

APPENDIX 10

SEATS OUT OPERATIONS

10-1. REFERENCES.

- a. AR 95-1, Aviation Flight Regulations, 12 Nov 08
- b. NG Supp 1 to AR 95-1, Flight Regulations, 8 Aug 11
- c. USSOCOM Manual 350-6, Special Operations Forces Baseline Interoperable Rotary Wing And Tiltrotor Infiltration/Exfiltration Training Standards, 15 Sep 11

10-2. PURPOSE. To establish standardized procedures for conducting seats-out AASLT operations and training in UH-60 aircraft in support of units authorized and trained to conduct seats-out operations.

10-3. WAIVER AUTHORITY.

a. Commanders at each level (air and ground) must consider the risk involved versus mission necessity when deciding whether to operate with or without seats. A waiver is required for seats out operations. This must be requested by the supported battalion or brigade staff. Obtaining seats-out approval is not the responsibility of the supporting aviation unit. Refer to AR 95-1, para. 8-11e, NG Supp 1 to AR 95-1, para. 8-11e, and USCOCOM Manual 350-6, appendix G.

b. Flying with troop seats removed in the UH-60 aircraft is authorized for air assault / mobile mission training, but is considered a **HIGH RISK** mission for the aviation unit.

c. Point of contact at NGB is the ARNG Standardization Officer, (703) 607-7773, DSN 327-7773.

10-4. GENERAL.

a. With the seats installed, the standard Allowable Cargo Load (ACL) for the UH-60 is ten (10) combat-loaded soldiers. If the seats are removed, the ACL increases. Without seats, the UH-60 ACL is dependent on the type of equipment being carried by the troops. For planning purposes, the UH-60 is capable of

transporting approximately 16 combat-loaded troops (with rucks) and 20 without full combat loads. The combat loads of the soldiers being lifted will determine the actual ACL for the aircraft. Executing AASLT operations with troop seats removed permits maximum number of troops to be airlifted and facilitates rapid build-up of combat power in the LZ.

b. Such operations will not be routine in peacetime; however, it is prudent for leaders to ensure that aircrews and combat troops are trained to perform such operations should they be required to do so in combat.

c. To minimize mission risk, it is **MANDATORY** that flight leaders perform an eyes-on-recon of LZs to be used during seats-out operations.

d. A thorough risk analysis by the chain of command will be completed prior to each training event.

e. Although the ACL for seats-out operations varies from 16 to 20 soldiers, the ACL may be less than 16 when mortars or other bulky equipment / ammunition are carried. Only the UH-60L can accommodate an ACL of 20 troops under all environmental conditions.

f. ACL should not exceed 16 pax when troops carry rucksacks. Depending on size and number of rucks carried, ACL may be less than 16. When rucksacks are part of the ACL they will be placed on the cargo floor and sat on by the individual soldier.

10-5. RESPONSIBILITIES:

a. AASLT Task Force Commander -

(1). Establishes the ACL for each mission based on METT-T analysis & recommendations of the supporting aviation unit commander.

(2). Responsible for the safety and security of all ground force soldiers and equipment involved in the operation.

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(2). While in assembly areas, chalk leaders ensure their personnel are in proper loading sequence.

(3). Chalk leaders initiate movement once aircraft have landed. Farside and nearside groups move to the aircraft in file with the chalk leader always leading the nearside group.

(4). Chalk leaders ensure both groups load in proper sequence IAW the load plan.

(5). Once loaded, all personnel will sit with their weapons between their legs and with muzzles pointed down.

(6). Mortars and other bulky equipment / supplies must be secured using GBU-1B cargo tie-down straps.

(7). Troops in positions 8, 9, or 10 will secure cargo doors and signal the CE and gunner with a thumbs-up when doors are secured.

(8). The CE and gunner will visually confirm security of the cargo doors prior to takeoff and verbally inform the PC "cargo doors secured left / right". The PC will verbally acknowledge the cargo door security check.

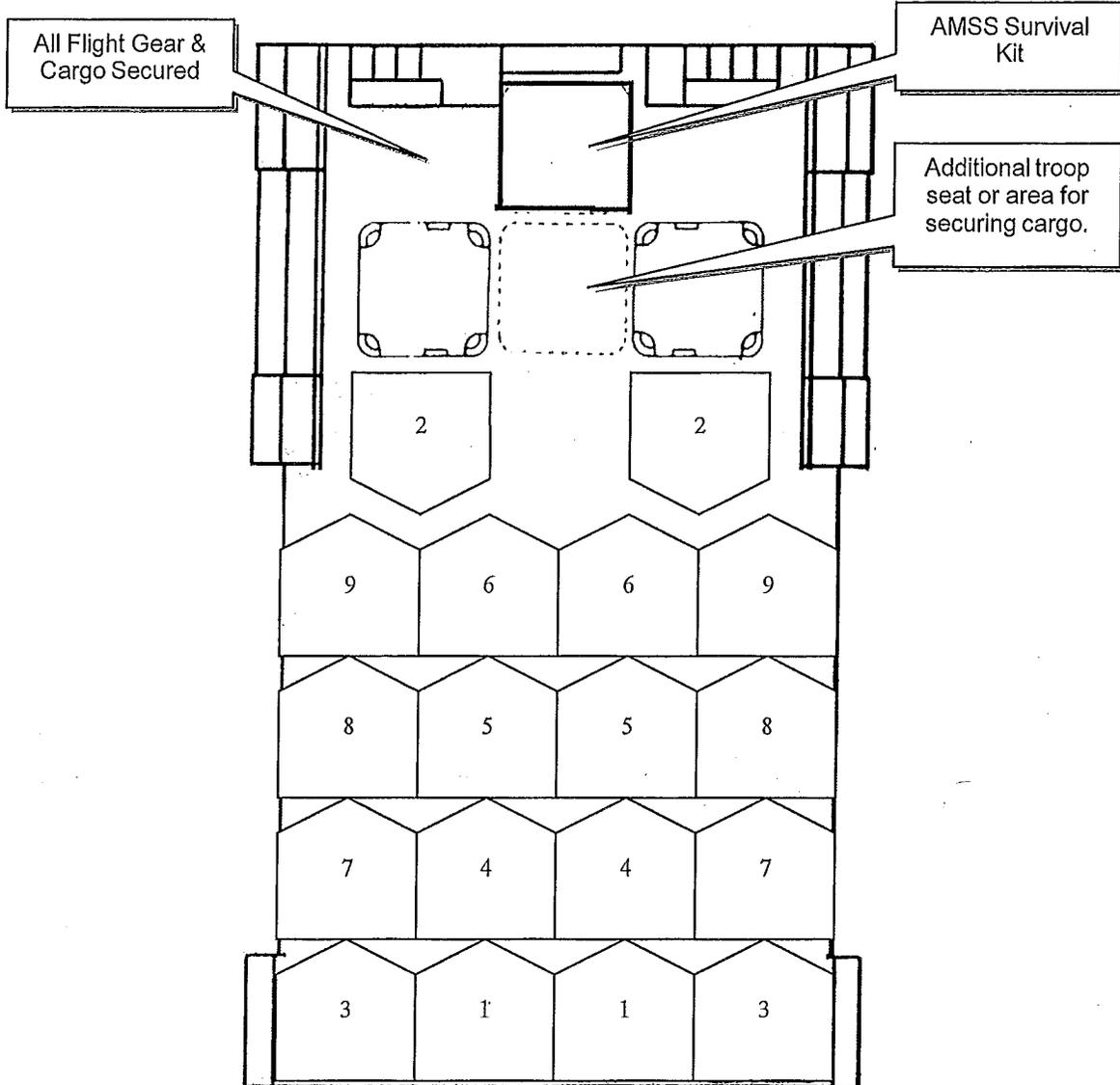
b. Unloading - Unloading will not begin until directed by the PC. After landing the PC will announce "clear to exit".

(1). Only after the aircraft has landed, motion has stopped and signaled to do so by the CE, troops in positions 8, 9, or 10 will open the cargo doors and troops in positions 7 or 8 will ensure the cargo doors are locked in the open position (full aft).

(2). Personnel will exit and clear the aircraft as rapidly as possible to execute the unit's ground tactical plan.

(3). Chalk leaders will account for all personnel and equipment.

Figure 10-2
Load Plan for 18 Troops without Rucksacks



FOR OFFICIAL USE ONLY

LADDER OPERATIONS

REFERENCES

- AR 95-1, Aviation Flight Regulations, 11 Mar 14
- NG Supp 1 to AR 95-1, Flight Regulations, 8 Aug 11
- USSOCOM Manual 350-6, Special Operations Forces Baseline Interoperable Rotary Wing And Tiltrotor Caving and Jacob's Ladder Training Standards, 15 Sep 11
- TC 3-04.33, Aircrew Training Manual, Utility Helicopter, H-60 Series, MAY 2013

Approval Authority

IAW para 8-11 d NG Supp 1 to AR 95-1, a complete list of tactical insertion/extraction mission tasks which do not require a seats-out waiver from NGB/ARNG are identified in para. 4-15.1a(2)

(1) Tactical Ingress/Egress tasks include:

- (a) Rappelling;
- (b) rescue hoist;
- (c) Special Patrol Infiltration/Exfiltration System (SPIES);
- (d) Fast Rope Insertion and Extraction System (FRIES);
- (e) Helicopter Cast and Recovery (HELOCAST);
- (f) parachute operations (Paradrop); and
- (g) Combat Rubber Raiding Craft (CRRC) (also known as *K-Duck* operations).

- a. **Supported Units:** USASOC/NAVSPECWARCOM/AFSOC/MARSOC:
First O-6 in Chain of Command of Forces at Risk and/or O-6 in Mission/Course of Action Approval Authority. (USSOCOM Manual 350-6 appendix G)
- b. **Aviation Supporting units:** Refer to NG Supp 1 to AR 95-1 para 4-15.1a(2). For LAARNG aviation units Ladder operations no lower than a **MODERATE** approval level.

9-1. General. Ladder operations are used to provide a means of infil/exfil of personnel by helicopter from areas which prohibit helicopter landings.

9-2. Objectives.

- a. To prescribe qualification and training requirements for maintaining proficiency in the conduct of ladder operations.
- b. To prescribe safety requirements, ladder methods, equipment, and rigging procedures in the conduct of ladder operations.
- c. To define the duties and responsibilities of key personnel during ladder operations.

and a minimum of 50 meters, not to exceed 100 meters, left or right of the aircraft flight path. Safety boats must be of a type and capacity to effect recovery of personnel.

(4) A minimum of one safety swimmer will be aboard each safety boat.

The swimmer will be a graduate of the Combat Diver Qualification Course or a USSOCOM-approved waterborne infil course, scout swimmer course, or current Red Cross lifesaver or water safety instructor course. The safety swimmer must have swim fins, a face mask, and a Service-approved personal flotation device to help personnel, as needed. The swimmer cannot be the boat driver.

(5) A Service-approved flotation device is required during water operations. Inflate flotation devices to 1/3 of their total capacity (or as pre-briefed) prior to entering the water.

(6) Attach a chemlight/light source to themselves during overwater/night operations.

(7) Personnel will be secured to a tension bearing portion of the ladder prior to the aircraft departing into forward flight.

(8) Maximum load will not exceed ladder/aircraft limits.

(9) Aircraft should keep well clear of ground obstacles.

(10) Ladders must be recovered and secured prior to forward flight when no equipment or personnel are attached.

9-4. Personnel Qualification Requirements.

a. **Initial Training.** All personnel will successfully complete the initial ladder training listed below before beginning ladder qualification training in paragraph 9-4.c.:

(1) Personnel will be briefed on ladder equipment and purpose, capabilities, limitations, and emergency procedures.

(2) Personnel will be briefed on the duties and responsibilities of the PC, crewmembers, and SO.

(3) Requirements in Chapter 3, paragraph 3-2.f. for water operations.

b. **Safety Officer (SO).** Personnel performing duties as SO will be experienced in ladder operations.

c. **SOF Baseline Interoperable Standards for Ladder Qualification.** Upon completion of a USSOCOM recognized school/course, Ladder-qualified personnel will have met all standards at the appropriate levels. Component training requirements and standards may be higher in any area to allow for Service or Component PoE that maybe mission area specific. At a minimum the SOFBIS requirements for Ladder qualification are:

(1) Demonstrate use of all required ladder equipment.

(2) Demonstrate donning of harness, rappel seat and/or safety line to include ladder hook-up.

(3) Define and identify unsafe attachments or equipment related to ladder training.

(4) Define terms used in ladder operations.

(5) Demonstrate knowledge of all ladder commands.

(6) Conduct one (1) ladder operation.

d. **Sustainment Training.** 72 hours prior to conducting ladder training, units will receive formalized

training in the procedures to be used during ladder operations. At a minimum, this training will include:

(1) Rigging and inspection of individual equipment.

(2) Rigging/inspection of aircraft and accompanying equipment.

(3) Hand and arm signals.

(4) Safety requirements and emergency procedures.

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- (10) Direct the aircraft out of the extraction zone, keeping the ladders clear of all obstacles.
- (11) Continually observe the personnel on the ladders, monitor aircraft altitude above obstacles, and immediately inform the PC of any unsafe conditions.
- (12) Keep the PC informed as to the condition of the operation, giving corrections as required to ensure safety.
- (13) Disconnect the ladder system when required.
- (14) Mark ladders with chemlights/light sources during night operations at the point where.
 - (a) The ladder enters the aircraft.
 - (b) The bottom of the ladder.
 - (c) 3-5 feet from the bottom rung.

e. Ladder Personnel.

- (1) Understand all ladder operation procedures and equipment.
- (2) Adhere to all commands from the aircrew/SO.
- (3) Bring to the attention of the aircrew or SO any unsafe condition during the training.

f. Supported unit

- (1) Responsible for the selection, control, and security each PZ or LZ.
- (2) Provide all equipment for operations.
- (3) Responsible to provide at least one caving ladder team leader per aircraft.
- (4) Ensure that unit personnel are qualified and physically prepared to participate in caving ladder operations.
- (5) Ensure that all personnel have received a combat swimmer's safety briefing and have required buoyancy equipment (if applicable).
- (6) Ensure that all personnel have one chemlight attached and activated to their upper portion of body during night over water operations (training and qualification).
- (7) Cease the caving ladder operation if any unsafe condition arises.

9-6. Equipment.

- a. Ladders. All service-approved ladders are authorized for use.
- b. Snap links / Carabineers (will conform to the standards in chapter 5).
- c. Restraint harness for CE/FE/AG/safeties.
- d. Headsets.
- e. Heavy duty tape (100 MPH)
- f. knife.
- g. 4"X4" block of wood (as required). (Mark's block)
- h. Service-approved flotation devices for all personnel (for water ladder operations).
- i. Bolt cutters or alternate equipment to perform emergency jettison/cutaway procedures.
- j. Light source (required for personnel conducting overwater operations) and for ladder markings.

- (2) After entering aircraft, all equipment will be properly secured.
- (3) All Service-approved ladders are authorized for use. Ladder operations must follow the manufacturer's written limitations and restrictions for each type of ladder. Care must be taken not to exceed the attachment point limitations/capabilities.

b. Emergency Actions.

- (1) Should an emergency occur during an extraction, personnel will secure body to the ladder and

apply the distress, help or pick me up hand and arm signal by waving one hand overhead to inform the crew. The pilot should lower the member to the ground or water safely.

- (2) In the event of an actual aircraft emergency, the PC will be the final authority as to the solution of the emergency and the action taken.

- (3) When a suspended individual or ladder has become ensnared and an ascent is not possible, immediate steps will be taken to lower the aircraft until the personnel can unhook.

WARNING: Personal Flotation Devices (PFD), if inflated prior to exiting the aircraft, may hinder emergency egress from downed, underwater aircraft.

WARNING: (V-22) Personnel should be aware of the significant water spray created by aircraft downwash. This is significant in that it may reduce swimmer awareness and breathing ability.

9-9. Safety Procedures.

- a. Airspeeds shall not exceed 80 KIAS. During cold/wet weather operations airspeed should not exceed 50 KIAS due to wind chill factors.

- b. During training maximum flight time with personnel on the ladder is 20 minutes.

- c. At least one operable radar altimeter is required to maintain obstacle clearance between ropers and the ground.

9-10. Signals and Commands.

- a. All signals and commands both routine and emergencies between the aircrew and the supported unit will be coordinated and briefed for the operations.

- b. Hand signals for directing aircraft movement are contained in Appendix A.

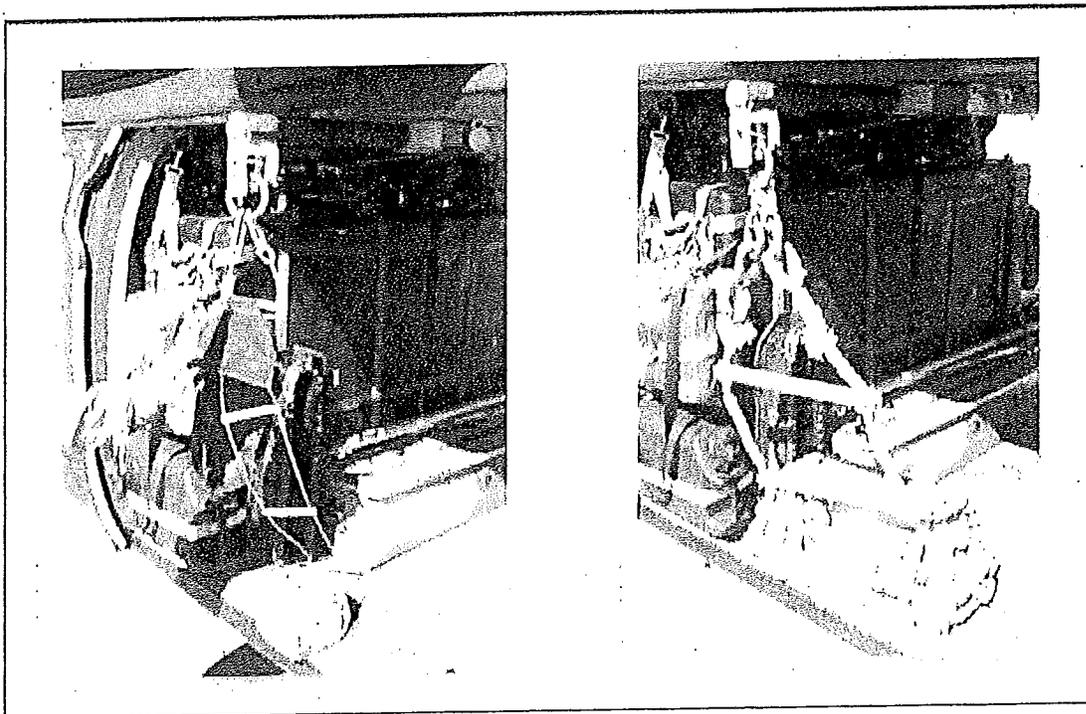


Figure 9-4. Caving and Jacob's Ladder Attached to the FRIES Bar of an H-60.



Figure 9-7. Jacobs Ladder attached to H-60 Tie-Downs.

the extraction personnel during hook up to the ladders. NCM will inform PC when personnel and ladder(s) are secure. The P and NCM will announce when their attention is focused inside and again when reestablished outside. If forward flight is required, the NCM must constantly monitor the survivors and keep the P* informed of their stability and height above obstacles.

2. Procedures.

a. The PC will ensure the ladder is inspected, serviceable, and secured to the aircraft. The NCM will inspect and secure a serviceable ladder to the aircraft cabin floor. Proper flotation will be attached to the ladder as necessary.

b. The PC will inform the NCM when to deploy the ladder and establish what maximum radar altimeter reading may be achieved with the ladder safely on the ground or in the water.

c. Once personnel in the water are located, plan the approach into the wind as much as possible. The approach should terminate to a hover approximately 20 feet above the personnel. The crewmember in the cabin area will lower the caving ladder when directed to do so by the PC. The crewmember will advise when the caving ladder has been deployed and that it is in the water. The ladder must touch the water BEFORE personnel in the water touch it to avoid electrical static discharge shock. Owing to lack of visual references, it will be difficult to detect drift over the water. Crewmembers must provide assistance to the P* in order to maintain a constant position over the personnel in the water.

d. Personnel to be extracted will grasp the ladder after it has entered the water and comes within reach.

Personnel will then climb the ladder into the aircraft. Crewmembers will assist with the entry into the aircraft as much as possible. In the event personnel are injured or cannot climb into the aircraft, they will attach themselves to the ladder with a snap link attached to the front of the survival vest (attach snap link directly to cable rung and not directly rung. These personnel will be flown to the nearest landing area, lowered to the ground, and then moved into the aircraft.

OVERWATER CONSIDERATIONS: Overwater flight, at any altitude, is characterized by a lack of visual cues, and therefore has the potential of causing visual illusions. Be alert to any unannounced changes in the flight profile and be prepared to take immediate corrective actions. The radar altimeter low bug should be set to assist in altitude control. Hazards to terrain flight (such as harbor lights, buoys, wires, and birds) must also be considered during overwater flight.

NIGHT OR NIGHT VISION GOGGLE (NVG) CONSIDERATIONS: For night operations, ladders will be marked with chemlights/light sources at the point where the ladder enters the water, the bottom of the ladder, and 3-5 feet from the bottom of the rung. This will aid the crewmembers in identifying when the ladder enters the water. Spatial disorientation can be overwhelming during overwater operations at night. Proper scanning techniques are necessary to avoid spatial disorientation. If there are visible lights on the horizon or if the shoreline can be seen, the pilot may opt to approach the survivor(s) so the aircraft is pointed toward these references, if the wind permits. If no other references exist, deploy chemlights to assist in maintaining a stable hover.

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SAO: _____

SP: _____

ASO: _____

POC: 

AASF#1 IP

LAARNG

SPECIAL PATROL INFILTRATION/EXFILTRATION SYSTEM OPERATIONS

12-1. REFERENCES.

- a. AR 95-1, Aviation Flight Regulations, 11 Mar 14
- b. NG Supp 1 to AR 95-1, Flight Regulations, 8 Aug 11
- c. USSOCOM Manual 350-6, Special Operations Forces Baseline Interoperable Rotary Wing And Tiltrotor Infiltration/Exfiltration Training Standards, 15 Sep 11

12-2. PURPOSE. To establish standardized procedures for conducting Special Patrol Infiltration/Exfiltration System operations and training in UH-60 aircraft in support of units authorized and trained to conduct seats-out operations.

12-3. APPROVAL AUTHORITY

IAW para 8-11 *d* NG Supp 1 to AR 95-1, a complete list of tactical insertion/extraction mission tasks which do not require a seats-out waiver from ARNG/AV are identified in para. 4-15.1a(2)

(1) Tactical Ingress/Egress tasks include:

- (a) Rappelling;
- (b) rescue hoist;
- (c) Special Patrol Infiltration/Exfiltration System (SPIES);
- (d) Fast Rope Insertion and Extraction System (FRIES);
- (e) Helicopter Cast and Recovery (HELOCAST);
- (f) parachute operations (Paradrop); and
- (g) Combat Rubber Raiding Craft (CRRC) (also known as *K-Duck* operations).

a. Supported Units: USASOC/NAVSPECWARCOM/AFSOC/MARSOC:

First O-6 in Chain of Command of Forces at Risk and/or O-6 in Mission/Course Of Action Approval Authority. (USSOCOM Manual 350-6 appendix G)

- b. Aviation Supporting units:** Refer to NG Supp 1 to AR 95-1 para 4-15.1a(2). For LAARNG aviation units SPIE operations will be no lower than a **MODERATE** approval authority.

12-4. GENERAL.

a. **SPIE.** SPIE was developed to rapidly insert or extract personnel from an area where landing is not possible. SPIE procedures can be used for rough terrain as well as water extraction (wet-SPIE) operations. Personnel, each wearing a harness with an attached snap link, hook into the SPIE rope D-ring. A second safety rope and snap link is used and is connected to the upper or lower D-ring of the rope but not the same D-ring as the primary attaching point. The helicopter lifts vertically

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appropriate authority. The senior supported commander will review risk assessments to ensure that the entire operation has been properly assessed and appropriate controls have been

implemented. Risk approval will be IAW the published guidance governing the forces conducting the training and/or operation. Commanders must continuously evaluate and manage risk and never become so overconfident on mission accomplishment that risks are ignored.

c. Tactical safety considerations pertaining to helicopter infil/exfil operations and training are too numerous and situation dependent to address comprehensively in this publication. Specific tactical questions about safety should be addressed to the appropriate publication or unit SOP. Safety reporting responsibilities are addressed in USSOCOM Directive 385-1, *Joint Safety Program*.

d. USSOCOM units and personnel will comply with applicable Component and USSOCOM regulations, directives, and standards when conducting SOF training and operations. When operating on an installation, units will comply with host installation regulations, directives and policies that do not conflict with Component or USSOCOM regulations. If a conflict exists between the host installation regulation, directive or policy, and this or other Component/USSOCOM regulations, directives or standards, the affected unit will notify their HQs through the unit's chain-of-command for resolution.

e. **Safety Officer (SO).** For the purposes of this manual, the SO is seen as a participating member of the operation and/or training event and should not be confused with the range safety officer.

F. Water Operations. Personnel participating in infil/exfil training that involves intentional operations overwater will successfully complete drown proofing and a swim qualification/test IAW Service regulations as well as be "current" in their swim qualification. Commanders at all levels will ensure personnel being trained have the appropriate swimming skills to safely accomplish all required training tasks. All personnel aboard aircraft that are operating beyond autorotation glide distance of land will wear a Service-approved flotation device. For swim or dive-related operations, an authorized swimmer/diver flotation device will be worn. Inflation requirements and associated warnings are addressed in applicable chapters of this document.

WARNING: The wearing of body armor during SPIE infil/exfil operations can result in life-threatening situations due to the harness causing the body armor to ride up and cause choking and/or reduce the flow of blood to the brain. If body armor is required, body armor with a cut away section below the neck (similar to the Army SOF BALCS-R body armor) should be used for SPIE operations. If other types of body armor are used, extreme care will be taken to monitor personnel for signs of choking/unconsciousness during SPIE operations,

WARNING: Personnel will not wear a MILES harness during any helicopter infil/exfil operation that uses ropes, ladders, hoist or flotation devices.

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The safety swimmer must have swim fins, a face mask, and a Service-approved personal flotation device to help personnel, as needed. The swimmer cannot be the boat driver.

12-7. Personnel Qualification Requirements.

a. **Initial Training.** All personnel will successfully complete the initial SPIE training listed below

before beginning SPIE qualification training in paragraph 7-4.c. USSOCOM manual 350-6:

- (1) Must be authorized by an O5 level commander to conduct SPIE training
- (2) Be thoroughly briefed on the SPIE system, its purpose, capabilities, limitations, and emergency procedures.
- (3) Be thoroughly briefed on the duties and responsibilities of the PC, CE/FE/AG, SPM and SO.
- (4) Complete hands-on training on the SPIE system.
- (5) Requirements in Chapter 3, paragraph 3-2.f. USSOCOM manual 350-6 for water operations.
- (6) Aircrews will be qualified to perform their duties IAW an approved aircrew training program.

b. **SPIE Master (SPM).** Selection of personnel for qualification as SPM should be based on the individual's demonstrated leadership capabilities, maturity (E-4 or above), knowledge and experience of SPIE operations. Personnel are qualified to perform the duties of SPM after they have met the requirements in paragraph 7-4.a. and 7-4.c. USSOCOM manual 350-6, as well as the successful completion of the SPM training course. SPM training will include the following:

- (1) Receive instructions and demonstrate proficiency on preparing the aircraft for SPIE operations.
- (2) Receive instructions and demonstrate proficiency in the following SPM duties:
 - (a) Coordination procedures and responsibilities.
 - (b) Troop briefings.
 - (c) Throwing and retrieving ropes.
 - (d) Hand and arm signals.
 - (e) Emergency procedures.
- (3) Personnel undergoing initial SPM qualification training will serve as SPM on at least one (1) day operation and one (1) night operation from an aircraft.

c. **SOF Baseline Interoperable Standards for SPIE Qualification.** Upon completion of a USSOCOM recognized school/course, SPIE qualified personnel will have met all standards at the appropriate levels. Component training requirements and standards may be higher in any area to allow for Service or Component PoE that may be mission area specific, but at a minimum the SOFBIS requirements for SPIE qualification are:

- (1) Demonstrate proper techniques for donning an approved harness and connecting the harness and equipment to the SPIE system (personnel will ensure that their individual harnesses are properly fitted and worn, with minimal slack in the leg straps to prevent the harness from riding up during infil/exfil).
- (2) Conduct two (2) SPIE operations without equipment, (1 day/1 night).
- (3) Conduct two (2) SPIE operations with combat equipment and weapon, (1 day/1 night).

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- (1) Ensuring all aircraft and aircrews are at the appropriate locations for training, rehearsals and the operation.
- (2) Ensuring that all aircrew understand their responsibility concerning SPIE IAW this manual.
- (3) Ensuring that all aircraft infil personnel on the designated objective.

c. Pilot-in-Command (PC).

- (1) The PC assumes the duties of the AMC on single ship missions.
- (2) Ensures the aircrew and all non-aircrew personnel are briefed and understand their responsibilities during SPIE operations, including aircraft safety and actions in the event of an emergency.
- (3) Ensures the SPIE equipment rigging is inspected for completeness and functionality with no visible metal fatigue or other structural weakness, and that it is installed properly.
- (4) Keeps the aircraft positioned over the objective with corrections from the crew as required.
- (5) Emphasizes procedural techniques for clearing, recovery, jettison of the SPIE and/or aircraft premature departure from the objective area.

NOTE: The SPM and the CE/FE/AG are responsible for the safe conduct of the SPIE operation. Because there is considerable overlap between the duties and responsibilities of these personnel, they must coordinate closely before the operation to determine who is performing which duty.

d. SPIE Master (SPM). A SPM will be designated for each aircraft and has overall responsibility for the safety of all personnel conducting SPIE operations, ensuring adherence to safety precautions outlined in this manual. The SPM is responsible for the following:

NOTE: In the absence of a SPM the CE/FE/AG will assume SPM duties.

NOTE: The CE/FE/AG will rig the aircraft if a SPM is not available and secures all loose equipment to ensure nothing falls from the aircraft.

(1) Preflight/Infil Duties.

- (a) SPM coordination of all aspects of troop and unit preparation to include procurement of sufficient SPIE equipment for the operation.
- (b) SPM coordination of all support activities.
- (c) SPM proper preparation of SPIE equipment.
- (d) SPM briefs the pilot and other concerned personnel about details of the operation, especially the extraction and dismounting procedures.
- (e) SPM makes requests through the CE/FE/AG to keep the pilot informed throughout the operation and maintains communications with the CE/FE/AG SPM.
- (f) SPM assignment of qualified personnel to the duties of SPM and other key positions as required by the operation.
- (g) SPM strict adherence to procedures for the planning, preparation and execution of the operation as outlined IAW current Service and Component directives, regulations and manuals as well as the references in the Glossary (Section II) of this manual to include current AWR/FC/Unit SOP and local directives related to the specific training.

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(3) Dismounting Duties.

(a) On arrival at the dismounting area, CE/FE/AG informs the PC as to the approximate distance of the rope from the ground.

(b) Once the PC starts the vertical descent, CE/FE/AG continually informs him as to the approximate distance of the rope from the ground.

(c) CE/FE/AG informs the PC of any horizontal drift that occurs and any obstructions near the SPIE rope. Also informs the pilot of any oscillation that may occur.

(d) CE/FE/AG informs the PC when the rope is about 25 feet above the ground and again when it is 10 feet above the ground. Ensures that the rate of descent is slow enough to enable personnel to touch down and get out from under other personnel safely.

(e) CE/FE/AG reports when the first man initially touches down, when the last individual begins to move away from under the helicopter, and when all personnel are disconnected.

(f) CE/FE/AG or SPM, on order of the pilot, either retrieves the SPIE rope into the aircraft or disconnects the SPIE rope and drops it to the ground.

(1) When using the H-60 aircraft, the only way to retrieve the SPIE rope while in the air is by having a pre-attached recovery rope with a 16-foot sling rope. In some cases, the SPM joins two 12-foot-long sling ropes to haul the SPIE rope aboard and attaches the rope 5 to 6 feet below the cargo hook or cargo strap hook-up point.

(2) The type of knot used to connect the sling (or recovery) rope to the SPIE rope is selftightening in nature (for example, the prusik knot). The SPM fastens the standing end of the sling rope to the deck tie-down or uses a snap link.

(3) Although it is important to keep the line out of the way, the primary consideration is its length. The retrieval rope must be long enough to account for any oscillation in the SPIE rope during flight.

WARNING: Rope will not be deployed until the aircraft is at a stabilized hover directly over the designated objective (Exfil).

e. Safety Officer (SO). The SO is responsible for safe and efficient extraction missions. His duties are as follows:

(1) Ensures radio or visual signal communication with the SPM or aircrew. Radio communication is required for training.

(2) Ensures all personnel have properly hooked up to the extraction rope, and verifies hook-up of the personnel safety sling.

(3) Ensures personnel and ropes are clear from all obstacles.

(4) Signals the SPM that personnel are ready for extraction.

(5) Assists personnel as they land at the let down area.

f. Individuals.

(1) Understand all aspects of the SPIE system and emergency procedures.

(2) Ensure correct equipment configuration.

(3) Ensure carried equipment's dimension or bulk will not interfere with the ability to safely execute SPIE operations.

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Planners must consider the worst case scenario in the event of a mass casualty. The absence of a medic, medical equipment, or transportation will terminate the operation

(2) **Communications Requirements.** During SPIE training, the SPM and SO will maintain positive communication with the aircrew utilizing aircraft communication when available or prearranged hand and arm signals/light signals. Additionally, the SPM or SO will inform the PC to stop operations if an unsafe condition develops. During extractions, the SO (via the SPM) will inform the PC that all personnel are ready for extraction. During tactical missions, prearranged signals should be used to communicate between the mission and aircrew personnel (i.e., flashing light or chemlight/light source signals).

(3) **Adverse Weather/Terrain Conditions.** During the risk assessment for SPIE training the following conditions will be considered:

- (a) Wind chill factors caused by rotor downwash, cruise airspeeds, and duration that could cause cold weather injuries through exposure. Airspeeds shall not exceed 70 KIAS under normal conditions or 50 KIAS during cold weather and water operations.
- (b) The rope is exposed to the elements for a sufficient length of time to freeze, thereby reducing its tensile strength.
- (c) Conditions, to include blowing particles or water spray produced by rotor downwash, that cause the aircrew or SPM to lose visual contact with the ground.

b. Night Operation Requirements.

- (1) Two chemlights/light sources will be attached at the bottom end of the rope and 5 feet higher to aid in determining the relationship of the SPIE rope to the ground.
- (2) Individual Component and sub-unified commanders will establish training, policy and procedure for use of NVDs.

12-10. Rigging of aircraft

H-60.

(1) Equipment.

- (a) One 120-foot SPIE rope with deployment bag.
- (b) Two 11-foot, three or four-loop cargo slings or two 9-foot, three or four-loop cargo slings.
- (c) Two Type IV connector links (four if aircraft does not have cargo hook).
- (d) Heavy duty tape (100 mile tape). Use to secure chemlights/light sources to rope and excess straps as required.
- (e) One 12-foot sling rope.
- (f) Five oval snap hooks (nine if the aircraft does not have cargo hook).
- (g) Optional: 4X4 wooden shoring to allow emergency cutting of slings without damage to aircraft.
- (h) Cutting device (axe).

NOTE: If the aircraft does not have cargo hook, use four 11-foot or 9-foot, three or four loop slings.

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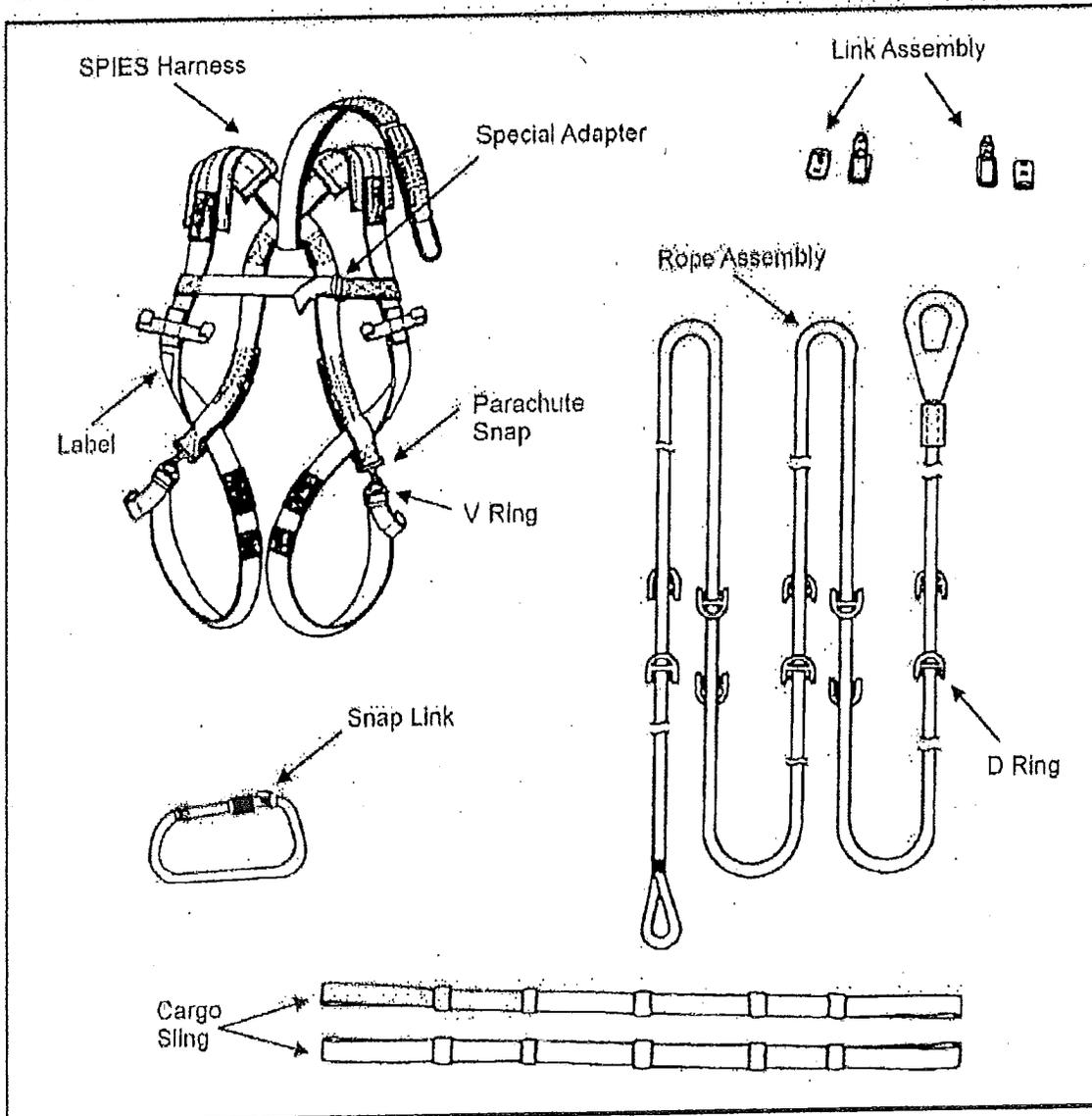
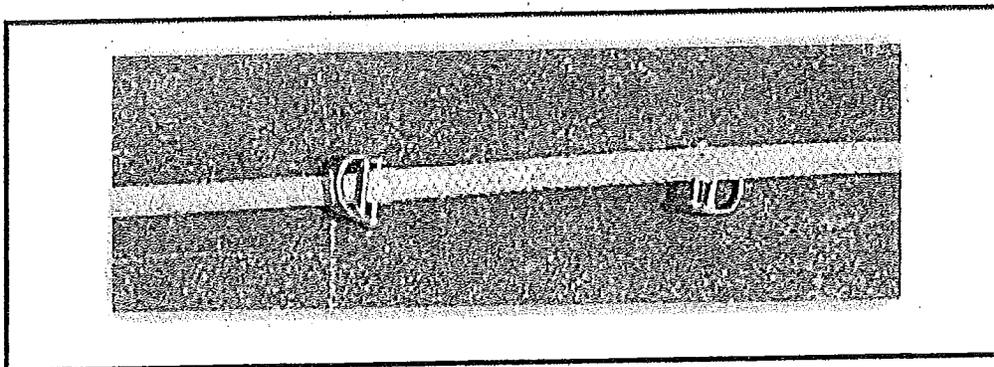


Figure 12-1. SPIE Equipment.



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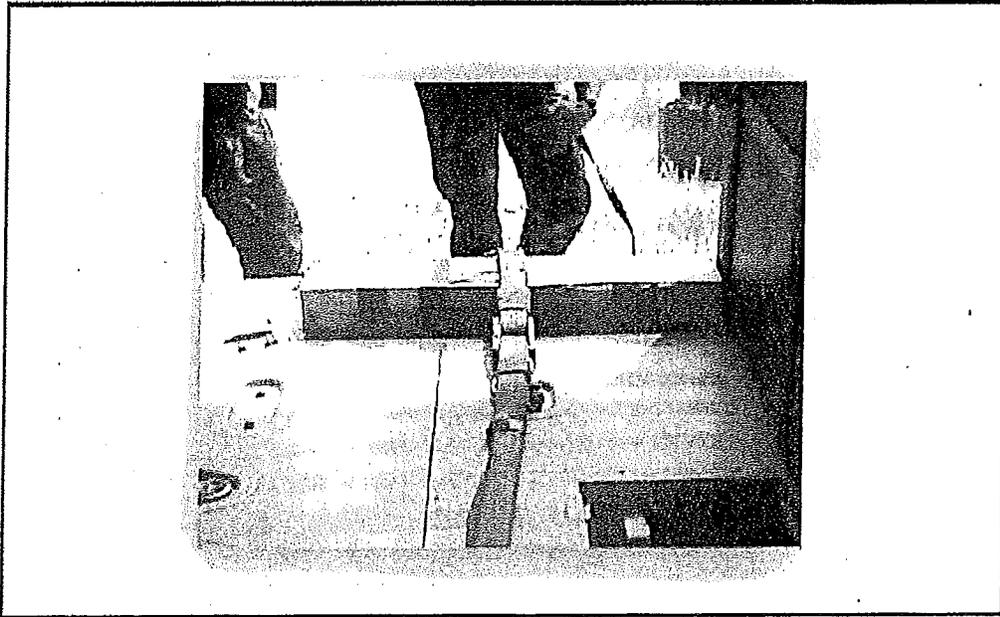


Figure 12-5. Placement of Wood Block.

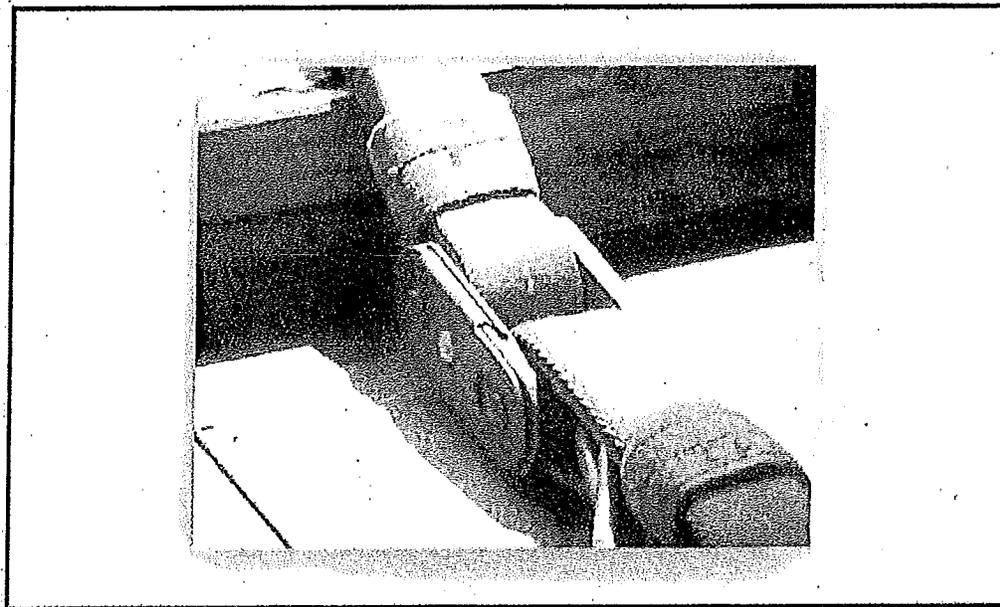


Figure 12-6. Placement of Type IV Link.

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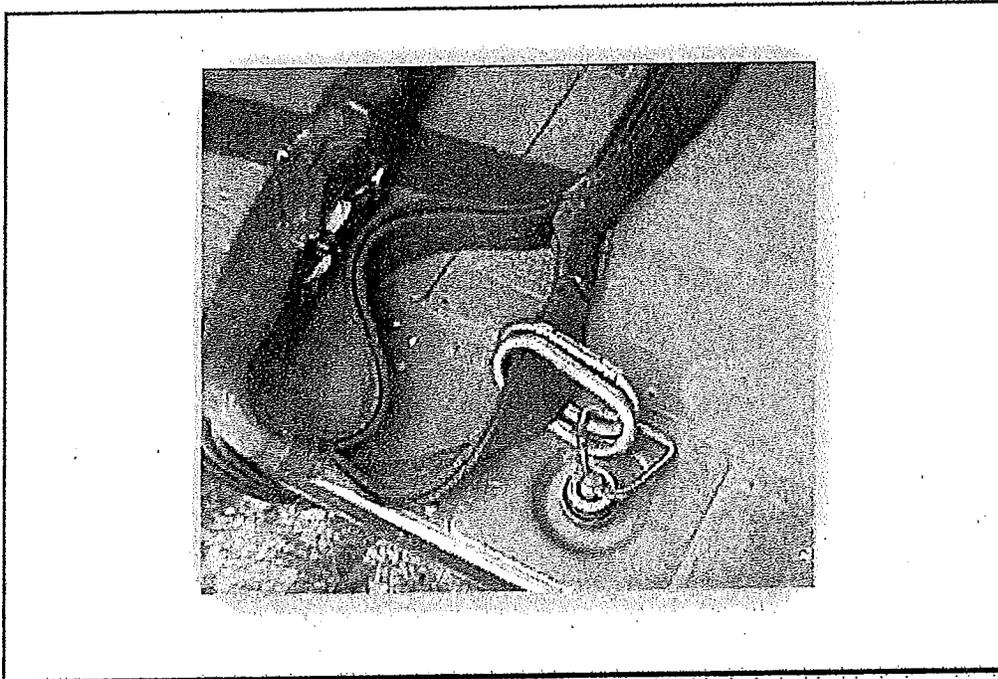


Figure 12-9. H-60. Snap Links Alternating on Strap.

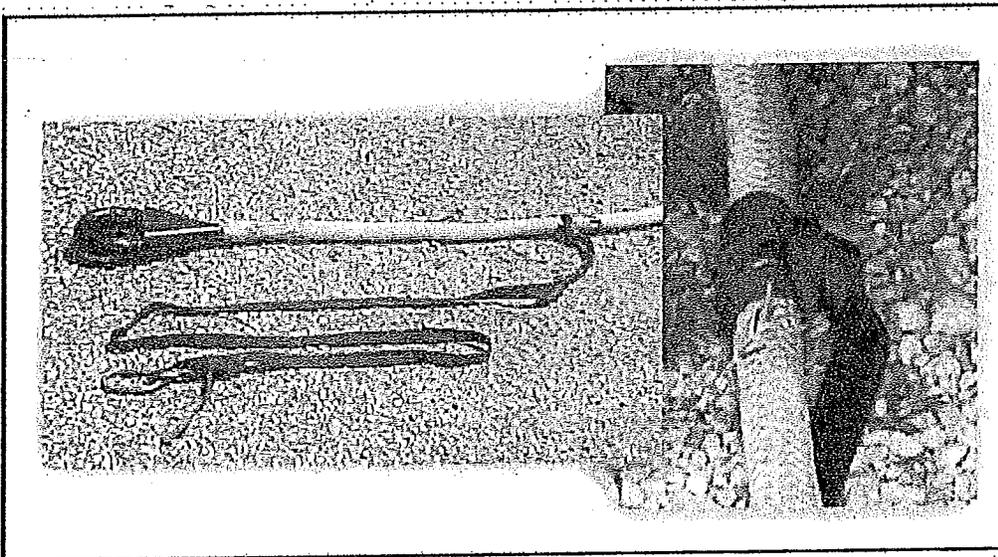


Figure 12-10. Recovery Rope Tied to SPIE Rope.

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7-10. Safety Procedures.

- a. Should an emergency occur during an extraction, personnel will apply the distress, help or pick me up hand and arm signal by waving one hand overhead (see Figure A-6) to inform the crew. The pilot should lower the member to the ground or water safely.
- b. Airspeeds shall not exceed 70 KIAS under normal conditions or 50 KIAS during cold weather and water operations.
- c. During training, maximum flight time with personnel on the rope is 20 minutes.
- d. At least one operable radar altimeter is required to maintain obstacle clearance between ropers and the ground.
- e. The V-blade knife or similar cutting device must be readily available in the event the SPIE rope straps need to be cut due to an emergency or the rope becomes entangled.
- f. A safety line will be secured around personnel utilizing a bowline or similar type knot.

7-11. Signals and Commands.

- a. All signals and commands between the aircrew and the supported unit will be coordinated.
- b. Hand signals for directing helicopter movement are contained in Appendix A.
- c. Emergency signals from aircraft crews to supported unit will be briefed for operations.

7-12 Perform Special Patrol Infiltration/Exfiltration System Operations

WARNING

Ensure that the SPIES master and crew chief wear safety harnesses secured to tie-down rings anytime cabin doors are open.

CAUTION

Ensure that SPIES rope remains secured to the cargo hook until the aircraft has landed. If recovery of SPIES rope is impossible, execute a roll-on landing to avoid entanglement in the rotor system

CONDITIONS: In an H-60 helicopter with special patrol infiltration/exfiltration system (SPIES) equipment installed.

STANDARDS: Appropriate common standards and the following additions/modifications:

1. Rated.

- a. Conduct a crew and passenger safety briefing.
- b. In-flight maintain a minimum of 100 ft separation between extraction personnel and highest obstacles.
- c. Maintain airspeed ± 5 knots. (Maximum airspeed with team members attached is 70 knots indicated airspeed (KIAS) in moderate climates and 50 KIAS in cold climates.)
- d. During hover, maintain hover altitude ± 10 feet and do not allow drift to exceed 5 feet.

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c. Maximum en route airspeed will be **no faster than 70 KIAS** in moderate climates and **50 KIAS** in cold climates while team members are attached to the SPIES rope. **Maximum aircraft bank angle will be no greater than 30 degrees.** It may be necessary to reduce airspeed if SPIES personnel begin to spin or if the cone angle exceeds 30 degrees.

d. Upon arrival at the dismount area, a transition is made into **hovering flight at an altitude of 250 feet above ground level (AGL).** **A vertical descent is started with the rate not to exceed 100 feet per minute at touchdown.** Maintain a stable hover until SPIES members clear the extraction system.

ADVERSE WEATHER/TERRAIN CONDITIONS: SPIES operations will not be conducted under the following conditions:

- Wind chill factors caused by the rotor wash of the helicopter or extraction cruise air speeds that may cause cold weather injuries.
- Ice on the SPIES.
- SPIES is exposed to the elements long enough to freeze, thereby reducing its tensile strength.
- Blowing particles produced by rotor downwash cause the aircrew or the SPIES master to lose visual contact with the ground.

WATER EXTRACTION CONSIDERATIONS: The SPIES is suitable for extracting teams from the water. For this procedure, three inflatable life vests or any type of floatation device is tied to the SPIES rope to provide buoyancy for the rope while in the water. Takeoff, en route, and landing are the same as over land. The dismounting procedures differ when landing on a ship. Once onboard, the team members take their orders from LSE or personnel in charge of the deck.

NIGHT OR NIGHT VISION GOGGLE (NVG) CONSIDERATIONS: When hovering above 25 feet, the P* may have difficulty in maintaining altitude and position. Use the radar altimeter to assist in maintaining altitude. Use references, such as lights, tops of trees, or manmade objects above and to the sides of the aircraft. By establishing a reference angle to these objects, the P* can detect altitude changes when his or her perspective to these objects changes. Ground objects—fences, trails, roads—provide excellent references for detecting lateral drift. Proper scanning techniques must be used. The P* may become spatially disoriented when alternating his or her viewing perspective between high and low references.

The AN/AVS -7 ANVIS HUD hover symbology can aid in maintaining position and hover altitude for night vision goggle (NVG) operations and assist in maintaining position over the insertion point during adverse environmental conditions (blowing dust, sand, or snow) or low levels of illumination. Proper scanning techniques are necessary to detect aircraft drift and to avoid spatial disorientation.