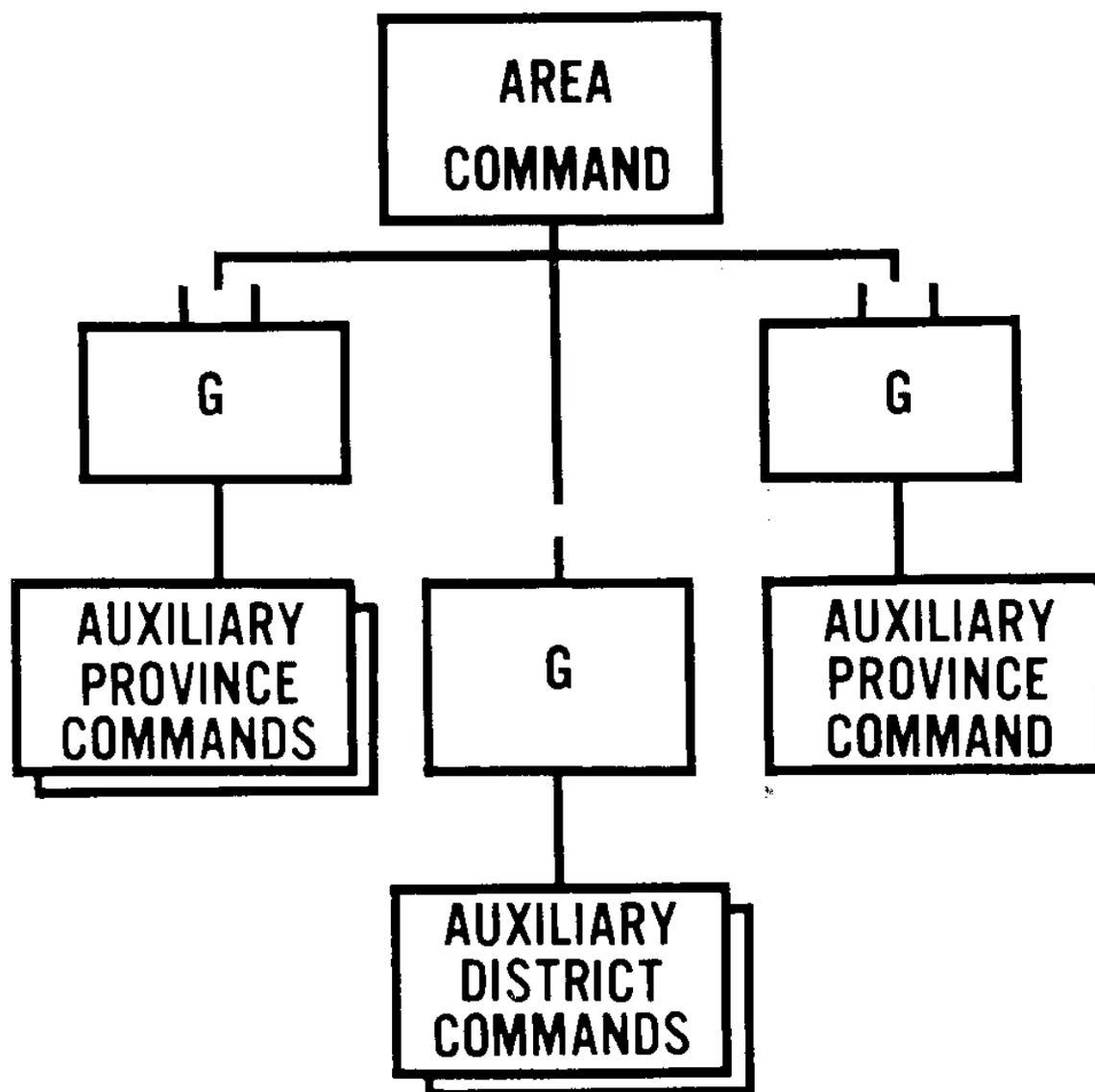
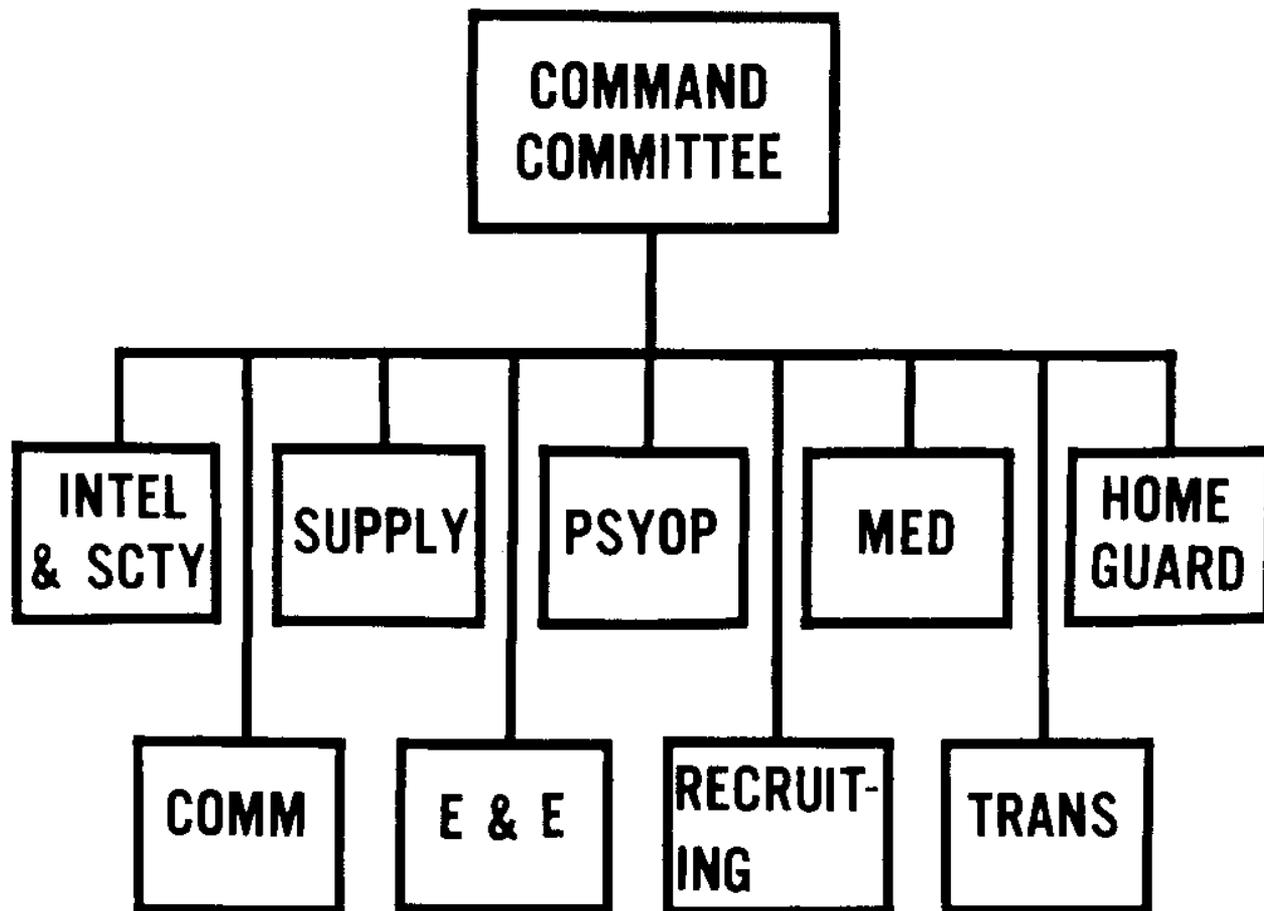


Figure 5-4. Decentralized auxiliary organization.

c. The Underground. The underground is that element of the resistance organization which conducts operations in areas denied to the guerrilla force. In areas which are predominately industrial or in areas with well-developed communication systems, and, generally speaking, in those areas where the enemy has great superiority over guerrilla forces, the undergrounds may become the most effective weapon of UW operations. The underground organization is largely self-contained and security requires that the underground incorporate support activities within the framework of its own cellular organization. Special Forces would most often be employed to exploit a guerrilla

potential; however, since a UWOA may contain an active underground whose activities and requirements are part of the area command mission, the organization and operations of the underground must be understood by Special Forces personnel.

- (1) Missions of the underground (see FM 31-21A).
- (2) Roles of the underground (see FM 31-21A).
- (3) Organization of the underground (see FM 31-21A).
- (4) Control of the underground (see FM 31-21A).



**NOTE: THIS REPRESENTS A HIGHLY ORGANIZED UNIT
SEPARATED INTO FUNCTIONAL SUB-UNITS**

Figure 5-5. Command committee.

Section III. ORGANIZATION OF RESISTANCE FORCE SUPPORT SYSTEMS

5-10. General

a. Once the area and unit organizations are underway, the area command must consider the establishment of support functions and systems, and determine who will be delegated primary responsibility for each function. Activities for which responsibility will be established in support of the guerrilla force include security and warning, logistics, communications, medical support, recruiting, and, in some instances, the provisions of support by means of providing part-time guerrillas for diversionary operations as required. Other

functions, such as support related to sabotage and subversive operations, intelligence, counterintelligence, psychological operations, and evasion and escape operations, normally are controlled and coordinated by the area command, but responsibility for selected operations to support these functions may be delegated to regional and district commands as necessary (FM 31-21A).

b. Support requirements discussed herein will be general in nature and are outlined to provide guidance to Special Forces operational detachments on problem areas to be considered when organizing

support functions and systems for the area command. Details and specific techniques are discussed in appropriate chapters in this manual and other FM's.

c. Of prime consideration are those missions and support functions that may be performed by the guerrilla force, the auxiliary, and the underground force.

(1) Normally, auxiliary units are assigned direct-support missions for guerrilla units in their area of responsibility.

(2) In specific missions, selected tasks assigned to the auxiliary force may be coordinated directly with the supported guerrilla command while others are controlled by the auxiliary's own higher headquarters.

(3) In the assessment of the area, it may be determined that the enemy security measures or antipathy of certain segments of the population often deny selected portions of operational areas to the guerrilla force or the auxiliary. Since these areas are usually essential to support enemy operations, the resistance force attempts to extend its influence into them. The underground may therefore be employed to achieve objectives which would otherwise be unobtainable.

(4) When considering using the underground, the area command must be made to realize that, in many respects, the underground closely resembles the auxiliary force with the major differences being that:

(a) The underground is tailored to conduct operations in areas normally denied the auxiliary force and the guerrilla force.

(b) The underground is not dependent on control or influence over the civilian populace for its success; however, the degree to which the underground achieves this objective is a byproduct of other operations.

d. For other support functions of the auxiliary and underground, see FM 31-21, FM 31-21A and FM 31-20A.

5-11. Considerations in Establishing Support Functions and Systems

a. *Security and Warning.* The Special Forces, through the area commander, must stress that proper organization and development of the area can only be assured through a strong security and warning system. No matter how firm the guerrillas' control over their immediate area of operation, essentially

they are operating in enemy-controlled country. Their continued existence depends on their ability to conceal the locations of their bases and personnel. Their success in operations depends on their ability to conceal their intentions. Tight security, therefore, is an essential part of guerrilla operations. Resistance forces must further be prepared to counter aggressive moves against their organizations and, therefore, their warning systems must be functional but tightly controlled.

(1) *Auxiliary.* Auxiliary units provide a physical security and warning system for guerrilla forces. They organize local civilian sympathizers who keep the enemy force under surveillance and who warn the guerrillas of enemy moves. These civilians are selected as part of the security system because of their advantageous location which permits them to monitor enemy movement toward guerrilla bases. They make up one segment of the outer zone security system (see chap 2 and FM 31-20A).

(2) *Underground.* The underground will operate similar in nature to the auxiliary to contribute security to the guerrilla force. Incidental to their everyday operations, they uncover enemy activity or indications which, when evaluated, may disclose potential danger to the guerrilla force. They establish specific systems designed to provide warning of the impending actions of enemy units. They intimidate any collaborators and attempt to elicit information from enemy personnel, local officials, and the police. They also operate in the outer zone security system. For other support functions in security and warning, see FM 31-21A.

(3) *The guerrilla force.* Special Forces personnel, through the area command, must make the resistance force, specifically the guerrilla force, aware of the general principles applied to security and the factors that must be considered to influence security measures to be imposed.

(a) *General principles.* Sound security is primarily based on discipline not only that imposed by orders from the area command, but also the personal discipline of each guerrilla. An important part of this discipline is constant alertness, both to dangers from without and to the inner dangers of lax behavior. Further, the guerrillas must have a counterintelligence system to detect and defeat the intelligence effort of the enemy.

(b) *Security responsibility.* The first responsibility for security falls on the guerrilla

FM 31-20

leader. He must establish measures to protect his men. Team leaders provide additional security measures for their own local protection. Security practices established at each level should be coordinated with both higher and lower echelons.

(c) *Influencing factors.* Factors that influence the type of security measures adopted include the:

1. Stage of development of the guerrilla movement.
2. Guerrilla force's general capabilities.
3. Guerrilla force's relations with the civilian populace and external forces.
4. Topography and general physical aspects of the area.
5. Efficiency of the enemy's control system.
6. Mission of the particular guerrilla force or unit.

(d) *Categories.* There are three broad categories of guerrilla security. They are security of—

1. Personnel.
2. Installations.
3. Movement.

(e) *Warning systems.* The guerrilla force's warning system is an integral part of the inner and outer security zone established by the area command and is closely coordinated with the auxiliary and underground. The guerrilla force is responsible for establishing and maintaining the inner security zone (chap 2). For details on security and warning systems employed by the guerrilla force, see chapter 2 and FM 31-20A.

b. *Logistics.* Logistical support systems are categorized as internal and external logistics. The Special Forces detachment commander is directly responsible for an effective, internal supply system which will encompass organization, acquisition, control of supplies, and accountability procedures. The Special Forces detachment commander must impress on the area commander that all supplies will not be coming from external sources and that the area command must concern itself with other aspects of logistics that involve production, procurement, transportation, and storage of items needed by the resistance force.

(1) Logistical requirements. Logistical requirements in a typical UWOA include—

- (a) Sustenance, clothing, and survival items.
- (b) Light weapons, ammunition, demolitions, and communication equipment.
- (c) Transportation.

(d) Medical supplies and equipment.

(e) Essential repair and maintenance services for clothing and equipment.

(f) Certain critical PSYOP materials such as inks and papers.

(g) Money, identity papers, and specialized equipment.

(2) *Production.* The problem of production may never arise in a given guerrilla operational area, but the very nature of guerrilla activity requires support from the civilian community. Guerrilla forces, who may be completely cut off from most civilian production facilities and support, often find it necessary to improvise their own field expedients. They might, also, actually have to plant and raise some of their own foodstuff and livestock.

(3) *Procurement.* Procurement in itself has four problems:

(a) *Source.* It must be determined whether the item can be procured from within the guerrillas' own area of operation or whether it will have to come from outside the country. It is generally best to use the simplest source, that of obtaining an item from the local area (assuming that it can be secured), rather than to become involved in all the complications of an air or sea delivery from outside.

(b) *Payment.* This can be accomplished by cash, trade, or credit, although this should not be construed to mean that this is the only method of payment open to the area command. Usually, the least troublesome is payment by cash, be it the local currency, gold, silver, or some other medium that is in general acceptance as money.

(c) *Security.* Of prime importance when considering security involved in logistics, the Special Forces detachment commander must determine if the origin of the items used to support clandestine operations is of any significance or importance. Although an item may be obtained without violating security, its transport or use in the operational area may be compromising, requiring the acquisition of a substitute. This does not necessarily involve all items, but those specifically used in support of clandestine or covert operations. Consideration should be given to the fact that if an item is peculiar to one section of the operational area, and it is compromised, then it is possible that the enemy's reaction and reprisals brought against the local populace could have a drastic effect on future operations.

(d) *Time lead in planning resupply.* The Special Forces detachment commander must concern himself with the problem of maintaining

accountability of supplies on hand and a replacement and resupply system to maintain the required quantity of supplies and equipment to support operations. This is not to be construed as meaning that the area command must stockpile and maintain large storage areas, but must ensure that the required amounts of supplies are available at the appointed time to support current operations. In addition to this, the detachment commander must consider planning for and requisitioning sufficient amounts of, supplies and equipment to support buildup and future operations.

(4) *Transportation*. When the area command and the Special Forces detachment commander consider the problem of transportation in relationship to travel, support of supply functions, and support of operations, several factors must be examined:

(a) The feasibility of using vehicular transportation internally (within geographical limits of designated operational areas) to cross borders or in penetration of enemy lines.

(b) Open country travel is of necessity overt, in the sense that the vehicle can be seen or kept under surveillance. The clandestine or covert aspect of the travel is that the resistance element may be riding in the vehicle or using it to further their activities.

(c) There must be a secure method of using the chosen transportation; and it must be available to the resistance force when needed.

(d) The need for a vehicle (e.g., an automobile) must be foreseen and planned for so that it does not create an emergency which may subsequently endanger or compromise an operation.

(e) Delivery of supplies from the outside usually involves air or sea transportation. Transportation from the reception site is the responsibility of the resistance force. The type of transportation required is dictated by the amount of supplies requested by the resistance force and the Special Forces detachment.

(f) Packaging is another aspect of the transportation problem. When shipments are made by the external support element, that element is responsible for suitable packaging. The resistance force and the Special Forces detachment, however, must be prepared to notify the external support element of the need for caching, storing, and requirements for immediate use of selected items that will enable the support element to package each item properly. The size and type of containers used

in packaging will have an effect on the type transportation requirements that the resistance force and Special Forces detachment must plan for. For details on prepackaging and supply request, see chapter 9 and appendix F.

(5) *Storage*. There are three main factors to consider when storing supplies and equipment available space, preservation, and accessibility.

(a) Although fluid situations are characteristic of guerrilla warfare, it is always possible that sudden unforeseen, moves will be necessary. Quantities of surplus material then present problems of transportation or of caching. In any case, material should be stored in units small enough so that they can be moved all at one time from any one location. As an example, a guerrilla force which requires five trips to move everything from one location, would not have to return to the same place twice to complete the move if the material were equally distributed in five separate storage sites.

(b) Another aspect of storage is that of preservation. Food is subject to spoilage or attack by insects and rodents. Clothing may mildew or be attacked by moths or other pests. Equipment is subject to rust or other damage by the elements. Proper packaging by the outside element would eliminate some of these problems, or they may supply packaging material to the Special Forces detachment commander which would assist him in preparing for storage of those items not immediately required.

(c) Items stored for short periods should be readily accessible. Accessibility, in this instance, means storage of complete units for immediate use, e.g., weapons with their ammunition, magazines, and cleaning equipment. The one exception to complete-unit storage is communication gear. Here the security factor is the main consideration. Selected items of communication equipment may be in proximity to the main headquarters, while other portions of radio equipment are stored in other areas. Signal plans and cipher pads are kept in the possession of communication personnel or are tightly controlled by the commander. In the overall plan, the storage location of communication equipment may be known to only selected personnel.

(d) The storage of sensitive items, such as explosives, presents special problems. Even more important, then, the problem of preservation and accessibility is the question of safety. Explosives should be stored well away from personnel. Fire and

shock are the principal hazards. The construction of special storage containers may be necessary.

5-12. Considerations in Establishing Health and Morale Functions and Procedures

Obviously operational supplies are vital, but equally vital are those required to sustain life, health, and morale of the resistance force. In the establishment of base camps and bases of operations, Special Forces-personnel, through the area commander, must educate guerrilla leaders in their responsibilities to ensure that personnel under their command and control are fed, clothed, and cared for in a manner that will assist in ensuring their loyalty and response to orders. The following are some considerations that must be discussed:

a. *Water and Food.*

(1) Base camps should be close to an adequate supply of running water or spring water for cooking and drinking, as well as water suitable for bathing. Purification processes must be instigated by the Special Forces detachment medic. These processes are, in some instances, time consuming and a nuisance, and guerrilla personnel can become extremely careless following an operation. The detachment commander must impress on the leaders that a sick guerrilla is worse than useless and attention must be paid to established health and sanitation procedures.

(2) Most areas suitable for guerrilla base camps will have some natural food, such as berries, edible plants, and small game. These foods, however, are not sufficient to sustain the energy of active guerrillas, and high-calorie foods such as grains, sugar, and certain types of meats must be provided. For a detailed explanation of this aspect of logistical support provided by external supply systems, see chapter 9.

b. *Shelter and Clothing.* These two items of supply will be considered together since to some extent one complements the other, and both are influenced by climate and weather.

(1) Shelters, such as natural or constructed caves, offer the best protection-both from the elements and from enemy observation. Huts can be constructed of boughs and branches so that they are stout and weatherproof; however, they should be built under natural cover of growing foliage for protection from air observation. Aerial photography, if taken with camouflage-detection film, shows up non-growing foliage very plainly even though it may have been cut recently.

(2) In places where the climate is such that personnel may live in the open or where they are only temporarily bivouacked, hammocks may be desirable. They permit the men to sleep off the ground, away from insects, rodents, and dampness. With a canopy of waterproof cloth stretched over them, supported by stakes or ropes, hammocks provide a comfortable bed even in rainy weather. Straps can be attached to a hammock to permit it to double as a rucksack.

(3) Where radical climatological changes take place, seasonal changes of clothing are necessary. Waterproof clothing is desirable. The issue of stout, well-fitting shoes are the most important item of clothing that can be obtained for the guerrilla. A guerrilla depends largely on his feet for transportation, and nothing can slow his progress more than tired or blistered feet.

c. *Medical Supplies.* The most important medical supplies for the guerrilla, or for that matter all resistance forces, are preventive medicines.

(1) As soon as possible, inoculations should be given against diseases prevalent in the area and against tetanus.

(2) Medicines taken by mouth for preventive purposes such as anti-malaria pills are highly desirable.

(3) Antiseptics and disinfectants in dry forms, such as sulfa and iodine powders, are more convenient than liquids and do not deteriorate as rapidly.

(4) At least one first-aid kit should be supplied for each operational squad, platoon, or similar operational unit.

(5) A first-aid packet should be issued to each individual.

(6) The needs for the local populace, specifically, the families of the guerrillas should be foreseen and basic medicines provided for them.

(7) For details on medical aspects of Special Forces operations in all phases of unconventional warfare operations, see chapter 11.

d. *Morale Items.*

(1) The most important single item for morale purposes probably is tobacco, in whatever form in use in the area.

(2) Books can provide both entertainment and education.

(3) In nearly every country in the world, some type of ball is used in the most popular game. Physical exercise is needed to keep the men in condition and to relieve tensions, and games with balls help to answer this need.

Section IV. ADMINISTRATION, LAW, AND ORDER**5-13. Planning Considerations**

a. When planning and preparing for commitment into operational areas to support a resistance force in the conduct of unconventional warfare, the Special Forces detachment commander will, based on preinfiltration intelligence, make tentative plans for the formalization of the administrative machinery to adequately support this force. The SFOB should, prior to infiltration, and based on contact made by the theater unconventional warfare command with the government in exile (if one exists) provide guidance for the establishment of pay scales, rank structure, and codes and legal systems. This will provide uniformity throughout a country in all operational areas, which will preclude inflated rank structures, unrealistic pay scales, and "drumhead" or "kangaroo" courts. Necessary administrative forms to support this administrative machinery may be drafted and printed during the detachment's isolation phase. Final decisions pertaining to the administrative organization, however, must be delayed until the postinfiltration phase and after the details have been resolved by the resistance leader in concert with the detachment commander. Blocks of personnel serial numbers may be assigned by the SFOB to the various UWOA's prior to infiltration for assignment to guerrillas.

b. Administrative systems should be simple and effective and established early in the stages of development. Administrative systems should include, as a minimum:

- (1) Supply accountability (sensitive items, e.g., weapons, radios, drugs).
- (2) Personnel rosters.
- (3) Registers of sick, wounded, and deceased.
- (4) Awards and decorations.
- (5) A daily journal. Written operation orders and reports will be kept to a minimum and issued on a need-to-know basis.

c. An administrative section is established within the command group of the area command to maintain essential records. As the area develops, it may become feasible to decentralize administration to subordinate echelons. In such cases, however, duplicate information and records that can compromise the operation should be forwarded to the administrative section of the area command for miniaturization and disposition.

5-14. Records and Administrative Procedures

a. *Operation Journal.* Because of its ultimate historical importance, an operation journal should be maintained. Reports of combat engagements should include the designation and commander of the guerrilla force, the type of action, approximate strength of the guerrilla force, guerrilla casualties, and, if possible, the specific designation of the enemy unit and an estimate of enemy casualties. To assist in post-operation investigations, eyewitness accounts of atrocities should be clearly documented. This data should be made available to PSYOP personnel.

b. *Command Structure.* This record should reflect the designation of the various units within the guerrilla force, the auxiliary, the underground, and the names and designation of key personnel.

c. *Personnel Roster.* The personnel roster should list members of the various organizations within the area command and must be kept current. Such rosters, in the initial stages of organization and development, may be maintained by the individual unit, with duplicate copies forwarded to the area command when feasible.

d. *Personnel Records.*

(1) It is desirable that personnel records be maintained on guerrillas as well as the other personnel in the resistance movement as a means of substantiating post-hostility claims for wartime service, as well as means of refuting false claims. Resistance to this procedure may be expected when a recommendation is made to the resistance leader that all personnel be photographed and fingerprinted. This can be overcome, however, when assurances are given that a viable, secure system can be established, and that the records will be exfiltrated from the UWOA and maintained at the SFOB. Records may be microfilmed and placed in a secure cache in the UWOA as an alternate means to exfiltration. Photographing these documents and subsequently caching or exfiltrating the negatives provides a method of preserving and securing records not obtainable by other means. Special Forces operational detachments will find their organic photographic equipment important in making identification photographs for populace control and for organization and control of resistance forces. To avoid having a large amount of sensitive material on hand, the detachment may

FM 31-20

photograph these items at frequent intervals. After processing the negatives and determining its acceptability, the originals of units records may be destroyed.

(2) The information placed on personnel records should include the individual's full name, home village or city, date on which he joined the resistance force, whether or not an oath of enlistment was taken, date discharged, promotions, demotions, acts of bravery, awards and decorations, rank or position attained in the resistance force, and any disciplinary action taken against the individual.

(3) After initial personnel records are accomplished, they are forwarded to the area command. Postings to the initial record may be accomplished by serial number. In this manner, there is no reference to individuals by name or other incriminating data that would associate them with the resistance movement. A sample initial record is shown as an inclosure to the Master Training Schedule (app G).

e. Oath of Enlistment.

(1) Resistance leaders should be convinced of the necessity of a formal oath of loyalty to the resistance movement. At an appropriate ceremony, it is desirable that an oath of enlistment be administered by the local indigenous leader to each new member of the resistance force. This may provide a basis for recognition by the local government, after hostilities, of the jurisdictional authority exercised by guerrilla unit commanders over individual guerrillas.

(2) Personnel should be required to sign the oath, and the oath should become a part of the initial personnel record and secured accordingly. Ideally, the oath should make reference to the guerrilla code and should also make reference to punishments for violation.

f. Casualty Records. This information includes records of personnel killed, wounded, missing in action, or separated from the guerrilla force because of illness or for other reason.

g. Graves Registration Information. This information, as a minimum, should include name, date and cause of death, and location of the remains.

h. Medical Records. These records should include data as to type of prevalent diseases, preventive medicine actions taken, types of wounds, and general information on the organization of the medical structure for the area command.

i. Payrolls. Appropriate records must be maintained to support any commitment made to members of the resistance force for services rendered.

j. Claims. The area command should maintain sufficient records to assist in settling claims after hostilities.

k. Awards and Decorations. Valorous acts, meritorious acts, and meritorious service should be formalized within the guerrilla force and systems established to support the program. In some instances, U.S. awards may be recommended by the detachment commander; however, guidance in this area is the responsibility of the group S1, and should be provided in the isolation phase. A government in exile may wish to act as the final approving authority and may provide general guidelines for the establishment of an awards and decorations program. Once an award or decoration has been approved, it should be awarded at an appropriate ceremony, consistent with security regulations.

5-15. Discipline

a. Strict discipline is an integral part of command and control procedures instigated over any paramilitary force. Without it, no force can survive, let alone carry out effective operations against the enemy. Since guerrillas are usually not uniformed, and appear dirty or bedraggled, an impression persists that discipline is loose in guerrilla units. Discipline must be extremely harsh but fair in guerrilla units, and orders must be executed without delay or question. Minor infractions of orders, especially during the conduct of operations, have far reaching consequences for guerrillas and supporting resistance elements.

b. More often than not, a guerrilla force will have a code, possibly not in writing, but certainly an understanding of what is expected of all guerrillas. A code, in writing, however, should be promulgated by the resistance leader with advice by the Special Forces detachment commander and, as new recruits are gained, they should be required to know and understand its provisions as well as the penalties for treason, desertion, and dereliction of duty. Codes for guerrilla forces are usually simple, but call for extreme punishments for what would be, in conventional forces, minor infractions.

(1) Any legal code promulgated for guerrilla forces should, if possible, be generally in line with that which existed for the regular military forces of that country. When this is impractical, the guerrilla chief and his officers may draft a code.

(2) There should be provisions for punishments similar to those imposed under Article

15, Uniform Code of Military Justice, as well as provisions for more severe punishments. The guerrilla chief should be advised to establish a courtmartial or tribunal to try cases, rather than arbitrarily make decisions as to the fate of an accused.

(3) An agreement must be reached with the guerrilla leader, as soon as possible after infiltration, delineating the authority for exercising disciplinary and judicial powers over members of the guerrilla force and members of the SFOD.

c. With decentralization of command and widely dispersed operations, individuals are habitually given mission-type orders with little guidance or supervision and are expected to

accomplish their missions with no excuses being accepted. It is necessary, therefore, that guerrillas must be impressed with the necessity for personal conduct being above reproach when dealing with the civilian populace, for every act which loses civilian supporters is harmful to the resistance movement.

d. While the maintenance of discipline is the responsibility of the resistance leader, the Special Forces detachment commander is normally expected to make recommendations for measures which will insure proper discipline. Such factors as the culture of a group must be considered, since what encourages discipline within one group may not work with other groups.

Section V. TRAINING OF THE RESISTANCE FORCE

5-16. General

a. Training will require a maximum and continuous effort on the part of the detachment. The level of resistance force training must be determined, and training programs must be designed to provide and improve common levels of training. Training programs should be simple but effective with training areas secure from enemy observation and action.

b. Before commitment into operational areas, Special Forces detachments simplify their task of training the forces by developing tentative training programs. Guided by area studies and intelligence, the detachment prepares and collects training aids and other equipment that may be required in the operational area. When committed into a UWOA, these items are delivered with the detachment's automatic supply drop.

c. Although maximum use of improvisation must be made in all phases of operations, the following items accompanying deployed detachments may prove useful in conducting rudimentary training as discussed later in this chapter:

- (1) Grease pencils and colored chalk.
- (2) Target cloth or ponchos (blackboard substitutes).
- (3) Basic manuals on weapons generally found in the area (in the language of the country if possible).
- (4) Lesson plans for basic subjects as outlined in Master Training Schedule (app G).
- (5) GTA's improvised from parachute silk or other such material.

(6) Other similar items of particular value in training the indigenous force and that can be used to support training as outlined in appendix G.

d. Guerrilla personnel must receive training in the tactics, techniques, and skills peculiar to guerrilla warfare. Command, staff, and support echelons of the guerrilla forces must attain proficiency and flexibility in order to accomplish the assigned mission.

e. The primary training mission of Special Forces operational detachment personnel is to develop a selected guerrilla cadre into competent trainers of guerrilla personnel and units

5-17. Characteristics of Guerrilla Training

a. In each situation the detachment commander decides which of the following training systems will be the most beneficial to resistance force personnel: (1) centralized training, (2) decentralized training, (3) individual, or on-the-job training or (4) specialized training for selected personnel. In most instances one or all of the systems noted above will be used. To reiterate what has already been discussed in FM 31-21, to expedite training programs, and to provide effective instruction to dispersed units, a centralized training course may be designed and presented to selected resistance personnel, who in turn act as instructor cadres to dispersed units. When this occurs, a decentralized training system is then put into effect.

b. Other characteristics of training resistance forces that must be considered by the Special Forces

FM 31-20

detachment commander are:

- (1) A wide range of education and capability levels of resistance personnel.
- (2) Divergences of motivation for joining resistance forces.
- (3) Variance in the extent of previous military experience.
- (4) Possible language barriers requiring training through interpreters.
- (5) Probability of limited training material available.
- (6) Use of combat engagements as a training device.

c. Examples of a master training program for a leadership school and a 30-day master training program for preparing individual training are shown in appendix G.

5-18. The Training Plan

a. General.

(1) The training plan is an outline of the commander's determination of the manner in which he can best accomplish the training mission. It results from his estimate of the training situation reflecting the state of training of the guerrilla force, the personnel available, the weather and climate, and the training objective. The mission is the most important element in any training situation.

(2) The development of a training plan consists of

- (a) The analysis of the mission.
- (b) An analysis of the local training situation.
- (c) Determination of system of organization for training.

(3) Following the training estimate, the training plan is developed. These training steps may have been completed prior to infiltration and require only refinement in the UWOA. Training is then programed into units of instruction which will facilitate accomplishment of the training objectives.

b. Analysis of the Mission.

(1) Based on his operational directive from higher authority, the detachment commander determines specific tasks for the guerrilla force to accomplish.

(2) If the guerrilla force has been assigned multiple missions, priorities of training must be established.

(3) If included missions are derived from the specified mission, the detachment commander must ensure that all requirements can be met within the time specified and with the facilities and personnel available.

(4) The mission and operational objectives must be specifically delineated for the guidance of all concerned. The shorter the training time the greater the care that must be taken in defining the training mission or objectives.

c. *Analysis of the Local Training Situation.* The detachment commander must evaluate all aspects of the local training situation to determine shortcomings in the overall training programs. This analysis may reveal obstacles to training that cannot be resolved or which dictate the selection of another organization or program for training. Personnel recruited for the guerrilla force may have little or no previous military training. The detachment commander must evaluate the capabilities of resistance personnel and their state of training by personal observation, inspections, and the results of limited operational missions. Principal factors to be considered in this analysis are:

(1) *Essential training to be conducted.* The detachment commander may have to establish priorities of subject material. Lesson plans brought with the detachment on infiltration may have to be modified.

(2) *Personnel.* The detachment commander may have to provide special training in the technical and tactical aspects of conducting guerrilla warfare for resistance leaders.

(3) *Time.* Training time available is one of the most critical factors to be considered. Initially, the operational detachment commander will estimate the time required to accomplish the training mission. If unexpected progress permits him to reduce this time, a favorable effect on the morale of the guerrilla force may result. The detachment commander must realize that training time will be lost by individuals as well as by groups and provide for makeup training as an integral part of the training program.

(4) *Training facilities.* The detachment commander must determine requirements for ranges, rehearsal areas, improvised classrooms, and other training facilities that must be established. Physical security is a prerequisite for all training areas. It may be advisable that range and rehearsal areas be located away from the guerrilla base to preclude enemy detection.

(5) *Training aids.* Consistent with the situation, maximum training aids and equipment will

accompany the operational detachment at the time of infiltration. Initially, equipment available for training may be limited; however, improvised training aids and mockups may be used during the early training phase. Each member of the detachment contributes his ideas and thoughts in the preparation of training aids and facilities.

d. System and Organization for Training. The requirement for physical security in the UWOA generally dictates that guerrilla forces be dispersed over a wide area. Consequently, the system and organization for training normally is decentralized. Training should be planned, organized, and inspected by detachment members and their counterparts. Each major training area is supervised by detachment members during the conduct of training. Training is accomplished primarily by means of practical applications to include the conduct of combat operations.

5-19. Operations to Support Training

a. Throughout the organization, development, and training phases of guerrilla activities, small combat operations to support training and test the

readiness of the force are conducted. With the aid of prior and concurrent psychological operations, the goals of these operations are to

(1) Attract additional recruits to the resistance forces.

(2) Assist in gaining support of the civilian populace.

(3) Give the area command an opportunity to evaluate the training conducted.

(4) Increase the morale and esprit de corps of the resistance and guerrilla force.

b. The selection, planning, and execution of combat action should ensure maximum success with a minimum of casualties to the guerrillas. Combat operations should be commensurate with the status of training and equipment available to the resistance force. As training is completed and units are organized, more complex and larger operations are planned and executed. Typical training operations that may be considered are reconnaissance patrols; (2) ambushes, raids; and limited demolitions missions; and, (3) surveillance over future possible guerrilla force objectives.

CHAPTER 6

AIR OPERATIONS

Section I. GENERAL

6-1. Responsibilities in Unconventional Warfare

In conventional military operations, the selection of DZ's or LZ's is a joint responsibility of both the Air Force and the Army. The marking of these sites in conventional operations is the responsibility of the Air Force. The nature of unconventional warfare requires Special Forces to assume the responsibility for these functions. Special Forces personnel are trained in procedures for selecting, reporting, and marking DZ's and LZ's and for organizing and conducting reception operations.

a. Before infiltration Special Forces planners will select DZ's and LZ's by using all available intelligence sources and maps. The DZ and LZ data are then filed at the SFOB. Final approval of infiltration DZ's and LZ's is a joint decision of the commanders of the SFOB and the air support unit.

b. Following commitment into operational areas, Special Forces detachments are responsible for selecting, reporting, and marking additional DZ's and LZ's. After infiltration and on completion of ground reconnaissance, the detachment confirms or makes line changes to the DZ/LZ data on file at the SFOB. Final acceptability of the DZ or LZ rests with the air unit performing the mission.

6-2. Air Delivery Operations

UW joint airborne operations are small-scale operations where the basic considerations of low detectability of aircraft, security of the objective area, exact timing, precise execution, and full coordination are dominant. In a UW environment, airborne operations will normally

be conducted at night. Air operations are characterized by detailed planning of infiltration and exfiltration routes and taking advantage of as many types of passive defensive measures as possible to avoid detection. Air missions will normally require deep penetration of enemy-dominated territory or airspace. Drop altitudes (except in the use of free-fall parachute techniques) will usually be lower, than for conventional operations and DZ and LZ criteria will usually be below minimum prescribed for conventional operations. Although several airdrop methods may be used in the UW operations, the Army will normally assume responsibility for the release systems at normal drop altitudes (para 6 -21).

6-3. Additional Considerations

UW airborne operations are further characterized by:

a. Single aircraft missions without escort.

b. Penetration flights into denied areas under conditions of minimum safe altitude (MSA) to deliver personnel and equipment into or pickup from a target area, to include high -altitude flights in excess of 40,000 feet for HALO operations.

c. Frequent changes of course en route to the pre -initial point (PRE -IP).

d. Establish drop altitude or landing altitude between PRE -IP and IP.

e. Departure from IP on a predetermined track.

f. Arrival over DZ/LZ within a specified time.

g. A single pass over the DZ (or into the LZ).

h. Execution of the drop directly over the ground release point markings.

i. Personnel drops conducted at altitudes between

FM 31-20

400 and 800 feet. Cargo drops in selected areas may be conducted successfully at lower altitudes if within the capability of the air drop system and parachute performance characteristics.

j. Maintaining, if possible, drop course, altitude, and speed for a designated distance and time to conform with the rest of the flight pattern after completion of the drop.

k. The use of alternate DZ's.

l. The use of "blind -drop" procedures when reception committees are unavailable.

6-4. Planning.

Planning procedures are followed as applicable to UW operations. Items of particular interest to service forces involved in UW missions are:

a. *Air Delivery Operations to Operational Areas.* Successful air delivery operations depend on careful coordination between the SF elements and the air support unit and compliance with SOP's. SF coordination is accomplished through the SFOB (fig 6, -1). A typical air resupply mission involves the following sequence of events:

(1) *Operational detachment.*

(a) Selects DZ's and LZ's.

(b) Transmits DZ or LZ data and resupply requests to SFOB.

(2) *SFOB,*

(a) Processes DZ, LA data, and resupply requests.

(b) Coordinates mission with air support unit.

(c) Transmits mission confirmation message to operational detachment.

(d) Prepares and delivers supplies and personnel to departure airfield.

(3) *Air support unit.*

(a) Prepares mission confirmation data for SFOB.

(b) Receives and loads supplies and personnel to be delivered.

(c) Executes mission.

(4) *Operational detachment.*

(a) Organizes reception committee and DZ and receives personnel and supplies.

(b) Removes and distributes incoming supplies.

b. Supplies are packed and rigged in aerial delivery containers which have capacity of 500 lbs or less. To facilitate rapid clearance of the DZ, the contents of each container are further packaged in manportable increments. Detailed information on types and uses of various containers are found in TM 55 -450 -15; also see Catalog Supply System, appendix F, and chapter 9.

c. Capabilities/Limitations of Air Delivery Methods. Inner package size and configuration of resupply bundles should be considered when the following airdrop systems are used:

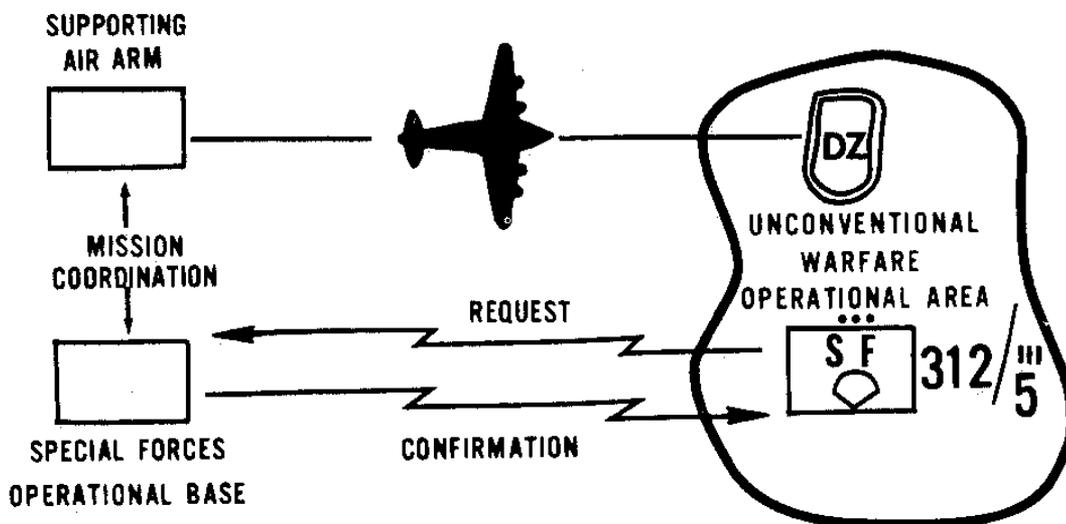


Figure 6-1. Coordination of UW air operations.

<i>ADVANTAGES</i>	FREE DROP	PARA DROP	PLADS	LAPES	HALO
Small wind effect -----	X		X	X	
Multiple bundle ability -----	X	X	(*)	X	X
Soft impact -----	X				X
Reduced detectability -----	X				X
Reduced hazard to aircraft -----					X
Release point easily determined -----		(**)	X	X	
Small DZ adequate (100 yds) -----		(**)	X		
<i>DISADVANTAGES</i>					
Large wind effect -----		X			X
Hard impact -----	X		X	X	
Single bundle per. pass -----			X		
Exposes aircraft to ground fire -----	X	X	X	X	
Hard to determine release point -----	X	(**)			X
Large DZ/level area required -----	X	(**)			X

*Some aircraft. **Varies with altitude

6-5. Preplanned Resupply Techniques

To reduce the impact of equipment losses which may occur during infiltration and subsequent operations, the SFOB schedules both automatic resupply and emergency resupply procedures.

a. Automatic Resupply.

(1) Automatic resupply is scheduled for delivery shortly after the detachment has been committed. It is prearranged as to time, delivery site, and composition of load.

(2) This resupply is delivered automatically unless the detachment cancels or modifies the original plan.

(3) Automatic resupply is planned to replace lost or damaged items of equipment and to augment the detachment with equipment which could not be carried in on the infiltration.

b. Emergency Resupply Requirements and Procedures Upon Infiltration.

(1) Prior to infiltration, an emergency resupply procedure and DZ is determined and coordinated through the SFOB with the supporting air arm, based on all available intelligence of the operational area

(2) The contents of the emergency resupply bundles) normally will be communication, survival, and medical equipment to

(a) Restore the detachments operational capability.

(b) Provide the detachment with sustenance and medical supplies in the event of injuries and loss of equipment sustained during the drop.

(3) A concept of such an operation may be as follows

(a) The emergency resupply DZ is flown when the operational detachment has not established

contact with the SFOB within a designated period of time after infiltration. Infiltration will be considered completed when the Initial Entry Report is made by the detachment.

(b) If infiltration has been completed, a request to cancel the emergency resupply drop may be submitted with the Initial Entry Report. However, the DZ data, as determined through intelligence, will be maintained on file at the SFOB until the detachment confirms or modifies the data, or cancels out that DZ for future use.

c. Emergency Resupply Requirements and Procedures After Infiltration.

(1) Emergency resupply DZ (s) are selected and reported to the SFOB as soon as practical after the Initial Entry Report is submitted and the operational detachment is established in the operational area.

(2) The emergency resupply is prearranged as to time and composition of load.

(3) The location of the emergency resupply DZ (s) and contents of the load should be known only to members of the operational detachment.

(4) The contents of the load will consist of those items necessary to restore the operational capability of the detachment and may consist of

(a) Communications—normal radio equipment, as well as electronic homing devices that may assist in the establishment of exfiltration sites when radio silence is mandatory.

(b) Survival and medical equipment as required (climatic).

(c) Weapons and ammunitions –to provide the detachment with the capability of

1. Defending itself pending exfiltration.

2. Providing local resistance forces (if contact is still maintained) with the capability of continuing limited operations.

FM 31-20

(5) The emergency resupply procedure is initiated and predicated on the loss of communications between the operational detachment and the SFOB for a predesignated number of contacts. There are several contingencies in which the loss of communication may occur, such as:

(a) Communication equipment becomes inoperative.

(b) Enemy pressure has fragmented the resistance force and the detachment's capability to continue operations forcing them to become either highly mobile, or required to remain dormant and maintain radio silence.

(c) Operational contingencies were of such a nature that forced a split in the relationship between the operational detachment and, the resistance force.

(6) If the operational detachment is in a mobile state that requires continuous movement, emergency DZ's should be selected and reported at the first opportunity. If, during this situation, a predetermined number of radio contacts are missed, then the resupply is initiated and the equipment dropped on the last reported DZ.

(7) In receiving the emergency resupply, the operational detachment will follow the procedures outlined in paragraph 6-20.

Section II. DROP ZONE SELECTION AND REPORTING

6-6. General

U.S. Army Special Forces detachments are responsible for selecting, reporting and marking DZ's. The selection of a DZ must satisfy the requirements of both the aircrew and the reception committee. The aircrew must be able to locate and identify the DZ. The reception committee selects a site that is accessible, reasonably secure, and safe for delivery of incoming personnel or supplies.

6-7. Air Considerations

a. Terrain.

(1) The general area surrounding the site must be relatively free from obstacles which may interfere with safe flight.

(2) Flat or rolling terrain is desirable; however, in mountainous or hilly country, broad ridges and level plateaus can be used.

(3) Small valleys or pockets completely surrounded by hills are difficult to locate and normally will not be selected.

(4) To afford the air support unit flexibility in selecting an IP, it is desirable that the aircraft be able to approach the DZ from any direction, and that there is an open approach quadrant of at least 45° to allow the aircrew a choice when determining the approach track.

(5) DZ's having a single clear line of approach are acceptable, provided there is a level turning radius of 2 nautical miles on each side of the site (medium aircraft) (fig 6 -21) (1 nautical mile for light aircraft) (fig 6 -3).

(6) Rising ground or hills or more than 1,000

feet, or 300 meters depending on type of map used, elevation above the surface of the site should normally be no closer than 2 nautical miles to the DZ for night operations conducted during the black moon (out of moon phase). During moon phase, rising ground or hills above the surface of the target need not be considered a hazard and no restrictions are imposed. In areas where the above criteria cannot be met, the deviation will be noted in the mission request and forwarded to the air support unit commander for decision.

(7) Deviations from recommended minimums may cause the aircraft to fly at altitudes higher than desirable when executing the drop, resulting in excessive wind drift. (Refer to paragraph 6 -4c).

b. *Weather.* The seasonal weather conditions in the drop area must be considered. Ground fogs, mists, haze, smoke, and low -hanging cloud conditions may interfere with the pilot's observation of DZ visual signals and markings. Excessive winds also hinder operations.

c. *Obstacles.* Due to the low altitudes at which operational drops are conducted, consideration must be given to navigational obstacles in excess of 300 feet above the level of the DZ and within a radius of 3 miles. If such obstacles exist and are not shown on the issued maps, they must be reported. When operational drops are scheduled for altitudes of less than 400 feet, specific considerations should be given to navigational obstacles in excess of 100 feet. If such obstacles exist and are not shown on issued maps, they must be reported.

d. *Enemy Air Defenses.* Drop sites should be

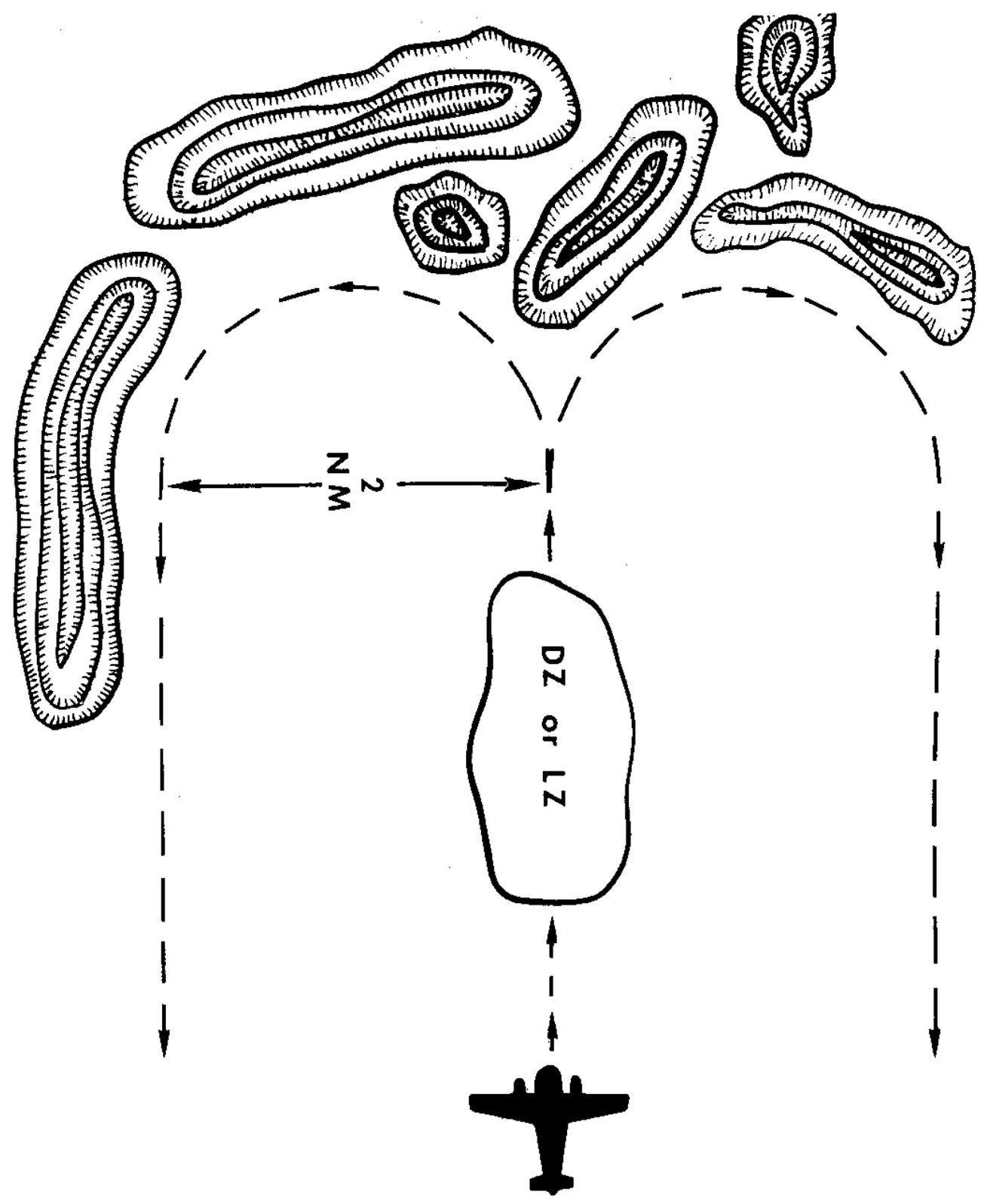


Figure 6-2. Level turning radius required for one-approach DZ's and LZ's (medium aircraft).

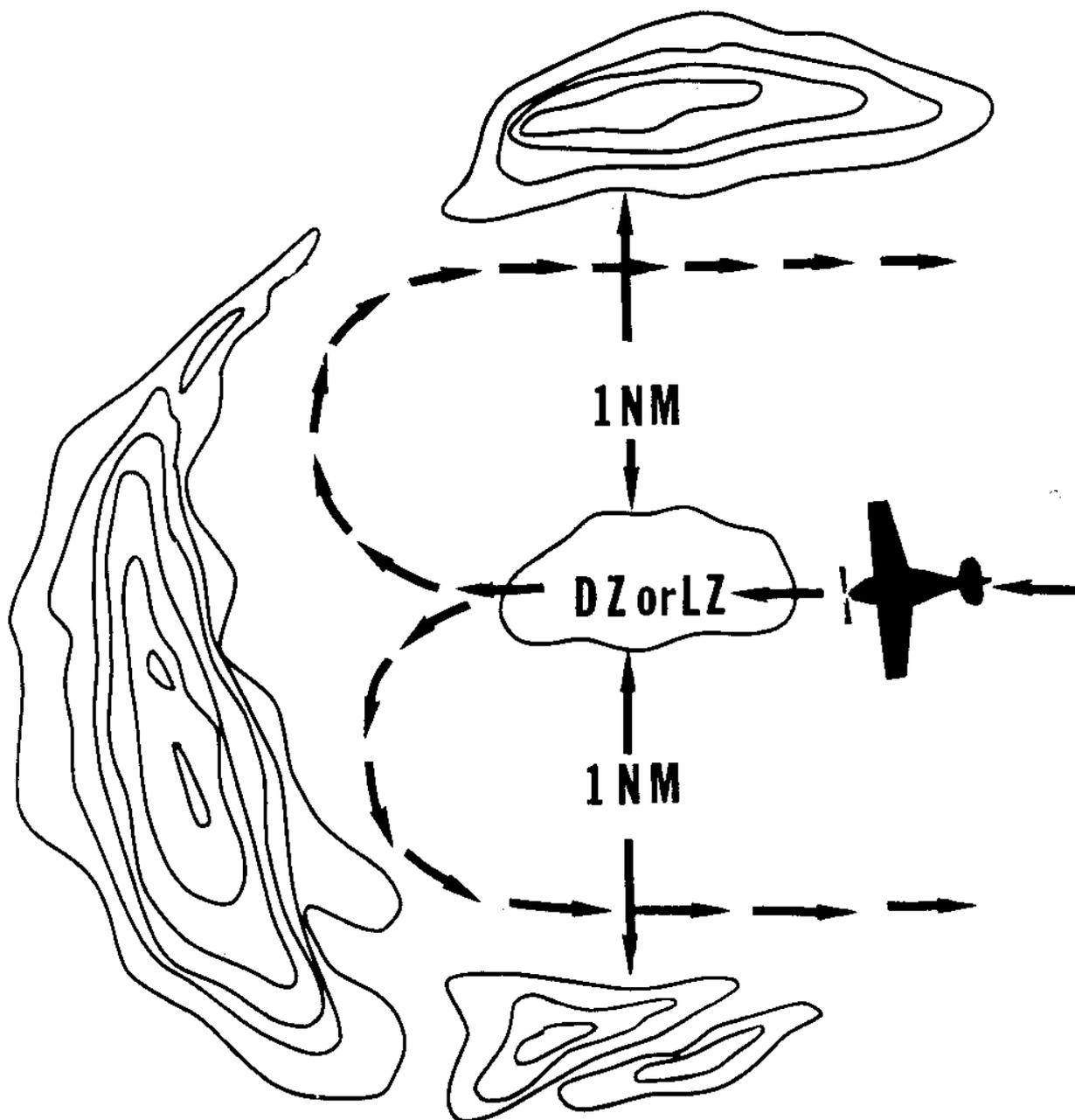


Figure 6-3. Level turn radius for light aircraft.

located so that the aircraft will not have to fly over or near enemy anti-air installations or installations that have radar capability of detecting aircraft at drop altitudes.

6-8. Ground Considerations

a. Shape and size

(1) The most desirable shapes for DZ's are square or round.

(2) The required length of a DZ depends

primarily on the number of units to be dropped and the length of their dispersal pattern.

(a) Dispersion occurs when two or more personnel or containers are released consecutively from an aircraft in flight. The long axis of the landing pattern generally parallels the direction of the flight.

(b) Dispersion is computed using this rule-of-thumb formula: $1/2$ speed of aircraft (knots) X exit time (seconds) = dispersion (feet converted to yards). Exit time is the elapsed time between the exits of the

first and last items (fig 6-4).

(3) The length of the dispersal pattern represents the minimum desirable length for DZ's. If personnel are to be dropped, a desirable safety factor of at least 100 yards is added to each end of the dispersal pattern to ascertain minimum DZ length required.

b. The width of rectangular -shaped DZ's should allow for minor errors in computation of wind drift.

6-9. Surface

a. The surface of the DZ should be reasonably level and relatively free from obstructions such as rocks, trees, fences, and powerlines. Tundra and pastures are ideal types of terrain for both personnel and cargo reception.

b. Personnel DZ's located at comparatively high elevations (6,000 feet or higher) will, where possible, use soft snow or grasslands. Because of the increased rate of parachute descent at these altitudes, such drops are less desirable than those at or near sea level.

c. Swamps, paddies, and marshy ground are marginally suitable for personnel and bundles in the wet season since the presence of water compounds recovery problems and is hazardous. Frozen paddies present a rough, hard surface, marginally suitable for personnel drops.

d. Personnel and cargo can be received on water DZ's.

(1) In dropping personnel on a water DZ, the depth will not be less than 4 feet and arrangements must be made for rapid pickup.

(2) The surface of the water will be clear of floating debris or moored craft, and there will be no protruding boulders, ledges, or pilings.

(3) The water will also be clear of underwater obstructions to a depth of 4 feet.

(4) Water reception points will not be near shallows or where currents are swift.

(5) Minimum safe water temperature for personnel drops is 50° F (+10° C).

e. The following ground surfaces can be used for supply DZ's:

(1) Gravel or small stones no larger than a man's fist.

(2) Agricultural ground; however, if postmission secrecy is a factor, it is inadvisable to use cultivated fields.

(3) Brush or tall trees; however, marking of the DZ and the recovery of containers is more difficult.

(4) Marsh, swamp, or water, provided the depth of water or growth of vegetation will not result in loss of containers.

6-10. Security

UW operations makes security a matter of prime

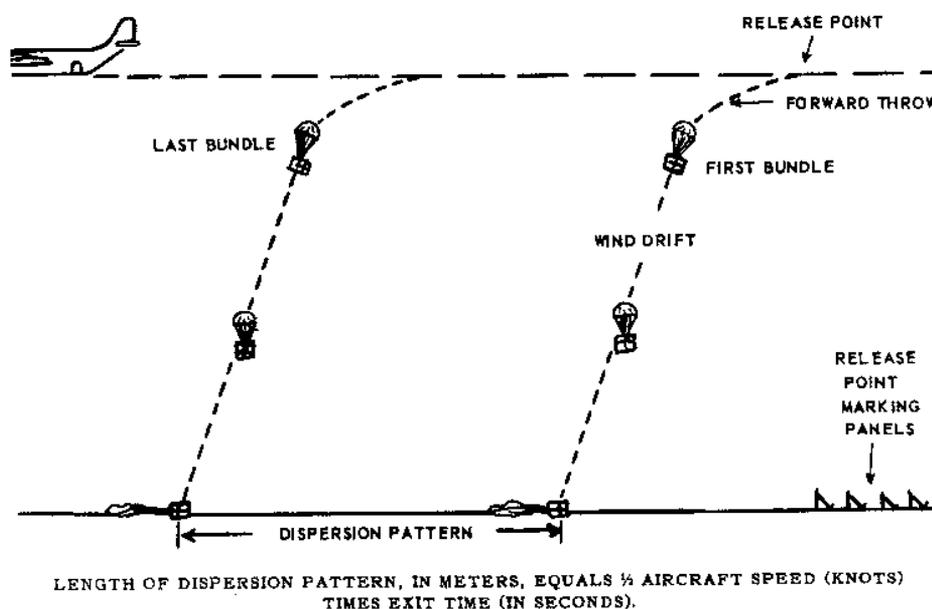


Figure 6-4. Computation of dispersion.

FM 31-20

importance. The basic considerations for security in the location of DZ's are:

- a. Maximum freedom from enemy ground interference.
- b. Accessibility to the reception committee by routes that are concealed from enemy observation or which can be secured against interdiction or ambush.
- c. Proximity to areas suitable for the caching of supplies and the disposition of air delivery equipment.

6-11. Reporting Drop Zones

a. *DZ Dana*. The minimum required DZ 'data includes

(1) DZ code name extracted from the operational detachment SOL. Also indicate if DZ is a water DZ.

(2) Location to include complete UTM grid coordinates, including grid zone designations, to the center of the DZ (example: PK602712).

(3) Open quadrants measured from the center of the DZ, reported as magnetic azimuths clockwise from the north. The open quadrants are acceptable aircraft approaches (fig 6-5).

(4) Track with magnetic azimuth of recommended aircraft approach (fig 6-5). If a specific aircraft course is required it will be reported as "required track," but only in exceptional circumstances will the Special Forces detachment require a specific track to be flown.

(5) Obstacles (fig 6-6). Because of the low altitudes at which operational drops are conducted, consideration must be given to navigational obstacles more than 300 feet or 90 meters (depending on the type of map used) above the level of the DZ and within a radius of 3 miles. These obstacles must be reported by description, magnetic azimuth, and distance from the center of the DZ.

(6) Reference point (fig 6-6). A reference point such as a landmark that can be located on issued maps by name alone, e.g., a lake, town, or mountain, is reported by name, magnetic azimuth, and distance in miles from the center of the DZ to the center of the reference point. It is used with (2) above, in verifying the DZ location, and should not be confused with the IP selected by the aircrews.

b. *Additional Items*.

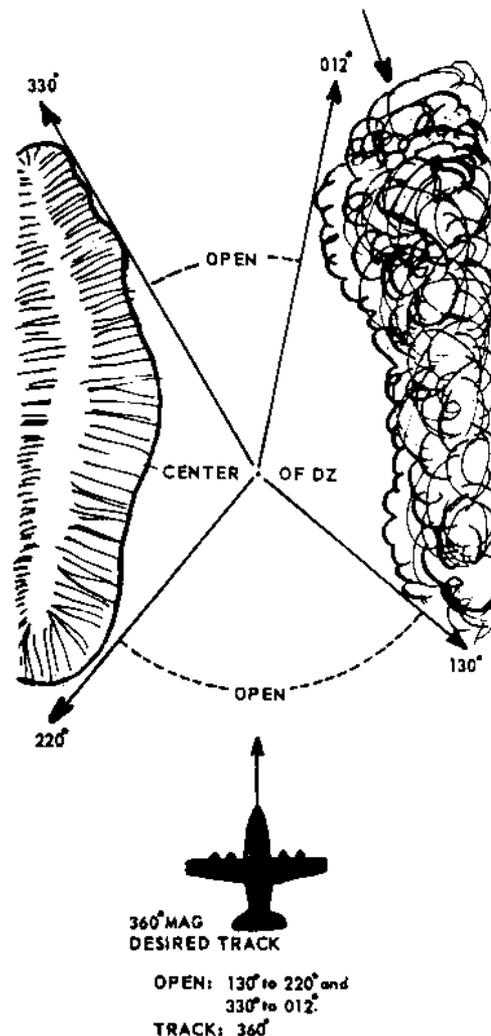


Figure 6-5. Computation of open quadrant and aircraft track (desired heading).

(1) Concurrent mission request. The basic DZ report may become a mission request by the addition of two items

(a) Date/time group that indicates the actual time that the aircraft is desired over the DZ. Use Greenwich Mean Time (ZULU).

(b) Items or services desired. Requests for supplies are normally prepared using the Catalog Supply System (CSS), a logistic SOP used to support SF operational detachments. The CSS is normally prepared by the SF Operational Group S4 (see chap 9 and app F).

(2) Designation of alternate DZ. When a concurrent mission request is submitted with the DZ report, an alternate DZ should be designated. The code name of the alternate DZ is the last item of the

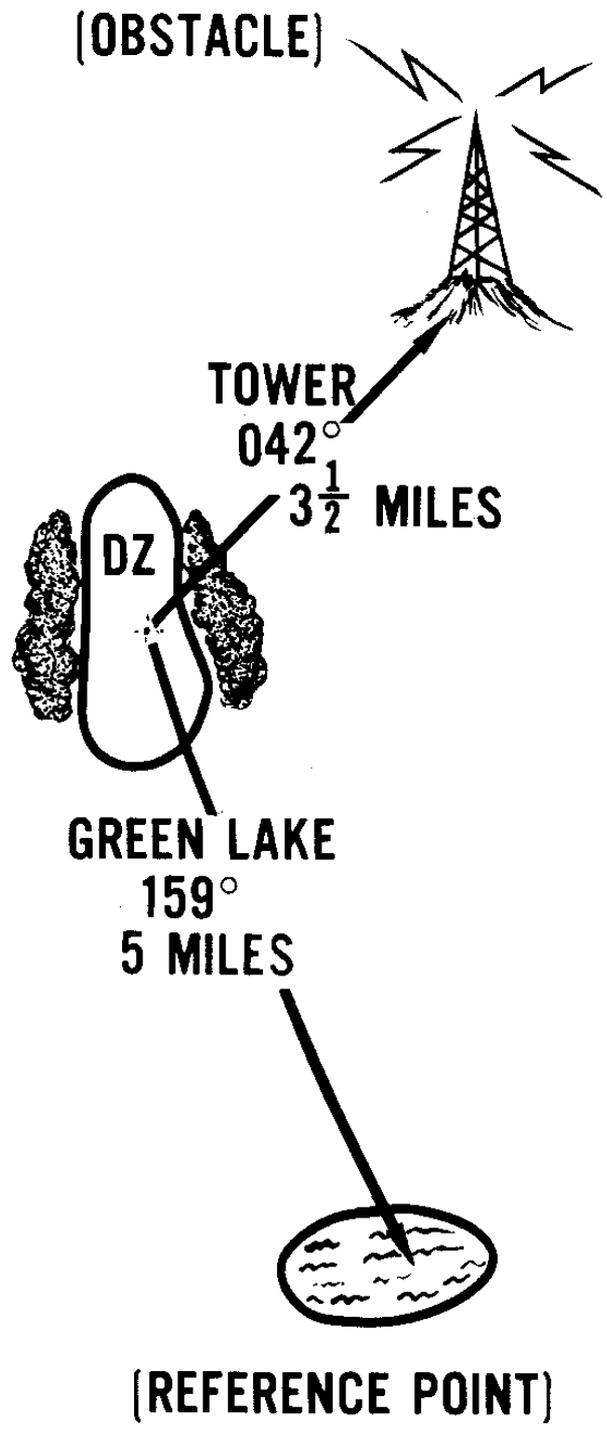


Figure 6-6. Reporting obstacles and reference points.

FM 31-20

mission request if a DZ has been previously reported. If the alternate DZ has not been previously reported, then the mission request will include items one through six of the standard DZ report as they pertain to the alternate DZ, as noted above and referred to in appendix C.

(3) *Special situations*. In special situations, additional items may be included in DZ reports, e.g., additional reference points, navigational check points in the vicinity of the DZ, special recognition, and authentication means. If additional items are included, they must be identified by appropriate paragraph headings.

c. *Azimuths*. Azimuths are reported as magnetic in degrees and in three digits. With the exception of the aircraft track, all azimuths are measured from the center of the DZ. For clarity, the abbreviation "DEG" will be used when reporting direction,

d. *Initial Point* (fig 6-7). The IP, located at a distance of 5 to 15 miles from the DZ, is the final, prominent, navigational checkpoint before reaching the DZ. The pilot selects the IP; the DZ party can assist him by recommending a track that will facilitate the selection of an identifiable IP. Immediately before reaching the IP and using the technique of selecting a prominent landmark as a "PRE -IP," the pilot turns to a predetermined magnetic heading (track) that takes him to the DZ within a certain number of minutes. The turn over the IP to establish in -bound heading should be kept small. Air units will make the final selection of the IP and approach track for each mission. If possible, "required tracks" will be flown as reported. The SFOD will make recommendations based on specific area knowledge. The following features constitute suitable IP's:

(1) *Coastlines*. A coastline with breaking surf or "white beach" is easily distinguished at night. Mouths of rivers over 150 feet wide, sharp promontories, and inlets are excellent guides for both day and night.

(2) *Rivers and canals*. Prominent bends in the banks of a river or the confluence of two or more rivers are excellent IP's. Although wooded banks reduce reflections, rivers at least 90- to 100-feet wide are visible from the air. Canals are easily recognizable because of their straight banks and uniform width; however, they may be valueless in areas where they are uniformly patterned. Small streams are not readily discernible at night.

(3) *Lakes*. Isolated lakes, at least 1/2-mile in

diameter or greater, give good light reflection, but must be clearly identifiable in shape or possess some other distinctive characteristic.

(4) *Forest and woodlawns*. Forested areas at least 1/2-mile square with clearly defined boundaries or unmistakable shapes are easily identified.

(5) *Major roads and highways*. Straight stretches of main roads with one or more intersections can be used as an IP. For night recognition, dark surfaced roads are not desirable; although, when the roads are wet, reflection from moonlight makes the road visible but may appear to be a river or a stream.

(6) *Railways*. Normally, railways are poor IP's because of the difficulty of seeing them at night. Since most operations are conducted at night and in low - visibility conditions, aircrews should give little consideration in selecting railways as possible IP's. When there is snow on the ground, rail lines which are frequently used will appear as black lines cutting through the white landscape.

(7) *Islands*. Either off-shore or situated in a lake or river, significant islands of at least 300 feet length or breadth, offer an excellent IP.

Note. Towns subject to blackout are of little use for night work except where the population is 20,000 or larger. The possibility of a town that size being heavily defended should not be overlooked. Aircraft should never fly directly over a town; however, it may make an excellent reference point if the aircraft track takes it to within 8 nautical miles of the town.

e. *Subsequent Use of DZ*. The SFOB maintains reported DZ's on file. If a previously reported DZ is to be used again, the mission request need contain only

- (1) Code name of DZ.
- (2) Date/time of mission.
- (3) Supplies/services desired.
- (4) Alternate DZ.
- (5) Track of alternate DZ.

6-12. Alternate Drop Zones

Alternate DZ's will be designated for every, mission requested; however, separate drop times are established and the alternate DZ is manned by a skeleton reception committee. If the primary DZ is not suitable for reception due to unfavorable conditions, the aircraft proceeds to the alternate DZ. This DZ should be as close to the aircraft primary heading as possible to preclude turn around and possible enemy detection of the operation. Drop times for alternate DZ's are

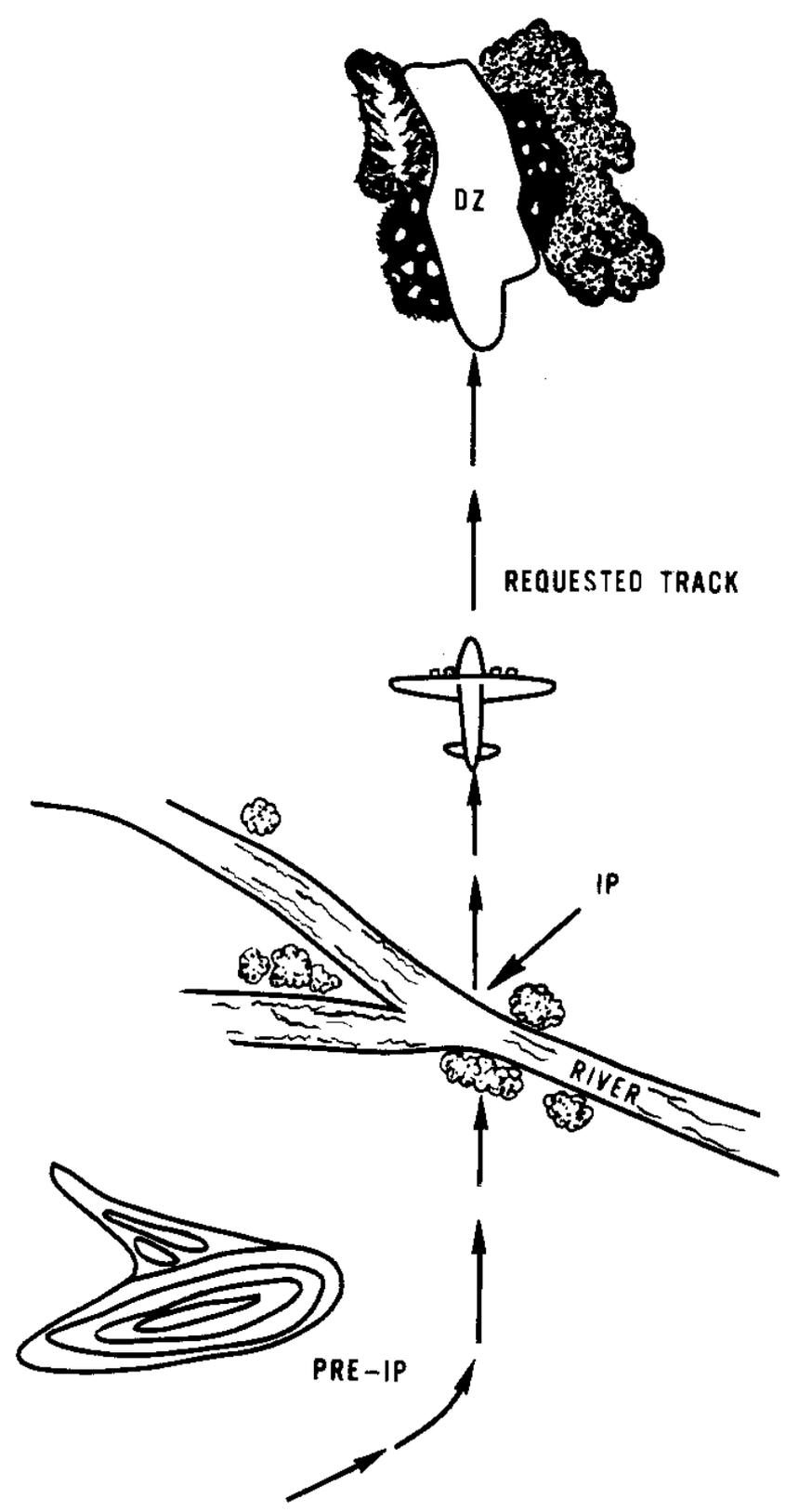


Figure 6-7. Relationship between IP and requested track.

FM 31-20

determined by the air operations base (AOB) based on flight time and are included in the mission confirmation message.

6-13. Mission Confirmation for Air Drop

Following the processing of the DZ report and resupply request at the SFOB, a confirmation message is transmitted to the operational detachment, usually in a blind transmission broadcast (BTB). The confirmation message includes

- a.* Code Name of the DZ. Code name identifies the mission.
- b.* Track. Track is the magnetic azimuth upon which the aircraft will approach. The actual track flown may differ from the original request to conform to the location of the IP selected by the aircrew.
- c.* Date/Time of Drop. This also may differ from the original request because of priorities, weather, or aircraft availability.
- d.* Number of Cargo Containers or Personnel. This assists the reception committee in the recovery of all containers and personnel.
- e.* Drop Altitude. This assists the reception committee in properly placing DZ release –point markings to compensate for wind drift.
- f.* Alternate DZ.
- g.* Date/Time of Drop at Alternate DZ.
- h.* Sample Message. See appendix C for sample drop confirmation message.

6-14. Area Drop Zone

a. General. An area DZ consists of a prearranged flight track over a series of acceptable drop sites. This establishes a line of flight between two points, "A" and "B" (fig 6 –8). The distance between these points should not exceed 15 miles and have no major changes in ground elevation in excess of 300 feet. Drop sites may be selected not more than 1 mile to the left or right of the established line of flight. The aircraft arrives at point "A" at the scheduled time and proceeds towards point "B" observing for the DZ markings. Once the markings are located, the drop is conducted in a normal manner. The area DZ system is particularly well adapted for use in conjunction with preplanned, automatic resupply operations where DZ's are frequently selected on the basis of map reconnaissance. The DZ is illuminated a total of 10 minutes (starting 2 minutes prior to ETA. over point "A") or until the first deployed parachute is observed.

b. Drop Zone Data. Area DZ's are reported by using the normal DZ report format, with the following exceptions

- (1) Locations of both point "A" and "B", including reference points (fig 6–8).
- (2) The open quadrant is not reported.
- (3) Obstacles over 300 feet above the level of the terrain along the line of flight, within 2 nautical miles on either side, and not shown on the issued map (fig 6-9). These obstacles are reported in reference to either points "A" or "B".
- (4) See appendix C for sample area DZ report.

NOTE: DROP MAY BE RECEIVED ANYWHERE
ALONG FLIGHT PATH BETWEEN POINTS
"A" AND "B" DISTANCE BETWEEN POINTS
"A" AND "B" NOT TO EXCEED 15 MILES.

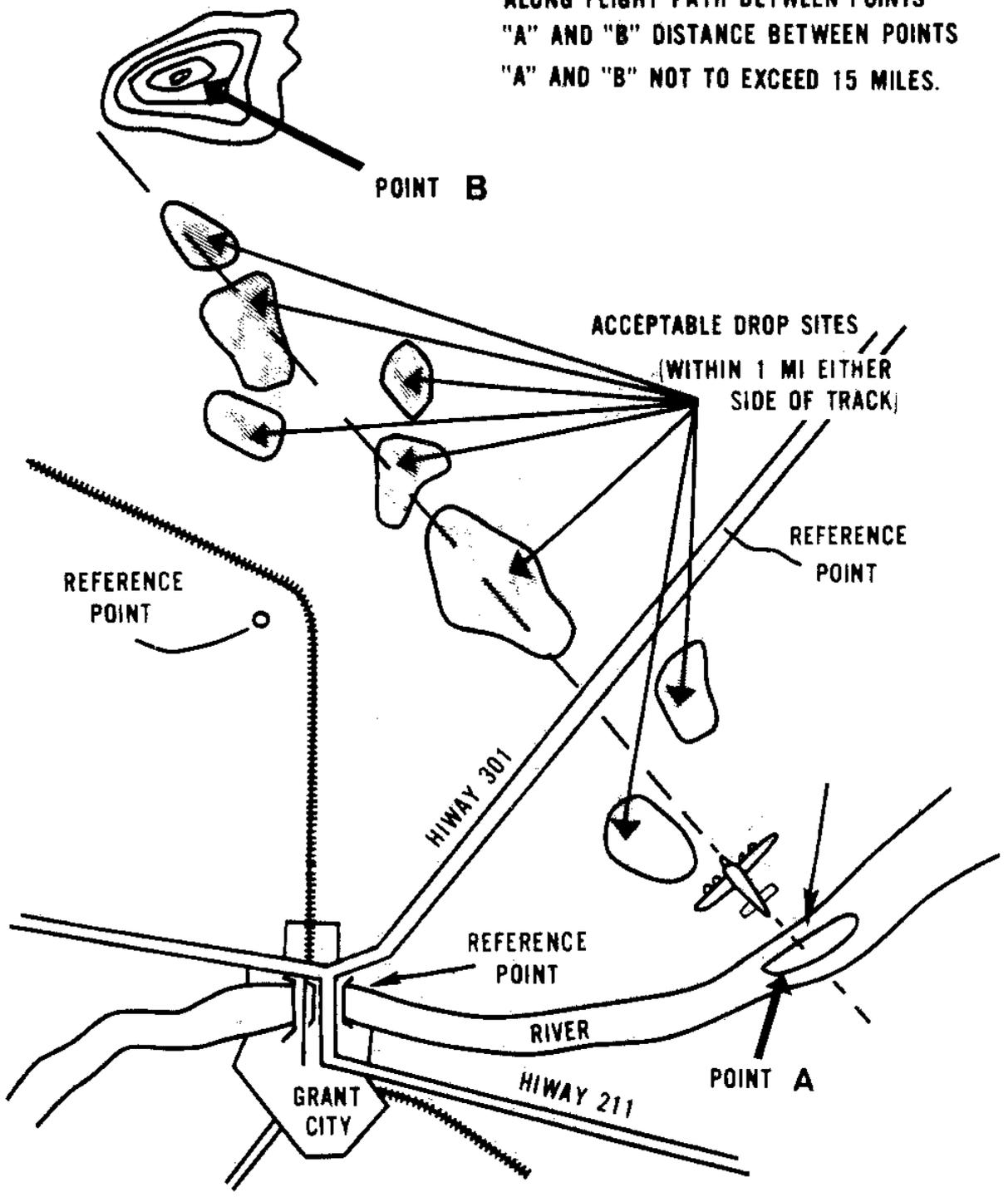


Figure 6-8. Area DZ (reference points).

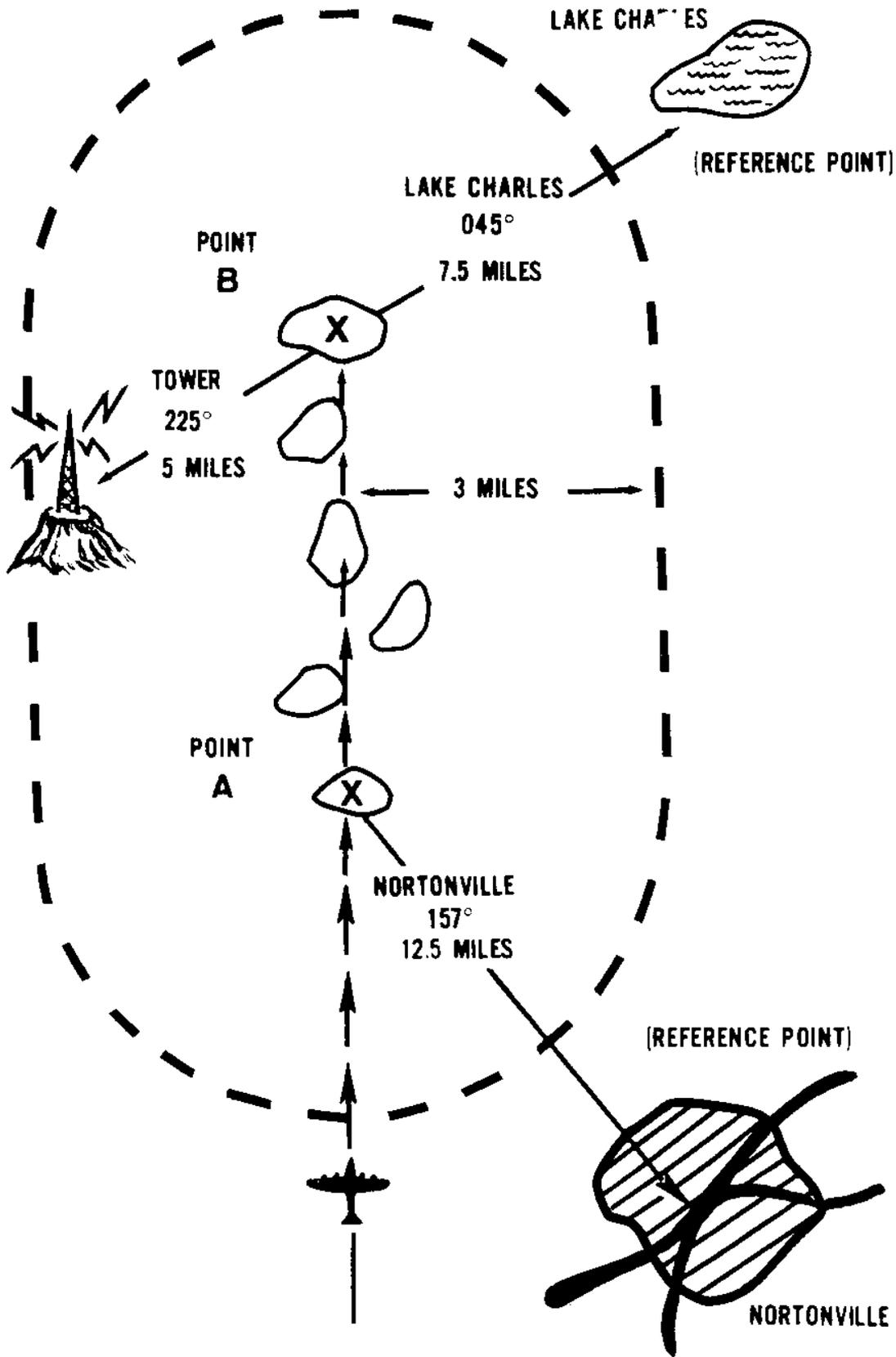


Figure 6-9. Obstacles and reference points (area DZ).

Section III. MARKING DROP ZONES

6-15. Drop Zone Identification

a. The purpose of DZ markings is to identify the site, indicate the point over which personnel or cargo will be released, and provide visual terminal guidance for the aircraft. The patterns for marking DZ's are included in the SOI's. Marking of DZ's during the hours of darkness or periods of low-visibility is accomplished by using lighting devices such as flashlights, flares, and small wood, oil, or gas fires. For daylight operations a satisfactory marking method is the Panel Marking Set AP-50 or VS-16. If panels are not available, sheets, strips of colored cloth, or other substitutes can be used provided there is sharp contrast with the background.

b. The light source selection by the ground reception committee must take security requirements and atmospheric and terrain conditions into account. From a security standpoint the flashlight is the best light source; however, there must be equal light emission by all lights used. Other possible light sources are flares, electronic flashers, and small wood, oil, or gasoline fires. Light sources other than flashlights may be required to penetrate haze or ground fog, or to form a distinctive light pattern which can be more readily identified than – a flashlight pattern. If local conditions dictate use of other light sources, all lights in a pattern must be of the same type. Light sources other than flashlights will be screened on three sides or placed in pits with sides sloping toward the direction of the approaching aircraft.

6-16. Homing Devices

The use of electronic homing devices permits reception operations during conditions of low-visibility. Such devices may also be used in conjunction with the visual marking systems.

6-17. Computation of Ground Release Point

The ground release point is determined to ensure delivery of personnel or cargo within the usable limits of the DZ. Computation of the ground release point for personnel and low-velocity cargo drops involves the following factors (fig 6-10)

a. *Dispersion.* Dispersion is the length of the pattern formed by the impact of the parachutists or other cargo containers (fig 6-4). The desired point of impact for the first parachutist/container depends on the manner in which the calculated dispersal pattern is fitted into available DZ space.

b. *Wind Drift.* Wind drift is the horizontal distance traveled from the point of parachute deployment to the point of impact as a result of wind conditions. The release point is located a calculated distance upwind from the desired impact point. To determine the amount of drift, use the following formulas

(1) Personnel using parachutes with 35-foot canopies: Multiply the wind velocity (knots) by each 100 feet to drop altitude. Multiply this product by 4.1 (the constant or K factor for a 35-foot canopy). The formula is: Wind (V) times altitude (A) times 4.1 (K) equals drift (D) in yards. Thus: $D = VAK$. Example: Drop altitude is 800 feet and wind velocity is 10 MPH*; drift is $10 \times 8 \times 4.1$ or 328 yards.

(a) *An anemometer is used to measure wind velocity. Some anemometers give readings in knots, others in miles-per-hour. To convert to knots, miles-per-hour is multiplied by .86, but for practical purposes, the direct substitution of miles-per-hour for knots in wind drift formulas gives sufficiently accurate results for winds below 10 knots.

(b) Since anemometers will not always be available, or may have been damaged or destroyed, Special Forces personnel manning DZ's must be able to estimate wind velocity with acceptable accuracy. Detachment personnel can learn to do this during training by observing the effect of winds of varying strengths on grass, dust, bushes, small pieces of paper, or small pieces of cloth or handkerchiefs held at arms length, and then comparing these effects with those associated with anemometer reading.

(2) Other low-velocity types of parachute drops: Use the same formula: however, substitute a constant factor of 2.6 for 4.1.

(3) Static line deployed, maneuverable personnel parachute: The maneuverable parachute is the same as the T-10 (35-foot canopy) parachute except material has been removed from the rear of the parachute near the lower lateral band, to form an oval –shaped orifice to assist in maneuvering. When the canopy is manipulated in such a manner that the orifice faces into the wind, the parachute has an increased rate of drift as compared to other 35-foot canopies; when the orifice is faced away from the wind considerably less drift results. Thus, when computing wind drift formula for the maneuverable parachute, use the same formula as noted above but substitute a constant factor of 4.0 for 4.1.

(4) Personnel and cargo drop: When receiving both personnel and cargo in the same drop, use the same formula as noted above, but use the constant factor of 4.0.

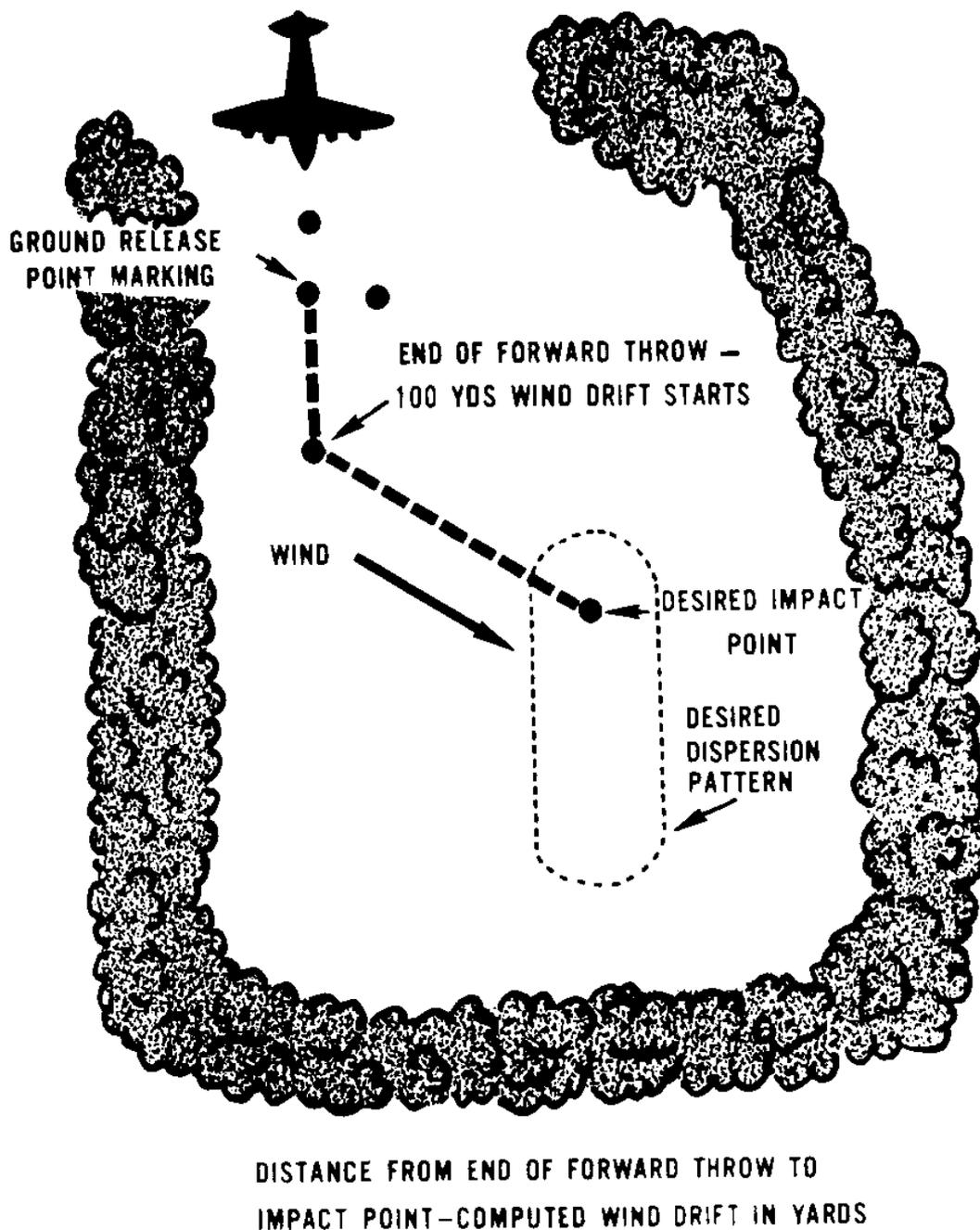


Figure 6-10. Computation of ground release point.

(5) Pilot balloon (PIBAL) winds aloft wind drift system

(a) Personnel responsible for DZ operations and wind drift calculations on DZ's require certain knowledge and techniques in determining winds aloft from ground level to drop altitude. In most instances, when winds on the

surface are minor or nonexistent, observing cloud formations over the DZ may indicate winds at altitude that could effect parachute operations. Therefore, effective wind observations are required to determine the effects, in terms of drift, that the direction and speed of winds will produce on parachutists or bundles between the surface and some specific altitude.

(b) Using a simplified system, a ground

release point may be acquired by releasing a pilot balloon and determining the lateral drift of the balloon as it ascends to drop altitude. This system provides accurate wind information which will assist DZ personnel in determining the exact positioning of the release point markers. DZ personnel inflate a balloon with helium or hydrogen until it reaches a desired diameter in inches, using a measuring string previously cut to that length. A balloon thus inflated will drift at the same rate that a jumper would drift when descending by parachute from drop altitude. The balloon must be inflated to a larger diameter at night to allow for the additional weight of a small light. Upon releasing the balloon, DZ personnel keep the balloon fixed in the sights of a "pocket transit" or some angle measuring device. By reading the balloon's drift during given periods of time, DZ personnel can accurately establish effective winds from the surface to drop altitude. This information is obtained from a special computation card. DZ personnel convert this angle of rise to winds in knots, then convert winds to ground drift in feet or yards, thus enabling them to mark the ground release point accordingly. A rule of thumb formula, if winds can be predicted and not measured, is that 1 knot of wind at jump altitude gives 100 feet of drift per minute of descent for the average jumper using a 35-foot canopy. The parachutist descent in minutes is based on 1250 feet of descent = 1 minute.

(c) For a detailed description of equipment required and the techniques of employing this system see appendix H. Included in appendix H is a special computation card indicating how the determined angle of rise when converted to winds at drop altitude will enable DZ personnel to determine wind drift on the ground. When using this system, it is not necessary to figure wind drift on the ground using surface winds as noted in (1) above. Measured surface winds at this time are merely used to indicate whether or not conditions are safe for jumping.

c. Forward Throw. Forward throw is the horizontal distance traveled by the parachutist or cargo container between the point of exit and the opening of the parachute. This factor, combined with reaction time of the personnel in the aircraft, is compensated for by moving the release point an additional 100 yards in the direction of the aircraft approach.

d. High-Velocity and Free-Drop Loads. High-velocity and free-drop loads are not materially

affected by wind conditions; therefore, wind drift is disregarded. Dispersion is computed the same as for low-velocity drops. On the other hand, without the restraint of a parachute, forward throw is compensated for by moving the ground release point marking in the direction from which the aircraft will approach a distance equal to the altitude of the aircraft above the ground (e.g., if altitude of aircraft is 600 feet, move ground release marking 600 feet in the direction of the aircraft approach).

6-18. Methods of Ground Release Point Marking

There are two methods for marking the DZ ground release point. The principal difference between the two is the method of providing identification. The marking systems described below are designed primarily for operational drops executed at an altitude of 400 to 800 feet. Drops executed at an altitude in excess of 800 feet require modification of the marking systems.

a. The primary marking method employs lights or panels in a distinctive configuration which change daily according to the unit's SOL. In addition to marking the ground release point, this configuration serves to identify the DZ to the aircrew.

(1) The number of markers used seldom exceeds six.

(2) The distance between markers is 25 yards for drops executed at operational altitudes of 800 feet or less. When the drop altitude exceeds 800 feet, the spacing is increased to 50 yards.

(3) The release point markers will normally form a distinctive shape (square, rectangle, or triangle (letter ("T," "L," or "X").

(4) In executing drops, the aircraft is aligned as accurately as possible over the right hand row of markers. The drop is made directly over the last light in the right hand row (1, fig 6-11).

b. An alternate marking method may employ a standard three-marker pattern (2, fig 6-11) positioned in the form of an inverted "L." Identification of the DZ is accomplished by means of a code light, displayed in addition to the 3 lights of the standard "L," 5 yards outside the first marker light in the pattern.

c. Operational drops executed at altitudes in excess of 800 feet require the use of a flank marker placed 200 meters to the left or right of the release point markings depending on size and configuration of the DZ. The configuration of some cargo and troop carrying aircraft

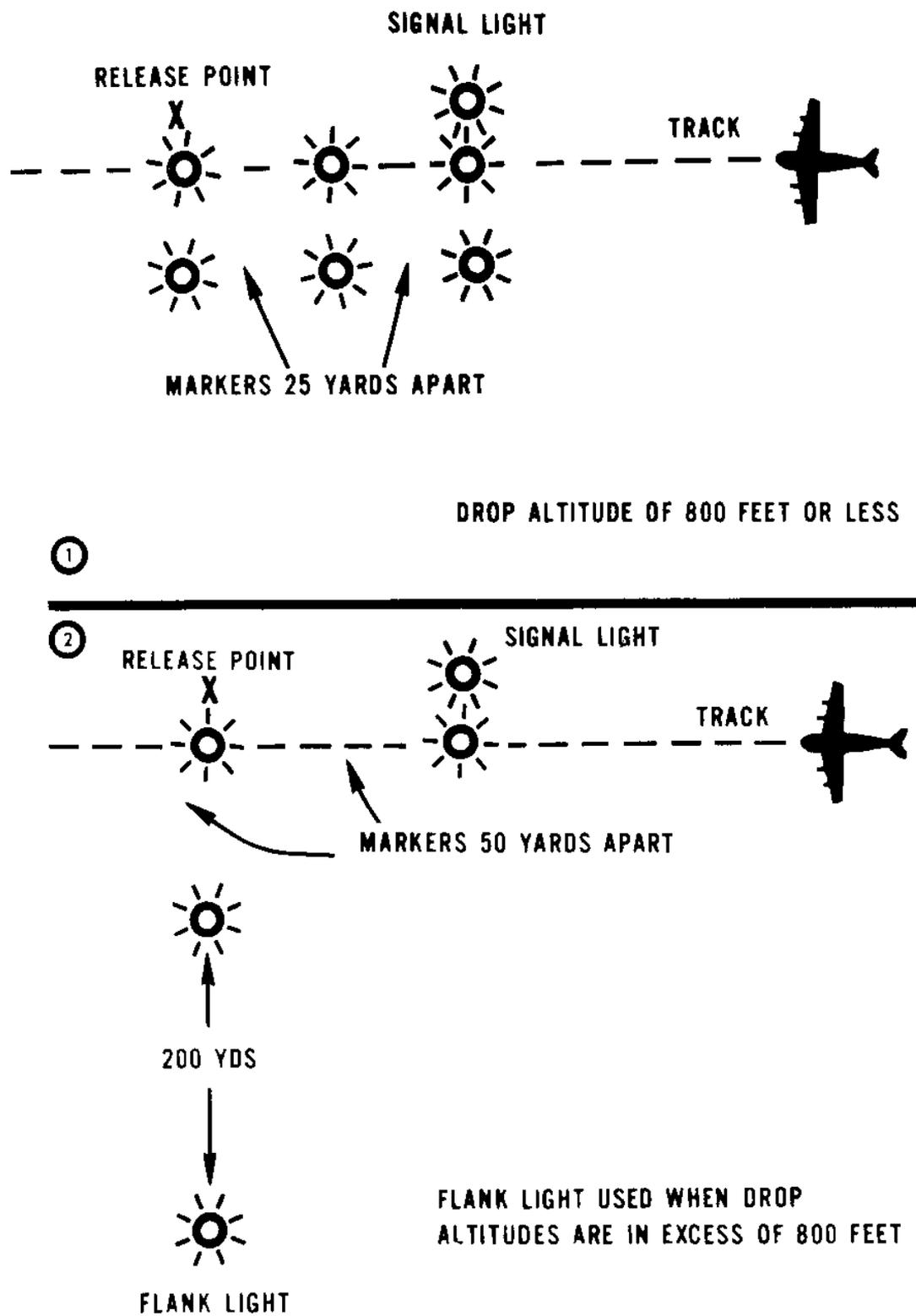


Figure 6-11. Methods of ground release point marking.

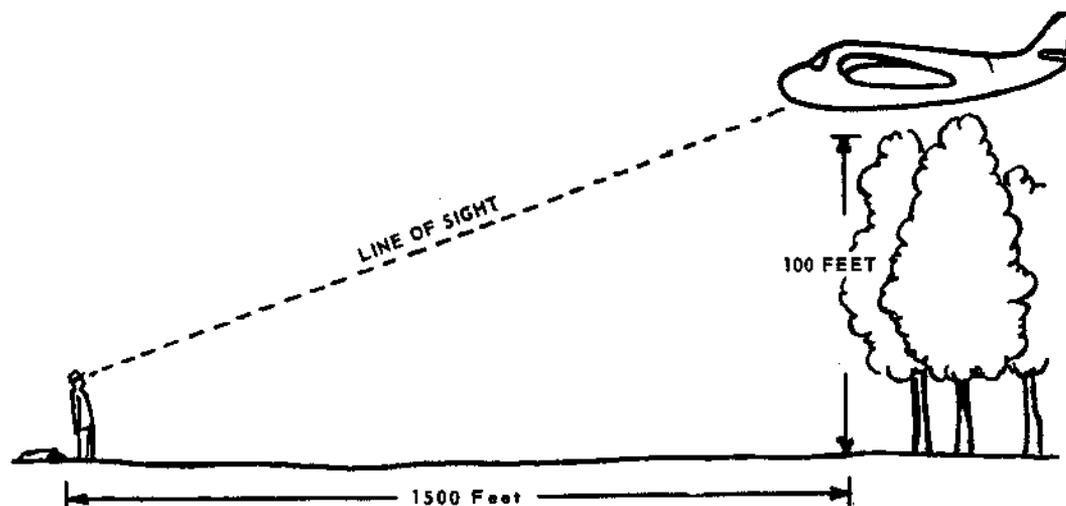


Figure 6-12. "Mask" clearance ratio 15:1.

prevent the pilot from seeing the markings after approaching within approximately 1 mile of the DZ while flying at 1,000 feet altitude. From that point on, the pilot must depend on flying the proper track to pass over the release point. The flank marker indicates the release point and the exact moment the drop should be executed.

6-19. Placement of Markings

a. Markings must be clearly visible to the pilot of the approaching aircraft. The formula for determining mask clearance is 15 units of horizontal distance to 1 unit of vertical distance, a ratio of 15 to 1, for each unit of obstruction. As an example, markings shown in figure 6 -12 are placed 750 feet from a 50 -foot mask of vegetation and a terrain feature.

b. Precautions must be taken to ensure that the markings can be seen only from the direction of the aircraft approach. All flashlights should be hooded for security (side glow) and aimed in the direction of the expected aircraft approach. Fires or improvised flares are screened on three sides or placed in pits with sides sloping toward the direction of the aircraft's approach (fig 6 -13) .

c. When panels are used for daylight DZ marking they are positioned at an angle of approximately 45° from the horizontal to present the maximum surface toward the approaching aircraft (fig 6 -14). If the drop is taking place during the period of sunrise or sunset, and the sun is in the eyes of the pilot during the approach to the DZ or LZ, smoke grenades or simple smudge fires should be



FLASHLIGHT HOOD



FIRE SCREEN



FIRE PIT

Figure 6-13. Security of DZ markings.

used in conjunction with panel markings to assist the aircrew in sighting the DZ markings on the approach.

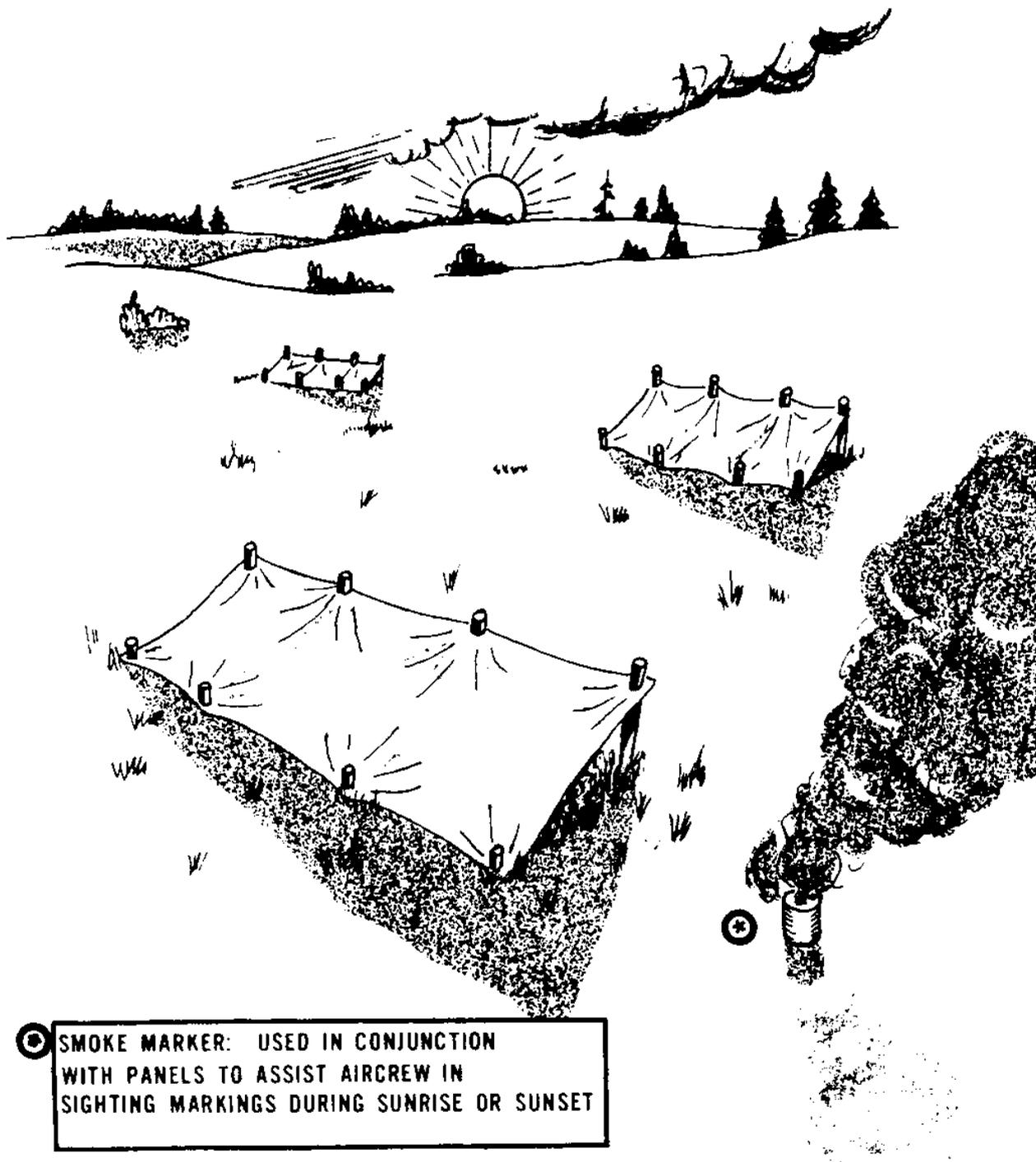


Figure 6-14. Placement of panel markings.

6-20. Unmarked Drop Zones

a. Personnel and equipment may be dropped on unmarked DZ's when necessary. This technique is generally limited by visibility to specific moon, phases or daylight. A DZ selected for this purpose

should be located in an isolated or remote area and free from possible enemy interference.

b. Drops on unmarked DZ's may be preplanned for specific periods of time. The receiving unit is required to keep the DZ under constant surveillance during the

time the drop is scheduled. As soon as the cargo is delivered, observers alert the receiving unit, measures are taken to dispose of the items received, and the DZ is sterilized (elimination of all signs of the drop). To aid in recognition, the DZ's should be of odd configuration and size and have specific, recognizable landmarks. Unmarked DZ's are also used to support emergency resupply procedures as outlined in paragraph 6-5b and c.

6-21. Drop Zone Authentication

a. Air to Ground. The aircraft is required to arrive over the DZ within a specified time limit, usually extending from 2 minutes before to 2 minutes after scheduled drop time. The DZ markings are displayed according to schedule. Arrival during this specific time period, approach on the designated track, and flying at designated altitude is indication to the reception committee that the aircraft is friendly.

b. Ground to Air.

(1) The reception committee is identified by one of the following methods:

(*a*) Primary method: Display a specific DZ marking configuration for the: date or each day of the week as per SOI. The display of proper markings for a particular time frame identifies the reception committee.

(*b*) Alternate method: Display a standard marking configuration indicating the release point and identifying the reception committee by means of a coded light or panel signal. The following rules govern the use of a coded light signal

1. Code letters consisting solely of all dots or dashes, e.g., "I," "E," "M," "O," "S," or "T" are normally not used.

2. Use the following time intervals to assist the aircrew in recognition of the signal: dots-2 seconds long; dashes-4 seconds long; interval between dots and dashes-2 seconds; interval between coded letters-5 seconds.

(2) The schedule for DZ markings, and identification and authentication signals, is contained in the SOI. This schedule is changed as frequently as necessary for security.

Section IV. FREE-FALL PARACHUTE OPERATIONS

6-22. General

a. Tactical Application. When the tactical situation and mission requirements demand an extremely clandestine penetration of selected areas, a preferred method may be the release of parachutists from high altitudes using a free-fall parachute technique to effect entry of personnel and cargo into an operational or objective area. Free-fall parachute operations are generally characterized by flights over the objective area, at altitudes not normally associated with parachute operations, and will normally be conducted in darkness or twilight to reduce the chance of enemy observation or detection. The parachutists are released at a point in space which is calculated to allow them to land within their objective area. Maneuverable parachutes, coupled with automatic opening devices, provide the detachment with the capability of all personnel opening at a predesignated altitude and landing together safely as a tactical unit prepared to execute its mission. Tactical military free-fall parachuting is not to be considered as a pin-point accuracy type of drop, but must be regarded as the means of entering a designated impact area within the objective area. The success of this type of drop,

except under the most adverse circumstances, is assured regardless of the local weather condition or visibility. Freefall parachuting is advantageous under the following circumstances:

(1) As a means of infiltration into hostile areas when low altitude penetration is not practical because of enemy ground fire.

(2) In mountainous terrain, where parachute operations using aircraft at low altitudes are prohibited, unsafe, or otherwise impracticable.

(3) When the impact area is limited in size, providing the impact area can be seen at the time of exit from the aircraft.

(4) When infiltration is to occur with other operations involving aircraft, or formation of aircraft, flying at high altitudes,,

(5) When navigational aids are not available to ensure required accuracy of drops at low altitudes, e.g., deserts and jungles.

(6) For infiltration of small Special Forces pilot teams or blind drop infiltrations.

(7) When aircraft flying; above hearing range will not be detected, e.g., in areas of operation where no radar or other sophisticated detection systems exist.

FM 31-20

b. Considerations. When planning free-fall operations, commanders should consider the following:

(1) Coordination must be affected with necessary agencies and services to provide a jamming capability to the supporting air service or to plan for the disruption of the detection system if the operations are planned in hostile areas protected by enemy radar and other detection systems.

(2) The availability of aircrews working under arduous conditions in depressurized aircraft at extremely high altitudes (in excess of 40,000 feet) is vitally important.

(3) Free-fall parachuting is valid from operational drop altitudes (static line) up to high altitudes in excess of 40,000 feet depending on the capability of the supporting aircraft.

c. Equipment.

(1) Free-fall parachutists will have in their possession normal operating TOE equipment which will include TA clothing and equipment in keeping with the climatic conditions, food, and survival items. The only exception to this is the free-fall parachutist's jump helmet, goggles, and altimeter used for free-fall parachuting. All detachment equipment and supplies will be jumped and carried as individual loads (fig 6-15). If selected items must be dropped as accompanying supplies, they will be packed -in appropriate aerial delivery containers. There are various methods and techniques for free falling this equipment into operational areas, and these are described below. Once the drop is in progress, free-fall parachutists will locate and follow the bundles to the ground which lessens the possibility of losing the equipment in the drop. Techniques that may be used to free fall equipment are:

(a) Nonelectric blasting caps may be used to fire parachute retaining devices with time fuze cut in accordance with altitude and desired freefall time to opening.

(b) Use of power-actuated, reefing line cutters, and items of issue available to airborne units, when shorter delays are necessary.

(c) Use of high altitude bombing techniques are satisfactory for delivery of time-delay cargo parachutes.

(d) Use of FIB timer and a ripcord deployed parachute.

(2) For altitudes above 12,000 feet, oxygen equipment is mandatory. Special equipment needed

in addition to the goggles and helmets are oxygen masks and several main oxygen sources. These include:

(a) An oxygen console to support an entire detachment for long flights.

(b) The delivery aircraft's oxygen supply to support the aircrew.

(c) Walk around oxygen battles for jumpmasters and aircrews.

(d) Bail-out bottles for parachutists after leaving the aircraft.

(e) Oxygen masks, goggles, jump helmets, and altimeters are contained in the free-fall parachutist kit, available to Special Forces units as organizational equipment.

(3) For altitudes above 40,000 feet, more sophisticated equipment such as pressure suits and helmet assemblies may be required. This equipment is available through Air Force supply channels and should be requisitioned well in advance of the operation. For pressurized aircraft, prior coordination with the supporting air unit may lessen equipment requirements.

6-23. Procedures

Employed correctly, the free-fall technique can be used by full operational detachments or larger units. However, since the number of personnel that will normally be dropped in this manner is small, emphasis should be directed toward taking only absolutely essential equipment and supplies. For free fall, the rucksack is attached in the jumper's rear below the main parachute but in a manner similar to that for static line jumping (fig 6-15).

a. Briefing. The briefing should include a review of en route plans and actions at specified points along the route in the event of an abort or enemy action. All the techniques of the jump, to include oxygen procedures, when to arm the automatic opening device on the parachute, and action at the 20-, 6-, and 2-minute warnings are explained. A minimum of two extra parachutes and altimeters should be carried in the event of premature firing of an automatic opening device or the failure of an altimeter.

b. Station Procedures. Under tactical conditions, the detachment should be completely rigged prior to takeoff. This ensures that, in the event of an abort or enemy action, the detachment will exit the aircraft with all of their equipment. A final check of all equipment is made and all altimeters are calibrated. Altimeters are



Figure 6-15. Free-fall (HALO) parachutist with equipment.

FM 31-20

normally calibrated so that the instruments read distance above the ground at the DZ; however, while in flight, the aircraft commander will keep the detachment informed of changes to the altimeter reading if it is necessary to abort and make an emergency exit.

c. In-Flight Procedure. In-flight activity is generally described in TM 57-220. En route, the aircraft commander keeps the jumpmaster informed of the position of the aircraft. In turn, the jumpmaster keeps the jumpers informed. This information is essential so that the detachment members know their relative position along the route and can apply the required actions in the event of an abort or enemy action. All actions at the 20-, 6-, 2-, and 1-minute warnings will be in accordance with premission briefings. The pilot will signal the jumpmaster when he has reached his computed air release point. The jumpers will exit the aircraft on the command of the jumpmaster.

d. Free-Fall Procedures. Once the jumpers have gained stability in free fall, they take up a preselected heading so that all are oriented in the same direction. They then fall in "bomb line" plot activating their parachutes at a preselected altitude or upon activation of the automatic opener. These actions will keep the parachutists' dispersion relatively constant during free fall. In determining the heading, reliance cannot be made on visual sighting of terrain features, since that is not always possible, -3.g., night operations, flat jungle areas, or mountainous areas. A reliable means of determining heading is that upon exiting the aircraft, all jumpers maintain heading in the direction of the aircraft. An alternate means of maintaining heading is to use a wrist compass. The jumpers make no effort to move laterally during free fall in an attempt to move toward a specific terrain feature; however, they may adjust their position to maintain contact with the lead man or equipment bundle. Night operations and lack of familiarity with the terrain make such operation extremely difficult and may cause wide dispersion.

6-24. Drop Zones

a. General. Free-fall infiltration envisages the selection of a DZ in an area of low population density. While a desired impact point on the ground is jointly selected by the air support unit and the Special Forces unit, the success of the operation is not dependent on hitting this exact spot. Using the

desired impact point as a reference, the CARP is calculated based on available weather data. During actual execution, current weather information may be provided either from the objective area or from the navigational equipment of the aircraft. This data may necessitate changing the CARP, desired impact point, or both. In any event, the jumpmaster is kept fully informed of the prevailing conditions, and in turn keeps his jumpers informed. At the appropriate time, the jumpers exit the aircraft employing the technique described above. The success of the infiltration is dependent on their landing together within the operational area in the proximity of the desired impact point.

b. Marking and Authentication.

(1) *Marking.* Unlike static-line infiltration, for free-fall operations, DZ markings have no relation to the air release point for the jumpers. In both day and night operations, DZ markings are often difficult to locate from jump altitude. Because of this, DZ markings are not used. Terrain features are used to indicate release point during the day, and ground reference lights are desirable to determine the release point at night.

(2) *Authentication.* The most positive means of authentication for free-fall infiltration operations is to use coded electronic radio signals from the DZ to the aircraft. Visual signals, commonly used in normal air infiltrations, can be employed if the aircraft altitude and visibility will permit the pilot to see the signal; however, since in all probability the pilot cannot see the signal, they may serve as a guide to the jumpers upon reaching opening altitude. This system may be used when a reception committee is expected.

6-25. Computed Air Release Point (CARP)

a. In planning for infiltration, the desired impact point of the parachutist is selected based on intelligence data. Once this point is selected, the point in space (CARP) at which the parachutist will exit the aircraft must be computed. Again using intelligence data available, the release point is determined from the cumulative value of the three separate elements which describe the path of the parachutist:

- (1) Forward throw of the aircraft.
- (2) Wind drift of the parachutist in free-fall.
- (3) Wind drift of the parachutist under the canopy.

b. Forward throw for most aircraft which will deliver free-fall parachutists is considered a constant of 275 yards along the line of flight of the aircraft.

c. To determine the wind-drift of the parachutist during free-fall, divide the average velocity of the winds by the distance of free fall in thousands of feet and then multiply this by the constant 3 (there are 3

meters of drift per, knot of wind per 1,000 feet of free fall). This will give the distance of drift in meters. The direction will be the average wind vector.

Section V. RECEPTION COMMITTEES

6-26. General

It is desirable, when not employed in a unilateral role; that the Special Forces detachment be met by an indigenous reception committee. Infiltration without the assistance of the reception committee may be necessary when there is no prior contact with the resistance element in the area and time does not permit the establishment of such contact. Once the detachment is in the operational area and established, reception committees are formed to conduct all future airborne or air-landed operations in operational areas. Reception committees normally are composed of indigenous personnel trained and supervised by members of the Special Forces operational detachment. The functions of a reception committee are to:

- a. Provide security for the reception operation.
- b. Emplace DZ markings and air-ground identification equipment.
- c. Maintain surveillance of the site before and after the reception operations.
- d. Recover incoming personnel and cargo.
- e. Sterilize the site.
- f. Provide for movement from DZ and disposal of equipment.

6-27. Composition and Duties

The reception committee normally may be organized into five parties. Small reception committees may combine the functions of two or more parties, e.g., the command and marking parties may be consolidated.

- a. *Command Party.*
 - (1) Controls and coordinates the actions of all reception committee components.
 - (2) Includes the reception committee leader (RCL); communication personnel, consisting of messengers and a radio operator; and the Special Forces advisor.
 - (3) Provides medical support during personnel drops.
- b. *Marking Party.*
 - (1) Sets up and operates the marking system.

- (2) Lights and extinguishes lights as directed.
- (3) Assists in recovery of personnel and equipment.
- (4) Helps sterilize DZ, by covering all traces of light pattern.

c. *Security Party.*

- (1) Insures that unfriendly elements do not interfere with the operation.
- (2) Consists normally of inner and outer security elements.
 - (a) The inner security element is positioned in the immediate vicinity of the site and is prepared to fight delaying or holding actions.

(b) The outer security element consists of outposts established along approaches to the area. They may prepare ambushes and roadblocks to prevent enemy movement toward the site.

(3) The security party may be supplemented by auxiliary personnel depending on the friendly situation in the operational area. These groups generally are used to maintain surveillance over enemy activities; keep the security party informed of enemy movements; and, when necessary, conduct limited objective attacks or ambushes to divert or prevent enemy movement toward a site.

(4) Provides march security for moves between the reception site and the destination of the cargo or infiltrated personnel.

d. *Recovery Party.*

- (1) Recovers cargo and air-delivery equipment from the DZ.
- (2) For air drop operations, the recovery party should consist of at least two men for each parachutist or cargo container. The recovery party, usually dispersed along the length of the anticipated impact area, spots each parachute as it descends and moves to the landing point.
- (3) Once a bundle is found, one man must stay with it while the second takes the parachute to the recovery collection point and guide, a detail back to carry off the packages. Another technique is to divide the recovery party into two-man teams which have

FM 31-20

been assigned a parachute number coinciding with the sequence of exit from the aircraft. If personnel are available, the recovery party leader stations a separate recovery detail at the far end of the DZ to track and locate bundles if the exit is delayed or disrupted. Recovery party personnel must have a simple signaling means, such as a metal cricket or tone sticks, to preclude shouting or unnecessary movement. When the first bundle, or parachutist, exits from the aircraft, the recovery party leader should station a man directly under the point of exit. This man remains in place until all bundles or parachutists are recovered. He serves as a reference for the point of exit and can subsequently indicate the aircraft's exact line of flight if a bundle is lost and a sweep of the DZ must be made.

e. Transport Party.

(1) Moves items received to distribution points or caches.

(2) Consists of part, or all, of the members comprising the command, marking, and recovery parties.

(3) Uses available means of transportation such as pack animals and wagons.

6-28. DZ Sterilization

a. To insure sterilization, the reception committee:

(1) Must police or obliterate cigarette butts, candy and gum wrappers, equipment, and other

signs of occupancy (crushed undergrowth, heel scuffs, trails, human waste).

(2) Recover all rigging straps and other air delivery equipment.

(3) Assign an individual at the recovery collection point to be responsible for accounting for air items and packages as recovery teams bring them off the DZ.

(4) Provide a two- or three-man surveillance team, preferably from the supporting auxiliary element to maintain a close watch on the DZ area for enemy activity during the 48 hours following the drop.

b. To assist in sterilization, the individual parachutist

(1) Recovers all parachute items, straps, bundles, and equipment, which he wore on the drop.

(2) Buries unwanted air items separately, preferably at the base of thick bushes.

(3) Erases drag marks, footprints, and impact marks. So far as possible, he disguises freshly cut tree branch stubs with mud.

(4) Avoids trampling or crushing vegetation; bypasses plowed areas and grass fields when moving off the DZ.

(5) Prevents accidental compromise of the operation by avoiding paths and roads and by moving cross-country to the assembly point.

Section VI. AIR-LANDED OPERATIONS

6-29. General

a. Air-landed operations provide UW forces with a speedy and efficient means of evacuating both personnel and cargo from an operational area; however, such operations are difficult and require highly trained aircrews and reception committees. Normally, in UW operational areas, air landed operations are conducted at night. Air landed operations can be conducted in daylight if conditions permit.

b. An air-landed operation entails an actual landing on a previously selected site, aided by the reception committee leader (RCL) on the ground. As a general rule, the same considerations applicable to DZ selection also apply to LZ selection, with the exception that site size and approach features are far more important factors because landing operation requirements for site selection cannot be set

arbitrarily. Certain specified minimums must be met to assure safe landing and takeoff.

6-30. Selection of Landing Zones

a. Basic Considerations. The basic considerations, relative to the selection of a LZ fall into four categories:

(1) Aircraft limitations.

(2) The mission at hand, i.e., the secure reception or dispatch of personnel or cargo, and importance of mission.

(3) Ease of identification of the LZ from the air.

(4) LZ size and terrain features.

b. Aircraft Limitations. In landing operations, more than anywhere else, limitations of the aircraft are the primary factors in site selection. When performing landings on unprepared terrain, the aircrew places its

safety entirely in the hands of the RCL. Only through thorough familiarization with all basic requirements can the LZ personnel ensure the safety necessary for landing operations. It is incumbent upon the RCL to provide this safety. Common sense and sound judgment cannot be over-emphasized.

c. Selection Requirements. The selection of LZ's and the coordination activities required prior to implementation of an air landing operation closely parallel the procedures used in DZ operations. However, as opposed to a DZ, the physical requirements for an LZ are more exacting, such as site size, ground surface conditions, and approach features. The LZ should not be near a heavily defended area. Low-flying aircraft are extremely vulnerable to light flak and ground fire. Physical security of the LZ area is of paramount importance in that enemy observation during the operation could result in the capture of the aircraft or failure of the mission.

d. Terrain Features.

(1) LZ's should preferably be located in flat or rolling terrain, or, if in mountainous terrain, located on ridges or plateaus.

(2) In mountainous or hilly country, sites selected at higher elevations containing large valleys or level plateaus of sufficient size can be used.

(3) Pockets or small valleys, completely surrounded by hills, are usually unsuitable for landing operations by fixed-wing aircraft.

(4) Although undesirable, sites with only a single approach can be used. It is mandatory when using such sites that:

(a) There is sufficient clearance at both ends of the LZ to permit a 180 ° turn to either side within a radius of 2 nautical miles for medium aircraft and 1 nautical mile for light aircraft (fig 6-2 and 6-3).

(b) All landings and takeoffs are made into the wind.

e. Weather. Prevailing weather in the landing area should be favorable. In particular, there must be a prior determination of prevailing wind direction and velocities and of conditions restricting visibility such as ground fog, haze, or low hanging cloud formations.

f. Size. The required size of LZ's varies according to type of aircraft used. Safe operations require the following dimensions

(1) Medium aircraft (fig 6-16) (C-130, and C-47): 2,500 feet in length and 80 feet in width for

night operations; minimum for day operations is 60 feet.

(2) Light aircraft (fig 6-17) (U6, Beaver) 1,000 feet in length and 75 feet in width for night operations; minimum width for day operations is 50 feet.

(3) Special light aircraft (fig 6-18) (U10) 800 feet at sea level elevation, 75 feet in width for night operations, and 50 feet for day operations.

(4) In addition to the basic dimensions, and to provide a safety factor, extra clearances are required as shown below

(a) A cleared surface or safe area of 10 percent of the minimum required length is added to each end of the runway.

(b) A 25-foot area, extending along both sides of the strip and free of obstacles over 3 feet high.

(c) Owing to decreased air density (DA), landings at higher elevations require increased LZ dimensions. If the LZ is located in terrain above 4,000 feet or areas with a very high temperature, the minimum length must be increased, as follows

1. Add 10 percent to minimum, for each 1,000 feet of altitude above 4,000 feet or fraction thereof.

2. Add 10 percent to minimums for temperature between 90-100° F (30° C and 38° C). Add 20 percent for temperatures 100° F (38° C) and over.

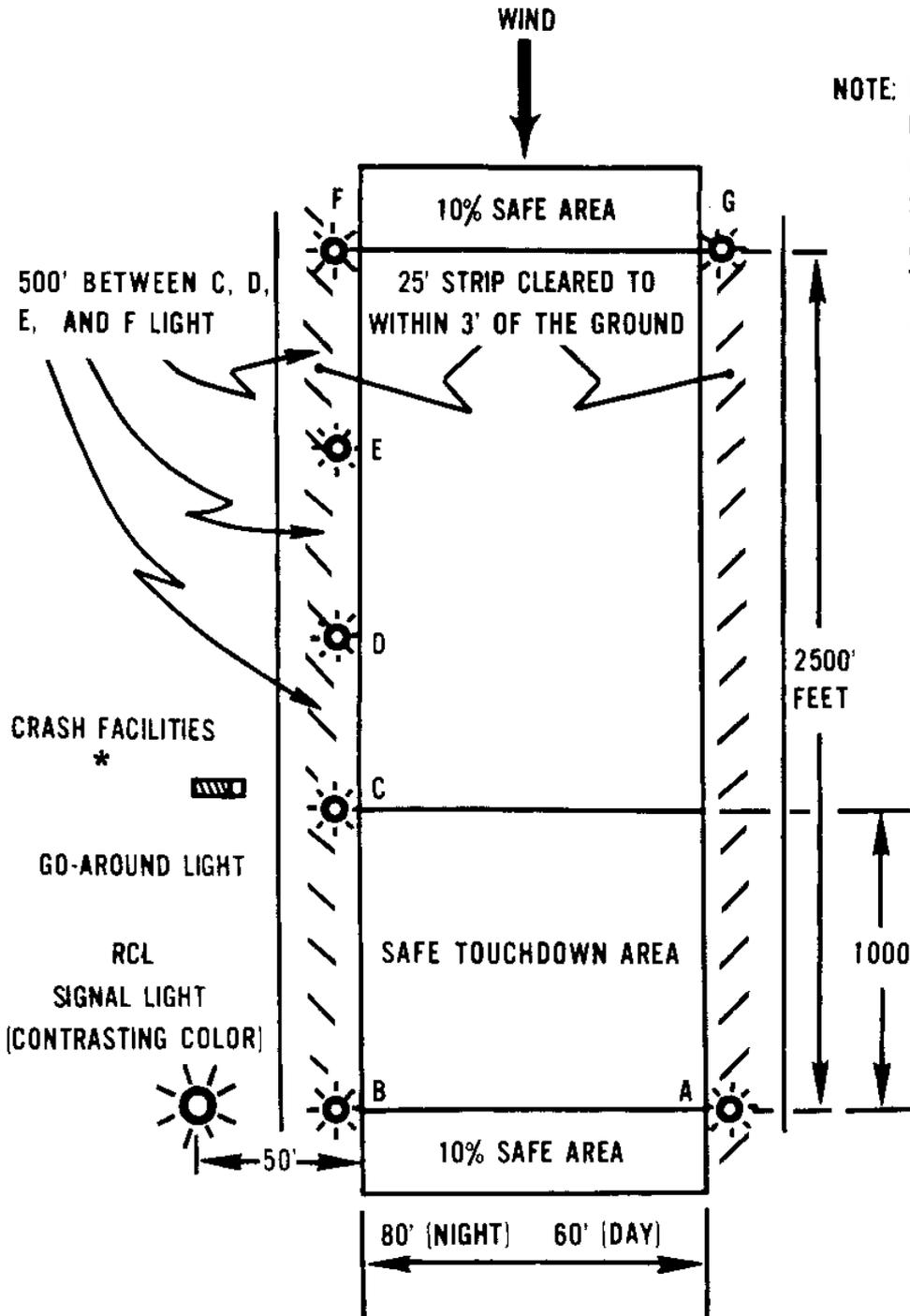
(5) It is important to remember that the 10percent safe area is added to each end of the runway as explained in (4) (a;) above after the altitude and temperature increase has been added. An example for the U10 aircraft; follows

(a) Runway length required is 800 feet. Altitude is 6,000 feet, and the temperature is 95° F.

(b) Ten percent for each 1,000 feet above 4,000 feet equals: 20 percent added to 800 feet equals: $800 \times .20 = 160$ feet == new minimum of 960 feet.

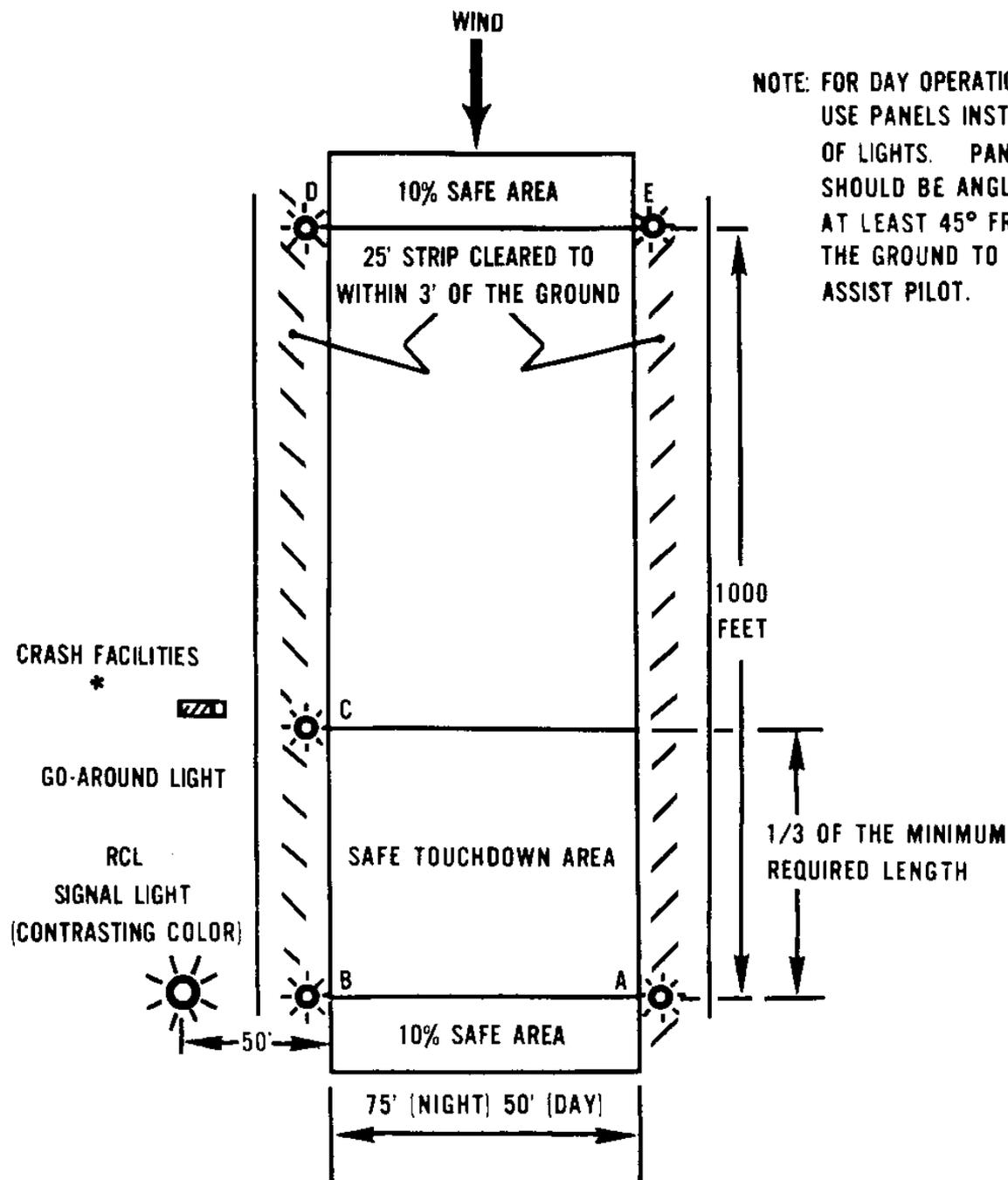
(c) Ten percent for temperatures between 90 - 100° F added to the new minimum length equals: 10 percent added to 960 feet equals: $960 \times .10 = 96$ feet = new minimum of 1,056 feet.

(d) Ten percent safety factor added to each end of the new minimum equals: $1,056 \text{ feet} \times .10 = 105.6$ (rounded off to 106 feet) = $1,056 - 106 + 106 =$ a total of 1,268 feet required for the runway.



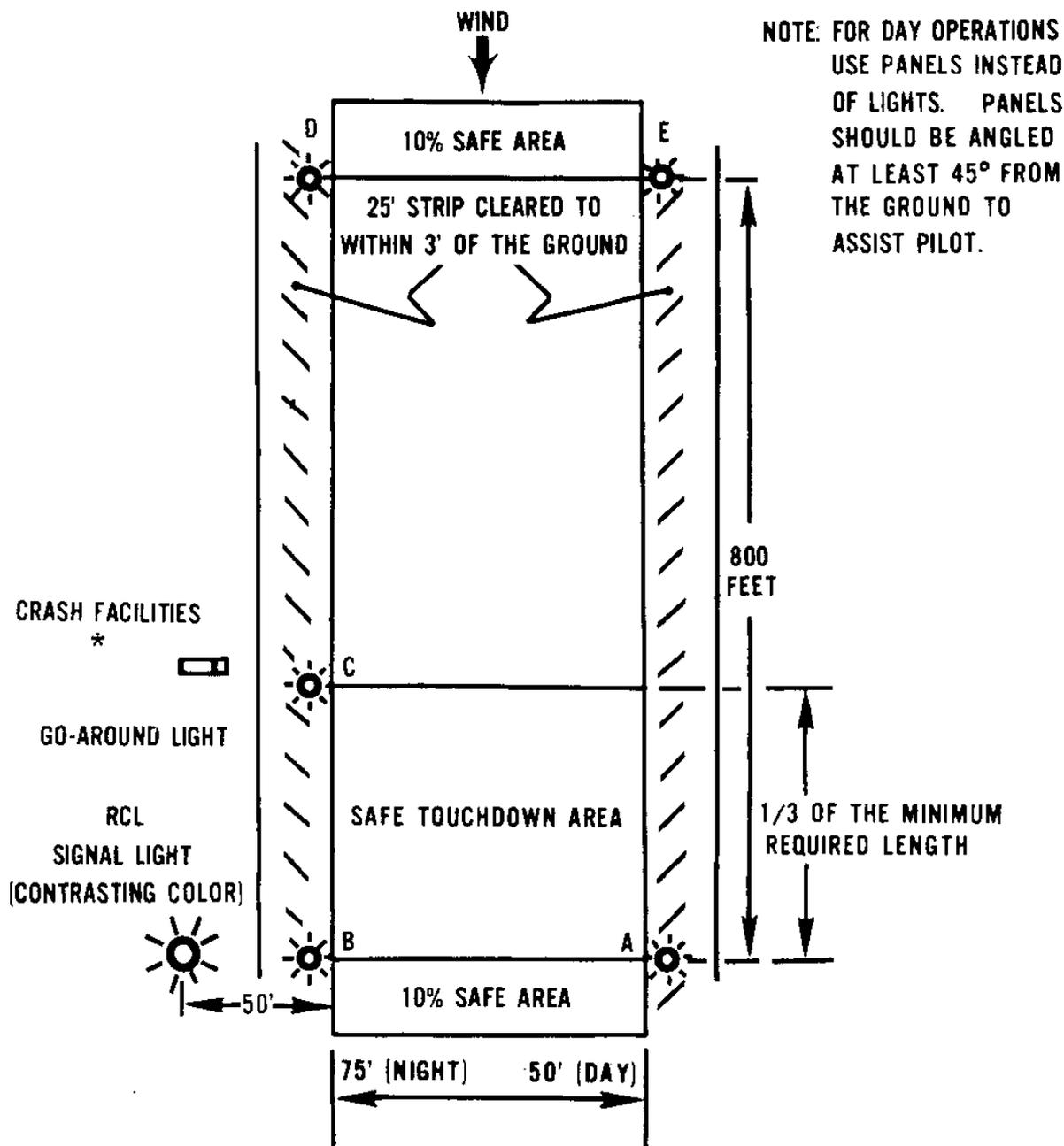
* WHEN AVAILABLE

Figure 6-16. Landing zone (land) medium aircraft (night operations).



1. 1000 FEET - MINIMUM REQUIRED LENGTH FROM SEA LEVEL UP TO 4000 FEET ALTITUDE.
2. MINIMUM REQUIRED LENGTH WILL INCREASE DEPENDING ON TEMPERATURE-ALTITUDE ABOVE SEA LEVEL.

Figure 6-17. Landing zone (land) light aircraft (night operations).



WHEN AVAILABLE

1. 800 FEET - MINIMUM REQUIRED LENGTH FROM SEA LEVEL UP TO 4000 FEET ALTITUDE.
2. MINIMUM REQUIRED LENGTH WILL INCREASE DEPENDING ON TEMPERATURE-ALTITUDE ABOVE SEA LEVEL.

Figure 6-18. Landing zone (land) U10 aircraft (night operations).

g. Surface.

(1) The surface of the LZ must be level and free of obstructions such as ditches, deep ruts, logs, fences, hedges, rocks larger than a man's fist, low shrubbery, or grass over 1 foot in height.

(2) The subsoil must be firm to a depth of 2 feet.

(3) A surface containing gravel and small stones, or thin layers of loose sand over a firm layer of subsoil is acceptable. However, if a JATO-assisted takeoff is made, such surface is not suitable. Plowed fields or fields containing crops should not be used.

(4) LZ's that are not suitable in summer may be ideal in winter. Ice with a thickness of 8 inches will support a light aircraft. Ice 24 inches thick will support medium aircraft. Unless the aircraft is equipped for snowlanding, snow in excess of 4 inches must be packed or removed from the strip.

(5) The surface gradient of the LZ should not exceed 2 percent (applicable to both length and width).

h. Wind. Ground crosswind velocities are an important consideration and must not exceed the maximums as shown below:

CROSSWIND LIMIT TABLE
(LAND LZ ONLY)

<i>Type of Aircraft</i>	<i>Maximum Crosswind</i>
C-130 (Hercules)	21 knots
C-119 (Boxcar)	18 knots
C-123 (Provider)	10 knots
C-47 (Gooney Bird)	16 knots
C-46 (Commando)	18 knots
HU-16 (Albatross)	15 knots
C-7 (Caribou)	18 knots
U-10 (Special Light)	Day: 20 knots; night: 10 knots
U-6 (Beaver)	15 knots

i. Approach and Takeoff Clearance. The approach and takeoff clearances are based on the glide/climb characteristics of the aircraft (fig 6-19). For light aircraft the glide/climb ratio is 1 to 20; that is, 1 foot of gain or loss of altitude for every 20 feet of horizontal distance traveled. The ratio for medium aircraft is 1 to 40 and the U10 ratio is 1 to 10. As a further precaution, any obstruction in approach and departure lanes must conform to the following specifications

(1) A 6-foot obstruction may not be nearer than 120 feet for light aircraft or 240 feet for medium aircraft.

(2) A 50-foot obstruction may not be nearer than 1,000 feet for light aircraft or 2,000 feet for medium aircraft.

(3) A 500-foot obstruction may not be nearer than 2 miles for light aircraft or 4 miles for medium aircraft. There need be no limitations beyond these figure.

(4) The heights of obstacles are computed from the level of the landing strip. Where land falls away from the LZ, objects of considerable height may be ignored provided they do not cut the line of ascent or descent. This condition is most likely to exist in mountainous terrain where plateaus are selected for LZ's.

(5) If the pilot is forced to establish a base leg, it should not be over 1 nautical mile from the strip for light aircraft nor over 3 nautical miles for medium aircraft.

j. Markings and Authentication (Land Fixed Wing). For night operations, lights are employed for marking LZ's; during daylight, panels are used. When flashlights are used as the light source, they should be hand-held, to ensure directional control, and aimed at the landing gear to prevent blinding the pilot.

(1) The pattern outlining the limits of the strip consists of five (for light aircraft) or seven (for medium aircraft) marker stations (fig 6-16, 6-17, 6-18). Stations "A" and "B" mark the downwind end of the strip and are positioned to provide for the safety factors previously mentioned. These stations represent the point at which the aircraft should touch the ground. Station "C" indicates the last point; at which the aircraft should touchdown to complete a safe landing.

(2) A signal station manned by the RCL is located 50 feet to the left of light station "B" at the approach, or downwind, end of the strip. For night operations the signal light should be of a contrasting color to the lighter used on the LZ if a positive means is required to distinguish the signal from surrounding lights. During daylight operations a distinctive panel configuration located approximately 50 feet to the left of station "B" (RCL) is used for recognition.

6-31. Conduct of Operations

a. General. The LZ markings are normally displayed 2 minutes prior to the arrival time indicated in the mission confirmation message. The markings remain displayed for a period of 4 minutes or until the aircraft completes touchdown and landing roll (fig 6-20).

b. Authentication. Authentication is accomplished by the:

FM 31-20

(1) Aircraft arriving at the proper time and on a predetermined track.

(2) Reception committee leader flashing or displaying the proper code signal.

c. *Landing Direction.* Landing direction is indicated by the row of LZ markers which are always on the left of the landing aircraft (fig 6-16, 6-

17, and 6-18).

d. *Approach.* The pilot usually attempts to land straight-in on initial approach. When this is not possible, due to change of wind direction, a modified landing pattern is flown using a minimum altitude for security reasons. Two minutes before target time, the

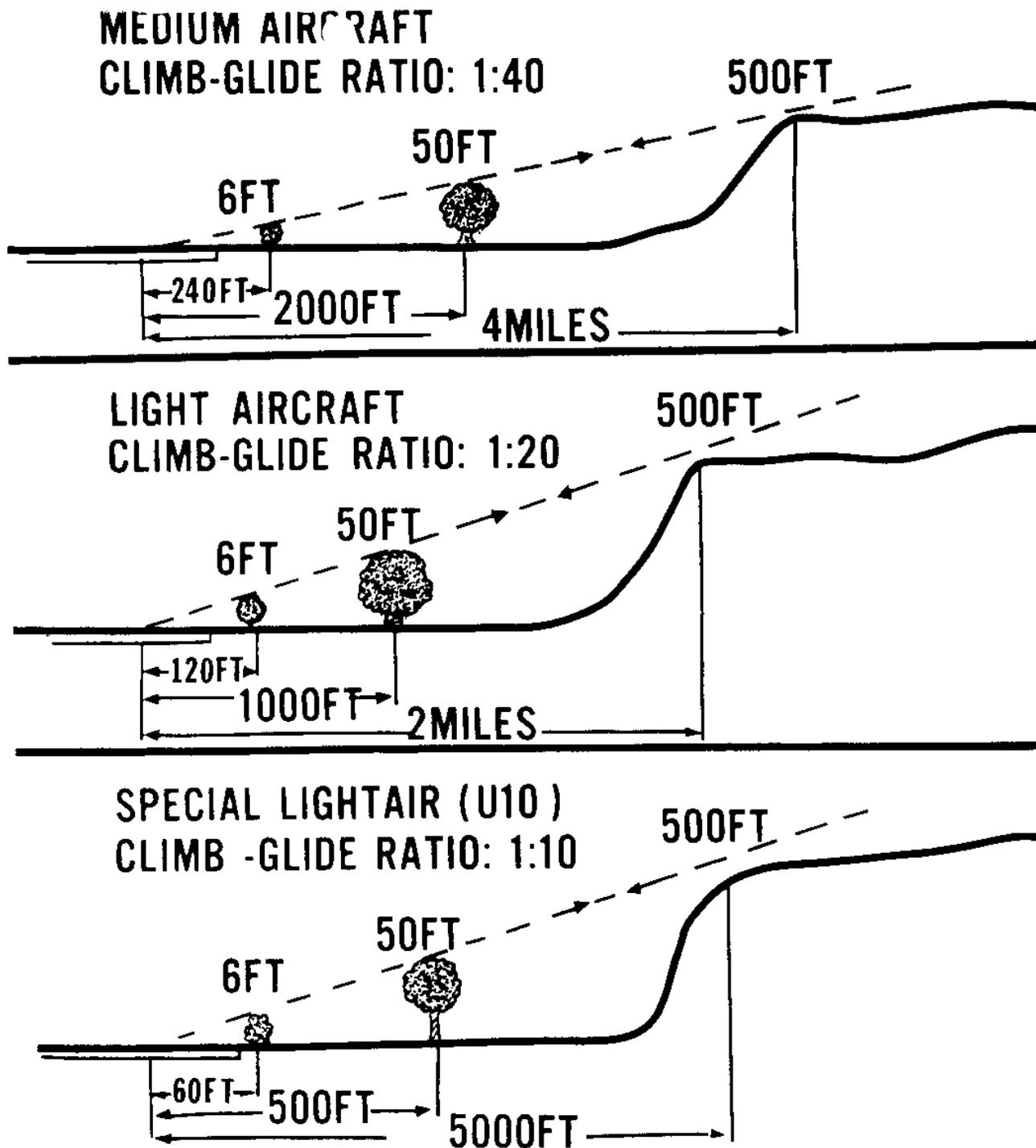
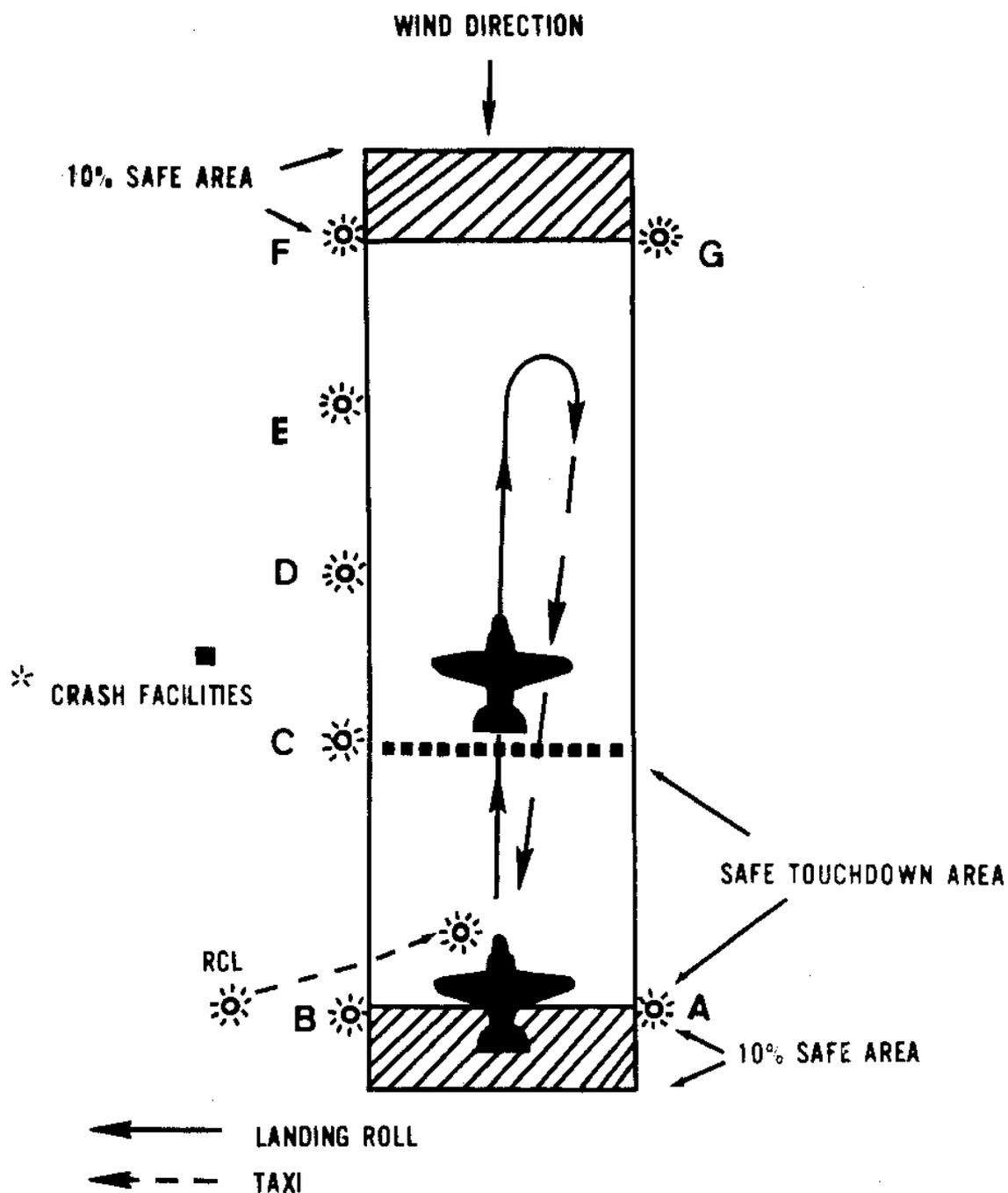


Figure 6-19. Takeoff/approach clearances (fixed-wing aircraft).



NOTE: ACFT ON LZ MAKES RIGHT TURN ONLY.

* WHEN AVAILABLE.

OTHER LIGHTS EXTINGUISHED RCL LIGHT MOVES FORWARD TO GUIDE AIRCRAFT TO TURN AROUND POINT.

Figure 6-20. Landing procedures—land LZ.

FM 31-20

RCL causes all lights on the LZ pattern to be turned on. When directional lights, i.e., flashlights, are used they should be aimed like a pistol, in the direction of expected aircraft approach. The RCL flashes the coded identification signal in this direction. Upon arrival of the aircraft in the area (within 15 degrees to either side of the approach track and below 1,000 feet and when the RCL determines the aircraft is on its final approach, he will cease flashing the coded identification signal and aim a solid light in the direction of the landing aircraft. The solid light provides a more positive pattern and perspective for the pilot during landing. If a "go-around" is required, all lights follow the aircraft until it is safely landed.

e. Touchdown. All lights continue to follow the aircraft during touchdown and remain on until it passes each light station. The aircraft will touchdown, complete a landing roll, execute a right turn, and taxi back in the direction of the RCL light (fig 6-20). After the aircraft passes the RCL position and lands, the RCL signal light and stations "B" and "A" shine a solid light in the direction of the aircraft. These lights guide the pilot who will taxi the aircraft back to takeoff position. After off-loading or on-loading is complete and the aircraft is ready for takeoff, the RCL moves to a vantage point clear of the aircraft, signals the LZ lights to be illuminated for takeoff, and signals the pilot to takeoff by flashing his light in the direction of the aircraft. LZ markings are removed as soon as the aircraft is airborne. To eliminate confusion and insure expeditious handling, personnel or materiel to be evacuated are loaded aboard the aircraft after unloading of incoming personnel or materiel. The aircraft engines will remain running during the

entire operation. To insure safety from the propeller while on the ground, oil- or on-loading approach to the aircraft will be from the rear only.

f. Abort Procedures. Landings are not made under the following conditions

(1) Lack of, or improper, identification received from the LZ.

(2) An abort signal given by the RCL, e.g., extinguishing the LZ markings.

(3) Any condition in the aircraft, or in the flight path that, in the opinion of the pilot, makes it unsafe to land.

g. Use of Alternate Landing Zones. Under ideal conditions, to increase the probability of success of an air landing operation, an alternate LZ may be designated for some missions. Separate landing times are established and both LZ's are manned. Personnel or cargo to be exfiltrated normally are stationed at the primary LZ; operational planning should allow for the orderly, secure transfer of personnel or cargo to the alternate LZ should the primary become unsuitable sufficiently in advance of the landing time. No attempt should be made to transfer personnel or cargo to the alternate LZ during the interval between landing times. Incoming personnel or cargo can be received at either the primary or alternate LZ.

h. Dispersion or Withdrawal. As in all covert or clandestine operations, ample plans are made by the RCL for dispersion or withdrawal of equipment and personnel in case of enemy interference. This is carefully coordinated with all elements involved in the mission and, if considered necessary, actual practice withdrawals or dispersions are carried out.

Section VII. LANDING ZONE (WATER)

6-32. Selection Criteria (Water, Fixed-Wing)

a. Site Size. For water LZ operations, special light and light aircraft fall into the same category. The size for the special/light aircraft based on the marking system used is modified as follows:

(1) MEDIUM AIRCRAFT (HU -16 Albatross) (fig 6-21)

	<i>Day or night</i>
Length	4000 feet
Width	1500 feet
Safe Area (each end)	10 % of minimum required length

(2) SPECIAL/LIGHT AIRCRAFT (fig 6-2)

	<i>Day operations</i>	<i>Night operations</i>
	(One Side Marked)	
Length	1500 feet	1500 feet
Width	225 feet	450 feet
Safe area (each end)	10%	10%
	(Minimum required length)	

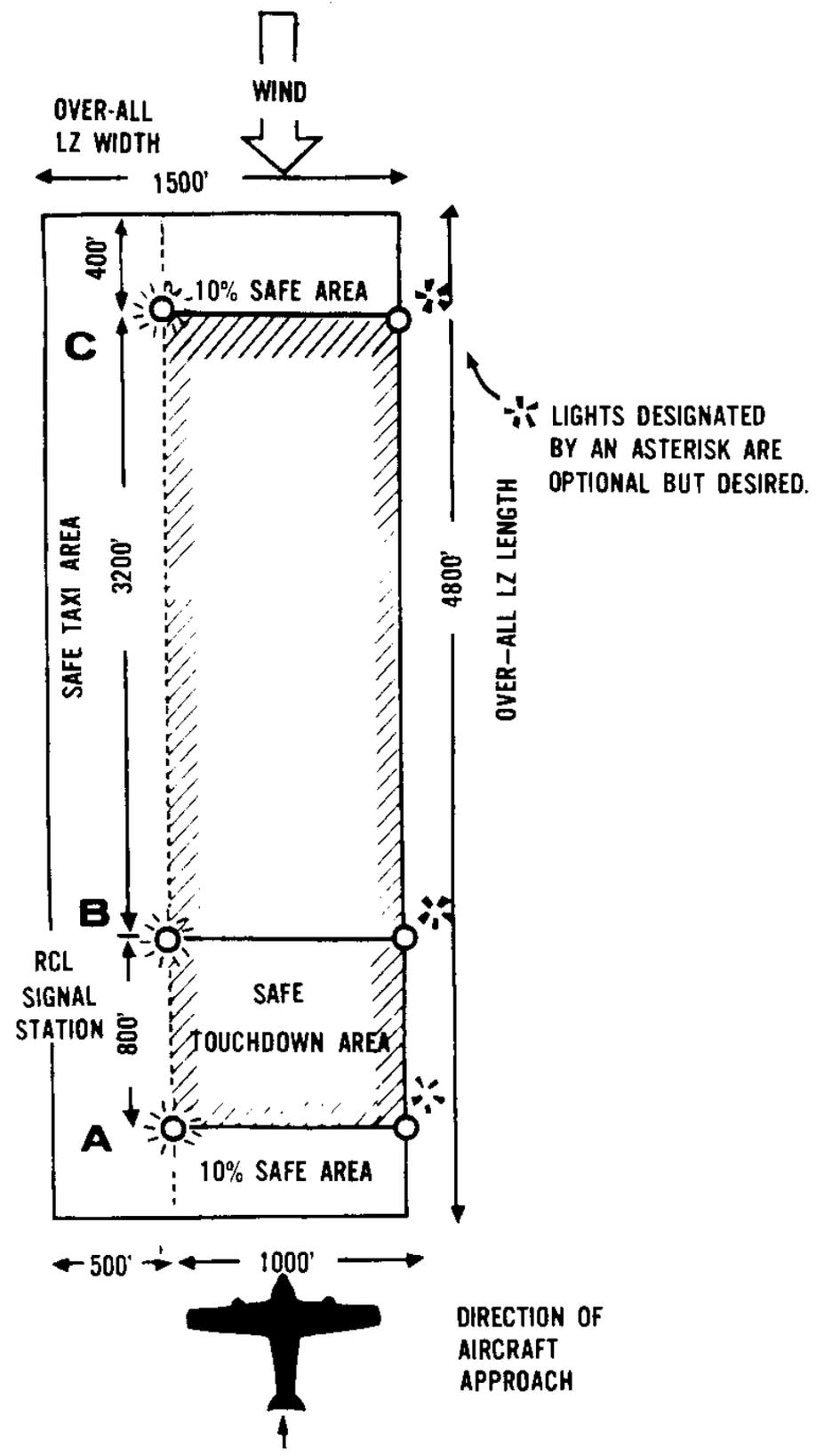


Figure 6-21. Water landing zone, medium aircraft (day or night).

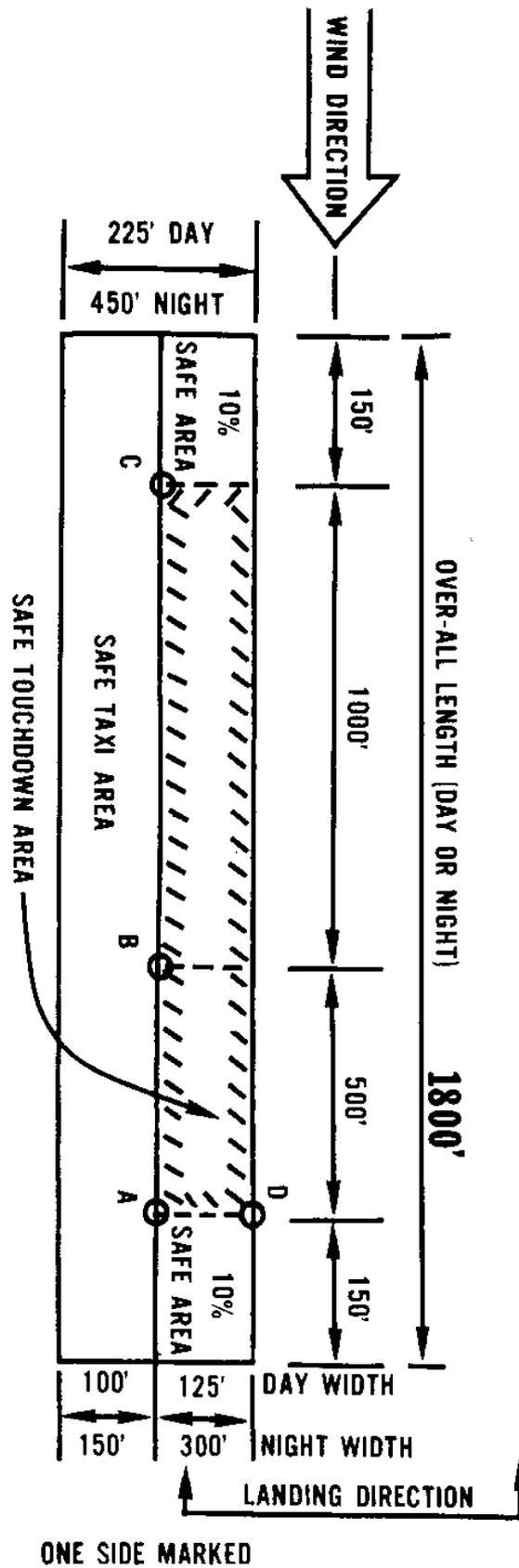


Figure 6-22. Water landing zone markings (light/special light) (one side marked, day and night operations).

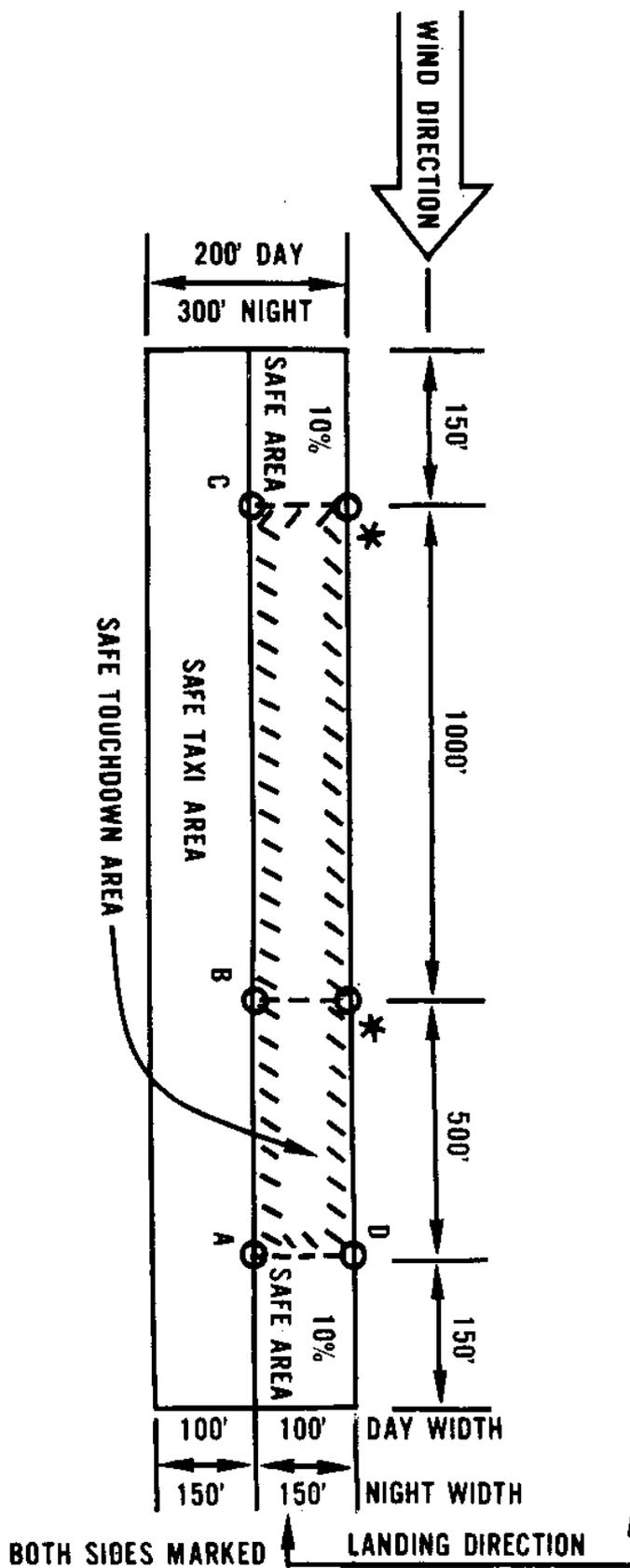


Figure 6-23. Water landing zone markings (light/special light) (both sides marked, day and night operations).

*** MARKINGS ARE OPTIONAL, BUT DESIRED**

FM 31-20

(3) SPECIAL LIGHT AIRCRAFT		
(fig 6-23)	(Both Sides Marked)	
		(Optional)
Length	1500 feet	1500 feet
Width	200 feet	300 feet
Safe area		
(each		
end)	10%	10%
	(Of minimum	
	required length)	

b. *Surface.* Minimum water depth for medium aircraft is 6 feet, and for light aircraft 30 inches. The entire LZ must be free of obstructions such as boulders, rock ledges, shoals, water-logged boats, or sunken pilings within the above minimum depth figures, and the surface must be cleared of all floating objects such as logs, debris, or moored craft.

c. *Wind.*

(1) Wind conditions affect water landings more so than they do air landing operations on land LZ's. There are three primary considerations when determining wind factors:

(a) No landings will be made in winds in excess of 20 knots. Wind conditions that exceed this will affect the surface and windwave swells as discussed below.

(b) On open water, when surface winds exceed 8 knots the aircraft must land into the wind. However, in the event it is impossible for the aircraft to land directly into the wind, the landing may vary up to 15° from the direction of the wind.

(c) Crosswind velocities are broken down into two major subdivisions, semi-sheltered LZ's and sheltered LZ's, with maximum crosswinds shown below

Type of Aircraft	Semi-sheltered LZ	Sheltered LZ
HU-16 (Albatross)	10 knots	20 knots
U-10 (Special Light)	10 knots	10 knots
U-6 (Beaver)	15 knots	15 knots

(2) For medium aircraft, surface swells must not exceed 1 foot in height and the windwaves are not to exceed 3 feet in height when all swells and windwaves are in phase (fig 6-24).

(3) For light aircraft wave heights must be 1 foot or less.

d. *Tide.* The state of the tide should have no bearing on the suitability of the landing area as long as the low tide depth exceeds that required for the mission aircraft.

e. *Water/Air Temperature.* Due to the danger

VELOCITY (KNOTS)	HEIGHT OF SEA (FEET)	SURFACE CONDITIONS
0	0	Smooth slink sea.
2	0	Small occasional ripples.
3-1	1/2	Small ripples all over - no calm areas
5-6		Well defined wave smooth with no breaking.
	1	
7-9	2	Occasional whitecaps.
10-11	3	Pronounced wows, frequent whitecaps which cent' a short distance.
12-13	4	Whitecaps close together carrying over o distance equal to wave height; slight traces of wind streaks.
11-16	5	Clearly defined wind streaks whose lengths are becoming equal to about ten (10) wave lengths; light flurry patches.
17-19	7-8	Long well-defined streaks, coming from same direction as wind; many whitecaps.
20-27	9-10	Streaks ate long and straight white; caps on every crest; wind picks up end carries mist along; large wows.

Figure 6-2k. Wind and sea prediction table.

of icing, water and air temperatures must conform to the following minimums:

	Water Temperature	Air Temperature
Salt water-----	f-18°F (-8°C)	+26°F (-3°C)
Fresh water -----	f-35°F (-) .2°C)	+35°F (+2°C)
Brackish water-----	f-30°F (-1°C)	-X35°F (+2°C)

f. *Approach and Takeoff Clearances.* Water LZ's require approach/takeoff clearances identical to those of land LZ's and are based on the same glide/climb ratios (fig 6-20).

g. *Marking and Authentication (Water, Fixed-Wing).*

(1) As with land LZ's, lights or panels may be used to mark water LZ's.

(2) The required minimum method of marking water LZ's is to align three marker stations along the left edge of the landing area (see fig 6-21, 6-22, and 6-23). Usually, to maintain position, two people are necessary in each watercraft, as one will be signaling while the other attempts to maintain position in the line of lights. Station "A" is positioned at the downwind end of the strip and indicates the desired touchdown point. Station "B" marks the last point at which the aircraft can touchdown and complete a safe landing. Station "B" is also the location of the RCL and the pickup point. The identification code signal is transmitted from

station "B" but with a different light than that used to mark the runway. Station "C" marks the upwind extreme of the landing strip. Generally, it is best to completely outline the desired landing area (fig 6-21 and 6-22). However, the ground party is required to get this information concerning the water LZ markings to the SFOB, or it should be understood prior to infiltration.

(3) An alternate method is to use a single marker station, marked at night with a steady light in addition to the signal or recognition light (fig 6-25). This station is located to allow a clear approach and takeoff in any direction. The pilot is responsible for selecting the landing track and may touch down on any track 1,000 feet from the marker station.

Following pickup, the aircraft taxis to the 2,000-foot circle in preparation for takeoff.

h. Conduct of Operations (Water) (fig 6-26).

(1) Before the landing operation, the LZ is carefully cleared of all floating debris. The marker stations are properly aligned and either anchored to prevent drifting or position maintained by use of alignment with shore lights. In deep or rough water, improvised sea anchors may be used.

(2) The procedure for displaying the LZ markings and identification is the same as for operations on land LZ's.

(3) Personnel or materiel to be evacuated are positioned in the RCL boat. Following the landing run,

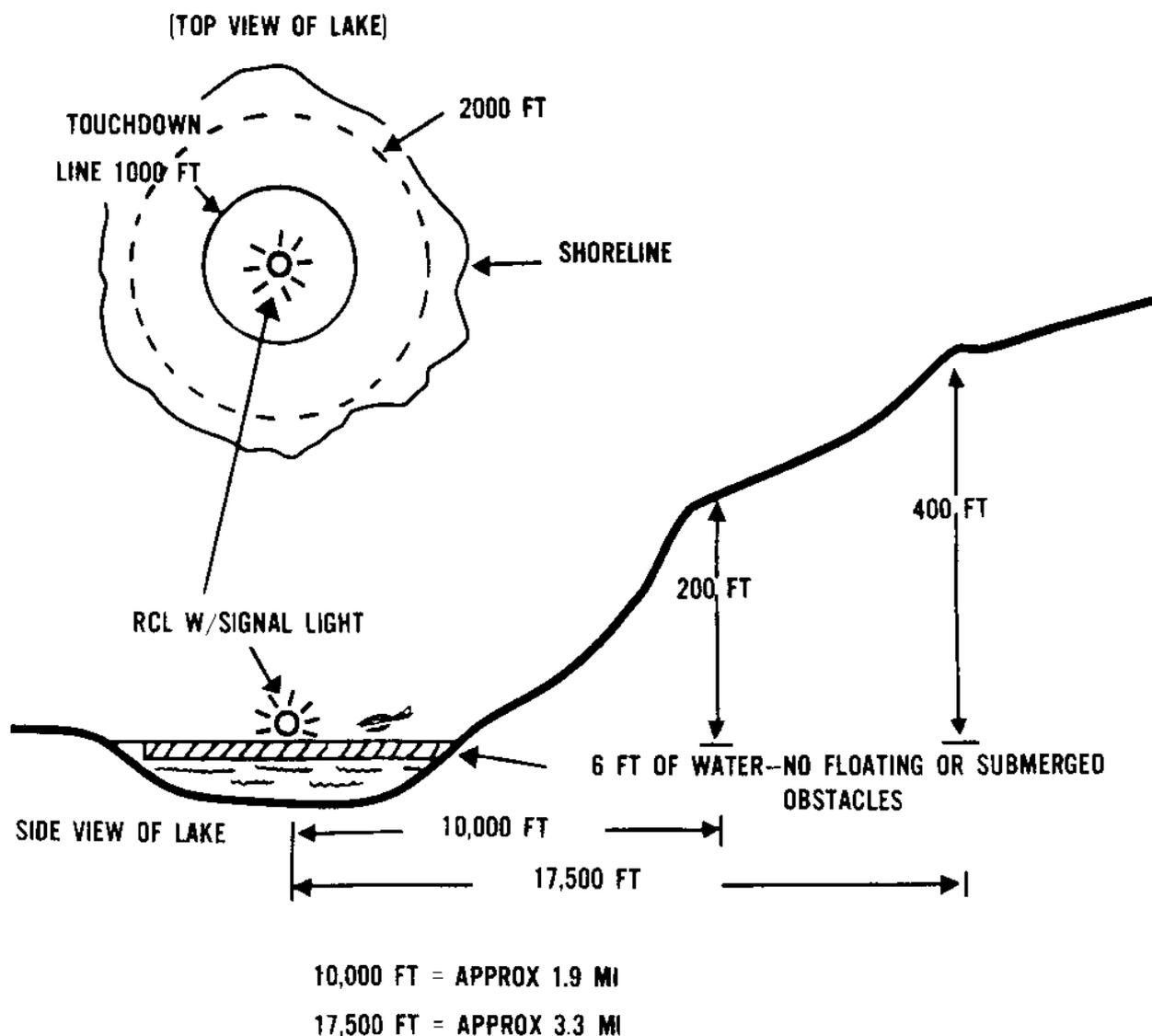


Figure 6-25. One-light water landing zone (night).

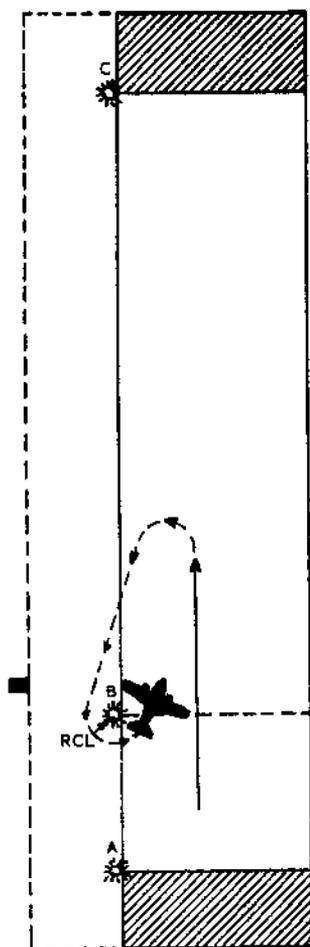


Figure 6-26. Landing procedure (water LZ)
(medium aircraft).

the aircraft turns to the left and taxis back to the vicinity of the RCL boat to make the pickup. The RCL indicates his position by shining his light in the direction of the aircraft until the pickup is completed. Care must be taken not to blind the

aircrew with this light; it should not be aimed directly into the cockpit but at the waterline.

i. Pickup Operations. The RCL boat remains stationary during pickup operations (fig 6-27). The aircraft taxis to within 50 to 100 feet of the RCL boat, playing out a dragline from the left rear door. The dragline is approximately 150 feet in length and has three life jackets or other floatable objects attached (one approximately 51D feet away from the aircraft, a second at midpoint, and a third on the extreme end of the line). The float equipment has small marker lights attached during night operations. The aircraft taxis to the left around the RCL boat, bringing the dragline close enough to be secured. The RCL fastens the line to the boat but does not attempt to pull on the line because of the danger of swamping the boat. Members of the aircrew pull the boat to the door of the aircraft. Should the boat pass the aircraft door and continue toward the front of the aircraft, all personnel in the boat must abandon immediately when passing the trailing edge of the wing to avoid being struck by the propeller. Outgoing personnel/materiel board aircraft first in water operations.

j. Water Pickup. When the U-10 aircraft is used for water pickup, the procedure is modified to accommodate the passenger loading door on the right side (fig 6-28). Following the landing run, the U-10 turns to the left and taxis back to the vicinity of the RCL boat. The aircraft taxis to the right around the boat, allowing the RCL crew to secure the right pontoon.

k. Takeoff. After pickup, the aircrew is given any information that will aid in the takeoff. Following this, the RCL boat moves to a safe distance from the aircraft and signals the pilot "all clear." If necessary, previously installed JATO bottles are used for positive power takeoff.

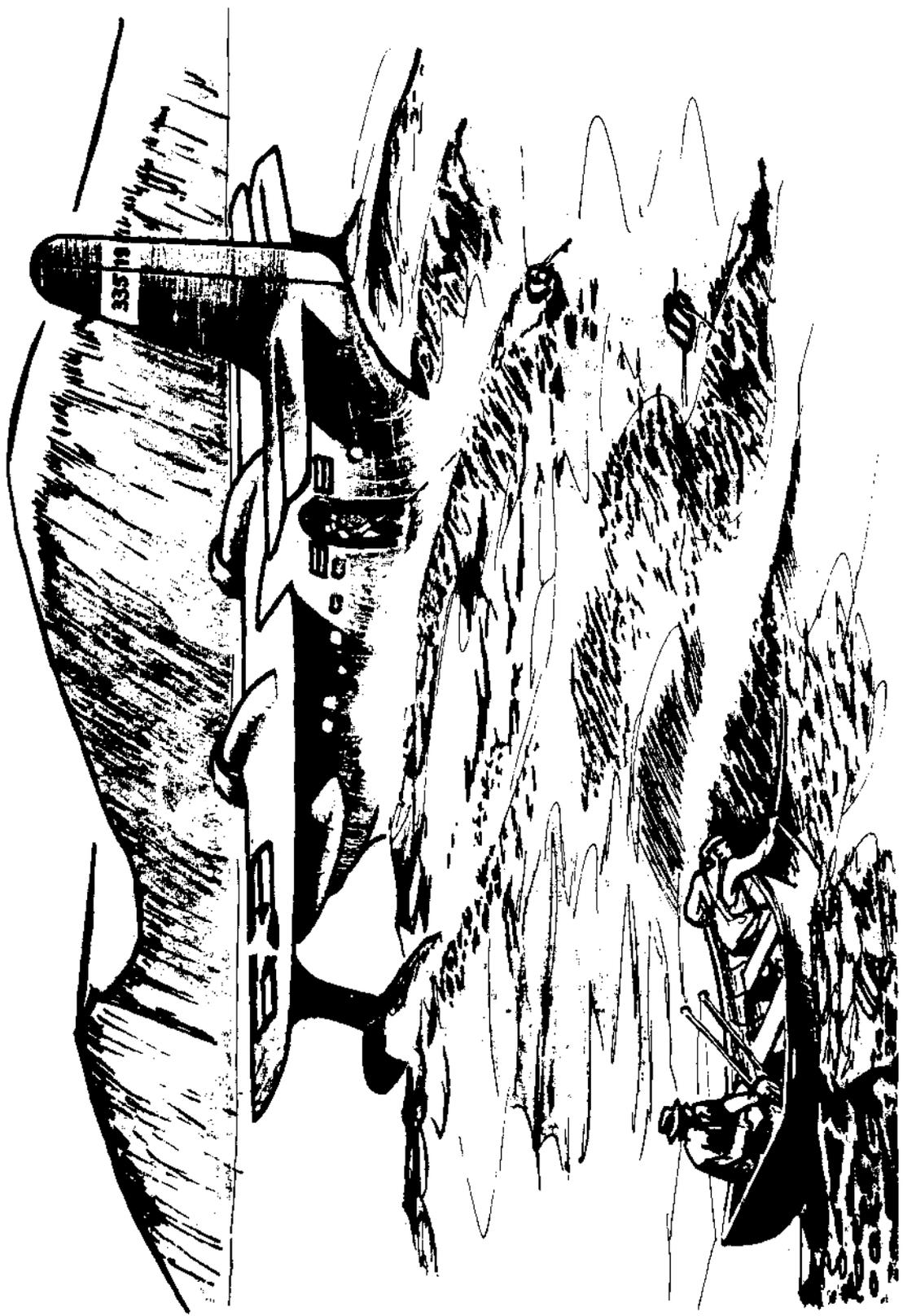


Figure 6-27. Water pickup operations.

FM 31-20

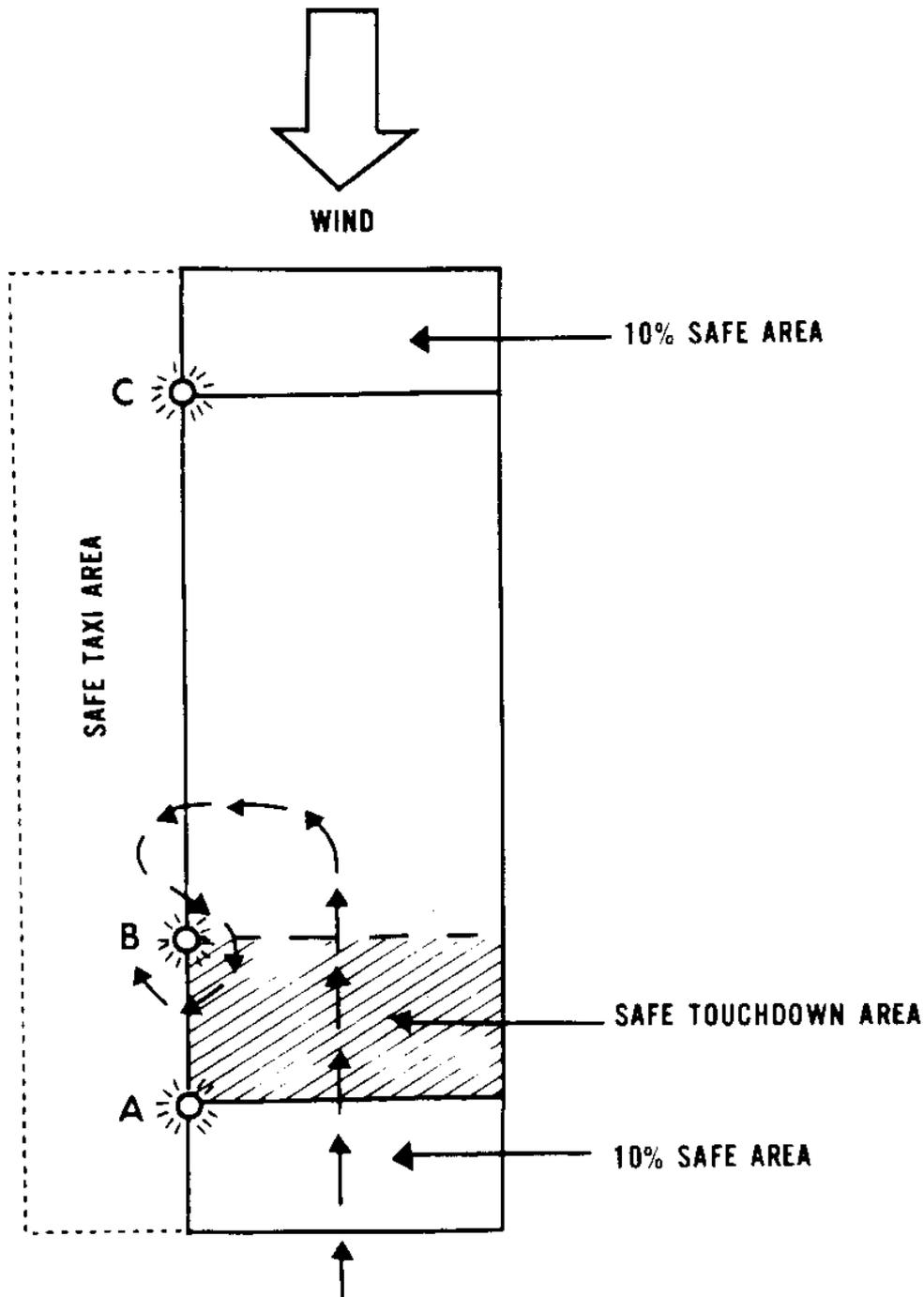


Figure 6-28. Landing procedure (water LZ) special light aircraft.

Section VIII. LANDING ZONES FOR ROTARY-WING AIRCRAFT

6-33. General

a. Within their range limitations, helicopters provide an excellent means of infiltration, exfiltration, and evacuation from operational areas. Their advantages include the ability to-

- (1) Ascend and descend almost vertically.
- (2) Land in relatively small areas of ground.
- (3) Hover nearly motionless and take on or discharge personnel and cargo without landing.
- (4) Fly safely and efficiently at low altitudes.

b. Some unfavorable characteristics of helicopters are:

- (1) Engine and rotor noise compromise security.
- (2) Icing, or high gusty winds, make flying difficult or sometimes impossible.
- (3) Changes in atmospheric conditions affect the aircraft's lift capability.
- (4) Dust clouds caused by the rotor compromise security of location.

c. For the maximum effective use of helicopters, LZ's should be located to allow landings and takeoffs into the wind.

d. During night operations, helicopters usually must land to transfer personnel or cargo.

e. A decrease in normal air density limits the helicopter payload and requires lengthened running distances for landing and takeoff. Air density is largely determined by altitude and temperature. Low altitudes and moderate to low temperatures result in increased air density. Conversely, high altitudes and high temperatures cause decreased air density.

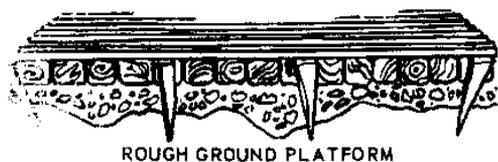
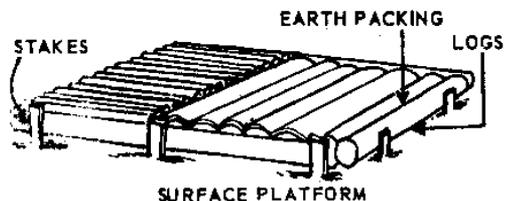


Figure 6-29. Examples of platform LZ's for rotary-wing aircraft.

6-34. Selection Criteria

a. Surface.

(1) The surface should be relatively level and free of obstructions such as rocks, logs, tall grass, ditches, and fences.

(2) The maximum ground slope permitted is 15 percent.

(3) The ground must be firm enough to support the aircraft.

(4) Heavy dust or loose snow will interfere with pilot vision just before touchdown. This effect can be reduced by clearing, wetting down, or using improvised landing mats or platforms.

b. Size.

(1) Under ideal conditions, and provided the necessary clearance for the rotors exists, a helicopter can land on ground slightly larger than the spread of its landing gear.

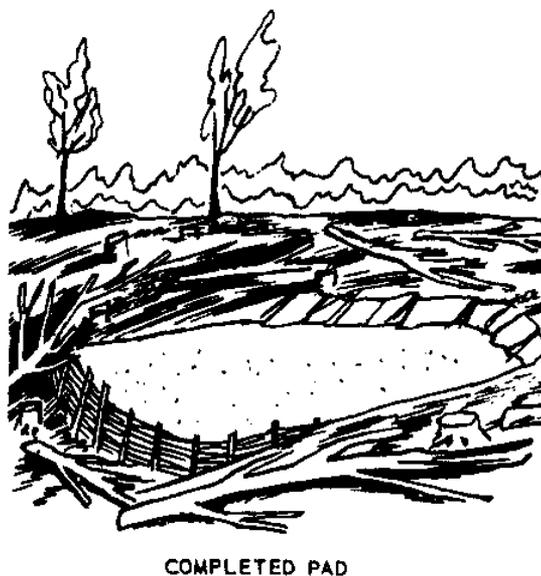
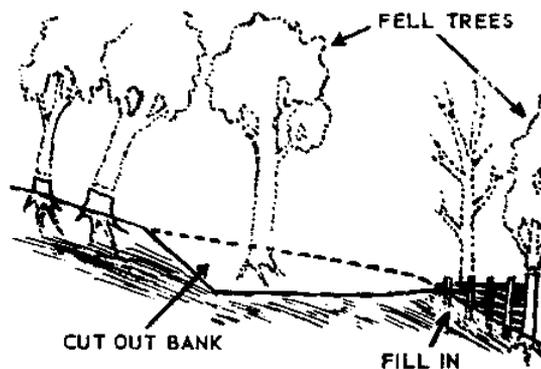


Figure 6-30. Preparing landing pads for rotary-wing aircraft in mountainous terrain.

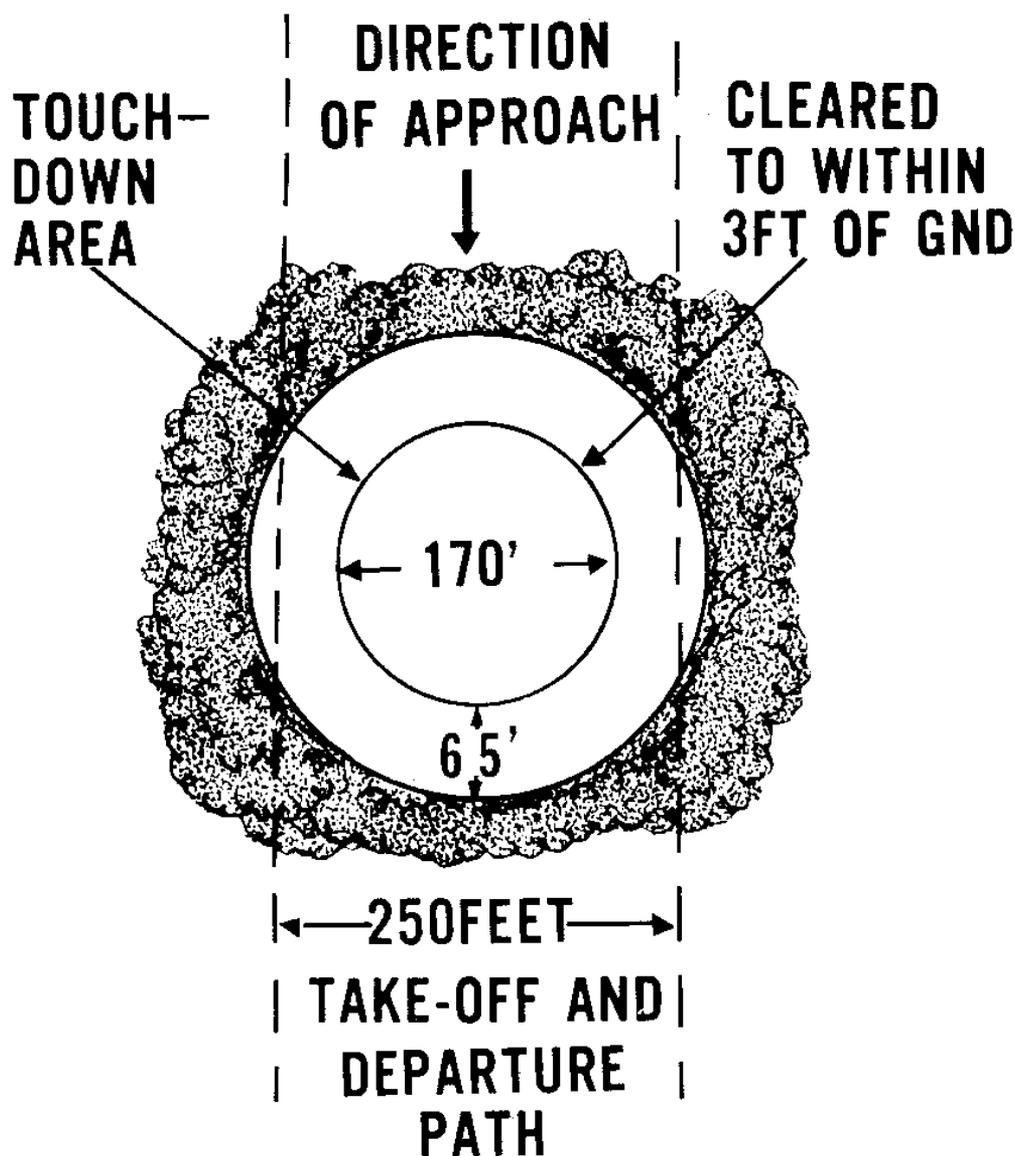


Figure 6-31. Landing zone for rotary-wing aircraft (night operations).

(2) Landing platforms may be prepared in swamp or marsh areas by building platforms of locally available materials (fig 6-29). Such LZ's normally are used for daylight operations only. The size of the clearing, and the approach -and takeoff- requirements for this type of LZ are discussed below with the following additional requirements for the platform:

(a) The area should be large enough to accommodate the spread of the landing gear plus 10 feet.

(b) The surface should be capable of supporting the weight of the aircraft.

(c) The LZ should be of firm construction

that will not move when the helicopter touches down and rolls slightly forward.

(d) The LZ should be level.

(e) If logs or bamboo are used, the LZ should be constructed so that the top layer of poles is at right angles to the touchdown direction.

(3) Landing pads can also be prepared on mountains or hillsides by cutting; and filling (fig 6-30). Caution should be exercised to insure there is adequate clearance for the rotors.

(4) Helicopters with a flotation capability present no problem in landing zone preparation. They are equipped to land in water of any depth. However, helicopters can land in water without the use of special

flotation equipment provided

(a) The water depth does not exceed 12 inches.

(b) A firm bottom such as gravel or sand exists.

(5) Primary consideration should be given to the requirements to support night operations. There are three LZ patterns for which Special Forces detachments must become familiar with the safety factor criteria, size, and landing procedures:

(a) General dimensions (fig 6-31). All LZ's prepared to support night operations should, as a minimum, have the following dimensions

1. An area of 170 feet in diameter cleared to the ground.

2. An area beyond this, surrounding the cleared area, 65 feet wide, and cleared to within 3 feet of the ground.

3. The completed LZ is thus a minimum of 300 feet in diameter.

(b) Approach/takeoff clearances (fig 6-32).

1. There should be at least one path of approach to the LZ measuring 250 feet in width.

2. In considering how long this should extend on takeoff, the detachment uses the climb ratio of 1 to 5 for rotary-wing aircraft.

3. Takeoff and departure from the LZ may be along the same path used for the approach; however, a separate path as free from obstacles as the approach path is desired.

6-35. Marking and Identification

a. LZ's for rotary-wing aircraft are marked to:

(1) Provide authentication of the reception committee.

(2) Indicate direction of wind and required direction of approach.

(3) Delineate the touchdown area.

b. Equipment and techniques for marking are similar to those used with the fixed-wing LZ's lights, flares, and fires at night, and panels in daylight.

6-36. Landing Procedures

a. Pattern One—"Y" System (fig 643). This method uses a five-light marker station. When this method is used, improvised lights such as fires and flares may be used.

(1) The direction of approach is into the open end of the "Y".

(2) When compatible with approach path, wind direction is along the stem of the "Y" toward the open end.

(3) The touchdown area is delineated by the triangle formed by the three lights designated as "C," "D," and "E," marking the open end of the "Y" and which define the outer perimeter of the cleared, or touchdown, area.

(4) Stations "A" and "B" are the signal stations, whose signals may be used for authentication through a contrasting color pattern or blinking pattern. The authentication color code, or designated signal, will be obtained from the SOI.

(5) The RCL is located at light marker station "A," and personnel to be exfiltrated will be with him. This assures all concerned that personnel approaching the helicopter for loading are clear of the rear rotors.

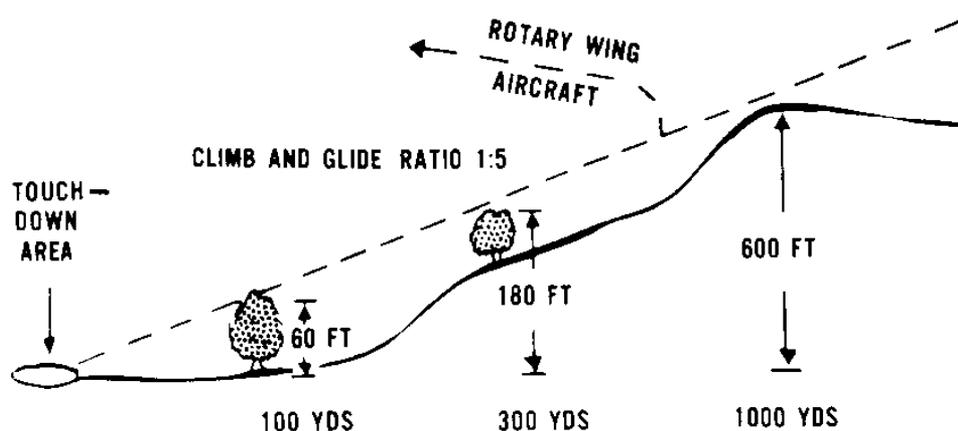


Figure 6-32. Approach/takeoff clearances—rotary-wing aircraft: climb ratio 1:5.

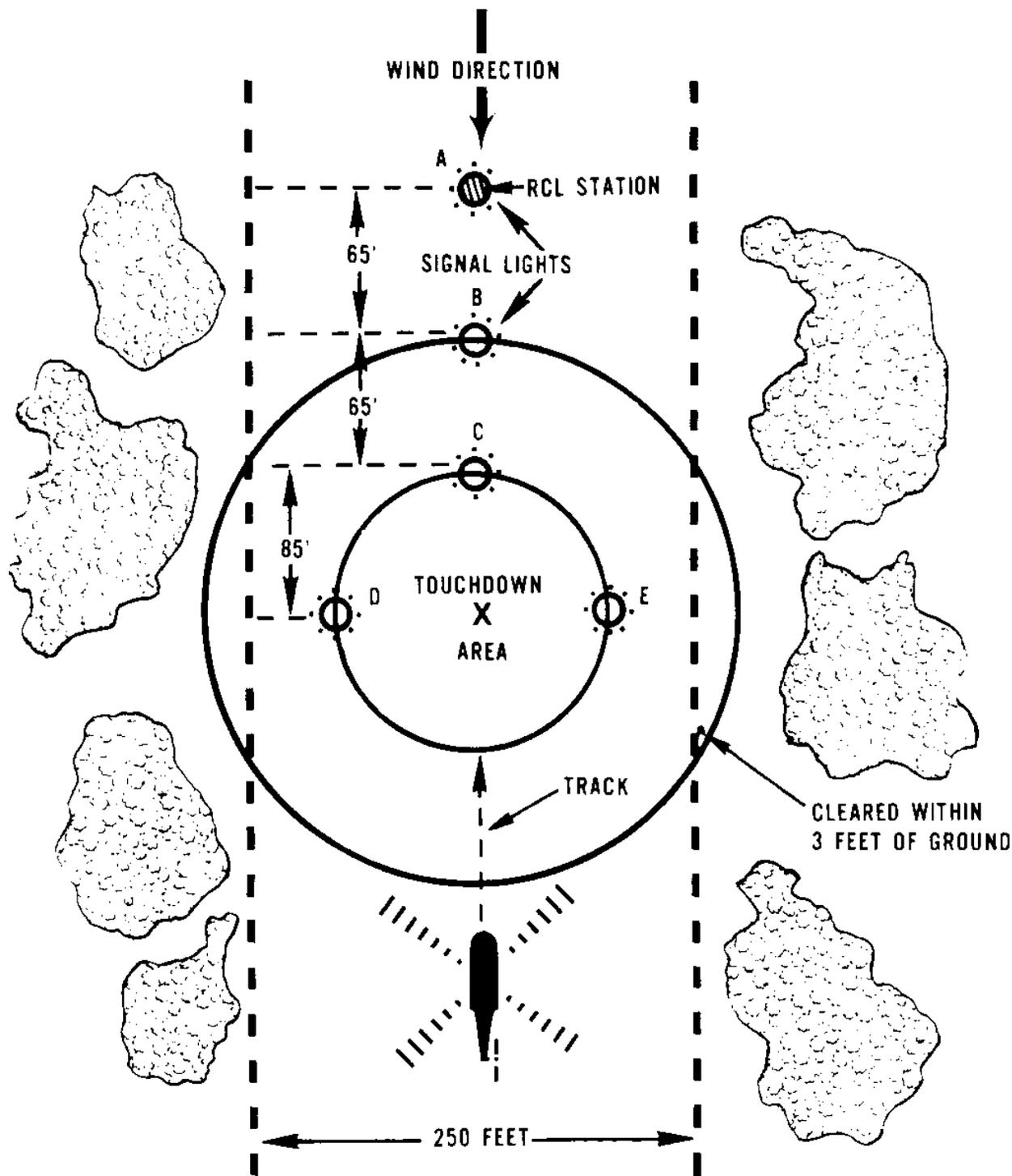


Figure 6-33. Pattern one—"Y" landing zone for rotary-wing aircraft (night operations).

(6) In establishing this light pattern, LZ personnel must give maximum attention to the proper placement of the light pattern. To avoid confusing the pilot, and to insure that the open end of the "Y" is clearly defined the following procedure should be followed

(a) The RCL will determine from which direction the wind is blowing. He will then determine the outer perimeter of the cleared touchdown area in the direction of the wind, and designate this as station "C".

(b) The RCL will then pace off 85 feet (1/2

of the diameter of the cleared area) in the direction from which the aircraft will approach. The point at which he stops is designated the touchdown area.

(c) Using a compass, and facing into the direction from which the aircraft will approach, he will then take a 90 ° reading to the right, and send out a light marker 85 feet. This is designated station "D."

(d) Again facing into the direction from which the aircraft will approach, he then takes a 90° reading to the left and sends out another light marker 85 feet. This is designated station "E."

(e) The RCL still standing on the designated touchdown area, then faces into the wind and on the designated track of the aircraft.

(f) The RCL sends another light marker out 65 feet from station "C" and designates this station "B." This station also designates the outer perimeter of the LZ that may be used. He then sends another light marker out another 65 feet from station "B," and designates this as station "A." From his position he is then able to align station "C," "B," and "A" to ensure that the stem of the "Y" is in line with the inbound heading, or track, of the aircraft.

(7) In landing procedures the RCL flashes the authentication code signal continuously until the aircraft is just ready to hover and land. He then shines a solid light in the direction of the helicopter, not at the pilot, but just below the fuselage, to assist the pilot in maintaining orientation with the ground. The pilot will keep stations "D" and "E" light markers on his immediate left and right which also serves to keep him oriented, prior to setting down. If these lights are placed too far forward on the circle and the pilot passes them, he may have trouble in keeping oriented as to his position in the designated touchdown area.

(8) Immediately after touchdown the RCL moves forward with personnel to be exfiltrated. All lights remain on until the aircraft takes off.

b. Pattern Two—Pool-of-Light System (fig 6-34).

(1) In this pattern, the same size LZ as described above is used.

(2) There are three lights in this pattern, with all of them being aligned on the left of the LZ, on the pilot's side of the aircraft. An optional fourth light may be used to mark the right edge and outer perimeter of the cleared touchdown area. If this light is desired, it may be a stationary light and will not be

aimed in the direction of the pilot. The light may be a flare or fire.

(3) The lights are designated—

(a) Station "A," which serves two functions:

1. It is the RCL location.

2. It is also the sigma, or authentication, light and marks the lower extremities of the designated touchdown area.

(b) Station "B" marks the center and left outer perimeter of the touchdown area. It is also located directly opposite the designated touchdown point.

(c) Station "C" marks the upper extremities of the designated touchdown area.

(4) Using the "B" light marker as the center of the light pattern, the RCL places the "A" and "C" 75 feet to the right and left of the "B" light, forming a straight line, for a total of 150 feet.

(5) The lights used may be the MX 290 Lantern type, or of similar construction, capable of directing a beam a minimum of 150 feet, and forming a pool of light approximately 30 feet in diameter. Three such lights should provide the pilot a pool-of-Fight approximately 60 feet in diameter within his designated touchdown area. Other types of light sources may produce a pattern larger than this, and others may produce a smaller pattern. Marking parties should practice casting their lights until the best results are obtained.

(6) Landing procedures are controlled by the RCL who lights up the LZ, minutes prior to landing time.

(a) All lights are turned on and aimed like a pistol in the direction of the aircraft's approach.

(b) The RCL (station "A") simultaneously flashes a coded authentication signal continuously in the direction of the expected aircraft approach.

(c) When the aircraft is on final approach, the RCL ceases flashing the authentication signal, and then aims a solid light in the direction of the aircraft, following it to its designated touchdown area.

(d) All lights are extinguished when the aircraft completes its touchdown.

(e) To avoid blinding the pilot, the lights will be focused midway on the helicopter fuselage.

(f) The RCL and personnel to be exfiltrated, will, if the aircraft is of the UH-1 series, board the aircraft from the pilot's side. This enables the pilot to determine the number of personnel boarding, and when boarding is complete. If the aircraft is of the

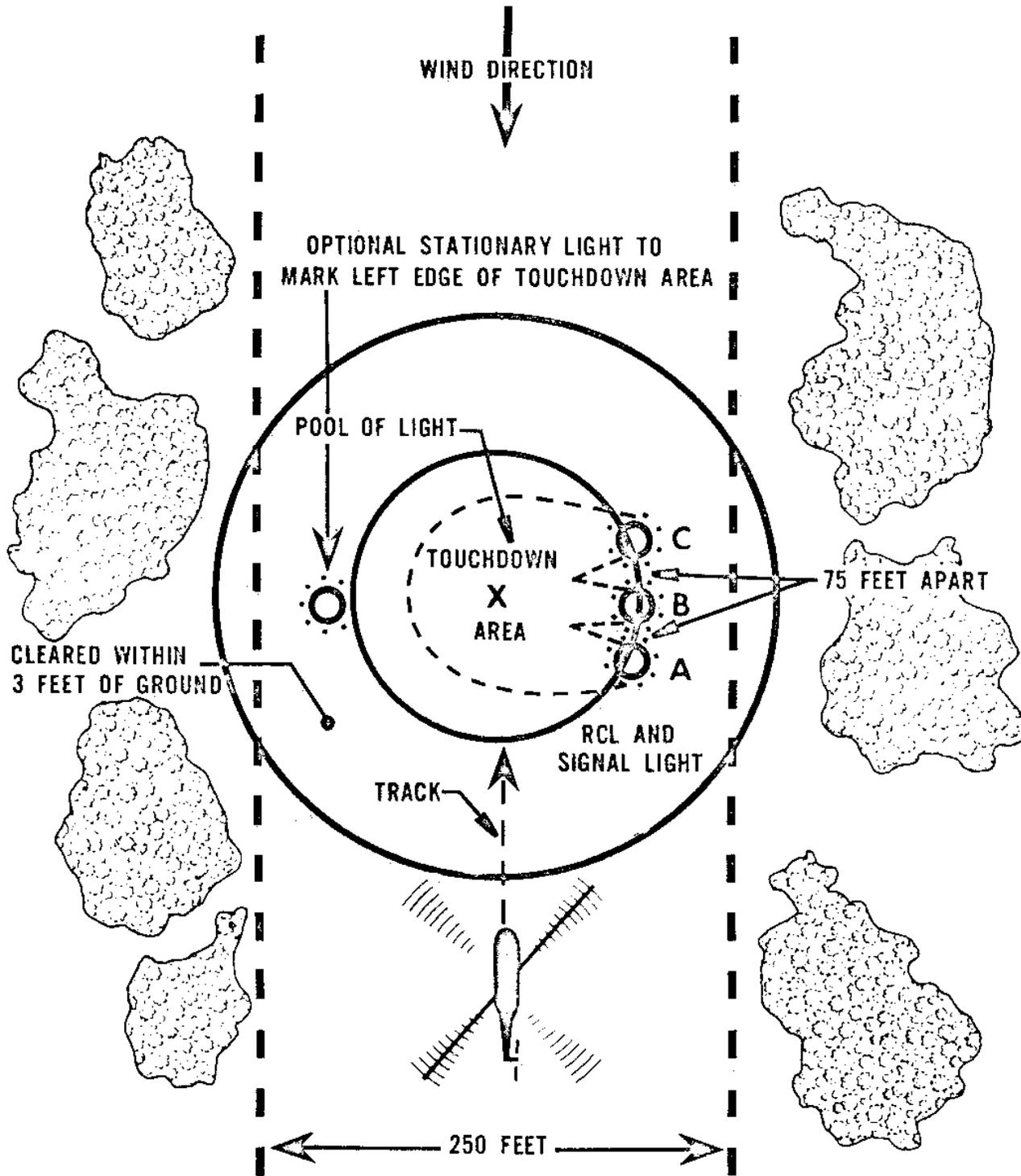


Figure 6-34. Pattern two—pool-of-light landing zone for rotary-wing aircraft (night operations).

configuration where the door is on the right side, personnel will move around the front of the aircraft to board. The RCL will remain in front of the aircraft where he can observe both the pilot and the personnel boarding.

(g) When the personnel are aboard, the RCL will give the signal to the pilot for takeoff. All lights are turned on to form the pool-of-light in order to orient the pilot as to the proper heading for takeoff.

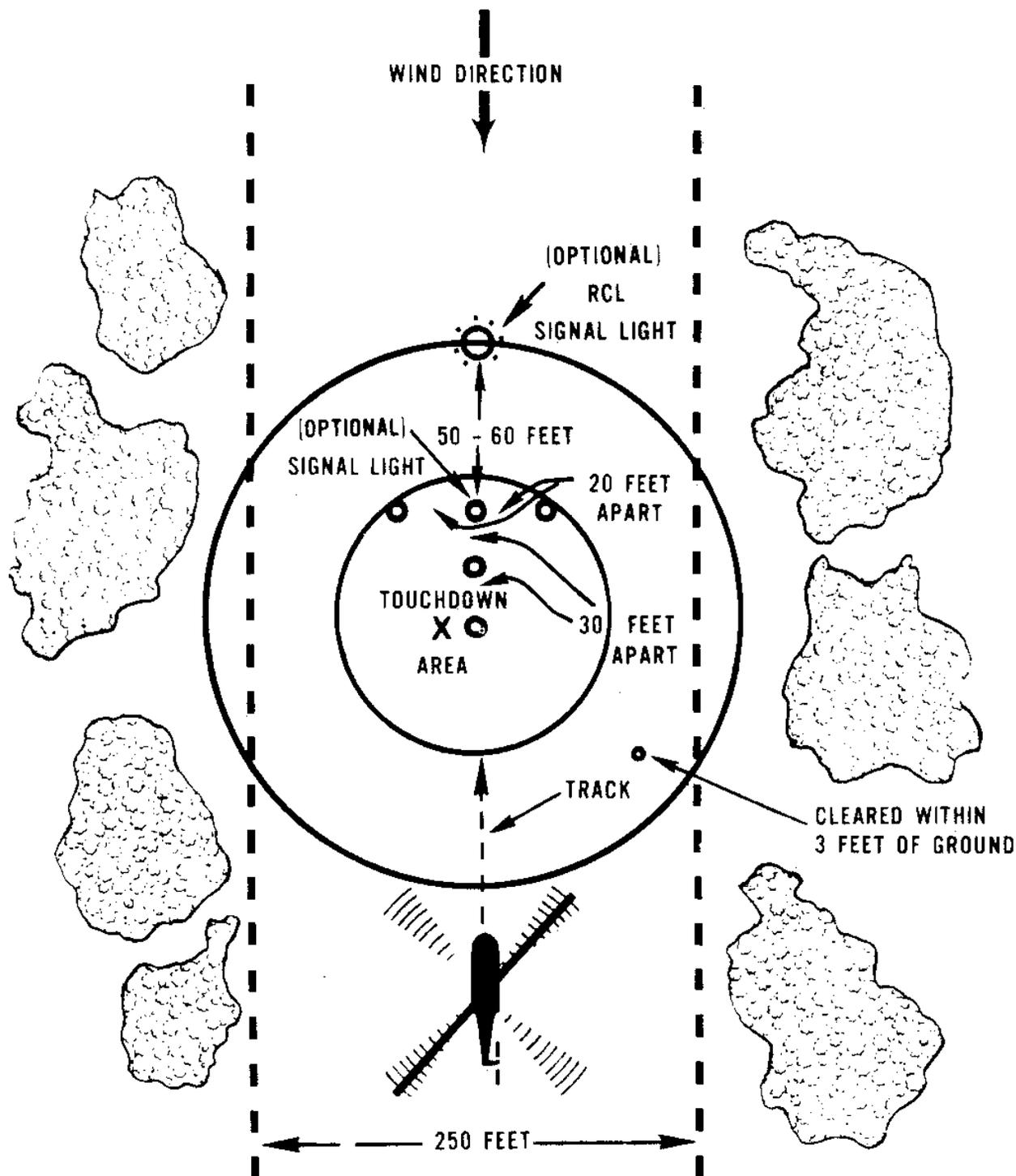


Figure 6-35. Landing zone—rotary-wing (night operations) pattern three—"T" system.

Pattern Three—"T" System (fig 6-35). When flashlights, lanterns, or other battery-powered light sources to include the ML 608 Weather Data Lighting Unit (PIBAL), and strobe lights are in plentiful supply, LZ personnel may mark a rotary-

wing LZ using the "1" system. This method uses five light markers, with an optional sixth light if deemed necessary. This system may be preferred to the other two, especially when rotary-wing aircraft support comes from conventional force units unfamiliar with

FM 31-20

Special Forces air operations and their normal system of LZ marking.

(7) The inbound heading or track of the aircraft is up the stem of the "T" pattern.

(8) The wind direction, as near as possible, is down the stem of the "T."

(9) All lights should be secured to the ground to prevent them from being blown over or knocked down.

(10) The lights, if lantern type, may be unidirectional (360°), or beamed in the direction from which the helicopter approaches. An improvised, wide-angle shield may be taped on to the light source to assist in establishing a directional beam. Lights on the stem are 30 feet apart, and lights on the crossbar are 20 feet apart (fig 6-35).

(11) The touchdown area for the aircraft is that area immediately to the left of the first light at the base of the stem of the "T" in the center of the cleared area.

(12) There are two methods in which the signal may be displayed

(a) The signal light is used for authentication. Normal procedure calls for this light to be at the top of the stem of the "T." The signal light at the top of the "T" may be a strobe light, with its intermittent blink, and may be color coded by placing colored tape or other device over the light.

(b) Since these lights are all stationary and fastened to the ground, it may be impossible to establish a coded signal. An optional method may be to place the signal light and RCL station 50 to 60 feet above the crossbar of the "T." The system used will be dependent on the type of lights available for signaling.

(13) The lights remain on during the landing and touchdown, and the RCL controls the activities on the ground as with the other two landing patterns. The lights are removed immediately after takeoff.

6-37. Reporting Landing Zones

a. Reporting of LZ's for fixed-wing aircraft and the coordination between the operational detachment and the air support unit through the SFOB closely parallels the procedures used in aerial delivery operations. The minimum LZ data required is:

(1) *Code name*. Extracted from detachment SOI.

(2) *Location*. Complete military grid coordinates of the center of the LZ.

(3) *Long axis*. Magnetic azimuth of long axis of runway. It also indicates probable direction of landing approach based on prevailing winds,.

(4) *Description*. Surface, length, and width of runway.

(5) *Open quadrant*. Measured from center of the LZ and reported as a series of magnetic azimuths. Open quadrants indicate acceptable aircraft approach.

(6) *Track*. The magnetic azimuth of recommended aircraft approach.

(7) *Obstacles*. In addition to the limitations pertaining to takeoff and approach clearances, obstacles exceeding 300 feet above the level of the LZ within a 1-nautical mile radius, and not shown on issued maps, are reported by description, azimuth, and distance from the center of the LZ.

(8) *Reference point*. A landmark shown on the issued map; reported by name, azimuth, and distance from center of LZ and used with (2) above in plotting the LZ location,

(9) *Date/time*. Date/time mission is requested.

(10) *Items to be infiltrated or, evacuated*. See appendix C for a sample LZ report.

(11) *Alternate LZ*.

b. Reporting LZ's for Rotary-Wing Aircraft. The minimum LZ data reported generally is the same as for fixed-wing LZ's, except in first paragraph indicate that the site is for use by rotarywing aircraft.

6-38. Mission Confirmation (Air Landed)

a. Following the processing of the LZ data at the SFOB, and coordination with the air support unit, a confirmation message is transmitted to the operational detachment. This procedure is similar to that used for aerial delivery operations.

b. The confirmation message contains, as a minimum, the code name of the LZ, the date/time that the aircraft will arrive, and the track to be flown.

c. See appendix C for sample air-landed confirmation message.

Section IX. MISCELLANEOUS AIR OPERATIONS

6-39. Aerial Recovery System (ARS)

a. General. Exfiltration is the means employed to return or bring personnel out of operational areas

to friendly territory. Exfiltration and evacuation techniques normally employed in support of unconventional warfare operations have already been

discussed in the air-landed portion of this chapter. ARS, or as it is commonly referred to in some areas "Skyhook," is a recovery technique within the capabilities of Air Force support units. "Skyhook" techniques may be used to exfiltrate or evacuate personnel and equipment from areas inaccessible to aircraft landings, on land or in the water.

b. Missions. "Skyhook" missions must be coordinated through the SFOB and approved by the supporting air unit selected for the mission. Aircraft equipped to fly exfiltration or evacuation missions using skyhook techniques will be placed on standby status. Operational missions may include evacuation or exfiltration of

- (1) Seriously ill or injured U.S. personnel.
- (2) Guides or assets who can brief operational elements and reinfiltate with operational detachments.
- (3) Priority and valuable cargo and equipment from remote areas that might normally require days or weeks of hazardous travel to bring out.
- (4) Downed aircrews.
- (5) Bodies subject to possible desecration such as heroes and martyrs.
- (6) Personnel engaged in underwater operations against selected targets following mission accomplishment.
- (7) Prisoners who possess useful information.

c. Capabilities and Limitations (fig 6-36). Pickups can be performed under varying conditions. However, it is necessary to discuss the capabilities and limitations of the aircraft that is equipped to support this type of operation, specifically the C-130E-1.

- (1) Capabilities.
 - (a) Night pickups with stroboscopic lights attached to the lift line.
 - (b) Open sea pickups.
 - (c) The use of small clearings in dense forests that will not permit helicopter landings.
 - (d) Multiple pickups, using longer and heavier duty lift lines. Loads are strung along the line separately rather than being tied together in one unit.
 - (e) A virtual all-weather capability. Weather affects operation only to extent that visibility may be restricted. Operations normally are delayed only when weather grounds aircraft.
- (2) Limitations.
 - (a) The recovery aircraft shall make recovery attempts upwind only.

(b) Up to 30 degree, off the wind line is permissible upwind.

(c) Under emergency, conditions and with extreme caution, recoveries may be attempted up to 45 degrees off the wind-line upwind.

(d) Relative to the vertical plane, recoveries may only be made when the balloon layover angle accountable to surface wind velocity is 30 degrees or less.

(e) Under emergency conditions, and with extreme caution, recoveries may be made with up to 45 degrees balloon layover angle.

(f) Airspeed for recoveries will be between threshold speed (that speed which the aircraft attains just prior to actually landing or touchdown) and 140 knots ground speed.

(g) The lifeline balloon is limited to use at temperatures between -65 ° F and 120' F.

(h) Because of the lifeline and balloon capability, aerial recovery of cargo or personnel from the surface of the earth or water is limited to the following operational conditions.

<i>Ground elevation</i>	<i>Total allowable pickup weight</i>
Sea level to 6,000 feet -----	500 pounds maximum
6,000 to 10,000 feet -----	110 to 260 pounds maximum

d. Equipment.

(1) "Skyhook" equipment consists of two air-droppable containers of heavy duck material and nylon webbing. In the containers are 2 fiberglass containers filled with E650, cubic feet of helium; a polyethelene, dirigible-shaped balloon with an automatic valve that seals when inflation is complete; 500 feet of tubular nylon lift line; a protective helmet; an all-weather, nylon coverall suit with zippered front, 1 chest strap, integral self-adjusting harness to fit any size person, and sheepskin hood protecting the head and neck. The equipment may be packaged in a waterproof container and equipped with a rubber life raft for airdropping into water or swampy areas. Difficulties in reading printed instructions are lessened by an animated cartoon instruction board.

(2) The aircraft presently used by Air Force support units for aerial recovery operations are equipped with a "yoke" or wide fork on its nose (fig 6-37). The yoke assembly is a "V" shaped guide, installed on the nose of the aircraft which guides the lift line into a locking device at the apex of the yoke. The yoke is hydraulically actuated and folds back on both sides of the radome when not in use. Fending lines divert the lift line around the wing tips if the pilot fails to intercept the yoke. Large radomes and side access hatches cause no interference. An electrical, hydraulic, or pneumatic

FM 31-20

NOTE

AT ZERO WIND,
APPROACH MAY
BE MADE FROM
ANY DIRECTION.

WIND AT BALLOON ELEVATION	APPROXIMATE LIFT-LINE ANGLE
30 KTS	45°
20 KTS	30°
10 KTS	10°

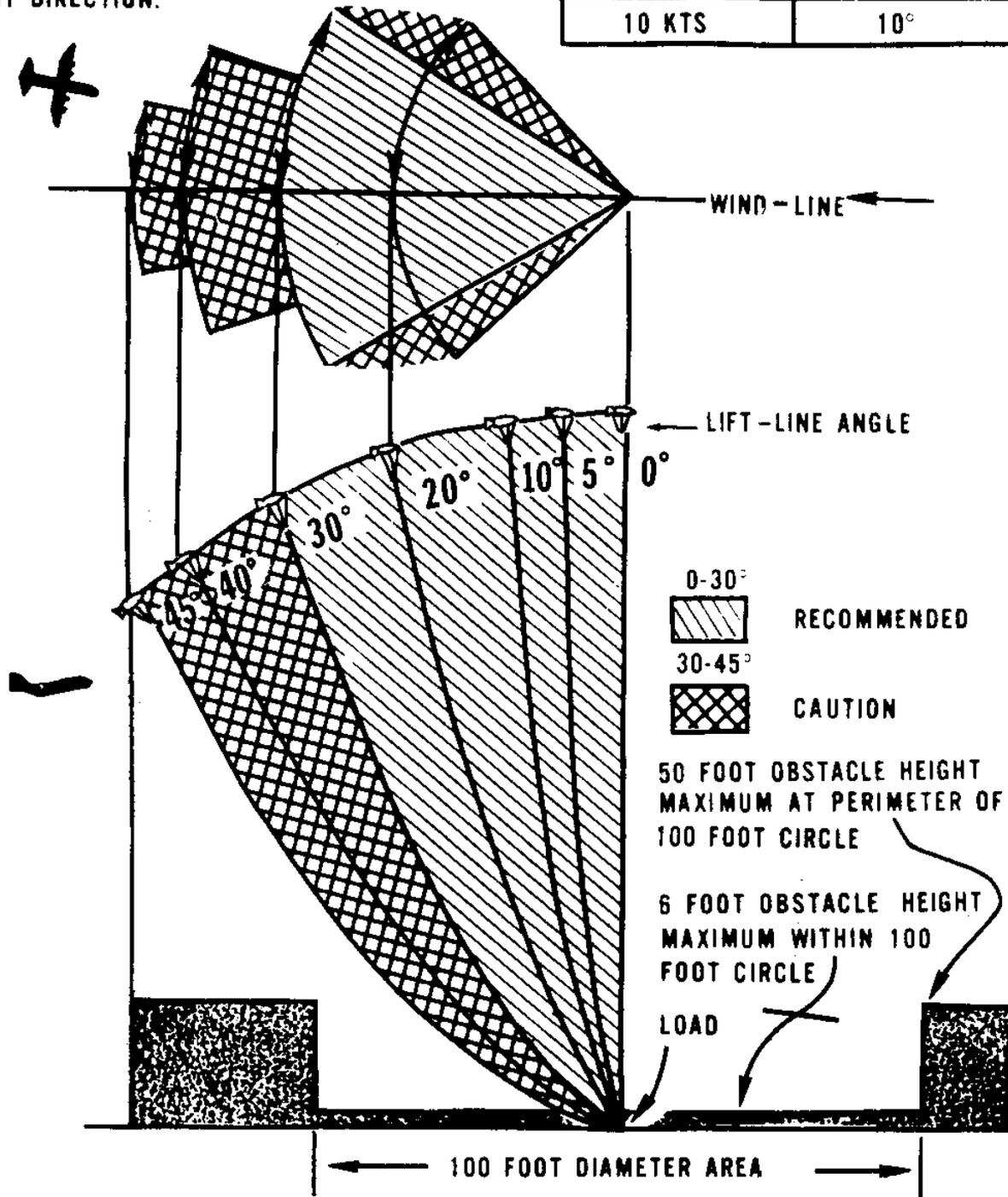
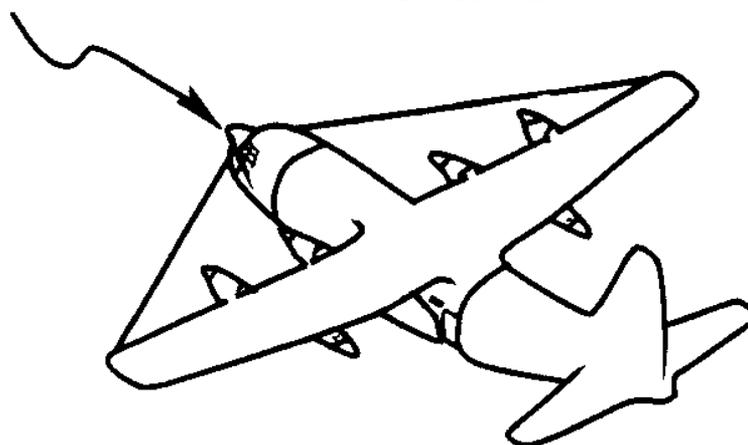


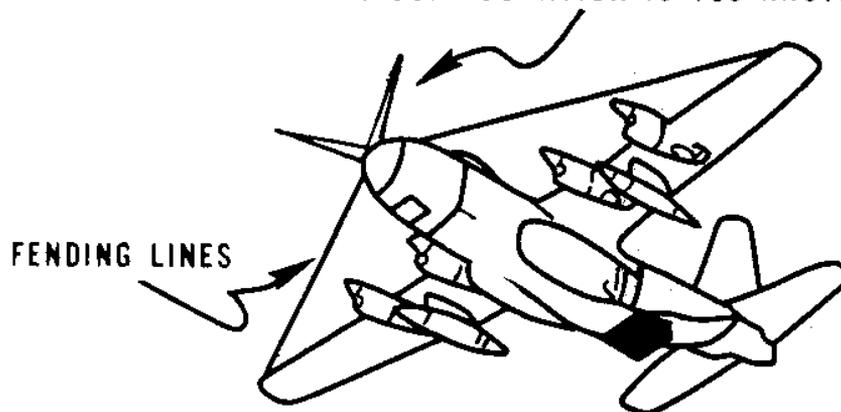
Figure 6-36. Recovery zone and wind limits.

"YOKE" FOLDED BACK IN TRAVEL POSITION



1

"YOKE" EXTENDED IN PICK-UP POSITION MAXIMUM SPEED IN THIS CONFIGURATION IS 150 KNOTS.



2

Figures 6-37. View of "yoke" mounted on C130E-1 aircraft.

winch to assist in reeling in the load is mounted inside the aircraft.

6-40. Employment

a. Normal air-drop techniques will be used to deliver the special equipment required. The equipment is dropped on the initial pass over the DZ. The person to be exfiltrated or evacuated,

following the directions on the illustration board, will don the coverall suit, with the harness attached to the lift line which is attached to the balloon. The balloon is plugged into the helium bottles. The exfiltrator then pulls a safety pin and squeezes a valve on the helium bottle, permitting the flow of gas to inflate the balloon. He releases the balloon and sits down facing the approaching aircraft (A, fig 6-38).

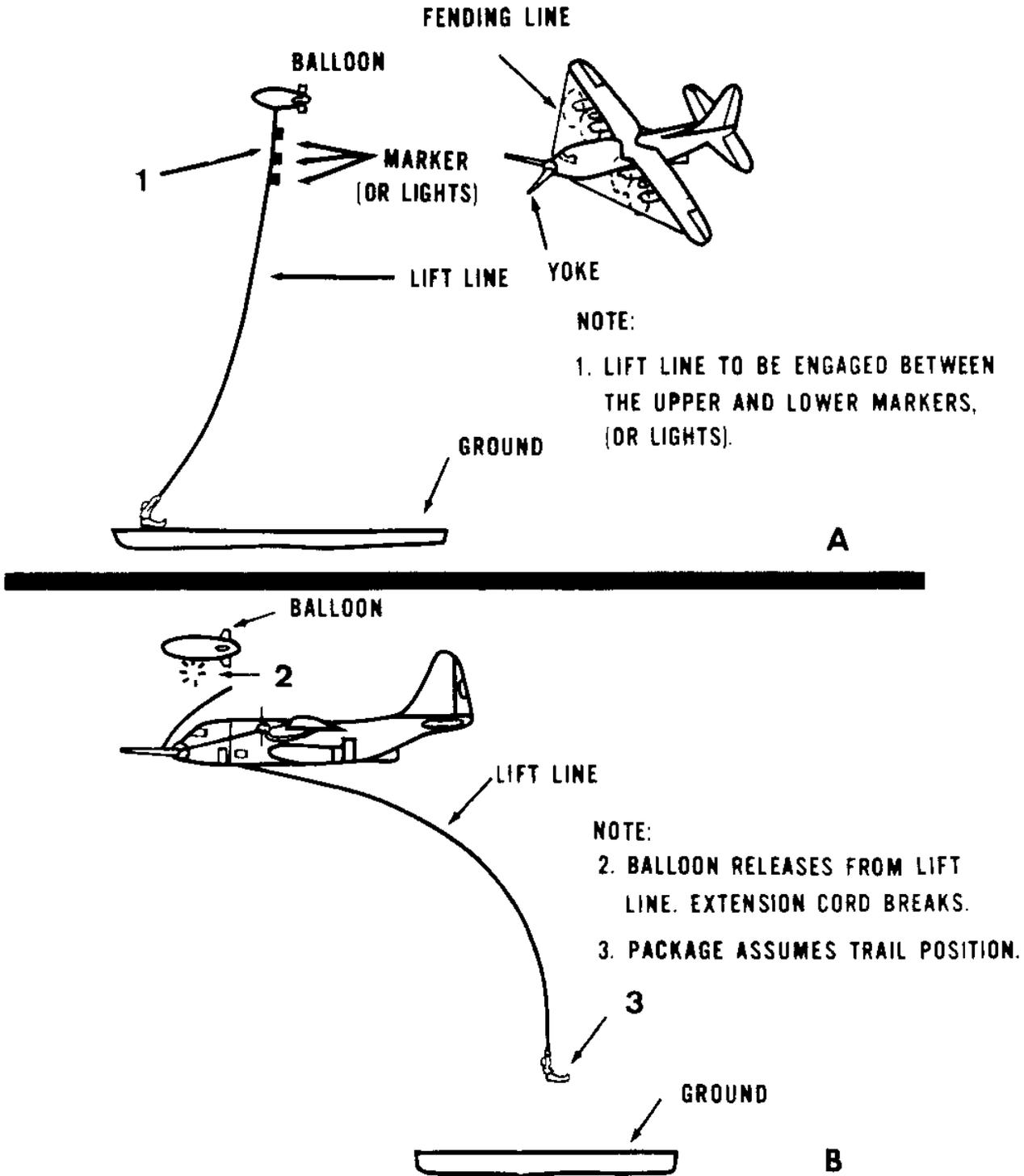


Figure 6-38. Recovery—sequence of operation.

b. On the return pass over the DZ, the aircraft, flying upwind of the lift line, approaches the balloon at an altitude of approximately 400 feet three cerise colored flags, spaced 25 feet apart, are attached to the lift line; the first flag is 50 feet below the balloon

and serves as the contact point for the aircraft (B, fig 6-38). In night operations, the lift line which is equipped with stroboscopic lights at the same intervals, is activated by a remote control unit in the hands of the exfiltrator. These lights permit the pilot to line up the

aircraft on the approach run. The aircraft is also equipped with a remote control unit on the instrument panel, permitting the pilot to activate the lights until contact is made with the lift line.

c. Special Forces detachments requesting exfiltration or evacuation by "skyhook" technique will be required to establish the DZ and receive the required equipment. They will assist the exfiltrator to don his suit and dispose of the remaining equipment immediately after the pickup. In emergencies, the person to be exfiltrated may be required to perform the ground phase of the operation alone. In this event, areas selected for the pickup should be remote and inaccessible to ground interference. Remaining equipment may be hidden by the person to be exfiltrated, or picked up at a later date by the operational detachment.

6-41. Message Pickup

Light aircraft have been used successfully for

message pickups. The message pickup system is designed to allow an aircraft to retrieve a container while making a low pass over the pickup zone (PZ). The system saves considerable time since the aircraft does not have to land. Message pickup has advantages over landing operations of less risk to the aircraft and an ability to use terrain for pickup zones that would be unsatisfactory for LZ's. The principal limitation is that the load should not exceed 5 pounds. Lighter weight is desirable.

6-42. Pickup Zone Selection (fig. 6-39)

Air considerations for PZ selection are identical to DZ selection. The most desirable shape for a PZ is square or round. Minimum sizes are 50 x 30 feet for day operations and 75 x 300 feet for night operations. The surface should be level. In addition to being free from hazards to flight, the PZ and its approach and departure paths must be free of power lines, fences, and similar obstacles which could entangle the aircraft pickup

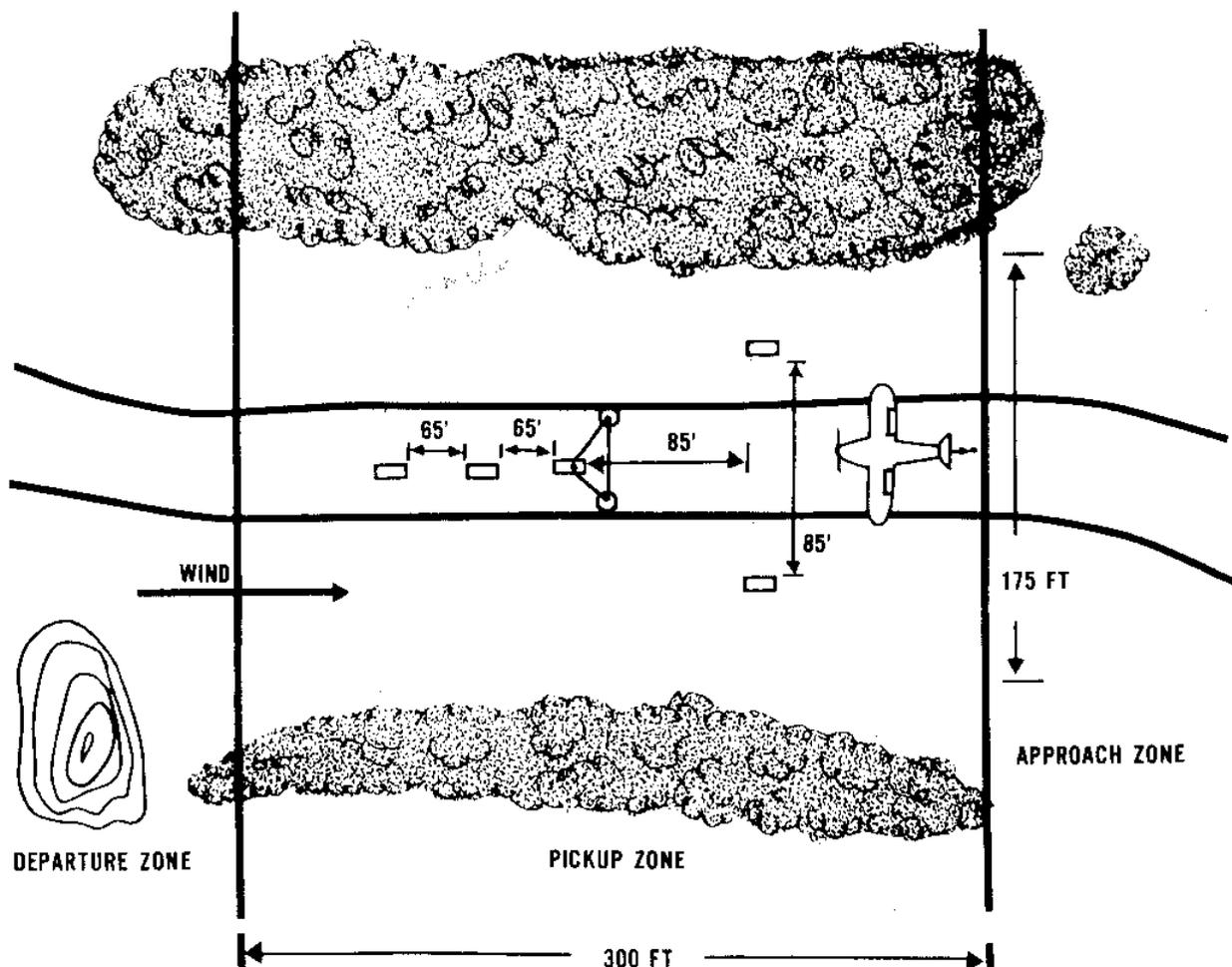


Figure 6-39. Pickup zone.

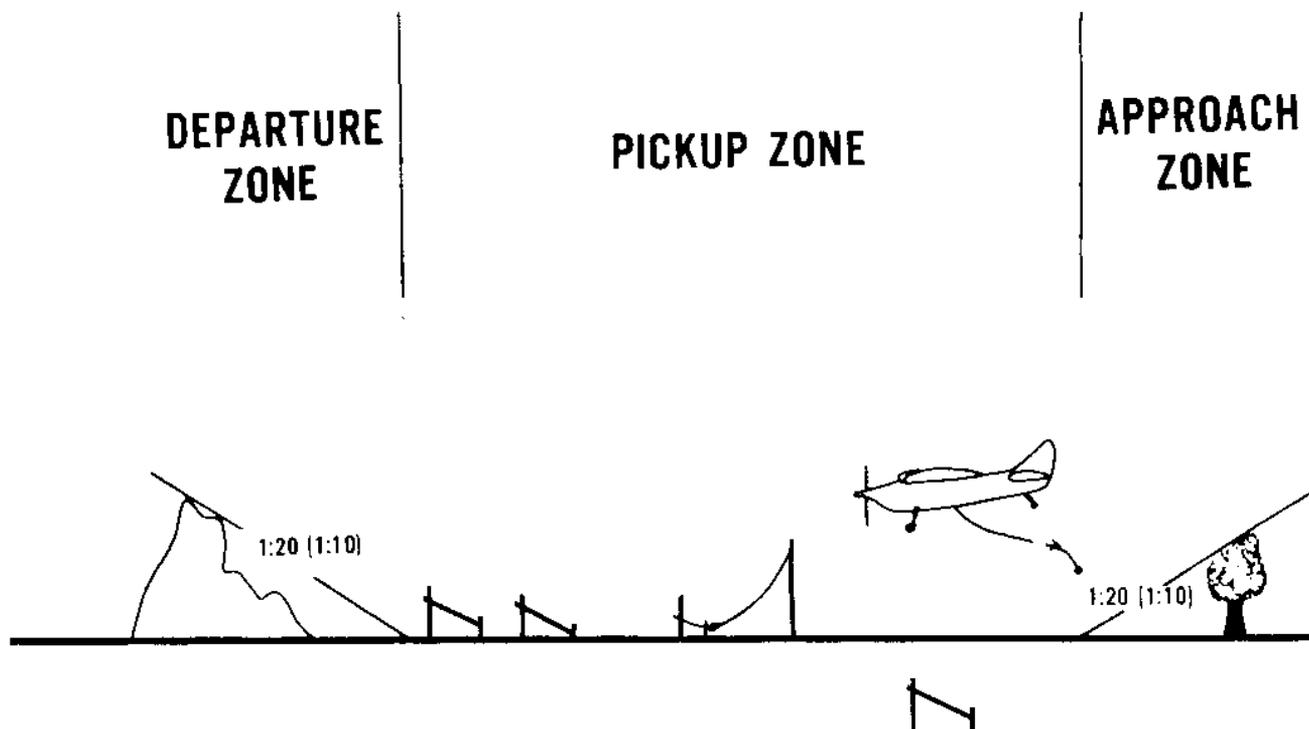


Figure 6-40. Pickup zone—approach and departure.

hook. Straight sections of road are suitable if there are no obstacles and security considerations permit their use.

6-43. Approach and Departure (fig. 6-40)

Approach and departure clearances must conform to those for light and special light aircraft LZ's. Specifically, no obstruction should exceed the aircraft's 1:20 (light) or 1:10 (special light) glide/climb ratio. The attainment of a proper glide/climb ratio will insure adequate mask clearance.

6-44. Ground Preparation (fig. 6-41)

a. Ground equipment consists of two poles 15 feet in length (any deviations in length must be reported to SFOB), a message bag or container, strong cord (cotton clothesline or window sash cord) 75 feet in length, and four panel markers for day or lights (flashlight or flarepot) for night operations.

b. In preparing the site, poles are erected or held approximately 25 feet apart. To increase visibility to the pilot, poles should have visual markers attached to the tops. For day operation these markers can be painted, bright cloth, or paper (e.g., aluminum foil). For night operations, flashlights taped on tops of poles give the best results. The message pickup line is routed from the message container to the top of

one pole, horizontally to the other pole and back to the container which rests on the ground between the poles and slightly downwind from the poles. The line is secured to the poles by tape, thread, light string, or on nails or projections. The method used should be sufficiently strong to prevent wind blow-off or accidental shake-off.

6-45. Air Preparation

a. Aircraft equipment should include safety belts, pickup hooks (grapnel type) and a 75-foot line. A complete spare hook and line should be carried in the aircraft.

(1) The pickup line from the aircraft should be 75 feet long and of a cotton material. The best results are obtained with cotton clothesline or window sash cord.

(2) Pickup hooks are made from some type of stiff wire (coat hangers, welding rods) anal tied securely to the pickup line. This should be shaped into a three-pronged hook, with prongs approximately 3 inches long (fig 6-42).

(3) A lead weight at the end of the pickup line should weigh 1 pound. A three-pronged hook is placed approximately 12 to 18 inches up from the lead weight, fastened at the end of the pickup line (fig 6-43).

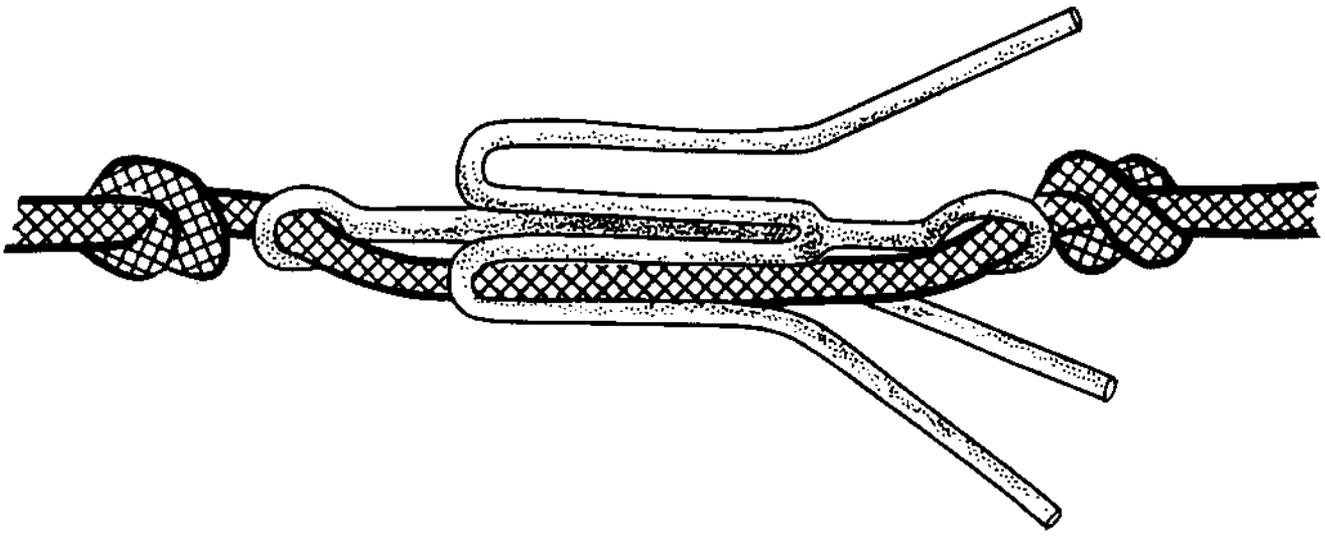


Figure 6-42. Pickup hook.

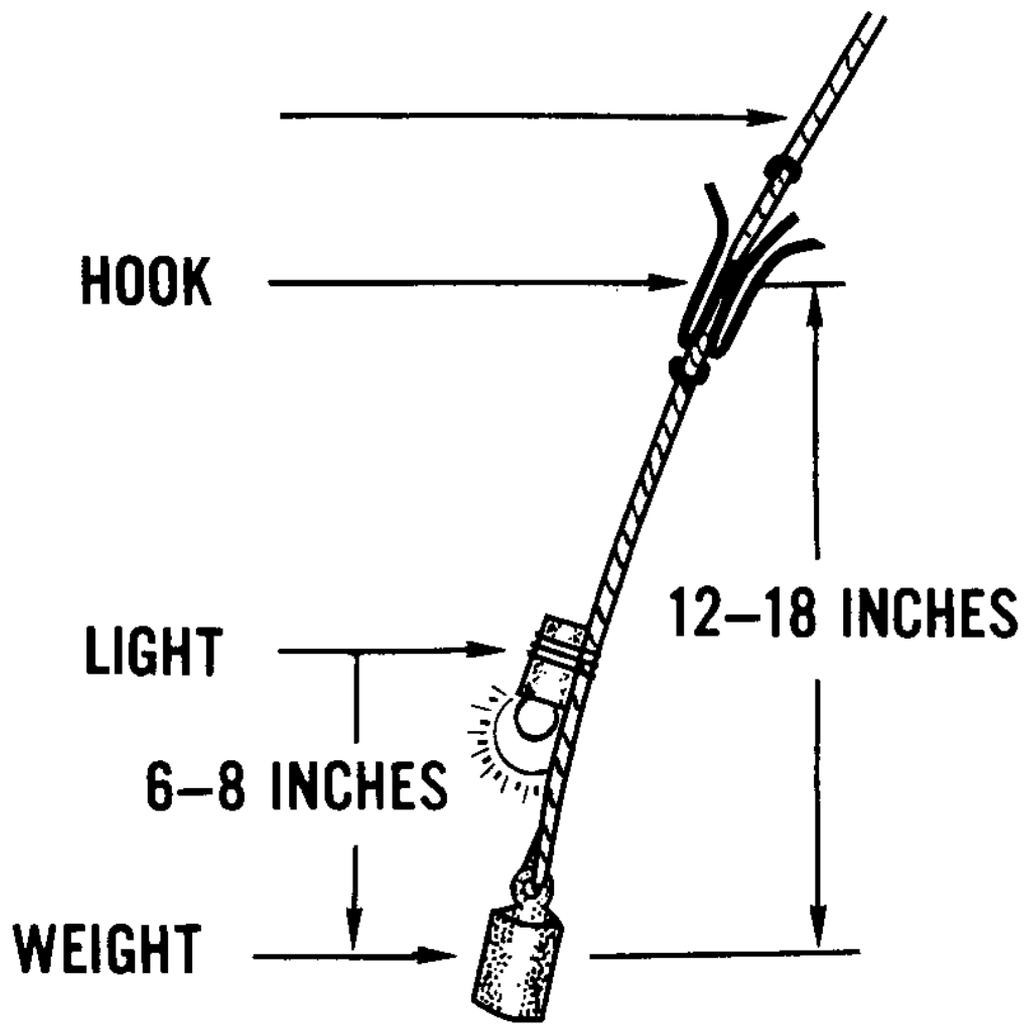


Figure 6-48. Pickup line—complete.

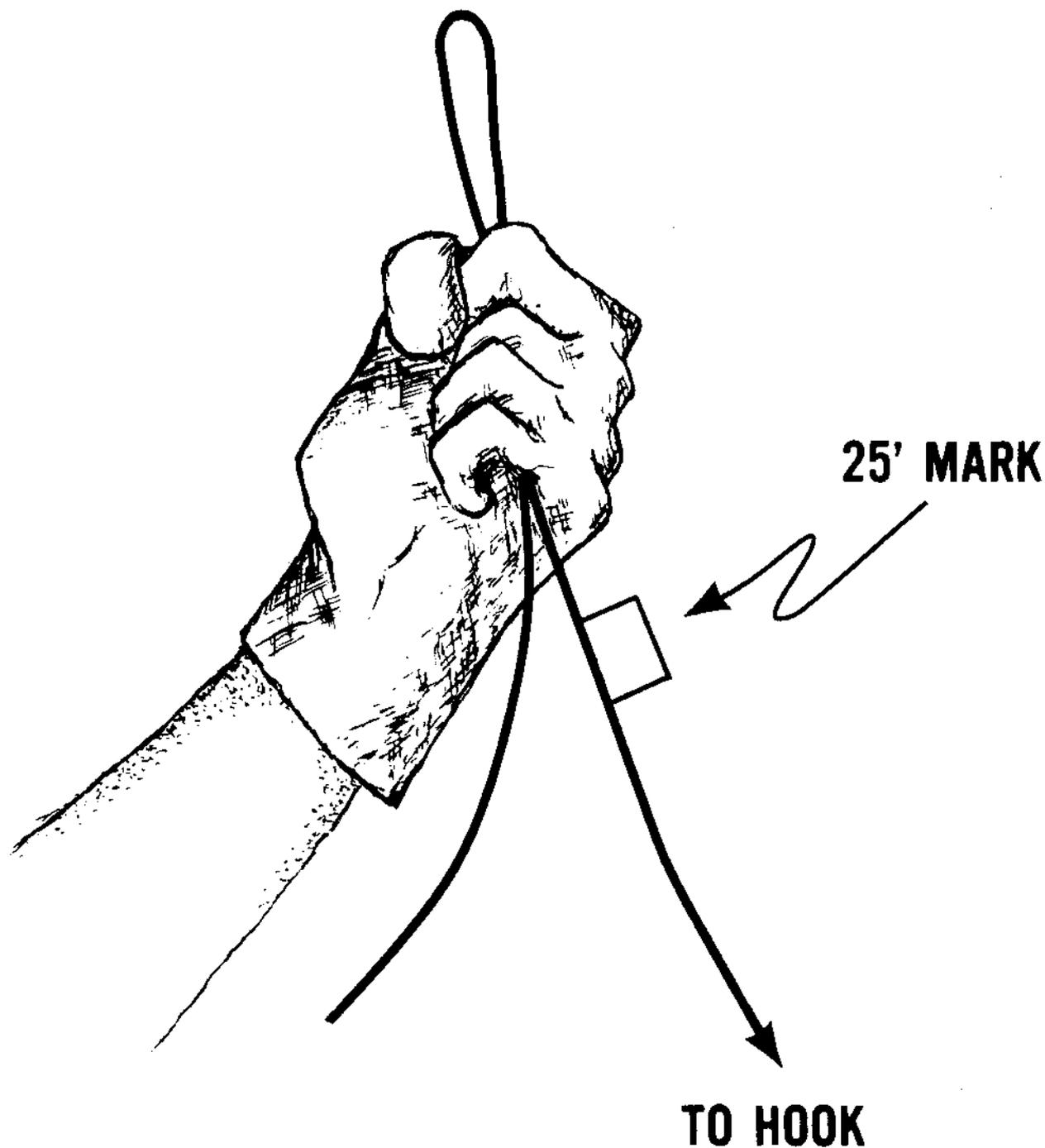


Figure 6-44. Method of holding pickup line.

with a bight so that it will be pulled out of the hand if the hook catches on an obstacle (fig 6-44).

6-46. Pickup Zone Report

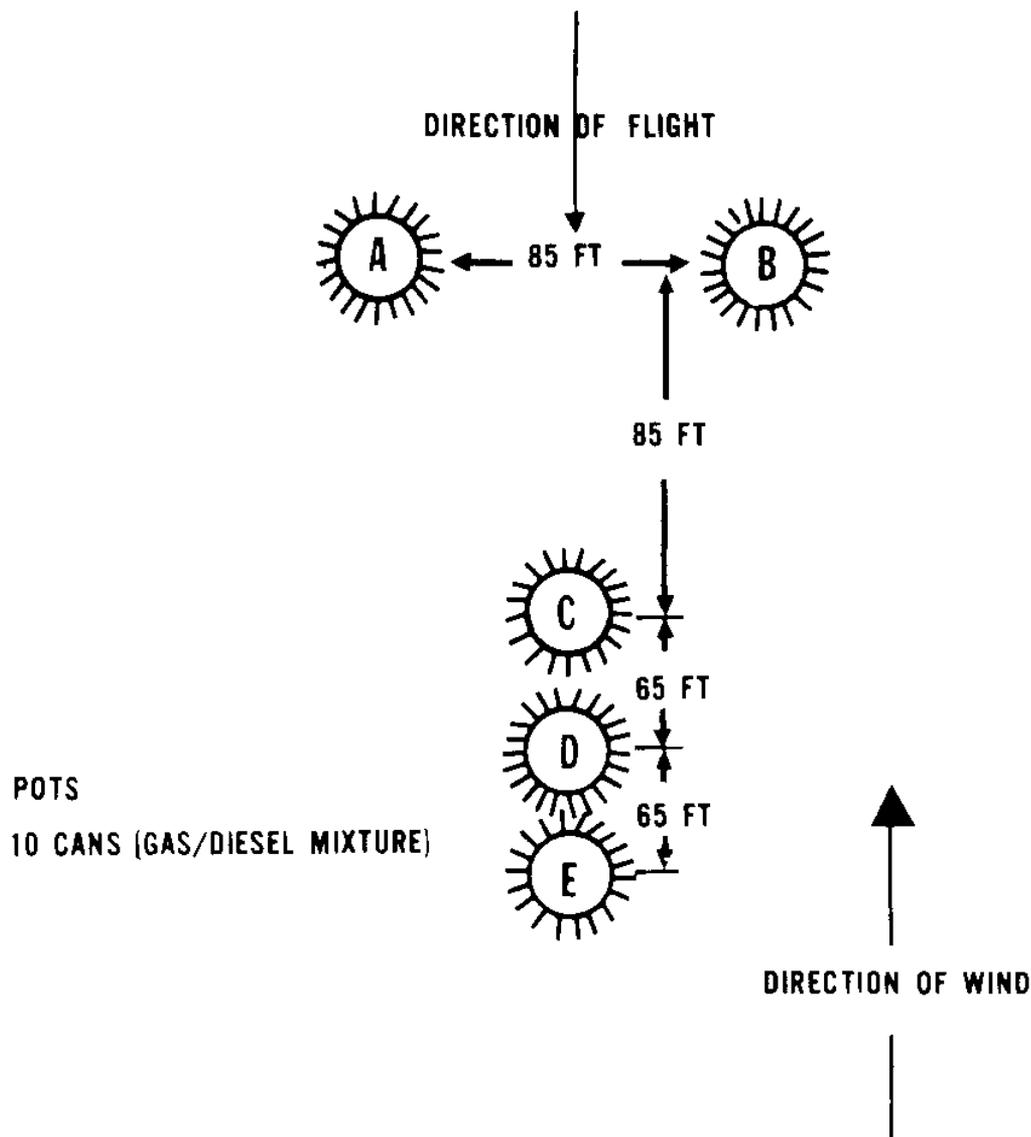
a. Format. The format for requesting a message pickup is the same as for reporting landing zones except as indicated below.

b. Reporting Pickup Zones.

(1) PZ data. The minimum required PZ data includes

(a) *Code name.* Extracted from detachment SOI. Indicate if water.

(b) *Locution.* Complete military grid coordinates of the center of the PZ.



NOTE: PANELS CAN BE USED IN PLACE OF LIGHTS.

Figure 6-45. Message pickup—panel/light pattern.

c. *Long axis.* Magnetic azimuth of long axis of PZ. Also indicate probable direction of approach based on prevailing winds.

(a) *Description.* Type, length, and width (e.g., "road, 500 feet x 200 feet"). Dimensions are for entire usable area.

(b) *Open quadrant.* Acceptable aircraft approaches.

(c) *Track.* The magnetic azimuth of recommended aircraft approach.

(d) *Obstacles.* Reported as for LZ's.

(e) *Reference point.* Reported as for LZ's.

(f) *Date/time.* Date/time mission requested.

(g) *Mission request.* Items to be picked up (e.g., photos, maps guerrilla records).

(2) *Additional items.* Supplementary navigation, marking, or tactical information of importance to pilot will be contained in. an additional paragraph.

d. *Sample message.* See appendix C for sample message.

6-47. Marking Pickup Zones (fig 6-45)

a. The purpose of PZ marking is to identify the site, indicate the point where the pickup apparatus is

located, and provide visual terminal guidance for the pilot. The authentication code will be included in the detachment's SOI.

b. The pickup pattern is established by using the standard helicopter marking pattern discussed in paragraphs 6-33 through 6-38. The pickup container is located at panel/light "C."

6-48. Concept of Operation

The pilot will fly into the open end of type "Y" pattern (into the wind). The hookman lets the line out of the aircraft door until the 25-foot mark is reached. The hookman manipulates the line to clear

obstacles and maintains a 3- to 6-foot terrain clearance. When the message line has been hooked it is pulled into the aircraft while the pilot makes his climbout. If the hookup is not made on the initial pass, repeated attempts will be made unless the ground party indicates abort of the operation by removing panels. The use of smoke during day operations will assist the pilot in locating the PZ and estimating wind conditions. Water operations require that the message container not only float and protect contents from water damage but also that it not retain water which will make it too heavy for pickup.

Section X. CHECKLIST FOR AIR OPERATIONS

6-49. Resupply Operations

a. Training for Reception Operation.

(1) Guerrillas and auxiliaries for their mission.

(2) Rehearsal.

(3) Security measures stressed during training to avoid compromise.

b. Conduct of Operations.

(1) DZ surveillance prior to, and after, operation.

(2) Outer security of the DZ established.

(3) Close security established.

(4) Assembly points off the DZ.

(5) DZ marking conform with SOI.

(6) Recovery parties.

(7) Transport parties.

(8) Place of the release point (cargo drop).

(*a*) Wind drift: Altitude in 100's of feet x wind velocity in knots x (K factor depending on type of parachute used) = drift in yards.

(*b*) Forward throw: 100 yards.

(9) Time lights on and extinguished.

(10) Noise discipline.

(11) DZ sterilized.

(12) DZ cleared rapidly and in an orderly manner.

(13) Movement from the DZ.

(14) Sensitive items secured and controlled.

c. Alternate DZ.

(1) Provisions of paragraph 6-11 applies.

(2) Minimum requirement:

(*a*) Interzone security.

(*b*) Minimum personnel in marking party.

(*c*) Provisions for temporary caching vicinity of DZ.

(*d*) Security of cached items.

(3) Alternate plan includes sterilization of DZ by main force.

(4) Sensitive items destroyed if compromise is imminent.

CHAPTER 7

COMBAT EMPLOYMENT OF RESISTANCE FORCES

Section I. GENERAL

7-1. Purpose

a. Guerrilla warfare is a series of tactical strikes designed to weaken an enemy that is superior in total resources. Rather than attempting to overwhelm the enemy in combat, the guerrilla inflicts as much damage as he can in successively paralyzing blows, withdrawing after each action before the enemy recovers.

b. It is impossible for an enemy to guard everything, everywhere; therefore, guerrillas should attempt to keep the enemy off balance by continually striking at targets, day after day, month after month, in widely dispersed patterns so that the enemy will become confused, demoralized, and frustrated. To accomplish this, guerrillas utilize various methods of interdiction.

7-2. Interdiction

a. During combat employment major emphasis is placed on interdiction operations which includes denying the enemy the use of selected areas through the partial or complete destruction of facilities, military installations, and equipment. Interdiction operations are basic to guerrilla warfare and range from the destruction of one vehicle by one individual to attacks by larger groups or forces against strategic and tactical industrial targets or sites. When properly coordinated and conducted with other activities, interdiction operations can make significant contributions to the destruction of enemy combat power and his will to fight. Although tactical in execution, interdiction operations have a strategic objective and have both long-range and immediate effect on the enemy, his military force, and ultimate population support. Missions of directed guerrilla actions are to:

- (1) Destroy or damage vital installations, equipment, and supplies.
- (2) Capture supplies, equipment, and kill or capture key enemy personnel.

- (3) Divert enemy forces from other operations.
- (4) Create confusion and weaken enemy morale.

b. Normally, operations are directed against targets on a broad scale using all available resistance forces having the capability to accomplish the task. Guerrilla units conduct overt attacks against the enemy, his supply and production facilities, and his sources of power and lines of communications. Attacks are timed to achieve maximum results from surprise and confusion and often to coincide with operations of other theater forces. Closely coordinated with these guerrilla operations, the underground and the auxiliary may conduct widespread programs of sabotage, strikes, and disaffection.

c. The enemy reaction to large-scale UW operations is usually violent, immediate, and may result in reprisals against the civilian population. Losses among civilian support elements (auxiliaries and the underground) and a concentration of operations against the guerrilla forces may result. A reduction in the number of guerrilla operations may be ordered in particular areas to relieve pressure being exerted by the enemy, or the theater UW command may direct that guerrilla operations in contiguous areas be intensified to help dissipate enemy retaliation efforts.

7-3. Types of Interdiction Operations

a. Raid. A raid is an operation involving a surprise attack to secure information, confuse the enemy, to eliminate key personnel, or to destroy or damage his installation. Such attacks are characterized by secure movement to the objective area; brief, violent execution; rapid disengagement from action; and, a planned, deceptive withdrawal.

b. Ambush. An ambush is a surprise attack used

FM 31-20

against moving or temporarily halted targets such as railroad trains, truck convoys, individual vehicles, and dismounted troops.

c. Use of Mines and Boobytraps. The use of standard or improved mines and boobytraps affords the area commander a means of interdicting enemy routes of communication and key areas with little expenditure of manpower. The planned use of these items as an interdiction technique also has a demoralizing effect on enemy forces. Mines and boobytraps can be used effectively in defensive operations.

d. Sniping. Sniping tends to impede enemy operations and demoralize personnel. A few snipers can cause casualties among enemy personnel, deny or hinder use of certain routes, and require employment of a disproportionate number of troops to neutralize the snipers. For this reason snipers also can be effective in defensive operations. Snipers may operate in covering a mined area, as part of a raiding or ambush force, or as a separate operation.

7-4. Target Analysis in Interdiction Operations

a. General. There are two principal considerations in selection of a target

- (1) The effect of the action on the enemy.
- (2) The capability of the guerrilla unit.

b. Target Selection. In interdiction operations, targets are not attacked indiscriminately but are a part of an overall scheme or plan to disrupt and ultimately destroy a target complex. A target complex is a series of interrelated or dependent target elements which together serve a common function. A railroad system is a complex within itself, containing bridges, tunnels, rail yards, control signals and towers, stations, water towers for steam engines, and an electrical system for electric engines.

(1) In selecting targets for attack in a particular target complex, the five factors of selection are: criticality, accessibility, vulnerability, recuperability, and the effect such operations have on the local population. The criticality factor for a target changes with the situation. A railroad bridge is less critical when the enemy has few locomotives. Its safeguarding may be critical when friendly conventional force plans require its use. The vulnerability of a target shifts with the means available to attack it, such as explosives, incendiaries, and special devices. A powerplant,

command post, or supply depot is less accessible after the enemy has positioned additional security personnel. Recuperation is more likely if reserve stocks are plentiful. For further discussion of these five factors see FM 31-21.

(2) To analyze a target complex and select targets for attack that produce maximum timely effects, diagrams, photographs, and other intelligence material should be studied carefully. The simplest operations can cause great confusion and annoyance as well as create untold damage to an enemy, e.g., a number of squad-sized teams removing or destroying the rails of a railroad complex over a 100-mile stretch of track. This type of activity conducted on a recurring basis, and in different areas selected at random, places a great deal of pressure on the enemy. It stretches his repair and maintenance facilities and personnel, as well as requiring him to increase his security activities, and may temporarily deny him the use of a portion of his rail system.

7-5. Target Systems for Interdiction Operations

The following target systems are suited for interdiction operations:

a. Railroad Systems. Railroads present profitable and accessible target systems for attack by guerrilla forces. Open stretches of track, trestles, switches, repair facilities, tunnels, signal systems, and slide areas provide unlimited possibilities for attack. On electrified railroads, power substations, plants, and lines offer critical targets. Types of railway targets vary with the geographical area.

b. Highway Systems. Points for interdiction are selected in areas where the enemy cannot reestablish movement easily by making a short detour. Bridges, underpasses, and tunnels are vulnerable points in road networks. Sections of road which may be destroyed by flooding from adjacent rivers, canals, or lakes are also vulnerable. In addition, a road may be interdicted by causing rock or landslides. Live and dummy mines may be used to interrupt road traffic. Ambushes are conducted where the terrain is suitable. Enemy traffic may be disrupted by fire from positions some distance from the road itself.

c. Waterway Systems. The most critical parts of waterway systems are ports, dams, and locks. These facilities are usually well guarded. Their destruction can effectively disrupt water traffic for long periods. Waterway control and navigational equipment such as signal lights, beacons, and channel markers can be attacked effectively. Sinking vessels in restricted

channels, dropping bridges into waterways, creating slides, and destroying levees all are effective in blocking waterway traffic.

d. Airway Systems. Interdiction of airlines of communication is accomplished most easily by attacking vulnerable facilities on the ground. Air terminals, communication systems, radar and navigation systems, fuel and maintenance facilities, and key personnel are targets for attack. Support items such as fuel, lubricants, spare parts, and maintenance tools can be destroyed or rendered unusable. Attack of low flying aircraft with small arms or light anti-aircraft weapons may also be possible, particularly in the vicinity of airfields.

e. Communication Systems. Widely dispersed communication systems are vulnerable to guerrilla attack. Such systems may include radio, telegraphy, telephone, and other physical facilities. Cutting telephone wires and cables, damaging telephone terminals and exchanges, and destroying radio antennas and transmission lines, or destroying the radio stations themselves, seldom result in a complete loss of communications. Alternate and emergency means of communication are usually available. Destruction of any part of a communication system, however, harasses an enemy and creates an overload on remaining communication facilities. It is likely that critical communication facilities will be well protected and difficult to attack. It is often possible, however, to damage or destroy interconnecting facilities, such as wire and transmission lines.

f. Power Systems. Powerlines are vulnerable to attack in the same manner as wire communication lines. Large transmission towers often require demolitions for destruction. Critical points in any power system are the transformer substations. Heavily guarded, power producing plants and steam generating plants are difficult to attack, but a successful effort will disrupt the power supply for extended periods of time.

g. POL Storage and Transport Systems. Attack of POL systems may be directed because of the effect on an enemy's national economy as well as on his ability to mount and support military operations. If he relies heavily on air lines of communication, supporting POL facilities provide critical targets in their interdiction. POL storage tanks, pipelines, transport vehicles, and vessels all provide profitable targets for raids, ambush, or sabotage, as appropriate.

h. Water Supply Systems. The disruption of waterlines supplying industry can often be accomplished profitably. Raids and sabotage against reservoir facilities, pipelines, and purification plants are feasible; however, possible adverse effects on the civilian population must be considered.

7-6. Tactical Control Measures in Interdiction Operations

a. General. In interdiction operation; against a target complex, the use of all elements of the area command which includes the guerrilla force, underground, and auxiliary, committed in coordinated widespread activities will produce a maximum effect. The area commander uses appropriate control measures as an aid in directing and coordinating resistance force tactical operations.

b. Common Control Measures.

(1) *Target assignment.* Targets or objectives are designated for attack. These targets are usually lines of communication, military installations and units, and industrial facilities. Normally, targets or objectives for guerrilla forces are not held for any length of time, nor are they cleared of determined enemy resistance.

(2) *Zones of action.* Zones of action are used to designate area of responsibility for offensive operations by subordinate units. Within the zone of action, the subordinate commander exercises considerable freedom in the conduct of operations. Movement of other guerrilla units through an adjacent zone of action is coordinated by the area command. The auxiliary units within a zone of action provide support to the guerrilla unit responsible for the area. Boundaries of zones of action are changed as required.

(3) *Routes of movement.* Guerrilla force commanders may prescribe routes of movement in order to control movement to targets. Guerrilla units approach the objective area either by single or multiple routes.

(4) *Mission support site (MSS).* The MSS is a preselected area used as a temporary storage site or stopover point and is normally located in areas not controlled by the guerrilla force. An MSS is utilized by guerrilla units to increase their operational range and enable them to remain away from guerrilla bases for longer periods of time. MSS's can be used prior to and after an operation. They are occupied for short periods of time. This time is seldom longer than a day. As in an assembly area, the using unit prepares for further operations and may be provided with supplies and intelligence by the auxiliary. The MSS should be

FM 31-20

reconnoitered and outposted prior to occupation by the main guerrilla force.

c. Other Control Measures. Additional control measures, such as rallying points, direction of attack, assault positions, and lines of departure, may be employed by smaller guerrilla units. These control measures are employed in a manner similar to their use by conventional military units.

7-7. Other Interdiction Techniques (Mining, Sniping, and Expedient Interdiction Techniques)

a. Mining. Mining affords the Special Forces and resistance force commander a means of interdicting enemy routes of communication and key areas with little expenditure of manpower. Mines may be used in support of specific tactical operations or in a general harassment of the enemy by emplacement along routes of enemy movement. They may be emplaced around installations to cause casualties, limit movement, and induce low morale among enemy troops. For detailed information on the use and installation of mines, boobytraps, and other devices see FM 5-31.

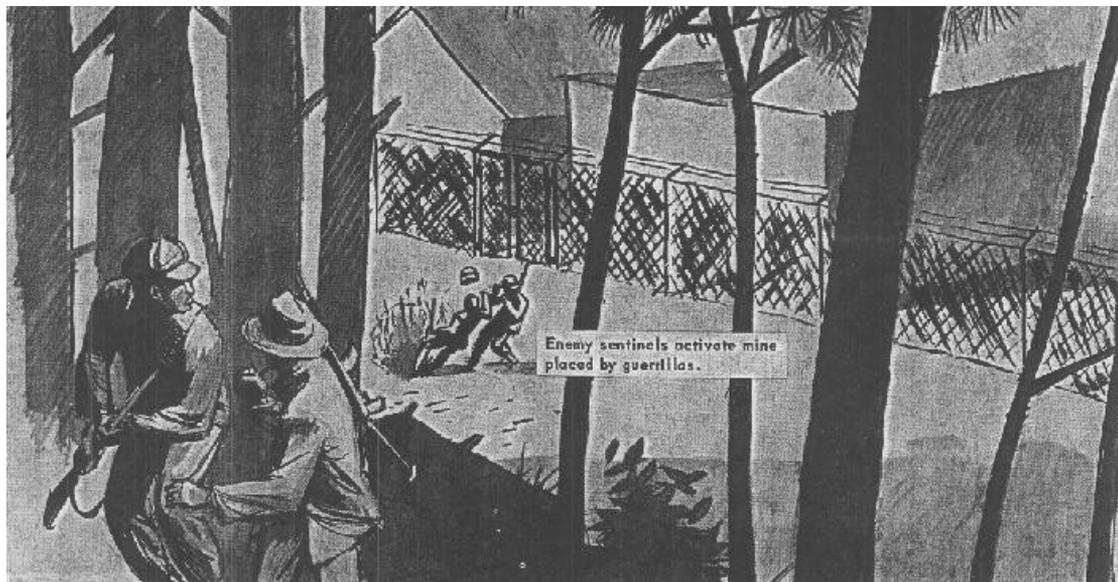
b. Sniping. Sniping as an interdiction technique is economical in the use of personnel and equipment, and has a demoralizing effect on the enemy. A few personnel, well-trained in sniper operations and properly deployed, can cause numerous casualties among enemy personnel, hinder or temporarily deny his use of certain routes or

areas, and may require him to employ a disproportionate number of troops to rid the area of snipers. Detachment commanders and resistance force commanders selecting, training and deploying snipers throughout their area, must be completely familiar with their use, be able to train them properly, and plan for logistical support in acquiring special sniper equipment to make them effective in all types of operations.

(1) *The sniper.* A sniper is an expert rifleman, physically and mentally hardened to endure long periods of loneliness, hardship, and who must be able to

- (a) Estimate ranges.
- (b) Search areas systematically.
- (c) Locate and identify sounds.
- (d) Use cover, concealment, and camouflage.
- (e) Use maps, sketches, aerial photographs, and the compass.
- (f) Recognize enemy personnel and equipment quickly.
- (g) Move without detection.
- (h) Endure long periods of waiting (patience).

(2) *Missions.* Snipers assigned areas of responsibility should have mission-type orders outlining priority targets that may include killing key enemy personnel such as patrol leaders, gunners of crew-served and automatic weapons, communication personnel, observers, and enemy snipers. In the absence of these priority targets, they may fire on any enemy personnel. Snipers may cover an area that has been mined to prevent removal or exploitation of the



Figures 7-1. Enemy sentinels activate mine placed by guerrillas.

minefield. They may be used as part of a raid or ambush to stop enemy personnel escaping the area under attack. In addition to their sniping mission, they may collect information for intelligence sections of the area command or guerrilla units. In their constant search for targets, they become thoroughly familiar with the terrain, enemy actions, and movements, routes of communications, and other activities.

(3) *Selection and training.* Detachment commanders and resistance force commanders select snipers from their outstanding guerrilla force personnel, specifically the rifleman in operational units. Additional training should be given in maintenance and operation of electronic night firing devices, viewing devices such as telescopic sights, and other types of firing devices as the commanders deem necessary or as time permits.

(4) *Planning for their use.* Plans must be made to properly locate individual snipers or sniper teams. The use of snipers should be incorporated into the tactical plan of the area commander, and their use should be coordinated with individual guerrilla units and subsector commanders. When snipers are being employed in specific areas, all operations should be curtailed in that area, or conducted on a limited basis. Special provisions must be made for the sniper's rest and recuperation after strenuous tours of duty. This may require a special unit, tightly controlled by the area command.

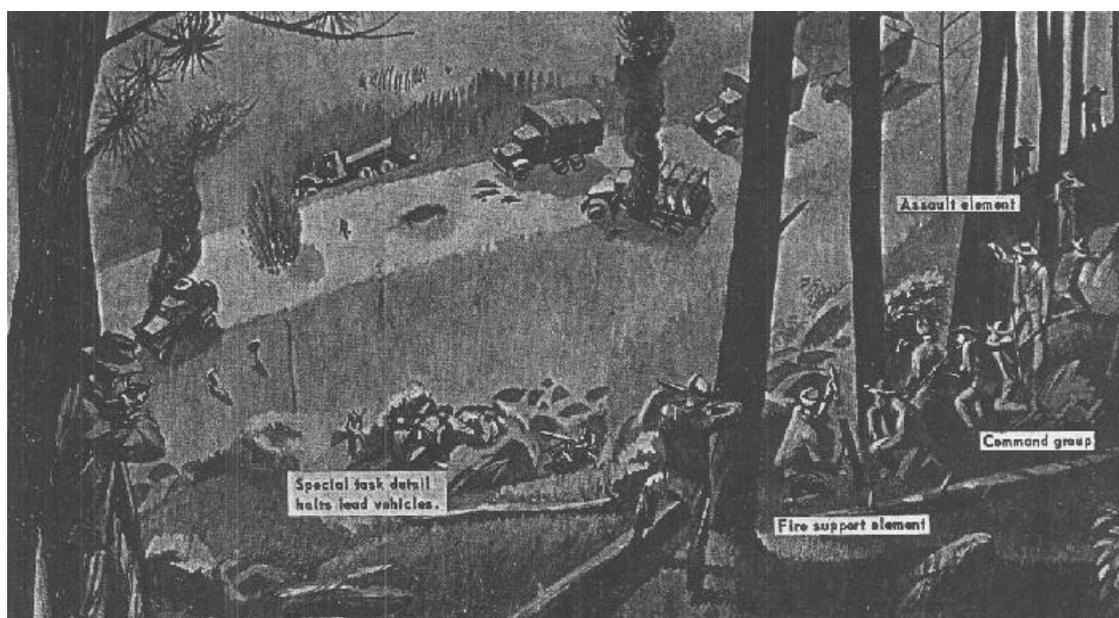
(5) *Sniper teams (fig 7-2).* Snipers are best employed in pairs, particularly when operating from

a stationary post. Remaining in one position for long periods of time, and the constant use of binoculars, places a heavy strain on one man. By working in pairs, snipers are able to alternate duties, thus keeping their post in continuous operation. One observes and estimates ranges, while the other fires. The first shot should be a hit.

(6) *The individual sniper.* The individual sniper can often cover a large area by moving from one position to another, and is normally employed singularly when two might be detected. In this case, the single sniper moves from one firing position to another as often as the search for worthwhile targets and good fields of fire require. Close coordination is required in these cases between sector and subsector commanders.

(7) *Equipment.* The individual sniper carries only the equipment and supplies necessary for his mission and the length of anticipated stay. In some instances, he may have to rely on MSS's or caches to replenish supplies and equipment, either in his operational role or for survival. The decision to release the location of these sites to the sniper or sniper teams rests with the area commander. The sniper may need, as a minimum, his weapon, binoculars, watch, compass, map, camouflaged clothing, telescopic sight and, if available, infrared weapon sight or a metascope, and individual rations. Other equipment necessary to support assigned missions should be obtained as required.

c. *Expedient devices.* Expedient interdiction techniques employed against enemy personnel can be



Figures 7-2. Sniper team in action.

FM 31-20

used to the fullest extent to support security operations of base camps, installations, and facilities. Such devices will have limited application in raids, ambushes, and other denial and interdiction operations.

(1) Security of base operations. It is normal for guerrilla units, and other resistance forces operating as military units to establish base camps, installations, and facilities in remote areas, normally inaccessible to the enemy except for foot troops. Detachment commanders and resistance force commanders should support their inner security zone by planning for the use of expedient devices to interdict enemy foot patrols, and establish early warning nets of enemy action and possible penetration of security. Such devices can be used to fill voids or gaps between outpost, listening posts, and lookouts. Although natural obstacles such as swamps, cliffs, and rivers are used whenever possible to impede enemy movement, reliance should not be placed on such obstacles. These areas should be considered when planning the employment of expedient devices. Consideration should be given to

(a) Heavy emplacement of antipersonnel obstacles rather than antivehicle obstacles.

(b) Installation of mine fields and barbed wire, concealed in brush areas.

(c) Utilizing impenetrable brush and nuisance items such as sharpened stakes, nails, or other impaling devices.

(d) Installing, in trails and in ravines, mantraps such as camouflaged pits with sharpened stakes or impaling devices in the bottom.

(e) All types of boobytraps (see FM 5-31).

(2) Raids, ambushes, and other interdiction operations. When supporting such operations, commanders may normally use antipersonnel mines and antivehicle mines placed in ditches and on the sides of roads to prevent enemy personnel escaping the killing zone of the objective. Such devices may also be liberally strewn over routes into and out of the objective area, acting as nuisance items to a reinforcing enemy unit. If the area of operation is one that is used extensively by friendly civilians in the area, however, the attacking force will not be in a position to retrieve these mines, thereby exposing civilians to the danger. Tight control is required by the detachment commander and the resistance force commanders in employing expedient devices to support operations.

Section III. THE RAID**7-8. General**

The raid is one of the basic operational techniques employed by Special Forces in unconventional warfare. The key words to the successful accomplishment of any raid are flexibility and responsiveness to orders and directions.

7-9. Purpose of a Raid

A raid is a surprise attack against an enemy force or installation. Such attacks are characterized by secret movement to the objective area; brief, violent combat; rapid disengagement from action; and swift, deceptive withdrawal. Raids are conducted to destroy or damage supplies, equipment, or installations such as command posts, communication facilities, depots, or radar sites; to capture supplies, equipment, and key personnel; or to cause casualties among the enemy and his supporters. Raids also serve to distract attention from other operations, keep the enemy off-balance, and force deployment of additional units to protect rear areas.

7-10. Organization of the Raid Force

The size of the raid force depends on the mission,

nature and location of the target, and the enemy situation. The raid force may vary from a few personnel attacking a checkpoint or a portion of unprotected railroad track to a battalion attacking a large supply depot. Regardless of size, the raid force consists of three basic elements command, assault, and security.

a. Command Element. This element is normally composed of the raid force commander and personnel providing general support for the raid, such as medical aidmen; radio operators; and, if a fire support element is part of the raid, a forward observer. Command elements are not normally assigned specific duties with any element. The command element may be placed with any of the major elements of the raid force, and wherever the raid force commander may best influence and control the action. When personnel who normally comprise a command element perform specific duties with an element, they are assigned to that element, and no separate command element is organized.

b. Assault Element. The assault element is organized as determined by the mission and, specifically, what is needed to accomplish the major

objectives of the raid. It consists of a main action group or assault team and a special task detail. It may include a support team, if weapons and suitable firing positions are available, to deliver neutralizing and supporting fires.

(1) The main action group executes the major task of overcoming resistance and physically securing the objective. If the raid objective is to attack a critical element of a target system such as a bridge or tunnel, and render it unusable for a period of time, the main action group assaults and overcomes the key security functions, to be followed immediately by the special task detail who places and detonates the demolition charges. If the target is enemy personnel, the main action group may conduct its attack with a high proportion of automatic weapons, covered by supporting fire from the support team. In most instances, the main action group moves physically on or into the target; in other instances, they are able to accomplish their task from a distance. Other elements of the raid force may be committed in diversionary or coordinated attacks at several points on the target to permit the main action group to gain access to the target for the time required to accomplish the mission.

(2) Special task details assist the main action group to reach the target. They execute such complementary tasks as eliminating guards, breaching and removing obstacles to the objective, conduct diversionary or holding actions, assist where necessary by providing fire support, and act as demolition teams to set charges to neutralize, destroy, or render elements of the target unusable. The special task detail normally acts concurrently with the main action group but may, as the situation dictates, precede or follow them.

c. Security Element. The security element supports the raid by securing rallying points, gives early warning of enemy approach, blocks avenues of approach into the objective area, prevents enemy escape from the objective area, covers the withdrawal of the assault element, and acts as the rear guard for the raid force. The size of the security element depends on the enemy's capability to intervene and disrupt the operations.

(1) As the assault element moves into position, security elements keep the command group informed of all enemy activities, firing only if detected and on order from the command group.

(2) Once the assault element has begun its action, the security element prevents enemy entry into or escape from the objective area.

(3) The security element covers the withdrawal of the assault element to the rallying point, withdrawing itself on order, or upon a prearranged signal.

(4) As the raid force withdraws the security element conducts a rear guard action, designed to disrupt and ambush enemy movement and pursuit, and create confusion by leading the enemy away from the main force's avenue of withdrawal.

7-11. Preparation

a. Planning Considerations.

(1) The first step in the selection of the target is based on its criticality, accessibility, vulnerability, and recuperability. Other important considerations are the nature of the terrain and the combat efficiency of the raiding force.

(2) Additionally, the Special Forces and resistance force commanders must consider any possible adverse effects on their units and the civilian populace as a result of the raid. The objective is to diminish the enemy's military potential, but an improperly timed operation may provoke enemy counteraction for which resistance units and the populace are unprepared. An unsuccessful attack often may have disastrous effects on troop morale, while successful operations, on the other hand, raise morale and increase the prestige of the units and their leaders in the eyes of the civilians and make them more willing to provide much needed support. Further, every precaution must be taken to insure that civilians are riot needlessly subjected to harsh reprisals because of raid actions. The impact of successful raids can be exploited in detachment psychological and propaganda programs; however, it is important that before such action is taken, any possible unfavorable repercussions from the population and the enemy military forces be considered. If a raid is unsuccessful, psychological operations will be required to lessen any adverse effects on the friendly indigenous force.

(3) Although detailed, the plan for a raid must be simple and not depend on too many contingencies for success. Activities in the objective area are planned so that the installation to be attacked is not alerted. This means that activities will conform to normal patterns. Time and space factors are carefully considered—time is allowed for assembly and movement, particularly during darkness. All factors are considered to determine whether movement and attack should be made during daylight or darkness. Darkness naturally favors surprise and normally is the best time when the operation is simple and physical arrangement of the installation is known. Early dawn or dusk is favored

FM 31-20

when inadequate knowledge of the installation or other factors necessitates tight control of the operation. A withdrawal late in the day or at night makes close pursuit by the enemy more difficult.

b. Intelligence. The raid force commander must have maximum intelligence of the target, the enemy forces capable of intervening, the civilian population's attitude and support, and the terrain to be traversed en route to and from the objective area; therefore, an intensive intelligence effort precedes the raid. Resistance force intelligence and reconnaissance elements conduct premission reconnaissance of the route to the target and of the target itself. In guerrilla operations, local auxiliary sources are exploited, and the auxiliaries may act as guides. Surveillance of the target begins early and is continuous up to the time of attack. The raid force commander exercises extreme caution to insure the secrecy of the impending operation by careful assignment of missions to resistance force reconnaissance elements so that the local population will not become alerted and alarmed.

c. Rehearsals of Participants. Realistic rehearsals by all participants are conducted for the operation and terrain similar to that found in the target area is used when available. Sand tables, sketches, photographs, and target mockups are used

to assist in briefings. Contingency and emergency actions are practiced, and final rehearsals are conducted under conditions of visibility expected in the objective area.

d. Final Inspection. The raid force commander conducts a final inspection of personnel and equipment before moving to the objective area. If possible, weapons are test fired, faulty equipment is replaced, and the physical condition of each man is checked. During this inspection, a security check is made of personal belongings to ensure that no incriminating documents are carried during the operation. This inspection assures the raid force commander that his unit is equipped and ready for operation.

7-12. Movement

Movement to the objective area is planned and conducted to allow the raid force to approach the target undetected. Movement may be over single or multiple routes. The preselected route or routes may terminate in or near one or more MSS's. Every effort is made to avoid contact with the enemy during movement. Upon reaching the designated rendezvous and MSS, security groups are deployed and final coordination takes place before moving to the attack position.

7-13. Action in the Objective Area

Special task details move to their positions and

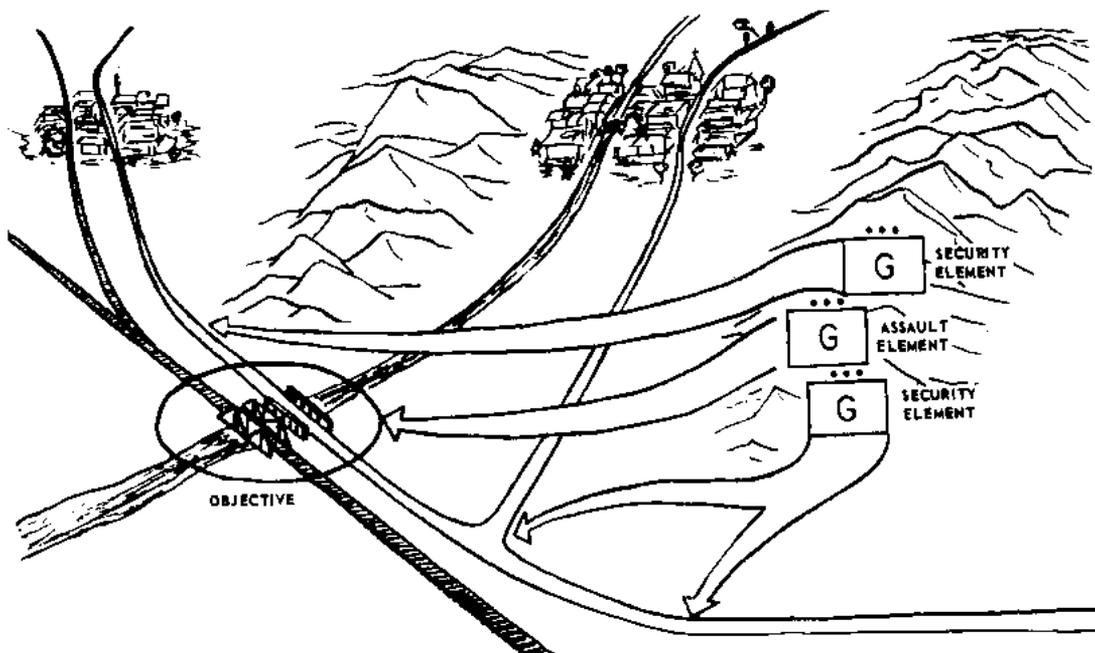


Figure 7-3. Movement to the objective area.

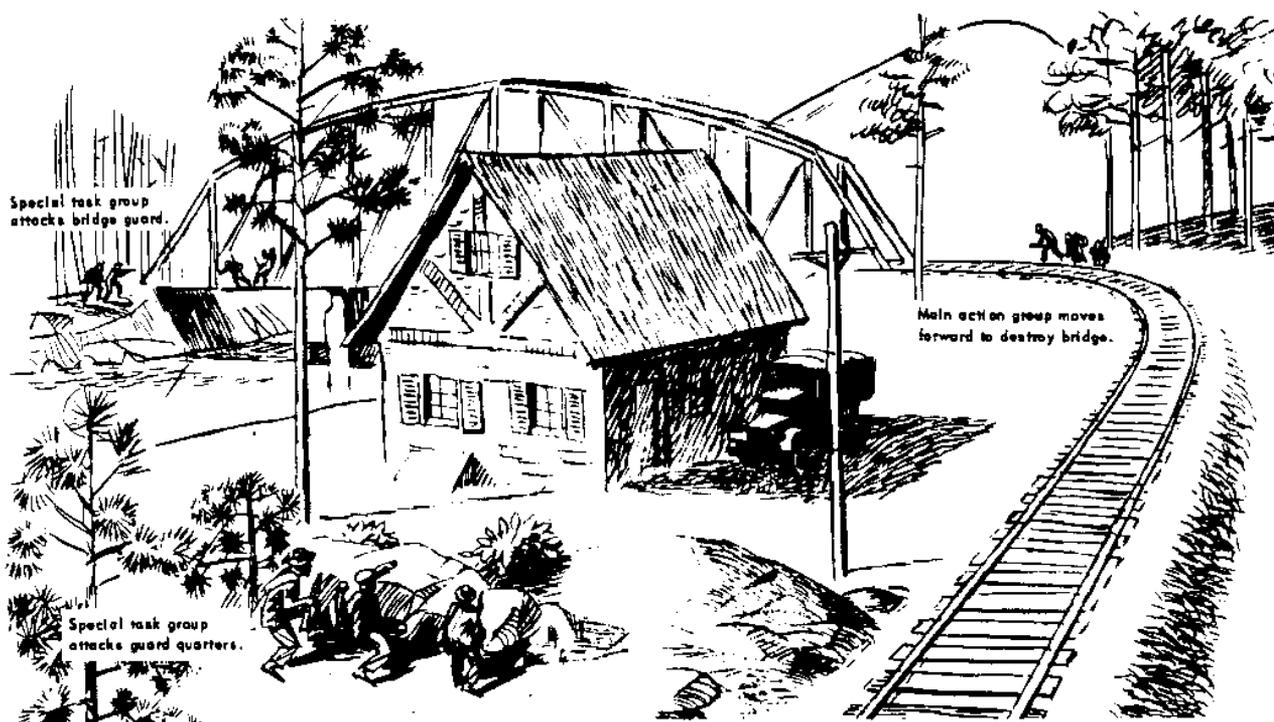


Figure 7-4. Action in the objective area.

eliminate sentries, breach or remove obstacles, and execute other assigned tasks. The main action group quickly follows the special task details into the target area. Once the objective of the raid has been accomplished, the main action group and special task details withdraw, covered by fire support elements with preselected fires or by the security element. If the attack is unsuccessful, the action is terminated to prevent undue loss of personnel and the special task details withdraw according to plan. The assault element assembles at one or more rallying points while the security elements remain in position to cover the withdrawal according to plan. The assault element withdraws on signal or at a prearranged time.

7-14. Withdrawal

a. Withdrawal is designed to achieve maximum deception of the enemy and minimum danger to the raid force.

(1) The various elements of the raid force withdraw, on order, over predetermined routes to the base area, through a series of rallying points.

(2) Should the enemy organize a close pursuit of the assault element, the security element assists by fire and movement, distracting the enemy, and slowing him down.

(3) If other elements of the raid force are closely pursued by the enemy they do not attempt to reach the initial rallying point; but, on their own initiative, they lead the enemy away from the remainder of the force and attempt to lose him by evasive action in difficult terrain.

(4) Specific instructions must be issued to the raiding force concerning such contingencies. Time-distance to be traveled, fire support and firepower, and the physical condition of the raiding force personnel are factors that will decide what course of action will follow. An attempt, may be made to reestablish contact with the main force at other rallying points, to continue to the base area as separate groups, to reach selected areas for evacuation, or, as a last resort, hole up in a selected MSS until such time as relief can be affected by the main force or a local auxiliary element.

(5) The raid force, or elements of it, may separate and proceed as small groups or individuals to evade close pursuit.

b. Frequently, in withdrawal operations, the raid force may disperse in smaller units, withdrawing in different directions, and reassembling at a later time at a predesignated place to conduct further operations. Elements of the raid force can conduct other operations, such as an ambush or the pursuing enemy force, during the withdrawal.

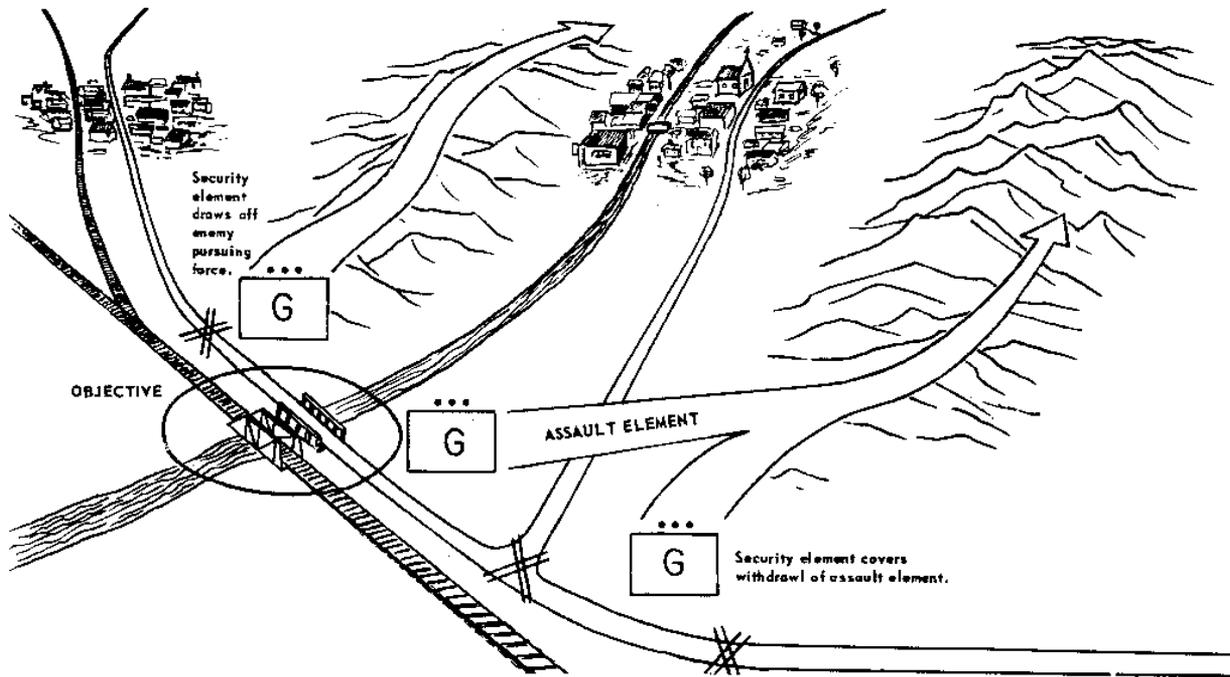


Figure 7-5. Withdrawal from the objective area.

7-15. Large Raids

a. General. When a target is large and well guarded, a larger raid force is required to ensure a successful attack. Large raids may involve the use of a battalion-size unit; and, though the operation is

conducted similarly to that for smaller raids, additional problems must be considered.

b. Movement to Objective Area. Surprise is just as desirable as in a smaller raid, but it is usually harder to achieve. In operational areas, the number of troops to

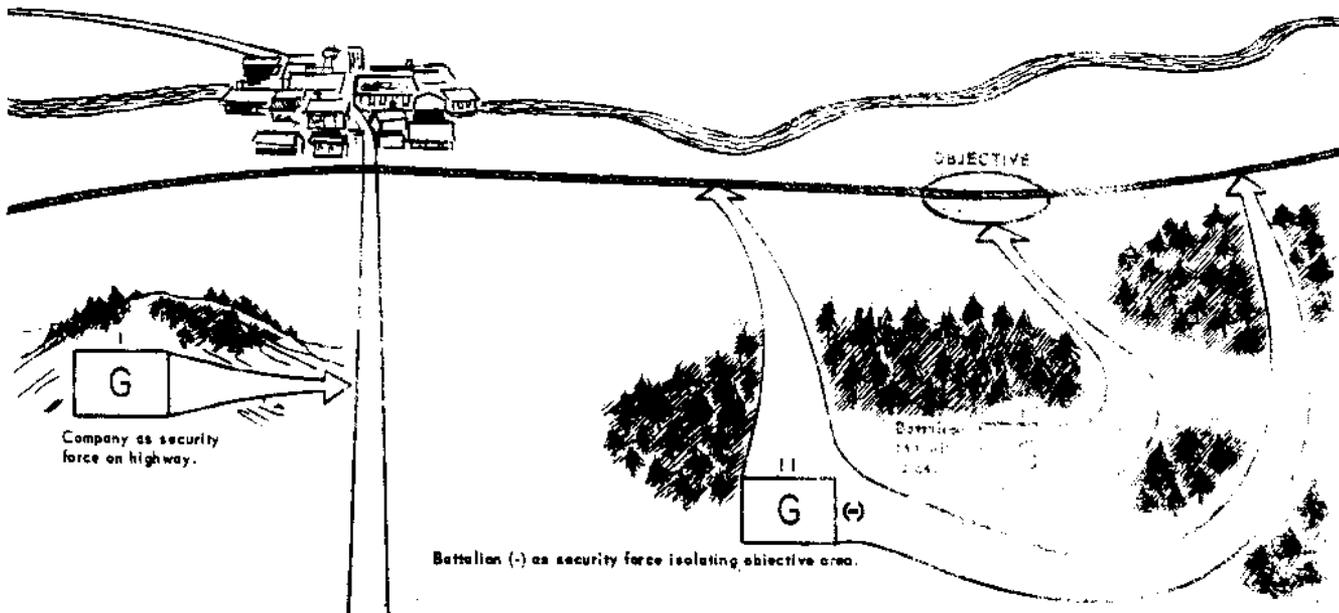


Figure 7-6. Movement to the objective area—large raid force.

be assembled and deployed may require additional MSS's at a greater distance from the target to preserve secrecy, which will necessitate a longer move to the attack position. A large raid force usually moves by small components over multiple routes to the objective area.

c. Control. Another problem inherent in a large raid is that of control. Units without extensive radio communication equipment will find coordination of widespread elements difficult to achieve. Pyrotechnics, audible signals, runners, or predesignated times may be used to coordinate action.

d. Training. A high degree of training and discipline is required to execute a large raid. Extensive rehearsals assist in preparing the force for the mission. In particular, commanders and staffs must learn to use large numbers of troops as a cohesive fighting force.

e. Fire Support. Additional fire support usually is a requirement. In UWOA's this may mean secretly caching ammunition in MSS's over a period of time before the raid. Guerrillas may each carry a mortar, recoilless rifle round, rocket or box of machinegun

ammunition, and leave them at the MSS or firing position for fire support units.

f. Timing. Timing is usually more difficult for a large raid. More time is required to move units, and the main action element needs more time to perform its mission. This requires stronger security elements to isolate the objective for longer periods. The time of the raid takes on increased importance because of the large numbers of personnel involved. Movement to the objective is usually accomplished during periods of low visibility; however, because of fire support coordination requirements and large numbers of personnel, the action may take place during daylight hours.

g. Withdrawal. In a UWOA, withdrawal from a large raid usually is by smaller groups over multiple routes in order to deceive the enemy and dissipate his pursuit. Dispersed withdrawal has the added advantage of denying a lucrative target to enemy air and fire support elements; however, the raid force commander must consider the possibility of an alert and aggressive enemy defeating the dispersed elements of the force. All factors must be carefully weighed before deciding on how to conduct the withdrawal.

Section IV. THE AMBUSH

7-16. General

a. *Missions.* Ambushes are surprise attacks from concealed positions, used against moving or temporarily halted targets such as trains, convoys, mounted columns, dismounted columns, individual vehicles, carrying parties, and reconnaissance and combat patrols. In an ambush the enemy sets the time and the attacker selects the place.

b. *Purposes.* Ambushes are executed to destroy or capture personnel and supplies, harass and demoralize the enemy, delay or block movement of personnel and supplies, and channel enemy movement by rendering certain routes untenable for traffic. Ambushes are executed to reduce the enemy's combat effectiveness by harassment or destruction. Guerrilla operations conducted deep in the enemy's rear areas may result in the enemy concentrating the majority of his movements to principal routes of communication where such targets are more vulnerable to attack by other forces. A secondary result is an increase in the combat effectiveness of the guerrilla force.

(1) *Destruction.* The loss of men and equipment will critically effect the enemy. In widespread guerrilla operations this will cause him to divert forces from other missions to protect his rear areas. The interference with, and ultimate destruction of, enemy reconnaissance and combat patrols will result in uncompleted patrols and depriving the enemy of valuable intelligence and information necessary to successfully combat the guerrilla.

(2) *Harassment.* The damage caused by the harassment of frequent ambushes is less apparent than physical destruction but is very important. When ambushes are frequent, widespread, and conducted against; all types of targets, troops tend to become reluctant to go on patrols, move in convoys, and in small groups, especially if these troops are rear area security forces. They become less aggressive and more defensive minded, avoid night operations, become more subject to confusion and panic if ambushed, and decline in effectiveness, all of which should be exploited to the maximum in PSYOP directed at the enemy troops.

FM 31-20

c. *Types.* Although ambushes are generally classified according to their primary purpose of harassment or destruction, they differ primarily in

size and action at the objective. Ambushes are further classified as deliberate ambushes or ambushes of opportunity.

GUERRILLA PATROL SEES ENEMY, GUERRILLA LEADER DECIDES TO AMBUSH.



FREEZE—FOLLOWED BY HASTY AMBUSH



AMBUSH IS EXECUTED.



RAPID WITHDRAWAL.

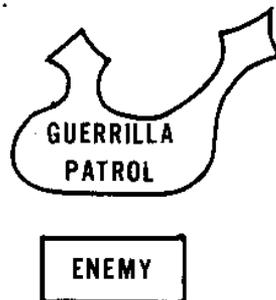


Figure 7-7. Ambush of opportunity.

7-17. Ambush of Opportunity

a. General. An ambush of opportunity is one in which available intelligence and information does not permit detailed planning, i.e., information to the effect that the enemy has increased patrolling action, but no significant route or formations and time intervals have been observed.

b. Courses of Action. The guerrilla force sending out reconnaissance elements to develop this information must prepare these elements to execute any of several courses of action. Courses of action taken in an ambush of opportunity are based on the types of targets that may be encountered and must be rehearsed prior to departure from base. Courses of action taken are determined when the opportunity for ambush arises. Examples are:

(1) The guerrilla force may commit small elements throughout the operational area to reconnoiter areas for suitable ambush sites, set up at the site selected, and execute an ambush against the first profitable target that appears.

(2) A guerrilla patrol may depart the base area just after dark, move to a specified point, run a traffic count until a designated time, ambush the first profitable target after that time, and return to base before daylight.

(3) A reconnaissance element, not on an ambush, may find that the best way to make contact with an enemy that cannot be avoided is to ambush it. This may be accomplished while en route to the objective area or while returning. The surprise may create enough confusion to enable the guerrilla force to break contact quickly and continue on to the objective, or move to an MSS without becoming engaged in prolonged combat.

c. Conduct of the Ambush. Depending on the number of personnel participating in the ambush of opportunity, the ambush force seals off access to prevent enemy reaction forces from overrunning its position. Escape routes open to the enemy, once the ambush is enacted, are covered by automatic weapon fire. The ambush force inflicts maximum damage with demolitions and automatic weapon fire, delivering a heavy volume of fire for a short time and withdrawing quickly and quietly. The force does not assault, except by fire, and avoids physical contact. If possible, they avoid being seen by the enemy.

d. Withdrawal. Withdrawal from the ambush site is accomplished rapidly to successive rallying

points. Individual snipers may be used as a rear security element, to impede and harass an enemy reaction force. Small elements may disperse into one or two-man groups to further confuse enemy pursuit. Each member of the ambush force must be aware of assembly points and safe areas.

7-18. The Deliberate Ambush

a. General. A deliberate ambush may be planned for an enemy force on the move into or out of the guerrilla unit's zone of responsibility, or against enemy targets which present themselves with regularity, moving over the same routes, departing and entering their own areas at the same points, or other established patterns of activity, within the guerrilla unit's zone of responsibility. The size and organization of an ambush force depends on the purpose of the ambush, the force or target to be ambushed, and the weapons and equipment with which the ambush will be executed.

b. Organization. The deliberate ambush force is organized into a headquarters element, assault element, and security element.

(1) *Headquarters element.* This element is normally constituted into the same segments as the raid force, but usually will assume its position with the main assault element in order to control the action at the ambush site.

(2) *Assault element.* This element conducts the main attack against the ambush target which includes halting the column, killing or capturing personnel, recovering supplies and equipment, and destroying unwanted vehicles and supplies which cannot be moved. When additional support is required, a support element can be formed within the assault element. This element may provide heavy automatic weapon fire, especially against foot troops; and, if the target is vehicular, provide antitank fire as well as mortar fire to assist in covering withdrawals.

(3) *Security element.* This element isolates the ambush site using roadblocks, other ambushes, and outposts. Security elements cover the withdrawal of the assault element and act as the rear guard during the withdrawal.

c. Planning. Planning for a deliberate ambush must provide courses of action for every immediate action or counteraction the enemy is capable of employing and these courses of action must be rehearsed in detail. In planning the ambush of opportunity, tentative plans must be made, and the ambushing force must be flexible enough to adopt or modify as appropriate at the ambush site. Four

FM 31-20

factors that play an important part in the planning of any ambush are briefly discussed below:

(1) *Information of the enemy.* However sketchy the information of the enemy may be, it must be used to the fullest in plans, preparation, and execution.

(2) *Control.* Close control must be maintained in executing any ambush. This control is best achieved through rehearsals and in the establishment and maintenance of good communications.

(3) *Patience.* The ambush party may be forced to occupy an ambush site well ahead of the arrival of the target. Patience is essential if secrecy is to be maintained. This can also be accomplished by rehearsals, and in knowing the force you are dealing with.

(4) *Camouflage.* The key to successful ambushes is surprise. Surprise cannot be achieved if men, weapons, and equipment are not well camouflaged and camouflage discipline enforced.

d. Preparation.

(1) *Selection of the ambush site.* Preparing the ambush site is similar to preparing for a raid, except that the selection of the ambush site is the major factor in the preparation. Certain factors affecting the selection of ambush sites) are:

(a) *The mission.* It may be a single ambush against one column or a series of ambushes against one or more routes of communication.

(b) *The enemy.* The probable size, strength, and composition of the enemy force that is to be ambushed, formations likely to be used, and enemy reinforcement capabilities must be considered.

(c) *Terrain.* In selecting the ambush site, favorable terrain may be located, although limitations such as deficiencies in firepower and lack of resupply during actions may govern the choice of ambush site. The site should have firing positions offering concealment and favorable fields of fire. Whenever possible, firing should be through a screen of foliage. The terrain at the site should serve to funnel the enemy into a killing zone. The entire killing zone is covered by fire so that dead space that would allow the enemy to organize resistance is avoided. The ambush force should take advantage of natural obstacles such as defiles, swamps, and cliffs to restrict enemy maneuvers against the force. When natural obstacles do not exist, mines, demolitions, camouflaged barbed wire, and other concealed obstacles are employed to canalize the enemy and also to inflict casualties.

Security elements cover roads and trails leading to the ambush site to warn the assault element of the enemy approach. These security elements also assist in covering the withdrawal of the assault element from the ambush site. The proximity of security to assault elements is dictated by terrain. In many instances, it may be necessary to organize secondary ambushes and roadblocks on these trails to intercept and delay enemy reinforcement

(2) *Time.* The time of the ambush should coincide with periods of low visibility which offer opportunities to surprise and confuse the enemy; however, movement and control are more difficult during the night ambush. Night ambushes are more suitable when the mission can be accomplished during, or immediately following, the initial burst of automatic weapon fire at close range. Frequent ambushes conducted at night will curtail the enemy's use of routes of communications, while friendly aircraft can attack the same routes during the day. Daylight ambushes facilitate control at the objective; it will permit offensive action for a longer period of time, and provide the opportunity for more effective fire from such weapons as rocket launchers, mortars, and recoilless rifles.

e. Intelligence. Since the guerrillas are seldom able to ascertain the exact compositions, strengths, and time of enemy movements in advance, their intelligence effort should be directed towards determining the movement pattern of the enemy. Using this information, resistance force commanders are able to determine what convoys are to be attacked by deliberate ambush or ambushes of opportunity. Intelligence considerations for ambushes are the same as for a raid.

f. Missions at the Ambush Site.

(1) When the primary mission is damage, the force seals off the area with security elements. They inflict maximum damage with demolitions, antitank weapons, and automatic weapon fire from support elements. The assault element; then provides security on the far side of the convoy, while designated elements kill or capture personnel and destroy vehicles and equipment. On command, or by prearranged signal, all elements withdraw to preselected rallying points and move out quickly.

(2) In conjunction with the above mission, when the primary purpose is to obtain supplies or capture equipment, security teams seal the area, while demolition teams and weapons are used to disable vehicles, but not destroy them. Once the desired items

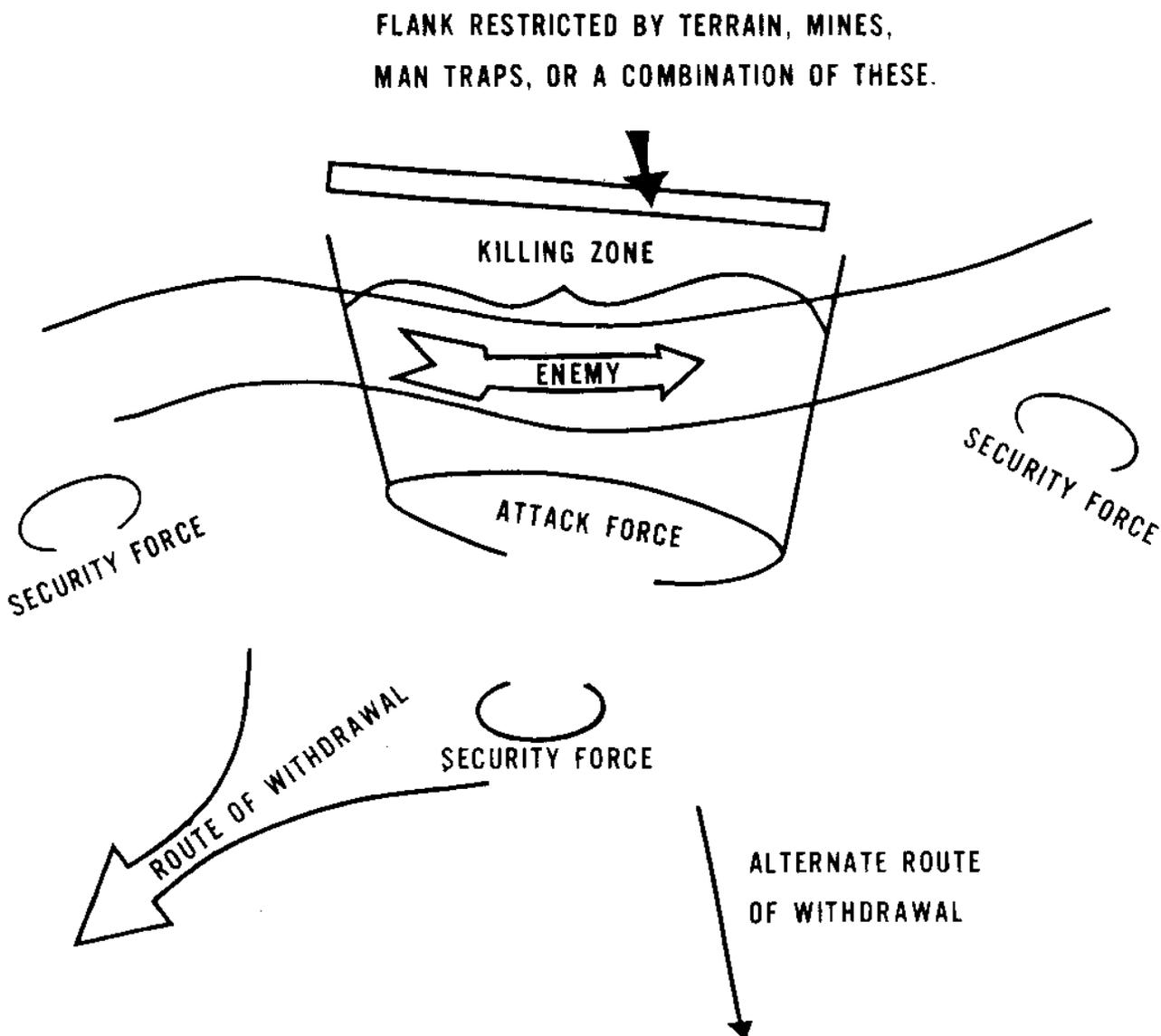


Figure 7-8. Deliberate ambush.

are secured, designated elements will then destroy all vehicles and equipment the force is unable to carry or does not require.

7-19. Conduct of the Ambush

a. Movement. The ambush force moves over a preselected route or routes to the ambush site. One or more MSS's or rendezvous points usually are used to consolidate forces and secure extra equipment along the route to the ambush site. Last minute intelligence is also provided at these stops by reconnaissance elements. Final coordination for the ambush is made at the final MSS or rendezvous point.

b. Action at the Ambush Site.

(1) Troops are moved to a forward assembly area near the ambush site, and security elements move out to secure their positions first, and then the assault and support elements, with the command group, move into place

(2) As the approaching enemy column is detected, or at a predesignated time, the ambush commander makes the final decision whether or not to execute the ambush. This decision depends on information not received that may include the size of the enemy column, guard and security measures, and estimated worth of the target in light of the primary mission.

(3) If the decision is made to execute the

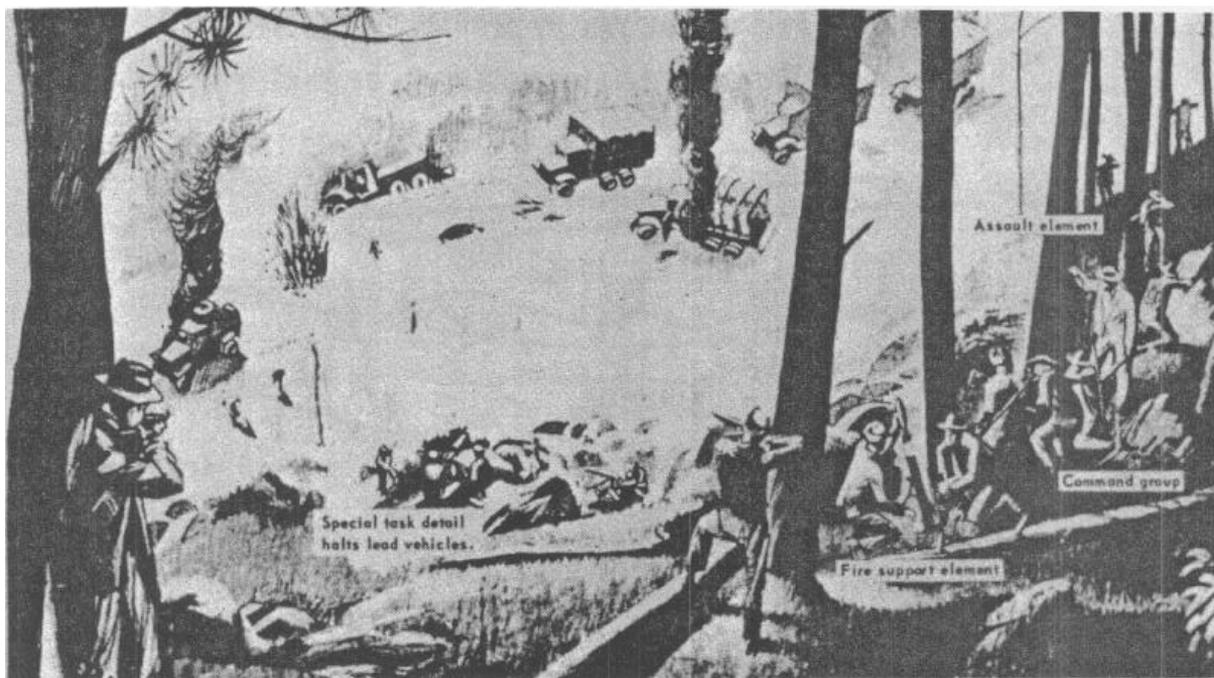


Figure 7-9. Action at the ambush site.

ambush, advance guards are allowed to pass through the main position. When the head of the main column reaches a predetermined point, it is halted by fire, demolitions, or obstacles. At this signal the entire assault element opens fire.

(4) Designated details engage the advance and rear guards to prevent reinforcement of the main column. The volume of fire is rapid and directed at enemy personnel exiting from vehicles and concentrated on vehicles mounting automatic weapons.

(5) The support element utilizes antitank grenades, rocket launchers, and recoilless rifles against armored vehicles. Machineguns lay banks of fixed fire across escape routes. Mortar shells, hand and rifle grenades are fired into the killing zone.

(6) If an assault is part of the mission, it is launched under covering fire on a prearranged signal.

(7) After enemy resistance has been nullified, special parties move into the column to recover supplies, equipment, and ammunition.

(8) When the commander desires to terminate the action, because the mission either has been accomplished or superior enemy reinforcements are arriving, he withdraws the assault and support elements first and then security elements which cover the withdrawal of the assault and support elements.

c. Withdrawal. Withdrawal from the ambush site is similar to withdrawal from a raid in that the security elements cover the assault and support elements.

d. Other Actions. If the purpose of the ambush is to harass and demoralize the enemy, a different tactic may be adopted. The advance guard is selected as the target of the ambush and the fire of the assault element is directed against them. Repeated attacks against enemy advance guards

(1) Cause the: use of disproportionately strong forces in advance guard duties. This may leave other portions of the column vulnerable or require the diversion of additional troops to convoy duty.

(2) Create an adverse psychological effect on enemy troops, and the continued casualties suffered by the advance guard make such duty unpopular.

7-20. Special Ambush Situations

a. Columns Protected by Armor. Attacks against columns protected by armored vehicles depend on the type and location of armored vehicles in a column and the weapons of the ambush force. If possible, armored vehicles are destroyed or disabled by fire of antitank weapons, landmines, Molotov cocktails, or by throwing hand grenades into open hatches. An effort is made to immobilize armored vehicles at a point where they are

unable to give protection to the rest of the convoy and where they will block the route of other supporting vehicles.

b. Ambush of Trains. Moving trains may be subjected to harassing fire, but the most effective ambush is derailment. Derailment on a grade, at a sharp curve, or on a high bridge will cause most of the cars to overturn and result in extensive casualties among the passengers. It is desirable to derail trains so that the wreckage remains on the tracks to delay traffic for long periods of time. Fire is directed on the exits of overturned coaches; and designated groups, armed with automatic weapons, rush forward to assault coaches or cars still standing. Other groups take supplies from freight yards and then set fire to the train. Rails are removed from the track at some distance from the ambush site in each

direction to delay the arrival of reinforcements by train. In planning the ambush of a train, remember that the enemy may include armored railroad cars in the train for its protection and that important trains may be preceded by advance guard locomotives or inspection cars to check the track.

c. Ambush of Waterway Traffic. Waterway traffic, such as barges or ships may be ambushed similar to a vehicular column. The ambush party may be able to mine the waterway and thus stop traffic. If mining is not feasible, fire delivered by recoilless weapons can damage or sink the craft. Fire should be directed at engine room spaces, the waterline, and the bridge. Recovery of supplies may be possible if the craft is beached on the banks of the waterway or grounded in shallow water.

Section V. GUERRILLA FORCE DEFENSIVE MEASURES

7-21. General

Guerrilla units normally are inferior to organized enemy forces in strength, firepower, mobility, and communications; therefore, their operations are primarily offensive. On this basis, Special Forces detachment commanders, when planning operations and security within the operational area, should not undertake defensive operations unless forced to do so or when ordered to support special operations conducted by theater forces. When the enemy attacks, guerrillas defend themselves by movement, dispersion, withdrawal, or diversions. Whenever possible, defensive operations are accompanied by offensive actions against the enemy's flanks and rear.

7-22. Preparation for Enemy Offensives

a. Guerrilla intelligence measures normally provide advance warning of impending, large-scale, counter guerrilla operations. Guerrilla commanders must be knowledgeable of the activities and conditions which might indicate impending enemy offensives in their operational areas. Some of these indicators are

- (1) Weather conditions that permit extensive field operations.
- (2) Arrival of new enemy commanders.
- (3) Any change in the conventional battle situation which releases additional troops for counter guerrilla operations. Such changes include enemy victories over allied conventional forces, a

lull in active operations, and a reduction of the size of the battle area.

(4) Increase in the size of local garrisons or the arrival of new units in the area, particularly combat troops or troops with special counter guerrilla capabilities such as radio direction finding, CBR, or rotary-wing aircraft units, or mountain, airborne, or reconnaissance troops.

(5) Extension of enemy outposts, increased patrolling, and aerial reconnaissance.

(6) Increased enemy intelligence effort against the guerrillas.

(7) New measures employed by the enemy to pacify or control the civilian population.

(8) Increased PSYOP effort directed against the guerrilla force.

b. Upon receiving information that indicates the enemy is planning a counter guerrilla campaign, the commander should increase his own intelligence effort, determine the disposition and preparedness of his subordinate units, and review plans to meet the anticipated enemy action.

7-23. Defensive Tactics

a. To divert the enemy's attention, the commander may direct diversionary activities to be initiated in other areas. He may also intensify his operations against enemy lines of communications and installations. Full use of underground and auxiliary capabilities assist diversionary measures and tactics.

FM 31-20

b. In preparing to meet enemy offensive action, key installations within a guerrilla base are moved to alternate bases and essential records and supplies are transferred to new locations while less essential items are destroyed or cached in dispersed locations. If the commander receives positive intelligence about the enemy's plans for a major, counterguerrilla operation, he may decide to evacuate his main base without delay.

c. The commander may decide to delay and harass the advancing enemy, making any attack so expensive that the enemy will terminate operations and be content with their original dispositions. Security activities on the periphery, as well as within a base, are accelerated and maximum use is made of the defensive characteristics of the terrain. Ambushes are positioned to inflict casualties and delays and antipersonnel mines are employed extensively to harass the enemy. If the enemy overruns various strong points, the guerrillas withdraw to successive defensive positions to delay and harass; and, when the situation permits, they may disperse, pass through the line of encirclement, and initiate attacks on the enemy's flanks, rear, and supply lines. If the enemy is determined to continue his offensive, the guerrilla forces should disengage and evacuate the area, for under no circumstances does the guerrilla force allow itself to become so engaged that it loses its freedom of action and allows enemy forces to encircle and destroy it.

d. When faced with an enemy offensive of overwhelming strength, the commander may disperse his force, either in small units or as individuals, to avoid destruction. This course of action should not be taken unless absolutely necessary, for it renders the guerrilla organization ineffective for an undetermined period of time.

7-24. Counter guerrilla Tactical Operations

a. Encirclement is the greatest threat to a guerrilla force because it limits the guerrilla's flexibility of action. Encirclement is difficult for a counter guerrilla force to carry out because it requires positioning a large number of troop units around the guerrilla force, preferably during the hours of darkness, if it is to be effective. Coordination of an encirclement will be more complex in rough terrain. The enemy should be expected to make maximum use of firepower, aerial reconnaissance and air strikes, and airmobile reserves to effect the destruction of the guerrilla force.

b. If the enemy succeeds in encircling the guerrilla force, he will attempt capture or destruction of the guerrillas by such tactics as contracting the encirclement, fragmenting the area encircled, and forcing the guerrillas against defended or impassable terrain obstacles or into predetermined killing zones.

c. See FM 31-16, FM 31-21, and FM 31-22 for a detailed discussion of breakout of encirclement and other counter guerrilla offensive operations.

7-25. Defensive Measures that 'the Guerrillas May Employ

a. Have auxiliaries and underground increase counterintelligence activities.

b. Initiate diversionary activities in other areas.

c. Intensify operations against lines of communication.

d. Prepare to implement guerrilla base evacuation plan.

e. Institute delay and harassing tactics.

f. Exploit guerrillas' inherent advantages of fluidity and intimate knowledge of terrain.

g. Prepare to initiate "breakout" operations (see para 7-26).

h. Withdraw to more favorable terrain.

i. Increase frequency of ambush operations.

j. Prepare for the enemy's use of chemical and biological weapons.

k. Establish caches in potential withdrawal areas.

l. Emphasize passive air defense measures.

m. Plan for employment of concentrated fires of automatic and semiautomatic weapons against helicopters and low-performance aircraft.

n. Plan counteractions against enemy heliborne and airborne operations.

o. Take adequate communication security measures.

p. As a last resort, implement dispersal plan. This plan must include instructions covering interim conduct and ultimate reassembly.

7-26. Guerrilla Breakout Operations

a. *Organization of Breakout Operations.* A typical guerrilla organization for breakout operations includes:

- (1) Guerrilla scouts.
- (2) Breakout force, consisting of two strong guerrilla elements.
- (3) Main body.
- (4) Two flank guard elements (right and left).
- (5) Rear guard.

b. Operational Concept. The guerrilla scouts locate a weak point in the enemy lines along an axis of movement that will benefit the guerrillas following the breakout (e.g., into jungles, swamps, mountains, etc.). The remaining elements (a (2) through (5) above) are positioned as shown in figure 7-8. The breakout force attacks to create and maintain a suitable gap in the enemy lines. The main

body and flank guards then proceed through the gap thus formed. The two breakout force elements close on each other and proceed through the gap, followed by the rear guard elements. The breakout is timed to occur during periods of poor visibility, which will impede enemy observation and accurate fire. During the attempt, guerrilla units not included in the enemy circle make attacks against the enemy's rear to lure forces away from the main breakout attempt and help to create gaps. After a successful breakout, the guerrilla force should reassembly in a predesignated area. Wherever possible, the tempo of its operations should be increased at this time, thus raising the morale of the guerrilla force.

Section VI. OPERATIONS IN SUPPORT OF CONVENTIONAL FORCES

7-27. Missions in Support of the Unified Command

These missions, strategic in nature, are tactical in execution. Such missions have both long-range and immediate effects on the enemy and usually consist of interdiction of lines of communication and destruction of strategic targets (see para 7-2 through 7-7). Subsidiary operations may involve support of PSYOP, special intelligence tasks, subversion operations, and evasion and escape operations. Actions by guerrilla forces against the enemy to obtain logistical items are subsidiary to their strategic missions. Guerrilla operations cause the enemy to divert forces to rear area defensive missions, and subsequent actions ensure these forces remain committed to this role.

7-28. Airborne Operations

Operational control of guerrilla forces within an airborne objective area should be exercised by the airborne force commander. Specific command and control procedures are developed jointly by--the theater UW command and airborne commanders.

a. Support of Airborne Operations. Guerrilla forces may support airborne forces during the assault phase and subsequent operations. They may also be employed in conjunction with airborne raids and heliborne operations.

b. Guerrilla Force Assistance to an Airborne Assault.

(1) Guerrilla forces can provide intelligence of the objective area to the airborne force commander through the theater UW command.

Guerrilla units may be given the mission of securing drop and landing zones, seizing objectives within the airhead line, occupying reconnaissance and security positions, delaying or harassing enemy movements toward the objective area. Concurrent with the landing of the assault echelon, guerrillas can furnish current intelligence data, provide guides, conduct reconnaissance and security missions, interdict approaches into the objective area, control lightly defended areas between separate airheads and dispersed units, attack enemy reserve units and installations, and conduct diversionary attacks. In addition, guerrilla forces may assist in controlling the civilian populace within the objective area.

(2) Precise timing of the airborne assault with supporting guerrilla operations is essential. If committed prematurely, guerrilla forces may nullify the surprise effect of the operation, and, in turn, suffer defeat in detail. If committed late, the desired support effects from the guerrilla force employment may never materialize.

(3) Subsequent to the air assault phase, guerrilla forces continue to exert pressure on the enemy in the vicinity of the objective area. Guerrillas continue to provide current intelligence information. The guerrillas conduct harassing attacks against enemy units, thus requiring the enemy to fight two forces simultaneously. During the exploitation phase, guerrilla forces may be employed to assist in controlling areas between dispersed friendly units, in reconnaissance security roles, and as guides.

(4) Guerrilla forces can assist an airborne raiding force by providing information and guides, performing reconnaissance and security missions, and

FM 31-20

diverting enemy forces during the withdrawal of the raiding force.

7-29. Amphibious Operations

Initially guerrilla forces operating within an amphibious assault objective area are under the operational control of the amphibious task force commander. Operational control of guerrilla forces is transferred to the landing force commander when the latter assumes responsibility for operations ashore. Operational control of guerrilla forces supporting amphibious operations should not normally be passed below major landing force component level.

a. Support of Amphibious Operations. Guerrillas may support ground forces engaged in amphibious operations in one or more of the following ways: conduct operations to hinder or deny the enemy approach to the beachhead; temporarily seize and hold all or a portion of a lightly defended beachhead; conduct diversionary operations to deceive the enemy as to the location of the actual beachhead; temporarily seize helicopter landing areas; and, assist airborne and heliborne operations which may be conducted in conjunction with, or complementary to, the amphibious assault.

b. Guerrilla Assistance to an Amphibious Assault.

(1) Guerrilla forces can interdict approaches into the area, attack artillery positions and reserves, destroy command posts and communication facilities as well as logistical installations and airfields which can support the enemy.

(2) If the selected beachhead is lightly defended or unoccupied, guerrilla units may seize and hold portions of the beachhead. Guerrilla forces should seize their objectives just prior to the initial assault. Landing force planning must provide for early relief of guerrilla units. Plans for naval gunfire support to guerrilla forces must include provisions for the conduct and adjustment of fires. Naval gunfire liaison personnel, shore fire-control parties, and tactical air control parties should be provided as required. Planning for such operations is conducted jointly by the theater UW command and amphibious task force commanders.

(3) Guerrillas may be employed in a tactical cover and deception role to assist amphibious assaults. Guerrilla forces intensify operations in selected areas to deceive the enemy as to the exact location of the main landings. Air defense radar and

coastal detection stations are targets for attack to reduce the enemy's early warning capability. A sudden increase in resistance activities or a shifting of such activities to other areas assists deception.

(4) Timing of the use of guerrilla forces in support of an amphibious operation is extremely important. Premature commitment alert, the enemy and may lead to the defeat of the guerrilla force. Late employment may not produce the desired effect.

7-30. Linkup Operations

These operations are conducted to assist advancing tactical commands. As delegated by theater, operational control of guerrilla forces is exercised by tactical commanders through a Special Forces liaison element. This element is attached to the headquarters gaining operational control from the unified commander.

a. Many offensive operations in which guerrilla forces assist tactical commands involve a juncture between elements of the two forces.

b. Not all guerrilla forces in an operational area are involved in linkup with tactical units. Some missions will preclude physical juncture. For example, during raids or area interdiction operations by airborne forces or when conducting operations as part of a cover and deception plan for an amphibious force, it is often undesirable to linkup all guerrilla units with the attacking units.

c. Operational control of the guerrilla force normally should pass from the theater UW command to the major ground force commander when the UWOA falls within the tactical command's area of influence. This usually will be well in advance of linkup.

d. When guerrilla units are attached to a conventional force, responsibility for administrative and logistical support of these units normally passes from the SFOB to the conventional force.

e. The theater commander in coordination with U.S. and allied officials will determine the disposition or further utilization of the UW forces following linkup.

f. In the event that control of guerrilla forces is retained by the United States after, linkup, it may be practicable to use these forces for missions under the control of theater army support command (TASCOM), theater army civil affairs command (TACAC), or control may be retained by the local tactical commander. For continuity, Special Forces detachments may be required to remain with guerrilla

units until coordination relationships have been established between guerrilla forces and the appropriate U.S. command.

7-31. Planning Considerations

a. Liaison.

(1) Linkup planning provides for an exchange of liaison personnel between the linkup force and the SFOB. If possible, the area command should be represented by a liaison party exfiltrated from the UWOA. This party consists of Special Forces personnel and resistance representatives. It can provide timely information to the tactical commander concerning the latest resistance and enemy situations, recommended linkup coordination measures, and recommended missions for guerrilla units.

(2) The tactical commander will send a liaison party to the area command. This liaison party may include representatives from the tactical commander, Special Forces liaison personnel, tactical air control parties, forward observer teams, and communication personnel and equipment. The liaison party should be completely aware of the scope and purpose of the linkup plan.

b. Coordination of Schemes of Maneuver. Standard control measures are established to assist linkup. See FM 61-100 for details of these control measures. Guerrilla units usually are dispersed over a large area; consequently, linkup may take place at several widely separated points and at a number of different times.

c. Fire Coordination Measures. Fire coordination measures, such as no-fire lines and fire support coordination lines (FSCL), are established by the headquarters directing the operation. Because of the dispersion existing among guerrilla units and the fact that civilian support organizations are a part of the UW force, additional restrictions on supporting fires may be necessary. In particular, the planned employment of nuclear and CB weapons by the tactical commander in the UWOA must be thoroughly coordinated.

d. Communication Coordination. Radio communication equipment with the guerrilla forces normally is limited. The tactical commander will provide the guerrilla force equipment with a voice capability which can link the guerrilla force to his headquarters. Visual recognition signals are selected to assist in linkup. Pyrotechnics and other required

items not available to the guerrilla force should be provided by the ground force concerned.

e. Contact Points. Specific locations are established for the two forces to effect contact. Usually these points are well-defined terrain features.

f. Employment Following Linkup. The unified commander will prescribe the conditions and duration of utilization of the guerrilla forces after linkup. Within the scope of this guidance the tactical commander may further utilize guerrilla forces over which he exercises operational control. For a discussion of employment after linkup, see paragraph 7-32.

7-32. Missions Conducted after Linkup

a. Reconnaissance and Security. The normal method of employment in reconnaissance and security missions is to assign guerrilla units an area of responsibility. Within this area, guerrilla forces patrol difficult terrain and gaps between tactical units, establish roadblocks and observation posts, screen flanks, provide guides to conventional units, provide or augment security to artillery positions and other facilities, and seek out enemy agents and stragglers.

b. Rear Area Security. Guerrillas may be used as security forces at logistical and administrative installations, supply depots, airfields, pipelines, rail yards, ports, and tactical unit trains areas. Guerrilla units can patrol difficult terrain which contains bypassed enemy units or stragglers; police towns and cities; guard lines of communications such as railroads, highways, telecommunication systems, and canals. When provided with appropriate transportation, guerrilla units may be employed as a mobile security force reserve.

c. Civil Affairs Assistance. Because of their knowledge of the language, familiarity with the local population, and previous experience, guerrilla forces, or selected civilian support elements, may be assigned to assist civil affairs units. They may be attached to divisional, corps, or army civil affairs units. Guerrilla forces can perform refugee collection and control duties, civil police duties, assist in the PSYOP campaign in rear areas, help establish civil government, apprehend collaborators and spies, recruit labor, furnish or locate technicians to operate public utilities, guard key installations and public buildings, assist in the review and censorship of material for dissemination through public media facilities, and, in general, assist in restoring the area to its normal state.

CHAPTER 8

WATERBORNE OPERATIONS IN CONVENTIONAL WARFARE

Section I. U.S. NAVY IN SUPPORT OF SPECIAL FORCES OPERATIONS

8-1. General

a. The U.S. Navy has many unique capabilities that may be of assistance in Special Forces operations. The Navy's major contribution for supporting unconventional warfare lies in its capability to clandestinely infiltrate and exfiltrate personnel and supplies into, and out of, UWOA's located relatively close to navigable water areas, and usable landing sites.

b. Up to the point of debarkation, infiltration by submarine is the most secure means of infiltration. The nuclear submarine, with its speed and range, provides Special Forces with a greater capability for amphibious infiltration; however, amphibious infiltration is not limited to submarines as a means of transport. Destroyers, landing craft, or amphibious aircraft may be used to accomplish infiltration. For discussion of naval support of infiltration see chapter 4.

8-2. Transport

a. Selection of transport is the responsibility of the Navy. Available are amphibious aircraft, surface, and subsurface vessels. Special Forces operations place emphasis on subsurface vessels.

b. The selection of transport for a specific mission is largely determined by the following factors:

- (1) The distance to the objective area.
- (2) Offshore hydrography.
- (3) The enemy situation.
- (4) Time on station.

c. The landing craft used depends on the type of transport employed, the tactical and physical conditions at the landing site, the number of personnel, and the amount of cargo to be landed. Of basic concern to the detachment commander is the type of landing craft he will be assigned for

operations. Normally, the inflatable reconnaissance boat (designated IB (L) with a capacity for 12 men or IBIS) with a capacity for seven men) will be used for this purpose. While in the briefing center and before leaving the departure site, the detachment commander ensures that his detachment is proficient in amphibious operations.

d. Upon assignment of a transport vessel, the detachment commander should become familiar with the ship's characteristics, facilities, and interior to include exact troop locations and storage areas for the detachment's equipment and boats. Equipment is then prepared and packaged in containers of specific dimensions and weights, according to the requirements of the assigned craft. All equipment is waterproofed and marked for identification. When a submarine is the transporting craft, inflatable boats are deflated and stowed in the free flooding portions of the superstructure.

8-3. Tactical Considerations

a. Amphibious operations conducted in support of Special Forces units may be divided into the following phases:

(1) Movement by transport craft to the debarkation point.

(2) Transfer from transport; craft and movement to the landing site in small landing craft or indigenous craft. If indigenous craft is used, Special Forces personnel and cargo should be concealed en route to the landing site.

(3) Disposal of landing craft. In some situations, the detachment may be required to secrete or cache their landing craft for possible use in exfiltration or evacuation from the operational area. Landing craft may sometimes be returned to the transport vessel by naval personnel supporting the operation.

(4) Movement of personnel/cargo from the beach site into the objective area and sterilization of the

FM 31-20

infiltration site.

b. To prepare the detachment for these phases, the detachment commander conducts extensive joint training exercises. Numerous drills in the basic techniques of debarking, boat handling, use of emergency escape trunk, recovery of personnel, and use of communication equipment are accomplished. Complete rehearsals are conducted frequently. In addition, if the move is to be made by submarine, physical conditioning exercises should be a part of

the daily routine. If a completely submerged transit is made, this will preclude any possible physical exercise because of the restrictive limitations of the submarine.

c. After embarkation on the transport craft, debarkation rehearsals should be conducted with the crew of that craft after the ship is at sea and out of sight of land.

d. For additional discussion of naval support see FM 31-21.

Section II. LANDING OPERATIONS

8-4. Debarkation Techniques

Debarkation and ship-to-shore movement are precise operations which can easily jeopardize the safety of all elements and compromise the mission. Detection of the submarine before debarkation could result in delay, modification, or cancellation of the operation. The choice of a debarkation method will depend largely on intelligence gathered during the planning phase and on the type of mission, as well as by the degree of training of the Special Forces detachment to be infiltrated.

a. *Surface Launch.* The surface launch may be conducted by either the wet or dry method. The dry launch consists of the submarine personnel inflating boats, sliding them over the side into the water, positioning them at specified stations, and debarking troop personnel. The wet launch is similar to the dry launch except that Special Forces personnel man the inflated boats positioned on the deck and then the submarine submerges, automatically launching the manned boats.

b. *Broached Launch.* This procedure requires the submarine to surface with decks awash. The Special Forces personnel debark through the upper conning tower hatch into the water. As soon as the last swimmer leaves the conning tower, the hatch is secured and the ship submerges at dead-slow speed, preventing propeller wash from injuring the swimmers. The swimmers may then make a compass swim to the beach or inflate the boats in the water, secure the equipment, and row the boats to shore. This technique restricts the amount of equipment that can be carried.

c. *Bottom Lockout.* This procedure can be used when debarking from a submarine and when the

vessel can come to a full stop, resting submerged on the bottom. Special Forces personnel, equipped with self-contained underwater breathing apparatus (SCUBA) (open and closed circuits), are locked out in a compartment that can be flooded, allowing them to swim out and make a submerged, compass swim to the beach. This technique can also be used by debarking personnel without SCUBA equipment allowing free, or buoyant, ascent to the surface. Swimmers can then make a surface compass swim to the beach. It is also possible for a pair of SCUBA divers to "lock-out," release, and inflate boats, and for the remainder of the detachment to make a free ascent to the surface with their equipment. After surfacing, they man the boats and row a compass course to the beach.

d. *Debarkation From Surface Craft.* The detachment debarks by climbing down landing nets into inflatable boats. Because of security, the surface craft remains beyond the horizon and other landing craft delivers the detachment to the beach or tows them to a prescribed release point. Submarines may also surface, and tow the inflatable boats by fastening a towline to the aft end of the sail or conning tower. The boats are towed to a designated release point off the landing site and released.

8-5. Conduct of Landing Operations

Conduct landing operations on selected landing sites may be accomplished with or without reception committees. When reception committees are present, the supporting naval craft receives the proper authentication signals through infrared lights or other visual signalling devices. Landing operations are normally conducted as follows

a. One hour before debarkation, the Special Forces commander is alerted and all detachment equipment is

assembled near debarkation hatches, according to the selected debarkation technique. Upon reaching the debarkation point, the Special Forces commander reports to the conning tower for a periscope view of the beach and to receive last-minute instructions for landing.

b. Navigation is difficult during the ship-to-shore movement. The course to the landing site must compensate for set and drift of known currents. A combination of dead reckoning, celestial observation, and shoreline silhouette is used in navigating. Underwater sound, infrared light, radar, visible light, or radio can be used for navigating if the situation permits. Boat control depends on the number of boats in the landing party.

c. As the boats approach the surf zone, the detachment commander orders the boats to lie outside the surf zone and to maintain relative position to the beach. Scout swimmers enter the water, approach the beach, determine any enemy presence in the landing area, and make contact with the reception committee. This usually is done by moving singly about 50 meters in opposite directions after reaching the beach.

d. After determining that the landing area is clear, they signal the boat team by prearranged signal. This same technique is followed even though a reception committee is present. The scout swimmers will establish security until the boat is beached and the remaining personnel secure the equipment. After sterilizing the landing site, the detachment conducts the remainder of its infiltration by land. If a reception committee is available, they will guide the detachment to safe areas where additional equipment that may be brought ashore can be stored, establish security, and assist in sterilizing the landing site.

8-6. Landing Site Selection

a. Considerations. Normally the initial landing site selected for detachment infiltration is the responsibility of the supporting service and the SFOB; however, once the detachment has been committed into the operational area, the selection of subsequent landing sites is the responsibility of the detachment commander. Alternate landing sites are selected when possible. Selection must be based on the requirements of both the materials to be landed

and the availability and size of his reception committee. The detachment commander must have a basic knowledge of hydrography in order to select sites that will permit transport vessels to conduct landing operations in close proximity. He gives the same consideration to selecting water landing sites as he does to the selection of DZ's and LZ's.

b. Locations. The site should be located to provide maximum freedom from enemy interference. Stretches of heavily defended or frequently patrolled coastlines should be avoided. If sand beaches are used, tracks and other signs of operations that may compromise the mission should be obliterated. Rural, isolated areas are preferred.

c. Exits. The coastal area immediately behind the landing site should provide a concealed avenue(s) of exit and areas of evasion.

d. Barriers. The technique of backward planning, i.e., step-by-step visualization of the operation commencing with the safe arrival of over the-beach-infiltration personnel/cargo at the guerrilla base, may disclose that landing sites satisfying landing party and reception committee criteria are unsuitable due to the existence of enemy barriers between the site and the ultimate destination. Such barriers may consist of heavily patrolled roads, large areas affording little or no concealment, extensive mangrove swamps, areas populated with enemy sympathizers, or an area extensively used for enemy troop maneuvers and training. Unless a secure means of circumventing existing barriers is devised, the selection and use of landing sites should be limited to those without barriers.

8-7. Reporting Landing Sites

a. The following minimum data is reported for a beach landing site (additional hydrographic data may be required in some situations)

(1) Proword (designated in SOI).

(2) Paragraph A: Code Name. Designated in accordance with the SOI. Designate as primary or alternate (PRI-ALT).

(3) Paragraph B: Location. Complete military grid coordinates to the nearest 100 meters of the center of the beach-landing site (BLS).

(4) Paragraph C: Beach Shape and Usable Length. Report the shape, i.e., straight, concave, convex, etc., of the BLS and its usable length in meters. The term "usable" may be confined to only that length

FM 31-20

of beach to be used.

(5) Paragraph D: Reference Point. A landmark clearly indicated on the issue maps. Reference point will be reported by grid azimuth, description, and distance in kilometers from the center of the BLS.

(6) Paragraph E: Beach Gradient. Report the more shallow gradient of the right, center, and left of both the foreshore and that portion of the near shore to the 3½-fathom line. Gradients will be expressed in a ratio of depth to horizontal distance.

(a) Paragraph E1: *Foreshore Gradient*.

(b) Paragraph E2: *Nearshore Gradient*.

(7) Paragraph F: *Width of Surf Zone*. The width of the surf zone is measured from where the surf begins to the limit of the up rush on the beach in meters.

(8) Paragraph G: *Obstacles*. Report all obstacles not shown on issued maps which are within 3 kilometers seaward of the BLS. Obstacles will be reported by grid azimuth, description, and distance in kilometers from the center of the BLS.

(9) Paragraph H: *Additional Information*. (See appendix C for example.)

b. The Beach Landing Mission Request will be submitted in accordance with current SOP and SOI in effect. The following data is the minimum required for a mission request.

(1) Proword (designated in SOI).

(2) Paragraph A: *Code Name of BLS* (primary BLS). If the BLS is to be used as a departure site for a rendezvous, the word "RENDEZVOUS" will follow the BLS code name.

(3) Paragraph B: *Date/Time Mission Requested* (primary BLS). State two date/time groups-primary and alternate.

(4) Paragraph C: *Authentication Date* (primary BLS).

(a) The frequency or authentication code letter.

(b) If rendezvous and underwater signal is to be used, indicate type of signal and authentication code letter.

(c) Indicate any special equipment for signal.

(5) Paragraph D: *Supplies/Personnel* requested for infiltration/exfiltration mission is requested.

(6) Paragraph E: *Code Name of BLS* (alternate BLS). Same requirements apply as stated in paragraph A.

(7) Paragraph F: *Authentication Data* (alternate BLS).

(8) Paragraph G: *Additional Information*.

(a) If a rendezvous operation is planned, the type of boat/vessel to be used by the detachment will be specified.

(b) The location of the rendezvous site, when required, will be furnished in polar coordinates by the SFOB in the Beach Landing Mission Confirmation message to the detachment,, (See app C for example.)

c. The Beach Landing Confirmation message will be transmitted to the operational detachment and should contain the following minimum data.

(1) Proword (designated in SOI).

(2) Paragraph A: *Code Name* (primary BLS). The word "RENDEZVOUS" will follow the code name if a rendezvous is to be used. If a rendezvous is to be used, a polar coordinate site from the BLS in degrees and meters will follow the word "RENDEZVOUS." The polar coordinates grid azimuth and then the distance in meters.

(3) Paragraph B: *Azimuth to Direct Signal* (BLS to ship). If a rendezvous is to be used, the grid azimuth for the signal light, if required, will be from the rendezvous site to the ship.

(4) Paragraph C: *Date/Time of Mission* (primary BLS).

(5) Paragraph D: *Number of Bundles/Personnel*.

(6) Paragraph E: *Alternate BLS Code Name*. Same comment as indicated in paragraph A.

(7) Paragraph F: *Azimuth to Direct Signal* (BLS to ship).

(8) Paragraph G: *Date/Time of Mission* (alternate BLS):

(9) Paragraph H: *Vessel Call Sign and Frequency* (if appropriate).

(10) Paragraph I: *Additional Information*

(a) The type of craft to be used for a rendezvous will be specified as well as the method of rendezvous.

(b) Special signal instructions. (See appendix C for example.)

d. *Surf Observation (SUROB) Report*.

(1) A mission request involving movement to the shoreline requires information in addition to that reported in the BLS Report. Surf conditions must be reported to determine the best vessel or landing craft for safe, successful accomplishment of the mission.

(2) Method of observation. A sample surf report is shown in appendix C. One hundred successive breakers are observed and the type and estimated heights are recorded. The data is used to determine information to be entered in paragraphs A, C, and D of the report format. The SUROB should be made at a time during the day which coincides with the time of the day the operation is to occur.

(3) Elements of a SUROB are:

(a) Proword: JEWEL (designated in SOI).

(b) Paragraph A: *Significant Breaker Height*. The mean value of the 1/3 highest breakers on the beach measured to the nearest half foot.

(c) Paragraph B: *Maximum Breaker Height*. The highest breaker observed during the period measured to the newest half-foot.

(d) Paragraph C: *Period*. The time interval between breakers measured to the nearest half-second.

(e) Paragraph D: *Breaker Types*. Plunging, spilling, or surging preceded by the numerical percentage of each as applicable.

(f) Paragraph E: *Angle of Breaker With the Beach*. The acute angle, in degrees, a breaker makes with the beach. Also indicate the direction toward which the breaker is moving, i.e., right flank or left flank.

(g) Paragraph F: *Littoral Current*. The long shore current, measured to the nearest tenth knot. Also the direction, toward which a floating object is carried, right flank or left flank, is given.

(h) Paragraph G: *Surf Zone*. The predominant number of breakers in and the width of the surf zone in meters.

(i) Paragraph H: *Additional Information*. Secondary wave system, if present, dangerous conditions, etc.

e. Data reported on beach landing sites is maintained on file at the SFOB and by the supporting naval unit, similar to DZ and LZ reports. Should a detachment desire to use a previously reported BLS, reference is made only to the code name and the date/time the mission is requested.

f. An alternate landing site should be designated and reported in each request for amphibious operations. Prior coordination for use of the alternate site affords flexibility and increases the chances of success. Tide conditions and seaward visibility may not vary much despite widely separated landing sites. Also, an amphibious operation is affected by rate of water movement. For these reasons when times designated for operations at the primary and alternate landing sites are reported, a plus or minus 30-minute tidal variation is included.

g. Mission confirmation messages are transmitted to the detachment following the processing of the landing site data and resupply or evacuation request. This message includes the time of arrival required by the reception committee.

8-8. Marking of Beach Landing Sites

a. Beach landing sites are marked for night operations by means of visible or infrared lights arranged in predesignated (SGI) code pattern or transmitting a prearranged code signal. Panels, arranged in a predesignated code pattern may be used for daylight operations.

b. Landing site markings indicate the proper landing point and serve as authentication of the reception committee. At night, ship-to-shore authentication is accomplished by coded light signals either visible or infrared., and panel signals are used during daylight operations.

c. Authentication signals between rendezvousing ships, such as a navy transport and an indigenous-type craft, are passed with the boat coming from the landing site identifying itself first.

d. The display of BLS markers should be visible only to the seaward approach to the site and be elevated as high as possible to achieve maximum range of visibility. Identification signals exchanged between rendezvousing ships should be oral. If lights must be used, the intensity of the signal lamp and the range of transmission is reduced to the minimum extent; practical. If lights from other sources, such as dwellings, exist along the shore, signal lights must differ in color and brilliance.

e. In coastal areas containing shoals, coral reefs, or other navigational hazards, return trip may be aided by the temporary anchoring of small, battery-powered lights affixed to poles and placed at intervals. These

FM 31-20

lights, marking course changes, or hazards, are retrieved as passed during the return voyage. The offshore location of the rendezvous point will be specified for each mission. In principle, it is located to provide the shortest travel of the small craft consistent with the security of the transport. Actual locations are dependent on tides, hydrography, enemy capabilities, normal offshore traffic, visibility,

and surface conditions.

8-9. Reception Committee

The organization of reception committees for amphibious operations is similar to that for air operations and the same basic functions of command, security, marking, recovery (unloading), and transport must be fulfilled.

Section III. SMALL-BOAT HANDLING

8-10. General

Normally Special Forces detachments will utilize the inflatable reconnaissance boats IB (L) or the IB (S) for water infiltration. The inflatable reconnaissance boat is easily stored aboard surface and subsurface vessels and cached or disposed of ashore. Prior to water infiltration, detachments must be trained in the handling of small boats, especially the type selected for the detachment's operation.

8-11. Launching Inflatable Boat in Surf

a. From the Beach. The coxswain observes the surf conditions and then launches the boat during a period of light breakers and takes advantage of any rip currents which will assist the crew in traversing the surf zone. The coxswain regulates the timing with which the boat is launched with the interval of the breakers. When numbers one and two are about thigh deep in the water, they are ordered by the coxswain to board. As soon as they are aboard and have begun to paddle, the procedure is repeated in turn for each opposite pair of paddlers. As the crew embarks, they lean will forward in order to keep the weight in the bow. This assists in preventing the boat from capsizing when it is struck by a breaker. As the coxswain orders each pair of paddlers aboard, he, assisted by those paddlers who are still in the water, continues to push the boat to seaward, perpendicular to the surf, until he is about waist deep. As soon as a wave breaks and it is considered a favorable time to get underway, he gives the boat a final push and embarks. After the coxswain is aboard, the crew continues to paddle seaward in an attempt to get beyond the surf zone before the next series of heavy breakers begins. The men in the bow and stern must anticipate the rise and fall of the boat, as the bow meets the wave and as the stern is lifted; otherwise, they may be thrown into the water.

b. Beaching Inflatable Boat in Surf.

(1) As the boats approach the surf zone, the detachment commander orders the boats to lie outside the surf zone and to maintain relative position to the beach. During the period that the scout swimmers are checking the beach and contacting the reception committee, the detachment commander is observing the surf zone to determine the best route to the beach and the surf interval.

(2) After determining that the beach is secure the detachment commander orders the boat(s) to land. The coxswain observes the surf and rip currents, and beaches the boat during the period of light breakers. He avoids any rip currents, since they will retard the shoreward movement of the boat. Prior to the time the boat enters the surf zone, the coxswain orders the boat crew to shift its weight to the stern. This reduces the possibility of a breaker raising the stern and thus causing the boat to broach. As the boat traverses the surf zone, it is kept perpendicular to the waves by the actions of the coxswain and the bowmen. The coxswain, by appropriate orders, causes the boat to travel at varying speeds to avoid any plunging breakers. The coxswain periodically observes the surf to seaward; the paddlers must never look to seaward because this may cause them to lose the cadence established and fail to observe surf conditions to the front, which may cause the coxswain to lose control of the boat. The crew paddles strongly as each wave raises the boat to take advantage of the wave's momentum. The greatest danger of broaching or swamping the boat exists in the surf zone just before the boat is beached. This is due to the disturbance created where the incoming waves collide with the backwash of previous waves. As soon as the crew disembarks, the coxswain collects the paddles and directs the crew to empty the water from the boat and carry it above the high water mark on the beach.

c. Operating Inflatable Boats off Rocks.

(1) Landing. The technique of landing through surf, whether the beach is sandy or rocky, is the same. When the landing is made onto rocks, however, the men must keep their legs in the boat, and the method of disembarking varies from that used in a landing on a sandy beach. As soon as the boat touches the rocks, the stroke disembarks with bow painter. He secures the painter to a solid object and keeps the line taut while the remainder of the crew disembarks quickly, forward men first. Each man must get clear of the boat to allow the men behind to disembark. After each man has disembarked, he must move to a position where a

wave cannot toss the boat against or on him. It may be necessary for the crew to continue to paddle after the stroke has disembarked to keep the stern to the waves.

(2) Withdrawal. The surf has a tendency to hold against the rocks when a withdrawal is conducted. The withdrawal is executed in a reverse manner to that of the landing. The boat is placed in the water while the coxswain holds the stern line to keep the stern against the rocks. Men embark forward to aft; the stroke is the first to embark and the coxswain the last. As the coxswain embarks, he pushes the boat from the rocks and traverses the surf zone in the manner set forth in a. above.

Section IV. UNDERWATER OPERATIONS

8-12. General

Because of their training in underwater operational techniques, Special Forces detachments can conduct operations successfully in all operational areas. These techniques involve the use of SCUBA equipment, both open- and closed-circuit systems.

8-13. Tactical Underwater Operations.

a. Rivers, lakes, canals, other inland waterways, and coastal waters adjacent to likely target areas afford excellent opportunities for Special Forces and selected resistance elements to conduct interdiction missions.

b. Targets adjacent to water generally will be heavily guarded from land attack but less well defended from water approaches, at least initially. Special Forces and selected resistance personnel, adequately equipped, can approach targets underwater and enter the target area, caching their underwater equipment on shore. By appropriate ditching procedures they can also cache equipment underwater, if required. Diversionary land attacks by other elements of the attacking force will increase the chances of success by drawing attention away from the water area. After accomplishing the mission, the force can quickly and secretly depart the target area in the same manner they arrived.

c. Other operations using underwater techniques:

(1) Small-team reconnaissance of harbors, industrial water sites, shipping lanes, mine fields, submarine defenses, docks, and dams.

(2) Establishment and recovery of underwater caches, prepositioned or air-dropped.

(3) Recovery of underwater caches abandoned earlier for emergency reasons.

d. The selection of targets determines the type of equipment and procedures to be employed.

8-14. Capabilities of Equipment

a. The open-circuit SCUBA system is used in rivers and coastal waterways where obstacles and debris in the water in the target area cause water turbulence and security is not of primary importance. The swimmer can surface safely, cover long distances underwater, and dive to greater depths.

b. When maximum security is required in entering target areas, the closed-circuit SCUBA system is employed. This system does not advertise itself with streams of bubbles like the open-circuit system. Swimmers using this system can approach and work in the target area with less fear of discovery.

8-15. Limitations

SCUBA equipment, being cumbersome and difficult to maintain, should be airdropped into the operational area as needed. By following this procedure, the equipment will be in a good state of maintenance and safe for use.

a. The open- and closed-circuit systems require special tools and repair kits, as do the hoses, rubber wet suits, and face masks.

b. Closed-circuit SCUBA equipment is particularly difficult and dangerous to operate and only trained personnel should attempt to employ such equipment.

FM 31-20

Large quantities of baralyme are required to prepare the air tanks with the pure oxygen base for breathing. Since closed-circuit SCUBA uses

rebreathable air, the baralyme must be changed after every operation. Dampness and humidity affect this material and render it extremely dangerous.

CHAPTER 9

LOGISTICS

Section I. THE EXTERNAL LOGISTIC SYSTEM

9-1. General

a. Logistic support provided to UW forces includes the same functional fields as those provided to conventional forces, i.e., labor, maintenance, construction, hospitalization and evacuation, supply, transportation, and other services. However, the amount of support and the methods of providing it differs between those UW elements located in friendly territory and those committed to hostile areas (UWOA's). UW forces located in operational areas depend far more on internal (local) sources of logistic support than do conventional military forces. The logistic support of UW forces--located in hostile areas is further complicated by the problem of transporting supplies and equipment over or through territory under enemy 'control' thus creating a requirement for clandestine delivery. This requirement for clandestine delivery is usually the limiting factor in the amount of external logistic support provided to UWOA's. An added consideration is the diversity of supplies, particularly class I, usually required because of ethnic and geographical differences which exist in UWOA's.

b. Army Special Forces units located in the COMMZ are satellited on Theater Army Support Command (TASCOM) units for logistical support. Special Forces liaison detachments with the field army receive their logistic support from the TASCOM. This support follows conventional logistic support procedures and provision for it is included in existing theater UW plans. The JUWTF serves as the theater agency to prepare UW logistic support estimates. Air Force and Navy UW forces are normally supported by their parent service, but may receive selected common service logistic support from TASCOM as directed by the theater commander.

9-2. Resistance Force Support

a. Externally provided logistic support is provided by TASCOM and coordinated by, or processed through, the SFOB. This logistic support is furnished to both UW elements located in friendly territory and those committed to UWOA's.

b. The provision of logistic support to UW forces located in denied areas is usually limited to mission essential supplies not available in the area. Normally, it is not possible to furnish extensive transportation, maintenance, hospitalization and evacuation, construction, and other services to UWOA's from external sources. The nature and extent of externally provided logistical support is largely dependent on theater forces capabilities to operate between, over, or in UWOA's.

9-3. Operational Detachment Supply

The quantity and types of supplies and equipment carried by Special Forces detachments on infiltration are dictated by the situation in the operational area. The capabilities, responsiveness to friendly control, contacts existing with resistance forces, size of resistance forces, enemy capabilities, method of infiltration (land, sea, or air), requirements for detachment survival, and available resources in the UWOA all influence the type and amount of supplies which accompany the Special Forces detachment. Based on the above considerations, the Special Forces group commander establishes supply levels for each class of supply in an operational area and determines the sequence and method of delivery. These supply levels may be altered upon recommendation of the detachment commander based on his post-infiltration area assessment.

9-4. Phases of Supply

a. Phases of supply used in UW operations are accompanying supply, follow-up supply (automatic and

FM 31-20

on-call), and routine supply.

b. Accompanying supplies are those supplies taken into the operational area by the Special Forces detachment at the time of infiltration. Accompanying supplies are issued to the detachment at the SFOB during the final briefing stages to allow for rigging and preparation for delivery. In addition to the general consideration cited in paragraph 9-3, the quantity of these supplies is influenced by:

(1) Availability of a reception committee at infiltration.

(2) The requirements for sustaining operations for a given number of days, pending receipt of the automatic follow-up supply.

(3) The need to include selected items of equipment to partially equip a nucleus of the resistance force, if a reception committee is expected.

(4) The necessity for other items of equipment and supplies to help establish rapport with resistance personnel.

c. Follow-up supplies are delivered after the initial detachment infiltration to resupply and equip UW forces until routine supply procedures can be instituted.

(1) Automatic follow-up supply. These are supplies delivered into the operational area on a prescribed basis or contingent on an event. The automatic follow-up supply is prearranged as to time, location, and contents prior to the detachment's departure from the briefing center. The type and quantity of supplies to be included in the automatic follow-up supply is determined by the SFOB, based on the same considerations which influence accompanying supply. The automatic follow-up supply gives the detachment added flexibility in that it may include additional communication equipment, weapons, class V supplies, medical supplies, and other items to support training and planned operations for the resistance force. Automatic follow-up supply may be cancelled, modified, or rescheduled as to time, location, and contents by the detachment depending on the initial area assessment. Automatic follow-up supply may also serve to reinforce U.S. sincerity to support the resistance movement.

(2) Emergency supply is an automatic follow-up supply procedure designed to restore the operational capability of the detachment if contact

with the SFOB has been lost. Items planned for delivery will consist primarily of essential equipment necessary for individual survival and that required to restore the detachment's operational capability. Emergency supply is delivered to a site selected by the detachment and is based on a given contingency, usually the loss of radio contact with a detachment for a specified period of time. For details on emergency supply site selection and reporting, see chapter 6.

(3) On-call, follow-up supplies are held in readiness at COMMZ depots and the SFOB for immediate delivery to operational detachments on a specified request basis. Once communications have been established with the SFOB, detachments request on-call, follow-up supplies based on operational needs.

(a) These supplies consist of additional major items of equipment and supplies which are not consumed at a predictable rate.

(b) The operational detachments determine the quantities and type of supplies to be included in the on-call requests.

(c) Determination as to amounts requested is dependent on the rate of expansion of the resistance force, anticipated tempo of operations, and the capability of the resistance force to receive, transport, and secure incoming supplies.

(4) To expedite follow-up and routine supply requests, ensure accurate identification of supplies and equipment and minimize field station radio transmission time. Special Forces units use a brevity code system known as the Catalog Supply System (CSS). For a detailed explanation, refer to paragraphs 9-11 through 9-15 and appendix F.

9-5. Supply by class.

a. Class I. Initially, the detachment infiltrates with sufficient class I: supplies to sustain itself until automatic follow-up supply occurs, usually within 72 hours. Additional class I: supplies are included in automatic follow-up supply to sustain the detachment for an addition predetermined period of time (5 to 10 days). Thereafter, detachment and UW force class I requirements are provided from the theater supply system only as required to supplement food resources available in the operational area. Emergency supply deliveries include sufficient class I supplies for the detachment for a designated period of time.

b. Class II and IV. Limited amounts of class II

and IV supplies accompany the detachment on infiltration. This consists mostly of maintenance items and spares for weapons and radios. Additional spare parts are included in automatic and on-call follow-up supply deliveries. Once routine supply procedures are established, class II and IV items are provided as requested by the detachment to support UW forces in the area.

c. Class III supplies carried by detachments in accompanying supply is limited to the small amount required to run portable gasoline-driven radio generators. Normally, the UW force must depend on the UWOA for most of its class III supplies until such time as the theater logistic system can provide stocks on a bulk basis.

d. Class V usually constitutes the bulk of supplies provided to UWOA's. The detachment infiltrates with a basic load for its own weapons and those accompanying weapons to be issued to the UW force. Class V supplies are included in automatic and emergency follow-up supply and as requested when routine supply procedures are implemented.

e. Detachments infiltrate with full canteens. Water resupply is normally secured from the operational area.

9-6. Delivery of Supplies

Initially, the most commonly used means of supply delivery to UWOA's is by air transport with paratroop being the usual technique. Free fall may be used for certain hardy items. Later, as UWOA's expand and come under some degree of friendly control, air landed supply missions are used. UWOA's adjacent to the ocean or other water areas may be supplied by surface and subsurface craft. Supplies are normally delivered directly to the lowest user having Special Forces representation. After linkup, supplies are delivered to UW forces by conventional surface means, such as trucks and rail. Initial supply missions usually require secrecy of movement to protect the receiving UW force; therefore, single air or watercraft missions conducted during periods of low visibility are normally the rule. See chapters 4, 6, and 8.

9-7. Supply Accountability

The detachment commander is responsible to account for all supplies and equipment delivered to him in the operational area. Sensitive items such as weapons, radios, drugs, demolitions, ammunition, and other such items must be controlled. A Special Forces representative should be present during all supply missions to account for deliveries. The detachment commander should also attempt to determine types, quantities, and locations of weapons and class V supplies in the hands of resistance forces which were procured from sources other than the theater logistic system. Control of sponsor provided supplies and equipment, if judiciously used, can often strengthen the detachment commander's ability to influence UW force operations.

9-8. Medical Evacuation and Hospitalization

Medical evacuation from UWOA's will often be difficult; therefore, a strict system of priorities must be established by the SFOB. Until a regular, unimpeded system of transportation between the UWOA's and friendly territory can be established, evacuation will be limited to serious cases which cannot be treated in the UWOA. As the theater capability to move into the UWOA improves, the evacuation policy from the operational area can be liberalized. Hospitalization at COMMZ medical installations for evacuated resistance personnel will be established in theater UW plans.

9-9. Transportation

All modes of transportation (land, sea, and air) will be used to support UWOA's. Because of security requirements, clandestine transport missions will initially depend on aircraft or watercraft during periods of low visibility. Both the Air Force and the Navy maintain the capability of secret delivery of personnel, supplies, and equipment into hostile areas. Later, as the enemy capability to control UWOA's wanes, regular transportation means including surface methods can be used.

9-10. Maintenance, Labor, Construction, and Services

a. Maintenance support of UWOA's provided by the theater logistic system will normally be limited to repair and direct support services provided on an emergency basis by contact teams.

b. Labor from theater sources will not be available to UWOA's prior to linkup. Special Forces detachments

FM 31-20

rely on local sources for labor.

c. Construction, like labor, in UWOA's will depend on local resources and will not be provided by the theater logistic system.

d. Other Services. Theater-provided laundry and graves registration service will not be available to

UWOA's prior to linkup. Normally the theater commander will authorize temporary burial in UWOA's for deceased U.S. personnel with the remains being recovered after linkup. Occasionally bodies of U.S. personnel can be evacuated soon after their death, but this depends on the theater transport capability to move into the UWOA without compromising the UW force.

Section II. CATALOG SUPPLY SYSTEM

9-11. General

A catalog supply system (CSS) is a brevity code system established to support Special Forces detachments when requesting delivery of supplies into an operational area. The catalog prepared for the detachment should be brief, clear, concise, and preferably reproduced in miniature to facilitate ease in handling. A catalog supply system should be developed for units based on mission requirements, contingent plans, and unit field SOP's. For details referring to planned organizations of potential guerrilla forces and paramilitary forces, refer to FM 101-10-3 and AR 580-5.

9-12. Responsibilities

a. The preparation of a CSS is normally delegated to the Special Forces Group S4 and is published in the SOI's by the Signal Officer.

b. The preparation of supplies and equipment for delivery to a UWOA is normally the responsibility of the logistical support element of the SFOB.

9-13. Characteristics and Principles of the System

a. *Characteristics.* The CSS uses a brevity code in which a single major item or several associated items are identified by a code word. The system may be comprised of individually packaged items as well as units comprising several associated items packaged together or individually. This combination permits the user maximum flexibility in requesting supplies.

b. *Principles.*

(1) In preparing the CSS a determination is made of the broad classification of supplies to be included, i.e., quartermaster, signal, or medical. Each broad classification is then assigned a code designation.

(2) A determination is then made of the

number of packages that will be included under each major item or unit. As a guide, a man-portable bundle of 50 pounds or less should comprise one package.

(3) Ancillary supplies should be included with individual items, e.g., ammunition and cleaning equipment with weapons; batteries with flashlights. Additional ammunition may be included as an individual package. As a result, 1 unit consisting of weapons with ammunition, additional ammunition and cleaning equipment may consist of 3 individual packages each weighing approximately 45 pounds, for a total package weight of 135 pounds.

9-14. Preparation of Supplies

a. Each man-portable package should be equipped with carrying straps or a packboard to facilitate ease in carrying and rapid clearance of reception sites.

b. Each package should be waterproofed to permit caching above ground and limited caching underground or underwater.

c. Maximum use should be made of reusable items for packaging materials such as clothing and blankets for padding and ponchos for waterproofing.

d. Include selected morale and comfort items, if possible.

e. Insure each package is marked in accordance with a prearranged coding system, so that contents can be readily identified without opening packages or units. Include an inventory list with all packages.

f. Insure that any required instructional material is printed in the language of the indigenous UW force as well as in English.

g. The number of delivery containers required is determined by delivery means available, i.e., aircraft or submarine.

9-15. Request Procedures

a. The coding system is not secure by itself, but serves to reduce message length when a variety of

supplies are ordered. As an example, each broad classification of supply is listed in a sequence of assigned letter designations, e.g.:

<i>Section</i>	<i>Designation</i>
I Chemical	ALPHA ALPHA through DELTA ZULU
II Demolitions/ Mines/ Engineer Equipment	ECHO ALPHA through HOTEL ZULU
III Medical	INDIA ALPHA through LIMA ZULU
IV Weapons /Ammunition	MIKE ALPHA through PAPA ZULU
V Quartermaster	QUEBEC ALPHA through TANGO ZULU
VI Signal	UNIFORM ALPHA through WHISKEY ZULU
VII Special	XRAY ALPHA through ZULU ZULU

b. To reduce garble when ordering supplies, maximum use should be made of phonetic spelling. In the catalog some major units or packages may be followed by a numbered list showing the contents of

the package or unit. These units or packages can be ordered complete or any numbered item may be ordered separately. As an example, clothing and equipment for 40 men is required. One such item is ponchos. In the catalog prepared for your unit, under quartermaster, appears the code designation QUEBEC ALPHA. Item 7 under this code designation reads Two (2) Ponchos. In preparing your request, it would read ONE ZERO QUEBEC ALPHA SEVEN. This indicates that 20 each of item 7 is requested.

c. The system should permit all items listed in each unit to be ordered separately, if necessary. Normally, the complete unit should be ordered.

d. Items not listed should be requested by nomenclature in sufficient detail to insure thorough understanding at the SFOB. For Example: TWO GASOLINE LANTERNS.

e. For a sample format of a CSS, refer to appendix F.

Section III. PLANNING CONSIDERATIONS IN ESTABLISHING SUPPLY SYSTEMS

9-16. General

a. Special Forces detachment commanders must consider all of the different methods available for procuring supplies in formulating their supply systems. These methods are discussed in paragraphs 9-19 through 9-25.

b. With proper planning and understanding of the methods for procuring supplies, the area command can fulfill much of its supply requirements.

9-17. Areas of Consideration

In planning, considerations must be given to formulating a well-organized procurement system which obtains its supplies from the best sources available. It is important for the Special Forces detachment commander and area commander to consider how much is required and how it is best used to support operations. Examples are:

a. Ammunition.

(1) How much ammunition is required?

Considerations:

(a) Guerrillas use less ammunition than conventional forces since guerrillas use hit-and-run tactics.

(b) Guerrillas do not have the firepower of

conventional forces although they do, and should, rely on maximum use of automatic weapons.

(2) Can guerrillas be limited to the amount of ammunition they can expend in any one engagement? Considerations:

(a) While rates of fire cannot be arbitrarily limited, strict fire discipline should be imposed so that supplies will not be wasted.

(b) For each engagement, based on requirement, a basic load of ammo may be issued to each participant.

(c) Resupply may be accomplished by establishing caches at preselected rallying points and used as required in the event of heavy engagement during withdrawals.

(3) Is there a rule-of-thumb for the calculation of the amount of ammunition required by guerrillas? Considerations: Calculation of amounts of ammunition may be based on the assumption that

(a) No 1-month will have more than 10 full combat days.

(b) No more than one-third of the total number of the force should be engaged constantly in actions in which ammunition is expended.

(4) How much ammunition may be expected to

FM 31-20

be lost during resupply operations? Considerations

(a) In the initial stages, losses in ammunition should run between 10 and 20 percent of the amount resupplied by aircraft.

(b) In later stages as the guerrilla force's efficiency in conducting air operations increases, losses should be entirely eliminated.

(c) With area supremacy, consideration should be given to air landing supplies to preclude any risk of loss.

(5) Should more ammunition or explosives be requested in the initial stages of organization and development? Considerations:

(a) Normally, in the early stages of organization and development, guerrilla operations are characterized by the avoidance of combat with conventional forces.

(b) More explosives and less ammunition should be considered in the initial stage.

(c) Interdiction operations to include attacks on bridges, power lines, train derailment, and other such denial missions using demolitions will avoid physical contact with an enemy force.

(6) How does weather affect supply procurement? Considerations:

(a) High winds causing rough seas can make it difficult to resupply by sea.

(b) Rainy weather with limited visibility and low cloud cover could preclude resupply by air.

(c) Peculiar weather conditions in certain areas may require reserves of ammunition to be stockpiled.

(d) Based on the above, ammunition caches should be established to support operations - a decentralized system of controlling supplies.

b. Weapons.

(1) What are the considerations concerning lost or damaged weapons? Considerations:

(a) Except for captured enemy weapons, there is usually no replacement of weapons except that provided by the SFOB.

(b) Procedures may be set up to replace worn out gun barrels, provided armorer repair kits are available, and the capability exists to train personnel in this type of maintenance.

(c) Minimum weapon accountability procedures should be established which would have an effect on ammo support requirements and requests.

(2) Can breakable parts be replaced on weapons? Considerations

(a) Breakable parts of weapons may be replaced at a set percentage to be coordinated at SFOB level.

(b) Cannibalization of damaged weapons for replacement parts may be required.

c. Explosives.

(1) What is the basis for determining the amount of explosives to be requisitioned, and the amounts to be allocated for operations? Considerations: Calculations on the amount of explosives required are made

(a) Depending on types of missions to be accomplished for a given period of time.

(b) So that charges are sufficient to accomplish the mission. For example, an estimated 40 pounds of explosives may be required to destroy 1 mile of single track railroad and one-third more for each mile of double track.

(2) How much explosive can be expected to be lost or damaged during resupply operations? Considerations:

(a) In the initial stages, losses run from 10 to 20 percent of quantities resupplied by air.

(b) In later stages, as the guerrilla force's efficiency increases, there should be no losses.

(c) See a (4) (c) above.

(3) Are reserves in explosives necessary for the same reasons that ammunition are? Considerations:

(a) More explosives per man, or per unit, are necessary in the initial stages than later as discussed in paragraph a (5) above and chapter 5.

(b) Caches should be established on a decentralized control system.

d. Individual Equipment.

(1) What equipment should receive a high priority? Considerations:

(a) Establishing priorities to items selected is a difficult task and will be the subject of much discussion; however, certain factors which must be examined to determine priorities are climatic conditions, topography, ethnic groups, and the state of morale of the guerrillas.

(b) Some items that may be considered for a high priority are: appropriate footgear, warm clothing, ponchos, first aid kits, safety-razor kits, headgear, and guerrilla insignia.

(c) Some items that may be grouped as

intermediate priority are: uniforms, extreme weather clothing, sleeping gear, loadbearing equipment, and canteens.

(d) The lowest priority may be item, such as: eating utensils, gloves, sewing kits, extra shirts, and comfort items.

(2) What is the basis for resupply? *Considerations:* Normally, 6 months after infiltration replacement can be expected for 1 pair of appropriate footwear, 2 or 3 pairs of woolen socks and 1 pair of trousers per guerrilla; 12 months after infiltration-1 pair of footwear, 2 or 3 pairs of woolen socks, and 1 uniform per guerrilla can be expected.

e. Medical Supplies.

(1) What are some of the considerations concerning medical supplies? *Considerations:*

(a) Medical treatment is a strong morale factor with guerrillas.

(b) Care of the sick and wounded should be emphasized and a first-aid kit should be issued to each individual.

(c) Needs of the local population should be foreseen and basic medicines provided for them.

(2) What is the basis for resupply? *Considerations:* Replacement medical supplies may be made on the following basis: 33 percent of basic issue after 6 months and 33 percent of total issue after 12 months in the operational area.

f. Food Supplies.

(1) What considerations are important for food supplies? *Considerations:*

(a) All staple foods may be supplied from the operational area.

(b) Salt and sugar are important items and should be supplied from the SFOB if they cannot be procured locally.

(2) Are staple foods the only foodstuffs that are to be considered? *Considerations:* For morale and psychological effect, coffee and cigarettes should be provided occasionally, or, if possible, regularly on a 2 pounds of coffee and three cartons of cigarettes per man per month.

9-18. Other Considerations in the Establishment of Supply Systems

a. The considerations discussed are not the only factors that the detachment and area commanders must take into consideration. Continuing area assessment may disclose other areas of concern not readily apparent at the time of initial infiltration.

b. Considerations developed, and guidance received from the SFOB as to the percentage of logistical support that can be expected from external sources, will assist the area commander in formulating plans for the procurement of supplies internally using the methods of procurement discussed in paragraphs 9-19 through 9-25.

c. Based on the percentage of supplies available from external sources and those available internally, the area commander may consider the establishment of farms, or even factories, for the production and repair of unobtainable items.

Section IV. THE INTERNAL LOGISTIC SYSTEM

9-19. General

Initially, operational areas are expected to provide the bulk of food and clothing for resistance forces. Support for indigenous personnel is affected by three primary considerations-geographical locations, the size of the force, and the type of operations. The geographical location will determine the type and extent of agriculture dominant in the area; to some extent it will also influence the diet of the local population. Geography also influences the type and amount of personal clothing and equipment required and life expectancy of these items. Diseases and noncombat injuries are greatly influenced by geographical location. The geography of an area and

enemy situation determine the type of targets to be attacked which, in turn, influence the method of operations. The size of the force to be supported is important. If local food procurement is adequate only for the present force, then class I supply problems may limit the size of forces to be developed later. Available information in the UWOA enables the detachment commander to forecast needs and plan appropriate procurement well in advance. Reasonable accurate experience factors to guide the commander's planning can be developed if detailed issue records are maintained. For further information, see FM 31-21.

9-20. Civilian Support and the Internal Logistic System

FM 31-20

Civilian support is essential to the internal logistic system. In many cases civilian support of the guerrilla effort will be completely spontaneous; the defeat of a hated enemy being adequate payment. The following systems may be put into effect to support the internal supply functions.

a. Battlefield Recovery. Each element of the area command is capable of procuring supplies. During offensive operations the guerrilla force may be able to satisfy some of its logistical requirements and at the same time accomplish the objective of denying these supplies to the enemy. Items of enemy equipment obtained during operations that are not needed should be cached; if they cannot be transported they should be destroyed or made inoperable.

b. Barter. The auxiliary may be able to arrange a barter system with the civilian population. In some cases, it may be mutually beneficial to trade critical items, such as medical supplies, cigarettes, medicines, drugs, and other high-value, low-bulk items, for supplies and services.

c. Purchase. In some cases, outright payment in currency, gold, or receipts for future payment may be demanded. The inflationary impact of increased currency flow on the local economy must be considered, as well as the security risk involved, before local purchase is adopted as a procurement system in a particular area. Funds in the form of negotiable currency, gold, silver, or other medium that is in general acceptance as money, may be furnished to Special Forces detachments with which they may purchase critical items or services. When cash payment cannot be accomplished, it may be possible for a chit system to be worked out, whereby a guarantee is given that the certificates of indebtedness given by the guerrillas will be redeemed after the war.

d. Levy. Guerrillas have also used a levy system to meet their logistical requirements. Usually this system for providing support to guerrillas is not desirable. Under rare circumstances its use may be necessary to the survival of the guerrilla force. In establishing a levy system, the area command must consider the factors which cause it to be undesirable, such as, serious food shortages due to enemy rationing or competition with the enemy for the

supplies.

e. Seizure. Seizure of items tends to alienate the civilian population because of the forced nature of the transaction. Therefore, seizure should be resorted to only in emergencies. When used, it should be directed against that portion of the population which supports the enemy. Whenever seizure is resorted to it should be reported to the SFOB.

9-21. Logistic Organization in the UWOA

a. The area command is the focal point of the UWOA logistical effort. Each element of the area command—guerrilla force, auxiliary, and underground—is assigned a role in the logistical effort. The guerrilla force acts as a procurement agency in conjunction with operations against the opposing force. It also has the responsibility for most of the transportation required and for selecting and securing the caches used for day-to-day issue. The auxiliary force is the principal logistical element in the area command. Since they live at home and lead reasonably normal lives, they are free to devote considerable time and effort to the procurement, movement, and storage of local supplies. The underground, on the other hand, should not be given extensive logistical responsibilities. Their area and methods of operation are such that the bulk of their effort is needed for self-support and for their assigned mission. They can often provide vital support by procuring limited items normally denied civilians, such as drugs, chemicals for explosives, radio repair parts, and documentation.

b. As the indigenous force grows in size, subordinate units will be assigned a sector or zone of operations and be responsible for establishing a separate procurement system for their sectors. This greatly reduces transportation needs since the supplies are procured near the consumer. This also improves security since the compromise or destruction of the procurement system in one sector will not destroy the entire procurement apparatus. Movement of supplies between sectors is kept to a minimum; and names, storage sites, and caches are not passed from sector to sector. An additional advantage of a decentralized system is that it permits a more equitable distribution of the logistical burden on the civilian population. Detachment commanders considering decentralized supply systems should consider air delivery direct to the user, thus easing transportation requirements.

9-22. Caches

Caches are hidden storage places for supplies and equipment. When properly planned and established, caches permit UW forces considerable freedom to operate throughout the UWOA and independent of, or distant from, their base areas. Caches reduce the amount of supplies required to be carried by UW forces, thus enhancing foot mobility, and are located to support projected operations caches may be established in friendly areas prior (to their being overrun or in enemy held areas after hostilities have commenced. Caches may be established to, support either current or future operations or reserved for specified emergencies. Major considerations for caches are: (1) the probability that the cache will be needed; (2) the storage life of the item (s) involved; and (3) the problems of providing adequate security for the cache. Caches are not established haphazardly, but are the result of requirements generated to support specific operation plans (OPLANS).

9-23. Mission Support Site Caches

Consideration should be given to locating caches at planned or likely mission support sites (MSS's). An MSS is a temporary base used by personnel who are away from their base camp during an operation for periods in excess of 2 days. The MSS may provide food, shelter, medical support, ammunition, or demolitions. The use of an MSS eliminates unnecessary movement of supplies and allows the indigenous force to move more rapidly to and from target sites. When selecting an MSS, consideration is given to cover and concealment, proximity to the objective, proximity to supply sources, and the presence of enemy security forces in the area. Although transportation problems will be increased, security dictates that the DZ's and LZ's be a

considerable distance from caches, MSS's and base camps.

9-24. Supply

a. Class I supplies to the UW force will be largely provided from the operational area. The theater logistic system augments resistance forces with class I supplies as available and required. In addition to procuring class I stocks locally, the guerrilla forces may raise some of their own food and livestock or secure it by attacking enemy supply dumps.

b. Initially, class II and IV supplies will also come largely from the area except for weapons, communication equipment, and some medical stocks which are normally sponsor-provided. Captured or abandoned enemy military equipment is used so far as possible. When regular guerrilla formations become largely U.S. equipped, captured enemy materiel may be distributed to auxiliary units.

c. Class III supplies will have to be locally procured until such time as the theater logistic system is able to furnish class III supplies to UW forces. Class III requirements of guerrilla forces are usually minimal.

d. Class V is largely provided by the sponsor; however, captured enemy stocks are used when available. The inability to procure ammunition may limit widespread use of captured enemy weapons.

9-25. Transportation

Reception facilities at LZ's, DZ's, or water landing sites will determine the extent to which the, UW force must depend on local transportation. Numerous-and secure reception-facilities permit external supplies to be delivered near the user. A single aircraft or other carrier can deliver portions of loads to two or more sites. The SF detachment would, in such a case, submit separate resupply requests and DZ locations for each sector or operational area.

CHAPTER 10

COMMUNICATIONS

Section I. GENERAL

10-1. General

The communication systems and techniques employed by Special Forces in unconventional warfare vary from conventional signal operations in support of activities located within friendly territory to clandestine systems and techniques between the SFOB and the deployed detachments in the UWOA.

10-2. Extent and Type of Communications

a. Communications Within Friendly Territory. Communications between the SFOB and other headquarters or activities in friendly territory generally are the same as those required by any headquarters of comparable size. Normally, facilities of the theater army area signal system are used to the maximum extent possible; however, when backup or special circuits are necessary, they are provided by radio or radio-teletype operated by the Special Forces group. Communications in this area present no unique operational or technical signal problems.

b. Communications to and from the UWOA. When a detachment is committed, the primary, and often the only, means, of communications with the SFOB is by radio. Clandestine communication techniques are employed. Other methods may be used, when practical, such as infiltration of couriers, exchange of messages during resupply, or through use of existing communication facilities.

c. Communications Within the UWOA. As a general rule, communications within the UWOA progress from clandestine to conventional systems as the guerrilla movement gains strength. The extent and type of system depends on factors such as size of the area, the size of the guerrilla force, activities of the enemy and the guerrillas, the technical proficiency of both the enemy and the guerrilla communication organization, and the

required speed of response to the orders of the area command. Any and all means which satisfy the requirement for communications and provide the required security are used. Certain clandestine communication systems may be used, but these should be tightly controlled by the commander (see FM 31-20A). All the following are considered:

- (1) Messenger.
- (2) Radio.
- (3) Telephone.
- (4) Audible signals.
- (5) Visual signals.
- (6) Local communication systems.
- (7) Pigeons or trained animals.

d. See FM 31-21.

10-3. Communication Media

a. Messenger. In the early developmental stages of a UWOA, messengers may be the only secure means of communication. In the UWCA, messenger (courier) service is organized using clandestine, nontechnical communication techniques described in FM 31-20A. During the organization and development of the UWOA, security remains a paramount consideration; therefore, communication means will be dictated by the status of training and capability of the resistance force.

b. Radio. Radio can provide instantaneous, generally reliable communications; however, any radio transmission is vulnerable to interception and jamming by an enemy. The advantage of its speed must be balanced against the probable loss of security. Low-powered, frequency-modulated radios operating in the VHF or UHF band can be used under some conditions, with little risk. Generally, when considering the use of radio, the deciding factors are the nature of the message text and the probable enemy reaction time if the message is intercepted. For example, enemy reaction to last-minute control instructions during a raid or ambush



Figure 10-1. Expedient Ground return circuit.

would not be rapid enough to affect the operation. On the other hand, the interception of plans or instructions involving future actions could result in disastrous compromise. Within a UWOA the availability of radio equipment may be the governing factor. Maintenance, spare parts, and resupply of batteries are important considerations. The use of even the simplest radio requires training of operators and maintenance personnel.

c. Telephone. In the early stages of development of a UWOA, telephones may be used extensively, possibly between a security outpost and a base camp, or during an ambush to warn of the approach of a convoy or train. When using a telephone under these conditions, it is often advantageous to use a ground-return circuit, allowing the telephones to be operated with a single metallic conductor connecting them. A section of barbed wire fence, unused power line, unused telephone line, or one side of a railroad track already in place can be used as the conductor.

The conductor must be insulated from the ground and the other terminal of the telephone must be connected to a good ground connection (fig 10-1).

d. Audible Signals. Audible signals are useful for short distances. Church bells, vehicle horns, musical instruments, sirens, dogs barking, or voices may be used as audible signals. Quite often, audible signals can be planned in such a way that the sound is routine and recognizable as a signal only to someone trained in the system.

e. Visual Signals. Visual signals are limited only by the imagination of the person planning the signals and by the equipment available. Visual signals include

(1) Flashlight signals at night or by using sunlight reflected from a mirror. The use of any flashing light requires some prearranged code.

(2) A housewife hanging laundry on a clothesline in a predesignated pattern to serve as a

warning; light, smoke, a fire, or a person walking over a given road at a specified time. Normal actions are the guide for developing visual signals.

(3) Flags used to transmit messages either by means of semaphore or wigwag. In semaphore two flags are used. The position of the flags designate a certain letter. Wigwags can be used to send a message by Morse code. The flag on one side of the body indicates a dash, on the other side a dot (see FM 21-60).

f. Local Communication Systems. Many areas of the world have extensive, local communication systems. Without any special equipment, part or all of these systems may be used. When considering the use of the local communication systems, security

must be paramount. The local language or dialect must be used in apparently innocent conversation.

g. Pigeons or Trained Animals.

(1) Homing pigeons, obtained locally or from the SFOB, may be used for the rapid, secure transmission of messages within the operational area. Since they require a few days to acquaint themselves with the home loft area, homing pigeons should be used when the guerrilla base is relatively static. Extremely cold weather limits the use of pigeons.

(2) Locally-procured, trained animals (usually dogs) may also be used as a means of communication; however, dogs are usually more susceptible to interception or diversion than homing pigeons.

Section II. COMMUNICATION TRAINING

10-4. Communication Training

a. General. Radio personnel assigned to Special Forces operational detachments are confronted with problems different from those faced by radio operators assigned to a conventional military unit. When committed to a UWOA, operators must be able to communicate over long distances, up to 2,500 miles, using low-powered equipment. They must do this in a manner that will result in minimum loss of security. Technical assistance and maintenance support are not readily available. Messages are encrypted using paper and pencil cryptographic systems. On progressing from clandestine to overt operations within the UWOA, machine crypto systems may be employed. The radio operators must also be prepared to assist and advise the detachment commander on any communication problem with the area to include the communication training of the resistance force.

b. Code Speed and Procedures. A Special Forces radio operator must be able to transmit and receive Morse code at the rate of 18 words per minute. He must be thoroughly familiar with radio-telegraph procedure as described in ACP-124B. Once these standards have been achieved, they must be maintained by constant practice. Before infiltration, the SOP is established for the actual radio-telegraph procedure to be used in the operational area. Sufficient time must be allocated for radio operators to become familiar with this specific procedure. Other members of the detachment must be familiar with these procedures as well.

c. Maintenance and Use of Equipment. Normal maintenance support is not available within a UWOA. In the detachment deployed in a UWOA, any repair of signal equipment is done by the operator, assigned signal maintenance man, or when feasible, by friendly members of the local populace or resistance elements. Radio operator training includes sufficient theory and practice so that the operator can perform direct support maintenance on the primary detachment radio set. He is sufficiently schooled in theory so that he can make sound recommendations on the use of enemy equipment captured within the operational area.

d. Radio Propagation. The radio frequencies to be used between the UWOA and SFOB are contained in the detachment's Signal Operation Instructions (SOI). These radio frequencies are determined before infiltration on the basis of published radio frequency prediction charts and tables. Detailed information on selecting frequencies for long-range communications can be found in TM 11-666 and radio propagation charts which are procured from the U.S. Army Strategic Communications Command, Communications Engineering Department, Fort Huachuca, Arizona 85613. These charts are published monthly and must be requested for the particular area of operations.

10-5. Message Writing

a. The writer of a message must express his thoughts clearly and concisely. Additional transmission time caused by unnecessary message length gives the

enemy a better opportunity for interception and radio direction-finding, and furnishes more traffic for analysis.

b. The following basic rules are applied to all messages:

(1) *Preparation.* All outgoing messages to the SFOB are prepared or reviewed by the detachment commander or his executive officer before transmission.

(2) *Content.* Write the message and then read it back. First consider any portion that can be eliminated. Many times the bulk of a message is used to say something that is obvious by the very fact that the message is being sent. Consider each portion. Does each portion tell the addressee something or could that whole sentence or thought be eliminated? Once this has been done, consider whether the thought of the message is expressed as clearly and concisely as possible.

(3) *Writing.* Print carefully to avoid any confusion about the meaning of the message. An encrypted message may be made completely useless by one misunderstood letter.

(4) *Abbreviations.* Use authorized abbreviations and only when they will not be misunderstood (see AR 310-25).

(5) *Punctuation.* Do not punctuate unless necessary for clarity. Do not use the expression STOP in a message. If punctuation is necessary, use authorized abbreviations such as QUES, CLN, PAREN, PD, CMM, PARA, and QUOTE-UNQUOTE.

(6) *Repetition.* Repeat only to avoid errors, not for emphasis. For example, 'repeat unusual names to ensure correct spelling.

(7) *Numbers.* Numbers may be written as digits or spelled out. When spelled out, they are expressed in words for each digit except in exact hundreds or thousands, when the word hundred or thousand is used. Some cryptographic systems require the numbers to be encoded without spelling. As a general rule, numbers should be spelled out before encrypting. If the message is completely understood the first time it is transmitted, the result will be less time on the air. Example: 1234 is written as ONE TWO THREE POINT FOUR; 500 is written FIVE HUNDRED and 20,000 as TWO ZERO THOUSAND.

(8) *Isolated letters.* If necessary to use isolated letters, use the phonetic alphabet for each isolated letter.

c. Codes Are Normally Used for Brevity. Extensive brevity codes can be developed by proper planning which can greatly enhance message brevity and clarity. Codes that may be employed by Special Forces detachments in their operations are (see sample, app F)

(1) The Catalog Supply System (CSS) which provides an operational detachment with a brevity code in which single or several associated logistical items may be requested on resupply operations (see sample Catalog Supply System, app F):

(2) The Q and Z signals used by radio operators (ACP 131).

(3) Operation codes (SOI).

Section III. ANTENNAS AND COMMUNICATION SECURITY

10-6. Antennas

Special Forces radio operators use field expedients to ensure reliable communications. Because of rigid limitations on size and weight of equipment, the radio used by Special Forces is not issued with a prefabricated antenna. Only antenna wire is issued. Although there is little the radio operator can do to increase the designed power output of his transmitter, he can maximize the propagation of his signal by use of an efficient antenna system. Antenna theory and construction are presented in FM 24-18 and TM 11-666. The Special Forces radio operator must understand the material covered in the manuals in order to provide longrange communications. Various types of antennas which

can be used with Special Forces-issued radio equipment are shown in figures 10-3 through 10-10.

a. Field Expedient Insulators. When constructing an antenna, it is important to insulate the antenna from its supports or from the ground. It is often necessary for the radio operator to make use of whatever materials are available. Almost any kind of wire can be used when constructing an antenna. Although glass and porcelain may be the best materials for insulators, it is better to use a second best (such as wood) rather than none at all. The antenna diagrams shown in this manual cannot be understood without a basic knowledge of antenna theory. These diagrams picture antenna configurations which can be used with issued radio equipment in limited space (see fig 10-2).

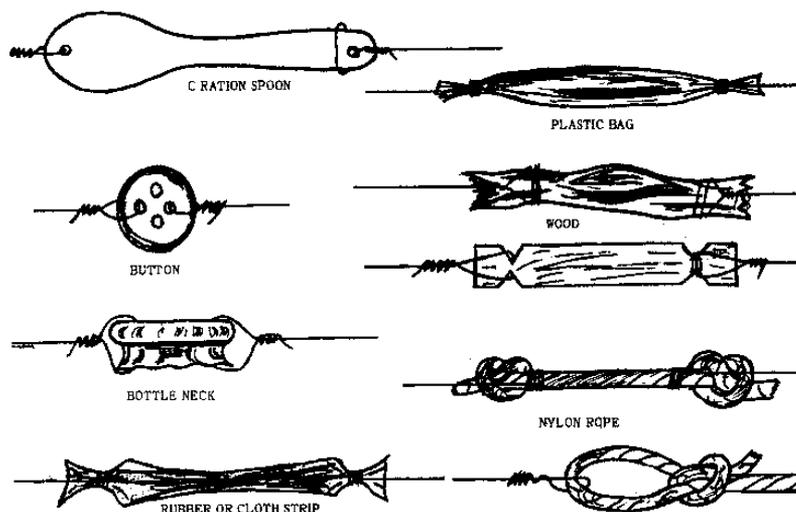


Figure 10-2. Expedient insulators.

b. Quarter-Wave Antenna. The quarter-wave-length antenna is normally erected vertically. Its length (in feet) is computed by dividing 234 by the operating frequency in megahertz. It is omnidirectional, making it an ideal antenna for a net control station (NCS) when operating with different teams and the exact team locations are not known. It can be used with any type of radio and is normally used when a groundwave is desired. In the case of standard FM radios it makes use of space waves

(line-of-sight). When a quarter-wave antenna is used, a good ground system is essential (fig 10-3).

c. Half-Wave Doublet Antenna. A typical halfwave antenna is the doublet, or dipole antenna. It is constructed by using one-quarter wavelength wire for each side and fed in the center by coaxial cable or, as a field expedient, a twisted pair of field wire. It can be used with any type of radio and can be constructed in a horizontal or vertical plane. When in a horizontal position (fig 10-4), it radiates broadside

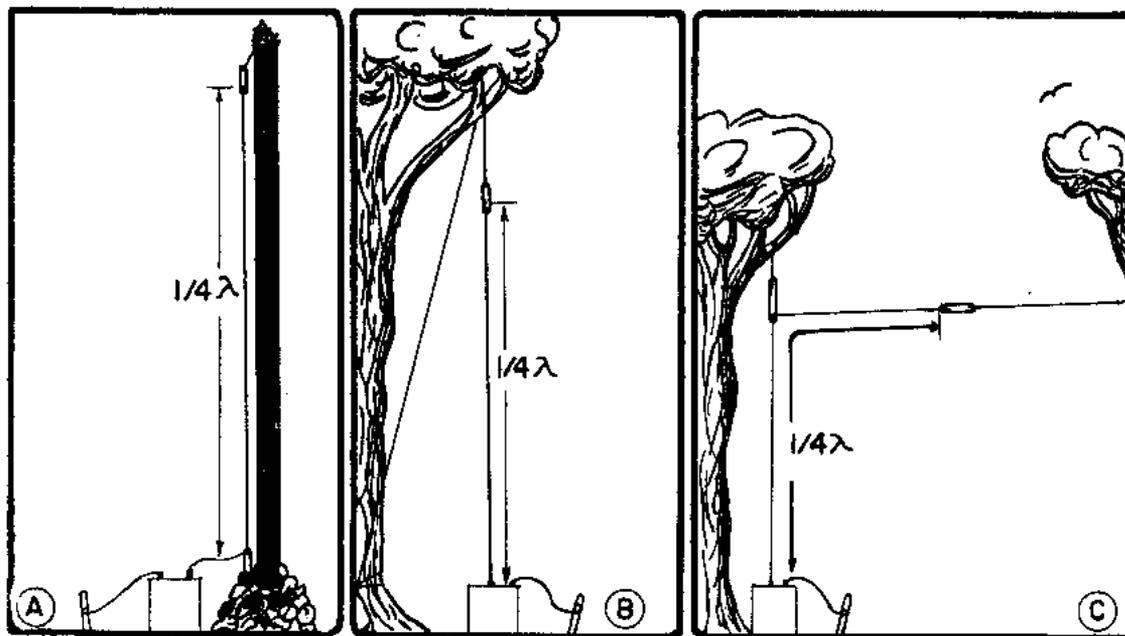


Figure 10-3. One-quarter-wavelength antenna (vertical).

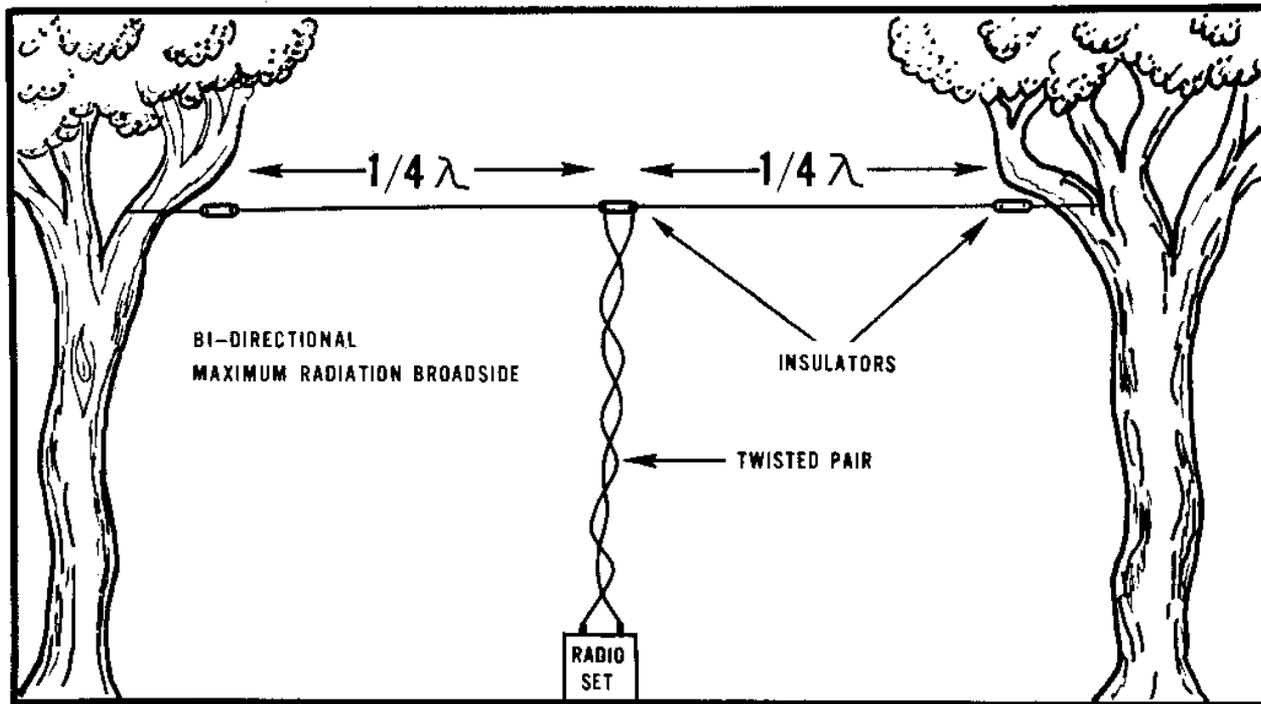


Figure 10-4. Half-wave doublet antenna.

at a 90° angle from the antenna. When it is constructed in a vertical plane, it has a radiation pattern of 360 degrees. This antenna is superior to

the quarter-wave-length antenna. When connecting this antenna to the radio set, one lead goes to the antenna binding post; the other goes to the ground

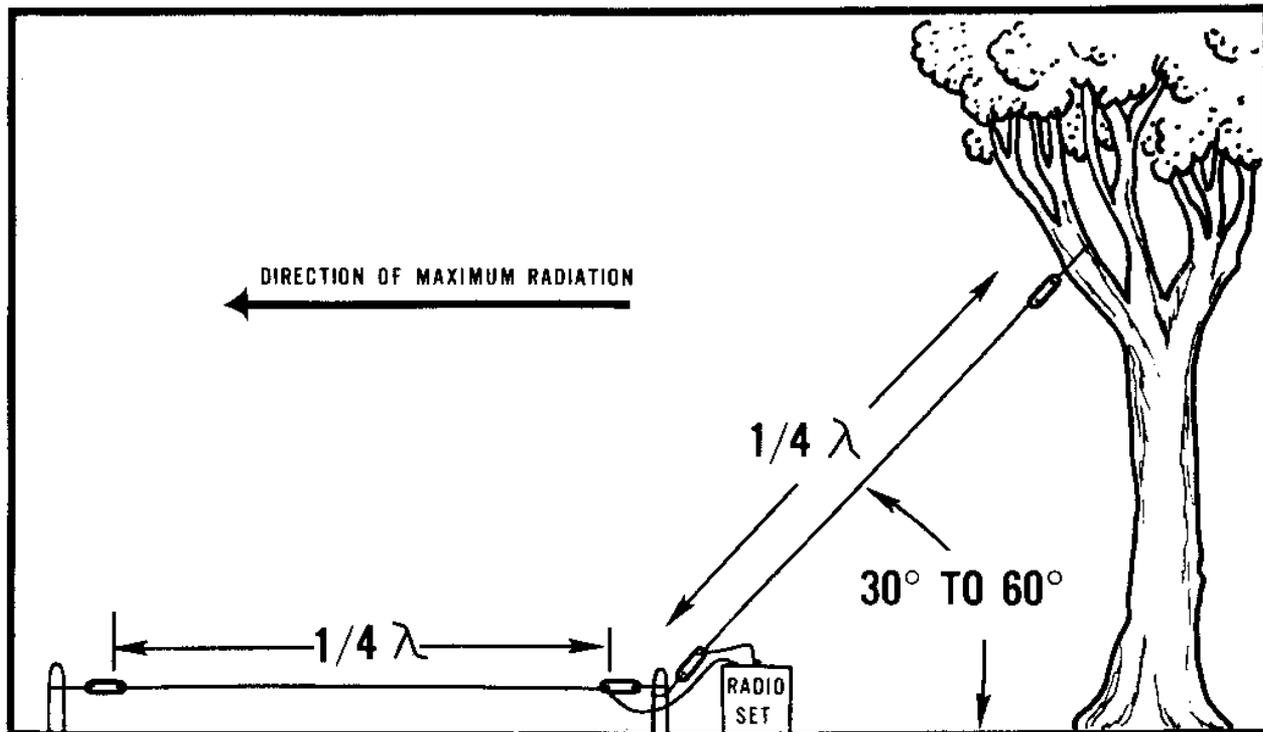


Figure 10-5. Slant-wire antenna.

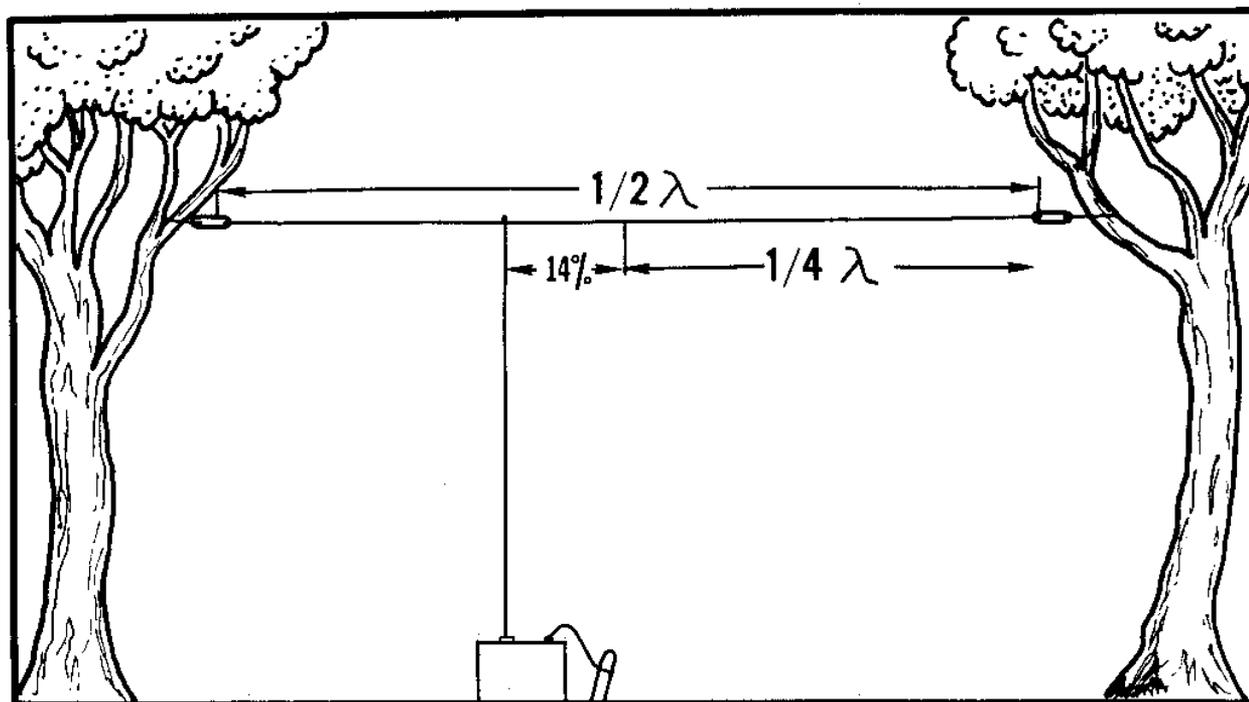


Figure 10-6. Fourteen percent off-center fed antenna.

binding post. No additional ground is necessary.

d. Slant-Wire Antenna. The slant-wire antenna is an efficient radiating system using only a single antenna support. Two pieces of wire, each one a quarter-wavelength long, are used to make up the antenna. One piece is slanted down from the antenna support at an angle of 30° to 60° and is connected to the antenna post on the transmitter. The other wire is used as a counterpoise just above the ground and laid out from the transmitter away from the slanting wire. If the wire used as a counterpoise is not insulated, it must be insulated from the ground; the counterpoise is connected to the radio ground post. Maximum radiation occurs in the direction of the counterpoise (see fig 10-5).

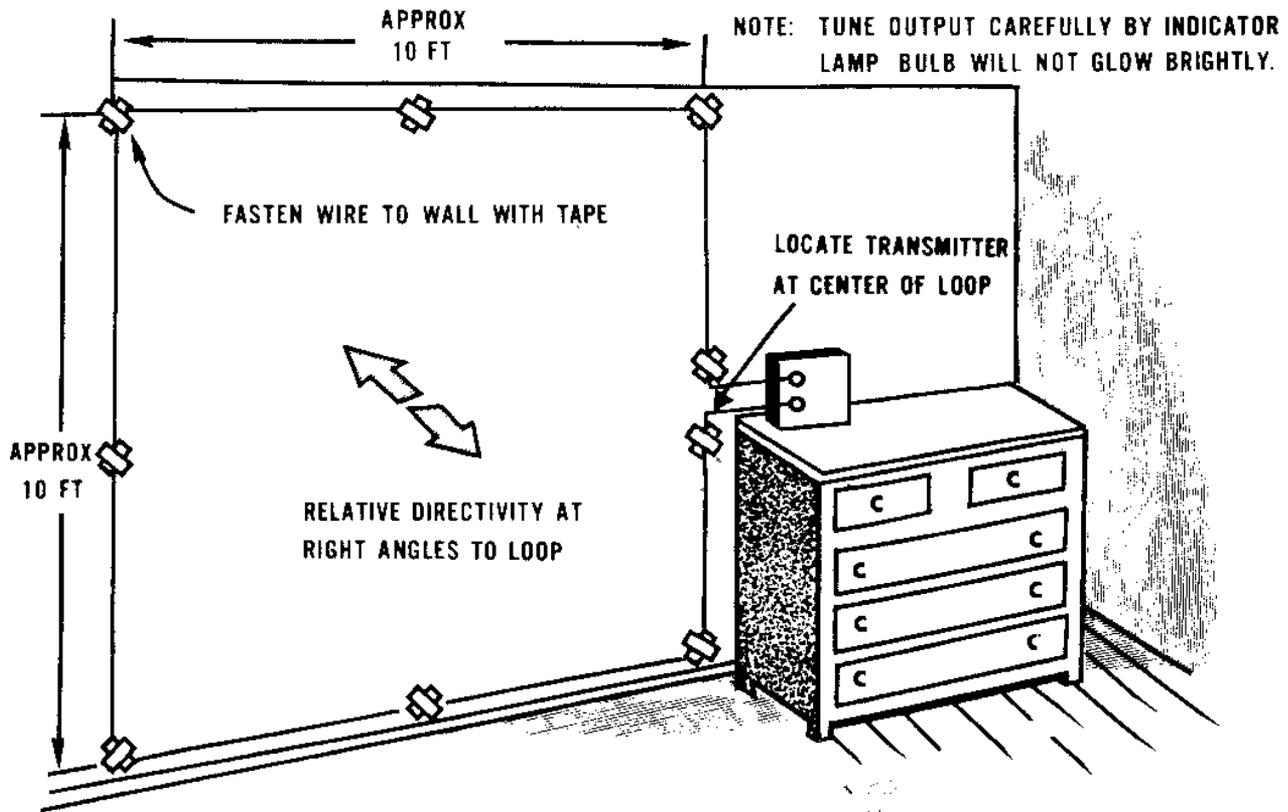
e. Fourteen Percent Off-Center Fed Antenna. In the event no suitable transmission line is available such as coaxial cable, or twisted pair, a suitable antenna can be constructed using an antenna one half-wavelength long and feeding it with a single wire at a point 14 percent of a one-half wavelength, or the total length of the antenna. This antenna is suitable for use with radios such as the AN/GRC-109 and AN/GRC-87. Maximum radiation occurs at 90° from the antenna (see fig 10-6).

f. Indoor Antennas. There are times when a Special Forces radio operator must operate from inside a building. When this is necessary, a suitable antenna can still be constructed. Any of the antennas mentioned in this chapter can be used if there is space available inside the building.

(1) If space is limited, a loop antenna may be constructed (fig 10-7). This antenna is a full wavelength long and is fed directly in the center. It is limited to frequencies whose wavelengths will not exceed the dimensions, of the room.

(2) For operation in lower frequencies, a half-wave, square-loop antenna (fig 10-8) may be used inside a building. Excellent results may be obtained if care is taken in constructing and tuning the antenna. This is important when operating the AN/GRC-109 since the indicator lamp of the antenna will not glow brightly with either the full-wave loop or the half-wave open loop. Although these antennas may be used indoors, it must be remembered that best results are obtained when operating with an outdoor system.

g. Other Antennas. It may be necessary to have patrols operating outside the normal range of FM radio sets. When this is necessary, an antenna system can be constructed which will allow communications beyond the normal range of current radios. This can be



ANTENNA LENGTH: FULL WAVE
 FREQUENCY SHOWN: 24 MEGAHERTZ
 NORMAL RANGE FOR FREQUENCY SHOWN: DAY, 750 MILES OR GREATER; NIGHT, FREQUENCY TOO HIGH.

ANTENNA LENGTH

$$\frac{936}{24} = 39 \text{ FT}$$

Figure 10-7. Full-wave square-loop antenna.

accomplished through the use of the jungle antenna (fig 10-9) or the half-rhombic antenna (fig 10-10). When operating on frequencies above 30 MHz, the transmission range can be increased by improved antennas. The use of any one of these antennas should more than double the range of standard FM radio sets.

10-7. Communication Security

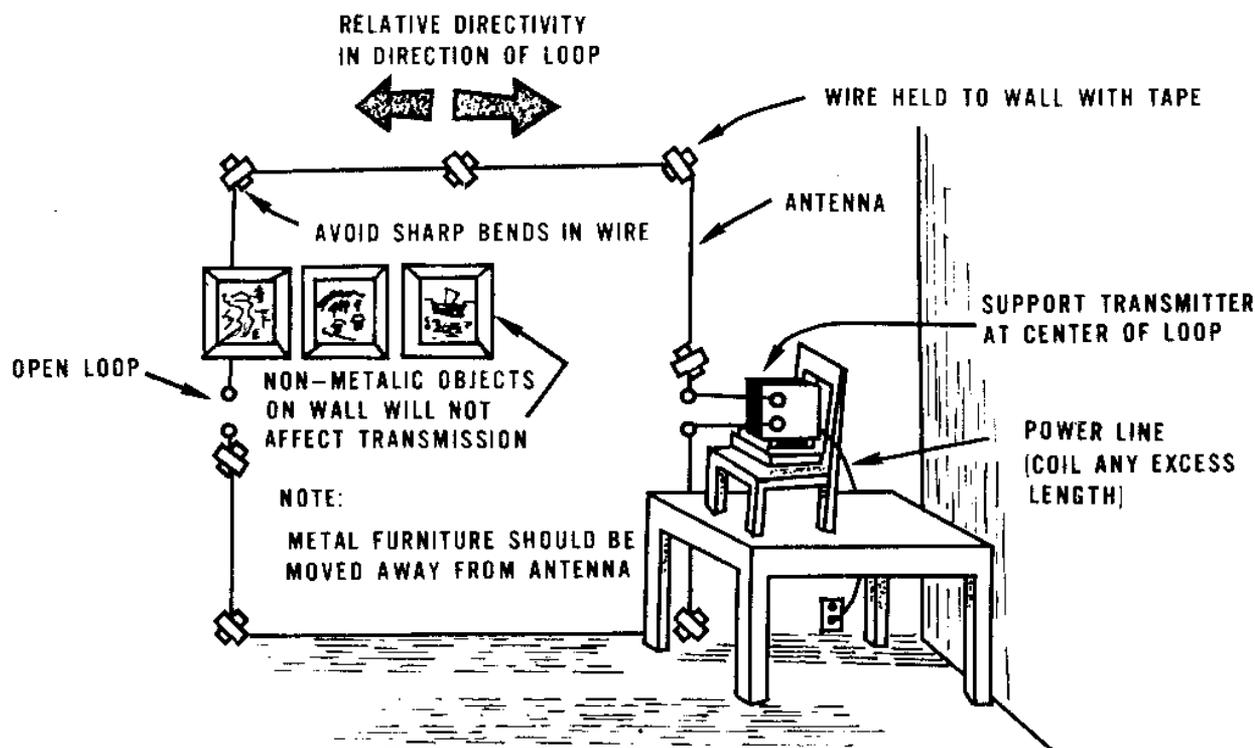
a. Security is of particular importance to a Special Forces detachment located in a UWOA. A violation of any of the principles of communication security endangers the detachment. Communication security is the protection resulting from all measures designed to deny unauthorized persons information of value which might be derived from a study of communications. Communication security is

obtained through proper physical security, transmission security, and cryptographic security.

b. Physical security is defined as that element of security which results from the physical measures taken to safeguard communication documents, equipment, and personnel. Within the SFOB, physical security measures are similar to those of any military organization.

(1) Operational detachment personnel obtain security clearance before infiltration. The detachment commander must use his judgment and discretion in dealing with indigenous personnel and allowing them access to classified information. Information on cryptographic systems used by Special Forces is never released to indigenous personnel.

(2) Classified material is kept on the person of one of the detachment members or under constant



ANTENNA LENGTH: HALF WAVE

FREQUENCY SHOWN: 18 MEGAHERTZ

NORMAL RANGE FOR

FREQUENCY SHOWN: DAY, 200-750 MILES; EARLY MORNING
OR LATE EVENING, 750-2500 MILES.

ANTENNA LENGTH —

$$\frac{468}{18 \text{ MHZ}} = 26 \text{ FT OR}$$

13 FT PER SECTION

NOTE: TUNE OUTPUT CAREFULLY BY INDICATOR LAMP. BULB WILL NOT GLOW BRIGHTLY.

Figure 10-8. Half-wave square-loop antenna.

guard. The physical security of the radio set is maintained by choosing good transmission and storage locations and by having a minimum number of persons know these locations. Techniques of physical security applicable to Special Forces in a UWOA are:

(a) Avoid easily identifiable and prominent geographical locations such as mountaintops.

(b) Move the radio after each transmission.

(c) Sterilize radio sites.

(d) Place surveillance on radio sets before and after transmission.

(e) Post guards when waiting for, and during, actual transmission.

(f) Do not carry classified material to transmission site.

(3) Detachment cryptographic systems and SOI's must not fall into enemy hands. Care must be

taken not to destroy these items prematurely since replacement is difficult. Remember, however, that destruction by burning is not complete unless the ashes are destroyed.

c. Transmission security includes all measures designed to protect transmissions from interception, traffic analysis, direction finding, and imitative deception. Some techniques of transmission security applicable to Special Forces operations in a UWOA are:

(1) Make minimum transmissions.

(2) Do not tune transmitters until exact contact times.

(3) Locate transmitter sites so that known direction finding stations are beyond groundwave distances.

(4) Transmit on an irregular schedule.

(5) Never transmit from the same area twice.

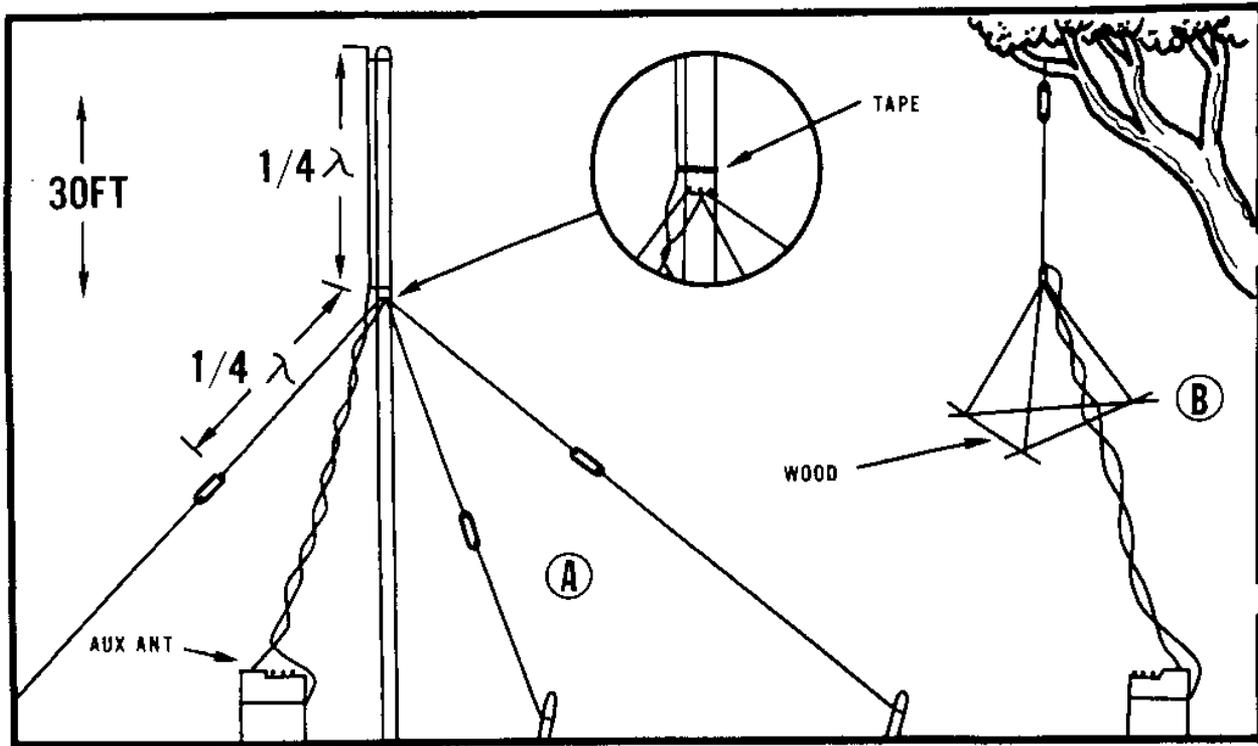


Figure 10-9. Jungle antenna.

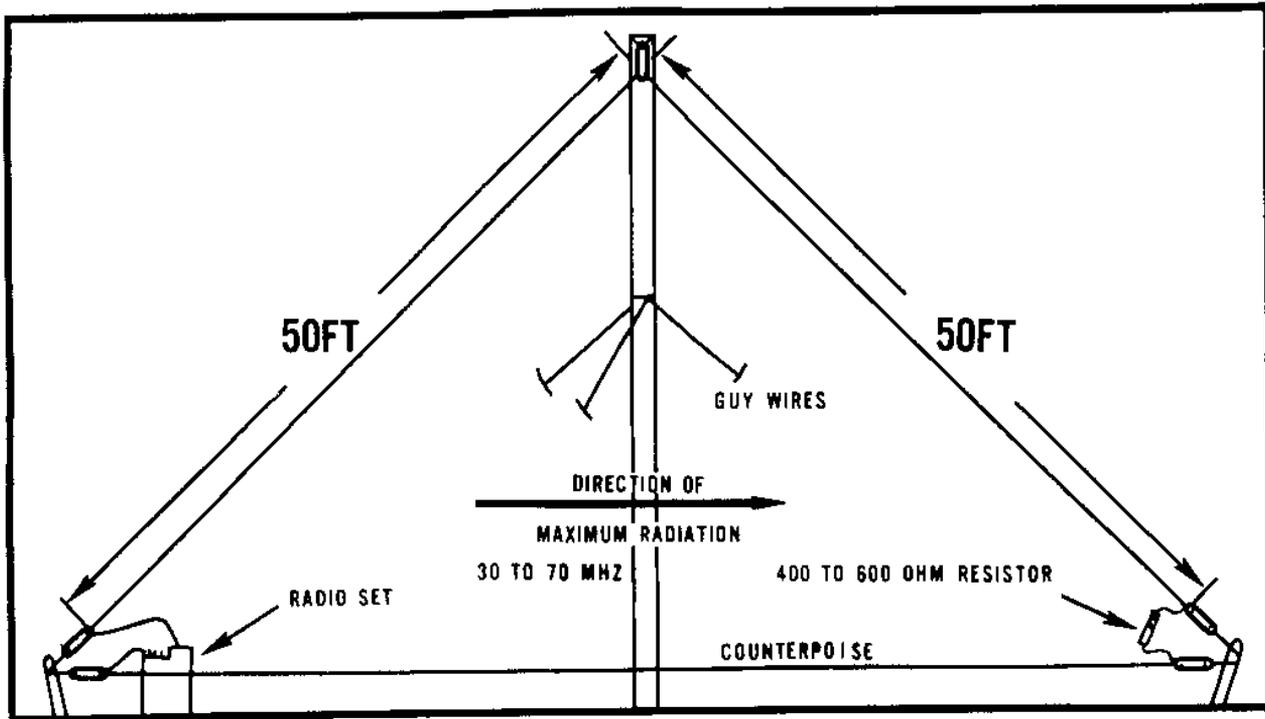


Figure 10-10. Half-rhombic antenna.

(6) Send short messages.

(7) Use, highly directional antennas.

d. Many times it may be necessary, in the interest of transmission security, to compromise between technically favorable transmission sites and transmission sites which meet the physical and transmission security criteria outlined above.

e. Cryptographic security results from the proper use of technically sound cryptographic systems. Systems and means available to the SFOB and the detachment commanders will vary with missions and operational areas. Specific instructions, techniques, and methods to be used are covered in premission briefings on a need-to-know basis.

f. See FM 31-21.

CHAPTER 11

MEDICAL ASPECTS OF SPECIAL FORCES OPERATIONS IN UNCONVENTIONAL WARFARE

Section I. CONSIDERATIONS

11-1. General

a. In conventional warfare, military medicine has but one general mission. That is, broadly stated, the conservation of fighting strength. The Army Medical Service (AMEDS) deals mainly with American troops, evacuating and treating them, and advising in the prevention of their diseases. Moreover, in conventional warfare, medical support is a logistical activity, a technical service. The AMEDS operates in a carefully constructed network, customarily stretching rearward from the "front lines" through the communication zone and ultimately back to the zone of interior.

b. In unconventional warfare the demands are quite different. There are no battle lines. The seizure of key terrain is less important than acquisition of popular support. The enemy's forces are continually harassed, kept off balance, and destroyed piecemeal. Since, for the guerrilla, there is no safe "rear" area to which to evacuate his casualties for treatment, wounded and ill personnel become a tactical rather than logistical problem. The commander finds that medicine, which was a combat service support activity in conventional warfare, has become a major tactical consideration in all operations.

11-2. Planning Considerations

a. The goals of medical operations in unconventional warfare are to conserve the fighting strength of the guerrilla forces and to assist in securing the support of the local populace for the U.S. and resistance forces operating within the UWOA.

b. Unconventional warfare demands clandestine organization and operation. The guerrilla challenges the physical superiority of his adversary with his own mobility and elusiveness. Mobility, when enhanced with an intimate knowledge of the area and with the all-important popular support, enables the guerrilla to appear, to strike, and to disappear before the enemy can react. Resistance medical support must be as mobile as the guerrilla tactical forces, responsive to his needs, and as effective as possible in preventing disease and restoring the sick and wounded to duty.

c. The Special Forces medical specialist is trained for the unconventional warfare role, wherein he functions in the absence of his physician advisor. As an advisor to resistance or guerrilla groups, he normally cannot utilize the organized medical service of the occupying or hostile government. He must rely almost exclusively on his own training and the local resources he can develop.

Section II. ORGANIZATION FOR UNCONVENTIONAL WARFARE

11-3. Organization for Medical Support

The organization of medical elements in unconventional warfare must be tailored to fit the particular situation. The basic medical organization is organic to the Special Forces group; however, it may be augmented by personnel from other medical units, depending on the skills required. In any case, this basic medical organization will be expanded, as appropriate, by the use of resistance force medical

personnel and by the implementation of medical training programs for local civilian, military, and paramilitary personnel. Skills organic to the Special Forces medical organization provide for the:

a. Provision of organizational medical care, preventive medicine, sanitary, engineering, dental, veterinary service, and medical supply to the detachment, or elements thereof, and to paramilitary and civilian personnel in consonance with command policy.

b. Planning, supervision, and conduct of programs for the training of U.S. forces and paramilitary and civilian personnel in:

- (1) The care of casualties from disease and injury.
- (2) Personal, organizational and community measures for the preservation of health.
- (3) The selection and preservation of foods.
- (4) The care and handling of pack animals and on field expedients in rigging packs and litters for animal transport.

c. Provision of preventive medicine functions, medical technical intelligence, and veterinary activities to include:

- (1) Epidemiologic investigation of conditions affecting the health of U.S. forces, paramilitary and civilian personnel, and animals.
- (2) Field surveys and inspection of significant environmental factors affecting the transmission of disease.
- (3) The planning and application of measures to control diseases in U.S. forces and guerrilla force and civilian personnel.

11-4. Medical Procedures Prior to Deployment

a. During periods of garrison duty and field training, medical activities in Special Forces units are directed toward maintaining the highest standards of personal hygiene and cleanliness in troop areas and facilities, unit and individual training in preventive medicine techniques, and the preparation of medical area studies. Technical advice and supervision are provided in connection with food and its preparation, water supply, troop housing, bathing and latrine facilities, waste and garbage disposal, insect and rodent control, and sanitation in campsites.

b. Periodic reports are rendered to keep the commander informed of the status of the health of his command and of the conditions which may adversely affect health. Corrective action is recommended for unsatisfactory conditions.

c. During the predeployment and isolation phases, the medic must contribute detailed information to the team's area study. The number of medical and trained paramedical personnel in the UWOA, their background, training, treatment methods and loyalties, and the available medical

treatment facilities, the living conditions and prevalent diseases, the attitudes and superstitions of the people and the availability of medical supplies all merit careful study and must be a matter of exact information to the team before its deployment.

d. During the period immediately preceding deployment, medical activities are directed primarily toward:

- (1) Briefings on the general medical situation in areas of planned deployment, to include information on the endemic diseases and on individual and small-unit measures which may be implemented for their prevention.
- (2) Immunization, to provide a high degree of immunity to disease conditions common to the UWOA.
- (3) Predeployment medical examinations, to identify and eliminate those personnel with medical conditions where effectiveness in remote situations would be difficult or impossible to maintain.
- (4) Intensive training of all detachment members in self-aid, "buddy care," and in specific survival techniques applicable to the UWOA.

11-5. Medical Requirements for UWOA's

a. In general, medical requirements within the UWOA will differ in two respects from those posed by conventional operations:

- (1) Battle casualties are normally fewer in guerrilla units than in conventional units.
- (2) The incidence of disease and malnutrition is often higher in guerrilla forces than in conventional forces of similar size.

b. The medical organization in support of resistance forces will ordinarily feature both guerrilla medical units and medical facilities staffed by the auxiliary. The former are usually located in guerrilla base areas and staffed by guerrilla medical detachments. Auxiliary facilities are located within the civilian economy sympathetic to the insurgent cause and treat individuals or small groups of patients. These may be held in a convalescent status, or may be given supportive care until such time as it is practical to evacuate them to more advanced treatment facilities in safe areas.

c. The first medical activity, after infiltration, may be the most effective means to establish rapport with resistance elements. At the time of establishment of contact with partisan elements, the medic, by his actions, affords an almost immediate entry into the less-than-hospitable environment in which the team often

finds itself. In an effort to establish rapport, each altruistic medical act, such as careful treatment of a sick partisan or a child, will represent an effective presentation of the team's credentials. The success of

all future missions of the Special Forces organization will depend on the rapport initially established between the American and resistance force personnel.

Section III. DEVELOPMENT OF MEDICAL SUPPORT IN UNCONVENTIONAL WARFARE OPERATIONAL AREAS

11-6. General

During the buildup phase of unconventional warfare operations, an initial area assessment is conducted to determine the actual extent of guerrilla medical training, availability of medical supplies and facilities, and the state of sanitation and health within the UWOA. On a continuing basis, the area assessment will include consideration of the diseases and local medical customs within the area of operations. In certain areas of the world, the local population may not be receptive to Western medical practices and concepts. Before a medical program can be initiated in such an area, it will be necessary to persuade the populace to accept a medical program or to modify one to best fit the situation.

11-7. Medical Requirement During the Buildup Phase

a. Medical training is an important part of the tactical training; it must be instituted as early as possible. The SF medical specialist must select and begin to train unit-level medics at the earliest opportunity. He must develop training programs for all the different working skills that will be needed in the insurgent hospital system. He must indoctrinate all members of the fighting force with the principles of "self-help and buddy aid." Guerrilla medical personnel need not function without backup, but may require assistance in organization. The partisans may have a military physician among their ranks. Civilian physicians may be sympathetic to the guerrilla cause and may render assistance in emergencies. Both should be fully utilized. Coercion may be applied to non-sympathetic medical personnel if their services are absolutely necessary.

b. It is during the buildup phase that the guerrilla force is thoroughly indoctrinated not only in first aid and the care of the sick and wounded, but also in preventive medicine procedures which must be strictly enforced during active operations. This indoctrination will be directed toward first aid, basic

sanitation, personal hygiene, and individual protective measures. Specific attention will be given to the use of drugs to suppress disease, immunizations, food and water sanitation, individual methods of protection against bites from insects and snakes, and the sanitary disposal of human wastes. Recommendations are made to individual commanders with respect to the measures to be enforced in all localities of the UWOA. The scope of the preventive medicine effort must be adequate to encompass the probable expansion of the guerrilla force, and must include requirements for the civilian population (i.e., the dependents of the guerrillas) as well as the guerrilla force itself.

(1) The guerrilla force may comprise both foreign and local personnel. Differences in immunity to the endemic diseases will exist between ethnic groups. Certain preventive measures may be applicable to one group and not to the other. For instance, the use of chloroquineprimaquine for the prevention of malaria is not equally feasible in all populations. While it may be necessary to administer routine malaria prophylaxis to those recently introduced to the area, it may or may not be desirable to treat local resistance forces with the same drugs, e.g., primaquine may be poorly tolerated by the local personnel. Further, the members of the resistance force may exhibit diseases uncommon to U.S. forces., such as serious nutritional deficiencies and cases of active tuberculosis.

(2) Rigorous preventive medicine and sanitation practices are necessities in the guerrilla camp. An outbreak of disease limits effectiveness and endangers security. Sanitary principles are also basic to the guerrilla medical civic action effort.

11-8. Medical Support During Employment Phase

During the period of employment of the guerrilla force in active operations against the enemy, plans for the care of sick and wounded as well as preventive medicine activities must be directed toward the members of small, highly mobile, operational units which will be deployed throughout the UWOA. The operational order for every guerrilla mission must include plans for collecting points

for the wounded and dead, as well as the location of aid stations and routes of evacuation from the area of engagement to clandestine treatment facilities. Preventive medicine techniques within the UWOA will be determined by local and immediate requirements. Plans must be made to meet problems such as epidemics. Prior to offering medical assistance or acknowledgement of a request for medical treatment consideration should be given to the customs and taboos of the ethnic group concerned and the medical support available. Medical treatment given to dependents or civilians, in cases that the local midwife or "doctor" cannot handle, could be beyond the capabilities of the SF medic.

11-9. Medical Support During Demobilization Phase

a. The demobilization phase begins when linkup between friendly conventional forces and the guerrilla force is completed. Following linkup, the importance of clandestine and overt resistance forces in support of the theater military mission diminishes. This phase is characterized by social disorganization created by relocation and resettlement of large numbers of displaced persons, refugees, and evacuees. Disorganization of civil government, the disruption of public utilities, and mass migrations all contribute to the potential for epidemics. The trained auxiliary and guerrilla force aidmen and hospital attendants, as well as local resistance force medical personnel, must be phased into the national health plan of the new government. Medical supplies and equipment must be collected, audited, and integrated into the overall plan. Medical facilities which, by the close of guerrilla activities, may be highly sophisticated, should be turned over to regional or governmental health agencies so they may continue to contribute to the national medical economy.

b. The role of the preventive medicine section organic to the Special Forces group now changes from one of support for the guerrilla unit and the families of the guerrillas, to one of assisting civil government and military civil affairs units to implement public health measures within the areas of guerrilla operations.

11-10. Hospitalization in the UWOA

a. The care and treatment of U.S. sick and wounded will generally be accomplished by medical personnel within the area, until evacuation of

selected personnel can be accomplished to friendly areas outside the UWOA by air evacuation or through the auxiliary and the underground. Small, isolated, and well hidden treatment and holding facilities should be established in relatively secure areas. These will, of necessity, impose tactical limitations on the commander. There must be alternate sites for all facilities. All must be protected by a wide warning net. For the operation of his hospitals, the guerrilla will again depend on his auxiliary. Simple, battle-tested, basic surgical principles of resuscitation, and debridement with delayed primary closure of wounds, will be observed. Sophisticated surgical procedures will not be practiced. Many lives will be saved, and a remarkably high percentage of patients will be returned to duty. Convalescence can continue within the auxiliary network-under the eyes of the area command.

b. When necessary, the auxiliary and the underground may assist in the infiltration of civilian medical personnel and equipment to accomplish life-saving procedures. In some instances, the auxiliary may arrange hospitalization in widely-scattered, private homes where periodic visits can be made by medical personnel. As the UWOA -expands, the services of civilian professional medical personnel and the medical facilities located in villages and towns within the UWOA may be available during certain hours, f not for complete and continued hospitalization.

11-11. Evacuation Procedures in the UWOA

a. Since evacuation within, and from, the UWOA is normally difficult, unit commanders must rely on their own resources, as well as support from auxiliaries and the underground, in planning the evacuation of casualties. Evacuation to forward aid stations must be rapid, for the presence of a wounded man severely limits the guerrilla's ability to clear the battlefield swiftly.

b. Great reliance must be placed on self-aid. Maximum use must be made of specially trained, enlisted medical personnel who may give or supervise treatment which obviates the requirement for evacuation. Local pack animals and other civilian ground and water transportation should be used to the maximum possible extent, as well as litter bearers recruited from among local auxiliary personnel. Every effort is made to evacuate the wounded, yet the tactical situation may preclude the transportation of casualties with the unit to the guerrilla base. In such an event, the wounded may be hidden temporarily in well-concealed

locations or mission support sites (MSS's). The auxiliary, who can care for the wounded until their return to active duty, must be notified of the location of these drops. All operations should include an SOP for emergency treatment and evacuation.

c. Whenever possible, wounded or sick Americans should be evacuated to a safe area, for possible exfiltration from the UWOA. The same is true of key guerrilla and resistance leaders. Each case will have to be evaluated against the risk of compromising the overall resistance force mission. Frequently the wounded individual may have to remain in the UWOA.

(1) The in-flight pick-up system ("SkyHook") may be used to evacuate a disabled patient (see para 4-8-4-10). In no case should a disabled patient be admitted to the evasion and escape network. For its function, such a network requires a high degree of compartmentalization and individual agent ignorance as to the organization of the net. A disabled man would not be able to negotiate each segment of the net by himself, and, requiring assistance, he could compromise the whole net.

(2) Thorough evacuation will deny the enemy the wealth of intelligence available from the wounded. Clandestine evacuation from the aid stations to hospitals may be conducted. Such evacuation systems are typically operated by auxiliary.

(3) The removal of the dead from the scene of action is most important for security reasons since identification by the enemy may jeopardize their families and their units. The bodies of those killed in action are removed and cached until recovery is possible. Bodies are then disposed of by means consistent with the customs and the religions of the local population.

(4) As the overall tactical situation begins to favor the sponsor, air evacuation of sick and wounded to safe base areas may become feasible. This lightens the burden on the meager treatment facilities available to the area command and provides a higher standard of medical care for the patient.

11-12. Veterinary Medical Support in a UWOA

a. Veterinary specialists normally will not accompany a detachment into the UWOA, but will support the deployed detachment with advisory assistance from the SFOB. Veterinary medical techniques applicable to Special Forces operations in

the UW situation may be considered according to the phase of the operation.

(1) Veterinary procedures prior to deployment. During periods of garrison duty and field training, veterinary activities are directed toward the preparation of area medical studies and individual and unit training on the subject of:

(a) Wholesomeness and sanitation of subsistence.

(b) Care and management of pack animals.

(c) Food inspection procedures.

(d) Animal diseases transmissible to man.

(e) Techniques for using animals for pack arid transportation.

(f) Survival techniques.

(g) An initial area assessment to determine the extent of indigenous training, organization, and effectiveness of veterinary resources and availability of veterinary supplies and facilities.

(2) Immediately before deployment, veterinary activities are directed toward

(a) Briefings on the veterinary medical situation in areas of planned deployment to include endemic and potential epidemic animal diseases transmissible to man and on individual and small-unit measures which may be implemented for their prevention.

(b) Briefings on diseases of animals in areas of planned deployment that may directly or indirectly influence the outcome of unit deployment.

(3) Veterinary procedures during the buildup phase. During the buildup phase of unconventional warfare operations, veterinary activities will include area assessments which are designed to determine the veterinary requirements for support of combined U.S. and resistance forces within the UWOA. Areas of emphasis should include:

(a) Rations and the nutritional requirements of resistance force personnel.

(b) Animal diseases transmissible to man.

(c) Availability of animals for transportation and evacuation.

(d) Identification and location of sources of production and channels of supply of biological immunizing agents against those animal diseases peculiar to the UWOA. Third country sources of supply should be considered since some agents are not produced in the United States.

(4) Programs based on this information will usually be implemented as expansion of the resistance force occurs and will include:

(a) The establishment of suitable facilities in which to receive, store, and issue rations.

(b) The establishment of standards of acceptability for partisan-supplied foods.

(c) Stockpiling U.S.-supplied rations and the supervision of preparation of operational rations. (Composition of rations will be based on the previous assessment of nutritional requirements of guerrilla personnel.)

(d) The establishment of preventive medicine procedures for the control of animal and those animal diseases transmissible to man.

(e) The procurement of pack animals.

(f) Training for guerrilla personnel in

1. Survival techniques to be used by individual and small, operational units.

2. The selection and preparation of indigenous foods.

3. The care and handling of pack animals.

b. Recommendations to appropriate resistance force commanders with respect to veterinary preventive measures which must be initiated and enforced to control endemic and potentially epidemic diseases of animals and those animal diseases transmissible to man.

c. During the employment phase of unconventional warfare operations, veterinary activities will consist of continued evaluation of veterinary data and the formulation of plans to improve environmental sanitation, the provision of food supplies, and the control of animal diseases and diseases transmissible to man within the UWOA. Emphasis will be on providing assistance and technical information to deployed operational detachments. Emphasis should be placed on the importance of livestock to families in a transitional society. Because of this, maximum use of veterinary capabilities can be instrumental in favorably influencing the populace.

d. During the demobilization phase, veterinary activities are redirected toward assisting the logistic effort in providing an adequate food supply for large numbers of displaced persons, refugees, and evacuees. Secondary efforts are directed toward the control of animal diseases

of public health significance. The major veterinary programs, formulated at theater level, will be directed at redevelopment of food production and processing and will be implemented under the operational control of the civil government and the civil affairs units having jurisdiction within the country.

11-13. Medical Supply in the UWOA

a. In all probability, medical supplies for use within the UWOA will only be available in limited quantity by resupply from the SFOB. Prior planning to provide the minimum essential medical supplies and equipment for current, planned, and contingent operations is mandatory. Based on the area assessment, and as the development of the resistance force medical organization progresses, medical supplies are phased into the UWOA by the operational detachments based on their requirements. Excess medical stock should be maintained at the SFOB to expedite prompt resupply or delivery of medical items to operational detachments with unexpected requirements. Medical supplies may include surgical and dental instruments, blankets, drugs, bandages, and ambulatory aids. Anesthetics, antibiotics, dressings, and plain suppressants are usually the most critical items of supply. As the medical facilities expand, there may be a requirement for special items of surgical equipment. Medical items are ordered through use of the Catalog Supply System using a preplanned brevity code adapted to the UWOA.

b. There should be minimum dependence on the local economy for the provision of medical supplies and equipment, because such items will probably be scarce and in great demand by the enemy government and the local population. Captured medical supplies should be returned to the guerrilla base as expeditiously as possible for redistribution according to overall operational requirements. It may be possible to purchase some medical supplies on the civilian economy.

c. It will be necessary to cache medical supplies in mission support sites in order to maintain mobility and deny access to the enemy. Precautions, such as repackaging, must be taken to prevent damage and spoilage. Medical supplies are strictly controlled by the area command, since such articles are potential black market items and, usually, in critical short supply.

Section IV. INTELLIGENCE

11-14. Operational Intelligence

Intelligence collecting is an inherent capability of medical personnel. The activities of medical

personnel in treating members of the local population and ministering to the sick and wounded insurgents and PW's provide innumerable opportunities to collect tactical intelligence; for example, information on the

effects of the environmental improvement program, the effects of propaganda on the populace; and information on weapons, equipment, medical supply, and morale. This function is in addition to collection of technical medical intelligence.

11-15. Medical Area Study/Area Assessment

a. The deployment of small units to remote areas provides a unique opportunity to investigate the military disease problems of the area by using deployed personnel as "sentinels." An appropriate battery of screening examinations has been devised for any given area which is administered before deployment to obtain baseline data. The same examinations, accomplished on the return from a mission, serve the dual functions of detecting those individuals who have acquired disease requiring treatment, and the delineation of the major disease problems of the area. This effort requires the support of sophisticated medical laboratory facilities in rear areas.

b. Epidemiologic surveillance, conducted in this manner, serves two functions:

(1) It provides the basis for recommending preventive measures to be taken by units to be deployed in these areas in the future.

(2) It brings to attention those disease problems of military importance which require further investigation within operational areas by teams of trained personnel in order to devise techniques for their prevention.

11-16. Veterinary Information

a. Collection and evaluation of veterinary medical information is an essential and integral part of the principal medical area assessment. The following information is of interest to the staff veterinarian of the Special Forces group in the accomplishment of such an assessment:

- (1) Animal diseases endemic to the area.
- (2) Animal diseases transmissible to man.
- (3) Agricultural production.
- (4) Methods of food procurement, processing, and preservation.
- (5) Nutritional status of the local population.
- (6) Food resources of animal origin.

b. Such information will be of value in planning during the buildup phase of unconventional warfare operations.

CHAPTER 12

STABILITY OPERATIONS

Section I. INTRODUCTION

12-1. General

In stability operations, U.S. supported forces operate in less restrictive environments than in unconventional warfare. Efforts are directed towards countering insurgent movements by assisting the host country in denying them the support of the populace and by destroying them through combat actions.

12-2. Missions

Missions assigned TOE Special Forces detachments committed to stability operations are broad in scope. Once in-country, these missions are further broken down into detailed requirements dictated by the local situation and the national internal defense and development (IDAD) plan. Missions may be to

a. Train, advise, and provide operational assistance to host country Special Forces detachments, ranger-type units, paramilitary forces, and other military or irregular forces.

b. Execute short-range military civic action projects of the immediate impact type as part of the long-range internal development program.

c. Organize, train, advise, and direct tribal, village, and other remote area groups in stability

operations. This may include establishment of external defenses and internal security, border operations, and surveillance tasks.

d. For details on additional missions assigned Special Forces detachments in stability operations, refer to FM 31-21, FM 31-21A, FM 31-20A, FM 31-22, FM 31-73, and FM 41-10.

12-3. Selection of Operational Detachments

a. The same general criteria apply in selecting detachments for stability operations as for unconventional warfare operations. The same preparations are made for deploying to operational areas except that logistical support is more rapid and secure, lessening the amount of equipment accompanying the detachment.

b. In stability operations, the Special Forces detachment may be augmented, as required, for specific missions by civil affairs, psychological operations, military intelligence, military police, signal, engineer, and medical detachment personnel.

c. For additional information and guidance on training and employment of Special Forces in stability operations, see FM 31-21, FM 31-22, FM 31-23, and FM 31-73.

Section II. INTELLIGENCE

12-4. Intelligence Considerations in Stability Operations

a. In stability operations, Special Forces detachments will require accurate, detailed and timely intelligence to successfully accomplish assigned missions. Collection, processing, and dissemination of information concerning all aspects of an area of operations susceptible to, or undergoing, an insurgency are vital to successful stability operations. Of particular

importance are those aspects of intelligence activities devoted to neutralizing or destroying the insurgent infra: structure and counterintelligence activities to protect host country against espionage, subversion, and sabotage. Stability operations depend on intelligence and counterintelligence due to the insurgent reliance on the populace for success. The populace is both a target for the insurgent and a source for intelligence, recruitment, and logistical support. The populace thus becomes a major consideration of intelligence

in addition to the traditional ones of enemy, weather, and terrain.

b. It may not be possible for the Special Forces detachment commander to obtain sufficient information through overt means from the populace. The release of information to the Special Forces detachment by the people could result in retaliation by the insurgent, thereby destroying the usefulness of the people as informants. The detachment commander must consider the use of clandestine intelligence and counterintelligence operational techniques.

12-5. Area Study

a. Preparation. Basically the same preparations are made for commitment into a stability operations environment as into a UWOA. However, the Special Forces detachment is required, because of the nature of the activities in stability operations, to make extensive studies of local customs, religious beliefs, languages, cultural backgrounds, and personalities. Special Forces in stability operations need to exploit, to the maximum, local law enforcement agencies; security and intelligence elements and organizations; and interpreters, guides, and trackers.

b. Study Methods. The detachment itself may desire to prepare the area studies; however, the basic difference in preparing the study for a stability operation is that primary emphasis is placed on the study of propaganda appeals, symbols, and their uses and techniques of propaganda dissemination in support of all military operations. Gaining attention, understanding, and credibility among the people of the selected area is of primary consideration. Additionally, area handbooks dealing with the sociological, political, economic, and military aspects of the area are researched thoroughly to increase the background knowledge of the detachment before commitment.

c. Operational Area Intelligence. This information normally is given to the detachment upon arrival in the host country by the U.S. Military Advisor's staff and other elements of the Military Assistance Advisory Group (MAAG). Operational intelligence covers specific areas of operation, targets, missions, military operations, civil affairs operations, organization and training of paramilitary forces and their employment, border operations, air operations, and other missions designed to solidify host country programs to gain the support of the populace in its fight against insurgency.

Section III. INFILTRATION

12-6. General

Infiltration techniques employed in the conduct of operations will depend on assigned missions, number of personnel committed, and availability of suitable transportation. Consideration will be given to air infiltration that will include rappelling from helicopters, free fall parachute operations, and the employment of both fixed-wing and rotary-wing aircraft of the aviation company for air drops or air landings; water infiltration in areas contiguous to coastal areas; land infiltration, including long-range patrol actions; and stay-behind operations.

a. Air. Air delivery of equipment and personnel by parachute use the same techniques as those used in unconventional warfare operations. Other delivery techniques may be employed effectively since stability operations include short-range penetrations to objective areas; lack of sophisticated enemy air defenses; and penetrations in remote, inaccessible, insurgent-controlled areas.

(1) In areas inaccessible to normal entry, rappelling from a helicopter can provide access to an area and enhance the commander's freedom of

action in accomplishing assigned tactical missions. Examples

(a) Conducting raids against enemy camps and strong points.

(b) Establishing blocking positions at designated points during the conduct of encirclement operations.

(c) Augmenting strike force units in pursuit of insurgent forces.

(d) Infiltrating selected personnel, e.g., medical specialists, forward air controllers.

(e) Entry into distressed areas where normal approaches are denied.

(f) Conducting military civic action in remote, isolated areas.

(2) The number of personnel to be infiltrated into an area using helicopter rappelling techniques is limited by

(a) Allowance cargo of the helicopter.

(b) Hovering ability of aircraft.

(c) Wind conditions and other weather factors.

(3) Free fall parachuting as a means of infiltration may be desirable when a limited DZ area is available. The free fall parachutists, using the techniques of "tracking" combined with the maneuverability of the parachute, select and land in relatively small areas. Parachute operations of this nature may be used successfully in deep penetrations for long-range reconnaissance and intelligence missions, locating enemy redoubts and sanctuaries, and locating and establishing suitable DZ's and LZ's for receiving larger forces.

(4) Army aviation supporting Special Forces infiltration and other operations may employ fixed- or rotary-wing aircraft to effect delivery or resupply of personnel and equipment by parachute or air landings. Infiltration of Special Forces elements into insurgent-controlled areas may also be accomplished by low flying helicopters using various ruses and landing techniques which confuse the enemy as to the true location of the insertion. This technique is employed when dropping selected reconnaissance teams in designated areas to locate secret bases, fix locations of supply depots, and to locate and destroy communication centers or other key installations (chap 5 and 6).

b. Water. Water infiltration techniques used by Special Forces units in stability operations are generally the same as those employed in unconventional warfare operations (chap 8). A basic difference is the lack of a reception committee. In this instance, selected naval units will reconnoiter, select, and mark landing sites and direct the loading and unloading of infiltration personnel. The lack of sophisticated beach defenses and radar facilities will permit greater freedom for naval support craft and personnel. A wider variety of missions, not normally associated with Special Forces detachments, may be assigned and carried out with support by other naval forces. These missions may include:

(1) Psychological activities against selected targets.

(2) Operations to destroy enemy forces and facilities in conjunction with paramilitary forces.

(3) Reconnaissance to locate bases and supply depots.

(4) Gathering intelligence to locate and fix insurgent forces.

(5) Water operations involving the employment of small boats on rivers, inland waterways, estuaries, and lakes (see chap 8).

c. Land. Land infiltration techniques will be the same as those employed by Special Forces in unconventional warfare operations and long-range patrols in deep penetrations. Mission requirements may vary to the extent that Special Forces detachments may be deployed with larger, more heavily armed units such as strike forces or infiltrated to conduct remote area operations. The latter are conducted to establish islands of resistance in insurgent-controlled areas which may also serve as bases to support other tactical operations. The Special Forces element may:

(1) Attempt deep penetrations for raids and operations against selected targets.

(2) Conduct operations against targets of opportunity for designated periods of time in insurgent-controlled areas.

(3) Capture and hold key terrain for the establishment of blocking positions in support of an overall counter guerrilla operation.

(4) Conduct deep penetrations into insurgent areas and return to friendly areas after dropping selected intelligence and reconnaissance teams for stay-behind operations.

d. Stay-Behind Operations. Special Forces detachments employ stability operations to establish and prepare guerrilla operational areas. Detachments employed to organize and train paramilitary units, such as civil defense forces, can prepare them as a cadre for conversion to a guerrilla organization in the event the enemy assumes control of the area. The detachment will locate likely DZ and LZ sites, organize and train selected personnel for auxiliary and underground functions, establish supply caches, communication facilities, and safe areas.

Section IV. COMMUNICATION

12-7. Systems and Techniques

a. Initial Requirements. In establishing an SFOB in a stability operation environment, the same signal considerations apply as in an unconventional warfare environment. The area for stability

operations is considered to be friendly territory in the same meaning used in unconventional warfare. Under the supervision of the Special Forces group signal officer, the signal company will establish the following communications as directed:

(1) Installation, maintenance, and operation of an internal wire system for the SFOB.

(2) Termination of landline circuits from higher, adjacent, and lower headquarters.

(3) Entry into radio nets of higher and adjacent headquarters as required.

(4) Installation, maintenance, and operation of an appropriate cryptographic facility and communication center.

(5) Installation, operation, and maintenance of communication center.

(6) Installation, operation, and maintenance of communications to subordinate units.

b. Control Requirements. As the Special Forces effort develops in the area, provisions must be made for communications to the deployed detachments subordinate to the SFOB. Normally, the chain of command will be used for the chain of communications: "C" detachments will be responsible for communications to their deployed "B" detachments; "B" detachments to their deployed "A" detachments. Detachment commanders will establish their own internal communication systems.

c. Signal Company. The signal company will be employed in a slightly different role from that in unconventional warfare. Radio teletype teams, or sections of the mobile radio platoon, will be permanently deployed within the "C" detachment headquarters. These teams, while operating under the operational control of the "C" detachment commander, will necessarily remain under the command of the signal company commander. Only necessary personnel and equipment of the base operations platoon and the two base radio platoons to operate SFOB communications will remain at the SFOB. The balance of the personnel and equipment will be used to augment the "C" detachments and, where necessary, the "B" detachments.

d. Radio Communications. In an IDAD environment, longline communications are not normally installed; primary reliance is placed on radio communications. The TOE radio equipment of the Special Forces detachment is not suited for the high-volume, encrypted traffic load required. Some of the types of radio nets required are:

(1) *Command message nets.* Radio teletype, encrypted (on-line or off-line) to handle operational; logistical, and administrative message traffic:

(2) *Command voice nets.* Voice operated,

radio-telephone radio nets using suitable, available, AM-voice or single side band (SSB) radio equipment. The primary purpose is to provide the commander and staff direct contact with appropriate personnel in subordinate headquarters. Radio-wire integration is incorporated at all command levels of these nets whenever possible.

(3) *Emergency nets.* An emergency net will use both TOE Special Forces radio and other radio equipment provided to augment the group for its counterinsurgent mission. The voice and continuous wave net will be monitored by SFOB, "C," and "B" detachment levels of command. This net will be used as an alternate means for subordinate detachments to contact higher headquarters when other means fail.

e. Equipment Augmentation. To accommodate increased traffic loads in stability operations, communication equipment augmentation will be necessary. Provisions must be made for a command message net and command voice net at each echelon of command. In addition to the augmentation of personnel and equipment sent to the "C" detachment by the signal company, the "C" detachment will require radio equipment sufficient to operate a net control station for its command message net (radio-teletype) and a net control station for its command voice net. In addition it will require equipment to enter the command voice net operated by the SFOB. The "B" detachment will require the same equipment augmentation. The "A" detachment will require equipment to enter the "B" detachment command voice net.

12-8. Wire

Long distance wire communications are not normally feasible in an IDAD environment. Local wire systems in established Special Forces camps are highly desirable to provide:

- a. Immediate contact with key personnel for radio-wire integration calls.
- b. Control and coordination of camp defenses.
- c. Intra-camp administration and operations.
- d. Communications with observation posts.

12-9. Training

a. The reorganization of the Special Forces group communication structure to accomplish a stability mission requires that Special Forces personnel at all echelons be trained in the functioning of the signal communication systems.

b. Signal training also will be required for the

paramilitary forces that are established under control of the Special Forces operational detachments. The Special Forces detachment radio operators are well qualified to establish tactical communication systems within company-sized, paramilitary units. Training will emphasize the following aspects of signal communications:

- (1) Radio installation.
- (2) Voice radio procedure.
- (3) Communication security.
- (4) Concept of communications.

c. The type of signal equipment provided to the paramilitary forces may be standard, obsolete, or current U.S. military equipment or civilian procured equipment designed for use in the particular area concerned. The equipment should be simple to operate and maintain.

d. Maintenance training beyond operator level should be conducted for selected indigenous personnel at a central location for the entire country or political subdivision.

12-10. Communication Security

a. The basic elements of communication security as outlined in paragraph 10-7 apply in IDAD operations. Emphasis on certain aspects, however, will be different.

b. Physical security as applied in conventional units will apply to Special Forces operations in stability operations.

(1) Classified communication documents will be secured in compliance with AR 380-5, AR 380-40, and other classified communication publications.

(2) Radio equipment will be provided the normal security measures applicable to conventional units.

c. Transmission security will be emphasized in voice radio operations. The need to avoid direction finding is not paramount; however, all possible steps will be taken to prevent traffic analysis.

d. Cryptographic security measures pertain in IDAD operations.

Section V. OPERATIONS

12-11. General

Major emphasis is placed on interdiction operation and harassment of insurgent guerrilla units, training areas, and logistical installations to deny insurgent forces access to local supply sources. When properly coordinated with other tactical operations conducted by regular forces to include air strikes and major offensives against strongholds, interdiction operations can make a significant contribution to the destruction of the insurgent threat. Major goals are to:

- a.* Destroy and damage supply routes and depots.
- b.* Capture equipment and key personnel.
- c.* Create confusion and weaken insurgent morale.
- d.* Force the insurgent to keep on the move.
- e.* Fragment the insurgent force.
- f.* Relieve villages of the insurgent threat.
- g.* Deny the insurgent the support of the local populace.

12-12. Application of Unconventional Warfare Techniques

Unconventional warfare techniques, to include establishing intelligence nets, evasion, and escape

mechanisms on a limited scale, the use of psychological operations to gain support of the local population, raids and ambushes, and air operations all have application in stability operations. Techniques employed will depend largely on the assigned tasks and the support required. The organization and presence of effective paramilitary and local defense forces can neutralize the insurgents' efforts to gain support from the people. Special Forces detachments must carefully analyze each mission assigned and evaluate it in the light of unconventional warfare techniques and its application to stability operations. For additional information refer to FM 31-21, FM 31-21A, FM 31-20A, FM 31-22, and FM 31-23.

a. Paramilitary Forces. Special Forces detachments may be required to organize or advise already organized paramilitary forces of various types (civil guards, gendarmerie, combat police, provincial or district forces, and others). These forces usually are charged with internal security missions. They may be formed into company- and battalion-size units and normally are trained in small-unit tactics, individual, and light crew-served weapons. The organizational, training, and operational procedures used by Special Forces in guerrilla operations may be applied with reference to paramilitary forces in stability operations. The paramilitary force, in its security role, performs

limited tactical missions such as raids, ambushes, and the pursuit of insurgent forces. It can receive combat support normally not available in Special Forces guerrilla operations, e.g., artillery fire, armed Army aviation, close air, communications, and effective medical evacuation.

b. Local Defense Units. These units normally are responsible for the security of villages and hamlets; guarding small bridges, key intersections, and local airstrips; and for conducting limited offensive operations. They may be organized into platoons or squads, and members normally are from the villages and hamlets within the immediate area. With proper training they can conduct around-the-clock patrols, raids, and ambushes. In nonmilitary missions, they can assist in emergency relief and be the principal support of self-help programs set up by Special Forces units.

c. Special Groups. These groups are more likely to be identified with primitive tribes in remote areas, not readily accessible to regular forces. Among those included are people from religious or ethnic minorities and other miscellaneous groups such as workmen's militia, youth organizations, and female auxiliaries. They can provide local and internal security of their villages and hamlets when properly trained and armed with adequate weapons.

d. Missions. Types of missions assigned Paramilitary forces are basically the same as those conducted in guerrilla warfare operations; however, additional missions not normally associated with interdiction operations may include:

- (1) Border operations (surveillance and denial).
- (2) Reaction force operations.
- (3) Reconnaissance and combat patrols.
- (4) Long-range patrols into insurgent-controlled areas.
- (5) Psychological operations.
- (6) Military civic actions.

e. Paramilitary forces, directed by Special Forces, conducting offensive and defensive operations against an insurgent force have certain advantages that are denied the guerrilla force in limited or general war. Some of these are:

- (1) Artillery support from guns outside the insurgent-controlled areas.
- (2) Close air and other air support immediately available.

(3) Reinforcements, particularly from mobile airborne and ranger units.

(4) Evacuation from the operational area if necessary.

(5) Paramilitary forces, because of their location, organization, and support, can conduct extensive defensive operations in support of their villages and hamlets. Defensive tactics employed by paramilitary forces are similar to those of conventional forces with the exception of more primitive techniques for securing areas. These techniques may include such defensive measures as moats, palisade fences, mantraps, and terrain stripped of concealment and cover for an attacking force.

12-13. Border Operations

a. General. Where an insurgency has been successful against an established government, support from sources outside the country has often been a key factor in its success. A contributing factor to success in stability operations is a denial of this external support which includes the use of adjacent countries as a sanctuary.

b. Border Control. Indigenous forces may be given missions of accomplishing varied border control operations concurrently with other military operations. There are two basic concepts of control:

(1) *Border denial.* These measures are taken to physically separate the insurgent force from external support provided from an adjacent country (see FM 31-10).

(2) *Border surveillance.* This consists of an extensive network of observation posts and watchers, augmented by intensive patrolling activity to detect, ambush, and destroy small groups of infiltrators. Normally, a border surveillance operation of this type is especially applicable to Special Forces-directed indigenous forces when operating in rugged terrain and where construction of physical barriers is not practicable. For a discussion of border control in counterinsurgency operations, see FM 31-16.

c. Organization for Operations. The primary organization for border control operations is based on the insurgent situation and the terrain in the area. Special Forces commanders develop a force capable of sustained operations in remote areas for given periods of time. As a guide, a company of approximately 150 men may control up to 7 kilometers of terrain of rugged hill masses and forests or jungles. Organizations are

developed to insure adequate communications, fire support, and a highly trained reaction force as reserve.

d. Bases of Operation. The Special Forces detachment commander in planning border control operations must consider—

(1) *Range of fire support weapons.* If fire support from bases are provided by 105-mm and 155-mm howitzers, their respective ranges will permit location and deployment of base camps up to 30 kilometers apart. A larger organization will be required to effectively control the assigned area.

(2) *Mobility of reaction force (reaction time).* Maximum use of civilian transportation should be exploited; however, terrain and the lack of fuel and other necessary POL may negate the use of civilian vehicles. Sufficient helicopter support must be available on a continuing basis in those areas which are most active.

(3) *Communication requirements.* The detachment commander must determine his communication needs and coordinate with the Special Forces group signal officer for procurement of additional signal equipment and of needed technical advice. Communication systems must be designed to tie in with existing systems and must include connection with local, intelligence-gathering agencies and reaction and backup forces. Indigenous personnel are trained in the use of any system established.

(4) *Effective span of control.* This is effected by an adequate communication system and strong, well-trained leaders. Conscientious advisory support from Special Forces personnel will ensure maximum effort. Patrols and outposts will be given explicit instruction and directions to cover most contingencies that may arise and constant patrolling and periodic inspections of outposts and observation posts will further insure compliance with issued orders.

(5) *Logistical support of operational units.* The Special Forces commander and his counterpart, in committing long-range patrols into insurgent controlled areas or in pursuit of insurgent forces, must plan for a sound logistical resupply system. Lack of adequate supplies shorten the range capability of these patrols and render them ineffective. The detachment commander may consider using the area drop zone system for resupply (see chap 4). This procedure will serve as a technique of control through the establishment of

phase lines. Supplies must be delivered to fixed outposts periodically. Long-range patrols may use these outposts to replenish supplies as required and thus extend their patrol activities without return to home bases. However, sufficient rations must be carried by each man to last for a given period of time. Consideration will be given to the use of pack animals where they are locally available, particularly in areas where predictable periods of poor flying weather, such as a monsoon season, are experienced.

(6) *Availability of sensory and detection devices.* The availability and use of easily operated sensory and detection devices along known and likely infiltration routes. These devices contribute to early warnings and detections and provide commanders an expansion of area coverage.

e. Intelligence. The Special Forces operational detachment plans for the development of intelligence nets in the operational area to supply him a constant flow of intelligence. Military intelligence personnel, trained in recruitment and net organization are infiltrated into the operational area to develop the intelligence potential, and selected personnel not native to the area may be brought in by:

(1) Preparing cover stories (i.e., merchants, farmers) for entry into populated areas.

(2) Assigning them to paramilitary forces and local law enforcement agencies which will allow freedom of movement throughout the area.

f. Operational Techniques. The techniques involved in border control operations are many and varied. Techniques can include

(1) Saturation patrolling, to the maximum extent possible, with no fixed patterns and times.

(2) Small-unit operations of squad size or below.

(3) Surveillance of insurgent activities from fixed locations by day, with active operations against targets of opportunity during periods of darkness.

(4) Deceptive measures taken when moving indigenous forces through the area to deceive the insurgent forces in their surveillance activities.

(a) Use of civilian clothing to hide uniforms and identity, e.g., dress patrols as farmers or workers so that they can move freely through an area without suspicion.

(b) Use of enemy clothing when traveling over trails normally used by the insurgent.

(5) Penetration of the insurgent force and their support elements, by selecting and training local indigenous personnel.

(6) Infiltration of homing devices into the enemy organization by allowing them to capture arms, ammunition, radios, or other equipment essential to their activities.

(7) Gathering intelligence by using

(a) A system for maintaining records on prisoners, suspects, or criminals, who through the promise of parole or pardon, may be used to solicit information or act as agents or informers. The inherent risk, of course, is the possibility of double agents. The detachment commander can successfully employ deception operations by implanting false information, or other means.

(b) Intelligence maps which indicate routes, movement times, and primary and alternate base locations, which when cross-referenced with other files, will indicate the tentative activities of the insurgent in the area, substantiation by surveillance

of the population, and attitudes and reaction to curfew and other restrictions. For additional information, see FM 31-10, FM 31-16, FM 31-21, FM 31-21A, and FM 31-73.

12-14. Raid Techniques

a. In preparation for raids in stability operations, Special Forces detachment commanders should have plans (ready for implementation, if necessary) for the use of artillery support, close air and aerial fire support, reinforcements, and immediate evacuation.

b. In stability operations larger raids are conducted by regular troops, at times using air assault techniques, supported by Special Forces directed units.

c. In stability operations sufficient firepower is moved into areas within range of the selected target area and is on call to support the action.

Section VI TRAINING

12-15. General

a. Primary consideration and emphasis is given to training local defense units in defensive operations and tactics and in using weapons and equipment for security. Throughout the training program, constant attention is given to the psychological preparation of the people to accept government support in development programs, and in establishing sound local government. Special Forces detachments assigned to support local defense units, especially in remote areas and border areas, will conduct extensive training in guerrilla tactics and techniques. This includes training in:

- (1) Hunter-killer team techniques.
- (2) Trail watching.
- (3) Border-surveillance.
- (4) Ambush of supply routes.
- (5) Raids on insurgent camps.
- (6) Intelligence gathering penetrations of insurgent controlled areas.

b. During the training programs, combat operations are conducted on a limited scale as required to rid the area of insurgent threats and activities. These operations may be controlled and directed by Special Forces personnel.

12-16. Air Landing Operations

a. In the conduct of counter guerrilla tactical operations, air-landing operations may be conducted either at night or in daylight commensurate with the mission.

b. LZ's used in stability operations may be adjacent to base camps rather than at great distances. This provides maximum security for POL dumps and incoming/outgoing personnel and equipment on the LZ.

c. In supporting LZ operations, outer security should conduct constant surveillance and patrolling to prohibit the enemy from positioning automatic small arms in the area surrounding the LZ. LZ operations are identical to those described in chapter 4.

12-17. Small-Boat Operations in Support of Stability Operations

This section provides guidance for Special Forces units and personnel in the employment of boat transported combat units in support of counter guerrilla operations on inland waterways, lakes, rivers, canals, and estuaries. Tactics and techniques herein will apply to the employment of motorboats and nonmilitary craft such as sampans, junks, and other indigenous craft. In areas possessing a dense network of inland waterways, small boats can provide a high degree of mobility for Special Forces and paramilitary forces in guerrilla operations or operations conducted in insurgent-controlled areas. Small boats are used in much the same role as light trucks to perform a variety of military tasks. For additional information, see FM 31-75.

12-18. Planning Considerations

Special Forces detachment commanders, responsible for planning and conducting operations employing

small boats, must consider certain factors. Small boats normally should be considered as a means of transportation and not fighting vehicles. Boat patrols, or boat-borne security elements will halt quite frequently and debark small teams to observe or scout the riverbank. In some instances, these elements may be required to fight from small boats. This might occur in reaction to an ambush, surprise enemy activity, when pursuing fleeing enemy boats, or when operating in swamps and flooded areas where debarkation is impossible. Detachment commanders must analyze all the advantages and limitations in operating small boats.

a. Advantages.

(1) *Speed.* Motor-powered boats can attain speeds up to 32–37 miles per hour. Even at lower speeds, boat-borne forces can move more quickly in areas with dense waterway systems than foot troops or armored personnel carriers.

(2) *Obstacles.* Traveled waterways usually are free of obstacles which prevent movement, but shallow-draft boats can maneuver around obstacles as they are encountered. This is especially apparent in dense jungles and coastal mangrove swamps where waterways often constitute the only satisfactory routes of surface movement. Obstacles, such as fallen trees, fish traps, mines, and other manmade or natural obstacles, will slow movement considerably.

(3) *Boat capacity.* Units moving by boat can carry far more weapons and equipment with them than foot elements. Greater combat power can be brought to bear on the enemy; however, in planning combat operations, commanders must ensure that adequate means are available to move and use equipment effectively after troops debark or take only such equipment as can be man-transported.

b. Limitations.

(1) *Canalized movement.* Boats are confined to waterways; they have no cross-country capability. Movement may be restricted by a heavy volume of water traffic; however, boats can be manhandled for short distances overland.

(2) *Concealment and cover.* Some waterways normally used as communication routes are devoid of cover and concealment, especially if they are wide. Boats can be seen and fired upon easily in daylight. This may limit boat operations to night movement or limit movement by requiring boats to

travel close to the stream banks where shadows and overhead branches aid concealment.

(3) *Noise.* When power driven boats are used, the noise of motors reduces the degree of surprise and secrecy required in operations such as ambushes, raids, and infiltrations. The secrecy and surprise required may be obtained by using oars and relying on the motors to conduct an initial assault, or when compromised and required to abort mission.

(4) *Landing requirements.* Boats must go to or near the shore to unload troops in shallow water or in land. This requirement limits the reaction time of the force in surprise situations such as ambushes. Convenient landing sites are often not available.

12-19. Other Operational Techniques

Small boats may provide the mobility which permits superior firepower to be brought to bear against an insurgent force. The load-carrying capability, maneuverability, and speed of powered craft gives the Special Forces units additional advantages for other types of operations. The detachment commander may employ his craft in support of civic action projects and internal development programs.

a. Medical Evacuation. Small boats provide a relatively fast means of evacuating casualties and sick and injured. When boat evacuation is planned, aid stations may be located for convenient access to the waterway net. Land sites are prepared to facilitate prompt and gentle unloading of evacuees.

b. Movement of Supplies. When operating in remote areas served by waterways especially during adverse weather conditions that affect air operations, small boats can assist in all forms of logistical supply and movement. This may include resupply of ammunition, fuel, medical supplies, building supplies, food, clothing, and equipment needed for local forces. When necessary selected engineer equipment such as power tools to aid in building programs may be transported.

c. Populace and Resources Control Measures. When on patrols, the speed of small boats frequently allows them to overtake indigenous river craft normally used in commerce or that employed by the insurgent. Special Forces small boat operations may be used in policing waterways and searching suspected craft as part of populace and resources control campaigns. Boats can tie up critical areas and establish checkpoints in conjunction with local law enforcement agencies.

Section VII. POPULACE AND RESOURCES CONTROL

12-20. General

By virtue of their training and through extensive studies of their operational areas, Special Forces detachments may determine the availability of war supporting materials to the local populace as well as the insurgent force. The Special Forces detachment commander is able to advise his counterparts on resources control measures to deny the insurgent access to such materials. The detachment commander must exploit all available means to help the local law enforcement agencies prevent essential resources from falling into the hands of the insurgent. The police and paramilitary forces in operational areas must be properly oriented and indoctrinated for this task.

12-21. Controls

a. In establishing requirements for resources control, priorities must be assigned to specific items to be denied the insurgent. Restrictions on certain items may be injurious to the attitude of the populace, such as the control of fertilizer in a primarily agrarian area. Two methods that may be employed in controlling materials are price regulations and rationing.

b. Additional controls must be put into effect for materials that can be used in medical treatment of insurgents and in manufacturing improvised explosives. Adequate control of these items will depend upon properly trained, security personnel positioned at the production and distribution facilities for these sensitive items.

(1) *Physical security.* Physical security could include checkpoints for searching personnel and vehicular and waterborne traffic entering and leaving installations; detection devices for certain items that react to electronic devices; clothing change points requiring personnel to shower and change clothes on entering or leaving installations.

(2) *Personnel security.* Personnel security is more difficult, however, Special Forces personnel, working in close conjunction with local police and security elements, may instigate limited personnel security investigations to ensure that personnel selected for work are reasonably clear of implications with known insurgent members. Additional procedures may be through the use of:

- (a) Informers.
- (b) Offers of rewards for information.
- (c) Erroneous information concerning activities.
- (d) Surveillance of after-duty-hour activities.
- (e) Curfews.

c. The use of populace and resources control measures is sensitive and must be carefully planned and capable of enforcement. The need for restrictive measures must be made known to the people. Controls should be relaxed as the threat diminishes. Needless restrictions, violence, and oppression may further sway the populace to support of the insurgent. Activities of the local enforcement agencies must be closely coordinated with the spirit, intent, and techniques of other operational activities in the area.

Section VIII. FIELD ENGINEERING

12-22. General

a. When supporting internal development operations, the detachment commander and the combat engineer specialist will place primary importance on those actions designed to win the willing and active cooperation, assistance, and support of the people. In remote areas, where Special Forces detachments will normally operate, there may be a lack of sophisticated structures of any type. The construction of buildings may well be the assigned mission of the detachment, as opposed to combat operations. Extensive area studies conducted before commitment will reveal additional information on which to prepare plans and details of

operation. In preparing for commitment, the engineer specialist will receive extensive retraining and development in the field of expedient engineering that may include:

- (1) Road expedients.
- (2) Expedient crossings and bridges.
- (3) Land clearing for farming.
- (4) Construction of lifting devices.
- (5) Construction of simple sanitation projects.
- (6) Use of tools and materials for simple engineering.
- (7) Training and advising indigenous construction and combat engineering units in general

construction tasks and in the preparation of defensive fortifications for security of the local villages.

(8) Water supply and irrigation.

b. In support of internal development programs, Special Forces detachments when advising paramilitary and local indigenous forces in construction projects and establishment of defensive positions, may use conventional demolitions quite effectively in road building, land clearing, air landing construction, and obstacle removal projects. Logistical procedures normally found in support of such operations will permit extensive resupply and use of conventional demolitions.

12-23. Civic Action

Projects undertaken by Special Forces detachments supporting internal defense and development operations are referred to as military civic action. Special Forces detachments conducting military civic actions may find that they are the contact, or go-between, for the local administration and the national government. In undertaking these programs and in assisting the local administration to satisfy the aspirations of the people, the Special Forces advisor helps create the image of a responsive and capable government.

a. In assessing the capabilities of the paramilitary and regular units and minority groups to be advised, the Special Forces commander will propose military civic action projects in accordance with the overall host country's internal defense and development plan and the desire and willing participation of the local populace, within the capability of the local units. The Special Forces detachment commander must ensure that the objectives of proposed projects will:

(1) Contribute to the betterment of the lives of the local populace.

(2) Gain the support, loyalty, and respect of the people for the government and contribute, in some measure, to national development.

(3) Help develop the attitude of the people to undertake these programs on their own.

b. The Special Forces detachment undertaking civic action programs must evaluate each program from the standpoint of resources required to complete each task. Harvesting and road improvements, for example, maybe undertaken by para-military units possessing little more than a

labor pool and manpower. The detachment commander and his engineer specialist encourage their counterparts and local population to use local material and equipment as much as possible before requesting assistance from other U.S. support facilities. Where it is required, maximum use of trained personnel from local combat engineer troops may be used in tasks requiring a certain degree of skill. Those tasks requiring pure labor should be relegated to the local villages on a self-help basis. These actions will provide the Special Forces detachment with immediate work on the project and still afford a degree of training to local engineer units to increase their skill level.

c. In all internal development programs undertaken, Special Forces personnel must insure that the local, indigenous soldier understands that his actions are accomplishing the following objectives:

(1) He is learning his responsibility toward his community.

(2) An interchange of skills and ideas between soldier and civilian enhances understanding and unity.

(3) The soldier learns new skills which will be useful in his home village.

(4) The soldier possessing special skills has the opportunity to increase these skills and prepare his future for possible employment with local governments as well as with a higher administration.

d. For additional information in the performance of military civic action programs and functions, refer to FM 31-73 and TM 5-227.

12-24. Construction Programs

Special Forces detachment personnel should employ the technical skills and capabilities of engineer units of the host country forces, if available, for projects supporting internal development programs. However, the Special Forces detachment must adhere to fundamentals and avoid the more advanced techniques and procedures, particularly those that are not compatible with local equipment, terrain, size of host forces, and mobility. Special Forces personnel must improvise when standard equipment is not available. An assessment and evaluation of units' and local villagers' capability and availability will dictate those projects to be undertaken and may include—

a. General Construction Tasks. This includes rough carpentry; construction of drainage facilities with logs and stakes; construction of adobe buildings; rigging and lashing techniques; and construction of small water supply reservoirs.

b. Military Engineer Tasks. Here the emphasis will be on field fortifications built to withstand fires from the heaviest weapons the enemy is using in the field. Considerations should be given to trench-type fortifications around fixed installations. Additionally, the Special Forces may assist in the preparation and use of:

(1) *Obstacles.* Preferably antipersonnel obstacles as opposed to vehicular, installations of minefields and barbed-wire construction of nuisance items such as heavy brush and impaling devices, construction of watch towers, and using natural obstacles to impede vehicular movement.

(2) *Boobytraps.* Improvised traps for warning devices (FM 5-31), by using selected items of clothing and equipment that would naturally appeal

to an enemy, and antipersonnel mines employed in normal defensive positions.

(3) *Demolitions.* These may be used to improve mobility of tracked vehicles by reducing steep banks or destruction of tunnels and underground hiding places.

c. Specific Construction Projects.

(1) Construction of bridges and ferries from natural materials.

(2) Routes of communications which may include construction and improvement of roads, ditching, drainage, and temporary construction of air landing facilities.

(3) Land clearing for agriculture projects. For detailed information on construction programs that may be employed, see FM 31-73.

Section IX. MEDICAL REQUIREMENTS FOR STABILITY OPERATIONS

12-25. General

Medical requirements in stability operations differ from those in the UWOA, in that medical activities are conducted openly, using existing medical organization and facilities. The medical organization should provide for training and operational assistance to military and paramilitary forces of the host country, with particular emphasis on the development of civic action programs. Civilian personnel, selected from the community and called village health workers, are trained in cooperation with existing civilian health agencies and U.S. AID missions, to improve health and sanitary conditions in local villages. These personnel are trained in basic first aid and health and sanitation, either at centrally located medical training facilities or in the village. These indigenous personnel will carry out self-help programs in sanitation within the village under the supervision, and with the advice, of medical technical personnel organic to the Special Forces group or special action force.

12-26. Preventive Medicine in Stability Operations

a. In contrast to unconventional warfare operations, in which primary emphasis is on those measures which will improve and maintain the health of the guerrilla unit, the effort in stability operations is directed toward improvements in health and sanitation among indigenous civilian populations. The general steps to be taken in implementing such programs are:

(1) Establish liaison with existing health authorities.

(2) Accomplish an initial area assessment.

(3) Attempt to secure the support of the village leaders.

(4) Establish a training program for village health workers.

(5) Establish health and sanitation measures based on priorities and the desires of the villagers.

(6) Establish a roving village/hamlet sick call program.

b. The success of stability operations at a village level requires tangible evidence that the central government is responsible for efforts to improve the lot of the villager. Early liaison with appropriate local representatives of existing health agencies is, therefore, essential in order to achieve support, approval, and participation in plans for health programs to be implemented in the village.

c. The success of health programs will depend largely upon one's ability to motivate the villager to undertake changes in habits which have been practiced for generations. To accomplish this, it is necessary to have a knowledge of the social structure of the village and the local beliefs, customs, taboos, and mores. In many primitive societies the occurrence of disease is associated with visitations by evil spirits. The collection of information of this nature is part of the process of area assessment. Once some insight has been acquired into these matters, it is usually possible to

lay out an intelligent plan by which to attack basic health problems in the village.

d. Efforts are then directed toward motivating and training local villagers to accomplish these objectives. Local support is usually best achieved through the village leaders or the village council or similar governing body, to include the unofficial leaders or opinion formers who, although not acting in an official capacity, nevertheless exert great influence within the community.

e. Training programs in basic health subjects must be initiated for individuals who can successfully use their knowledge to help the people help themselves toward better health. It is usually wise to permit the village council to select those who will undertake such training. The prestige associated by the villagers with this activity will usually result in the selection of individuals who are already in a position of influence within the community, thereby giving additional emphasis to the program. The subjects recommended for such training programs are:

- (1) Germs and parasites as causes of disease.
- (2) Food and water sanitation.
- (3) Personal hygiene.
- (4) Village sanitation, latrine, and bath facilities.
- (5) Pre- and post-natal care.
- (6) Nutrition and health.
- (7) Insect and rodent-borne disease control.

f. Although initial emphasis is placed on enlisting the support of selected leaders and training village health workers, it is also necessary to obtain active participation by the villagers in order to accomplish the goals of improving and maintaining village health. Some suggested projects for general village participation might include one or more of the following:

- (1) General village improvement teams.
- (2) Waste disposal inspection teams.

- (3) Food and water inspection teams.
- (4) Rodent and vector control teams.

g. Priorities for programs are based upon the initial area assessment as well as upon the desires or "felt needs" of the community. In initiating programs, give consideration to these basic rules:

- (1) Know the community and its leaders.
- (2) Do not unnecessarily interfere with the people's customs.
- (3) Get the people to help themselves.
- (4) Keep programs simple and practical.
- (5) Build and maintain momentum.
- (6) Build trust.
- (7) Make it fun and convenient.
- (8) Plan for permanence.

12-27. Veterinary Procedures in Stability Operations

a. A major effort in veterinary support to assist in civic action programs is directed toward improving animal health in the host country. Host country veterinarians or veterinary organizations may be found at province or lower level. Assistance to the existing organization in terms of communications, transportation, supply, and security will often enable it to function effectively. Prevention of disease losses among animals is the most economical and fastest single means of increasing production.

b. In rural areas, self-help programs will be directed toward increasing agricultural and livestock production in order to improve and increase food supplies. Such programs should be realistic and not overlook the development of protein food sources; for example, the raising of small animals and fowl and the cultivation of fish.

c. Programs to establish high sanitary standards and provisions for quality control in food processing, storage, and handling can eventually provide opportunities for competition in world markets.

APPENDIX A

REFERENCES

A-1. Joint Chiefs of Staff Publications (JCS)

JCS Pub 1	Dictionary of United States Military Terms for Joint Usage.
JCS Pub 2	Unified Action Armed Forces (UNAAF).

A-2. Army Regulations (AR)

37-103	Finance and Accounting for Installation; Disbursing Operations.
37-103-1	Finance and Accounting for Installations; Imprest Funds.
40-1	Composition, Mission, and Functions of the Army Medical Department.
40-3	Medical, Dental and Veterinary Care.
40-424	Preparation and Maintenance of Clinical Records.
40-425	Outpatient Medical and Dental Records.
40-562	Immunization Requirements and Procedures.
40-655	Prevention and Control of Communicable Diseases of Animals.
40-657	Veterinary Food Inspection.
40-905	Veterinary Service for Public Animals.
310-25	Dictionary of United States Army Terms.
310-31	Organization and Equipment Authorization; Tables of Organization and Equipment.
310-50	Authorized Abbreviations and Brevity Codes.
350-1	Army Training.
380-5	Safeguarding Defense Information.
(C) 381-141	Provisions for Administration, Supervision, Control, and Use of Intelligence Contingency Funds (U).
(C) 381-205	Procedures Facilitating Intelligence Exploitation of Captured Enemy Personnel (U).
(S) 580-5	Project PARASOL—Support of Paramilitary Forces in Special Operations (U).

A-3. Field Manuals (FM)

1-5	Aviation Company.
1-100	Army Aviation, Utilization.
1-105	Army Aviation Techniques and Procedures.
5-25	Explosives and Demolitions.
5-26	Employment of Atomic Demolition Munitions (ADM).
(C) 5-31	Boobytraps.
6-20-1	Field Artillery Tactics.
6-20-2	Field Artillery Techniques.
8-10	Medical Support, Theater of Operations.
8-35	Transportation of the Sick and Wounded.
8-50	Bandaging and Splinting.
9-16	Explosive Ordnance Reconnaissance.
10-63	Handling of Deceased Personnel in Theaters of Operations.
19-30	Physical Security.
19-40	Enemy Prisoners of War and Civilian Internees.

19-60	Confinement of Military Prisoners.
20-32	Landmine Warfare.
21-5	Military Training Management.
21-6	Techniques of Military Instruction.
21-10	Field Hygiene and Sanitation.
21-11	First Aid for Soldiers.
21-20	Physical Readiness Training.
21-26	Map Reading.
21-30	Military Symbols.
21-40	Chemical, Biological, Radiological, and Nuclear Defense.
21-41	Soldiers Handbook for Chemical and Biological Operations and Nuclear Warfare.
21-50	Ranger Training and Ranger Operations.
21-60	Visual Signals.
21-75	Combat Training of the Individual Soldier and Patrolling.
21-76	Survival, Evasion, and Escape.
(S) 21-77A	Joint Worldwide Evasion and Escape Manual (U).
21-150	Combatives.
(C) 23-4	Individual and Miscellaneous Weapons (U).
23-12	Technique of Fire of the Rifle Squad, and Tactical Application.
24-16	Signal Orders; Records and Reports.
24-18	Field Radio Techniques.
24-20	Field Wire and Field Cable Techniques.
27-10	The Law of Land Warfare.
30-5	Combat Intelligence.
30-10	Terrain Intelligence.
30-15	Intelligence Interrogations.
30-16	Technical Intelligence.
30-17	Counterintelligence Operations.
(S) 30-18	Intelligence Collection Operations, Intelligence Corps, USA (U).
30-28	Armed Forces Censorship.
31-10	Denial Operations and Barriers.
31-16	Counter guerrilla Operations.
(C) 31-20A	Special Forces Operational Techniques (U).
31-21	Special Forces Operations=U.S. Army Doctrine.
(S) 31-21A	Special Forces Operations-U.S. Army Doctrine (U).
31-22	U.S. Army Counterinsurgency Forces.
31-23	Stability Operations, U.S. Army Doctrine.
(C) 31-40	Tactical Cover and Deception (U).
31-60	River-Crossing Operations.
31-73	Advisor Handbook for Stability Operations.
31-75	(Test) Riverine Operations.
33-1	Psychological Operations-U.S. Army Doctrine.
33-5	Psychological Operations-Techniques and Procedures.
41-10	Civil Affairs Operations.
57-35	Airmobile Operations.
57-38	Pathfinder Operations.
61-100	The Division.
100-5	Operations of Army Forces in the Field.
(C) 100-20	Field Service Regulations-Internal Defense and Development (IDAD) (U).
101-5	Staff Officers Field Manual: Staff Organization and Procedure.

101-10-1	Staff Officers Field Manual: Organization, Technical and Logistical Data; Unclassified Data.
101-10-2	Staff Officers Field Manual: Organization, Technical, and Logistical Data, Unclassified Data—Extracts of Nondivisional Tables of Organization and Equipment.
(S) 101-10-3	Organizational, Technical, and Logistical Data, Classified Data (U).

A-4. Technical Manuals (TM)

5-227	Designs and Techniques for Military Civic Action.
5-280	Foreign Mine Warfare Equipment.
5-632	Military Entomology Operational Handbook.
	Medical Corpsman and Medical Specialists.
(S) 9-1100-205-12	Operation and Maintenance Manual (SADM).
9-1300-200	Ammunition General.
9-1300-214	Military Explosives.
9-1375-200	Demolition Materials.
11-666	Antennas and Radio Propagation.
11-486-6	Electrical Communication Systems Engineering: Radio.
11-5122	Direct Current Generator, G-43/G.
31-200-1	Unconventional Warfare Devices and Techniques—References.
(C) 31-201-1	Unconventional Warfare Devices and Techniques—Incendiaries.
(C) 31-201-2	Unconventional Warfare Devices and Techniques Series—Explosives Manufacture (U).
(C) 32-220	Basic Cryptanalytics (U).
55-450-15	Air Movement of Troops and Equipment (Administrative).
67-220	Technical Training of Parachutists.

A-5. DA Pamphlets (DA Pam)

108-1	Index of Army Motion Pictures, Film Strips, Slides, Tapes, and Phono Recordings.
310-Series	Military Publications Indexes (as applicable).
550-Series	U.S. Army Area Handbooks. (as applicable).

A-6. Miscellaneous Publications

ACP 121	Communication Instructions, General.
ACP 122	Communication Instructions, Security.
ACP 124	Communication Instructions, Radio Telegraph.
ACP 131	Communication Instructions, Operating Signals.
(S)DIAM 58-11	Intelligence Collections (U).

hammer, a knife instead of a saw, and bamboo instead of pieces of wood for the frame. Three tools used for making a silk screen are:

(1) A hammer or heavy object for driving tacks and small nails.

(2) A knife for cutting the cloth and canvas hinge.

(3) A saw or hatchet for cutting the wood. Materials for constructing the frame are

(a) 4 pieces of wood, $1\frac{1}{4}$ x $\frac{3}{4}$ x $15\frac{1}{4}$ inches.

(b) 4 pieces of wood, $1\frac{1}{4}$ x $\frac{3}{4}$ x 21 inches.

(c) Sixteen 1-inch nails.

(d) Two $1\frac{1}{4}$ -inch nails.

(e) Nails must be very thin so they will not split the wood. It is best to use "soft" wood in making the frame. When you have made the frame, you are ready to attach the cloth. Many kinds of material can be used to make the screen. Silk cloth is a material which gives the best results; it is strong and can be cleaned and used many times. Parachute nylon or a cotton handkerchief will also serve in an emergency and even an undershirt can be used; however, remember that only finely woven cloth will allow a fine line to be printed.

c. *Directions for Attaching the Cloth to the Frame* (fig B-3).

(1) Cut the piece of cloth so that it is several inches larger than the dimensions of the frame.

(2) Soak the cloth in water so that it will shrink tightly over the frame when it dries.

(3) Place the cloth over the wooden frame and place one tack in each corner as shown in A,

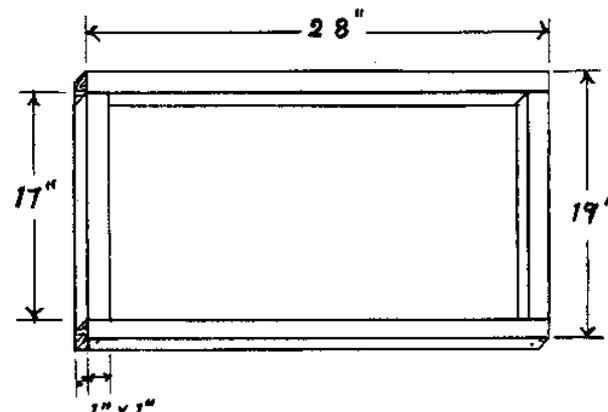


Figure B-4. Dimensions for construction of base and cover.

figure B-3. Either small $\frac{1}{4}$ -inch tacks or staples can be used. You will need about 90 tacks or staples to attach the cloth securely.

(4) Next, place a row of tacks along one side of the frame as shown in B, figure B-3. Ten evenly spaced tacks or staples will be enough.

(5) Place a row of tacks along the opposite edge of the frame as shown in C, figure B-3. The cloth must be pulled tight before driving each of these 10 tacks.

(6) Continue to drive the tacks around the outside of the frame.

(7) Add a second row of tacks around the inside as shown in D. This will give added strength to the screen.

d. *Materials for Constructing the Base and Cover.*

(1) 4 pieces of wood, 1 x 1 x 17 inches.

(2) 4 pieces of wood, 1 x 1 x 28 inches.

(3) 2 pieces of cardboard or plywood, 19 x 28 inches.

(4) 1 piece of canvas or heavy cloth, 2 x 28 inches.

(5) Eight $1\frac{1}{4}$ -inch nails.

(6) One hundred forty $1\frac{1}{4}$ -inch tacks.

e. *Directions for Making the Base and Cover* (fig B-4).

(1) The four pieces of wood (2 pieces, 17-inch and 2 pieces, 28-inch) are nailed together as shown in figure B-4. Two nails are used at each corner.

(2) The piece of cardboard or plywood is then placed over the wood frame and tacked around the edge with tacks. Space the tacks evenly 1 inch apart.

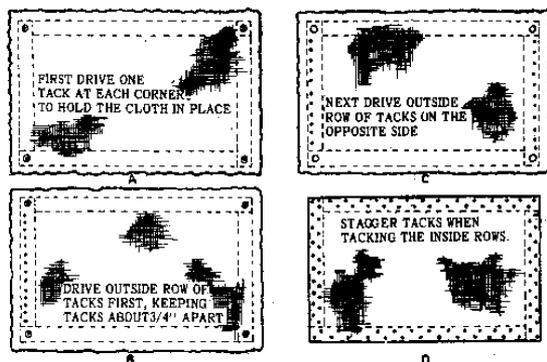


Figure B-3. Tacking cloth to underside of frame.

f. The Hinge Nails. You are now ready to hinge the silk screen to the base. Place the frame in the base with the cloth side down. The silk screen is now flat against the cardboard or plywood. The end of the silkscreen frame should be 1 1/2 inches from the end of the base. This will permit the frame to be raised. The two 1 1/4-inch nails are driven through the side of the base from the outside and into the end of the silkscreen frame. Figure B-1 shows where these hinge nails are placed. These two nails form a hinge which allows the screen to be raised and lowered. The final step in making your silk screen is the hinging of the base to the cover. This is done by using the 2- x 28-inch piece of canvas as a hinge. This piece of cloth is tacked along one side of the base and cover. You now have a carrying case for the silk screen, making the screen portable.

g. The Ink to Be Used. Many different kinds of ink can be used for printing with the silk screen. Ink with an oil base, such as mimeograph ink, is best. Paint with an oil base is the best substitute, or printer's ink can also be used. Ink that is used for silkscreen printing should be thick; oil base paints are almost the right thickness. A little practice with the silk screen will teach the printer what to look for in a good printing ink. The field expedient printer can practice by using many kinds of ink and paints. In an emergency, berries or any stain producing material can be crushed and an ink substitute produced.

h. How to Use the Stencil and Silk Screen.

(1) The first step is to make sure that you have all six of your tools. They should be clean and in good working order, and you should have enough paper to finish the job.

(2) Place the words, picture, or symbols on the stencil. If you are using the standard printing stencil, scratch the words onto the stencil with the pointed stylus. If you are using the cut-out stencil, remove the parts with a knife or sharp object.

(3) Lift the silkscreen frame up from the base as in figure B-1. Place the stencil on the bottom of the screen. Tacks, tape, or glue can be used to hold the stencil in place.

(4) Place a piece of paper on the base under the stencil. This piece of paper will protect the base from ink while you are preparing to print.

(5) Lower the silk screen onto the base. Place enough ink on the silk to cover the screen. Use the

squeegee to spread the ink evenly and to force the ink through the opening in the stencil. The squeegee must have a straight edge; another tool which will do the same job is a roller. A roller made of hard rubber is best for spreading the ink on the silk screen. A stiff brush is another tool which can be used.

(6) You are now ready to print. Place the piece of paper to be printed on the base and lower the silk screen on top of the paper. Slide the squeegee firmly over the silk, forcing the ink through the stencil; lift the screen, remove the paper, and allow the paper to dry. If the printing is not dark enough, add more ink to the screen.

(7) When the printing job is finished, remove the stencil and clean the screen and all other tools. Also, be sure that the squeegee is clean.

B-2. Instructions for Making and Using the Rocker-Type Mimeograph Machine

a. General Instructions. Cover any smooth, curved surface with a heavy (thick), porous fabric. Saturate fabric with mimeograph ink. Cover ink pad with desired stencil and apply to appropriate paper with a rocker-type movement of the apparatus.

b. Specific Instructions. A frame or base for this aid can be created, on the spot, by using many ordinary items. A wooden block, tin can, or glass bottle can be used as a frame. The machine can be made with crude tools; or, in some cases, the article may be used as it is. A frame may be made from a wooden block, using a chopping axe and a penknife. The surface can also be hollowed out to carry ink, styli, and stencil paper for supply purposes. Size can be increased by fastening a piece of sheet metal to the block.

(1) A coat or blanket can yield thick porous fabric; or felt or burlap can be used. A cover also may be made of many layers of thin fabric. Wrap the fabric around the smooth, curved surface of the printing frame to make an inkpad. The pad can be held in position with tape, string, thumbtacks, or glue.

(2) Saturate the pad with mimeograph ink. This ink can be a composite of almost any grease and carbon scraped from a fireplace or grating. Color can be achieved by mixing pigments of color to the grease instead of carbon. Mimeograph ink, commercial grade, is a universal item and is available in any civilized country. Shoe polish, thinned with kerosene or other solvent, is generally available and usable.

(3) Stencils can be made from thin, tough tissue

or thin airmail paper by applying a coat of wax (paraffin) to one side. This wax can be rubbed on, then gently warmed to insure uniformity of thickness and penetration of the paper. Only partial penetration is desirable; not saturation.

(4) For a stylus, you may use a ballpoint pen, a slender stick of hard wood, or even a heavy piece of wire with the ends rounded and smoothed enough to etch the wax without tearing the paper. The stylus is used to inscribe the desired message or to sketch on the wax coating of the paper. The paper is then applied to the ink pad with the wax next to the ink. Some of the ink will penetrate through the lines made by the stylus, thus "printing" the blank paper. The undisturbed wax prevents the ink from penetrating the paper in unwanted places.

(5) If no mimeograph paper is available, substitute paper chosen for printing should be of quality equal to newsprint; but, almost any paper will suffice.

B-3. Instructions for Making and Using a Gelatin Printing device

a. General Instructions. This reproduction method is more commonly known as the hectograph technique, a commercial technique used worldwide. All necessary materials are commercially known by the name "hectograph" and are available in several variations from gelatin plates to prepared plates which are fiber backed, wraparound models for machine use (Ditto). The Ditto machines are similar in appearance to mimeograph machines. Emergency or field conditions will probably dictate the use of the simple gelatin plate described below.

b. Specific Instructions. Gelatin, the base for this technique, can be purchased as a hectograph product, made from gelatin powder produced by food concerns (such as Knox), or made by boiling the bones and skin of animals. (Pulverizing the bone will speed the boiling down process.) Enough gelatin powder should be added to make a semisolid plate. The warm, liquid gelatin is poured into a shallow, wide container or on a tabletop where it is allowed to cool and set. When properly prepared, it becomes a glass-smooth plate which feels like sponge rubber to the touch. This will be soft enough to absorb the ink but firm enough not to bleed the ink on the master copy. The addition of a little animal glue will toughen the plate and a little glycerin will keep it from drying out too quickly.

The effects of these additions are in direct proportion to the quantity used; both are desirable, but not absolutely necessary. Both should be added and well-mixed during the liquid stage of the gelatin.

(1) The master copy is made on a good grade of smooth, tough, hard-finish paper. The material to be reproduced is typed or written using Hectograph or Ditto carbon paper, ribbon, ink, or pencil; all are commercially available. In an emergency, trial and error testing will unveil numerous ink pencils (indelible), writing inks, and stamped inks that will reproduce. When the ink has been applied to the master copy, do not blot. If pencil is used, be sure that the copy is strong and uniform.

(2) When the gelatin plate is set and ready for work, sponge the plate thoroughly with cold water and allow it to set for an additional minute or two. Using a sponge, remove all excess moisture and apply the master copy, face down, on the gelatin plate. Carefully smooth the copy to insure complete and uniform contact with prepared plate. Do not remove for at least 2 minutes. Lift one corner of the master for a gripping point and smoothly and carefully lift the master copy from the gelatin plate. The gelatin plate now bears a negative copy of the desired material and is ready to reproduce the copy.

(3) Begin reproduction immediately after the master copy has been removed from the gelatin plate. Reproduction is accomplished by placing a blank sheet of smooth surface paper on the gelatin plate and smoothing it into total contact by using the hand (or a rubber roller, if available), then lifting the sheet from the gelatin surface. This is done rapidly to obtain as many copies as possible from one inking of the plate. One good inking of the plate may produce from 100 to 200 copies by this method, while a commercial Ditto machine may produce as many as 700 copies. To speed this process, one small corner of the sheet of reproduction paper is left free for gripping. This can be accomplished by permanently affixing a small piece of paper to the place on the gelatin plate where a corner of the reproduction paper would fall. This piece of paper acts as a guide and a buffer to keep that one corner of the reproduction paper from sticking. When removing the reproduction paper, lift the sheet by the loose corner; do not attempt to roll it away. The rolling action will cause the reproduction paper to curl as it dries.

(4) After completing the reproduction job, sponge the gelatin plate thoroughly with cold water and allow it to set for 48 hours or until the ink has been

assimilated by the gelatin. The plate is now ready to be used on a new and different job. The only way to shorten this time span is to dissolve the gelatin plate in hot water; boil off the superfluous water until the

liquid is thickened to the desired consistency, and pour a new gelatin plate. Of course, two or more gelatin plates may be prepared to increase production capabilities.

APPENDIX C

MESSAGE FORMATS

C-1. Message Formats

a. Communications between the committed Special Forces operational detachment (SFOD) and the Special Forces operational base (SFOB) is the lifeline of the SFOD. Proper communication between the SFOD and the SFOB is predicated on the proper use of the SSI and SOI by the detachment.

b. Formats have been developed for messages for the purpose of brevity. Before the SFOD and SFOB can properly understand each other's communication, each must use the proper format for the message being sent. The formats of all messages that are likely to be sent are contained in the detachment's SSI and SOI.

c. The detachment members should commit the formats of the messages contained in this appendix to memory.

C-2. Sample Initial Entry Report

<i>Item</i>	<i>Sample entry</i>
Proword -----	BOBBY
Code name -----	DAVID
Location -----	ALPHA TANGO NINE SIX FOUR EIGHT
Casualties -----	BIGGS BROKEN ARM
Contact -----	YES
Strength-----	TWO HUNDRED FIFTY
Additional-----	CANCEL EMERGENCY
Information-----	RESUPPLY DROP

C-3. Sample Drop Zone Report*

<i>Item</i>	<i>Sample entry</i>
Proword -----	DEBBY
Code name -----	HAIRY
Location -----	THREE TWO TANGO PAPA TANGO SIX FOUR ONE TWO FOUR THREE
Open quadrants -----	OPEN ONE THREE ZERO DEG TO TWO TWO ZERO DEG AND THREE THREE ZERO DEG TO ZERO ONE TWO DEG
Track -----	TRACK THREE SIX ZERO DEG RADIO TOWER ZERO EIGHT SIX DEG SIX MI

<i>Item</i>	<i>Sample entry</i>
Reference point -----	BENNETTSTOWN ZERO NINE FIVE DEG ONE FIVE MI

C-4. Sample Area Drop Zone Report*

<i>Item</i>	<i>Sample entry</i>
Proword -----	HELGA
Code name-----	JOLLY AREA
Location -----	PT ALFA THREE TWO TANGO PAPA TANGO SIX ONE TWO THREE FOUR FIVE PT BRAVO THREE TWO TANGO PAPA TANGO SIX ONE TWO FOUR NINE TWO
Obstacles -----	PT BRAVO TOWER TWO TWO FIVE DEG ONE ZERO MI
Reference point -----	PT ALFA NORTONVILLE ONE FIVE SEVEN DEG TWO ZERO MI PT BRAVO LAKE FARELL ZERO FOUR FIVE DEG ONE THREE PT THREE MI

Note. Open quadrant is not applicable to area DZ's and therefore, is not reported in DZ report.

C-5. Sample Landing Zone Report

<i>Item</i>	<i>Sample entry</i>
Proword -----	TRIBE
Code name-----	NOBLE
Location -----	THREE TWO TANGO PAPA TANGO SIX ONE SIX TWO FOUR ZERO
Axis -----	AXIS ONE TWO ZERO DEG
Description-----	FIRM SOD ONE FIVE ZERO FT BY THREE SIX ZERO ZERO FT
Open quadrants-----	OPEN ZERO FIVE ZERO DEG TO ONE NINE ZERO DEG AND TWO FIVE ZERO DEG TO THREE ONE ZERO DEG
Track-----	TRACK ONE TWO ZERO DEG
Obstacles -----	TOWER ZERO ONE ZERO DEG FOUR MI
Reference point -----	OLDBURG ZERO FIVE ZERO DEG NINE MI

C-6. Sample Request for Airdrop or Air Landed Mission

<i>Item</i>	<i>Sample entry</i>
Proword -----	DOVES
Code name-----	HAIRY

* All items will be reported. When applicable, "NONE" will be reported in order to preserve sequence.

Note. When requesting a mission to be flown to a DZ/LZ that has been reported to SFOB previously, it is necessary to give the code name of the DZ/LZ only. If the DZ/LZ has not been reported previously, the mission request should contain all items shown in the appropriate examples above.

<i>Item</i>	<i>Sample entry</i>
Date/Time group -----	ZERO FIVE TWO TWO ZERO ZERO ZULU FEB
Request -----	ONE ZERO INDIA ALFA
Alternate -----	HANDY

Note. An alternate DZ/LZ normally will be designated whenever a mission is requested. If the selected alternate DZ/LZ has been reported to SFOB previously, the mission request should contain complete information as shown in the preceding examples. Primary and alternate will always be identified as such by referring to the primary first and the alternate last as shown above. A date/time for the alternate will not be submitted by the requesting detachment, but will be determined by the SFOB in coordination with the air support unit, and the requesting detachment will be advised in the mission confirmation message.

C-7. Sample Airdrop Confirmation Message

<i>Item</i>	<i>Sample entry</i>
Proword -----	BRAVO
Code name -----	HAIRY
Track -----	TRACK THREE SIX ZERO DEG
Date/Time -----	ZERO FIVE TWO TWO ZERO ZERO ZULU FEB

Number of containers or personnel -----	ONE TWO PERS THREE BUNDLES
Drop altitude -----	EIGHT ZERO ZERO
Alternate DZ -----	HANDY
Alternate date/time -----	ZERO FIVE TWO TWO FOUR ZERO ZULU FEB

Track for Alternate DZ -----	TRACK ZERO TWO ZERO DEG
------------------------------	-------------------------

C-8. Sample Air-Landing Confirmation Message

<i>Item</i>	<i>Sample entry</i>
Proword -----	LEASH
Code name -----	NOBLE
Actual track -----	TRACK ONE TWO ZERO DEG
Date/Time -----	ONE NINE ONE ZERO THREE ZERO ZULU APR
Alternate -----	NANCY
Alternate track -----	TRACK ONE TWO EIGHT DEG
Alternate date/time -----	ONE NINE ONE ONE ZERO ZERO ROMEO APR

Type of aircraft -----	MEDIUM
------------------------	--------

C-9. Sample Pickup Zone Report

<i>Item</i>	<i>Sample entry</i>
Proword -----	PIVOT
Code name -----	APPLE
Location -----	THREE FOUR PAPA VICTOR SIX EIGHT TWO EIGHT ONE NINE
Axis -----	AXIS TWO SIX SEVEN
Description -----	DIRT ROAD SIX ZERO FT BY FOUR ZERO ZERO FT

<i>Item</i>	<i>Sample entry</i>
Open quadrant -----	OPEN ZERO FIVE FIVE DEG TO ZERO NINE NINE THREE DEG TO TWO SIX NINE DEG
Track -----	TRACK ZERO THREE SIX DEG
Obstacles -----	TOWER THREE FIVE FIVE DEG THREE MI
Reference point -----	FARELLVILLE TWO SIX NINE DEG SIX MI

C-10. Sample Request for Pickup

<i>Item</i>	<i>Sample entry</i>
Proword -----	STONE
Code name -----	APPLE
Date/Time group -----	ZERO EIGHT ONE EIGHT ONE FIVE JUN

Item to be picked up -----	CAPTURED DOCUMENTS
----------------------------	--------------------

C-11. Sample Pickup Confirmation Message

<i>Item</i>	<i>Sample entry</i>
Proword -----	REGAL
Code name -----	APPLE
Track -----	TRACK ZERO THREE SIX DEG
Date/Time -----	ZERO EIGHT ONE EIGHT ONE FIVE JUN

C-12. Sample Beach Landing Site Report

<i>Item</i>	<i>Sample entry</i>
Proword -----	IRWIN
Code name -----	ROCKY
Location -----	YD NINE FIVE SEVEN NINE FIVE FIVE
Beach shape and usable length -----	CONCAVE TWO ZERO ZERO YDS
Reference point -----	THREE ZERO ZERO DEG PALERMO FOUR MI
Beach gradient foreshore gradient -----	ONE TO FOUR ZERO ONE TO FIVE ZERO ONE TO FIVE ZERO
Nearshore gradient -----	ONE TO FOUR ZERO ONE TO FOUR ZERO ONE TO SIX ZERO
Width of surf zone -----	TWO FIVE ZERO YDS
Obstacles -----	ZERO NINE FIVE DEG WRECKAGE TWO MI
Additional Information -----	OMITTED

C-13. Sample Beach Landing Mission Request

<i>Item</i>	<i>Sample entry</i>
Proword -----	NAKED
Code name -----	ROCKY, RENDEZVOUS
Date/Time -----	ONE FOUR ZERO TWO ZERO ZERO OCT ONE SIX ZERO TWO ZERO ZERO OCT
Authentication data -----	PAPA
Supplies/personnel -----	TWO NANCY ONE ZERO BUNDLES AND ONE NANCY ONE EIGHT BUNDLES

<i>Item</i>	<i>Sample entry</i>
Code name	
alternate BLS -----	RIFLE
Authentication	
data -----	LIMA
Additional	
information-----	SAMPAN ZERO FOUR FIVE DEG TWO FIVE ZERO YDS INFRARED

C-14. Sample Beach Landing Mission Confirmation

<i>Item</i>	<i>Sample entry</i>
Proword -----	GLORY
Code name -----	ROCKY, RENDEZVOUS, TWO SIX FIVE DEG TWO ZERO ZERO YDS
Azimuth to direct	
signal-----	TWO SEVEN ZERO DEG
Date/Time-----	ONE FOUR ZERO TWO ZERO ZERO OCT
Number bundles/ personnel-----	NINE BUNDLES
Alternate code	
name -----	RIFLE
Azimuth to direct	
signal-----	TWO SIX FIVE DEG
Date/Time-----	ONE FOUR ZERO THREE ONE ZERO OCT
Vessel call sign	
and frequency-----	SEAWOLF FOUR TWO PT FIVE
Additional	
information-----	SUBMARINE SURFACE INFRARED

C-15. Sample Surf Observation (SUROB)

Report

<i>Item</i>	<i>Sample entry</i>
Proword -----	JEWEL
Significant breaker	
Height-----	THREE PT FIVE
Maximum breaker	
Height-----	FOUR PT FIVE
Period-----	EIGHT TO ONE ZERO
Breaker type-----	ONE ZERO ZERO SPILLING
Angle of breaker	
to beach-----	FIVE DEG RIGHT FLANK
Littoral current-----	ZERO PT FIVE RIGHT FLANK
Surf zone -----	THREE TO FOUR LINES ONE
Additional-----	FIVE ZERO YDS
Information-----	OMITTED

C-16. Example

A sample message for any purposes indicated above may be constructed by simply writing the information given in the "Sample Entry" column, without breaks or paragraph headings. An example, using the samples given in paragraphs C-1 and C-4, is shown

HAIRY THREE TWO TANGO PAPA TANGO SIX
FOUR ONE TWO FOUR THREE OPEN ONE
THREE ZERO DEG TO TWO TOW ZERO DEG
AND THREE THREE ZERO DEG TO ZERO ONE
TWO DEG TRACK THREE SIX ZERO DEG RADIO
TOWER ZERO EIGHT SIX DEG SIX MI
BENNETTSVILLE ONE SEVEN TWO DEG SEVEN
MI ZERO FIVE TWO TWO ZERO ZERO ZULU FEB
ONE ZERO INDIA ALFA HAND

APPENDIX D

AREA STUDY GUIDE FOR UNCONVENTIONAL WARFARE

Section I. INTRODUCTION

D-1. General

This appendix may be used as a guide and outline in the preparation of an area study through research of information on a selected country. The outline provides a systematic consideration of the principal factors within a country which may influence Special Forces operational planning. Paragraphs D-4 through D-11 may be used for studying a region of expected operations and as a guide for more detailed evaluation of a selected country.

D-2. Purpose

The purpose of the area study guide is to provide a

systematic means for compiling and retaining essential information to support operations. Although the basic outline is general in nature, it is flexible enough to permit detailed coverage of a given area. As time is made available for further study, various subjects should be subdivided and assigned to selected detachment members to produce a more detailed analysis of specific areas of interest.

D-3. Techniques of Preparation

The maximum use of graphics and overlays is encouraged. Most subsections lend themselves to production in graphical or overlay form.

Section 11. GENERAL AREA STUDY FOR UNCONVENTIONAL WARFARE (OUTLINE)**D-4. General***a. Political.*

(1) Government, international political orientation, and degree of popular support.

(2) Attitudes and probable behavior of identifiable segments of the population toward the United States, its allies, and the enemy.

(3) National historical background.

(4) Foreign dependence or alliances.

(5) National capital and significant political, military, and economic concentrations.

b. Geographic Positions.

(1) Areas and dimensions.

(2) Latitude and climate.

(3) Generalized physiography.

(4) Generalized land use.

(5) Strategic location.

(a) Neighboring countries and boundaries.

(b) Natural defenses including frontiers.

(c) Points of entry and strategic routes.

c. Population.

(1) Total and density.

(2) Breakdown into significant ethnic and religious groups.

(3) Division between urban, rural, or nomadic groups.

(a) Large cities and population centers.

(b) Rural settlement patterns.

(c) Areas and movement patterns of nomads.

d. National Economy.

(1) Technological standards.

(2) Natural resources and degree of self-sufficiency.

(3) Financial structure and dependence on foreign aid.

(4) Agriculture and domestic food supply.

(5) Industry and level of production.

(6) Manufacture and demand for consumer goods.

(7) Foreign and domestic trade and facilities.

- (8) Fuels and power.
- (9) Telecommunication and radio systems.
- (10) Transportation adequacy by U.S. standards.

- (a) Railroads.
- (b) Highways.
- (c) Waterways.
- (d) Commercial air installations.

e. National Security.

- (1) Center of political power and the organization for national defense.
- (2) Military forces (army, navy, and air force) ; summary of order of battle.
- (3) Internal security forces and police forces; summary of organization and strength.
- (4) Paramilitary forces; summary of organization and strength.

D-5. Geography

a. Climate. General classification of the country as a whole, i.e., showing normal temperatures, rainfall, and average season variations.

b. Terrain. General classification of the country noting outstanding features, i.e., coasts, plains, deserts, mountains, hills, plateaus, rivers, and lakes.

c. Major Geographic Subdivisions. Divide the country into its various definable subdivisions, each with generally predominant topographical characteristics, i.e., coastal plains, mountainous plateau, rolling, and heavily forested hills. For each subdivision use the following outline in a more specific analysis of the basic geography.

- (1) *Temperature.* Variations from normal and, noting the months in which they occur, any extremes that would affect operations.
- (2) *Rainfall and snow.* Same as (1) above.
- (3) *Wind and Visibility.* Same as (1) above
- (4) *Relief.*

(a) General direction of mountain ranges or ridgelines and whether hills and ridges are dissected.

(b) General degree of slope.

(c) Characteristics of valleys and plains.

(d) Natural routes for, and natural obstacles to, cross-country movement.

(5) *Land use.* Note any peculiarities, especially

(a) Former heavily forested areas subjected to widespread cutting or dissected bypaths and roads, also the reverse, and pasture or waste land which has been reforested.

(b) Former waste or pasture land that has been resettled and cultivated and is now being farmed, also the reverse, and former rural countryside that has been depopulated and allowed to return to waste land.

(c) Former swamp or marshland that has been drained; former desert or wasteland now irrigated and cultivated; and lakes created by dams.

(d) Whenever not coincidental with (a), (b), or (c) above, any significant change in rural population density is noted.

(6) *Drainage (general pattern).*

(a) Main rivers, direction of flow.

(b) Characteristics of rivers and streams such as width, current, banks, depths, kinds of bottoms and obstacles, etc.

(c) Seasonal variation, such as dry beds and flash floods.

(d) Large lakes or areas of many ponds or swamps (potential LZ's for amphibious aircraft).

(7) *Coast.* Examine primarily for infiltration, exfiltration, and resupply points.

(a) Tides and waves, to include winds and current.

(b) Beach footing and covered exit routes.

(c) Quiet coves and shallow inlets or estuaries.

(8) *Geological basics.* Types of soil and rock formations (include areas for potential LZ's for light aircraft).

(9) *Forests and other vegetation.*

(a) Natural or cultivated.

(b) Types, characteristics, and significant variations from the norm at different elevations.

(c) Cover or concealment to include density; seasonal variation.

(10) *Water.* Ground, surface, seasonal, potability.

(11) *Subsistence.*

(a) Seasonal or year-round.

(b) Cultivated (vegetables, grains, fruits, and nuts).

(c) Natural (berries, fruits, nuts, and herbs).

(d) Wild life (animals, fish, and fowl).

D-6. People

The following outline should be used for an analysis of

the populace in any given region or country, or as the basis for an examination of the people within a subdivision as suggested in paragraph D-5c. Particular attention should be given to those areas in a country where the local inhabitants have peculiarities and are at considerable variance in one or more ways from the normal national way of life.

a. Basic Racial Stock and Physical Characteristics.

- (1) Types, features, dress, and habits.
- (2) Significant variations from the norm.

b. Standard of Living and Cultural (Educational) Levels.

- (1) Primarily note the extremes away from average.
- (2) Class structures (degree of established social stratification and percentage of populace in each class).

c. Health and Medical Standards.

- (1) Common diseases.
- (2) Standards of public health.
- (3) Medical facilities and personnel.
- (4) Potable water supply.
- (5) Sufficiency of medical supplies and equipment.

d. Ethnic Components. This should be analyzed only if of sufficient size, strength, and established bonds to constitute a dissident minority of some consequence.

- (1) Location or concentration.
- (2) Basis for discontent and motivation for change.
- (3) Opposition to majority or the political regime.
- (4) Any external or foreign ties of significance.

e. Religion.

- (1) Note wherein the national religion definitely shapes the actions and attitudes of the individual.
- (2) Religious divisions. Major and minor religious groups of consequence. See d (1) through (4) above.

f. Traditions and Customs (Particularly Taboos). Note wherever they are sufficiently strong and established that they may influence an individual's actions or attitude even during a war situation.

g. Rural Countryside.

- (1) Peculiar or different customs, dress, and habits.
- (2) Village and farm buildings; common construction materials.

h. Political Parties or Factions.

- (1) If formed around individual leaders or based on established organizations.
- (2) If a single dominant party exists, is it nationalistic in origin or does it have foreign ties?
- (3) Major legal parties with their policies and goals.
- (4) Illegal or underground parties and their motivation.
- (5) Violent opposition fractions within major political organizations.

i. Dissidence. General active or passive potential, noting if dissidence is localized or related to external movements.

j. Resistance (Identified Movements). Areas and nature of activities, strength, motivation, leadership, reliability, possible contacts, and external direction or support.

k. Guerrilla Groups. Areas and nature of operations, strength, equipment, leader's reliability, contacts, and external direction or support.

D-7. Enemy

a. Political.

- (1) Outside power. Number and status of nonnational personnel; their influence, organization, and mechanism of control.
- (2) Dominant national party. Dependence on and ties with an outside power; strength, organization, and apparatus; evidences of dissension at any level in the party; and the location of those areas in the country that are under an especially strong or weak nonnational control.

b. Conventional Military Forces (Army, Navy, and Air Force).

- (1) Nonnational or occupying forces in the country.
 - (a) Morale, discipline, and political reliability.
 - (b) Personnel strength.
 - (c) Organization and basic deployment.
 - (d) Uniforms and unit designations.
 - (e) Ordinary and special insignia.
 - (f) Leadership (officer corps).

- (g) Training and doctrine.
- (h) Equipment and facilities.
- (i) Logistics.
- (j) Effectiveness (any unusual capabilities or weaknesses).

(2) National (indigenous) forces (army, navy, air force). See (1) (a) through (j) above.

c. Internal Security Forces (Including Border Guards).

(1) Strength and general organization, distinguishing between nonnational and national elements.

- (a) Overall control mechanism.
- (b) Special units and distinguishing insignia.

(c) Morale, discipline, and relative loyalty of native personnel to the occupying or national regime.

(d) Nonnational surveillance and control over indigenous security forces.

(e) Vulnerabilities in the internal security system.

(f) Psychological vulnerabilities.

(2) Deployment and disposition of security elements.

(a) Exact location down to the smallest unit or post.

(b) Chain of command and communication.

(c) Equipment, transportation, and degree of mobility.

(d) Tactics (seasonal and terrain variations).

(e) Methods of patrol, supply, and reinforcements.

(3) The location of all known guardposts or expected wartime security coverage for all types of installations, particularly along main lines of communication (LOC) (railroads, highways, and telecommunication lines) and along electrical power and POL lines.

(4) Exact location and description of the physical arrangement and particularly of the security arrangements of all forced labor or, concentration camps and any potential PW inclosures.

(5) All possible details, preferably by localities, of the types and effectiveness of internal security controls, including checkpoints, identification cards, passports, and travel permits.

D-8. Targets

The objective in target selection is to inflict maximum damage on the enemy with minimum expenditure of men and material. Initially, the operational capabilities of a guerrilla force may be limited in the interdiction or destruction of enemy targets. The target area and specific points of attack must be studied, carefully analyzed, and priorities established. In general, targets are listed in order of priority in accordance with mission requirements.

a. Railroads.

(1) Considerations in the selection of a particular line

- (a) Importance, both locally and generally.
- (b) Bypass possibilities.
- (c) Number of tracks and electrification.

(2) Location of maintenance crews, reserve repair rails, and equipment.

(3) Type of signal and switch equipment.

(4) Vulnerable points:

- (a) Unguarded small bridges or culverts.
- (b) Cuts, fills, overhanging cliffs, or undercutting streams.
- (c) Key junctions or switching points.
- (d) Tunnels.

(5) Security, system.

b. Telecommunications.

c. POL.

d. Electric Power.

e. Military Storage and Supply.

f. Military Headquarters and Installations.

g. Radar and Electronic Devices.

h. Highways.

i. Inland Waterways—Canals.

j. Seaports.

k. Natural and Synthetic Gas Lines.

l. Industrial Plants.

Note. Targets listed in b through l above are divided into subsections generally as shown in a above. Differences in subsections are based on peculiarities of the particular target system.

Section III. UNCONVENTIONAL WARFARE OPERATIONAL AREA INTELLIGENCE STUDY GUIDE

D-9. General

The following guide is designed to bring the essential elements of intelligence for the operational area into focus. It is based on the outline as shown in paragraphs D-4 through D-8, but narrows the factors that apply to a relatively small and specific area. This guide refines the critical elements and places them into proper perspective of an actual operation at a given time.

D-10. Purpose

To outline the development of detailed intelligence on an assigned UWOA to support the commitment of a Special Forces operational detachment.

D-11. Format

a. Select from paragraphs D-4 through D-8 those elements that are applicable to the situation and the assigned UWOA. Use appropriate parts of paragraph 5-8.

b. Eliminate nonessential data and prepare a brief, concise summation of basic facts.

c. Note serious gaps in data as processed in *b* above and take immediate action to fill these gaps with the most current reliable information.

d. Prepare or request graphics, large-scale sheets and special maps covering the assigned area, the latest photography and illustration or information sheets on targets in the area, town plans, sketches of installations, and air and hydrographic charts related to the area.

e. Assemble the material for ready reference. Then proceed to plot on maps or overlays, wherever feasible, the following

(1) Recommended initial locations of operational bases and alternate bases.

(2) Primary and alternate DZ's, LZ's, or points for other forms of infiltration.

(3) Possible direction and orientation points for infiltration vehicles (aircraft or boat), i.e., landmarks or reference points.

(4) Routes from infiltration point to preselected bases with stopover sites.

(5) Points for arranged or anticipated contacts with friendly elements.

(6) Enemy forces known or anticipated, to include location, strength, and capabilities.

(7) Estimate of enemy operations or movements during the infiltration period.

(8) Settlements or built-up areas in the vicinity of the infiltration point and tentative operational bases.

(9) All railroads, highways, telecommunications, and other lines of communication in the UWOA.

(10) All important enemy installations and facilities.

(11) Significant terrain features.

(12) Off-road routes and conditions (depending on the season) for movement in all directions.

(13) Distances between key points.

(14) Recommended points of attack on assigned target system and selection of other potential target areas.

f. As time permits, continue to collect information and revise estimates in keeping with more current intelligence. Develop increasing details on *e* (1) through (14) above, with special emphasis on

(1) Local inhabitants:

(*a*) Local traditions, customs, and dress.

(*b*) Food, rationing, and currency.

(*c*) Attitudes toward the enemy regime, the United States, and for or against existing political ideologies.

(*d*) Peculiarities or variances among individuals or small groups.

(*e*) Resistance force group leadership and systems of control or influence employed.

(2) Enemy military forces and installations.

(3) Other security forces and police.

(*a*) Organizations, locations, and strengths.

(*b*) Unit designations, insignia, and uniforms.

(*c*) Areas covered and unit responsibilities.

(*d*) Checkpoints, controls, and current documentation.

(*e*) Patrols and mobile units.

(4) Geographic features of the operational area in greater detail.

(5) Approaching seasonal climatic changes and their effect upon weather and terrain.

(6) Target categories and target areas in greater detail.

Section IV. UNCONVENTIONAL WARFARE OPERATIONAL BRIEFBACK CHECKLIST AND FORMAT

D-12. General

The following is offered as a suggested guide to the order of presentation and a suggested checklist that each SFOD staff member should cover. It is emphasized that this is only a guide and the final decision as to who presents a specific portion of the briefback will be determined by the detachment commander and will be based on the personality, appearance, staff capability, briefing ability, etc., of each SFOD staff member.

a. SFOD Commander.

(1) General description and location of the operational area (not a terrain analysis—very brief such as in what country and what general region).

(2) Mission of the SFOD.

(3) Concept of operations.

(4) Staff organization of the SFOB and the plan for formulation and training of a combined/joint staff in the area of operations.

b. SFOD Executive Officer.

(1) Background on the area, to include:

(a) Geography.

(b) Sociological aspects.

(c) Economics.

(d) Religion.

(e) Political situation.

(f) Transportation nets.

(g) Utilities and telecommunication nets.

(2) History of resistance and guerrilla activities.

c. SFOD S2 or Assistants.

(1) Intelligence of the enemy to include:

(a) Location of the enemy front lines, if applicable.

(b) Description and location of enemy combat forces.

(c) Description and location of enemy security and counter guerrilla forces.

(d) Information concerning intelligence, security, and other auxiliary nets already established.

(e) Target analysis (demolition requirements).

d. S3 or Assistants.

(1) Infiltration plan to include:

(a) DZ and alternate DZ (LS and alternate LS for water infiltration).

(b) Assembly plan.

(c) Pertinent information concerning time of loading, time of drops, stick assignments, etc.

(2) Aircraft in-flight abort plans (or water en route abort plans), to include:

(a) Time of flight.

(b) Zones and assembly areas.

(c) Action to be taken in the event of an abort.

(3) Ground contact plan and alternate contact plan.

(4) Contingent plan.

(5) Estimate of present guerrilla situation, to include

(a) Composition and organization.

(b) Level of training.

(c) Availability of interpreters.

(d) Strengths.

(e) Weaknesses.

(6) Plan for individual and unit training on a basic, advanced, and specialized basis.

(7) Tentative plan for operations, to include E&E.

e. SFOD S1.

(1) Discipline, law, and order (SFOD).

(2) Guerrilla processing, to include:

(a) Oath of allegiance.

(b) Guerrilla code.

(c) Personnel data records.

(d) Photographs.

(3) Administration of the guerrillas.

(4) Prisoners of war.

(5) Graves registration.

(6) Morale and personal services (SFOD), to include

(a) Chaplain services.

(b) Decorations and awards.

(c) Mail.

(d) Pay and allowance.

(e) Comfort items.

(7) Promotions, demotions, and assignments.

(8) Reports to SFOB.

(9) Demobilization procedures

(a) Recovery of equipment.

(b) Pay and allowances.

(c) Decorations and awards.

(d) Postwar use of guerrilla forces.

f. SFOB S4 or Engineer SGT.

(1) Equipment to accompany SFOD in the infiltration (use of door bundles if used).

(2) Emergency resupply.

(3) Automatic resupply (time, location, recognition signal, equipment to be received, etc.).

(4) Estimate of the guerrilla logistical requirements, present and future.

(5) Evaluation of auxiliary systems as pertains to logistical potential, to include:

(a) Food.

(b) Weapons.

(c) Demolitions.

(d) Equipment.

(6) Accounting for supplies and equipment.

(7) Possible promises and contract stipulations to include agreements for obtaining supplies.

g. SFOD Medical Specialist.

(1) Evaluation of the medical situation in the area and possible medical problems.

(2) Medical equipment accompanying: SFOD in the infiltration.

(3) Medical equipment in the automatic

resupply.

(4) Estimate of the medical potential of the area to include:

(a) Hospitals.

(b) Doctors.

(c) Medical supplies.

(5) Plans for the medical training of guerrilla and auxiliary personnel.

h. SFOD Radio Operator Supervisor.

(1) Existing facilities and communication nets in the area.

(2) Communication plans and procedures.

(3) Communication equipment accompanying SFOD in the infiltration.

(4) Communication equipment in the automatic and emergency resupply.

i. SFOD Commander.

(1) Linkup plans.

(2) Action to be taken by the SFOD in case of an actual alert.

(a) Notification system.

(b) Assembly plan.

(c) Plan for movement to SFOB.

(3) Entertain questions.

APPENDIX E

AREA ASSESSMENT

E-1. General

a. In preparation for planning and directing operations, Special Forces detachment commanders require certain basic information, as well as specific information on the operational area. As was discussed previously, this information, when compiled and analyzed, is called the area study and operational area intelligence.

b. Equipped with this knowledge and based on requirements as stipulated by mission requirements, the operational detachment commanders, prior to implementing plans based on this knowledge, must confirm or refute this background data after infiltration through a process known as the area assessment.

c. An area assessment is the immediate and continuing collection of information started after infiltration into a UWOA. Characteristically it

(1) Confirms or refutes previous intelligence acquired as a result of area studies and other sources prior to infiltration.

(2) Is a continuing process.

(3) Forms the basis for modifying and replanning operational and logistical support for operational areas.

(4) Includes reevaluation of information of the enemy, weather, and terrain.

(5) Includes reanalysis of the information on the differently motivated segments of the civil populace to support operations.

d. The results of the area assessment should be transmitted to the SFOB only when there is marked deviation from previous intelligence and the information would have an impact on plans of higher headquarters. The SFOB prescribes, in appropriate SOP's and annexes, those items to be reported.

e. Emphasis and priority of specific items fluctuate with the situations.

f. The following outline, containing the major

items of interest to the area command, is an example of how such an assessment may be accomplished. This outline is designed to facilitate the collection, processing, and collation of the required material. There are two types of area assessment—initial and principal—based on degrees of urgency.

E-2. Immediate—initial Assessments

Initial assessment includes those items deemed essential to the operational detachment immediately following infiltration. These requirements must be satisfied as soon as possible after the detachment arrives in the operational area, and should include

a. Location and Orientation.

b. Detachment's Physical Condition.

c. Overall Security:

(1) Immediate area.

(2) Attitude of the local populace.

(3) Local enemy situation.

d. Status of the Local Resistance Elements.

E-3. Subsequent—Principal Assessments

Principal assessment, a continuous operation, includes those collection efforts which support the continued planning and conduct of operations. It forms the basis for all of the detachment's subsequent activities in the operational area.

a. The Enemy.

(1) Disposition.

(2) Composition, identification, and strength.

(3) Organization, armament, and equipment.

(4) Degree of training, morale, and combat effectiveness.

(5) Operations:

(a) Recent and current activities of the unit.

(b) Counterguerrilla activities and capabilities with particular attention to reconnaissance units, special troops (airborne, mountain, ranger)

rotary-wing or vertical-lift aviation units, counterintelligence units, and units having a mass CBR delivery capability.

- (6) Unit areas of responsibility.
- (7) Daily routine of the units.
- (8) Logistical support, to include
 - (a) Installations and facilities.
 - (b) Supply routes.
 - (c) Methods of troop movement.
- (9) Past and current reprisal actions.

b. Security and Police Units.

(1) Dependability and reliability to the existing regime or the occupying power.

- (2) Disposition.
- (3) Composition, identification, and strength.
- (4) Organization, armament, and equipment.
- (5) Degree of training, morale, and efficiency.
- (6) Utilization and effectiveness of informers.
- (7) Influence on, and relations, with the local populace.
- (8) Security measures over public utilities and government installations.

c. Civil Government.

- (1) Control and restrictions, such as
 - (a) Documentation.
 - (b) Rationing.
 - (c) Travel and movement restrictions.
 - (d) Blackouts and curfews.
- (2) Current value of money, wage scales.
- (3) The extent and effect of the black market.
- (4) Political restrictions.
- (5) Religious restrictions.
- (6) The control and operation of industry, utilities, agriculture, and transportation.

d. Civilian Populace.

- (1) Attitudes toward the existing regime or occupying power.
- (2) Attitudes toward the resistance movement.
- (3) Reaction to U.S. support of the resistance.
- (4) Reaction to enemy activities in the country and, specifically, that portion which is included in UWOA's.
- (5) General health and well-being.

e. Potential Targets.

- (1) Railroads.
- (2) Telecommunications.
- (3) POL.
- (4) Electric power.
- (5) Military storage and supply.
- (6) Military headquarters and installations.
- (7) Radar and electronic devices.
- (8) Highways.
- (9) Inland waterways and canals.
- (10) Seaports.
- (11) Natural and synthetic gas lines.
- (12) Industrial plants.
- (13) Key personalities.

f. Weather.

- (1) Precipitation, cloud cover, temperature, visibility, and seasonal changes.
- (2) Wind speed and direction.
- (3) Light data (BMNT, EENT, sunrise, sunset, moonrise, and moonset).

g. Terrain.

- (1) Location of areas suitable for guerrilla bases, units, and other installations.
- (2) Potential landing and drop zones, and other reception sites.
- (3) Routes suitable for:
 - (a) Guerrillas.
 - (b) Enemy forces.
- (4) Barriers to movement.
- (5) The seasonal effect of the weather on terrain and visibility.

h. Resistance Movement.

- (1) Guerrillas.
 - (a) Disposition, strength, and composition.
 - (b) Organization, armament, and equipment.
 - (c) Status of training, morale, and combat effectiveness.
 - (d) Operations to date.
 - (e) Cooperation and coordination between various existing groups.
 - (f) General attitude toward the United States, the enemy, and various elements of the civilian populace.

(g) Motivation of the various groups and their receptivity.

(h) Caliber of senior and subordinate leadership.

(i) Health of the guerrillas.

(2) Auxiliaries and the underground.

(a) Disposition, strength, and degree of organization.

(b) General effectiveness, and type of support.

(c) Motivation and reliability.

(d) Responsiveness to guerrilla or resistance leaders.

(e) General attitude toward the United States, the enemy, and various guerrilla groups.

i. Logistic Capability of the Area.

(1) Availability of food stocks and water to include any restrictions for reasons of health.

(2) Agricultural capability.

(3) Type and availability of transportation of all categories.

(4) Types and location of civilian services available for manufacture and repair of equipment and clothing.

(5) Supplies locally available to include type and amount.

(6) Medical facilities to include personnel, medical supplies, and equipment.

(7) Enemy supply sources accessible to the resistance.

j. Preventive Medicine.

(1) Weather.

(a) As the weather cold enough to put emphasis on causes, treatment, and prevention of cold weather injuries?

(b) Is the weather hot enough to put emphasis on causes, treatment, and prevention of heat injuries?

(2) Terrain. How does the terrain affect evacuation and medical resupply?

(3) Indigenous personnel.

(a) Physical characteristics. Describe endurance, ability to carry loads, and to perform other physical feats.

(b) Dress. What symbolism is attached to various articles of clothing and jewelry, such as amulets, if any.

(c) Attitudes.

1. What taboos and other psychological attributes are present in the society?

2. Describe rites and practices by witch doctors during illness. What do these rites symbolize? Does the practitioner use Western medicines?

3. How do indigenous personnel respond to events such as fear, happiness, anger, and sadness?

(4) Housing.

(a) Analyze physical layout of the community.

(b) Determine infestation with ectoparasites and vermin.

(5) Food.

(a) Is food cultivated for consumption? What foods?

(b) How do the seasons of your operational area influence diet? Does migration in search of food occur?

(c) What foods provided by U.S. personnel do the indigenous personnel prefer or reject?

(d) What cash crops are raised?

(6) Water supply, urban. What kind of water treatment plants are used (if any) ?

(7) Water supply, rural.

(a) What are the numbers and types of rural water supplies?

(b) What treatment is given to water in rural areas? Give attitudes of the indigenous personnel toward standard U.S. purification methods.

(8) Sewage disposal (when applicable).

(a) What are the types and locations of sewage treatment plants?

(b) In remote areas, what system is used for disposal of human excrement, offal, and dead animals or humans?

(c) What are the attitudes of the indigenous personnel to standard U.S. methods, such as the use of latrines?

(9) Epidemiology. What specific diseases in each of the three following major categories are present among the guerrillas, their dependents, or their animals?

(10) Domestic animals.

(a) What domestic animals are present?

(b) Describe the normal forage.

1. Do owners supplement the food supply? What food supplements are given, if any?

2. Are animals penned, or allowed to roam?

(c) Is any religious symbolism or taboo associated with animals ("sacred cows")? Are animals sacrificed for religious purposes?

(d) Are local veterinarians available for animal treatment and ante- and post-mortem inspections of meats? What is their training?

(11) Local fauna. Record species of birds, large and small mammals, reptiles, and arthropods present in the area if names are unknown, describe

(survival purposes).

(12) Poisonous plants. Record those species which are known to be toxic to man through contact with the skin, inhalation of smoke from burning vegetation, or through ingestion (survival).

APPENDIX F

CATALOG SUPPLY SYSTEM

1. This appendix provides a guide for the planning and preparation of a CSS for Special Forces operations.
2. The CSS shown in this appendix is only a sample.

Section I. CHEMICAL

Code	Unit designation	Unit wt	No. pks.	Unit data Contents
ALPHA ALPHA	Chemical Grenade No. 1 (16 rds).	46 lbs	1	Sixteen grenades, hand, smoke WP, M15, packed in individual containers.
ALPHA BRAVO	Chemical Grenade No. 2 (16 rds).	47 lbs	1	Sixteen grenades, hand, incendiary, (TH) AN, M14, packed in individual containers.
ALPHA CHARLIE	Chemical Grenade No. 3 (16 rds).	34 lbs	1	Sixteen grenades, smoke colored, M18 (green, red, violet, and yellow), packed in individual containers.
ALPHA DELTA	Chemical Grenade No. 4 (16 rds).	35 lbs	1	Sixteen grenades, hand, tear, CS, M7A1, packed in individual containers.
ALPHA ECHO	Detector kits (8)	43 lbs	1	Eight detector kits, chemical agent, M18.
ALPHA FOXTROT	Food Testing Kits (24)	45 lbs	1	Twenty-four food testing and screening kits, chemical agents, ABC-M8.
ALPHA GOLF	Leather Dressing (96)	43 lbs	1	Ninety-six cans leather dressing, vesicant gas resistant, M2.
ALPHA HOTEL	Protection & Treatment Set (70).	50 lbs	1	Seventy protection and treatment sets, chemical warfare agents, M5A1.
ALPHA INDIA	Water testing Kits (24)	50 lbs	1	Twenty-four water testing kits chemical agents, AN-M2.
ALPHA OSCAR	Napalm	42 lbs	1	Eight cans chemical agent thickener, five ¼ lb cans.

Section II. DEMOLITIONS AND MINES

Code	Unit designation	Unit wt	No. pks.	Unit data Contents
ECHO ALPHA	Demolitions No. 1 (20 blocks).	50 lbs.	1	20 blocks, demolition, MAI (21/z-lb comp C-4).
ECHO BRAVO	Demolitions No. 2 (2 assemblies).	44 lbs	1	Two assemblies, demolition, M37 (21/\$-lb comp C-4, 8 blocks per assembly).
ECHO CHARLIE	Demolitions No. 3 (45 blocks).	45 lbs	1	45 blocks, demolition (1-lb TNT).

* See notes at end of Section II.

FM 31-20

Code	Unit designation	Unit wt	No. pks.	Unit data Contents
ECHO DELTA	Detonating Cord (6000 ft). <i>Note 1</i>	42 lbs	1	6000 ft cord, detonating, 1000 ft per spool (6 spools-42 lbs).
ECHO ECHO	Detonators (15)	45 lbs	1	150 detonators, friction, 8-second delay, M2, and 15-second delay, M1, packed 10 per box (15 boxes-45 lbs).
ECHO FOXTROT	Firing Device No. 1 (200).	40 lbs	1	200 firing devices, set, demolition, delay type, M1 packed 10 per box, consisting of: <ol style="list-style-type: none"> 1. Two 15-minute delays. 2. Three 1-hour delays. 3. Three 2½-hour delays. 4. One 11½-hour delay. 5. One 13½-hour delay. (20 boxes-40 lbs.)
ECHO HOTEL	Firing Device No. 2 (116).	44 lbs	1	116 firing devices, demolition, mixed, packed 29 per box consisting of: <ol style="list-style-type: none"> 1. Five pressure type M1A1. 2. Five release type M5. 3. Five pull friction type M2. 4. Five pull release type M3. 5. Five pull type M1. 6. Four detonators, concussion type E M1. (4 boxes-11 lbs per box).
ECHO INDIA	Fuze (27,000 ft) <i>Note 1</i>	45 lbs	1	27,000 ft fuze, blasting, time, 100-ft packages, packed 30 packages per metal can (9 cans-45 lbs).
ECHO JULIET	Fuze Igniters	45 lbs	1	225 igniters, blasting, fuze, weatherproof, M2, packed 5 per box (45 boxes-45 lbs).
FOXTROT ALPHA	Priming Material No. 1	47 lbs	1	<ol style="list-style-type: none"> 1. 250 caps, blasting, special, type II, J2, PETN, packed 50 per box (5 boxes-5 lbs). 2. 6000 ft cord, detonating 1000 ft per spool (6 spools-42 lbs).
FOXTROT BRAVO	Priming Material No. 2	48 lbs	1	<ol style="list-style-type: none"> 1. 500 caps, blasting, special, nonelectric type I, J1, PETN, packed 50 per can (10 cans-5 lbs). 2. 4000 ft cord, detonating, 1000 ft per spool (4 spools-28 lbs). 3. 9000 ft fuze, blasting, time, 100-ft packages, packed 30 packages per metal can (3 cans-15 lbs).
FOXTROT CHARLIE	Nonelectric Demolition Unit No. 1.	55 lbs	1	<ol style="list-style-type: none"> 1. One assembly, demolition, M37 (22 lbs). 2. 10 blocks, demolition, 1 lb TNT (10 lbs). 3. 50 caps, nonelectric (½ lb). 4. 1000 ft cord, detonating (7 lbs). 5. Two crimpers, cap. 6. 25 destructors, explosive, universal, M10, packed 5 per box (5 boxes-61/4 lbs). 7. 3000 ft fuze, blasting, time (1 can-5 lbs). 8. 15 igniters, blasting, fuze, M2, packed 5' per box (3 boxes-3 lbs). 9. 1 roll insulation tape, electrical (1 lb).
FOXTROT DELTA	Nonelectric Demolition Unit No. 2.	745 lbs	15	<ol style="list-style-type: none"> 1. One nonelectric demolition unit No. 1. 2. 250 caps, blasting, special, nonelectric, Type I, J1, PETN, packed 50 per can. 3. One detonating cord unit. 4. One time fuze unit. 5. Twelve demolition units No. 1.
FOXTROT ECHO	Electric Demolitions Unit No. 1.	93 lbs	2	<ol style="list-style-type: none"> 1. 50 caps, electric (1 lb). 2. 1000 ft cord, detonating (7 lbs). 3. 500 ft cable, power, electrical firing, on reel, RL39B (36 lbs).

Code	Unit designation	Unit wt	No. pks.	Unit data Contents
				4. One assembly, demolition M37 (22 lbs). 5. 10 blocks, demotion 1-lb TNT (10 lbs). 6. 25 destructors, explosive, universal, M10, packed 5 per box (5 boxes-61/4 lbs). 7. One galvanometer, blasting (2 lbs). 8. One machine, blasting, 10-cap capacity (51%z lbs). 9. One pair pliers, lineman's (11/4 lbs). 10. 200 ft wire, electrical annunciator, on reel 21/4 lbs).
FOXTROT FOXTROT	Electric Demolition Unit No. 2.	740 lbs	14	1. One electric demolition unit No. 1. 2. 250 caps, blasting, special, electric, Type II, J2, PETN, packed 50 per box. 3. One detonating cord unit. 4. Twelve demolitions units No. 1.
GOLF ALPHA	Antitank Mines No. 1 <i>Note 2</i>	50 lbs	1	10 mines, light, ATM7A2.
GOLF BRAVO	Antitank Mines No. 2 <i>Note 2</i>	56 lbs	1	2 mines, AT, M19.
GOLF CHARLIE	Anti-Personnel Mines, No. 1. <i>Note 2</i>	40 lbs	1	128 mines, AP, M14.
GOLF DELTA	Anti-Personnel Mines, No. 2. <i>Note 2</i>	47 lbs	1	6 mines, AP, M16, bounding.
GOLF ECHO	Anti-Personnel Mines, No. 3.	45 lbs	1	15 weapons, AP, M18, Claymore.

Notes.

1. Assembled in two packages due to bulk.
2. Fuzes included in each package.
3. General.
- a. Accessory items such as priming adaptors and detonating cord clips may be added to the packages as desired.
- b. Peculiar, nonstandard items are added to the list in the theater of operations.

Section III. MEDICAL

Code	Unit designation	Unit wt	No. pks.	Unit data Contents
INDIA ALPHA	Combat Aidman's Set	48 lbs	1	Eight surgical instrument and supply sets, individual (6 lbs) standard medical supply set, 6545-927-4960, consisting of: 1. One bottle of acetylsalicylic acid tablets, USP bottle, 100 per bottle. 2. Five morphine injections, USP, 16 mg (1/4 gr) pkg. 3. One tube of tetracaine ophthalmic ointment 1/2oz tube. 4. One package benzalkonium chloride tincture. 5. Two bandages, gauze, 3-inch. 6. Two bandages, muslin. 7. Two dressings, first aid, field, 71/2" x 8". 8. Eight dressings, first aid, field, 4" x 7". 9. One spool of adhesive plaster, surgical, 3". 10. Two packages of bandages, absorbent, adhesive, 18 per package. 11. One pair scissors, bandage, angular, heavy.

FM 31-20

Code	Unit designation	Unit wt	No. pks.	Unit data Contents
				12. One tourniquet. 13. One thermometer. 14. One card of pins, safety, 12 per card. 15. One pencil. 16. One surgical instrument set, minor surgery: <ol style="list-style-type: none"> Two needle holders. Two forceps. One blade handle. Two packages of blades No. 10, 6 per package. Two packages of blades No. 11, 6 per package. One probe. One pair scissors. Suture material with needles.
INDIA CHARLIE	Field Surgery Set Supplement	45 lbs	1	Standard medical supply set, 6545-927-4400. <ol style="list-style-type: none"> One bag, waterproof, signal equipment, with shoulder strap 12" x 9" x 18". Two bottles of dextran injection, 500 cc. Six packages of morphine injection, USP, 16 mgm (1/4 gr), 5 per pkg. One bottle of penicillin C tablets, USP, 250,000 units, 100 per bottle. Five packages of penicillin injection in oil, 400,000 units, cartridge-needle unit 1 cc, 10 per package. Two syringes, cartridge. Six bottles of albumin, normal human serum, 100 cc. <i>Note 1.</i> <ol style="list-style-type: none"> One box of nalorphine hydrochloride injection, USP, 5 mgm (1/12 gr) per cc, 6 per box. Six bandages, gauze, camouflaged, 3 in x 6 yds. Four bandages, muslin. Two dressings, first aid, field, 11/4" square, large. 24 dressings, first aid, field medium. 36 dressings, first aid, field small. One spool of adhesive plaster, surgical, 3".
INDIA ECHO	Dental Unit	21 lbs	1	Three dental kits, emergency, field (645-927-8440).
INDIA	Splint Set_	26 lbs	1	1. Splint set consists of: <ol style="list-style-type: none"> One roll, splint set, telescopic splints, empty. 18 bandages, muslin. Three straps, leg traction. Three splints, wood. Three splints, leg, Thomas, half-ring, aluminum. Three litter bars, leg splint supporting. Three splint supports and footrest, leg. Three splints, wire, ladder. Three rods, irrigator supporting. <ol style="list-style-type: none"> Two blankets. Six dressings, field, medium. Six dressings, field, large.
INDIA GOLF	Water Purification Unit <i>Note 2</i>	23 lbs	1	300 bottles of water purification tablets
INDIA HOTEL	Insect Control Unit <i>Note 2</i>	25 lbs	1	Insect repellent
INDIA INDIA	Surgical Prep Set	45 lbs	1	<ol style="list-style-type: none"> Twelve cakes of soap, , surgical, 4-oz cake. 24 containers of detergent, surgical, 5-oz container. Six hand brushes, surgical. Two bowls, aluminum.

Code	Unit designation	Unit wt	No. pks.	Unit data Contents
				5. Six bottles of benzalkonium chloride, 25-cc bottle. 6. Twelve pairs of gloves, surgical, size 7%. 7. Twelve pairs of gloves, surgical, size 8. 8. One box of talc, USP, lb box. 9. Twelve packages of cotton, sterile, 1-oz package. 10. Two safety razors. 11. Two packages of razor blades, double edge. 12. Twelve hand towels. 13. Two bath towels. 14. Six lap sheets, small. 15. Six surgical drapes, small.
INDIA JULIET	Narcotics Unit	20 lbs	1	1. 120 boxes morphine sulfate, 15-mg syrette, 5 per box. 2. Six boxes of nalorphine hydrochloride injection, six per box. 3. 24 bottles of codeine phosphate, 30-mg tablet, 10 per bottle. 4. Six bottles of meperidine hydrochloride, small.
INDIA KILO	Local Anesthesia	25 lbs	1	1. Ten cans of procaine, cartridge, 25 per can. 2. Two cartridge syringes. 3. 20 bottles of lidocaine, 2%, 20-cc bottle. 4. Six syringes, 10-cc. 5. Three syringes, 20-cc. 6. Three boxes of needles, gauge 23, 12 per box. 7. Three boxes of needles, gauge 22, 12 per box. 8. One box of needles, gauge 20, 12 per box. 9. Two cans of alcohol, USP, 1 pint can. 10. Six plastic containers of phisohex, 5-oz container. 11. One package of cotton, rolled.
INDIA MIKE	Major Burns Unit	45 lbs	1	1. Six units of albumin, 100-cc unit. Note 1. 2. Three units of dextran, 500-cc unit. 3. Four bottles of normal saline, 1000-cc bottle. 4. Four bottles of dextrose, 5 %, 1000-cc bottle. 5. Ten intravenous tubing assemblies. 6. 24 packages of sodium chloridebicarbonate mix, 2 per package. 7. Twelve boxes of procaine penicillin, 400,000-units cartridge, field type, 10 per box. 8. Two cartridge syringes. 9. Two catheters, indwelling, French, size 16. 10. Two catheters, indwelling, French, size 18. 11. One fluid calculator for burns (nonstandard). 12. Six packages of morphine, injection, 15 mg, 6 per package. 13. Six cannulas, tracheotomy, nylon, size 5.
INDIA NOVEMBER	Shock Set No. 1 <i>Note 3</i>	30 lbs	1	24 bottles of albumin, normal, human serum, 100-ep bottle, with injection assembly.
INDIA OSCAR	Shock Set No. 2	24 lbs	1	12 bottles of dextran, 500-cc bottle, with injection assembly.
INDIA PAPA	Shock Set No. 3	25 lbs	1	1. Three bottles of normal saline, 1000-cc bottle. 2. Three bottles of dextrose, in water, 5%, 1000-cc bottle. 3. Eight intravenous injection assemblies. 4. One spool of adhesive tape, 3 in. 5. Two boxes of levarterenol ampule, 12 per box. 6. Two vials epinephrine, 1:1000, 30-cc vial.
INDIA QUEBEC	Intravenous Fluids No. 1	25 lbs	1	1. Four bottles of dextrose in water 5%, 1000-cc bottle. 2. Two bottles of dextrose in water 10%, 100-cc bottle. 3. One spool of adhesive tape, 3 in.

FM 31-20

Code	Unit designation	Unit wt	No. pks.	Unit data Contents
INDIA TANGO	Sterile Dressing Unit	26 lbs	1	<ol style="list-style-type: none"> 4. Eight intravenous tubing assemblies. 1. Twelve dressings, field, large. 2. 36 dressings, field, medium. 3. 36 dressings, field, small. 4. Two boxes of bandage, gauze, 3 in., 12 per box. 5. Two boxes of bandage, gauze, 4 in., 12 per box.
INDIA UNIFORM	Bandage Unit	22 lbs	1	<ol style="list-style-type: none"> 1. Six packages of gauze pads, 2 x 2 in. 2. Four packages gauze pads 4 x 4 in. 3. Six packages bandages, absorbent, adhesive (band-aid), 100 per package. 4. Six spools of adhesive tape, 3 in. 5. 12 . packages of cotton, sterile, 1-oz package. 6. Two boxes of roller gauze, 2 in., 12 per box. 7. Two boxes of roller gauze, 3 in., 12 per box. 8. Two boxes of roller gauze, 4 in., 12 per box. 9. Two boxes of muslin bandages, 24 per box.
INDIA VICTOR	Elastic Bandage Unit	25 lbs	1	<ol style="list-style-type: none"> 1. One box of bandages, cotton, elastic, 2 in., 12 per box. 2. Two boxes of bandages, cotton, elastic, 3 in., 12 per box. 3. Four boxes of bandages, cotton, elastic, 4 in., 12 per box. 4. One box of bandages, cotton, elastic, 6 in., 12 per box. 5. Two spools of adhesive tape, 3 in.
INDIA WHISKEY	Litter Set	46 lbs	1	<ol style="list-style-type: none"> 1. Two litters, folding. 2. Two blankets.
INDIA XRAY	Mountain Litter Set	44 lbs	1	<ol style="list-style-type: none"> 1. One litter, rigid, mountain. 2. Three blankets.
INDIA YANKEE	Blanket Set	50 lbs	1	<ol style="list-style-type: none"> 1. Tent blankets.
INDIA ZULU	Orthopedic Cast Set No. 1	50 lbs	1	<ol style="list-style-type: none"> 1. One roll stockinet, 3 in x 25 yds. 2. One roll stockinet, 4 in x 25 yds. 3. One roll stockinet, 6 in x 12 yds. 4. One roll bandage, felt, 3-in roll. 5. One roll bandage, felt, 4-in roll. 6. One roll bandage, felt, 6-in roll. 7. Two boxes of bandages, cotton, plaster impregnated, 3 in, 12 per box. 8. One box bandages, cotton, plaster impregnated, 6 in, 12 per box. 9. Six heels, orthopedic cast. 10. One pair shears, plaster cast, hand. 11. One saw, plaster cast cutting, hand. 12. Two plastic buckets (nonstandard).
JULIET ALPHA	Orthopedic Cast No. 2	50 lbs	1	<ol style="list-style-type: none"> 1. Three boxes bandages, cotton, plaster impregnated, 3 in., 12 per box. 2. Three boxes bandages, cotton, plaster impregnated, 4 in., 12 per box. 3. Three boxes bandages, cotton, plaster impregnated, 6 in., 12 per box.
JULIET BRAVO	Eye, Ear, Nose, Throat Set.	25 lbs	1	<ol style="list-style-type: none"> 1. One nasal speculum. 2. One myringotome. 3. One box of cotton tip applicators, 100 per box. 4. One box tongue depressors, 100 per box. 5. Two bottles chlorpheniramine maleate (chlortrimeton), 40 mg, 1000 per bottle. 6. Two boxes tetrahydrozoline hydrochloride (tyzine) nose drops, 12 per box. 7. One bottle APC tablets, 1000 per bottle. 8. One bottle ASA, 5-gr tablet, 1000 per bottle. 9. Six bottles codeine, Y2-gr tablet, 100 per bottle. 10. One box MBA eardrops, 12 per box.

Code	Unit designation	Unit wt	No. pks.	Unit data Contents
JULIET DELTA	Depressant Stimulants Unit.	20 lbs	1	<ol style="list-style-type: none"> 11. Two bottle terpine hydrate, 1-lb bottle. 12. One bottle boric acid, 1-lb bottle. 13. Six tubes polymixim B-bacitracin-neomycin ophthalmic ointment, % z-oz tube. 14. Three tubes cortisone ophthalmic ointment, 1/8-oz tube. 15. One mirror, laryngeal. 1. 24 bottles phenobarbital, 30-mg tablets, 100 per bottle. 2. Two bottles, secobarbital, 100-mg capsule, 500 per bottle. 3. Two bottles meprobamate, 400-mg tablet, 500 per bottle. 4. Twelve bottles of dephenhydramine hydrochloride (Benadryl), 50-mg capsule, 100 per bottle. 5. Twelve ampules of amobarbital sodium, sterile intravenous injection, 7%-grain ampule. 6. Two boxes pentylenetetrazol, 100 mg, 3.0-cc vial, 5 per box. 7. Ten bottles of dextroamphetamine, 5.0-mg tablet, 100 per bottle.
JULIET FOXTROT	Tropical Disease Unit	20 lbs	1	<ol style="list-style-type: none"> 1. Six bottles of tetracycline, 250-mg tablets, 100 per bottle. 2. 48 bottles of hexylresorcinol, 200-mg tablets, 20 per bottle. 3. 24 bottles of carbasone, 250-mg tablets, 20 per bottle. 4. Six boxes of stibophen, injection, 64 mg, 5 cc, 10 per box. 5. Twelve bottle of diethylcarbamazine, 50-mg tablet, 100 per bottle. 6. Six bottles of chloroquin, 500-mg tablet, 100 per bottle. 7. Six bottles of primaquine, 25-mg tablet.
JULIET GOLF	Malnutrition Unit	25 lbs	1	<ol style="list-style-type: none"> 1. 36 bottles of decavitamins, 100 per bottle. 2. One bottle of ferrous sulfate, 5-grain tablets, 50 per bottle. 3. Twelve bottles of menadione, 2.0-mg tablets, 50 per bottle. 4. Six bottles of ascorbic acid, 50-mg tablets, 100 per bottle. 5. Six bottles of riboflavin, 1.0-mg tablets, 100 per bottle. 6. Six bottles of Thiamin, 5.0-mg tablets, 100 per bottle. 6. Six bottles of Thiamin, 5.0-mg tablets, 100 per bottle.
JULIET HOTEL	Malaria Unit	20 lbs	1	<ol style="list-style-type: none"> 1. 24 bottles of chloro- 500 mg, 100 per bottle. 2. Twelve bottles of primaquin, 25 mg, 100 per bottle. 3. Two bottles of acetylealicyclic acid, 5 grains, 100 per bottle.
JULIET INDIA	Antibiotics No. 1	25 lbs	1	<ol style="list-style-type: none"> 1. 50 packages of procaine penicillin, 400,000-unit cartridge, 10 per package. 2. Six cartridge syringes. 3. Twelve bottles of tetracycline, 250-mg tablets, 100 per bottle. 4. Twelve bottles chloramphenicol, 215-mg tablets, 100 per bottle.
JULIET JULIET	Antibiotics No. 2	18 lbs	1	<ol style="list-style-type: none"> 1. Two bottles of sulfasoxizole, 500-mg tablets, 1000 per bottle. 2. Twelve bottles of penicillin, 250, 000-unit tablets, 100 per bottle.
JULIET KILO	Antibiotics No. 3	20 lbs	1	<ol style="list-style-type: none"> 1. One box of penicillin, crystalline, 200,000-unit vial, 100 per box.

FM 31-20

Code	Unit designation	Unit wt	No. pks.	Unit data Contents
				2. Three boxes of tetracycline hydrochloride, intravenous, 250-mg, 12 per box. 3. Three boxes of chloramphenicol, intravenous, 100-mg, 12 per box (nonstandard item). 4. Two boxes of water for injection, sterile, 5.0-cc vials, 12 per box.
JULIET LIMA	Mass Immunization Set	48 lbs	1	1. Four trays, instrument, with cover. 2. One sterilizer, surgical instrument, fuel heated. 3. Six hand towels. 4. Two bowls, plastic (nonstandard item). 5. Six cakes of soap, surgical, 4-oz cake. 6. Six containers of detergent, surgical, 5-oz container. 7. Six bottles of benzethonium chloride tablets, 80 per bottle. 8. Two Foerster forceps. 9. Two cans of alcohol, pint can. 10. Six bottles of Benzalkonium chloride, 25-cc bottle. 11. Six packages of gauze pads, 2 x 2 in. 12. Two packages of cotton, purified, rolled. 13. 48 syringes, 5.00 cc. 14. Twelve syringes, 10.0-cc. 15. Four syringes, 20.0-cc. 16. Two books, record, ruled. 17. Six pencils. 18. One package of gauze pads, 4 x 4 in. 19. Twelve boxes needles, gauge 23, 12 per box. 20. Twelve boxes needles, gauge 22, 12 per box. 21. Three boxes needles, gauge 20, 12 per box. 22. Three boxes needles, gauge 18, 12 per box.
JULIET MIKE	Diphtheria Immunization <i>Notes 4 and 5</i>	20 lbs	1	Diphtheria-pertussis-tetanus vaccine, 300 ampules.
JULIET NOVEMBER	Tetanus Immunization <i>Notes 4 and 5</i>	20 lbs	1	300 ampules of tetanus toxoid, 5-cc ampule.
JULIET OSCAR	Typhoid Immunization <i>Notes 4 and 5</i>	18 lbs	1	50 vials of typhoid-paratyphoid vaccine, 50-cc vial.
JULIET PAPA	Smallpox Immunization <i>Notes 4 and 5</i>	11 lbs	1	150 boxes of smallpox vaccine, 10 per box.
JULIET QUEBEC	Typhus Immunization <i>Notes 4 and 5</i>	30 lbs	1	150 vials of typhus vaccine, 20-cc vial.
JULIET ROMEO	Cholera Immunization <i>Notes 4 and 5</i>	26 lbs	1	Cholera vaccine, 20-cc vial.
JULIET SIERRA	Poliomyelitis Immunization. <i>Notes 4 and 5</i>	30 lbs	1	300 bottles of poliomyelitis vaccine, 9.0-cc bottle.
JULIET TANGO	Yellow Fever Immunization. <i>Notes 4 and 5</i>	11 lbs	1	75 ampules of yellow fever vaccine, 20-dose ampule.
JULIET UNIFORM	Plague Immunization <i>Notes 4 and 5</i>	22 lbs	1	150 vials of plague vaccine USP, 20-cc vial.
JULIET VICTOR	Rabies Kit <i>Notes 4 and 5</i>	18 lbs	1	1. 20 packages of rabies vaccine, USP, 14-dose package. 2. 80 ampules of antirabies serum, 1,000-unit ampules.
JULIET WHISKEY	Tetanus Antitoxin <i>Notes 4 and 5</i>	11 lbs	1	1. 100 bottles of tetanus antitoxin, 1,500 units per bottle. 2. 20 bottles of tetanus antitoxin, 20,000 units per bottle.

Code	Unit designation	Unit wt	No. pks.	Unit data Contents
JULIET XRAY	Gamma Globulin <i>Notes 4 and 5</i>	10 lbs	1	Ten bottles of globulin, immune serum, 10-cc bottle.
<i>Notes.</i>				
1. The field surgery set may be augmented with:				
a. Medical dispensary set.				
b. Supplemental supply set.				
2. Quartermaster supply set.				
3. Albumin dCCO not withstand freezing.				
4. Immunizations for 1,500 personnel.				
5. Vaccine requires refrigeration.				
6. Many medical packages weigh considerably less than 50 pounds. The supply agency adds items which are in constant demand to fill out lighter medical packages. Examples are: blankets, extra bandages, and dressings.				
7. Chloroquine is deleted from packages used in nonmalaria areas.				

Section IV. WEAPONS AND AMMUNITION

Code	Unit designation	Unit wt	No. pks.	Unit data Contents
MIKE ALPHA	Automatic Rifle (3)	250 lbs	3	1. One rifle, automatic, cal .30, M1918A2 (20 lbs). 2. Thirteen magazines, AR (6 lbs). 3. One belt, ammunition, AR (2 lbs). 4. 480 rds; cartridge, AR cal .30, 20-rd cartons, packed in ammunition can MB (2 cans, 32 lbs). 5. One spare parts and accessory packet (2 lbs) <i>Note 1.</i>
MIKE BRAVO	Carbine (20)	240 lbs	4	1, 960 rds, cartridge, AP, cal .30, 20-rd cartons, packed in ammunition can M8 (4 cans, 64 lbs). 1. Five carbines, cal .30, M-2 (30 lbs). 2. Fifty magazines, carbine, 30-rd capacity (4 lbs). 3. 800 rds, cartridge, ball, carbine, cal .30, M-1, packed in ammunition can M6 (1 can, 25 lbs).
MIKE CHARLIE	Light Machinegun (2)	484 lbs	2	1. One machinegun, cal .30, M1919A6, w/shoulder stock and bipod (37 lbs). 2. 275 rds, cartridge, linked, cal .30 4AP1TR, packed in ammunition box M1A1 (1 box, 22 lbs). 3. One spare parts and accessory packet (2 lbs). <i>Note 1.</i>
MIKE DELTA	Mortar (3)	320 lbs	1 5	550 rds, cartridge, linked, cal .30, 4AP1TR, packed in ammunition box M1A1 (2 boxes, 44 lbs). 1. One mortar, 60-mm, complete with base plate, mount, and sight (46 lbs). 2. One base plate, M1 (4.5 lbs). 3. One spare parts and accessory packet (2 lbs). <i>Note 1.</i> 4. Fifteen rds, shell, HE, 60-mm mortar, M49A2, packed in individual containers (53 lbs).
MIKE ECHO	Pistol (12)	90 lbs	2	1. Six pistols, automatic, cal .45, M1911AI (15 lbs). 2. Eighteen magazines, pistol, cal .45 (5 lbs). 3. 800 rds, cartridge, ball, cal .45 packed in ammunition box M5 (1 box, 29 lbs). 4. Six shoulder stocks, pistol (6 lbs).
MIKE FOXTROT	Recoilless Rifle (2)	406 lbs	2	1. One rifle, 57 mm, recoilless, T15E13 or M18, complete for shoulder firing, including telescope sight, M86C (45 lbs). 2. One cover, overall, M123 (3 lbs). 3. One spare parts and accessory packet (5 lbs). <i>Note 1.</i>

FM 31-20

Code	Unit designation	Unit wt	No. pks.	Unit data Contents
			6	Eight rds, cartridge, HEAT, 57-mm RR, M307, packed in individual containers (50 lbs).
MIKE GOLF	Rocket Launcher (3)	330 lbs	3	<ol style="list-style-type: none"> 1. One launcher, rocket, 3.5-inch, M20A1 or M20A1B1 (14 lbs). 2. Four rds, rocket, HEAT, M28A2, packed in individual containers (38 lbs). 3 Six rds, rocket, HEAT, 3.5-in, M28A2, packed in individual containers (57 lbs).
MIKE HOTEL	Sniper Rifle (6)	165 lbs	3	<ol style="list-style-type: none"> 1. Two rifles, cal.30, M1C, complete (23 lbs). 2. 480 rds, cartridge, AP, cal .30, 8-rd clips in, bandoleers, packed in ammunition can, M-8 (2 cans, 32 lbs).
MIKE INDIA	Submachinegun (9)	175 lbs	3	<ol style="list-style-type: none"> 1. Three submachineguns, cal .45, M3A1 (21 lbs). 2. Nine magazines, submachinegun, 30-rd, capacity (7 lbs). 3. 600 rds, cartridge, ball, cal .45, packed in ammunition box, M5 (1 box, 29 lbs).
MIKE JULIET	General Unit Note 2	2560 lbs	46	<ol style="list-style-type: none"> 1. One automatic rifle unit, 3 AR's. 2. One carbine unit, 20 carbines. 3. One light machinegun unit, 2 LMG's. 4. One mortar unit, 1 mortar. 5. One pistol unit, 12 pistols. 6. One recoilless rifle unit, 2 RR's. 7. One rocket launcher unit, 3 RL's. 8. One sniper rifle unit, 6 rifles. 9. One submachinegun unit, 9 SMG's.
NOVEMBER ALPHA	Carbine Ammunition No. 1 (6400 rds).	200 lbs	4	1600 rds, cartridge, carbine, ball, cal .30, 50-rd, cartons, packed in ammunition can, M6 (2 cans, 50 lbs).
NOVEMBER BRAVO	Carbine Ammunition No. 2 (6400 rds).	200 lbs	3	1600 rds, cartridge, carbine, ball, cal .30, 50-rd cartons, packed in ammunition can, 96 (2 cans, 50 lbs).
		200 lbs	3	<ol style="list-style-type: none"> 1. 800 rds, cartridge, carbine, ball, cal .30, 50-rd cartons, packed in ammunition can, M6. (25 lbs). 2. 800 rds, cartridge, carbine, tracer, cal .30, 50-rd cartons, packed in ammunition can, M6 (25 lbs).
NOVEMBER CHARLIE	Rifle Ammunition No. 1 (2880 rds).	192 lbs	3	960 rds, cartridge, AP, cal .30, 20-rd cartons, packed in ammunition can, M8 (4 cans, 64 lbs).
NOVEMBER DELTA	Rifle Ammunition No. 2 (2880 rds).	192 lbs	2	960 rds, cartridge, AP, cal .30, 20-rd cartons, packed in ammunition can, M8 (4 cans, 64).
			1	<ol style="list-style-type: none"> 1. 240 rds, cartridge, AP, cal .30, 20-rd cartons, packed in ammunition can, M8 (1 can, 16 lbs). 2. 720 rds, cartridge, tracer, cal .30, 20-rd cartons, packed in ammunition can, M8 (3 cans, 48 lbs).
NOVEMBER ECHO	Rifle Ammunition No. 3 (1920 rds).	128 lbs	2	960 rds, cartridge, AP, cal .30, 8-rd clips in bandoleers, packed in ammunition can, M8 (4 cans, 64 lbs).
NOVEMBER FOXTROT	Machinegun Ammunition No. 1 (220 rds).	176 lbs	4	550 rds, cartridge, linked, cal .30, 4AP1TR, packed in ammunition box, M1A1 (2 boxes, 44 lbs).
NOVEMBER GOLF"	Machinegun Ammunition No. 2 (2200 rds).	172 lbs	4	550 rds, cartridge, linked, cal .30, 2AP-2API-1TR, packed in ammunition box, M1A1 (2 boxes, 44 lbs).
NOVEMBER HOTEL	Pistol Ammunition (2400 rds).	232 lbs	4	1200 rds, cartridge, ball cal .45, 50-rd cartons, packed in ammunition can, M5 (2 cans, 58 lbs).
NOVEMBER INDIA	Recoilless Rifle Ammunition No. 1 (48 rds).	300 lbs	6	Eight rds, cartridge, HEAT, 57-mm RR, M307, packed in individual containers (50 lbs).

Code	Unit designation	Unit wt	No. pks.	Unit data Contents
NOVEMBER JULIET	Recoilless Rifle Ammunition No. 2 (48 rds).	300 lbs	6	Eight rds, cartridge, smoke, WP, 57-mm RR, M308, packed in individual containers (50 lbs).
NOVEMBER KILO	Recoilless Rifle Ammunition No. 3 (48 rds).	300 lbs	6	Eight rds, cartridge, HE, 57-mm RR, M306, packed in individual containers (50 lbs).
NOVEMBER LIMA	Mortar Ammunition No. 1 (60 rds).	121 lbs	4	Fifteen rds, shell, HE, 60-mm mortar, M49A2, packed in individual containers (53 lbs).
NOVEMBER MIKE	Mortar Ammunition No. 2 (24 rds).	110 lbs	2	Twelve shells, smoke WP, 60-mm mortar, M302, packed in individual containers (55 lbs).
NOVEMBER NOVEMBER	Mortar Ammunition No. 3 (24 rds).	96 lbs	2	Twelve shells, illuminating, 60-mm mortar, packed in individual containers (55 lbs).
NOVEMBER OSCAR	Rocket Launcher Ammunition (48 rds).	456 lbs	8	Six rds, rocket, HEAT, 3.5-inch, M28-1.2, packed in individual containers (57 lbs).
NOVEMBER PAPA	Grenade No. 1 (50 rds)	60 lbs	1	50 grenades, hand, fragmentation, M26 (T38E1), packed in individual containers (60 lbs).
NOVEMBER QUEBEC	Grenade No. 2 (50 rds).	45 lbs	1	50 grenades, hand, illuminating, MK1, packed in individual containers (45 lbs).
NOVEMBER ROMEO	Pyrotechnic Signal No. 1 (60 rds).	15 lbs	1	<ol style="list-style-type: none"> Twenty signals, ground, red star, parachute, M126 (T72), packed in individual containers (5 lbs). Twenty signals, ground, white star, parachute, M127 (T73), packed in individual containers (5 lbs). Twenty signals, ground, green star, cluster, M127 (T71), packed in individual containers (5 lbs). One projector, pyrotechnic.
NOVEMBER TANGO	Pyrotechnic Signal No. 2 (60 rds).	15 lbs	1	<ol style="list-style-type: none"> Twenty signals, green smoke, parachute, M128 (T74), packed in individual containers (5 lbs). Twenty signals, red smoke, parachute, M129 (T75), packed in individual containers (5 lbs). Twenty signals, yellow smoke, streamer, M139 (T76), packed in individual containers (5 lbs). One projector, pyrotechnic.

Notes.

- The spare parts and accessory packet includes items most subject to damage or wear and tools required for the care and maintenance of the weapon.
- The general unit contains the basic weapons for a guerrilla platoon plus weapons peculiar to weapon platoons.
- General:
 - Weapon units contain cleaning and preserving material such as rods, lubricants, and patches.
 - Ammunition is stripped of its outer shipping containers and delivered in its inner weatherproof container.

Section V. QUARTERMASTER

Code	Unit designation	Unit wt	No. pks.	Unit data Contents
QUEBEC ALPHA	Clothing and Equipment-40 personnel. Notes 1 and 2	840 lbs	20	Two-man unit consisting of <ol style="list-style-type: none"> Two belts, pistol, OD. Two blankets, OD. Two pair boots, combat. Two coats, man's water-resistant sateen (field jacket). Two canteens, dismounted, w/cup and cover. Two caps, field, poplin. Two ponchos, coated nylon, OG-107. Two pouches and packets, first aid.

FM 31-20

Code	Unit designation	Unit wt	No. pks.	Unit data Contents
				9. Two pair socks, wool. 10. Two pair suspenders, trousers, OD-107. 11. Two pair trousers, men's, cotton, water-resistant sa- teen (field trousers) (42 lbs).
QUEBEC	Clothing Equipment- 100 personnel. <i>Notes 1 and 2</i>	2100 lbs	50	Consists of 50 two-man units.
ROMEO ALPHA	Rations, Indigenous Personnel-100 men. <i>Note 3</i>	1750 lbs	35	High fat content meat or canned fish, poultry, sugar, to- bacco, salt, coffee, or tea, grain, flour or rice, accessory items, and water purification tablets (50 lbs).
ROMEO BRAVO	Rations, Indigenous Personnel-500 men. <i>Note 3</i>	8500 lbs	170	High fat content meat or canned fish, poultry, sugar, to- bacco, salt, coffee, or tea, grain, flour or rice, accessory items, and water purification tablets (50 lbs).
ROMEO CHARLIE	Special Rations-96 men <i>Note</i>	136 lbs	4	24 food packets, survival, (arctic or tropic) (34 lbs).
ROMEO DELTA	Special Rations-96 men	192 lbs	8	12 individual combat meals (24 lbs).
ROMEO ECHO	Packet, barter <i>Note 5</i>	500 lbs	10	50-lb packages.

Notes.

- Items vary with the climatic zone and season. This package is based on the temperature zone for spring, summer, and fall seasons. For winter, add gloves and 1 extra blanket per individual.
- Clothing sizes are issued as small, medium, and large. Clothing is matched to size of boots. Boot size is included in the message requesting the clothing package. The packaging agency dictates matching of boot and clothing sizes based on experience factors applicable to the operational area.
- Special rations for indigenous personnel are determined by the area of operations. Allotment is 15 lbs per individual per month.
- The food packet varies with the climatic zone.
- Contents to be determined by the area of operations.

Section VI SIGNAL

Code	Unit designation	Unit wt	No. pks.	Unit data Contents
UNIFORM ALPHA	Batteries No. 1	48 lbs	1	6 BA 279/U for AN/PRC-6
UNIFORM BRAVO	Batteries No. 2	50 lbs	1	20 BA 270/U for AN/PRC-6.
UNIFORM CHARLIE	Batteries No. 3	53 lbs	1	1. 15 BA 317/U (15 lbs). 2. 100 BA 32 (25 lbs). 3. 5 BA 1264/U (10 lbs). 4. 2 BA 58/U (1 lb). 5. 2 BA 261/U (2 lbs).
UNIFORM DELTA	Field Wire (1 mile)	56 lbs	1	1. One mile wire, WD-1, in dispensers, MX 306-two dis- pensers, total (52 lbs). 2. One Tool Equipment Set, TE-33 (2 lbs). 3. Tape, friction, 2 rolls (1 lb). 4. Tape, rubber, 1 roll (1 lb).
UNIFORM ECHO	Flashlights (20)	45 lbs	1	1. 20 flashlights (15 lbs). 2. 120 batteries, BA 30 (30 lbs).
UNIFORM FOXTROT	Power Unit UGP-12 (1)	60 lbs	1	1. One engine generator (15 lbs). 2. 5 gals gasoline (42 lbs). 3. One qt oil, SAE 10 or 30 (3 lbs).

Code	Unit designation	Unit wt	No. pks.	Unit data Contents
UNIFORM GOLF	Radio Set AN/PRC-10 (1)	42 lbs	1	1. One AN/PRC-10, complete (18 lbs). 2. Three batteries BA 279/U (24 lbs).
UNIFORM HOTEL	Radio Set AN/PRC-6 (2) <i>Note 1</i>	43 lbs	1	1. Two AN/PRC-6, complete (8 lbs). 2. 14 batteries, BA 270/U (35 lbs).
UNIFORM INDIA	Telephones (4)	42 lbs	1	1. Four telephones, battery powered (38 lbs). 2. 16 batteries, BA 30 (4 lbs).
UNIFORM JULIET	Switchboard (1)	42 lbs	1	1. One Switchboard, SB 22, complete (40 lbs). 2. Eight batteries, BA 30 (2 lbs).
UNIFORM KILO	Signal Equipment Battalion. <i>Note 1</i>	1284 lbs	26	1. 2 flashlight units (90 lbs). 2. 8 radio set units, AN/PRC-6 (344 lbs). 3. 5 radio set units, AN/PRC-10 (210 lbs). 4. 200 batteries, BA 30 (50 lbs). 5. 7 battery units, BA 270/U (350 lbs). 6. 5 battery units, BA 279/U (240 lbs).
UNIFORM LIMA	Signal Equipment Area Command, HQ and HQ Company.	1599 lbs	31	1. 1 flashlight unit (45 lbs). 2. 2 radio set units, AN/PRC-10 (84 lbs). 3. 1 switchboard unit, SB-22 (42 lbs). 4. 3 telephone units (126 lbs) 5. 20 wire units (1120 lbs). 6. 150 batteries, BA 30 (38 lbs). 7. 3 battery units, BA 279 (144 lbs).
UNIFORM MIKE	Radio Set AN/PRC-109 (1).	92 lbs	1	1. Radio Transmitter, RT-3 (9 lbs). 2. Radio Receiver, RR-2 (10 lbs). 3. Power Supply, RP-1 (25 lbs). 4. Operating spares and accessories (6 lbs).
UNIFORM OSCAR	Telephones Sound Powered.	45 lbs	1	5. Generator, G-43/G, complete (22 lbs). 6. Adapter, RA-2 (4 lbs). 7. 16 batteries, BA 317/U (16 lbs).
UNIFORM PAPA	Switchboard Emergency	108 lbs	1	1. 3 Reel Equipment, CE-11 (15 lbs). 2. 3 spools, DR-8, with 3/8 mi WD-1/TT (30 lbs).
UNIFORM QUEBEC	Radiac Detector Set	40 lbs	1	1. Wire WD-1/TT, 1 mile, 2 dispensers (52 lbs). 2. Wire WD-1/TT, 1 mile, 2 dispensers (52 lbs). 3. Switchboard, 993/GT, 1 ea (4 lbs).

Notes.

1. Appropriate sets of crystals packed with AN/PRC-6 radios to allow change of frequencies.
2. General-Cold weather batteries substituted when appropriate to season and area.

Section VII SPECIAL

Code	Unit designation	Unit wt	No. pks.	Unit data Contents
XRAY ALPHA	River Crossing Unit No. 1	50 lbs	1	1. Five life rafts, inflatable, one-person capacity, with CO2 cylinder and accessory kit. 2. Five life preservers, yoke with gas cylinder. 3. Five paddles, boat, 5 feet long.
XRAY BRAVO	River Crossing Unit No. 2	90 lbs	2	1. One life raft, inflatable, seven-person capacity, with CO2 cylinder and accessory kit. 2. Seven life preservers, yoke with gas cylinders. 3. Four paddles, boat, 5 feet long.

APPENDIX G

EXAMPLES OF MASTER TRAINING PROGRAM FOR RESISTANCE FORCES

Section I. EXAMPLE OF MASTER TRAINING PROGRAM FOR A
10-DAY LEADERSHIP SCHOOL

Following is an example of a 10-day master training program for a leadership school for selected indigenous personnel.

Subject	Scope	HOURS			
		Day	Night	Total	PE
Map Reading and Compass	Same general scope as in 3U-day program. Include how to read scale and coordinates.	4	2	6	(4)
Field Aid, Field Sanitation, and Survival	Same general scope as in 30-day program. Emphasis ON field sanitation and responsibility of commanders.	4		4	(1)
Individual Tactical Training (Day and Night)	Same general scope as in 30-day program. Emphasis on security of operational bases, movements, formations, control measures at night, and duties and responsibilities of commanders.	10	9	19	(16)
Patrols, Small-Unit Tactics, Raids, Ambushes (Day and Night)	Same general scope as in 30-day program. Emphasis on planning, organization, preparation, command, control, security, and execution of patrols, ambushes and raids.	10	20	30	(25)
Weapons (U.S. and Foreign)	Same general scope as in 30-day program. Familiarization firing. Primary emphasis on employment of weapons:	8	2	10	(7)
Intelligence	Same general scope as in 30-day program. Primary emphasis on intelligence gathering methods, systems, and counterintelligence. Night visions.	6	4	10	(8)
Air Operations	Same general scope as in 30-day program. Primary emphasis on selection and reporting of DZ's organization of reception committee, duties, and responsibilities of commanders.	6	8	14	(11)
Demolition	Familiarization with demolition procedures; demonstrating, planning, safety.	5		5	(3)
Communications	Communication means, available systems, communication security, simple cryptographic systems.	4		4	(2)
Leadership Principles and Techniques	Military leadership, traits, principles, indications, actions, and orders. Responsibilities and duties of the commander. Human behavior problem areas and problem solving process. Selection of junior leaders. Span of control and chain of command. Combat leadership.	6		6	(4)
Tactics and Operations	Characteristics of guerrilla warfare, guerrilla operations, principles, capabilities, and limitations, organization of operational bases, security, civilian support, logistics, counterintelligence, combat employment, missions, tactical control measures, target selection, mission support site, and defensive measures. Responsibilities and duties of indigenous leaders.	7	5	12	(9)
Total hours in master program		70	50	120	(90)

FM 31-20

Notes.

1. Identify those personnel whose leadership ability, knowledge, skill, or desire is below acceptable standards.
2. One additional day may be scheduled upon completion of leadership school for coordinating and planning future operations.
3. The 10-day master training program for the leadership school was developed to provide the indigenous leaders and potential leaders with a general knowledge of the subjects to be taught to all indigenous personnel. The primary emphasis was placed on the role of the leader or commander in order to prepare these leaders to supervise the activities of their subordinates. In this example it is assumed that most of these personnel have had prior military service and, therefore, should already possess a basic knowledge of the subjects to be covered. Upon completion of the 10-day leadership school, the leaders will return to their unit of work and train with their units, thus expanding their own knowledge of the subject covered.
4. A suggested arrangement of scheduling is as follows:
 - 29 April-4 May: Preparation for training and selection of leaders.
 - 5-14 May: Leadership training.
 - 16 May-14 June: Troop training.

Section 11. EXAMPLE OF A 30-DAY MASTER TRAINING PROGRAM

Following is an example of a 30-day master training program which may be used as a basis for preparing individual master training programs for each separate indigenous unit.

Subject	Scope	HOURS			
		Day	Night	Total	PE
Map Familiarization and Use of Compass	How to read a map, orientation of map with compass, how to locate oneself, determine azimuth, and day and night use of compass.	14	10	24	(20)
First Aid, Field	Basic treatment of wounds, prevention of infection, simple bandaging, pressure points, prevention of shock, splints, litter construction, and use; field sanitation measures regarding water supply, waste disposal, and personal hygiene.	6	4	10	(7)
Individual Tactical Training (Day and Night)	Camouflage, cover, concealment, movement, observation, reporting, discipline, sounds, hand-to-hand combat, combat formations, night movement, night camouflage, preparation of equipment and clothing, night visions, sounds and observation, night security and formations, message writing, immediate action drills, and security of operational bases.	26	9	46	(41)
Patrols, Small-Unit Tactics, Raids, Ambushes (Day and Night)	Planning, organization, preparation, formations, commands, control, security, communications and reporting of patrols; objectives, target selection, organization of raid forces; reconnaissance and intelligence; planning, preparation, movement, deployment, conduct of raids, disengagement, and withdrawal of raiding forces; characteristics, definition, objectives of ambushes, selection of ambush sites, organization of ambush forces, phases of ambush operation, planning, preparation movement, deployment, execution, disengagement, and withdrawal of ambush forces. All subjects covered for both day and night operations.	26	44	70	(60)
Weapons (Foreign and U.S.)	Carbine, M1; SMG; AR; Pistol, .45; machineguns; foreign weapons to include care and cleaning, loading, aiming, stoppages, range firing; familiarization firing of all weapons; and day and night firing.	28	10	38	(32)
Intelligence	Security measures, how to obtain and report information, captured documents and material; interrogation and handling of prisoners; and counterintelligence procedures.	8		8	(5)
Air Operations	Establishment of drop zone, marking and identification of DZ, security of DZ, receiving and transporting supplies and equipment.	16	16	31	(2b)
Demolitions	Nonelectric and electric firing systems, calculation and placement of charges, rail and bridge destruction, booby traps, and expedient devices.	21	8	29	(24)

Subject	Scope	HOURS			
		Day	Night	Total	PE
Squad Tests	Review and exercise covering all instruction.	23	16	39	(37)
Platoon Tests	Review and exercise covering all instruction.	42	24	66	(63)
Total hours in master training program.		210	160	360	(314)

Notes.

1. Maximum number of trained, indigenous personnel will be used to assist in training others. Identify those personnel who may qualify as potential cadre or potential leaders.
2. Intelligence, compass, map familiarization, observing and reporting, tactical training of the individual, patrolling, weapons, demolitions, and field sanitation will be integrated whenever possible.
3. Classes to be broken down into platoon-size groups whenever possible.
4. Practical work exercise, demonstrations, and conferences to be used in lieu of lectures to the maximum extent possible.
5. Stress small-unit training (patrol, squad, and platoon). Develop teamwork and esprit de corps.

Section 111. DATA CARD-PERSONNEL AND TRAINING RECORD

The following is an example of a personnel data card that may also serve as a training record. This simplifies and holds to a minimum the number of records that may be required to be maintained in an operational area. The type and amount of information to be recorded will vary with each operational area to include the degree of security to be afforded resistance personnel.

1. Personnel Data:

a. UWOA	FULL NAME	SN
b. RANK	DOB	POB
c. UNIT	DATE OF ENLISTMENT	
d. LAST CIVILIAN ADDRESS		
e. CIVILIAN OCCUPATION		
f. LANGUAGES		
g. SPECIAL SKILLS AND APTITUDES (CIVILIAN)		
h. FINANCIAL DATA:		
	DATE	AMOUNT PAID
	DATE	AMOUNT PAID
	DATE	AMOUNT PAID
i. LEFT THUMB PRINT	RIGHT THUMB PRINT	
j. PHOTOGRAPH		
k. DATE OF DISCHARGE OR DEMOBILIZATION		

FM 31-20

2. Training Record:

a. Basic training:

SUBJECTS DATES

b. Advanced/specialist training:

c. MOS specialties:

AREA OF INTEREST DEGREE OF PROFICIENCY

d. Weapon qualifications:

WEAPON DEGREE OF SKILL

e. Combat operations:

f. Awards and decorations:

g. Wounds or injuries:

Type Date

8. Disciplinary actions:

Date Offense Type of Trial Punishment

APPENDIX H

PILOT BALLOON (PIBAL) WINDS ALOFT WIND DRIFT SYSTEM

Section 1. GENERAL

H-1. Introduction

a. The austere environment of a Special Forces operation dictates that supporting weather equipment be compact, lightweight, durable, and simple to use and maintain. The requirement for a relatively simple winds-aloft measuring capability is met by a system referred to as the pilot balloon (PIBAL) wind drift system. This system is used to determine drift effects that wind directions and speeds will produce on parachutists or bundle loads between a specific drop altitude and the drop zone's surface.

b. This appendix is a compilation of minimum required data to support use: of the PIBAL system. It provides

- (1) Pertinent information to simplify procedures and provide guidance in obtaining component equipment of the PIBAL wind system.
- (2) Description of the component parts.
- (3) Operating instructions for the kit components, to include instructions for using a 10-gram helium system and a 30-gram hydrogen system.

Section II. EQUIPMENT AND COMPONENT LISTING

H-2. Ten-Gram Helium System

<i>FSN</i>	<i>Name/Nomenclature</i>	<i>Qty</i>	<i>Unit</i>
6676-526-8244	Transit pocket compass (Brunton)*	1	ea
1650-664-5376	Cylinder, helium, 200 cu in (complete)	2	ea
6660-663-7933	Balloon, metro, black (ML 157-A)	25	ea
	Locally procured string, measuring (57"/74")	2	ea
4020-321-5878	Twin, tie-off (RP-15)	1	lb
	Locally produced conversion chart (effective wind)	3	ea
6645-250-4680	Stop watch (optional)	1	ea
6660-924-2012	Lighting unit, PIBAL (ML 608/AM)	16	ea
6680-833-7010	Wind meter (Dwyer)	1	ea
6230-264-8261	Flashlight, security (TL-122-D)	1	ea
6680-620-6725	Regulator (ML-528) (optional)	1	ea
	Locally produced transfer assembly (pigtail) (optional)	1	ea
5120-449-8083	Wrench (10" adjustable) (optional)	1	ea
8465-782-3248	Rucksack, military	1	ea

Notes.

The transit pocket compass is not necessary. A simple, angle measuring device, made of light aluminum, may be fabricated by using unite if the angles are accurate (see fig H-9).

*"" Indicates support equipment necessary to transfer helium from large to small cylinders. However, helium may be transferred from larger containers by "cascading" or equalization of pressure. The amount of helium transferred using this system is adequate for two balloons. This coat does not include labor involved in assembling equipment. The coat of helium is negligible, 1% per small cylinder.

H-3. Thirty-Gram Hydrogen System

<i>FSN</i>	<i>Name/Nomenclature</i>	<i>Qty</i>	<i>unit</i>
6675-526-8244	Transit pocket compass (Brunton)	1	ea
6660-408-4559	Charge, calcium hydride (ML-304/TM)	18	ea
6660-526-6041	Balloon, metro, black (ML-51A)	25	ea
3655-408-4669	Generator, hydrogen (ML-303/TM)	1	ea
4020-231-5878	Twine, tie-off (RP-15)	11	lb
Locally produced conversion chart (effective wind)		3	ea
6645-250-4680	Stop watch (optional)	1	ea
6660-924-2012	Lighting unit, PIBAL (ML 608/AM)	15	ea
6680-833-7010	Wind meter (Dwyer)	1	ea
6230-264-8261	Flashlight, security (TL-122-D)	1	ea
8465-782-3248	Rucksack, military	1	ea

Section III. DESCRIPTION AND OPERATION OF SYSTEMS

H-4. General

In determining the system to be used, planners should consider the following advantages and disadvantages of each system. This list is not all inclusive, but contains the major points that, in most instances, provide the answer to what system is best suited to an operation.

a. Helium System:

(1) *Advantages:*

- (a) More accurate than hydrogen, giving a slower rate of ascent, and is not erratic in flight.
- (b) Helium is not flammable.
- (c) Small, one-time helium bottles may be used, and are lightweight.

(2) *Disadvantages:*

- (a) Small lightweight containers, once used must be refilled or disposed.
- (b) In remote areas helium will not be available.
- (c) Resupply of either larger containers or one-time small containers must be constant.
- (d) Containers are bulky and heavy for handling and storage.
- (e) In remote areas, transfer of helium from larger containers to smaller containers must be made by the "pressure equalization method," and this will result in loss of helium since you cannot successfully drain a large tank.

b. Hydrogen System.

(1) *Advantages:*

- (a) Less expensive.
- (b) Chemicals to produce hydrogen are available in the U.S. military inventory.
- (c) Chemical containers are small, lightweight, and disposable.

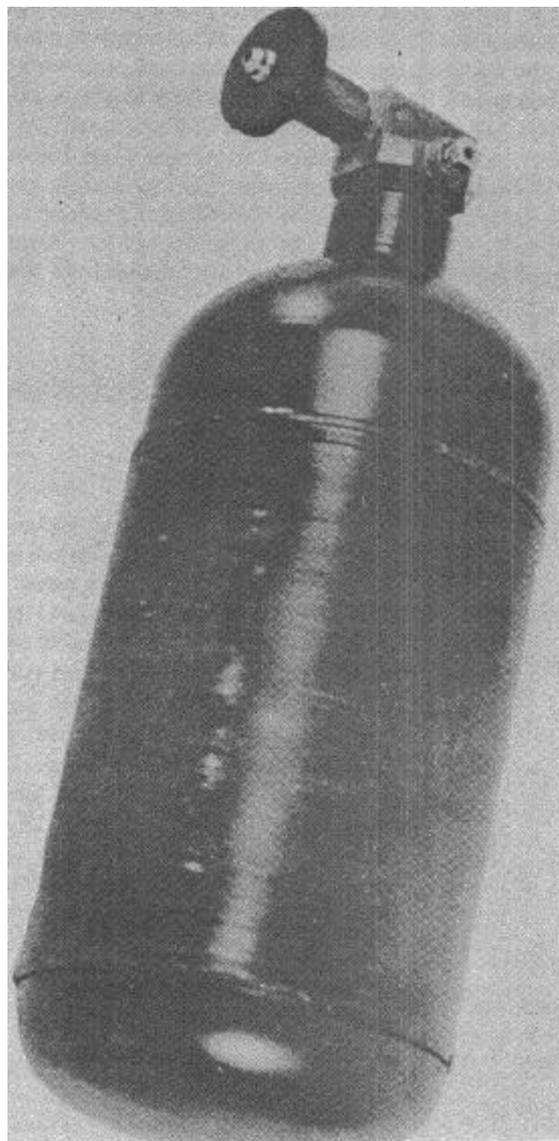


Figure H-1. Helium cylinder (200 cubic inches).

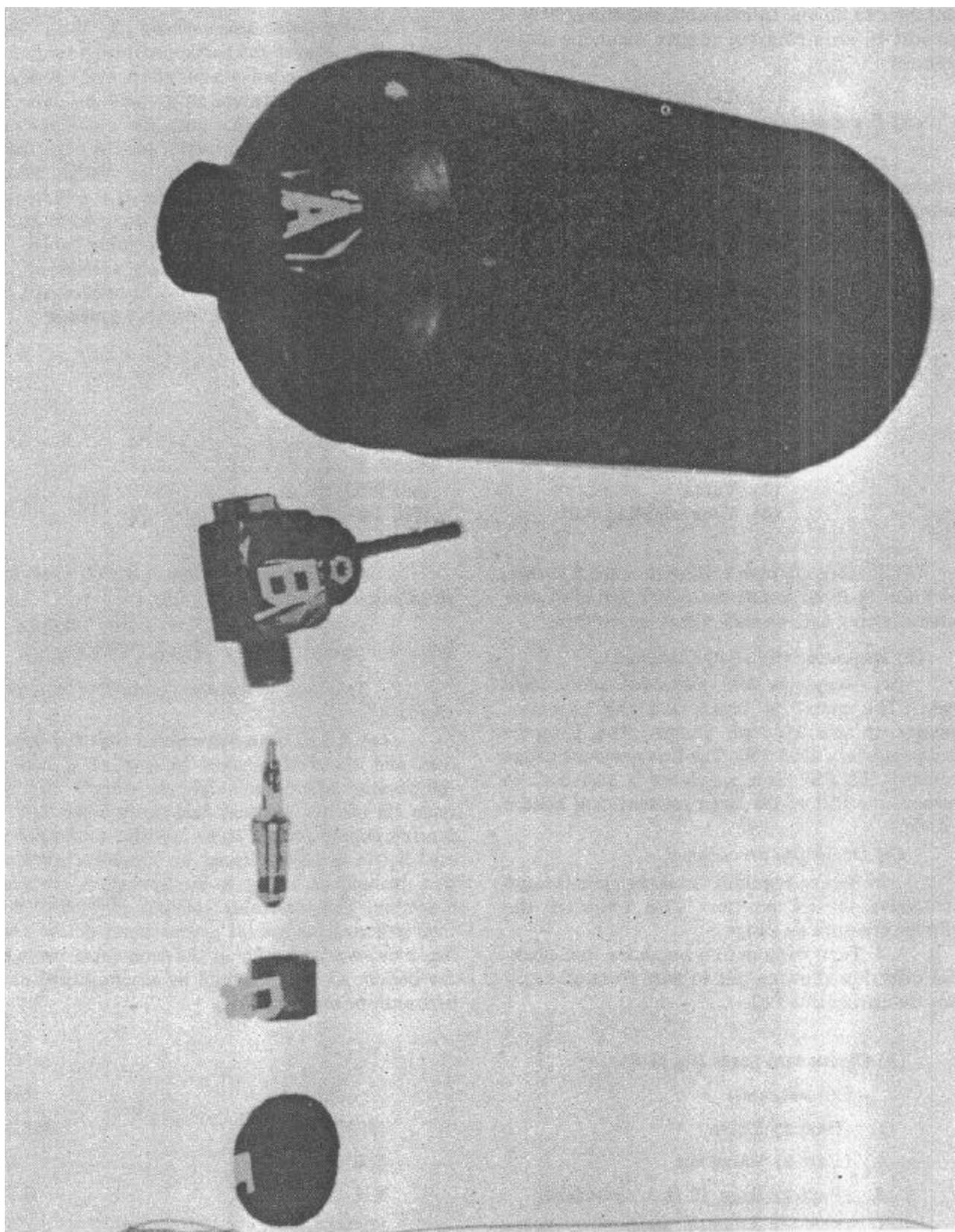


Figure H-2. Component parts of helium cylinder (200 cu in).

(d) The only requirement to produce hydrogen with the chemical is water.

(e) There is enough chemical in one container to fill one balloon and, therefore, time is not lost in acquiring the proper diameter measurement.

(2) *Disadvantages:*

(a) Constant resupply of chemicals is required although each container weighs approximately 17 ounces.

(b) Hydrogen is highly inflammable.

(c) In dry environments, water would be a problem.

b. *Components (fig H-2).*

<i>Nomenclature</i>	<i>FSN</i>	<i>Cost</i>
(1) Cylinder (200 cu in)	1650-664-5376	\$46.00
(2) Valve adapter	4820P 870414	39.14
(3) Valve	482PWK802644	15.00
(4) Tube coupling nut	4730-529-5256	.52

(5) Rubber adapter (circumference 2 inches, thickness 1/4 inch) locally manufactured to fit over valve allowing balloon neck direct connection.

(6) Regulator (fig H-3) (optional).

(a) Regulates and measures compressed gases. The metal is brass and the regulator consists of two 1 1/2-inch gauges. The pressure gauge registers 4000 PSI. The line pressure gauge registers 200 PSI. This regulator is also used to measure the PSI of the large conventional helium cylinder.

(b) Operating procedures.

1. Secure regulator to large cylinder and turn valve to ON position. This indicates the cylinder pressure on gauge.

2. Turn wing nut on regulator in a clockwise direction allowing gas to pass through regulator indicating line PSI.

(b) Component parts (fig H-5).

<i>Nomenclature</i>	<i>FSN</i>	<i>Cost</i>
1. (Part 1) Valve	4820P802644	\$15.50
2. (Part 2) Valve nut	4730-529-5256	.52
3. (Part 3) Hose (9 ft, w/adapters)	MIL-H-008794	3.72
4. (Part 4) Adapter, steel	4730-187-0842	.08
5. (Part 5 & 6) Adapter	4730-052-0842	4.10

H-5. Helium System

a. Cylinder (200 cubic inches) (fig H-1). This small, shatterproof gas bottle provides a jumpable helium source for balloon inflation. Cylinders are not equipped with valves as a complete unit. To obtain valves compatible with the cylinders and suitable for balloon inflation requires procurement of certain components as listed below. Assembly of the component parts of the jumpable cylinder should be accomplished by a hydrostatic shop since the valve-tank assembly must be hydrostatically tested. Completely assembled the cylinder weighs 10 lbs; size is: circumference, 17 inches; diameter, 5 inches; length, 14 inches.

3. A counterclockwise turn of wing nut results in loss of line PSI reading.

4. Shutting tank valve cuts off gas to regulator resulting in loss of tank PSI reading.

(7) Transfer assembly (pigtail) (optional) (fig H-4).

(a) It has been determined that the initial cost and the maintenance upkeep of a helium compressor would outweigh the benefit derived from its use for tactical field operations. Transferring helium from a large cylinder to the jumpable bottle is accomplished by pressure equalization techniques using a high-pressure transfer assembly. This assembly consists of components that will require special procurement action (see list, b below). Assembly of the component parts of the helium assembly should be accomplished at a hydraulic or machine shop.

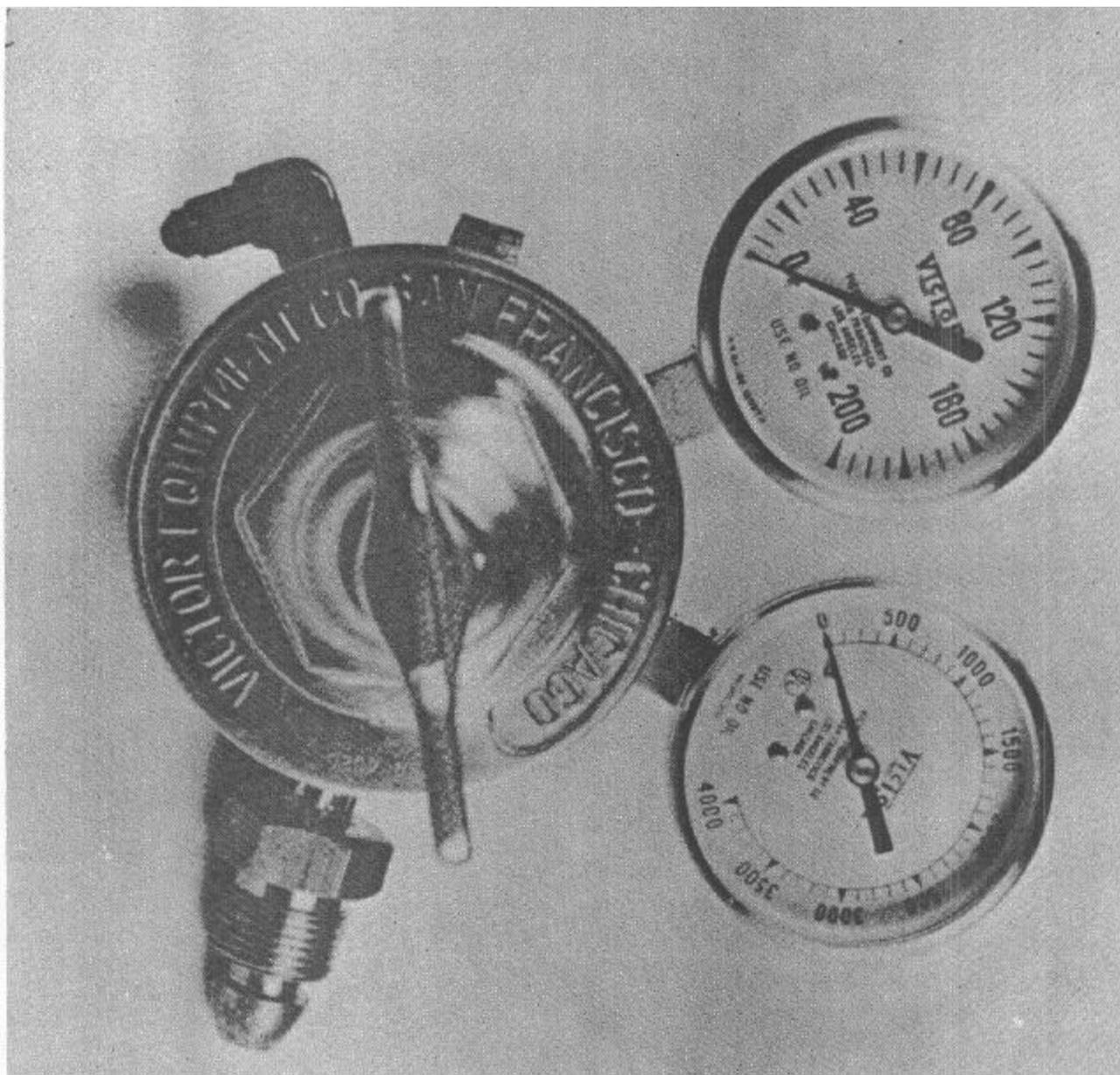


Figure H-8. Regulator.

(c) *Operating procedures.*

1. Connect small cylinder and large helium tank together by using the transfer assembly.
2. Open the valve on the large tank and the small cylinder.
3. Helium will flow into the small cylinder until the pressure is equalized.
4. When this is accomplished, close all valves
5. Remove transfer from large tank and apply regulator gauge to test the pressure.

The small cylinder will contain the same pressure as the large tank reading.

6. A full, large tank should read approximately 2000 PSI and each refill of the small cylinder reduces the large tank pressure by approximately 1000 PSI.

(8) Wrench (10" adjustable) (optional). This tool is a necessary support item of the helium transfer assembly.

c. *Balloon (ML 157-A) (fig H-6).* Manufactured 10-gram balloons meet quality control requirements of

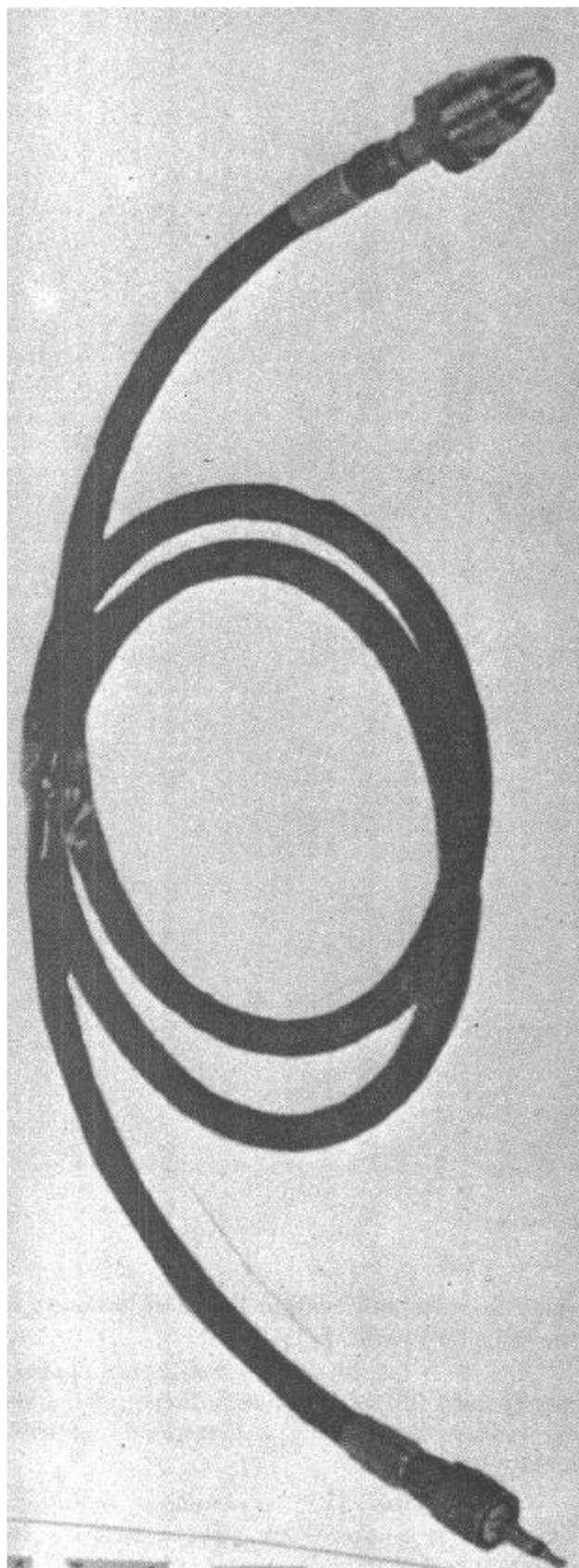


Figure H-4. Transfer assembly (pigtail).

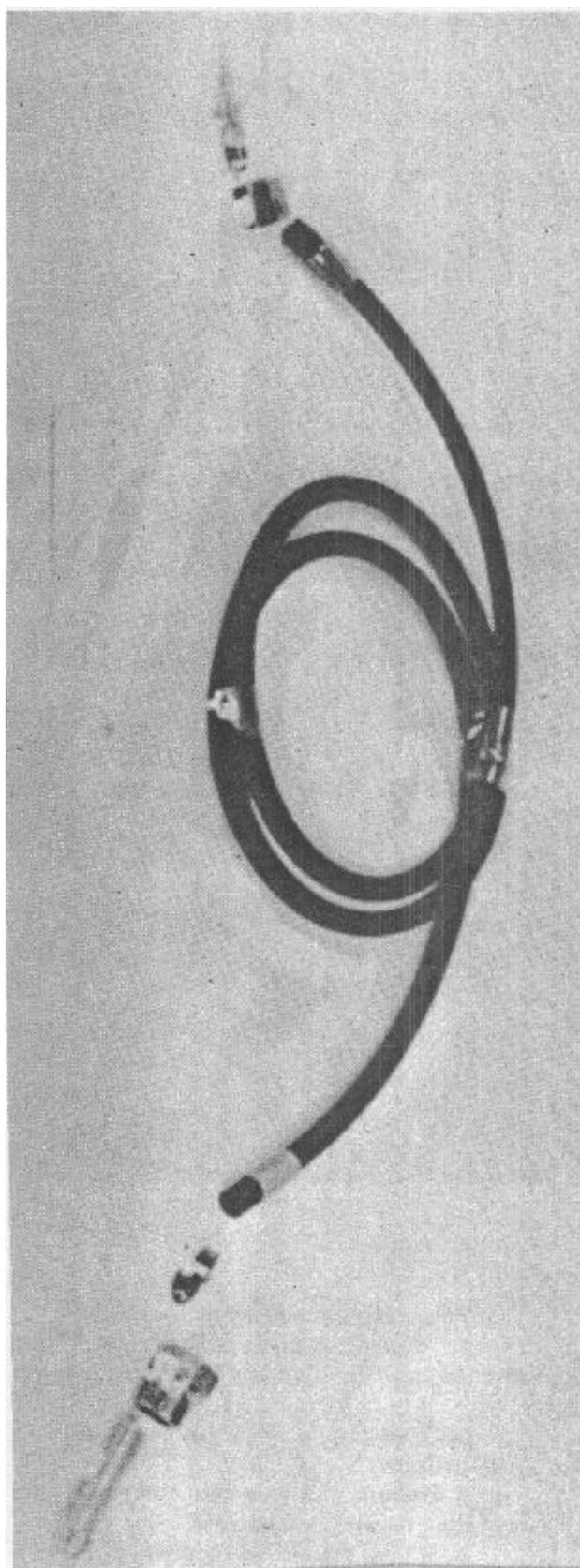


Figure H-5. Transfer assembly (pigtail) component parts.

direct inflation techniques resulting in a product -of constant shape and size.

d. Measuring String (57"/74") (fig H-6). Extensive testing has established the reliability of using the measuring string method of determining proper total lift when utilizing balloons. The 57-inch measurement is applied to the balloon during day runs. The increase in circumference to 74 inches for night operation compensates for the tiny lighting units. This direct inflation system eliminates the use of nozzles, hoses, weights, tubing, clamps, and is equally reliable. The measuring string may be a piece of suspension cord, knotted at one end to prevent unraveling. From this knot measure 57 inches and tie another knot. From the same end knot, measure 74 inches and tie a second knot. Cut off excess cord and seal end with a match. Depending on whether it is day or night operation, hold 2 knots together and inflate balloon inside the loop. This will insure correct inflation (see fig H-6).

(1) Operating instructions.

(a) Secure the balloon neck over the rubber washer.

(b) Turn tube coupling nut clockwise, activating the valve, and releasing helium.

(c) Upon proper balloon inflation turn

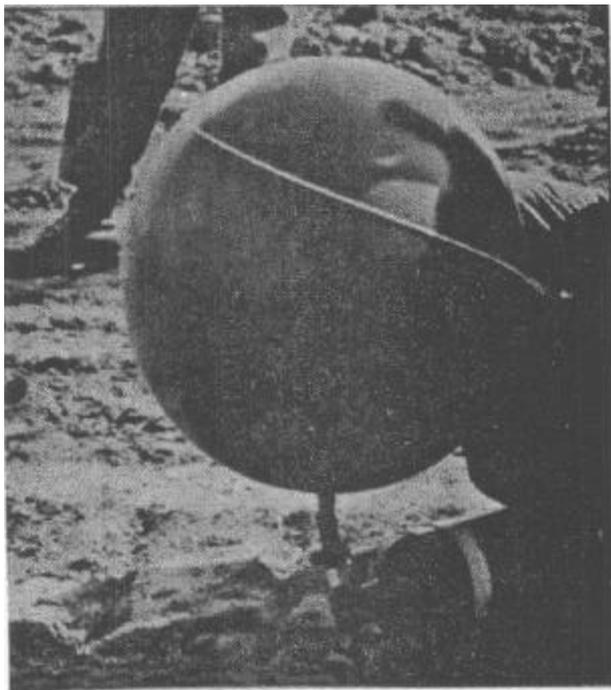


Figure H-6. Procedure for filling balloon to correct diameter.

coupling nut counterclockwise, closing the valve, and stopping the helium flow.

(2) Twine (RP-15). This twine is used to seal the balloon by tying around the neck as tightly as possible. The twine is also used to attach the lighting unit to the balloon.

H-6. Thirty-Gram Hydrogen System

a. Charge, Calcium Hydride (ML-304/TM) (fig H-7). This charge contains between 13 and 14 ounces of calcium hydride, 40 percent pure. This quantity generates approximately 6 cubic feet of hydrogen for the inflation of a 30-gram balloon. The charge is sealed in an airtight metal can approximately 35/8 inches in diameter, 21/2 inches high, and about 17 ounces in weight. The top of the charge is recessed and is provided with a screw fitting by means of which the charge can be attached to the generator. The top of the can is provided with 10 knockout holes, which are punched out immediately before the charge is used, to expose the calcium hydride. A measuring string is not required when using this charge since the balloon will inflate to the proper diameter for day or night.

b. Generator, Hydrogen (ML-303/TM) (fig H-8). The generator is used with calcium hydride charge ML-304/TM to produce hydrogen for 30-gram balloon inflation. The weight of the generator is 1 pound, 9 ounces. The generator body is a cylindrical can constructed of electrogalvanized iron. It is approximately 15 1/2 inches long; and 5 1/8 inches in diameter. The overall length of the outlet tube is 3 7/8 inches. The tip of the extended tube is corrugated to receive a 2-inch section of ML-.81 hose equipped with cock ML-56. Operating instructions are as follows:

(1) Insure that hose ML-81, with cock ML-56, is attached to outlet tube. Fit balloon over the cock opening.

(2) Obtain 18 inches of water in which to immerse the generator.

(3) Punch the charge knockouts and attach the charge to bottom of generator.

(4) Immerse the assembly to within 2 inches of the top of generator. A slight vibration indicates generation.

(5) Open the cock and allow balloon inflation.

(6) Move generator up and down in water 2 or 3 inches. This agitation increases rate of generation.

(7) Continue until vibration stops. The generation of hydrogen is now complete.

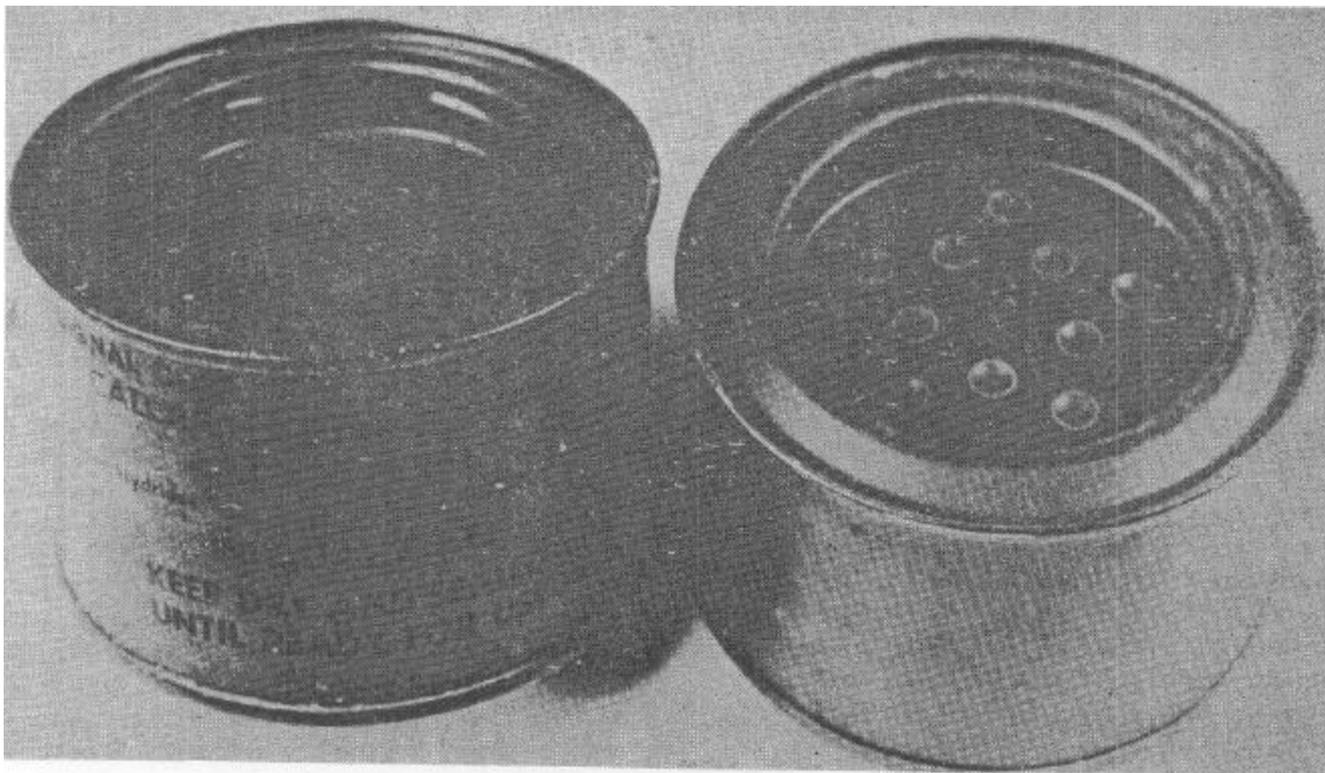


Figure H-7. Charge, calcium hydride (ML-304/TM).

(8) Close cock and detach balloon.

c. Balloon (ML-51A). This neoprene, 30-gram balloon is inflated to capacity by one calcium hydride charge (ML-304/TM) to produce lighter-than-air lift capability.

H-7. Miscellaneous Equipment

a. *Transit or Angle Measuring Device* (fig H-9 and H-10).

(1) The transit pocket compass (Brunton) is a top quality, sighting compass and clinometer with dial graduations of 1 degree. Essentially the instrument is a magnetic needle set in an accurately graduated circle (0° to 360°) in a case which opens into a versatile sighting arrangement. In addition, there is a level attached to a vernier for reading vertical angles ($0'$ to $90'$). The compass dial can be adjusted for magnetic declination. Weight is 9 ounces; seize $2\frac{3}{4}$, x 3 x $1\frac{1}{8}$ inches (fig H-9). Homemade devices are adequate provided the angles are accurate and can readily be used and seen at night (fig H-10).

(2) Operating instructions for transit.

(a) Elevation or vertical angles (fig H-11).

1. To observe elevation angles care must be taken to insure that instrument is vertical.

2. Extend the large sight parallel with the face of the instrument with the peep sight folded at a right angle. The mirror is inclined according to observer preference (approximately 45°).

3. Sight the balloon through the peep sight through the opening in the mirror while the fingers of the right hand move the vernier until the bubble in the long vernier level is centered. Open cover and read the vertical angle on the vernier.

(b) Azimuth or horizontal angles (fig H-12).

1. When sighting horizontal angles, ensure that instrument is horizontal to the ground by means of the round level.

2. Extend instrument with large sight toward observer, visualizing one continuous line from back sight to the mirror hairline.

3. Always identify the point on the ground that appears to be below the balloon and read the white needle point.

4. The white needle point yields the wind direction.

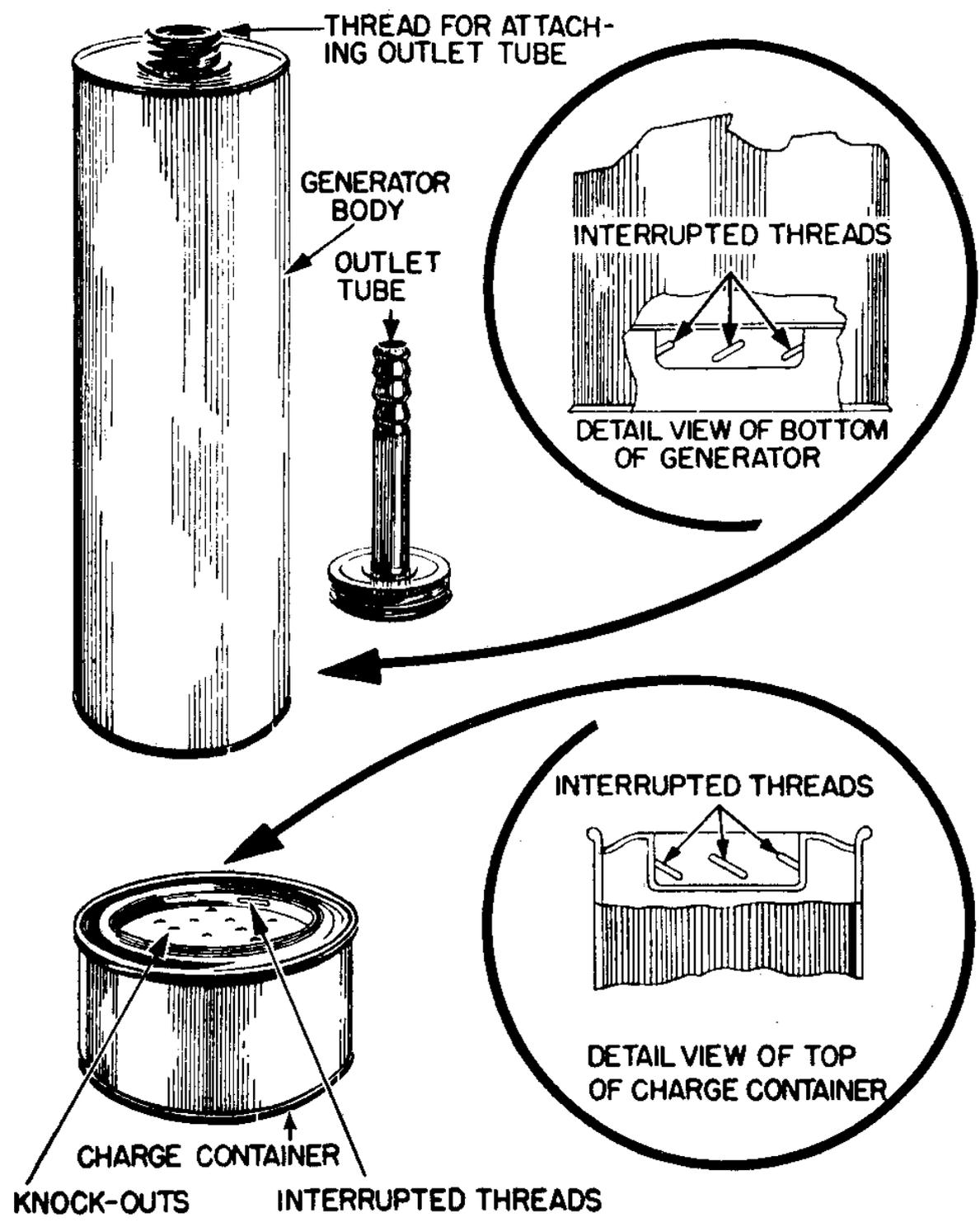


Figure H-8. Hydrogen generator ML-303/TM and calcium hydride charge.

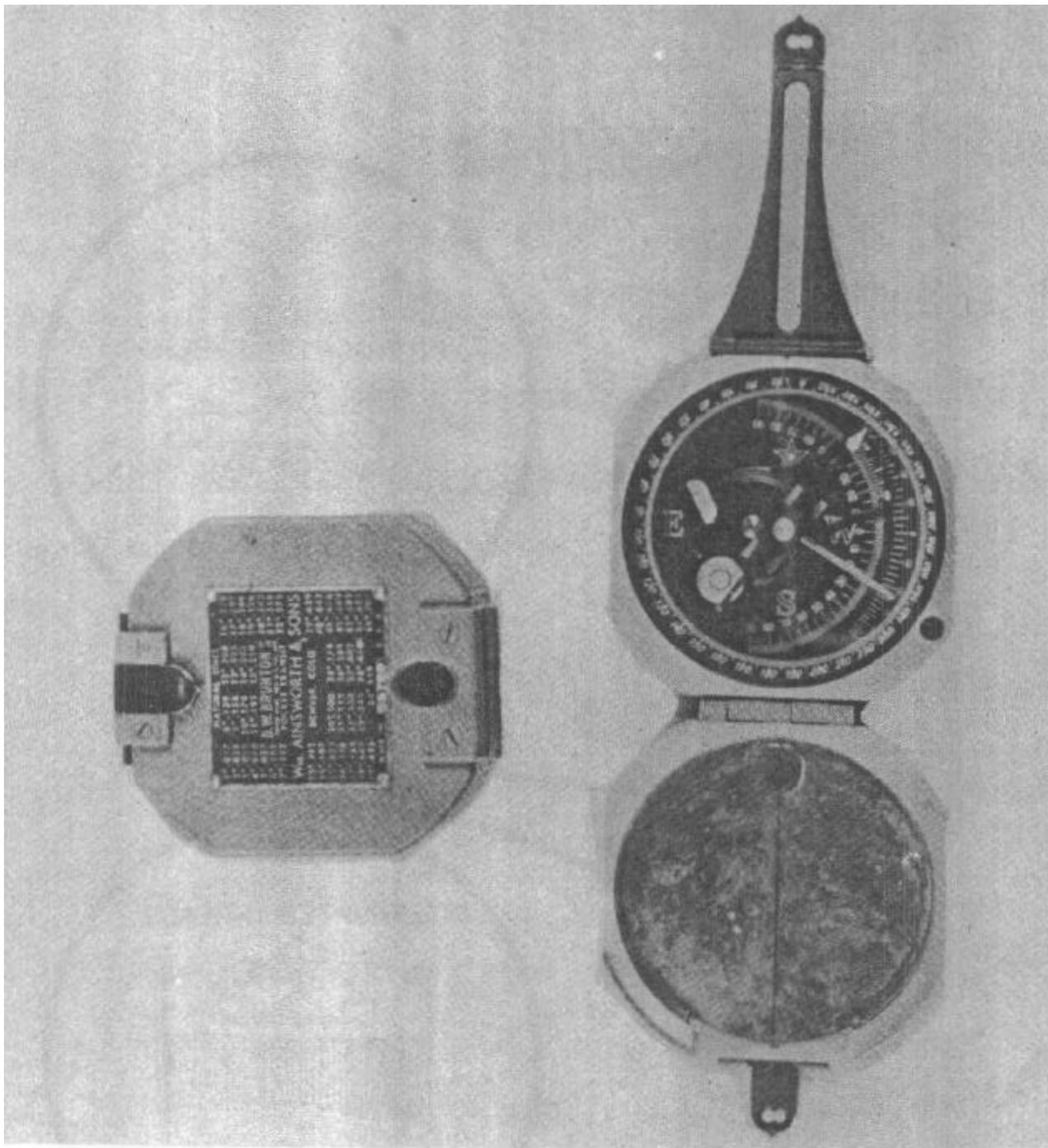


Figure H-9. Transit pocket compass (Brunton).

(c) Magnetic declination.

1. To set the magnetic declination, the circle is rotated by adjusting screw.

2. When magnetic declination is east of true north (that is, when you are west of the zero declination line on an isogonic map) rotate the dial CLOCKWISE from the "Zero Pen" the number

of degrees of declination.

3. When magnetic declination is west of true north (you are east of the zero declination line) rotate the dial COUNTERCLOCKWISE from the "Zero Pen" the number of degrees of declination.

b. Light Unit (ML 608/AM) (fig F1-13).

(1) This unit consists of a water-activated

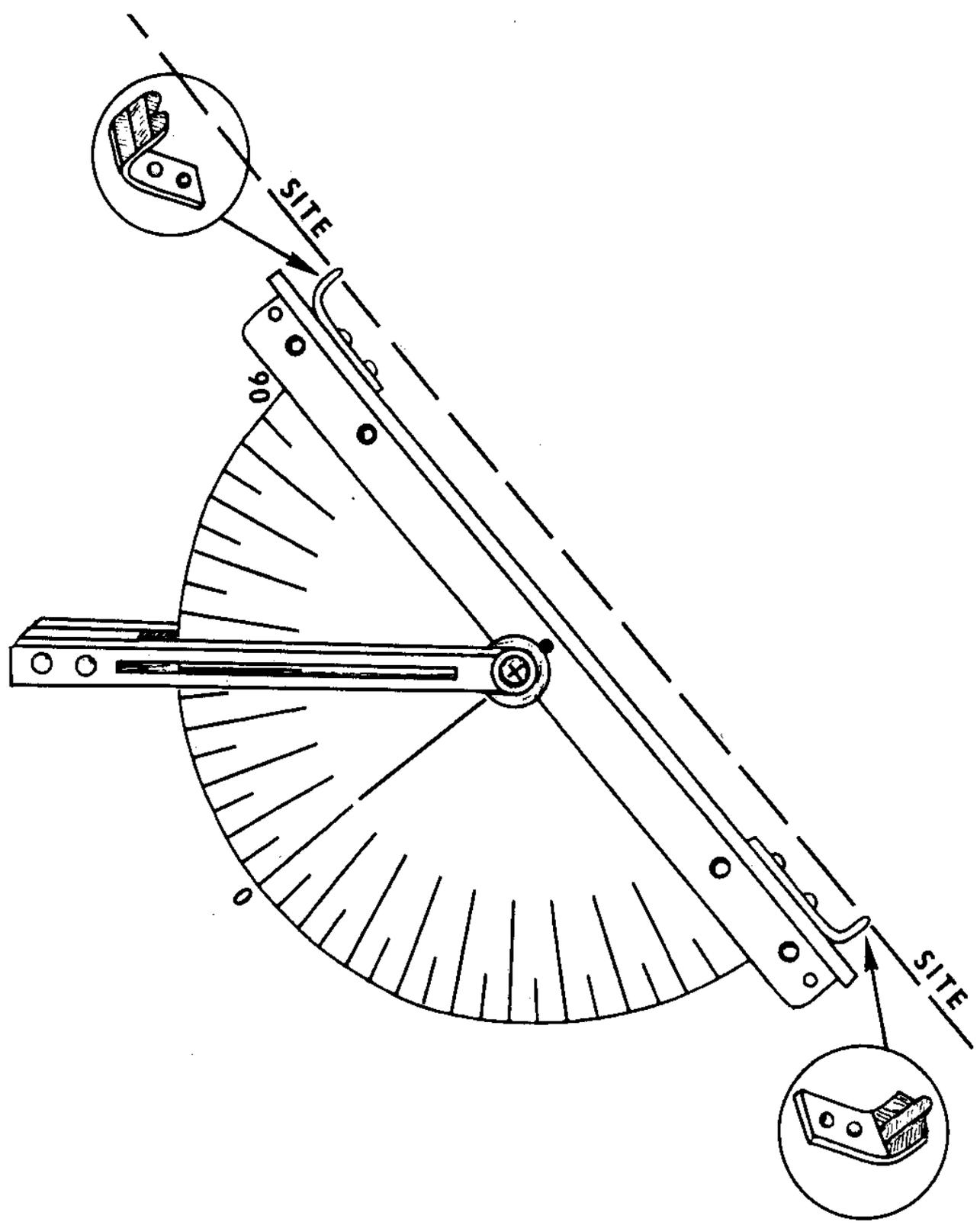


Figure H-10. Homemade angle measuring device.

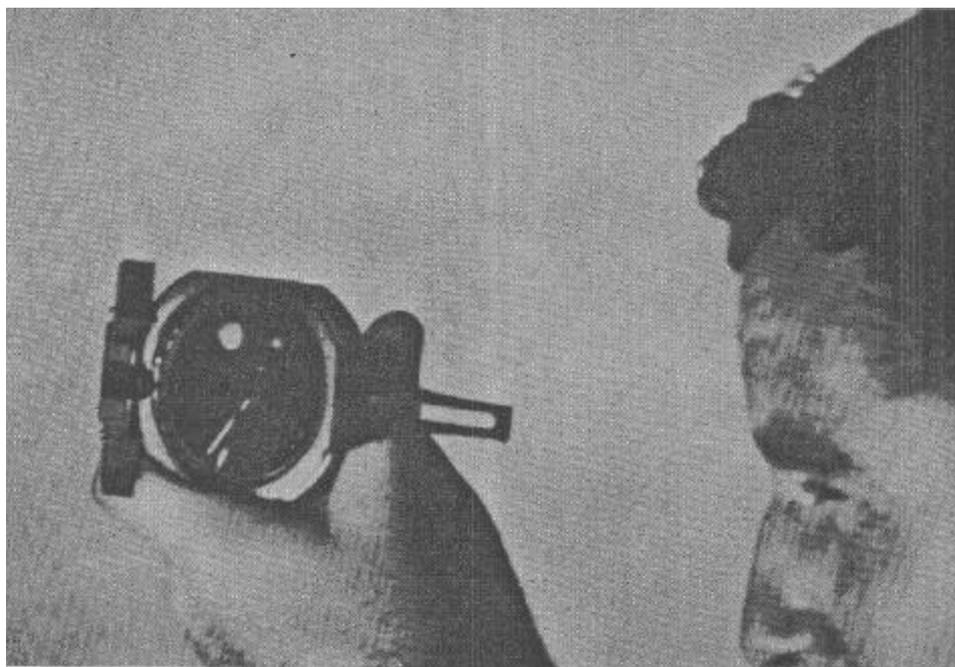


Figure H-11. Sighting elevation or vertical angles.

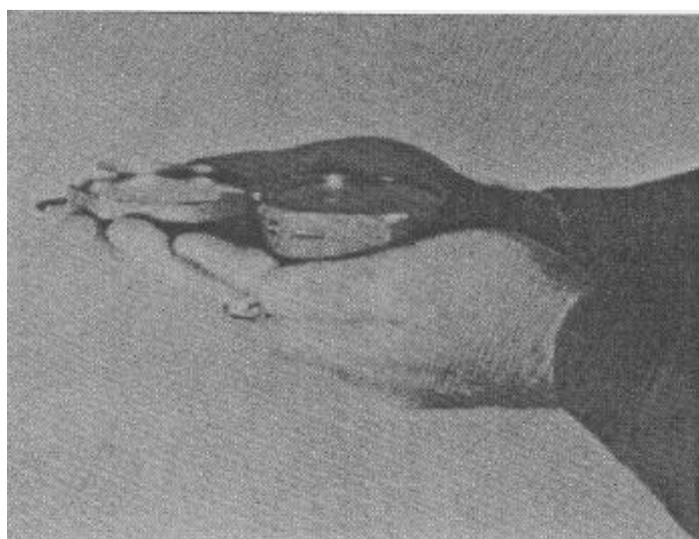


Figure H-12. Sighting azimuths or horizontal angles.

battery and a low-current lamp possessing life expectancy of approximately 1 hour under continuous operation. Tracking in a night time PIBAL is made possible by attaching this lightweight (25 gram when wet), electrically-operated unit to the balloon.

H-12

(2) Operating instructions: No lighting unit activated more than 15 minutes prior to release will be used. Activation will be accomplished as follows

(a) Immerse the battery in ordinary water, allowing the water to cover the battery but not the bulb.

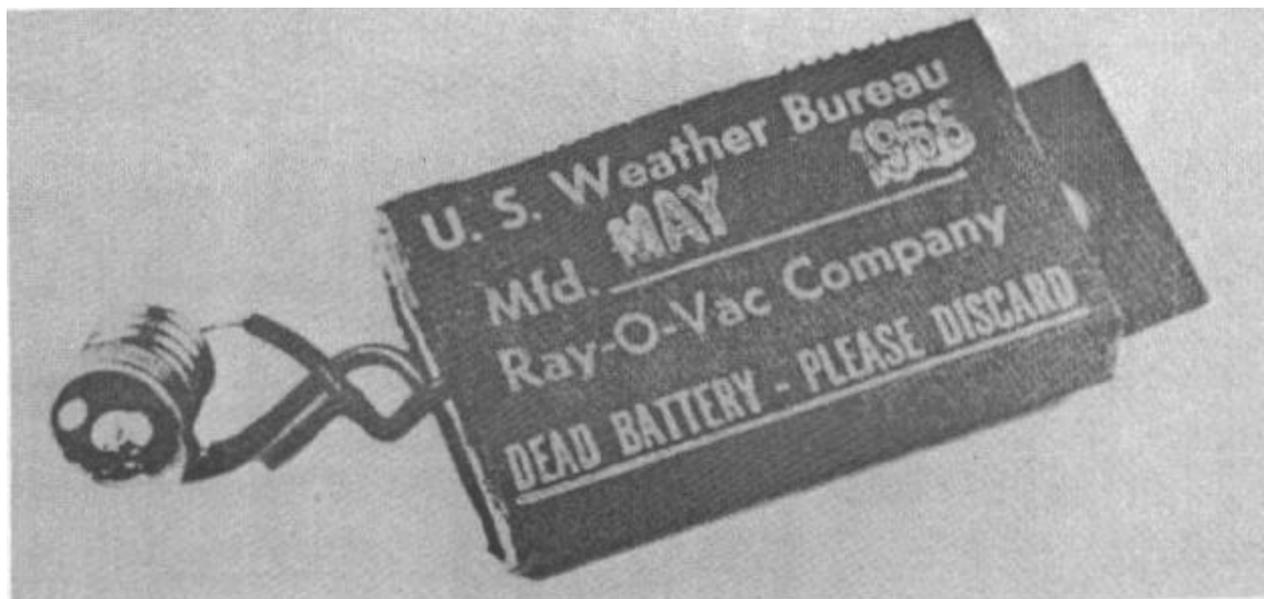


Figure H-13. Light Unit (ML 608/AM).

(b) Keep the battery vertical in water for about 2 minutes or until light begins to glow.

(c) Shake battery vigorously to force excess liquid out.

(d) Battery is ready for use (discard wrappers).

c. *Wind Meter (Dwyer) (fig H-14)*. This small, 3-ounce, plastic surface anemometer manufactured by Dwyer Corporation is a highly accurate wind speed indicator with a range of 0-66 mph.

d. *Flashlight (TS-122-D)*: This is a standard flashlight equipped with security filter to reduce possibility to compromise in sensitive or denied areas.

e. *Stop Watch (optional)*: This is a Swissmade, precision, shack-proof, instrument used to accurately determine the desired balloon ascension time in seconds. However, a normal watch with sweep second hand provides a reasonable degree of accuracy.

f. *Rucksack, Military*: This is the most versatile carrier available for airborne operations. The rucksack can be used as a backpack to transport equipment on long treks or it can be used by the parachutist by attaching it to the parachute harness. The container is used to carry all components of the Effective Wind Kit, plus the necessary personal items needed for survival in the field.

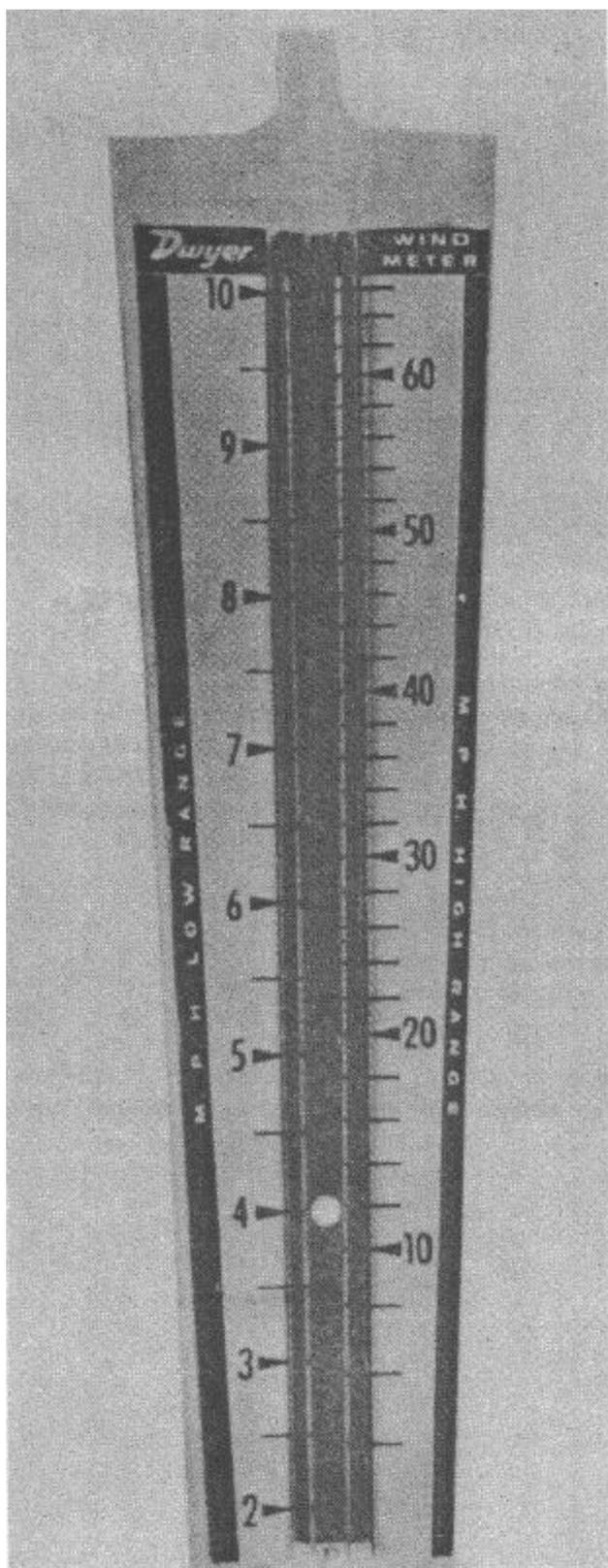


Figure H-14. Wind meter.

Section IV. APPLICATION

H-8. Preparations

a. *Transit.*

(1) The instrument will produce magnetic or true bearings. Often, due to location and limited time, it will be impossible to obtain true readings. When disseminating magnetic wind directions, specify that they are magnetic. According to the individual discretion and the circumstances involved, the compass may be adjusted with respect to true north in accordance with previous instructions.

(2) The elevation and azimuth angles will be read to the nearest whole degree. The angular accuracy depends on the ability of the observer sighting the instrument and will improve rapidly with experience. An experienced observer's transit readings will invariably compare favorably to more stable theodolite equipment.

b. *Balloon Inflation.*

(1) Ten-gram system: Select the circumference measurement-57 inches for day and 74 inches for night. The balloon is correctly inflated when it meets these circumference requirements.

(2) Thirty-gram system: Inflate the 30-gram balloon in accordance with previous instructions.

c. *Lighting Unit (ML 608/AM).* The unit will be activated in accordance with previous instructions as near balloon launch time as possible. The unit will be attached to the balloon neck with a short length of cord.

H-9. Sequence of Operations

After the transit, or angle measuring device, and the balloon have been prepared the following procedures apply:

a. Release the balloon keeping in mind the ascension time required to reach desired altitude. The desired altitude is that altitude from which the drop is made and the termination of the balloon flight. This altitude is obtained by allowing the balloon to ascend according to ascension rate tables (col 1) on conversion charts (tables H-1 through H-4), e.g., table 10-10-gram conversion chart-1,000 feet requires 2.25 in time for balloon to ascend to that altitude.

b. Watch balloon until about 30 seconds prior to read time. Then- sight balloon through the transit, or

angle measuring device, ensuring that the vernier bubble is level or the plumb bob is swinging free.

c. Insure that the balloon is properly sighted at precisely the time/altitude point. The elevation angle will be reflected on the vernier scale, or scale on the measuring device.

d. Without taking eye from the balloon immediately obtain the azimuth angle of the balloon. Remember-the white needle point indicates wind direction and eliminates any corrections. If using a homemade device, have another individual take wind direction or azimuth angle of balloon using a round compass.

H-10. Balloon Sightings

Fatigue is usually produced if the observer attempts to sight the balloon through the transit or angle measuring device during the entire duration of the balloon's flight. There are two techniques that may be used to prevent fatigue but will insure accuracy in readings.

a. Watch the balloon continuously with the naked eye until 20 to 30 seconds before your designated reading time. Then sight the balloon through the transit, or over the angle measuring device, until the balloon reaches the time/altitude point as noted on the ascension scale. Only one reading is actually necessary at the predetermined altitude.

b. Take two readings during the balloon's ascent or as often as necessary depending on the predesignated altitude of the drop. Readings taken periodically at designated altitudes, i.e., 500 feet and 1,250 feet, will give a more accurate estimate of wind conditions aloft at both altitudes; however, the only reading used is the last reading at drop altitude (fig H-15).

H-11. Extraneous Light

At night it is necessary to use a security flashlight in order to read transit dials and scales on angle measuring devices. The light must be shielded as much as possible to prevent extraneous light from reflecting from the transit glasses which may interfere with readings, as well as unintentionally sending signals which may be spotted by observers.

H-12. Light Sightings

If the light that is being tracked does not appear to diminish in brilliancy with time, it is probable that a

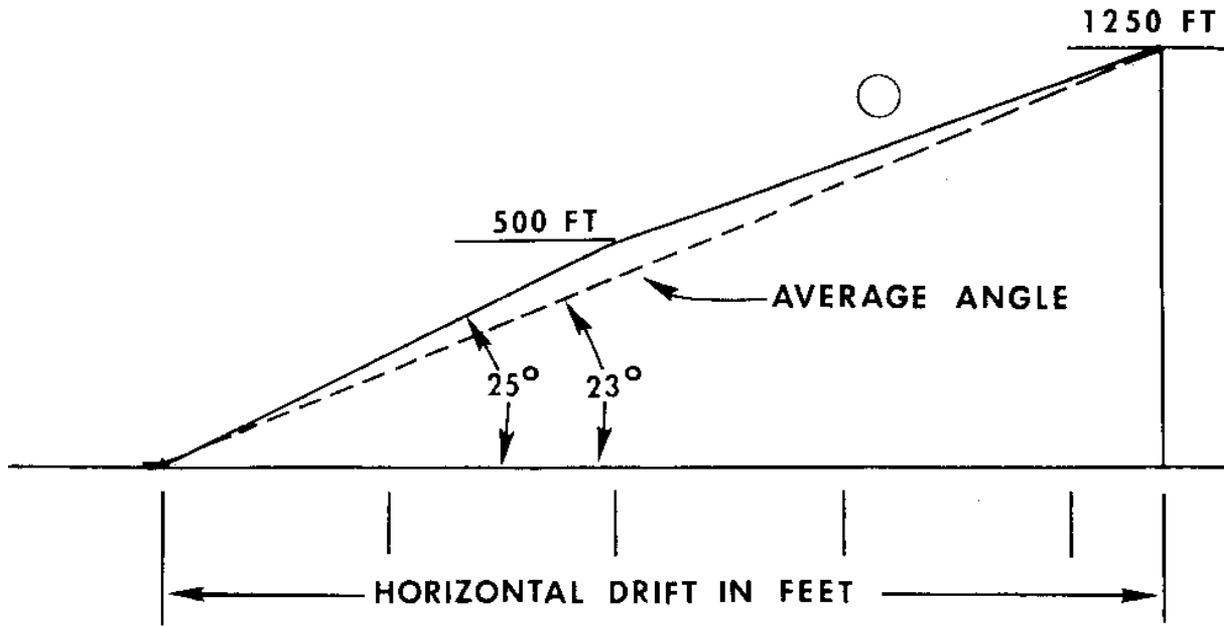


Figure H-15. Balloon climb and drift sighting.

star is being tracked. This is most likely to occur when the lighting device is tracked to altitudes in excess of 2,500 feet. Many times the lighting device may be distinguished from a star only by the relative rapid movement of the light as the balloon ascends in erratic fashion.

H-13. Conversion Charts

a. Conversion Chart (10-Gram Helium) (tables H-1 and H-2).

(1) This chart provides a means of direct conversion from elevation angle to mean vector wind (effective wind) speed in knots. This chart eliminates the use of plotting boards, overlays, and other tables for low-level, parachute-drop wind computations. This conversion chart is produced with trigonometric functions and a Monromatic calculator. Since positions of a parachutist's release point depends on an effective wind (vector winds) rather than winds at any particular altitude, this system will produce remarkable results.

(2) Description of chart

(a) Column 1: "Ascension rate-time/altitude." This column reflects the time it takes a properly inflated balloon to rise to a predesignated altitude, desired altitude, or that altitude from which the drop is to be made.

(b) Column 2: "Angle." This column reflects the angle of rise of the balloon from ground level to desired altitude. It goes from 9° to 25° in 1

° increments, and from 25° to 70° in 5° increments.

(c) Columns f. thru 8: "Indicated or desired altitudes." These are the altitudes from which most parachute drops will be made. In the columns directly under each altitude reading are a series of numbers that reflect mean (vector) or measured wind speeds, in knots, to that altitude based on the measured angle of rise of the PIBAL. These figures have been produced with trigonometric accuracy.,

(d) Column 9: "Measured wind speed." This column merely lists all wind speeds from 1 to 30 knots, which is the maximum allowable at altitude for personnel parachute drops.

(e) Column 10: "Drift factor." This column lists a predetermined drift factor computed as a constant for each wind speed depicted in column 9.

(f) Column 11: "Conversion factor." This column shows the predetermined constant factor for each altitude shown. This precludes the user from mathematically computing rates of descent from given altitudes.

(3) Operating instructions. To convert elevation angle of balloon at DESIRED ALTITUDE to effective wind in knots, and ultimately to drift in yards perform the following:

(a) Locate the elevation angle under column 2, "Angle," i.e., 23°.

(b) Identify the correct drop altitude column, 3, 4, 5, 6, 7, or 8, respectively, 500, 750, 1,000, 1,250, 1,500, or 1,750 feet.

CONVERSION CHART (10-GRAM HELIUM
FOR ELEVATION ANGLES TO WIND SPEED IN KNOTS

COLUMN 1	2	3	4	5	6	7	8	9	10	11	
ASCENSION RATE							WIND	DRIFT	CONVERSION		
TIME/ALTITUDE	ANGLE	500	750	1000	1250	1500	1750	SPEED	FACTOR	FACTOR	
									ALT	FACTOR	
0:10 / 80 Ft	70	02	02	01	01	01	01	1	20	250	1
0:20 / 170	60	03	02	02	02	02	02	2	40	500	2
0:30 / 250	55	03	03	03	03	03	03	3	60	750	3
0:40 / 330	50	04	04	03	03	03	03	4	80	1000	4
0:50 / 400	45	05	04	04	04	04	04	5	100	1250	5
1:02 / 500	40	06	05	05	05	05	05	6	120	1500	6
1:10 / 540	35	07	06	06	06	06	05	7	140	1750	7
1:20 / 610	30	08	07	07	07	07	07	8	160	2000	8
1:30 / 670	25	10	09	09	09	08	08	9	180	2500	10
1:40 / 730	24	11	10	09	09	09	09	10	200	3000	12
1:43 / 750	23	11	10	10	09	09	09	11	220	3500	14
1:50 / 790	22	12	11	10	10	10	09	12	240	4000	16
2:00 / 850	21	12	11	11	10	10	10	13	260	4500	18
2:25 /1000	20	13	12	11	11	11	11	14	280		
3:05 /1250	19	14	13	12	12	11	11	15	300		
3:49 /1500	18	15	13	13	12	12	12	16	320		
4:30 /1750	17	16	14	13	13	13	13	17	340		
5:11 /2000	16	17	15	14	14	14	13	18	360		
6:34 /2500	15	18	16	15	15	14	14	19	380		
7:58 /3000	14	19	17	16	16	16	15	20	400		
9:22 /3500	13	21	19	18	17	17	17	21	4.20		
10:44 /4000	12	22	20	19	19	18	18	22	440		
12:08 /4500	11	24	22	21	21	20	20	23	460		
	10	27	25	23	23	22	22	24	480		
	9	30	27	26	25	26	24	25	500		
								26	520		
								27	540		
								28	560		
								29	580		
								30	600		

Table H-1. Conversion Chart (10-Gram Helium)-500 to 1,750 Feet

(c) Locate the correct tabular value for wind speed by following the elevation angle, 23 ° line to the right, until it intersects with the correct drop altitude column i.e., 1,250 feet. In this instance, the correct tabular value for the wind speed at 1,250 feet would be 9 knots.

(d) Using your drift formula of 100 feet (33.3 yds) per knot of wind, per minute of descent, you then compute your drift in feet. In this instance, since it takes 1 minute to descend from 1,250 feet, and your wind speed at drop altitude is 9 knots, you multiply your constant of 100 feet by 9 (100 x 9) which equals 900 feet drift on the ground. Divide this by 3 (900 ÷ 3) - 300 yards.

(e) Using your conversion chart, go to column 9 and locate 9 (knots), follow the line to the right until it intersects column 10, you will note that

the drift factor is 1&0, at this point you go to column 11 and locate the correct drop altitude (1,250 ft) and follow the line to the right and you will see that the conversion factor is 5. Now, multiply 180 by 5 (180 x 5) and it equals 900 feet drift on the ground. Divide this by 3 (900 ÷ 3) = 300 yards drift on the ground.

(f) Sample problems.

1. Column 5. Drop altitude: 1,000 ft.
2. Column 1. Ascension rate: 2:215.
3. Column 2. Angle: 15.
4. Column 5. Wind Speed: 15 (knots).
5. Column 10. Drift factor: 300.
6. Column 11. Conversion factor: 4.

300 x 4 = 1,200 ft ÷ 3 = 400 yards of drift on the ground.

CONVERSION CHART (10-GRAM HELIUM FOR ELEVATION ANGLES TO WIND SPEED IN KNOTS

DRIFT = 100 FT (33.3 YD)/PER KT/PER MINUTE OF DESCENT
DAY (57" CIRCUM) NIGHT (75" CIRCUM)

COLUMN 1	2	3	4	5	6	7	8	9	10	11
ASCENSION RATE								WIND	DRIFT	CONVERSION
TIME/ALTITUDE	ANGLE	2000	2500	3000	3500	4000	4500	SPEED	FACTOR	FACTOR
0:10 / 80 Ft	70	01	01	01	01	01	01	1	20	250 1
0:20 / 170	60	02	02	02	02	02	02	2	40	500 2
0:30 / 250	55	03	03	03	03	03	03	3	60	750 3
0:40 / 330	50	03	03	03	03	03	03	4	80	1000 4
0:50 / 400	45	04	04	04	04	04	04	5	100	1250 5
1:02 / 500	40	05	04	04	04	04	04	6	120	1500 6
1:10 / 540	35	05	05	05	05	05	05	7	140	1750 7
1:20 / 610	30	07	07	06	06	06	06	8	160	2000 8
1:30 / 670	25	08	08	08	08	08	08	9	180	2500 10
1:40 / 730	24	08	08	08	08	08	08	10	200	3000 12
1:43 / 750	23	09	08	09	09	09	09	11	220	3500 14
1:50 / 790	22	09	09	09	09	09	09	12	240	4000 16
2:00 / 850	21	10	10	10	10	10	10	13	260	4500 18
2:25 / 1000	20	11	10	10	10	10	10	14	280	
3:05 / 1250	19	11	11	11	11	11	11	15	300	
3:49 / 1500	18	12	12	11	11	11	11	16	320	
4:30 / 1750	17	12	12	12	12	12	12	17	340	
5:11 / 2000	16	13	13	13	13	13	13	18	360	
6:34 / 2500	15	14	14	14	14	14	14	19	380	
7:58 / 3000	14	15	15	15	15	15	15	20	400	
9:22 / 3500	13	17	16	16	16	16	16	21	420	
10:44 / 4000	12	18	18	17	17	17	17	22	440	
12:08 / 4500	11	20	19	19	21	19	19	23	460	
	10	22	21	21	21	21	21	24	480	
	09	24	24	23	23	23	23	25	500	
								26	520	
								27	540	
								28	560	
								29	580	
								30	600	

Table H-2. Conversion Chart (10-Gram. Helium)-2,000 to 4,500 Feet

1. Column 5. Drop altitude: 1,750 ft.
2. Column 1. Ascension rate: 4:30.
3. Column 2. Angle: 17.
4. Column 5. Wind speed: 13 (knots).
5. Column 10. Drift factor: 260.
6. Column 11. Conversion factor: 7.

$260 \times 7 = 1,820 \text{ ft} \div 3 = 606.6$ or 600 yds drift on the ground.

b. Conversion Chart (30-Gram Hydrogen)
(tables H-3 and H-4).

(1) The conversion chart for hydrogen is used in the same manner as the helium chart. It should be noted, however, that the 30-gram hydrogen balloon being lighter than the 10-gram balloon will rise at a much sharper angle.

- (2) Sample problems:

- (a) Column 5. Drop altitude: 500.
- (b) Column 1. Ascension rate: 0 :42.
- (c) Column 2. Angle: 16.
- (d) Column 5. Wind speed: 24 (knots).
- (e) Column 10. Drift factor: 480.
- (f) Column 11. Conversion factor: 2.

$480 \times 2 = 960 \text{ ft} \div 3 = 320$ yds drift on the ground.

- (a) Column 5. Drop altitude: 2,500.
- (b) Column 1. Ascension rate: 3:43.
- (c) Column 2. Angle: 20.
- (d) Column 5. Wind speed: 18 (knot:).
- (e) Column 10. Drift factor: 360.
- (f) Column 11. Conversion factor: 11).

$360 \times 10 = 3,600 \text{ ft} \div 3 = 1,200$ yds drift on the ground.

CONVERSION CHART (30-GRAM HELIUM
FOR ELEVATION ANGLES TO WIND SPEED IN KNOTS

DRIFT = 100 FT (33.3 YD)/PER KT/PER MINUTE OF DESCENT

COLUMN 1	2	3	4	5	6	7	8	9	10	11
ASCENSION RATE								WIND	DRIFT	CONVERSION
TIME/ALTITUDE	ANGLE	500	750	1000	1250	1500	1750	SPEED	FACTOR	FACTOR
										<u>ALT FACTOR</u>
0:10 / 120	80	1	1	1	1	1	1	1	20	250
0:20 / 240	70	3	3	3	2	2	2	2	40	500
0:30 / 360	60	4	4	4	4	4	4	3	60	750
0:42 / 500	55	5	5	5	5	5	5	4	80	1000
0:50 / 600	50	6	6	6	6	6	6	5	100	1250
1:02 / 750	45	7	7	7	7	7	7	6	120	1500
1:10 / 830	40	9	8	8	8	8	8	7	140	1750
1:17 /1000	35	10	10	10	10	10	10	8	160	2000
1:48 /1250	30	12	12	12	12	12	12	9	180	2500
2:10 /1500	25	15	15	15	15	15	15	10	200	3000
2:34 /1750	24	16	16	15	15	15	15	11	2.20	3500
2:56 /2000	23	17	17	16	16	16	16	12	240	4000
3:43 /2500	22	18	18	17	17	17	17	13	260	4500
4:31 /3000	21	19	19	18	18	18	18	14	280	
5:21 /3500	20	20	20	19	19	19	19	15	300	
6:09 /4000	19	21	20	20	20	20	20	16	320	
7:00 /4500	18	22	22	21	21	21	21	17	340	
	17	23	23	23	22	22	22	18	360	
	16	25	25	24	24	24	24	19	380	
	15	27	27	26	26	25	25	20	4.00	
	14	29	29	28	27	27	27	21	420	
	13	31	30	30	30	30	29	22	440	
								23	460	
								24	480	
								25	500	
								26	520	
								27	540	
								28	560	
								29	580	
								30	600	

Table H-3. Conversion Chart (30-Gram Hydrogen)-500 to 1,750 Feet

CONVERSION CHART (30-GRAM HELIUM
FOR ELEVATION ANGLES TO WIND SPEED IN KNOTS

DRIFT = 100 FT (33.3 YD)/PER KT/PER MINUTE OF DESCENT

COLUMN 1	2	3	4	5	6	7	8	9	10	11
ASCENSION RATE								WIND	DRIFT	CONVERSION
TIME/ALTITUDE	ANGLE	2000	2500	3000	3500	4000	4500	SPEED	FACTOR	FACTOR
										<u>ALT FACTOR</u>
0:10 / 120	80	1	1	1	1	1	1	1	20	250
0:20 / 240	70	2	2	2	2	2	2	2	40	500
0:30 / 360	60	4	4	4	4	4	4	3	60	750
0:42 / 500	55	5	5	5	5	4	4	4	8U	1000
0:50 / 600	50	6	6	5	5	5	5	5	100	1250
1:02 / 750	45	7	7	7	6	6	6	6	12U	1500
1:10 / 830	40	8	8	8	8	8	8	7	14U	1750
1:17 /1000	35	10	9	9	9	9	9	8	160	2000
1:48 /1250	30	12	11	11	11	11	11	9	18U	2500
2:10 /1500	25	14	14	14	14	14	14	10	200	3000
2:34 /1750	24	14	14	15	15	14	14	11	22U	3500
2:56 /2000	23	15	15	15	15	15	15	12	24U	4000
3:43 /2500	22	17	16	16	16	16	16	13	260	4500
4:31 /3000	21	17	17	17	17	17	17	14	280	
5:21 /3500	20	18	18	18	18	18	17	15	30U	
6:09 /4000	19	19	19	19	19	19	18	16	320	
7:00 /4500	18	21	20	20	20	20	20	17	340	
	17	22	22	21	21	21	21	18	36U	
	16	23	23	23	23	22	22	19	380	
	15	25	25	24	24	24	24	20	40U	
	14	27	27	26	26	26	25	21	42U	
	13	29	29	28	28	28	27	22	44U	
								23	460	
								24	480	
								25	500	
								26	520	
								27	540	
								28	560	
								29	580	
								30	600	

Table H-4. Conversion Chart (30 Gram Hydrogen)--2,000 to 4,500 Feet

INDEX

	<i>Paragraph</i>	<i>Page</i>
Accompanying supplies -----	4-29,9-4b	4-1,9-1
Accountability supplies -----	9-7	9-3
Administration-----		
Systems -----	5-13b	5-17
Records -----	5-14	5-17
Discipline -----	5-15	5-18
Aerial Recovery System -----	6-39	650
Air operations checklist-----	6-39-6-48	6-50-6-61
Ambush -----	7-3b,	7-1,
-----	7-16-7-20	7-11-7-16
Antennas -----	10-6	10-4
Area assessment -----	2-7,app E	2-3, E-1
Area intelligence -----	2-6	2-2
Area study -----	2-5,app D	2-2,D-1
Armor ambush -----	7-20a	7-16
Assault element, raid -----	7-10b	7-6
Automatic resupply -----	6-15a	6-115
Automatic supply -----	6-5a, 9-4c(1)	6-3,3 2
Auxiliary forces-----	5-9a, b,	5-9,
-----	5-10c,5-11	5-13
Blind drop -----	4-4d	4-3
Border operations -----	12-13	12-6
Civil affairs -----	7-32c	7-21
Command element, raid -----	7-10a	7-6
Communications -----		
UWOA -S FOB -----	5-3b, 10-2b	5-3,10-1
UWOA -----	10-2c, 10-3	10-1
Training-----	10-4,12-9	103,12-4
Security-----	10-7	10-8
Stability operations-----	12-7-12-10	12-3-12-5
Computed Air Release Point (CARP) - -----	6-25	6-24
Counter guerrilla tactics -----	7-24	7-18
Defense units, local -----	12-12b	12-6
Drop zone -----	4-4c,	4-2,
-----	6-6-6-2.1,	6-4-6-21,
-----	6-24,6-28	6-24, 6-26
Emergency supply -----	6-5b, 9-4c(2)	6-3, 9-2
Engineering, stability operations -----	12-22r-12-24	12-10,12-i1
Evacuation, medical-----	11-11,12-19a	11-4, 12-9
Exfiltration -----	6-39a	6-50
Expedient devices, interdiction-----	7-7c	1-5
Free fall -----	6-22-6-25	621-6-24
Ground release point:-----		
Computation -----	6-17	6-15
Marking -----	6-18,6-19	6-17,6-18
Guerrilla:-----		
Civil affairs-----	7-32a	7-21
Unit organization -----	5-8	5-7
Bases -----	5-6c	5-5
Security -----	5-11x(3)	5-13
Discipline -----	5-15	5-18
Records-----	5-14	5-17
Training -----	5-16-5-18,	5-19,5-20,
-----	app G	G-1
Defensive measures -----	7-21-7-26	7-17, 7-18

	<i>Paragraph</i>	<i>Page</i>
Infiltration-----		
Reporting -----	4-3,app C	4--1,C-1
Air -----		4-4 4-2
Blind drop -----	4-4d	4-4
Free fall -----	4-4e	4-3
Water -----	4-5	4-4
Land -----	4-G	4-5
Stay-behind -----	4-7	4--5
Reception committee-----	6-27	6--25
Checklist -----	4-12-4-1.5	4-6-4--8
Intelligence:-----		
Area assessment -----	2-7	2-3
Area intelligence -----	2-6	2-2
Area study-----	2-5	2-2
Requirements -----	2-10	2-4
PSYOP -----	3-5	3--2
Raid intelligence -----	7-11b	7--8
Ambush intelligence -----	7-18e	7--14
Medical -----	11-14-11--16	11--6,11--7
Stability operations -----	12-4,	12--1,
	12-5, 12-13e	12-2, 12--7
Interdiction operations -----	7-2-7-7	7--1-7-4
Landing zones -----		
Selection -----	6-30	6--26
Operation -----	6-31	6--3.1
Water -----	6-32	6--34
Rotary wing -----	6-33--6-38	6-42-6-60
Reporting -----	6-37	6-50
Local defense units -----	12-12b	12-6
Logistics -----	5-11b,	5-14,
	9-1-1-25	9--1-9-9
Medical operations:		
Planning-----	112	11-1
Organization -----	11-3	11-1
Evacuation -----	11-11,12-19cc	11-4,12-9
Veterinary support -----	11-12	11-5
Supply -----	11-13	11-6
Intelligence -----	11-14--11-16	11--6,11-7
Area study -----	11-15	11-7
Stability operations -----	12-25--12-27	12-12, 12-13
Message formats -----	app C	C-1
Message pickup air-----	6-41--6-48	6-55-6-61
Message writing -----	10-5	10-3
Mines and boobytraps -----	7-3c, '7-7	7-2,7-4
Mission support site -----	9-23	9-8
Operations:		
Training -----	5-19	5-21
Air -----	Chap 6	6-1
Stability -----	1.2-11--12-14	12-5-12-8
Waterborne -----	Chap 8	8-1
Border -----	1-13	12-6
Paramilitary forces -----	12-12a	12-5
Pilot team-----	5-2d	b-3
Planning:-----		
Raid-----		7-11 7-7
Ambush -----	7-18c	7-13
Medical -----	11-1,11-2	11-1
Populace and resources control -----	12-19c, 12-20,	12-9,
	12-21	12-10
	<i>Paragraph</i>	<i>Page</i>
Psychological operations:		
Intelligence -----	3-5	3-2

Target audience -----	3-6	3-3
Target groups -----	37	33
Media -----	3-12	3-7
Printing methods -----	3-1g	3-81
Raid 7-3a, -----	7-1, 7-8--7-16, 12-14	7-6-7-10, 12-8
Reception committee -----	6-2, 6-6-28	6-25, 6-26
Resistance -----		
Character -----	5-2	5-1
Discipline -----	5-16	5-18
Training -----	5-16	5-19
Combat employment -----	Chap 7	7-1
Resources control -----	12-19c,T.2-4, 12-5	12-9,1.2-1, 12-2
Security:		
Security element, raid -----	7-10e	7-7
UWOA -----	2-14	2-5
Reception committee -----	6-27c	6-25
Role of auxiliary and underground -----	2-15	2-8
Auxiliary -----	5-11a(1)	5-13
Underground -----	5-11x(2)	5-13
Guerrilla force -----	6-11x(3)	5-13
Skyhook -----	4-10, 6--39	4-6, 6-50
Small boat handling -----	8-10, 8-11, 12-17-12-19	8-6, 12-8, 12-9
Sniping -----	7-3d, 7-7b	7-2,7-4
Stability operations:-----		
Missions -----	12-2	12-1
Intelligence -----	12-4,1.2-5, 12-13e	12-1,7L'2-2, 12-7
Training -----	12-15	
Small boat operations -----	12-17-12-.19	18,12-9
Populace and resources control -----	12-20, 12-21	12-10
Field engineering -----	12-22--12-27	12-10-12-13
Supplies -----		
Accompanying -----	4-2g, 9-4b	4-1, 9-1
Air infiltration -----	4-4f	4-3
Automatic -----	6-5a, 9-4c(1)	6-3, 9-2
Emergency -----	6-5b, 9-4c(2)	9-2
Medical -----	11-13	11-6
On Call -----	9-4c(3)	9-2
Water infiltration -----	4-5c(2)	4-4
Operational detachment -----	9-3	9-1
Phases -----	9-4	9-1
Class I -----	9-5a	9-2
Class II and IV -----	9-5b	9-2
Class III -----	9-5c	9-2
Class V -----	9-5d	9-3
Catalog system -----	9-11--9-16 9-11--9-15	9-4 F-1
General -----	9-24	9-9
Target analysis, interdiction -----	7-4	7-2
Target systems, interdiction -----	7-5	7,2
Train ambush -----	7-20b	7-17
Underground -----	5-9a, c, 5-10c, 5-11	5-9, 5-11, 5-13
	Paragraph	Page
Underwater operations -----	8-12--8-15	8-7
UWOA:		
General -----	5-1	5-1

FM 31-20

SF objectives-----	5-4	5-4
Organizational development-----	5-7	5-7
Area organization-----	5-6	5-5
Transportation-----	9-9, 9-25	9-3,9-9
Communications-----	10-2b,c, 10-3	10-.1
Medical considerations-----	11-1,11-2	11-.1
Medical requirements-----	11-5, 11-7-1:1-9	11-2, 11-3,11-4
Veterinary support-----	11-12, 12-2.7	11-5,1,2-13
Waterborne operations-----	Chap 8., 12-17-12-.19	8-1, 12-8,12-.9
Waterway ambush-----	7-20c	7-17

By Order of the Secretary of the Army

Official:

KENNETH G. WICKHAM,
*Major General, United States Army,
The Adjutant General.*

W. C. WESTMORELAND,
*General, United States Army,
Chief of Staff.*

Distribution

To be distributed in accordance with DA Form 12-11 requirements for Special Forces Operational Techniques.