THE AIR ASSAULT SCHOOL
FRIES/SPIES MASTER
FRIES HANDOUT

REFERENCES

a. United States Special Operations Command (USSOCOM) Manual 350-6

b. Army Regulation 95-1 Flight Regulations

   a. FORSCOM Supplement 1 to AR 95-1.

c. Army Techniques Publication 3-18.10

d. Marine Corps Regional Planning 3-11.4A, Helicopter Rope Suspension Techniques (HRST) Operations

e. Training Circular 3-04.11, Commander's Aviation Training and Standardization Program.

f. Training Circular 3-04.12, Aviation Mission Planning Forms.

g. Training Circular 21-24, Rappelling

h. Memorandum for See Distribution, Subject: Airworthiness Release (AWR) for UH60A/L/M Helicopters with Fast Rope Insertion/Extraction System (FRIES) Equipment Installed (AWR 1477), dated 14 September 2007, with Revision 6, dated 9 January 2013.

i. 101st ABN DIV (AA) FRIES/SPIES SOP
   a. References from these SOPs that differ from above references will be in **bold font, underlined, and will be adhered to when operating as a member of the 101st ABN DIV (AA)**

RISK MANAGEMENT AND APPROVAL AUTHORITY

- FRIES Operations for ground forces are considered Extremely High Risk prior to mitigation. The Deliberate Risk Assessment Worksheet, DD Form 2977 (SEP 2014), must be completed by the ground unit conducting the training or operation. It must be signed by the first O-5 in command or higher for Tower operations and the first O-6 in command or higher for Aircraft operations. In accordance with AR 95-1, Chapter 8-11 Flight Regulations, the approval authority for all "Seats-Out" FRIES operations resides with the Commanding General. This cannot be delegated below the O-8 level per AR 95-1. The ground unit O-6 responsible for the FRIES training or operation is responsible for informing the Commanding

General of each operation prior to execution. The unit commander must also continually reassess risk using the approved DD Form 2977 (Deliberate Risk Assessment) prior to and during execution of training or operation to ensure no future unanticipated conditions or circumstances occurred that would increase the risk. Safe conduct of the operation is the primary consideration.

FRIES MASTER QUALIFICATIONS

- In accordance with USSOCOM 350-6 you must be a mature E-4/SPC or higher
  - **CPL or higher**
- Warrant officer
- Commissioned Officer
- Graduate of an accredited F.R.I.E.S. Master Course

FRIES MASTER CURRENCY

- Must perform F.R.I.E.S. Master (FRM) duties at least once every 12 months

- If over 12 months **6 Months Fort Campbell** must receive refresher training by a current FRM IAW USSOCOM 350-6 (Chapter 6, para. 6-4) Refresher Training for FRMs will be detailed during "ROPER QUALIFICATIONS PRIOR TO TACTICAL (TRAINING) OPERATIONS" instruction

- If over 24 months **18 Months Fort Campbell** or if Soldier lacks proficiency as a FRM, commanders can consider initial qualification over refresher training

FRIES MASTER DUTIES AND RESPONSIBILITIES

- Safety first

- Responsibilities include:
  - Inspection of all equipment & personnel
  - Inspection of aircraft rigging
  - Aircrew and safety briefings
  - Training of ropers
  - Control of ropers entering and exiting the aircraft
  - Coordinate with the aviation unit for rope jettison procedures
  - Conduct rehearsals with ropers and supporting units
  - Measures each rope to confirm the length. No ropes greater than 90ft will be used without the approval from the Commanding General.

FRIES MASTER QUALIFICATION TRAINING

- During FRM qualification training, personnel will serve as a FRM or AFRM in a total of 7 operations:
  - Participate in 3 operations from a Fast Rope tower, (2 day/1 night).
  - Participate in 4 operations from an aircraft, (2 day/2 night).
- During the aircraft training requirement, the individual will serve as the FRM/AFRM on at least 2 day operations and 1 night operation.

- During FRM qualification training, personnel will serve as a roper in a total of 7 operations:
  - Demonstrate, from a platform/tower, the proper techniques for boarding the aircraft, movement in the aircraft, grasping the Fast Rope, exit procedures, and descending the Fast Rope
  - Conduct two (2) successful Fast Rope descents from a platform/tower (one without and one with combat equipment and weapon). Platform/tower height range is from 15 to 60 feet.
  - Conduct three (3) aircraft insertions without equipment, (2 day/1 night).
  - Conduct two (2) aircraft insertions with combat equipment and weapon, (1 day/1 night).

  NOTE: Initial aircraft training will not exceed 30 feet during first Fast Rope descent. Units should conduct FRIES training at the lowest altitude possible. There is no additional training value to higher altitudes, only increased chance of injury (40 feet is the recommended altitude)

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ROPER QUALIFICATIONS INITIAL TRAINING

- Authorized by an O5 level commander to conduct FRIES training.

- Briefed on the FRIES system, its purpose, capabilities, limitations, and emergency procedures.

- Briefed on the duties and responsibilities of the PC, crewmembers and FRM/AFRM.

- Complete hands-on training on the FRIES system.

- During descent, demonstrate the ability to use hands and feet to stop and hold a static position on the rope for 5 seconds, without difficulty, while wearing all required combat equipment.

- Demonstrate the ability to execute a controlled descent from a height of 15-60 feet.

J-HOOK IS NOT AN APPROVED LOCK-IN METHOD

ROPER QUALIFICATIONS PRIOR TO TACTICAL (TRAINING) OPERATIONS

- Ropers will receive:
  - Initial Training: As previously outlined, by a current FRM
  - Sustainment Training: Units will receive formalized training in the procedures to be used during Fast Rope operations within 72 hours prior to the operation. At a minimum, this training will include:
    - Rigging and inspection of individual equipment.
    - Rigging/inspection/procedures for the specific aircraft to be used and accompanying equipment.
    - Hand and arm signals.
    - Safety requirements and emergency procedures.

- Refresher Training: Personnel who have not participated in FRIES operations during the past 12 months will undergo refresher training before being included in an operation. Refresher training for Fast Ropers consists of:
  - A complete review of the FRIES system, its purpose, capabilities, limitations, emergency procedures.
  - The execution of at least 1 day and 1 night FRIES (one without equipment, one with combat equipment and weapon) descent from a Fast Rope tower.
  - The execution of at least 1day and 1 night FRIES (one without equipment, one with combat equipment and weapon) descent from an aircraft.
  - Refresher Training for FRMs includes all of the above plus the execution of an entire FRIES operation from an aircraft

All Soldiers should be limited to no more than 10 roping events in a 24 hour period. No more than six events should be with equipment

PERSONNEL NEEDED FOR NON-TACTICAL FRIES A/C TRAINING

- OIC or NCOIC

- One F.R.I.E.S. Master qualified individual (FRM or AFRM) per rope

- One qualified FRM on the ground will serve as the ground Safety Officer (SO) and maintain radio (FM or UHF) communications with the PC and the FRM in the aircraft.

- EMT qualified medic with a covered MEDEVAC vehicle and medical equipment: aid bag, neck brace, and spine board

PERSONNEL NEEDED FOR TACTICAL A/C FRIES MISSION

- One F.R.I.E.S. Master qualified individual (FRM or AFRM) per rope

- EMT qualified medic with a covered MEDEVAC vehicle and medical equipment (Aid bag, Neck brace, and Spine board)

- With prior notification, the aircraft used for the operation can be used as CASEVAC vehicle

WARNING

- When working in or around rotary winged aircraft you will take all commands from the Pilot(s), Crew Chief, and FRIES Master Instructors

- You will approach aircraft in authorized manner, after the Pilot In Command, Crew Chief, or Instructor deems the Landing Zone safe and aircraft has been cleared to be approached.

- Approach a UH-60, UH-1H, MH-6, or similar airframes from a 90 degree angle to or from the left or right side of the aircraft. At no time will personnel approach or exit towards the main or tail rotor of the aircraft.

- Approach a CH-47 D/F or similar airframes from, no more than, a 45 degree angle to the rear of the aircraft. At no time will personnel approach or exit towards the front rotor or from the left or right of the aircraft.

- Service members will not wear MILES harness during any rotary wing infil or exfil operation that uses ropes, ladders, and hoist or floatation devices.

PILOT IN COMMAND (PC) DUTIES AND RESPONSIBILITIES

- Ensures all aircrew and non-aircrew members understand their responsibilities concerning FRIES operations and the procedures for clearing, recovering, jettisoning, and actions during an emergency.

- Issues time warnings.

- Quickly gains and maintains a stabilized hover over the target throughout the operation.

- Gives the command of “ROPES, ROPES, ROPES” once at a stabilized hover.

- Gives the command of “CUT ROPES” in the event of an emergency.

- Keeps the FRM informed of changes to the situation.

- Addresses the following if suppressive fire is to be provided by the aircraft door guns:
  - When suppressive fire will begin and end
  - Conditions for automatic lifting and shifting of fires other than a weapon malfunction or wounded gunner.

CREW CHIEF (CE) DUTIES AND RESPONSIBILITIES

- Inspects the FRIES assembly for the following:
- Correct installation in the aircraft.
- Completeness and serviceability.
- No visible metal fatigue or other structural weakness that could cause failure of the system.
- Briefs all supported personnel on aircraft FRIES safety precautions, normal procedures, and emergency procedures.
- Briefs all personnel on aircraft FRIES configuration.
- Relays all commands and time warnings to the FRM.
- Ensures that ropes are not deployed until the aircraft reaches a stabilized hover over the LZ and 5ft of FRIES rope (marked by chemlights for night operations) is on the ground and clear of obstacles. Relays drift corrections to the PC, when necessary.
- Observes the exit of the ropers.
- Informs the PC of mission status with the following warnings:
- "ROPE(s) OUT": Ropes deployed from the aircraft.
- "ROPERS AWAY": First roper exits the aircraft.
- "ROPERS ARE CLEAR": All ropers have cleared the ropes.
- "ROPES CLEAR": CE confirms ropers are safely on the insertion point and ropes have been recovered or jettisoned.
- "CLEARED FOR FLIGHT": This confirms to the PC that ropes have been jettisoned or secured and the aircraft is cleared to depart the LZ.

- When recovering the ropes, secures the FRIES rope(s) and inform PC that "ROPES ARE SECURED" to allow the aircraft to egress (optional call).

- Verifies/ensures that the rope and site remain safe throughout the FRIES operation. If the CE identifies an unsafe condition, the CE will signal the FRM/AFRM using either the stop stick (closed fist) or the fouled rope (closed fist, arms over-lapped forming an X) hand-and-arm signal. Additionally, the CE will keep the pilots informed of the existing situation.

- Ensures rope is clear of ropers prior to jettisoning. The CE will not jettison any rope until all ropers have exited the aircraft and cleared the rope(s) or ensure personnel are secured in the aircraft prior to rope release.

- Ensures FRIES ropes are fully recovered and secured inside the aircraft or jettisoned prior to departing the LZ.

FRM'S A/C CHECKLIST

- Safety first

- Safety line or safety harness for ropers and FRMs

- Recovery line (must be static rope) with 2 carabiners (same length as decent)

- FM communications with Ground Safety Officer or NCOIC

- Ensure FRIES rope is of proper length for the operation

- Night: 3 chem lights: 1 at mount, 1 at end, and 1 light 5ft from end
  - **5 chemlights: one at the top with only a slit showing to identify the top of the rope to ropers, two 5ft from the end of the rope, and two at the end of the rope. Infrared chemlights will not be used except as a backup to the other chemlights at the bottom of the rope.**

- Ropers will have luminous tape or chemlight on top of helmet (different color than on fast rope)

- Avoid using NVGs during the actual descent because the goggles limit depth perception and create a tunnel vision effect.
  - **Ropers will not wear Night Vision Goggles (NVGs) or have a swing arm mount attached to their helmet while conducting FRIES operations.**

- Individual Units and their Commanders will establish SOPs for NVGs regarding placement on ropers and usage by FRMs or AFRMs

  - **NVGs may be used by the FRM. If the FRM is exiting the aircraft, then they should be worn around the neck and stowed inside the ACU top prior to roping IOT prevent entanglements.**

- FRM will evaluate individual roper's ability to conduct descents with equipment during sustainment training.

- FRM will coordinate with the aviation unit for rope jettison criteria and procedures
  - All ropers are clear from impact area (five meter radius) of the fast rope.
  - The safety pin is removed from the release mechanism.
  - The designated individual then jettisons the ropes.
  - Once ropes are observed on the ground FRM or CE relay "Ropes Clear" to PC.

FAST ROPING UNIFORM

- ACU's sleeves down

- Eye protection (i.e. wind goggles, ESS glasses, or approved ballistic eye ware)

- Hearing protection

- ID tags and ID card

- Kevlar or ACH helmet

- All leather or approved fast rope/rappelling glove with inserts

- Boots with a well-defined heel (no ripple-sole or soft-sole boots)

- Safety line is the inner-most item of equipment worn (made of 7/16 inch nylon rope taped and burnt or whipped and dipped to secure the ends)

- Combat equipment consists of ACH, Plate Carrier/IBA/IOTV, Assault Pack, and weapon

- Gloves
  - Broken stitches: 3 consecutive stitches or 5 in a stitch line that expose skin makeing the glove unserviceable
  - Exposure to petroleum based products
  - Must be all leather gloves

WEATHER RESTRICTIONS

- Wind chill factors caused by rotor downwash, cruise airspeeds, and duration that could cause cold weather injuries through exposure.
  - **The ambient air temperature is 39° F (4° C) or below and visible moisture is present. The ambient air temperature is 20° F (-7° C) or below.**

- Water or ice on the rope inhibiting the ability of the roper to control their descent.

- The rope is exposed to the elements for a sufficient length of time to freeze, thereby reducing its tensile strength.

- Conditions, to include blowing particles produced by rotor downwash or water spray, that cause the aircrew or FRM to lose visual contact with the ground

- **When lightning is observed within five nautical miles of the aircraft.**

- **When wind is reported greater than 30 knots or gust spread is greater than 15 knots.**

- **When rain obscures the windscreen, flight visibility is less than one mile, or when vertical visibility does not allow visual contact between the flight crew and ground.**

SAFETY PROCEDURES FOR UNIT COMMANDERS AND MISSION PLANNERS

- Commanders must personally approve the FRIES site selected for night operations. The FRIES site must be large enough to permit all ropers, upon reaching the surface, to move clear of the rope and for units or elements to consolidate or re-form.

- The mission commander, officer in charge, or noncommissioned officer in charge conduct a detailed risk assessment before FRIES operations. All night FRIES operations will be regarded as medium risk, at a minimum.

- Units must not conduct FRIES training in densely wooded areas or areas prone to blowing dust, sand, or snow, which can produce a hazard for ropers or the aircraft.

- Units must halt FRIES training if:
  - The aircraft is unstable.
  - The fast rope is not fully deployed (5 feet of the rope mission the surface).
  - Any obstacle is present that could interfere with the descent of the ropers.
  - The rope is frozen or slippery.
  - Anyone identifies any unsafe condition.

EMERGENCY PROCEDURES

- Aircraft Emergency:
  - Stop stick: Command by PC to cease FRIES operation. The FRM will stop personnel movement in the aircraft and will maintain positive control of first or next roper.
  - FRM and CE ensure ropers are clear.
  - PC performs appropriate emergency procedures

- Unsafe Drift or Premature Lift-off:
  - Individuals on the rope will lock-in.
  - Stop stick: Command by PC to cease FRIES operation. The FRM will stop personnel movement in the aircraft and will maintain positive control of next roper.
  - PC repositions aircraft over the LZ.
  - Continue the mission when cleared by the PC

- Fouled Rope/Area:
  - Stop stick: Command by PC to cease FRIES operation. The FRM will stop personnel movement in the aircraft and will maintain positive control of first/next roper.
  - FRM and CE attempt to jog the rope free or retrieve it back into the aircraft for redeployment. If the rope becomes hopelessly fouled, then the PC performs vertical descent. Never use the aircraft to attempt to free a fouled or entangled rope.
  - FRM/CE release rope and have ground personnel untangle the rope from the obstacle.

- Loss of Communications:
  - FRIES training will not be conducted without continuous communications between PC and FRM, and between the PC and the ground SO. Loss of communications in a tactical situation will be addressed in the AMB before the mission.

- Hung Roper**:**
  - Stop stick: The FRM will stop personnel movement in the aircraft and will maintain positive control of next roper.
  - The pilot will descend the aircraft if possible to relieve tension on the rope and to lower roper(s) to the ground/surface.
  - FRM/CE will have PC lower aircraft while ground safety pulls rope out to the aircrafts 9 or 3 o'clock, depending on side of the aircraft the rope is on. **(Training environment only)**
  - Rope will be assessed to ensure it is still in good condition to continue training. **(Training environment only)**
  - If lowering the aircraft is not possible, the FRM will send down a recovery line to ensure roper does not continue down the rope. Roper will secure

recovery line onto their safety line. FRM will then make a tactical decision to move the aircraft to safe landing zone or retrieve the roper into the aircraft.

KNOTS

- Bowline with an overhand knot around the body(safety line)
- Figure 8 knot(safety)
- End-of-Line Bowline with over hand knot (recovery)

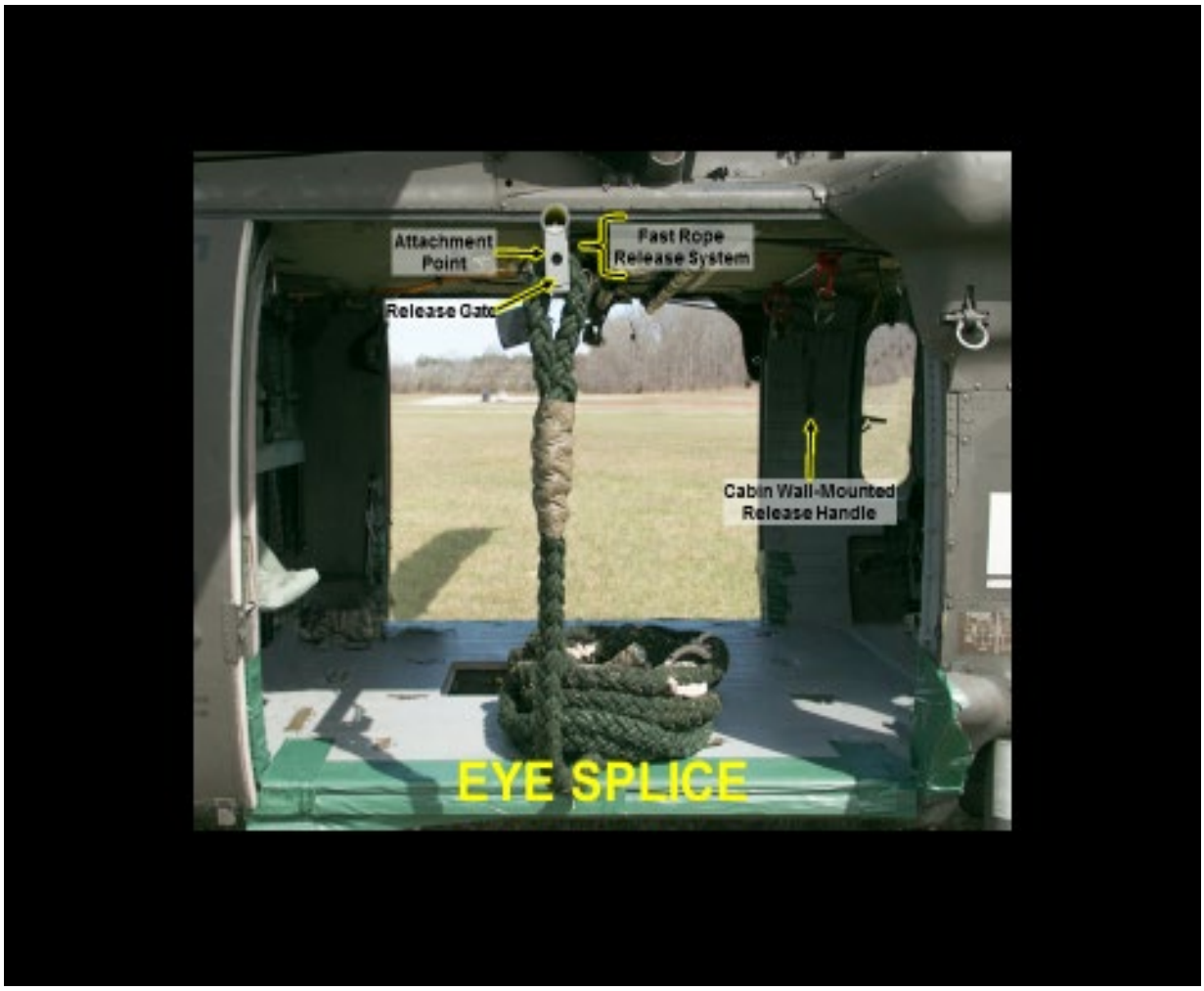
EQUIPMENT

- F.R.I.E.S. Rope: consists of a polyester main rope, which is 1 ¾ inches in diameter, olive drab in color, and is supplied in four standard lengths (50,60, 90, and 120 feet), specialized ropes can be acquired. At the bottom of the main rope, a white nylon rope (9/16 inch diameter) is woven-in to form three extraction loops. The three safety loops (9/16 inch diameter black nylon rope) are woven into the main rope at the same location as the extraction loops.
  - Fast Rope Tensile Strength: 35,000 lbs.
  - 9/16 IN (black/white) nylon rated capacity: 9,000 lbs.
  - A rope usage log should be maintained in DA form 5752-R
  - Shelf life will not exceed 15 years
  - Service life will not exceed 7 years
  - Shelf life plus service life will not exceed 15 years

- 2 types of anchoring system: EYE SPLICE AND HI-TECH
  - EYE SPLICE:
    - Rated capacity of 29,750 lbs (85% of tensile strength)
      Only authorized method of attachment for UH-60 F.R.I.E.S. bar.

  - HIGH-TECH:
    - Rated capacity 9,000 lbs.
    - 3/16 in safety cable: 1,000 lbs.

Ropes should be stored IAW USSOCOM 350-6 Ch. 6-13c.


Attachment Point
Fast Rope Release System
Cabin Wall-Mounted Release Handle
EYE SPLICE

A rope usage log should be maintained in DA form 5752-R

DA 5752-R ROPE LOG

Completed after using ropes on the Tower or in Aircraft

ROPE LOG *(USAGE AND HISTORY)* For use of this form, see FM 3-97.61; the proponent agency is TRADOC.			UNIT ID MARKING
NSN	DOCUMENT NUMBER	SERIAL NUMBER	MFR LOT NUMBER
DATE OF MFR	ISSUE DATE	DATE IN SERVICE	LENGTH
DIAMETER	FIBER	COLOR	CONSTRUCTION

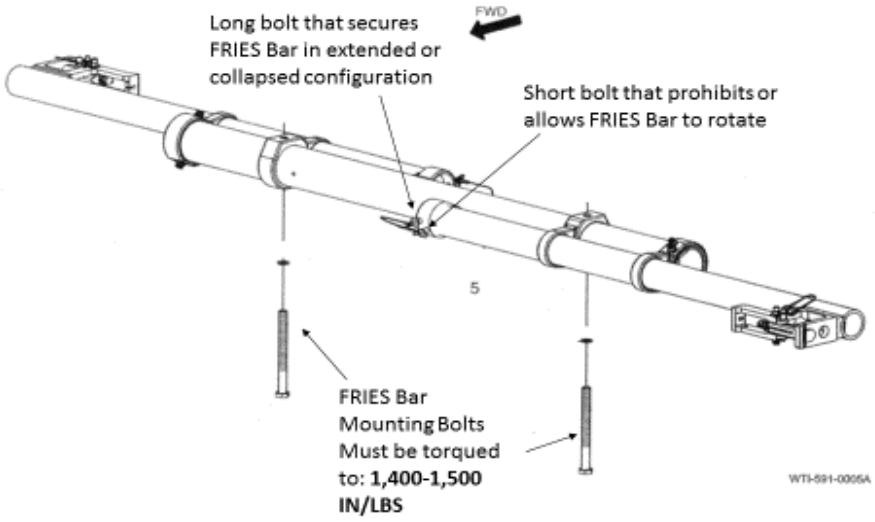
INSPECT ROPE FOR DAMAGE OR EXCESSIVE WEAR EACH TIME IT IS DEPLOYED AND AGAIN AFTER EACH USE. IMMEDIATELY RETIRE ALL SUSPECT ROPES.

DATE USED	LOCATION	TYPE OF USE	ROPE EXPOSURE	INSPECTOR'S INITIAL/DATE	ROPE CONDITION AND COMMENTS

DA FORM 5752-R, MAY 89 APD 9V1.010

UH-60 FRIES BAR

- Eye-splice FRIES rope only
- Release mechanism
- 1,500 lbs (6 ropers) Both sides
- 1,300 lbs one side
- F.R.I.E.S. Bar ceiling mount bolts
  - Torque to 1,400 to 1,500 lbs./in.



Properly seated “Tomb Stone”

CH-47 FRIES BARS

- "H" shaped AFT FRIES BAR rated capacity: 2,250lbs
  - The FRM/AFRM will not position themselves aft of the ramp hinge until the aircraft is at a stable hover and they receive a prior coordinated signal from a crewmember.

- Forward FRIES mount: 1,500 lbs

- Standard Military carabiner: 2,000 lbs
  - Will not have any dents, cracks, pits or rust that cannot be removed with a mild abrasive
  - Neither pin will be moveable
  - Opening gate will not move left or right more than 50% of the way

- Omega carabiner
  - Inspect like the standard military carabiner
  - Rotate locking mechanism to ensure that it locks/unlocks

STUBAI LOCKING CARABINER

- The STUBAI has a tensile strength of 3,200 lbs when the gate is closed.

- Cargo restraint net rings: rated capacity 3,500 lbs.
  - Point of attachment for secondary line

- Omega carabiner: To convert kilo newton (kn) into the rated capacity of the carabiner, take the number stamped on the side of the carabiner and multiply it by 224.81. Example: 53 (kn) x 224.81 (pounds-force) = 11,914.93 lbs rated capacity
  - Inspect like the standard military carabiner
  - Rotate locking mechanism to ensure it locks/unlocks

AIRCRAFT COMMAND AND CONTROL

- **HAND & ARM SIGNALS AND SEQUENCE OF EVENTS**

<table>
<tr><th>Personnel</th><th>Command</th><th>Action / Notification</th></tr>
<tr><td>PC/FRM
ECHOS</td><td>10-minutes</td><td>FRM checks that ropers are ready, anchor points are secure, and if lowering any loads, that they are rigged and ready.</td></tr>
<tr><td>PC/FRM
ECHOS</td><td>6-minutes</td><td>CE and/or FRM breaks the chemlights, if required. FRM will extend and lock the FRIES bar.</td></tr>
<tr><td>PC/FRM
ECHOS</td><td>1-minute</td><td>FRM will remove and secure cargo door troop strap. Ropers may detach safeties and position for FRIES</td></tr>
<tr><td>PC/FRM
ECHOS</td><td>30-seconds</td><td>1. FRM/CE will confirm LZ on final approach
2. FRM/AFRM will position FRIES ropes for deployment.</td></tr>
<tr><td colspan="3">PREPARE FOR AIRCRAFT FLARE FOLLOWED BY STABLE HOVER</td></tr>
<tr><td colspan="3">FRM identifies target area & any hazards on LZ (Landing Zone)
Ropers maintain a secure handhold in the aircraft
Ropers secure equipment and F.R.I.E.S. Ropes to prevent premature deployment</td></tr>
<tr><td colspan="3">STABLE HOVER ACHIEVED AFTER FLARE</td></tr>
<tr><td>PC/FRM
ECHOS</td><td rowspan="2">“ROPES,ROPES,ROPES”
“GET READY”
These commands will happen nearly simultaneously</td><td>After confirming a stable hover, AFRM/FRM echoes “ROPES, ROPES, ROPES”, deploys FRIES rope(s) and ensures they deploy to the ground properly.</td></tr>
<tr><td>FRM</td><td><u>Ropers prepare to unhook their safety lines and positions in their stick for descent.</u></td></tr>
<tr><td>CE</td><td>“ROPES OUT”</td><td>Confirmation when the AFRM//FRM have deployed the FRIES ropes.</td></tr>
<tr><td>FRM</td><td>“GO”</td><td>FRM and AFRM begin to descend ropers to infil.</td></tr>
</table>

ACTIONS FOR DESCENT		
FRM issues the command of "GO". AFRM echoes the command, ropers exit FRM or AFRM (when using both sides of the aircraft) control the rate of exit FRM or CE informs PC "Ropers Away" Minimum distance between ropers is 24 inches (from ropers feet to other ropers helmet) NOTE: AFRM or most experienced roper should exit the aircraft first for rope control		
CE	"ROPERS AWAY"	Notifies PC when 1st roper has deployed.
CE	"ROPERS ARE CLEAR"	Notifies PC when all ropers have cleared the ropes.
PC	"CLEAR TO CUT ROPES"	1. Cutting ropes: FRM(s) and/or CEs will remove safety pin prior to releasing the FRIES rope using the cabin wall-mounted release handle. 2. Recovering ropes: FRM(s) and/or CEs will secure the FRIES rope(s) and inform PC that "ROPES ARE SECURED" and aircraft can egress.
CE	"ROPES CLEAR"	Indicates all ropers are safely on insertion point and the ropes are either released or retrieved in the A/C.
CE	"CLEARED FOR FLIGHT"	CE confirms that the FRIES rope(s) has been successfully jettisoned or secured and the aircraft is clear to depart the LZ.
CE	"ROPES ARE SECURED"	**Optional:** confirms that CE has secured ropes when recovering the ropes to allow the aircraft to egress.

EQUIPMENT LOWERING PROCEDURES

- Anytime a Roper's load exceeds a total of 60 lbs FRM will consider lowering equipment.
- Assault pack weight exceeds 35 lbs., equipment will be lowered in clusters on separate ropes
- Clusters cannot exceed five assault packs, smaller preferred and weight cannot exceed 500 lbs.
- Lowering rope will be attached to FRIES bar or A/C
- Equipment will be lowered using lowering device. (i.e. Figure 8, Munter Hitch, SMC ladder). The aircrew will normally lower equipment, however, in the event

door guns are being used, the using unit should be prepared to provide one individual during lowering

- When equipment is being lowered from same side as ropers it should be done before the F.R.I.E.S. Ropes are deployed

- When done simultaneously, equipment and ropers will exit from opposite doors of the aircraft

FRIES LOG

INDIVIDUAL FRIES MASTER RECORD

This Record is to support the MPR by unit CDR, which is needed every 6 months.

NAME (Last, First, Middle Initial)	SMITH, ERIC J	GRADE	E-6
SSN			555-55-5107
ASSLT GRADUATION DATE	14 JAN 11	FRIES MASTER GRADUATION DATE	05 MAY 12
NOTES:			

INSTRUCTIONS

TYPE OF RAPPEL ABBREVIATIONS

TH	Tower Hollywood
TC	Tower Combat
HL	Hollywood Lock-In
CL	Combat Lock-In
ACH	Aircraft Hollywood
ACC	Aircraft Combat

TYPE OF DUTY

FM	FRIES Master
S	Safety
GS	Ground Safety

LINE NO.	LOCATION	TYPE OF DESCENT	TYPE OF DUTY	DATE	INITIALS OF CERTIFYING OFFICER
1	TBAAG	W, TH, TC, HL, CL	RMPI, RM, GC	1-May-11	TM SENIOR OR SENIOR FRIES MASTER
2	PZ-1	ACH, ACC	RMPI, RM, GC	2-May-11	TM SENIOR OR SENIOR FRIES MASTER

THE AIR ASSAULT SCHOOL
SPIES MASTER HANDOUT

REFERENCES

- USSOCOM Manual 350-6 Chapter 7
- ATP 3-18.10 Special Forces Air Operations Chapter 9
- Marine Corps Regional Planning 3-11.4A Helicopter Rope Suspension Techniques (HRST) Operations Chapter 5
- Training Circular 21-24, Rappelling
- Fort Campbell Regulation 95-1
- 101st Airborne Division (AASLT) S.P.I.E.S. SOP
- FM 4-02.2 Medical Evacuation
- FM 5-19 Composite Risk Management

S.P.I.E.S. MASTER DUTIES/QUALIFICATIONS

- In accordance with USSOCOM 350-6 a mature E-4 or above can perform duties. Ft Campbell regulations state that you must be an E-5 to perform duties.
- MUST CONDUCT INITIAL S.P.I.E.S. TRAINING CONSISTING OF
  - 2 infiltration/exfiltration without equipment (1 day and 1 night)
  - 2 infiltration/exfiltration with equipment (1 day and 1 night)
  - Must serve as a S.P.I.E.S. master (SPM) on 1 day and 1 night operation from A/C

S.P.I.E.S. MASTER CURRENCY

- Must perform S.P.I.E.S. Master duties at least once every 12 months
- If over 12 months, must receive refresher training by a current SPM IAW USSOCOM 350-6, Chapter 7, para. 7-4, and perform one SPM duty under the supervision of a current SPM

PERSONEL NEEDED FOR A/C S.P.I.E.S. MISSION

- One S.P.I.E.S. Master
- Ground Safety (MUST BE SPM QUALIFIED) must have and maintain communications with aircraft
- EMT qualified medic with a covered MEDEVAC vehicle and medical equipment (aid bag, neck brace, and spine board)

- With prior notification, the aircraft used for the operation can be used as CASEVAC vehicle

SAFETY REQUIREMENTS

- Safety first
- Safety line or safety harness for SPM
- FM Communications with Ground Safety
- Night: Each roper should have two chem lights, one in each hand, to signal (hook up or emergency)
- Two chem lights at end of rope and two chem lights five feet from end
- The SPM may wear NVG's(Night Vision Goggles)
- Individual Units and Commanders will establish SOP's for wear of NVG's

WARNING

- **WHEN WORKING IN OR AROUND ROTARY WINGED AIRCRAFT YOU WILL TAKE ALL COMMANDS FROM THE PILOT(S), CREW CHIEF, AND RAPPEL MASTER INSTRUCTORS**

- **YOU WILL APPROACH AIRCRAFT IN AUTHORIZED MANNER, AFTER THE PILOT IN COMMAND, CREW CHIEF, OR INSTRUCTOR DEEMS THE LANDING ZONE SAFE AND AIRCRAFT HAS BEEN CLEARED TO BE APPROACHED.**

- **APPROACH A UH-60, UH-1H, MH-6, OR SIMILAR AIRFRAMES FROM A 90 DEGREE ANGLE TO OR FROM THE LEFT OR RIGHT SIDE OF THE AIRCRAFT. AT NO TIME WILL PERSONNEL APPROACH OR EXIT TOWARDS THE MAIN OR TAIL ROTOR OF THE AIRCRAFT.**

- **APPROACH A CH-47 D/F OR SIMILAR AIRFRAMES FROM, NO MORE THAN, A 45 DEGREE ANGLE TO THE REAR OF THE AIRCRAFT. AT NO TIME WILL PERSONNEL APPROACH OR EXIT TOWARDS THE FRONT ROTOR OR FROM THE LEFT OR RIGHT OF THE AIRCRAFT.**

SPIES UNIFORM

- ACU's (sleeves down)
- Eye protection (i.e. Wind goggles or ESS glasses)
- Hearing protection
- ID tags and ID card
- Kevlar or ACH helmet

- Safety line and harness are the inner-most item of equipment worn (made of 7/16 inch Nylon rope taped and burnt to secure the ends)
- Conduct rehearsals to make sure individual equipment does not interfere with the operation

WARNING:
SERVICE MEMBERS WILL NOT WEAR A MILES HARNESS WHILE PERFORMING ANY ROTARY WING INFILTRATION OR EXTRACTION OPERATIONS
WARNING:
DURING NORMAL AND WATER OPERATIONS ALLOW THE ROPE TO MAKE CONTACT WITH THE GROUND/WATER TO ALLOW THE DISCHARGE OF STATIC ELECTRICITY. CHECK USSOCOM 350-6 PAGES 100-102 FOR MORE INFORMATION ON WATER OPERATIONS
WARNING:
WEARING OF BODY ARMOR WHILE CONDUCTING S.P.I.E.S. TRAINING CAN RESULT IN LIFE THREATENING SITUATIONS DUE TO HARNESS CAUSING ARMOR TO RIDE UP AND CAUSE CHOKING AND/OR REDUCTION OF BLOOD FLOW TO THE BRAIN. IF BODY ARMOR IS REQUIRED, BODY ARMOR MUST HAVE A CUT AWAY SECTION BELOW THE NECK (SIMILAR TO SOF BALCS-R) WILL BE USED. S.P.I.E.S. HARNESS AND SAFETY LINE WILL BE WORN UNDER BODY ARMOR

WEATHER RESTRICTIONS

- Wind chill factors that may result in cold weather injuries (caused by rotor wash or flight speeds)
- Air speed will not exceed 60 knots under normal conditions IAW Fort Campbell Flight Regulation 95-1. (70 knots IAW USSOCOM 350-6).
- Air speed will not exceed 50 knots under cold weather or water operations.
- Rope exposed to elements, causing it to freeze and reduce its tensile strength.
- Brown out/white out conditions
- Any condition that prevents visibility with the ground

SPM PRE-FLIGHT DUTIES

- Inventory and inspection of all equipment
- Briefs soldiers and aircrew on operation and hand and arm signals
- Ensures that ICS (Internal Communication System) is operational
- Rigging of A/C is IAW USSOCOM 350-6, chapter 7
- Ensures nothing inside of aircraft is adrift
- Places emergency axe where it is readily available

EXTRACTION DUTIES

- Aids pilot to team's location on PZ
- Deployment of SPIES rope
- Waits for 'thumbs up' from whole team
- Requests vertical lift-off (100 feet above during day and 200 feet above during night of the HIGHEST surrounding obstacles along flight route)
- Once minimum altitude is established, request transition into forward flight and maintain the 100 feet requirement during day and 200 feet during night.

NOTE:
THERE IS SOME OVERLAP BETWEEN DUTIES OF SPM & CE (CREW CHIEF)

IN FLIGHT DUTIES

- Observes team for any emergencies or unsafe conditions
- Observed direction of flight for unsafe conditions or obstacles to the ropers
- Before forward flight SPM ensures Bottom roper is, 100 ft. during the day and 200 ft. during the night, above HIGHEST surrounding obstacles along flight route
- Observes rigging to ensure no unsafe conditions occur

DISMOUNTING DUTIES

- Upon arrival of dismounting area, SPM will tell pilot to "hover" and give distance to the ground during vertical descent
- Inform pilot of any hazards near rope or oscillation that may occur
- Informs pilot when rope is 25 feet and then 10 feet AGL (above ground level), ensuring rate of descent is slow enough so team members can land safely
- Reports to the PIC (Pilot in Command) when the first roper initially touches the ground, when the last roper touches the ground, and when the team is disconnected and safely away from aircraft
- Retrieve S.P.I.E.S. rope using the recovery sling rope attached 5 to 6 feet below cargo hook using the self-tightening prussik knot
- Stow S.P.I.E.S. rope inside aircraft

NOTE:
Most inflight SPM duties will overlap with the crew chief duties.

EMERGENCY PROCEDURES

- At the first sign of danger or if an in-flight emergency arises, any team member will place both their hand on top of their ACH
- Other ropers echo emergency signal
- Upon observing this, the SPM tells the pilot to make an emergency landing in the nearest and safest area
- Maximum flight time with personnel on rope is 20 min

EMERGENCY PROCEDURES/ CUT AWAY PROCEDURES

- Only the PC (Pilot In Command) can give the command to cut ropes
- Axe or machete is placed in a manner to cut the ADS (Aerial Delivery System) secondary safety
- Generally, the PC will give command to cut the ADS first, and then activate the cargo hook at last possible moment to prevent dragging ropers or dropping them from altitude
- If cargo hook is accidentally activated first, SPM will cut ADS on command of PC

NOTE:
DURING TRAINING, MAXIMUM FLIGHT TIME WITH PERSONNEL ON THE ROPE IS 20 MINUTES

NOTE:
THERE IS OVERLAP BETWEEN DUTIES OF SPM & CE

EQUIPMENT INSPECTION

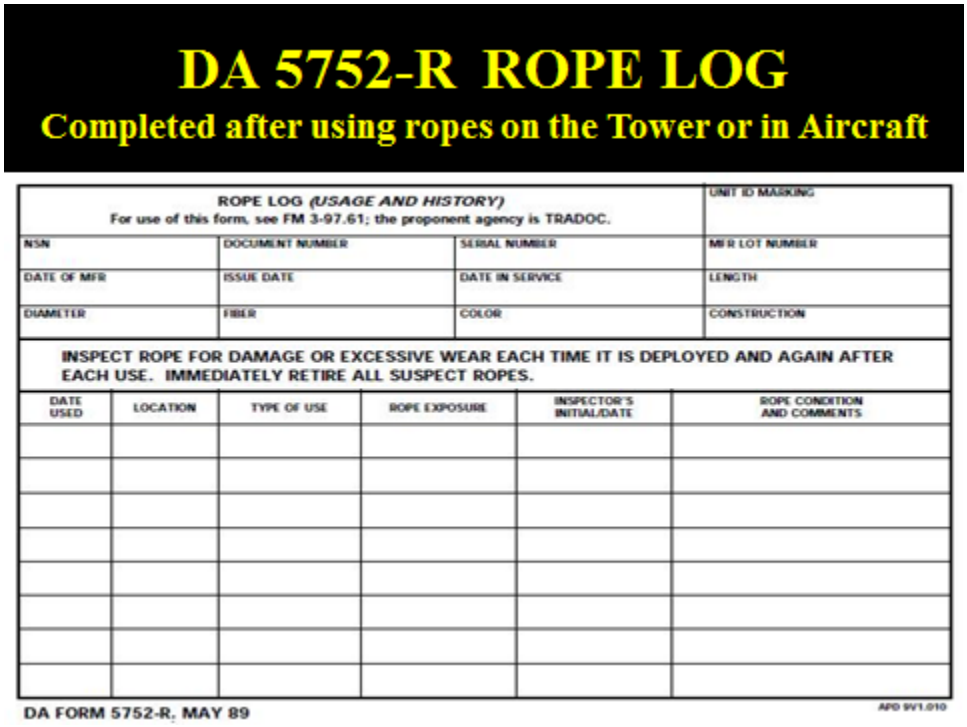
- Primary anchor point is the cargo hook. The secondary anchor point is two ADS with two Type IV connector links and eight standard military carabiners. ADS will be routed through the potted eye portion of the S.P.I.E.S. rope then routed back through the cabin of the aircraft. The eight standard military carabiners will be opposing, hooked into the floor of the aircraft and around the ADS
- The SPIES equipment is inspected before and after use, every six months, and whenever the SPM questions serviceability. Outdated, spliced, excessive abrasions, snags, or cuts on rope or harness, the equipment is removed from service

- Check the potted-eye for any cracks. If the rope has four or more cut, burned, or frayed strands in a 5 inch length, or petroleum- based products, it is unserviceable
- SPIES rope and harnesses has a service life of 7 years or a shelf life of 15 years from the manufactured date; whichever comes first

NOTE:
A COMBINED TIME CANNOT EXCEED 15 YEARS

SPIES ROPE

- The S.P.I.E.S. rope is a two-in-one type, braided, nylon extraction rope one inch in diameter and 120 feet long
- The SPIES rope is constructed out of a kevlar lined inner-core and an interwoven nylon outer-sheath
- The tensile strength is 24,000 lbs but a recommended planning strength of 5,000 lbs
- A rope usage log should be maintained in DA form 5752-R



DA 5752-R ROPE LOG

Completed after using ropes on the Tower or in Aircraft

ROPE LOG *(USAGE AND HISTORY)*
For use of this form, see FM 3-97.61; the proponent agency is TRADOC.

			UNIT ID MARKING
NSN	DOCUMENT NUMBER	SERIAL NUMBER	MFR LOT NUMBER
DATE OF MFR	ISSUE DATE	DATE IN SERVICE	LENGTH
DIAMETER	FIBER	COLOR	CONSTRUCTION

INSPECT ROPE FOR DAMAGE OR EXCESSIVE WEAR EACH TIME IT IS DEPLOYED AND AGAIN AFTER EACH USE. IMMEDIATELY RETIRE ALL SUSPECT ROPES.

DATE USED	LOCATION	TYPE OF USE	ROPE EXPOSURE	INSPECTOR'S INITIAL/DATE	ROPE CONDITION AND COMMENTS

DA FORM 5752-R, MAY 89 APD 9V1.010

"D-RINGS"

- D-Rings have a rated capacity of 2,500 lbs.
- There are 10 "D-Rings" on the SPIES rope. Inspect these as well as any other metal products for rust, cracks, dents, nicks, or burrs. If these are present, you will attempt to remove them by the least abrasive material possible, such as steel wool or a green pad. If a "D-Ring" is considered unserviceable the rope is turned in

NOTE:
FOUR ADDITIONAL D-RINGS CAN BE ADDED TO THE ROPE BY A QUALIFIED RIGGER IF NEEDED

S.P.I.E.S. D-RINGS

SPIES HARNESS

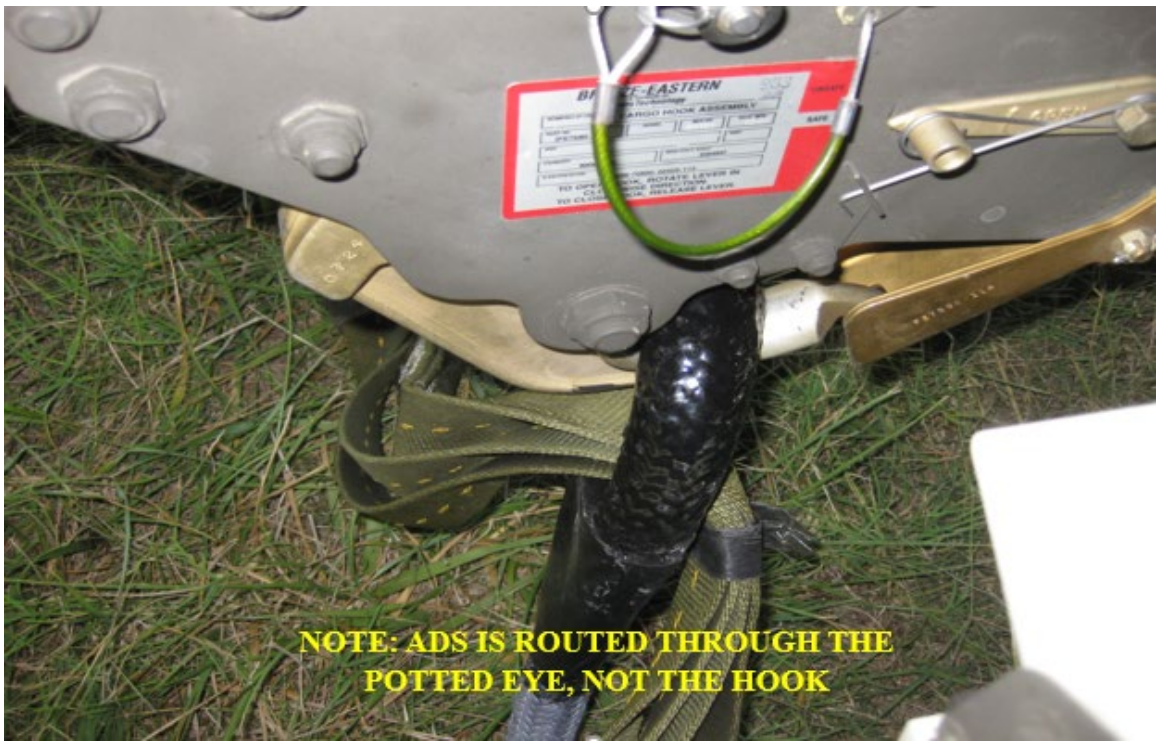
- The SPIES harness is constructed of nylon sling webbing. It is inspected for signs of petroleum-based products, cuts, twists, fading, excessive wear, fusing, fraying, and loose or broken stitching
- The stitch rule applies to this piece of equipment; Three consecutive broken stitches or five or more broken in a general area
- When placed into service, initiate a usage log with date. Stencil this date on the harness using riggers ink, in one inch block letters
- Annotate use and conditions on DA 2404 or usage log
- Inspect before & after use and every six months

OTHER EQUIPMENT USED

- Aviators kit-bag
- (2) nine-foot, three-loop ADS (13,500 lbs each)
- (2) Type IV connector links (12,500 lbs each)
- 2 inch tape (100-mph tape)
- (1) 12-foot 7/16-inch rope (4,500 lbs)
- (8) standard military carabiner (2,000 lbs each)
- Ensure floor rings inside of aircraft are present
- Crash axe or machete (readily available)
- (2) 4x2 wood blocks (placed under ADS for cutting)

PICTURE REFERENCE ON HOW TO HOOK-UP PERSONNEL AND S.P.I.E.S. EQUIPMENT IN THE

UH-60


NOTE: ADS IS ROUTED THROUGH THE
POTTED EYE, NOT THE HOOK


AIRBORNE

ROPE CARE AND MAINTENANCE

5-5. The rope is a climber's lifeline. Therefore, it must be cared for and used properly. The following general guidelines should be used when handling ropes:

 Do not step on or drag ropes on the ground unnecessarily. Small particles of dirt will be ground between the inner strands and slowly cut them.

 While in use, do not allow the rope to come into contact with sharp edges. Nylon rope is easily cut, particularly when under tension. If the rope must be used over a sharp edge, pad the edge for protection.

 Always keep the rope as dry as possible. If the rope becomes wet, hang it in large loops off the ground and allow it to dry. Never dry a rope with high heat or in direct sunlight.

 Never leave a rope knotted or tightly stretched for longer than necessary. Over time it will reduce the strength and life of the rope.

Never allow one rope to continuously rub over or against another. Allowing rope-on-rope contact with nylon rope is extremely dangerous because heat produced by the friction can cause nylon to melt.

 Inspect the rope before each use for frayed or cut spots, mildew or rot, or defects in new rope construction.

The ends of the rope should be whipped or melted to prevent unraveling.

Do not splice ropes for use in rappelling.

Do not mark ropes with paints or allow them to come in contact with oils or petroleum products. Some of these can weaken and deteriorate nylon.

Never use a rappelling rope for any purpose except rappelling.

Each rope should have a corresponding rope log (see DA Form 5752-R, *Rope Log (Usage and History)* or similar type of log. A rope log serves as a safety record. It should annotate use, terrain, weather, application, and condition each time the rope is used (Figure 5-1). DA Form 5752-R (located in the back of this TC) is authorized for local reproduction on 8 1/2- by 11-inch paper.

Never subject the rope to high heat or flame. This will significantly weaken it.

All ropes should be washed and rinsed periodically to remove dirt and grit. Commercial rope washers are made from short pieces of modified pipe that connect to any faucet. Pinholes within the pipe force water to circulate around and scrub the rope as it is slowly fed through the washer. Another method is to machine wash on a gentle cycle in cold water with a nylon-safe soap. Never bleach or use harsh cleansers. Ensure that only front loading washing machines are used to wash ropes.

When not in use, ropes should be loosely coiled and hung on wooden pegs—not on nails or other metal objects. Storage areas should be relatively cool with low humidity levels to prevent mildew or rotting. Ropes may also be loosely stacked and placed in rope bags for storage on shelves.

Avoid rope storage in direct sunlight, because ultraviolet radiation will deteriorate nylon over long periods.

INSPECTION

5-6. Ropes should be inspected before and after each use, especially when working around loose rock or sharp edges.

Deficiency List

Glove unserviceable- major
Gloves not worn- major
Sleeve not down- minor
Helmet not worn- major
Chinstrap not fastened- major
Chinstrap loose- minor
Shirt not tucked in- minor
Bowline improper- major
Bowline missing overhand knot- minor
Overhand knot improper- minor
Figure 8 knot improper- major
Carabiner missing- major
Safety line too short- minor
Safety line misrouted through harness- major
Harness chest strap not fastened- major
Leg strap twisted- minor
Leg strap not fastened- major
Harness inside out- major
Body armor not fastened- major
Assault pack loose- minor
Assault pack not secured
Assault pack chest strap not fastened- minor
Weapon improperly slung - major
Assault pack strap routed through trigger well- major
Safety line misrouted around assault pack- major
Harness misrouted around assault pack- major

FS HAND AND ARM SIGNAL

All testing will be conducted as Air Assault conducts H/A Signal testing. The test will be conducted on **“Get ready”**, **“Ropes, Ropes, Ropes”**, **“Stop Stick”**, **“Fouled Ropes”**, and **“Cut Ropes”**

“Get Ready” the student will position both arms out in front of them with fists made and thumbs skyward, rotating hand with thumb up from side to side.

“Ropes, Ropes, Ropes” the student will form two fists and bring them to the center of their chest with the outside of the hands away from their chest. The student will begin to pump their hands back and forth, from the student to themselves.

“Stop Stick” the student will have one hand placed out to the side in front of them acting as if their hand is placed on a fries rope to secure it, the opposite hand will create a fist and will punch out in front of themselves keeping the elbow locked out and the inside of the fist will be oriented toward the rope holding hand.

“Fouled Ropes” the student will create an “X” with their arms across their chest. Their left arm will be over their right. Their hands will make fists.

"Cut Ropes" student will remove hand that is securing the FRIES rope, create a fist, and extend the arm directly in front of themselves. The opposite arm will chop their armpit, with the fingers of that hand extended and joined.

SPIES HAND AND ARM SIGNAL

All testing will be conducted as Air Assault conducts H/A Signal testing. The test will be conducted on "**Hook Up**, **Cut Rope**, **Hook-up Complete**, and **In-Flight Emergency**"

"Hook Up" student will raise both arms up and simultaneously to their shoulders with a knife hand. They will then bring their fingers 6 inches up and then back down to their shoulders.

"Cut Ropes" student will create a fist, and extend the arm directly in front of themselves. The opposite arm will chop their armpit, with the fingers of that hand extended

Hook Up
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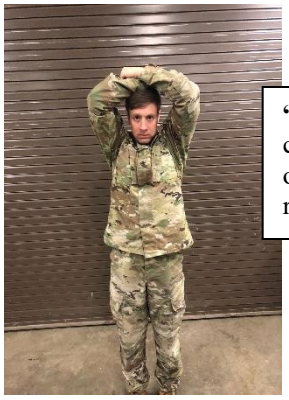
"Hook Up Complete" (Roper) student will extend outer arm directly to their side and display a "thumbs –up". Their other arm will hold the SPIES rope in place on their



"In-Flight Emergency" student will create an "X" with their wrists on the top of their helmet. Left wrist will be over right. Hands will be in fists.

Glossary

AC- Aircraft

AG- Aerial Gunner

AFRM- Assistant FRIES Master

CASEVAC- Casualty Evacuation

CE- Crew Chief

FE- Flight Engineer

FRIES- Fast Roping Insertion and Extraction System

FRM- Fries Master

SPIES- Special Patrol Insertion and Extraction System

SPM- Spies Master

ASPM- Assistant SPIES Master

IAW- In Accordance With

MEDEVAC- Medical Evacuation

PIC/PC- Pilot In Command

USSOCOM- United States Special Operations Command