USDA

United States Department of Agriculture

2020
FOREST SERVICE EMERGENCY MEDICAL SHORT-HAUL OPERATIONAL PLAN

Forest Service

February 2020

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer and lender.

Preparation, Review, and Approval (Signatures)

The following signatures designate leadership roles in preparing, reviewing, and approving the Operations Plan.

Prepared by:

/s/ Eric Graff Date: 12/04/2019

Assistant National Helicopter Operations Specialist

Reviewed by:

/s/ JASON BALDWIN Digitally signed by JASON BALDWIN Date: 2020.03.26 08:40:53 -07'00' Date:

Branch Chief, Aviation Operations

/s/ Digitally signed by JOHN NELSON Date: 2020.03.26 09:45:56 -06'00' Date:

Branch Chief, Airworthiness

/s/ MARY VERRY Digitally signed by MARY VERRY Date: 2020.03.26 10:34:18 -07'00' Date:

Branch Chief, Pilot Standardization

/s/ JOHN HAMILTON Digitally signed by JOHN HAMILTON Date: 2020.03.26 11:43:09 -06'00' Date:

Branch Chief, Aviation Safety

Approved by:

/s/ Digitally signed by PAUL LINSE Date: 2020.03.26 12:33:42 -06'00' Date:

Assistant Director, Aviation

This is a Forest Service Fire and Aviation Management Aviation Division sponsored publication.

Questions regarding the content of this publication, may be directed to the National Assistant Helicopter Operations Specialist or Branch Chief, Aviation Operations.

The use of trade, firm, or corporation names in this publication is for the information and convenience of the reader and does not constitute an endorsement by the USDA Forest Service of any product or service to the exclusion of others that may be suitable.

Previous Edition: 5.0

Review and Revision Schedule: The appropriate Program Manager and Branch Chief will review and publish the Operations Plan on a 3-year cycle, with a change option annually. Changes made during the cycle will be documented on a Digest Form (below), reviewed by the Regional Aviation Officers, WO Branch Chiefs and approved by either the Assistant Director, Aviation (Operations Plans) or the Deputy Chief, State and Private Forestry (Guides).

Revision Log	Date Approved	Version	Summary of Changes
	Signed April 2015	1.0	Initial Year
	Signed March 2016	2.0	Year Two
	Signed April 2017	3.0	Year Three
	Signed March 2018	4.0	Year Four
	Signed March 2019	5.0	Year Five
	Signed March 2020	6.0	See Below

Digest	Summary of Changes	Chapter	Version 6.0
	Quality Assurance	Chapter 1, Section 1.8	Defined intent and frequency
	Updated naming NSHO, ALSE	Entire document	Replaced IHOG with NSHO, added ALSE
	Removed equipment and related documentation	Chapter 3, 4, 6, Apx. D, E	Removed HD Runner, Ultimate Daisy Tether, Gerber Knife
	Approved short-haul equipment and related documentation	Chapter 3, 4, 6, Apx. D, E	Added Blue Water Short-haul Tether, added new Knife
	Additional approved equipment	Chapter 3, 4	Added BOOST 407 dual hook information
	This table provides a list of approved significant changes made to the current approved version of the operations plan. The Working Team met to review and incorporate revisions to the EMSHOP that were generated from the field. Overall plan enhancements include deeper explanations, terminology consistency, formatting and efficiency to reflect current usage. *Note*: This list is not inclusive of all changes made in the Operations Plan. This 2020 EMSHOP 6.0 version replaces the 2019 5.0 version.		

CONTENTS

CHAPTER 1: GENERAL INFORMATION

1.1 MISSION STATEMENT

The primary mission of the Forest Service Emergency Medical Short-Haul Program, is to ensure safe and efficient use of short-haul capabilities when and where needed. In some cases, short-haul may be the most expedient means to get medical care to a person in need, as well as extract an injured or ill employee for transport to definitive medical care.

- The Forest Service Emergency Medical Short-Haul Program provides a highly specialized delivery method of medical and extraction personnel and equipment. Short-haul provides for safe deployment of qualified aerial delivered personnel in areas with limited landing sites.
- All short-haul and medical insertion/extraction equipment, procedures, helicopter configuration, training, and training practices will be standardized nationally. The program will maintain the ability to move short-haul resources between geographic areas.
- Short-haul bases will have the capacity to host qualified booster short-haulers and outfit them with appropriate equipment configured in a standard package.

1.2 AUTHORITY & RESPONSIBILITIES

The Washington Office (WO) Aviation Management Division has national program management and oversight for the short-haul program, The Emergency Medical Short-Haul Executive Committee is composed of the Assistant Director Aviation (Lead), Assistant Director Operations and Assistant Director Risk Management. The Executive Committee is the direct conduit to the Director, FAM and Forest Service leadership.

The Emergency Medical Short-Haul Steering Committee (EMSHSC) will provide oversight of FS short-haul training, standards and operations to support emergency medical short-haul for fire suppression, all hazard incidents and non-fire operations, including requested support to partners and cooperators. The EMSHSC recommends policy, standards, procedures and direction for all FS emergency medical short-haul training and operations to the Executive Committee.

The National Assistant Helicopter Operations Specialist (NAHOS) is the agency program manager, providing expertise, oversight and training for the program. The NAHOS is the permanent chair of the Emergency Medical Short-Haul Operations Working Team (EMSHOWT), but is a direct report to the Branch Chief, Aviation Operations.

The Emergency Medical Short-Haul Operations Working Team (EMSHOWT) is established under the EMSHSC. The primary mission for the EMSHOWT is to establish a formal process for review and evaluation of current and proposed helicopter short-haul equipment, training, operating procedures and standardization for the United States Forest Service. Based on those evaluations, the EMSHOWT will submit recommendations to the EMSHSC. The EMSHSC/EMSHOWT may utilize technical specialists for technical support or focus on specific issues.

1.3 LEADER'S INTENT

The intent of the Emergency Medical Short-Haul program is to ensure safe and efficient use of short-haul capabilities to aid injured personnel. In some cases, short-haul may be the most expedient means to get medical care to a person in need, as well as extract an injured or ill employee for transport to definitive medical care. The Forest Service highly values the safety and health of its employees and cooperators.

1.4 OBJECTIVES

The Emergency Medical Short-Haul Operations Plan is established to provide sufficient direction and criteria for program oversight, responsibilities, equipment, policy, and procedures for the Fire and Aviation Management short-haul program.

1.5 DEFINITION OF SHORT-HAUL

Short-Haul: To transport one or more persons, suspended beneath a helicopter (HEC- human external cargo).

1.6 PURPOSE OF SHORT-HAUL

The short haul mission is intended to insert or extract personnel from an otherwise inaccessible location.

Based on a risk assessment, short-haul may be used under any of the following circumstances:

- A patient has life and/or a loss of limb or eyesight threatening injury or other medical complications that warrant prompt extraction.
- When a conventional rescue operation would expose rescue personnel and/or patient to a higher degree of risk. The following factors can contribute to this: duration and/or difficulty of a conventional extraction; patient safety and potential medical complications; weather (past, present and predicted); available daylight; resource availability.

1.7 SHORT-HAUL CREW ORGANIZATION

Minimum module size is 10 persons per short-haul helicopter.

Short-haul module size may increase above the minimum staffing level depending on funding, size of facilities, local management, and national needs. However, Short-Haul crew modules shall adhere to the ICS span of control for supervision. Because, span of control is influenced by the size, complexity, and specific hazards of the incident or operation a minimum of one supervisor/leader to five subordinates should be the target for each short-haul crew.

The table below shows the 10-person module configuration. Understanding that some helicopter programs support multiple helicopters, this module configuration is for single helicopter short-haul crews and was developed with the target span of control ratio in mind.

Three crewmembers shall be Emergency Medical Technicians (EMT) with a recommendation of five.

Standard 10-Person Crew Module

Position Description	Grade	Minimum Tours	Number of Positions
Helitack Program Manager FS1920	GS-09	26/0	1
Asst. Program Mgr. FS1918/FS1919	GS-07/GS-08	18/8 Minimum	1
Squad Leader FS1986/FS1987	GS-06/GS-07	13/13 Minimum	2
Senior Firefighter FS0199/FS0200	GS-04/GS-05	13/13 Minimum	2
Apprentice	GS-04/GS-05	13/13 Minimum	2
Firefighter	GS-04/GS-05	Temporary	2

The crew leadership positions (Helitack Program Manager, Helitack Assistant Program Manager, and Squad Leaders) should all be filled as recommended to achieve the appropriate span of control. The ratio of Senior Firefighter, Apprentice, and Temporary Firefighter positions may be flexed to accommodate experience, skills, and developmental opportunities. However, the number of the firefighter positions in total should be achieved so as to provide adequate crew capability for Initial Attack purposes and continuous short-haul capability.

Individuals need to be administratively assigned to the module and due to program complexities, short-haulers and short-haul spotters will not be trained nor qualified concurrently with rappel operations or vice-versa.

For the initial activation year of each unit's program, a minimum of two, maximum of three spotters will be qualified.

1.8 QUALITY ASSURANCE

The purpose of the Emergency Medical Short-haul Quality Assurance (QA) review is to ensure that all Forest Service Short-haul Programs are meeting the intent of the national standardization effort, abiding by the Emergency Medical Short-haul Operations Plan (EMSHOP) and providing a Quality Assurance Program. Quality Assurance reviews will be conducted during the first three operational years of any newly established Short-haul Crew. Short-haul Crews with three or more years of operational experience will have a QA review conducted at a minimum of every three years. If a deficiency is identified on any Short-haul Crew with current operational status, a QA review may be conducted the following year at the discretion of the EMSHOWT.

2.1 APPROVED AIRCRAFT

Only Interagency-Carded Aircraft and Interagency-Carded Pilots will be used for Forest Service short-haul operations. The Short-Haul Program is continually striving for enhancements in aircraft and equipment to meet Federal Aviation Administration (FAA) requirements.

The following Type-III aircraft are (currently) approved:

- Airbus AS350B3 (" H125")
- Bell 407

2.2 PILOT REQUIREMENTS

Pilot(s) shall comply with the following minimum requirements annually:

A. Meets appropriate contract specific pilot standards.
B. Successfully complete a flight evaluation administered by an Interagency Helicopter Inspector Pilot and possess a current Interagency Card for Short-Haul SAR.
C. Initial pilots must complete a Forest Service Short-Haul Training.
D. Short-Haul specific CRM training completed annually.
E. The pilot cannot perform operational short-haul missions until all of the using unit's initial short-haul training has been successfully completed. Only supervised short-haul training flights, with the managing unit, are allowed until the pilot's requirements have been completed

2.2.1 PILOT SHORT-HAUL EVALUATION

Pilots will be evaluated in accordance with the current Interagency Helicopter Pilot Practical Test Standards.

Phase I-III will be performed with a static load. Phase IV will be performed with a live load.

In addition to the criteria listed in the PTS, the following will be evaluated:

A. Preflight briefing
B. Hand signals / Verbal Communication
C. Insertion Procedures (Attendant and equipment to the scene)
D. Extraction procedures (Hook-up)
E. Pilot/ground personnel actions in the event of an emergency

2.2.2 PILOT PROFICIENCY REQUIREMENTS

To maintain currency, each pilot must fly at least one short-haul sequence demonstrating proficient operational procedures within the preceding 30 days. A short-haul evolution completed for another agency meets proficiency requirements.

If proficiency is lost:

A. Review EMSHOP Emergency Procedures with spotter.
B. Perform one ground sequence with spotter demonstrating proficient operational procedures.
C. Perform one live short-haul evolution demonstrating proficient operational procedures prior to any operational short-haul mission.

D. If a period of 42 days passes without an operational or proficiency flight, the spotter, with the concurrence of the HIP, will ensure the pilot is capable of inserting/extracting short-haulers through the use of ground sequences and proficiency short-haul evolutions utilizing an inert evolution before live HEC evolutions.
E. If the spotter has concerns that the pilot is not capable; the spotter must request a HIP to conduct another check ride, with concurrence from the Contracting Officer. It shall be the responsibility of the local program manager to ensure proficiency requirements are met and properly documented on a unit log or equivalent.

2.3 CHECK SPOTTER

2.3.1 DUTIES AND RESPONSIBILITIES

These duties and responsibilities are not all inclusive. There may be additional items that the Regional Helicopter Operations Specialist (RHOS) and National Assistant Helicopter Operations Specialist consider Check Spotter Duties.

1. Promote standardization.
2. Maintain a centralized roster for all spotter and spotter (t) within your Region.
3. Perform evaluation of spotter trainees. Perform re-currency evaluations of carded spotters.
4. Provide documentation on Spotter and Short-hauler performance.
5. Present a willingness to participate and work with other check spotters in and out of the Region to achieve a common goal.
6. Represent on a National Level (Attend national short-haul workshops, participate on national related committees, and remain involved with short-haul issues).
7. Follow all policies and procedures.
8. Review short-haul related material for standardization purposes.
9. Bring short-haul related issues to the National Assistant Helicopter Operations Specialist, Regional Helicopter Operations Specialist, and Regional Short-Haul Representative.
10. Assist with the planning of Annual Short-Haul Training as necessary.

NOTE: Check Spotters may suspend spotter or short-hauler qualifications pending review of the next higher certifying level. Revocations of this qualification will be determined at the appropriate Regional or National Aviation Office.

2.3.2 CHECK SPOTTER INITIAL CERTIFICATION REQUIREMENTS

A Regional Helicopter Operations Specialist (RHOS) with concurrence of the National Assistant Helicopter Operations Specialist (NAHOS) will approve Short-Haul Check Spotters in the form of a designated letter. In addition to meeting all spotter requirements, Check Spotter candidates must:

A. Have previously served as a qualified Short-Haul Spotter for one season.
B. Have demonstrated ability as an instructor and assisted in the training at two annual training academies or other equivalent experience.

2.3.3 CHECK SPOTTER ANNUAL CERTIFICATION

Short-Haul Check Spotters must meet annual certifications requirements as a Short-Haul Spotter.

2.3.4 CHECK SPOTTER PROFICIENCY REQUIREMENTS

Completes required evolutions as outlined In Certification and Proficiency chart, 2.7

2.4 SPOTTER

2.4.1 SPOTTER INITIAL CERTIFICATION REQUIREMENTS

Spotter candidates must:

A. Be qualified as HMGB
B. Be qualified as ICT4
C. Be previously qualified as a Short-Hauler. Personnel without one year of short-hauler experience, must maintain short-hauler proficiency during their initial spotter year.
D. Attend initial 3.0 hour Crew Resource Management (CRM) before attending Short-Haul Training.
E. Initial spotter training may be performed by a qualified spotter, with the guidance of a check spotter, using the spotter training syllabus in Appendix B.
F. The following tasks will be completed under the supervision of a check spotter for final qualification. This evaluation will be completed by a check spotter from another base.
    1. Demonstrate knowledge of the inspection, care and maintenance of short-haul equipment.
    2. Demonstrate ability to rig the helicopter for short-haul, provide a safety briefing and conduct a safety check of short-haul personnel without procedural error.
    3. Demonstrate knowledge of emergency procedures.
    4. Demonstrate ability to work with the pilot.
    5. Demonstrate knowledge of risk assessment and mission structure.
    6. Before the check ride evaluation, all required evolutions have been performed as outlined in Certification and Proficiency chart, 2.7.
    7. Successful completion of check spotter evaluation.

2.4.2 SPOTTER ANNUAL CERTIFICATION

A Short-Haul Spotter who was previously certified as a Spotter must complete annual certification training as outlined below in 2.7 to the satisfaction of a qualified Check Spotter. Previously Qualified Spotters must complete annual short-hauler certification, however does not need to maintain proficiency during that year.

2.4.3 SPOTTER PROFICIENCY REQUIREMENTS

Completes required evolutions as outlined in Certification and Proficiency chart, 2.7.

2.5 SHORT-HAULER

2.5.1 SHORT-HAULER INITIAL CERTIFICATION REQUIREMENTS

Short-Hauler candidates must:

1. Be Helicopter Crewmember or HECM (T).
2. Attend initial 3.0 hour Crew Resource Management (CRM) before attending Short-haul Training.
3. Demonstrate knowledge of the inspection, care and maintenance of short-haul equipment and rigging.
4. Demonstrate knowledge of short-haul procedures.
5. Demonstrate knowledge of emergency procedures.
6. Completes required evolutions as outlined in Certification and Proficiency chart, 2.7.
7. Demonstrate knowledge of risk assessment and mission components.
8. Demonstrates understanding of patient packaging for short-haul evolution.

Short-Haul EMT:

1. Meets all certification requirements above and qualified as EMT.

2.5.2 SHORT-HAULER ANNUAL CERTIFICATION

A short-hauler who was previously certified as a short-hauler must complete annual certification training as outlined below in 2.7 to the satisfaction of a qualified check spotter.

2.5.3 SHORT-HAULER PROFICIENCY REQUIREMENTS

Completes required evolutions as outlined in Certification and Proficiency chart, 2.7.

2.6 ANNUAL SHORT-HAUL CERTIFICATION REQUIREMENTS

Short-haul personnel will attend annual short-haul training.

2.6.1 ANNUAL SHORT-HAUL TRAINING FOR ALL POSITIONS WILL INCLUDE

A. Participation in helicopter safety refresher training.
B. Review and discussion of the short-haul operations plan, emergency procedures and risk assessment.
C. Review short-haul related incidents and lessons learned.
D. Attend 1.5 hour Short-Haul specific CRM training.

2.6.2 CHECK SPOTTER AND SPOTTER

A. Equipment inspection & preparation.
B. Demonstrate personal protective equipment use along with equipment rigging and attachments.
C. Demonstrate hand signals and radio communication.
D. Documentation and reporting.
E. Familiarity of rigging short-haul equipment to the helicopter, as per EMSHOP Chapter 4, Equipment Check.
F. Emergency procedures.
G. Completes required evolutions as outlined in Certification and Proficiency chart, 2.7 to the satisfaction of a Check Spotter.

2.6.3 SHORT-HAULER

A. Equipment inspection & preparation.
B. Patient packaging and equipment usage.
C. Proper documentation and reporting.
D. Completes required evolutions as outlined in Certification and Proficiency chart, 2.7.

2.6.4 ANNUAL CERTIFICATION

Completes required evolutions as outlined in Certification and Proficiency chart, 2.7.

2.6.5 PROFICIENCY REQUIREMENTS

Completes required evolutions, as outlined in Certification and Proficiency chart, 2.7.

2.6.6 LAPSE OF ANNUAL CERTIFICATION-RECERTIFICATION REQUIREMENTS

If a short-hauler or short-haul spotter has lost their annual certification for no more than two (2) consecutive operational seasons, an individual may recertify as a short-hauler by completing the requirements for annual certification (as outlined in Chapter 2).

If the recertifying individual cannot consistently demonstrate proficiency through their annual certification training, the individual may only be recertified by successful completion of initial training requirements (as outlined in Chapter 2).

If three (3) or more consecutive seasons elapse since their last certification, the individual shall have to complete short-hauler or short-haul spotter initial training requirements.

2.7 SHORT-HAUL CERTIFICATION AND PROFICIENCY CHART

It is the responsibility of the Check Spotter or Short-Haul Program Manager to determine, beyond the minimum requirement, the frequency of proficiency short-haul evolutions for all short-haul personnel, including the pilot. The Check Spotter may require additional training based on the complexity of the program, or for individuals needing more instruction. An operational short-haul within the proficiency period may count as a proficiency short-haul.

Minimum Requirements:

SHORT-HAUL CERTIFICATION AND PROFICIENCY CHART				
	Initial	Annual	Proficiency	If Prof. Lapse
Pilot	Pass the pilot practical exam in accordance with the PTS. Successfully complete unit training.	Pass the pilot practical exam in accordance with the PTS. Successfully complete annual short-haul training.	Short-haul once every 30 days or less.	Review EMSHOP communications, hand signals, and emergency procedures with spotter. Perform ground sequence with spotter demonstrating proficient operational procedures. Perform one live short-haul evolution demonstrating proficient operational procedures prior to an operational short-haul.
Check Spotter/Spotter	Spot minimum of 3 inert evolutions. Spot six evolutions of HEC with: Minimum of two of the six in typical terrain. Minimum of two with a 250' line. All evolutions will be conducted under the supervision of a qualified spotter.	Spot two evolutions with: Minimum of two in typical terrain. Minimum of two with HEC.	Spot once every 21 days or less.	Review EMSHOP equipment checks, communications, hand signals, and emergency procedures w/ pilot. Notify check spotter prior to performing live short-haul evolution. Perform one live short-haul evolution prior to an operational short-haul.
Short-Hauler	Complete a minimum of four evolutions. Minimum of two in typical terrain. Minimum of one with a 250' line. Minimum of two with double hauler configuration. Minimum of two with single hauler configuration.	Complete a minimum of two evolutions. Minimum of one in typical terrain.	Short-haul once every 21 days or less.	Review EMSHOP equipment checks, communications, hand signals, and emergency procedures with spotter. Perform one ground sequence. Perform one live short-haul evolution prior to an operational short-haul.

*The spotter may request that the pilot demonstrate the ability for precision placement on a more frequent basis. Without sacrificing efficiency or safety, short-haul pilots are encouraged to practice precision placement of external loads as often as possible. During routine project work it may be useful to define spot-specific targets and utilize a long line of the same length as the haul-line normally used for short-haul.

Chapter 3: EQUIPMENT

3.1 EQUIPMENT STANDARDS

All equipment used in Short-Haul operations shall be approved by the National Short-Haul Operations Working Team. All equipment will be monitored during use for wear and stress related damage. Shortening the service life or removal from service of a special component may be done, as necessary, in order to maintain an adequate margin of safety in the program.

3.2 PERSONAL PROTECTIVE CLOTHING

For all onboard flight activities; Personal Protective Equipment (PPE) shall be worn in accordance with current contract and NWCG Standards for Helicopter Operations (NSHO) and Interagency Aviation Life Support Equipment (ALSE) standards during operations.

When conducting Short-Haul operations in the Fire Environment PPE will include at a minimum: appropriate fire resistant clothing, fire shelter, head protection and food/water to sustain operations overnight. When applicable additional fire related tools and equipment may be used during short-haul operations e.g. chainsaw for vegetation removal, hand tools for landing site improvements.

3.3 EQUIPMENT MAINTENANCE, INSPECTION & RETIREMENT

Short-Haul Base Managers will ensure inspections of all short-haul equipment and PPE are conducted. Each program will maintain records of inspection, maintenance and use. Records will be retained for the life of a particular product or as long as it is in use; reference Chapter 6 documentation and Appendix D for forms. Airworthiness Maintenance Inspectors ensure the anchor systems (cargo hook) is fully functional and that the vendor is performing the appropriate inspections to the manufacturer's recommendations.

Any repairs, or maintenance will be performed to manufacturer standards if appropriate or by the manufacturer. Contact with acids or bleach must be avoided. Chemical damage to textiles can occur and may not be visually detected. Because of this potential hazard, lines should always be stored in line bag away from batteries and chemicals. Alkalis, oxidizing and reducing agents (e.g. bleach, fire retardant, and foam) are all known to be damaging to nylon. Nylon is unaffected by hydrocarbons; however, additives in these agents may adversely affect textiles. The effects of UV light has a detrimental effect on nylon, efforts should be made to protect the equipment from prolonged exposure. For all equipment reference manufacturer's direction in regard to maintenance, service and storage. All short-haul equipment that is removed from service (retired) must be destroyed to the point that it can no longer be used for its intended purpose. All short-haul equipment that has been retired remains government property and should be handled according to policy.

3.4 SHORT-HAUL EQUIPMENT FAILURE (REPORTING & INVESTIGATIONS):

If any short-haul equipment failure occurs the short-haul spotter will immediately secure the equipment and supporting documentation for review and investigation. The National Assistant Helicopter Operations Specialist will be notified immediately and will contact the NTDP Equipment Specialist. An Incident Report (SAFECOM) will be submitted through the proper aviation channels. The short-haul spotter will suspend operations until the appropriate equipment can be obtained to continue operations.

3.5 SHORT-HAUL LINE

Short-Haul line is used to suspend human external cargo (HEC) and medical equipment beneath the helicopter during short-haul operations. All programs shall utilize the Priority 1 Air Rescue ™ short-haul lines. Approved line lengths are 100, 150, and 250 feet. Minimum inventory numbers are located in Appendix E, Equipment Source List.

Inspections and Retirement

A. Lines will be marked (engraved) on the thimble with each base's three letter designator and a unique number.
B. Line history will begin when the line is manufactured.
C. Retirement of a short-haul line may be dictated by age, or during visual inspection. Inspect lines for damage, wear, and abrasion prior to each use. Retire if exposed to chemicals or prolonged UV exposure.
D. When in doubt, retire it. For further guidance with regard to line wear, inspection, care, and maintenance, refer to manufacturers specifications and guidelines.
E. Line will have a maximum life of 7 years from date of manufacture.

3.6 SHORT-HAUL LINE BALLAST

The short-haul line ballast improves the flight profile of an unweighted line, and aids in visibility. It is attached to the attendant end of the short-haul line near the MAP ring. Prusik knots are utilized to adjust and secure the ballast in the desired location

ARS™ 25 pound line ballast

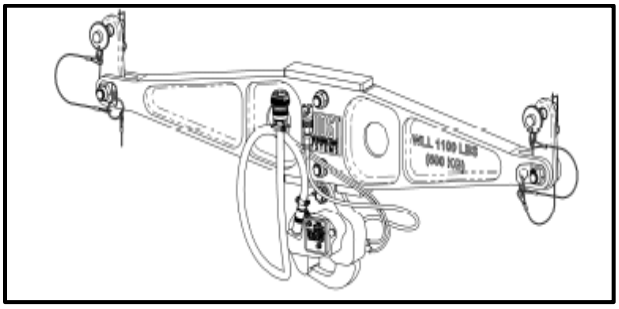
Lift-It™ 25 pound line ballast

Inspections and Retirement

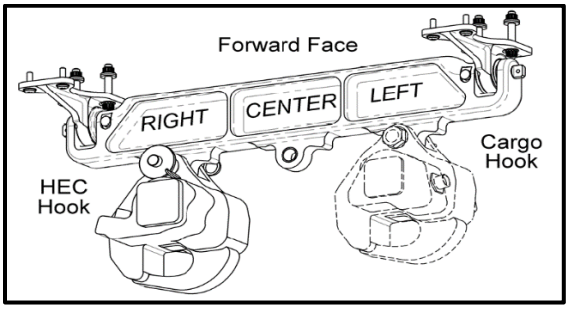
A. Inspected prior to each use.
B. Inspect fabric, webbing, and prusiks for abrasion, wear or other damage.
C. Retirement is based upon inspection only.

3.7 SHORT-HAUL SECONDARY RELEASE

The BOOST Human External Cargo (HEC) Dual Hook System Class D HEC kit, is a dual hook system that provides pilot actuated, hands-on-controls, release mechanisms for the HEC Hook. The HEC Hook is certified for human external cargo. The HEC Hook has a primary cyclic-mounted hydraulic-mechanical release and a secondary electrical release.



Astar BOOST HEC Dual Hook System



Bell 407 BOOST HEC Dual Hook System

The contractor is responsible for installation and managing the maintenance, inspection oversight of the equipment, per the Supplemental Type Certificate Instructions for Continuous Airworthiness. Spotters are trained in the proper installation and system checks of the Secondary Release (HEC Beam-Hook Assembly) but are not authorized to install it.

3.8 BOOST Y-LANYARD

Y-lanyard Assembly attaches the haul-line to both, the BOOST HEC Hook and existing helicopter cargo hook

Inspections and Retirement

A. Inspected by a spotter prior to each use.
B. Inspect stitching and material for abrasion, wear or other damage.
C. Metal adjusters and attachment ring should be free from cracks, dings, or other damage.
D. Each lanyard will be marked with a unique ID.
E. Lanyard shall have a maximum life of10 years from date of manufacture.

3.9 CARABINERS

Two carabiner models are used in the short-haul program; three stage, and two stage. Carabiners are designed to be loaded longitudinally. If load occurs on the side, i.e., cross gate loading, failure may occur.

Three stage Standard D 1/2" Steel NFPA 3 Stage Quik-Lok Carabiner or ½" Steel Large D Keylock 3-Stage Gold NFPA ANSI carabiner, both rated to 72kN from Omega Pacific™. This connects the short-haul line to the Y-Lanyard, It may also be employed to connect two lengths of haul line. The three stage carabiner shall be used to attach the spotter harness to the aircraft. The Yates harness is attached to the spotter anchor at the aft waist belt attachment ring, utilizing the three stage carabiner which can be released quickly in an emergency situation.

Two Stage carabiners are the Gemtor Model 5105 two stage auto locking carabiner with captive pin option (pin not shown) which can be released quickly in an emergency situation. These are utilized at tether attachment points, human short-hauler connections, and cargo connections. The captive pin is only to be employed with the attendant ring.

Inspections and Retirement

A. Check all parts for cracks, deformation, corrosion, wear, etc. Verify that the gate and sleeve close, lock and function properly in every respect. Inspect carabiners prior to each use.
B. Retire if the carabiner arrests a fall or is exposed to extreme loading, does not pass inspection, is exposed to chemicals, or if there is any doubt about its functionality or safety.
C. Retirement is based on inspection. There is no maximum in service life.
D. Dust and grim may collect and add action "stiffness". Cleaning can be done with mild soapy water, completely dry and lubricate (i.e. Tri-Flow) before use.

3.10 ATTENDANT RING:

Bourdon Forge 2004-1 3" forged steel ring. The captive pin Gemtor 5105 carabiner (two stage) is only to be employed on the attendant ring.

Inspections and Retirement

A. Check for cracks, deformation, corrosion, wear, etc. Inspect prior to each use.
B. Retire if exposed to extreme loading, does not pass inspection, is exposed to chemicals, or if there is any doubt about its functionality or safety.
C. Retirement is based on inspection. There is no maximum in service life.

3.11 SPOTTER/SHORT-HAULER HARNESS

The Yates Heli-Ops 388 ™ Harness is used for both the spotter and the short-hauler. For short-hauler configuration, the tether is attached via girth hitch to the front chest ring. For spotter configuration in doors off operations, the aft waist ring is connected to the spotter anchor utilizing one three stage carabiner, which when properly adjusted will prevent the harness from extending past the plane of the door.
Two (2) Sizes of harnesses are available; S/M and L/XL.

Inspections and Retirement

A. The harness must be inspected by the user prior to operation.
B. Inspect stitching and webbing for abrasion, wear or other damage.
C. Check all buckles, rings, and adjusters for damage and correct function.
D. Retire if subjected to a fall, the fall arrest indicator is visible, or if there is any doubt about the functionality or safety of the harness.
E. Harnesses will have a maximum life of 10 years from Date of Manufacture.

3.12 KNIFE

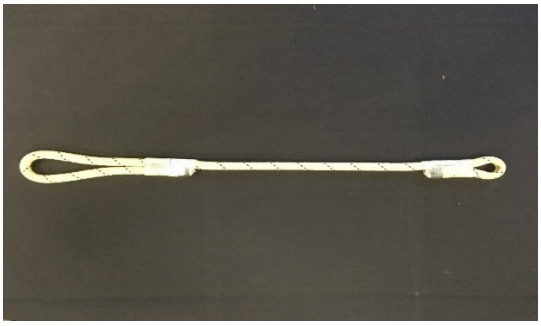
The knife will be utilized for the spotter and short-hauler as the cut away knife in instances of entanglement and emergency situations.

- Mounting must be on right side waist strap of the Yates harness. Waist belt shall be threaded through large belt loop as shown.

Inspections and Retirement

A. Check that the blade is in new condition.
B. Inspect sheath stitching and condition as well as the integrity of the belt loop, and retention strap.
C. Retirement of the knife and sheath are based on inspection only

3.13 SHORT-HAUL TETHER

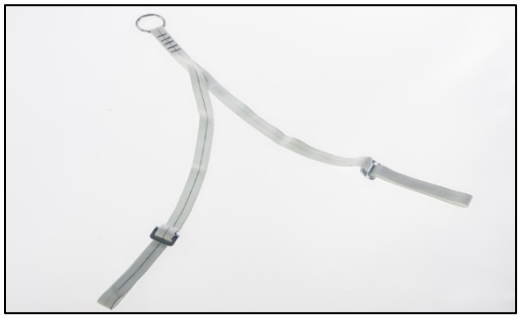


The Short-haul Tether is girth hitched to the attachment point on the front of harness, and attached to the attendant ring during short-hauler operations. The Short-haul Tether is girth hitched to the attachment point on the back of harness waist belt, and attached to the Spotter Anchor during spotter operations.

Inspections and Retirement

A. Inspect tether prior to each use. Check for cuts, abrasion, abnormalities and wear.
B. Each tether will be marked with a unique ID
C. Tether will have a maximum life of 5 years from Date of Manufacture.

3.14 SPOTTER ANCHOR



Spotter Anchor will secure the spotter to the aircraft connection points.

Inspections and Retirement

F. Inspected by a spotter prior to each use.
G. Inspect stitching and webbing for abrasion, wear or other damage.
H. Metal adjusters and attachment ring should be free from cracks, dings, or other damage.
I. Each anchor will be marked with a unique ID.
J. Anchor shall have a maximum life of 10 years from date of manufacture.

3.15 PATIENT EXTRACTION EQUIPMENT

All programs will utilize commercially made Bauman Bags, Bauman Screamer Suits, Helitack Airbag™ (CMC), and Ambulatory Victim Extraction Devise (AVED, Priority 1 Air Rescue).

Bauman Bag attachment point will utilize (2) 10mm Maillon Rapide Delta tri-links and (1) Gemtor 5105 two stage carabiner. Each tri-link shall capture four rings on each side of the Bauman Bag and be wrench tightened. During extraction / insertion, the carabiner will capture the two tri-links and the Attendant Ring.

Bauman BagBauman *Bag Insertion / Extraction Configuration*

Helitack Airbag™ attachment point will utilize (1) Gemtor 5105 two stage carabiner. During extraction / insertion, the carabiner will capture the two Forged Steel Rings and the Attendant Ring.

Helitack Airbag™ *Helitack Airbag™ Insertion / Extraction Configuration*

Bauman Screamer suit will utilize (1) Short-Haul Tether and (1) Gemtor 5105 two stage carabiner. During extraction /insertion, the Short-haul Tether will capture the three rings of the Screamer Suit with a girth hitch, while the carabiner attaches to the Attendant Ring.

Bauman Screamer Suit

Bauman Screamer Suit with Short-haul Tether

Ambulatory Victim Extraction Device (AVED) will utilize (1) Short-haul Tether and (2) Gemtor 5105 two stage carabiners. One carabiner will be connected to each end loop of HD Runner, and One carabiner will be used to connect the leg strap to the two side rings on AVED. During extraction /insertion, the Short-haul Tether will capture the two rings of the AVED while the other end attaches to the Attendant Ring using one carabiner.

Ambulatory Victim Extraction Device (AVED)

AVED with Short-haul Tether

Inspections and Retirement

A. Inspected prior to each use.
B. Inspect stitching and webbing for abrasion, wear or other damage.
C. Metal attachment ring should be free from cracks, dings, or other damage.
D. Each Short-haul Tether will be marked with a unique ID
E. Bauman Bags, Helitack Airbag™, Screamer Suits, and AVED will have maximum life of 10 years from date of manufacture.

3.16 SHORT-HAULER MEDICAL/PERSONAL GEAR BAG(S)

NTDP Short-haul Bag

El Cap

Quarter Dome

Sentinel

All programs will utilize any combination of the NTDP Short-haul Bag, Metolius™ El Cap, Quarter Dome or Sentinel models. Haul bags may be attached to the free end of the short-hauler primary attachment tether (daisy chain) by 1 two stage carabiner, or attached to the attendant ring with 1 two stage carabiner.

Inspections and Retirement

A. Inspected prior to each use.

B. Inspect stitching and webbing for abrasion, wear or other damage. Inspect container for holes, cuts, abrasion, or wear.

C. Retirement of haul bags is based upon inspection only.

3.17 EQUIPMENT CHANGES

Proposed changes in helicopter short-haul equipment shall utilize the New Equipment Form (D-17) and will be forwarded to the Check Spotters and NAHOS for concurrence. NAHOS will then decide if proposed change warrants an EMSHOWT vote for change. The resulting recommendation; if voted to change will be forwarded to EMSHSC group for approval.

4.1 FLIGHT RESTRICTIONS

- NWCG Standards for Helicopter Operations, Helicopter Capabilities and limitations excerpt:

  Flight operations and procedures, shall be conducted during daylight hours and only under Visual Flight Reference (VFR) conditions (minimum ½ mile visibility). Daylight hours are defined as thirty minutes before official sunrise until thirty minutes after official sunset or, in Alaska, during extended twilight hours when the terrain features are readily distinguishable for a distance of at least one mile.

4.2 RECONNAISSANCE FLIGHT

- The purposes of the reconnaissance check flight is to size up the scene, determine if short-haul is the appropriate response, and if so, collect the necessary environmental data and aircraft performance data necessary for the risk analysis (GAR). The short-haul team will also identify a suitable short-haul site.
- Flight Following during all flights is required.
- The spotter will assist with navigation and be alert to hazards (utilize hazard map, watch for other aircraft, clearances, wires, changing conditions, etc.).
- The spotter and pilot will evaluate the following short-haul site characteristics: proximity to the incident site (if insertion/extraction site is not at the incident site), approximate size, slope, rotor clearance, wind conditions, ground hazards, approach and departure routes, flight hazards, and ling length configuration.
    a. Line length configurations may consist of a single length of line or any combination of lines connected together using at a minimum one 3 stage carabiner.
- Personnel already on site should assist with the gathering of this pertinent information.
- The pilot will perform a hover out of ground effect (HOGE) power check at the proposed short-haul extraction site, during which the following additional criteria will be noted: GPS location (location of staging site, if using one), outside air temperature (OAT), power (adequate or not adequate to hold hover at the site or establish positive rate of climb) and altitude.
- The information gathered during the hover check is critical for the pilot and spotter, for the ongoing risk assessment process. And to ensure the aircraft is performing within its capability.
- Consider identification of a secondary pickup, or drop-off site for contingency purposes.
- Based on the information from the reconnaissance check flight, the pilot and spotter will make the final determination if, under existing conditions, a short-haul is within the performance capabilities and power limitations of the helicopter.
- The pilot and spotter will then make the final decision, as to whether or not a helicopter short-haul is warranted after consideration of all other related factors.

4.3 MISSION BRIEFING

A briefing shall be provided by the spotter prior to short-haul operations and must include the pilot, HMGB, and to the greatest degree possible, all persons involved in the operation.

As a minimum, the following shall be addressed during the mission briefing:

- Short-haul GAR.
- Nature of the mission.
- Location / fire behavior.
- Terrain.
- Vegetation.
- Line length configuration.
- Weather.
- Landing areas.
- Aircraft capabilities (load calculation, performance, W/B, etc.).
- Individual responsibilities (line management, communication/radio management, patient management).
- Cargo, if applicable.
- Hazards.
- Safety considerations.
- Emergency procedures.
- Situational awareness review.

NOTE: Risk assessment is an ongoing process and shall be assessed throughout the operation. Due to the range of potential scenarios and contexts, any short-haul operation associated with recovering human remains will be planned for and executed based on the specific situation.

4.4 HELICOPTER EQUIPMENT CHECK

- Cargo: Remove items not essential to the mission and secure all other cargo.
- If applicable, external cargo baskets removed.
- Cabin configuration: As directed by the pilot, monitor adjustments as the cabin is configured for short-haul.
- Spotter tether attachment point is secure and does not interfere with the operation of or cause accidental release of the seatbelt.
- Seatbelts are secure and operational.
- Maps and mission information are secured, but accessible.
- Communications check: All radios are operational and on correct frequencies. (A radio check must be done to establish communications between the aircraft and appropriate personnel, including pilot, spotter, short-haulers, and ground crewmembers).
- Intercom system operational. Due to other radio traffic use of the hot-mike is not recommended.

4.4.1 Dual Hook System and Line Check Procedures

- Secondary release system is installed, tested, and secure.
- The following hook check and line installation procedures are conducted.

When the pilot is ready to conduct a hook check, connect one small ring to the cargo hook, and, once engaged, apply downward pressure (1 Check). The pilot then opens the hook with the primary release. Reconnect the ring to the same hook and again apply downward pressure (2 Check). The pilot then opens the hook with the secondary release.

Reconnect the ring and apply downward pressure to ensure the hook is engaged. Confirm the cargo hook is in the locked position (3 Check, Diamond in the window). Place the remaining small ring into the HEC hook, and, once engaged, apply downward pressure (1 Check). The pilot opens the hook with the primary, hydraulic release. Reconnect the ring to the same hook and again apply downward pressure (2 Check). The pilot then opens the hook with the secondary, electrical release. Reconnect the ring to the HEC hook and confirm it is engaged by applying downward pressure and by seeing that the hook lock indicator shows 'fully locked' (3 Check, Diamond in the window) on the side of the hook.

If all hook releases have functioned correctly, the Y-lanyard with properly installed line ballast is now installed, and ready to be connected to the main line by the large ring.

4.5 SHORT-HAULER OPERATIONAL EQUIPMENT CHECK (*6 POINTS TO SAFETY*)

This is a pre-operational check and is not meant to be an equipment inspection. Refer to Chapter 3 for inspection criteria.

A Short-Hauler Operational Equipment Check will be completed prior to any short-haul operation utilizing a partner. In the rare instances where a partner is unavailable, a self-operational equipment check will be performed. All steps of the equipment check are to be performed both visually and tactilely for thoroughness. Individuals being checked will be attentive to each step of the equipment check process. If a discrepancy is found, the discrepancy will be addressed and the check will start over from the beginning.

1) **Flight Helmet-**
   a. Chin strap secure.
   b. Eye protection in place.
2) **Radio**- attached under the Yates harness, connected to the helmet, radio on, correct frequency, scan off.
3) **Tether**- girth hitched to the Yates harness, no damage.
4) **Carabiner and Attendant Ring-** Carabiner attached to the tether while capturing the attendant ring. Check for functionality of all components.
5) **Knife** –Attached on the harness waist belt. Snap closed securing knife.
6) **Harness** – Buckles connected, strap ends stowed, no twists, adjusted per individual.

Thumbs-up exchanged - Affirming completion of the 6 Points to Safety.

4.6 SPOTTER CHECK

A Spotter Check will be completed prior to any short-haul operation. All steps of the Spotter Check are to be performed both visually and tactilely for thoroughness. Individuals being checked will be attentive to each step of the Spotter Check process. If a discrepancy is found, the discrepancy will be addressed and the check will start over from the beginning.

1. Flight Helmet.
   a. Chin strap secure.
   b. Eye protection or visor down and secured.
2. PPE shall be worn in accordance with the current NSHO and ALSE.
3. Harness: Buckles connected, strap ends stowed, no twists, adjusted per individual.
4. Knife: Attached on the harness waist belt. Snap closed securing knife.
5. Thumbs-up exchanged affirming completion of spotter check.
6. Spotter attached to spotter anchor, carabiner functioning and allows for quick egress during an aircraft emergency situation.
7. Pilot will ensure that the spotter is connected to the spotter anchor.

4.7 HELICOPTER SHORT-HAUL INSERTION/EXTRACTION PROCEDURES

Operational Phase
During short-haul operations, the Spotter/Pilot may request/verify that the radio frequency is cleared for "emergency traffic" and will advise when initiating operations (sterile cockpit) and when complete with operations.

4.7.1 SHORT-HAUL TEAM DUTIES (EXTRACTION)

- Pilot initiates final approach to the extraction site, slows descent and stabilizes the haul line.
- Communication is established between Short-haulers and aircraft.
- Short-hauler relays
    a. Winds
    b. Known hazards
    c. Weights
    d. Configuration, i.e. "**Two short-haulers and Bauman bag**"
- Short-hauler states, "**Ready to receive**" Response from helicopter to ground crew "**inbound**".
- Short-hauler(s) may assist pilot by calling out distances of MAP ring above the canopy and will assist pilot in calling out distances of MAP ring above ground. Short-hauler(s) should also point out any hazards in the area to the pilot. All Short-hauler radio traffic must be concise.
- When applicable short-hauler will indicate load **"entering canopy".**
- Short-hauler will call distance from lowest point on line (MAP ring/load) to helicopter **"five zero**."
- Helicopter responds "**Copy, five zero"** at the start of the cadence.
- Height above ground will then be delineated by calling out **"four zero, three zero, two zero, one zero, eye level."**
- When the short-hauler has control of the line and the short-hauler communicates **"got it**, this indicates to pilot to hold and maintain hover.
- When ready, the Pilot radios short-hauler to **"hook up"** and Spotter gives the "*hook up*" signal simultaneously.
- Once hooked in, a "Head Nod" acknowledging READY is completed between the short-haulers.
- The short-hauler communicates **"ready"** and gives the "*lift*" signal.
- Helicopter states **"coming up"** and lifts short-hauler(s). Short-hauler communicates "**clear of obstacles**" and gives the **"***clear of obstacles*" signal when appropriate for forward flight.

While these communications are absolutes, real time or additional communications may be necessary.

4.7.2 SHORT-HAUL TEAM DUTIES (INSERTION)

- Pilot initiates final approach to the insertion site, slows descent and stabilizes the short-hauler(s)/load on the line.
- Short-hauler(s) may assist pilot by calling out distances of MAP ring above the canopy and will assist pilot in calling out distances of MAP ring above ground. Short-hauler(s) should also point out any hazards in the area to the pilot. All short-hauler radio traffic must be concise.
- When applicable short-hauler will indicate load "**entering canopy**".
- Short-hauler will indicate when load is at "**five zero"** feet.
- Helicopter responds "**Copy, five zero"** at the start of the cadence.
- Height above ground will then be delineated by calling out **"four zero, three zero, two zero, one zero**."
- When the short-hauler is stabilized on the ground and is ready to unhook state **"secure"** and unhook. Simultaneously the pilot will state **"unhook"** and the spotter will give the **"***unhook***"** signal.
- Short-hauler(s) radios the pilot that they are clear of the line by saying **"clear"** and gives the **"***lift***"** signal.
- Helicopter states **"coming up"** and lifts empty MAP ring/load. Short-hauler communicates **"clear of obstacles"** and gives the "*clear of obstacles*" signal when appropriate for forward flight.

4.7.3 INFLIGHT CONSIDERATIONS

- Short-haul line will be flown with line ballast in order to prevent excessive trailing behind the aircraft in forward flight.
- Forward flight will not exceed 50 knots with the short-haul line deployed.
- In flight spinning or position changes can be prevented by short-hauler extending an arm or a leg.
- Radio communication quality is best if the helmet boom mic is flush against the lips and cupped by hand and the head is turned away from the wind.
- If, at any time during the transport or ferry portion of the short-haul insertion or extraction, radio communications are lost or become inadequate, the pilot and spotter may decide to return to the staging site.
- Spotter and short-hauler may utilize "*ok*" hand signal**.**
- If the short-hauler(s) lose communication or wish to terminate the mission**,** initiate the **"***wave-off* **"**hand signal.

Note: If receiving an unattended external load, short-haul ground personnel will follow the standard height above ground call outs.

Note: Upon the completion of an actual Short-haul mission with a live non-Forest Service HEC, it is suggested that the vendor Pilot notify their company's management staff. At that vendor's digression, they can notify the FAA in accordance with the FARs for emergency deviations.

4.8 SPOTTER HAND SIGNALS

SHORT-HAUL SPOTTER HAND SIGNALS

WAVE – OFF

HOOK / UNHOOK

ARM EXTENDED WITH CLENCHED FIST

These short-haul specific hand signals should be clearly visible to the intended recipient. If additional hand signals are needed, refer to the standard hand signals in the NSHO or Interagency Response Pocket Guide (IRPG).

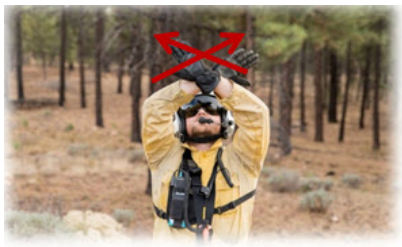
4.9 SHORT-HAULER HAND SIGNALS

SHORT-HAULER HAND SIGNALS

LIFT

HOLD HOVER

CLEAR OF OBSTACLES



WAVE OFF

ARE YOU OK? I AM OK.

NOTE: There are many circumstances that can constitute an in-flight emergency. Pilots, spotters and short-hauler must understand the significance of an inflight emergency with human external cargo (HEC). Pilots, spotters, and short-haulers must discuss in-flight emergencies and their respective roles. During an emergency is NOT the time and or place to discover that, "What you heard, is not what I meant." This is accomplished through planning, briefings, and training

5.1 EMERGENCY COMMUNICATIONS AND CATEGORIES

In short-haul, clear and concise communication between the spotter and pilot is critical to a successful outcome. During short-haul operations, there are two basic categories of in-flight emergencies.

1. Immediate response- those that require an **immediate** action (land as soon as possible).
2. Delayed response- those that permit a **delayed** action (land as soon as practicable).

The pilot is trained to respond to any in-flight emergencies in accordance with the Rotorcraft Flight Manual in addition to the emergency procedures outlined in this plan.

5.2 IMMEDIATE RESPONSE EMERGENCIES (LAND AS SOON AS POSSIBLE)

There are a limited number of emergencies that fall into this category. Emergencies are characterized by a need to transition immediately to forward flight, establish an autorotation or execute a forced landing without an external load. In this type of emergency, positive outcome may be impacted by the ability to jettison external loads quickly.

Examples of Possible Emergencies

a. Engine Failure
b. Tail Rotor Failure
c. Hard-over of controls
d. Engine over speed/driveshaft failure
e. Compressor Stall
f. Governor Failure
g. Fire

5.3 DELAYED RESPONSE EMERGENCIES (LAND AS SOON AS PRACTICABLE)

Many events, typically mechanical or environmental, fall into this category. These events are characterized by an ability to delay the departure from the short-haul hover. These events typically allow time to place the load safely on the ground prior to departing the hover.

Examples of Possible Problems

h. Transmission/Engine/Tail Rotor Gear Box Chip Light
i. Hydraulic Failure
j. Oil temp/Oil pressure light
k. Hydraulic temp or pressure light
l. Unknown Master Caution
m. Fire light

n. Stuck pedal
o. Fuel control or governor failure high side
p. Electrical failure
q. Adverse environmental conditions
r. Line Entanglement

NOTE: These events may not require immediate action other than communication and monitoring.

5.4 PILOT AND SPOTTER ACTIONS – SHORT-HAUL OPERATIONS

5.4.1 SHORT-HAUL IMMEDIATE RESPONSE ACTIONS

NOTE: "MAYDAY, MAYDAY" and the subsequent actions taken by the pilot and spotter will occur almost simultaneously. The pilot will attempt to gain forward flight, which may require releasing the haul line. Any failure to immediately release the line may pose a threat to the aircraft and personnel onboard, as well as increase the risk to the short-hauler.

NOTE: The decision of any short-hauler to cut away from the line is a personal choice depending on the circumstances and best chance for survival.

<table>
<tr><th colspan="4">Short-Haul Immediate Response (Land as Soon as Possible)</th></tr>
<tr><td colspan="4">PILOT DUTIES</td></tr>
<tr><td colspan="4">Pilot must identify this emergency accurately and without delay. Additionally, pilot must simultaneously alert the spotter by stating "Mayday, Mayday".</td></tr>
<tr><td colspan="4">SPOTTER DUTIES</td></tr>
<tr><td colspan="4">The spotter's response must be immediate. Additionally the spotter should attempt to verify the severity of the emergency and verbally confirm the pilots intended actions.</td></tr>
<tr><td rowspan="4">SHORT- HAUL PHASE</td><td></td><td>PILOT STATES</td><td>PILOT ACTION/SPOTTER RESPONSE</td></tr>
<tr><td rowspan="3">SHORT-HAUL LINE RIGGED, W/HEC or NO HEC</td><td rowspan="3">"MAYDAY, MAYDAY"
(over the short-haul operation frequency)</td><td>SPOTTER: TAKES SEAT, FASTENS SEAT BELT, AND PREPARES FOR EMERGENCY LANDING.</td></tr>
<tr><td>With HEC on the line, SHORT-HAULER: ASSESSES SITUATION, DETERMINES BEST COURSE OF ACTION.</td></tr>
<tr><td>PILOT: RELEASE SECONDARY; EVALUATE SITUATION, RELEASE PRIMARY AS NECESSARY.
SPOTTER: TIME PERMITTING STATES "LINE CLEAR"</td></tr>
</table>

NOTE: HEC will only be released when the pilot determines that retention of the HEC will jeopardize the survivability of the aircraft and crew.

5.4.2 SHORT-HAUL DELAYED RESPONSE ACTIONS

See table below for Pilot and Spotter actions during an in-flight emergency or situation that may be addressed through a delayed response.

<table>
<tr><th colspan="4">Short-Haul Delayed Response (Land As Soon As Practicable)</th></tr>
<tr><td colspan="4">PILOT DUTIES
During a delayed response emergency, “EXPEDITE, EXPEDITE”, is intended as the initial alert for the crew that the short-haul must be halted due to an aircraft malfunction or environmental condition. <u>It should not be the only communication</u>. As the situation allows the pilot should advise the crew of the aircraft status and the intended duration of the flight. Safe delivery of the HEC to the nearest suitable site should happen immediately, Short Hauler will continue to make normal call out. Delays may occur when no suitable site is readily available</td></tr>
<tr><td colspan="4">SPOTTER DUTIES</td></tr>
<tr><td colspan="4">The spotter should assist the pilot in locating a suitable area for the HEC</td></tr>
<tr><td rowspan="7">SHORT-HAUL PHASE</td><td></td><td>PILOT STATES</td><td>SPOTTER ACTION/RESPONSE</td></tr>
<tr><td rowspan="3">SHORT-HAUL LINE RIGGED, NO HEC</td><td rowspan="3">“EXPEDITE EXPEDITE”
(over the short-haul operation frequency)</td><td>SPOTTER: TAKES SEAT AND FASTENS SEAT BELT. STATES “READY”</td></tr>
<tr><td>PILOT: RELEASE SECONDARY AND AS NECESSARY RELEASE PRIMARY.</td></tr>
<tr><td>PILOT/SPOTTER: NOTE LOCATION OF JETTISONED EQUIPMENT FOR SUBSEQUENT RETRIEVAL</td></tr>
<tr><td rowspan="4">SHORT-HAUL LINE RIGGED, W/HEC</td><td rowspan="4">“EXPEDITE EXPEDITE”
(over the short-haul operation frequency)</td><td>SPOTTER: ASSIST IN LOCATING THE NEAREST SUITABLE AREA TO INSERT HEC.</td></tr>
<tr><td>PILOT: INSERT HEC TO SUITABLE AREA.</td></tr>
<tr><td>SPOTTER: TAKES SEAT AND FASTENS SEAT BELT, STATES “READY”.</td></tr>
<tr><td>PILOT: RELEASE SECONDARY AND AS NECESSARY RELEASE PRIMARY.</td></tr>
<tr><td colspan="3">PILOT/SPOTTER: NOTE LOCATION OF HEC AND EQUIPMENT FOR SUBSEQUENT RETRIEVAL</td></tr>
</table>

NOTE: Events of an environmental nature may be resolved by waiting for the event to subside. An event of this nature requires that the pilot inform the spotter of the actions required to address

the event. If at any point continued flight is hazardous due to environmental conditions, the pilot will state "EXPEDITE, EXPEDITE".

"EXPEDITE, EXPEDITE" and the subsequent actions taken by the pilot and spotter will occur almost simultaneously. The pilot will attempt to gain forward flight, which may require releasing the short-haul line. Any failure to immediately release the line may pose a threat to the aircraft and personnel onboard, as well as increase the risk to the short-hauler.

5.5 SHORT-HAUL INCIDENT (REPORTING & INVESTIGATION):

The short-haul spotter and local helicopter manager are responsible for reporting helicopter short-haul incidents through the proper aviation channels at the Forest and Regional levels [References: FSM 5723, NSHO] and will use a "SAFECOM" to report these incidents. (www.safecom.com)

5.6 SHORT-HAUL ACCIDENT:

Notification will be made to the Forest/ Unit or IMT, who in turn will notify the Regional Aviation Safety Manager and to the Regional Aviation Officer to begin the accident investigation process. The HMGB/Spotter will secure as evidence, all short-haul equipment and documentation, Load Calculations, manifests, the aircraft, aircraft records, fuel truck and all of its associated records. The accident site will be secured and maintained as evidence for the subsequent investigation.

6.1 CHECK SPOTTER OR SHORT-HAUL BASE MANAGER DUTIES

It is the responsibility of the Check Spotter or Short-Haul Base Manager to ensure that proper short-haul documentation is current and maintained properly. This includes, but is not limited to documentation of training, qualifications, proficiency, equipment, incident reports, and short-haul missions.
Manage short-haul spotter and ground crew member qualifications, records, and associated equipment documentation.
Ensure inspections of all short-haul equipment and PPE are conducted.
Ensure AARs are completed after all short-haul operations.

6.2 RECORDS AND REPORTS- GENERAL

Record keeping is mandatory for administering short-haul operations. Accurate records and reports on short-haul activities, equipment use, training, and incidents/injuries shall be maintained.

All short-haul logs are official documents and will be kept on the forms contained in Appendix D or electronic equivalent. Short-haul logs will be archived indefinitely.

All short-haul equipment that is removed from service (retired) must be destroyed to the point, that it can no longer be utilized for its intended purpose. Any equipment that requires documentation must show retirement date on the "Equipment Log" when removed from service.

NOTE: All electronic records should be backed up to an external drive or server. A hard copy of electronic record will be printed at least once annually. An electronic data storage system, can be used for this purpose.

6.3 SHORT-HAUL INJURY REPORTING

All short-haul injuries, in addition to being reported through established agency protocols, will be reported through the Regional Helicopter Operations Specialist and forwarded to the National Assistant Helicopter Operations Specialist.

6.4 TRAINING, CERTIFICATION AND PROFICIENCY RECORDS

Copies of certifying and recertifying documentation will be maintained in individual permanent records and forwarded to the IQCS Account Manager.

6.5 SHORT-HAUL UNIT LOG

All short-hauls, spots and related information must be entered into the short-haul unit log, found in Appendix D or electronic equivalent and shall be readily available for review. The spotter or base manager will ensure information is entered into the logs in a timely manner and the logs are kept current.

6.6 SHORT-HAULER TRAINING RECORDS

The short-hauler training record for initial training and recertification of short-haulers shall document each individual step in the training. Competency at each level of the training must be demonstrated by the trainee, before the lead trainer shall permit advancement to the next step (Appendix D). Each short-hauler will maintain a record of training, proficiency and operational short-hauls in the short-haul unit log.

6.7 SPOTTER TRAINING RECORDS

The spotter training record for spotters shall document each individual step in the training. Competency at each level of the training must be demonstrated by the trainee before the check spotter(s) shall permit advancement to the next step (Appendix D). Each spotter will maintain a record of training, proficiency and operational spots of short-haulers in the short-haul Unit Log.

6.8 EQUIPMENT MASTER RECORDS

All equipment requiring documentation will be assigned a unique identification number. The number will be retired with the piece of equipment. The equipment below shall have a log assigned to document inspections and service life. At a minimum, each log shall identify the ID#, date of manufacture and date of retirement for each piece of equipment. All inspections will be notated by date and who performed the inspection. Any deficiencies, wear, irregularities, etc., shall be noted and brought to the attention of a spotter. Reference Chapter 3- Equipment, for requirements for marking and inspecting equipment:

- Bauman Bag / Helitack Airbag
- Screamer Suit / AVED
- Spotter/Short-Hauler Harness
- Short-Haul Line
- Y-Lanyard
- Spotter Anchor
- Short-Haul Tether

This Strategic Program Risk Assessment (Appendix M) addresses the hazards associated with short-haul operations only. All other hazards associated with helicopter operations are addressed in the Aviation Risk Management Workbook.

*The pre-mission Risk Assessment Tool to be used for short-haul will be the Green, Amber, Red (GAR) Model (Appendix G). The GAR will be implemented prior to every mission and readdressed as conditions warrant.

The GAR model allows for time critical risk assessment and generates communication concerning the mission risks. This communication then helps identify the risk and leads to the appropriate mitigation. The GAR model is not intended to replace pre-mission planning, briefings and debriefings, or post action follow-up, but provide an efficient risk management tool for dynamic environments. It provides a more general analysis of the operational system and provides a qualitative rating scale for each of the categories that correspond to the identified areas of risk.

NOTE: It is important to remember that risk management is an ongoing process that continues throughout any aviation mission.

APPENDIX A: NEW BASE START-UP PROCEDURES

This appendix is intended to provide the framework of good communication and the expectations of a newly activated short-haul program. The following milestones have been outlined to assist you in your coordinated activation process. Your Regional Short-Haul Representative and/or check-spotter can provide assistance and should be your main point of contact for all activation activities.

Base Activation References and program related frequently asked questions – can be found at:

Forest Service Emergency Medical Short-Haul Intranet site

Link to Forest Service Emergency Medical Short Haul Intranet Site

US Forest Service Emergency Medical Short-Haul Quality Assurance Plan

Link to Forest Service Emergency Medical Short-haul Quality Assurance Plan

USDA Forest Service Emergency Medical Short-Haul Operations Plan (EMSHOP)

Link to Forest Service Emergency Medical Short-Haul Operations Plan (EMSHOP)

One Year Prior to Activation

February: Base activation requests are due for following year activation.

March: Base activation requests are processed and selections are completed. All bases requesting short-haul activation will be notified of request status. Crew points of contact (POC) are established for new start up programs.

POC's should be a higher supervision leader in a program, preferably an identified spotter candidate. This person will be made known to the National Assistant Helicopter Operations Specialist (NAHOS) upon notification of the crew's activation approval. POC's are established one year prior to activation to provide a direct coordination link between the NAHOS and the new startup program(s).

Upon notification of activation approval, startup programs are responsible for managing the following:

- Notification to helicopter vendor of additional contract requirements of the short-haul mission, if applicable.
- Participation on monthly short-haul conference calls once established.
- Development of facility and other program support needs (if previously identified in activation request).
- Shadowing an active Forest Service Short-Haul program for at least one week for mission familiarization prior to program startup.

November: New startup organizations should be more known and developed at this time. Programs and their POC's are expected to:

- Participate in the Fall Short-Haul AAR meeting as determined by the NAHOS.
- Be notified of consolidated training venue location and dates as developed during the Fall Short-Haul AAR meeting.
- Continue to work through staffing requirements, including additional funding requests (if previously identified in activation request) to meet Emergency Medical Short-Haul Operations Plan (EMSHOP) standards (Chapter 1).

- Identify EMSHOP standard of at least two short-haul spotter trainees with a maximum of three (EMSHOP chapter 1.8)
- Develop plans and identify at least three EMT's to meet EMSHOP's standard (Chapter 1) prior to short-haul training.
- Ensure qualification and training requirements will be met as identified in EMSHOP (Chapter 2).
- Continue to acquire established EMSHOP medical and short-haul equipment (consult medical and equipment purchasing plan, Appendix E and Appendix J).

Activation Year

January: During the activation year, start up programs and their POC's are expected to:

- Continue to work toward activation activities as identified above.
- Monitor helicopter vendor progress towards meeting all agency contract and EMSHOP requirements.
- Recruit and fill crew positions while managing EMSHOP requirements for potential spotter trainees, EMT's qualification, and recommended program size.
- Participate in the response development to the Region and Forest review of the EMSHOP Risk Assessment. This will be presented to the stand-up program by an identified Quality Assurance team or NAHOS prior to the scheduled Pre-Operational Quality Assurance Review.

Two Months Prior to Activation Date

- Startup programs will participate in a New Activation pre-season Quality Assurance Review prior to short-haul training. This will be conducted in accordance with the US Forest Service Emergency Medical Short-Haul Quality Assurance Plan (QA Plan 3.4) consisting of the evaluation of:
    - Helicopter solicitation award and status. Gauge vendor preparation for short-haul mission.
    - Base ops plan reflecting EMSHOP QA requirements are complete (QA Plan 3.4).
    - Verification of Regional and Forest organizations per EMSHOP QA requirements (QA Plan 2.2 and 2.3). Mitigation plan required for any current or anticipated organizational vacancies.
    - Review of the Regional and Forest response to Selected Risk Factors as provided by the NAHOS.
    - Verification that short-haul and medical equipment is received, configured, identified (labeled) and documented in accordance with EMSHOP (Chapter 3 Equipment, Appendix E Equipment and Appendix J Medical).
- Prior to consolidated short-haul training, completion of CRM N9059-Crew Resource Management 7 Skills training requirements (3.0 hours) by all base startup personnel prior to attending consolidated short-haul training.

Activation: Successful activation is contingent upon the following:

- Completion of short-haul specific CRM training (1.5 hours) by all base startup personnel while at short-haul training.
- Completion of short-haul training by all base startup personnel. EMSHOP qualification and staffing requirements for spotter, haulers, and EMT's are still enforced even in the event that candidates are not successful during training.
- Helicopter vendor pilots and aircraft approved for short-haul mission performed prior to training venue – **(to be coordinated by Agency Helicopter Inspector Pilot, Aircraft Inspectors and NAHOS**).
- Completion of letters of delegation for new Check Spotters, if applicable, by Regional Helicopter Operations Specialists (HOS) in concurrence with NAHOS (EMSHOP 2.3.1 and 2.3.2).
- Completion of the mid-season Quality assurance review. This date will be determined by the Quality Assurance Team during the New Activation pre-season QA Review process.

New Base Startup Short-Haul Program Waivers

Check Spotter Development – New short-haul base startups in Forest Service Regions that do not yet possess existing short-haul programs, will not meet established EMSHOP criteria of personnel possessing one year of previous operational experience for developing Regional Check Spotters. This requirement will be waived only in this instance of the initial year of new base startup activation. Subsequent development of regional check spotters will meet all established EMSHOP criteria.

End of Year Reports

End of Year Reporting- In addition to the National Helitack Data Questionnaire, base managers will be responsible for completion of an additional set of short-haul specific questions. Contact the NAHOS prior to short-haul training to obtain the current list of questions.

APPENDIX B: SHORT-HAUL TRAINING SYLLABUS

Short-hauler Training Syllabus

I. INTRODUCTION

It is essential that short-haul personnel are well trained, proficient, and competent in their role. Decisions made by pilot, spotter and short-hauler can determine the success or failure of the mission.

II. Training Objectives

Ensuring short-hauler trainee success through high quality training opportunities, fostering crew & program cohesion while instilling in them confidence, resiliency and a skill set.

III. Training Aids

Emergency Medical Short-haul Operations Plan (EMSHOP), optional PowerPoint presentations and videos, individual lesson aids, lesson materials, and training records. Instructors should also integrate personal experiences to enhance the concepts and learning environment.

IV. Cadre Responsibilities

Check Spotters (Lead Trainer) ensure standardization at all levels of training and follow training syllabus.

Spotters (Trainers) ensure proficiency is obtained by each trainee short-hauler prior to moving them to the next stage or certification of training.

Pilots ensure aircraft preparedness, understand training objectives, and provide feedback to the instructors and trainees.

Equipment Manager(s) ensure the adequate amount of equipment is available to support short-haul operations and supervise inspections to ensure all short-haul equipment is properly inspected and use records are completed.

Unit 1 – Program Introduction

Objectives: Provide students and pilots with a general overview of the short-haul program and policy.

Training Aids: Training PowerPoint, Flip chart, EMSHOP.

Lesson Outline:

1. **Program History and Overview**
   - A. DOI and FS
2. **Policy and Guidelines**
   - A. Introduce students to our guiding policy EMSHOP
3. **Short-haul Positions**
   - A. National Level
   - B. Regional Level
   - C. Crew Level
4. **Pilot Test Standards**
   - A. Brief overview of PTS
5. **Training Requirements**
   - A. Initial
   - B. Annual
6. **Risk Assessment**
   - A. Programmatic Risk Assessment

B. GAR

7. **Expectations**
    A. Cadre expectations
    B. Candidate expectations

Unit 2 – Crew Resource Management

Objectives: Provide all short-haul participants with a refresher of crew resource management principles as it applies to the short-haul mission.

Training Aids: PowerPoint, Flip chart, Lessons Learned Document, FSM 5709.16, CH. 20, and EMSHOP.

Lesson Outline:

1. **CRM Basics**
2. **Human Factors**
    A. Five Hazardous Attitudes
    B. Risk Aversion/tolerance
    C. Cognitive perception (change blindness, illusion, etc.)
    D. Physical factors (Fatigue, prescription drugs, etc.)
3. **Review 7 Critical Skills of CRM**
    A. Decision Making
    B. Assertiveness
    C. Mission Analysis
    D. Communication
    E. Leadership
    F. Adaptability (flexibility)
    G. Situational Awareness
4. **Lessons Learned Case Study**
    A. Short-haul Reports
    B. Extraction FLA's

Unit 3 – Equipment Orientation

Objectives: Provide all short-haul participants with an introduction to the equipment, including its use, inspections and care.

Training Aids: PowerPoint, Flip chart, short-haul equipment.

Lesson Outline:

1. **Personnel Protect Equipment (PPE)**
    A. Clothing
    B. Helmet
2. **Short-haul Lines**
    A. Line lengths
3. **Line Ballast**
    A. Weights
4. **Dual Hook System**

5. **Y-Lanyard**
6. **Carabiners**
    A. 3 stage carabiner
    B. 2 stage carabiner
7. **Harness**
    A. Yates 388
    B. Knife
        i. Super Knife
        ii. Knife Sheath and Installed location

    C. Hauler Tether
        i. Single Length 20" Short-haul Tether (Blue Water)
8. **Attendant Ring**
    A. Identify components
    B. Use
9. **Patient extraction equipment**
    A. Bauman Bag
        i. Tri Link
    A. Helitack Air Bag

        i. Adjustments

    B. Screamer Suit
        i. Gerth hitch Short-haul Tether and carabiner use
    C. Ambulatory Victim Extraction Device (AVED)
        i. girth hitch tether with carabiner use
10. **Spotter Anchor**
    A. 3 stage carabiner
11. **Medical/Personnel Gear Bags**
    A. El Cap
    B. Quarter Dome
    C. Sentinal
    D. NTDP Haul Bag
12. **Radio Equipment**
    A. Patch Cord

Unit 4 – Short-hauler and Spotter Hand Signals

Objectives: Provide all short-haul participants with an introduction to and the use of hauler and spotter hand signals.

Training Aids: PowerPoint, Flip chart, short-hauler to demonstrate hand signals.

Lesson Outline:

1. **Short-haul Attendant Hand Signals**
    A. Lift
    B. Hold Hover
    C. Clear of Obstacles
    D. Wave-Off
    E. Ok? Ok?

2. Spotter Hand Signals

A. Wave-Off

B. Hook / Un-Hook

Unit 5 – Short-haul Communications

Objectives: Provide all short-haul participants with an introduction to the short-haul operational communications.

Training Aids: PowerPoint, flip chart, personnel to demonstrate verbal communications, short-haul pocket training aid.

Lesson Outline:

1. **Operational Phase**
    A. Brief introduction of Operational steps
2. **Pilot/Short-hauler Extraction Duties**
    A. Pilot establishes positive radio contact
    B. Short-hauler establishes positive radio contact
    C. Pilot initiates final approach to extraction site
3. **Extraction Communications**
    A. Extraction sequence of pilot and short-hauler verbal communications
    B. Cold Hook procedures
4. **Pilot/Short-hauler Insertion Duties**
    A. Pilot initiates final approach to insertion site
    B. Short-hauler may provide heights above canopy
    C. Short-hauler should identify hazards
5. **Insertion Communications**
    A. Insertion sequence of pilot and short-hauler verbal communications
6. **Inflight Considerations**
    A. Unweighted line in flight
    B. Forward flight speed limitations
    C. Spin prevention/correction technics
    D. Radio boom mic

Unit 6 – Short-haul Emergency Procedures

Objectives: Provide all short-haul participants with overview of inflight emergency procedures.

Training Aids: Power Point, Flip Chart, Handouts.

Lesson Outline:

1. **Emergency Categories**
    A. Immediate Response
        i. Examples of possible emergencies
    B. Delayed Response
        i. Examples of possible problems
2. **Pilot, Spotter, Short-hauler actions**
    A. Immediate Response
        i. Pilots duties, actions, and communications
        ii. Spotters duties, response, and communications
        iii. Short-Haulers possible duties, response and communications
    B. Delayed Response
        i. Pilots duties, actions, and communications

ii. Spotters duties, response, and communications
iii. Short-Haulers possible duties, response and communications

Unit 7 – Equipment Check / 6 Points to Safety (FIELD STATION)

Objectives: Provide all short-haul participants with instruction on the proper steps to conduct an Equipment Check.

Training Aids: Flip Chart, Handouts, and Personnel to Demonstrate.

Lesson Outline:

1. **Short-hauler Equipment Check**
   - A. Helmet
     - i. Chin strap secured
     - ii. Eye protection in place
   - B. Radio
     - i. Attached under the harness
     - ii. Connected to patch cord
     - iii. Radio on
     - iv. Correct frequency
     - v. Scan off
   - C. Tether
     - i. Girth hitched at the harness
     - ii. No damage
   - D. Carabiner & Attendant Ring
     - i. Check for functionality of all components
   - E. Knife
     - i. Attached on harness waist belt
     - ii. Snap closed securing knife
   - F. Harness
     - i. Buckles connected
     - ii. Strap ends stowed
     - iii. No twists
     - iv. Adjusted per individual
   - G. Thumbs up given to affirm completion of 6 Points to Safety / Equipment Check

2. **Spotter Equipment Check**
   - A. Flight Helmet
     - i. Chin strap secured
     - ii. Eye protection in place
   - B. PPE
     - i. Worn in accordance with current ALSE standards
   - C. Harness
     - i. Buckles connected
     - ii. Strap ends stowed
     - iii. No twists
     - iv. Adjusted per individual
   - D. Tether
     - i. girth hitched

ii. connection configuration

E. Knife
   i. Attached on harness waist belt
   ii. Snap closed securing knife
F. Thumbs up give to affirm completion of Spotter Equipment Check
G. Pilot will ensure that spotter is correctly connected to the aircraft with verbal confirmation.

Unit 8 – Equipment Configuration (FIELD STATION)

Objectives: Provide all short-haul participants with instruction on the proper rigging and equipment configuration. Continue to build experience with Equipment Checks before and during this Unit.

Training Aids: Short-haul equipment, static lines to hang personnel and equipment, multiple used ultimate daisy tethers, knife and extra blades, and personnel to demonstrate. This station could be completed as a static hang or incorporated with a lifting mechanism.

Lesson Outline:

1. **Rigging**
   A. Single short-hauler
      i. Without gear
   B. Double short-hauler
      i. Without gear
   C. Haul Bag
      i. Medical Bag and short-hauler
      ii. Medical Bag and two short-haulers
      iii. Medical Bag with two short-haulers and extra bag
   D. Screamer Suit / AVED
      i. With short-hauler
   E. Bauman Bag / Helitack Air Bag
      i. With short-hauler(s)
      ii. With short-hauler and screamer suit (if time allows)
2. **Emergency Cut-away**
   A. Demonstrate the use of the attendant knife
   B. Identify possible locations for use

Unit 9 – Communications Station (FIELD STATION)

Objectives: Provide all short-haul participants with instruction on the proper communications sequence and the use of hand signals. Continue to build experience with Equipment Checks before and during this Unit.

Training Aids: Short-haul equipment, lines to present to personnel, and personnel to demonstrate. Instructors will need radios, patch cords, and any need PPE. This station could be completed as a static hang or incorporated with a lifting mechanism.

Lesson Outline:

1. **Single Short-hauler**
   A. Discuss options for holding equipment and making radio calls
   B. Extraction Sequence
   C. Insertion Sequence

2. **Double Short-hauler**
    A. Discuss roles and responsibilities
    B. Extraction Sequence
    C. Insertion Sequence
3. **Hand Signals**
    A. Wave-off
    B. Hold

Unit 10 – Helicopter Configuration / Safety Briefing (FIELD STATION)

Objectives: Provide all short-haul participants with a safety briefing for the helicopter being used for the training. Give participants a walkthrough of Secondary Release, helicopter door configurations, and other configurations.

Training Aids: Short-haul equipment, personnel to demonstrate.

Lesson Outline:

1. **Helicopter Safety Briefing**
    A. Standard helicopter briefing
    B. Short-haul related helicopter configurations
        i. Doors on/off
        ii. Basket on/off
        iii. Seat in/out
2. **Short-haul Equipment**
    A. Secondary release, walk through of components
    B. Spotter anchor and carabiner
    C. Short-haul line
        i. Length options
        ii. Layout
        iii. Flaking / piling

Unit 11 – Risk Assessment / GAR (FIELD STATION)

Objectives: Provide all short-haul participants with instruction on the components and use of a GAR.

Training Aids: Handouts of GAR risk assessment form.

Lesson Outline:

1. **GAR Form**
    A. Discuss process for use
    B. Discuss listed questions
    C. Discuss ratings and outcomes of those
2. **Briefing**
    A. Conduct a GAR briefing

Unit 12 – Live Flight Operations (FIELD STATION)

Objectives: Provide all short-haul participants with actual flight operations.

Training Aids: Helicopter, open/typical terrain, veteran short-haulers for assistance, short-haul equipment (amount based on number of trainees), and EMSHOP chart 2.6 for minimum evolutions for short-hauler qualification.

Lesson Outline:

3. **Terrain**
    - A. Discuss Terrain
        - i. Open
        - ii. Typical
    - B. Review landings
        - i. Open
        - ii. Typical
    - C. Review Communications
        - i. Verbal
        - ii. Non-verbal
4. **Flight Operations**
    - A. Live flights

SPOTTER TRAINING SYLLABUS

I. Introduction

It is essential that short-haul personnel are well trained, proficient, and competent in their role. The Short-haul spotter is a key position for ensuring the safe insertion and extraction of personnel and equipment to a medical situation. Decisions made by pilot, spotter and short-hauler can determine the success or failure of the mission.

II. Training Objectives

Ensuring spotter trainee success through high quality training opportunities, fostering crew & program cohesion while instilling in them confidence, resiliency and a skill set.

III. Training Aids

Emergency Medical Short-haul Operations Plan (EMSHOP), optional PowerPoint presentations and videos, individual lesson aids, lesson materials, and training records. Instructors should also integrate personal experiences to enhance the concepts and learning environment.

IV. Cadre Responsibilities

Check Spotters (Lead Trainer) ensure standardization at all levels of training and follow training syllabus. Conduct final qualifications for spotter trainees, trainee must be from a base other than Check Spotter's.

Spotters (Trainers) ensure proficiency is obtained by each trainee spotter prior to moving them to the next stage or certification of training.

Pilots ensure aircraft preparedness, understand training objectives, and provide feedback to the instructors and trainees.

Unit 1 – Policies, Procedures and Documentation

Objectives: Discuss compliance with all applicable agency policies and procedures.

Training Aids: EMSHOP, copy of Documentation forms, local Helibase Operations and Aviation Plans.

Lesson Outline:

1. **Review Agency Policy and Guidelines**
   - A. Review EMSHOP
     - i. Spotter prerequisites
     - ii. Spotter training requirements
     - iii. Proficiency schedules
2. **Procedures**
   - A. Base short-haul operations plan
   - B. Off Forest procedures
   - C. Supporting large incidents/geographical areas
   - D. Booster short-haul plan (if applicable)
3. **Documentation and Record Keeping Forms**
   - A. Training and Qualifications
   - B. Operational Short-haul
   - C. Training/Proficiency Short-haul
   - D. Case Incident Reports
   - E. SAFECOM/Mishaps
   - F. AAR's/FLA's
   - G. Equipment Tracking

Unit 2 – Environmental Hazards and limitations

Objectives: Identify potential hazards encountered during short-haul operations. Demonstrate risk management evaluation skills.

Training Aids: EMSHOP, SAFECOM's, NSHO, Flight Manual, IRPG, and Safety Bulletins.

Lesson Outline:

1. **Environmental Hazards**

   Discuss hazards that could have an impact on short-haul operations. These include but are not limited to those identified below.

   A. Weather Conditions
      i. Winds and instability. Any of the following conditions may be an indicator of hazardous landing, short-hauling, or firefighting conditions:
         a. A good indicator on fires is the smoke column;
            - Is it shifting direction?
            - Laying horizontal or blowing downhill?
            - Is it plume dominated?
      ii. Visibility
         a. Visual Flight Rules, Min. of ½ mile visibility
         b. Anticipate Civil twilight
         c. Inversion, low hanging smoke

   ** Pilot and spotter should look for weather and wind signs that could indicate turbulence or downward movement of air at destination.*

   B. Fire Environment
      i. Fire Behavior, current and anticipated
      ii. LCES
      iii. Fire Traffic Area
      iv. Incident within and Incident I.C.
   C. Terrain
      i. Shadows, low light conditions
      ii. Upslope/Downslope of active fire area
      iii. Site selection risks and hazards
   D. Review weather and environment related SAFECOM's

2. **Mission Limitations**

   Discuss the effects the following can have on mission success.
   A. Aircraft performance
      i. Altitude
      ii. Temperature
      iii. Payload
      iv. Weight and Balance (Center of Gravity)
      v. Fuel loading

   ** An onsite hover out of ground effect power check is completed before live operations commence.*

   ** Discuss site selection to achieve better helicopter performance.*

** It is important that the Trainee understands the flight manual, power settings and limitations, max temps, torque, etc.*

B. Crew Limitations
   i. Fatigue
   ii. Hazardous attitudes ("Can Do" attitude)
   iii. Self-sustained (how much food/water)

Risk Management

C. Review Strategic Program Risk Assessment
D. Review pre-mission risk assessments and associated mitigations. To include, but not limited to:
   i. Manifests
   ii. Load Calculations
   iii. Weather
   iv. Fuel loading
   v. Flight hazards
   vi. Communications
E. Green, Amber, Red (GAR) model is the standard deliberate risk assessment tool for mission planning.
   i. Allows time critical risk assessment
   ii. Generates communication with mission participants, i.e. Pilot, Spotter, Short-hauler
   iii. Identify appropriate mitigations
   iv. GAR model is not intended to replace pre-mission planning, briefings and debriefings
F. Mission
   i. Risk management is a continual process throughout the entire mission
   ii. Pilot has the ultimate responsibility for mission safety, the spotter must use sound judgment and abort the mission if conditions exits that he/she deems unacceptable or unsafe.

Unit 3 – Short-Haul Operations

Objectives: Demonstrate proper verbal/non-verbal communications. Effective communications with Pilot, all crew members, and flight following units. Knowledge of Secondary release checks. Proper inspection and care of equipment. Sound understanding of Emergency Procedures.

Training Aids: EMSHOP, Secondary release, Spotter Anchor, associated Spotter PPE.

Lesson Outline:

1. Communications

A. Reconnaissance Flight
   i. Scene size up
   ii. Identify the insertion site
      a. Proximity to incident/fire (hot/cold black and line/ballast considerations)
      b. Size
      c. Slope
      d. Rotor clearance
      e. Wind conditions
      f. Hazards (wires, snags, loose debris/gear, etc.)
      g. External load collision hazards

iii. Identify secondary insertion/extraction contingency site
iv. Info collected during the recon flight will aid in the briefings and completion of the GAR

B. Pre/Post Mission Briefings
   i. Topics that may be addressed
      a. Green, Amber, Red (GAR) completion
      b. What is the nature of the mission
      c. Location of the mission
      d. Known hazards
      e. Trigger points for aborting the mission
      f. Alternate methods for extraction
      g. Emergency procedures
      h. Communications, loss of communications

C. Operational Communications
   i. Flight following with Helibase, Dispatch, ATGS, etc.
   ii. Frequency/radio management duties (FM/AM – Pilot/Spotter)
   iii. Spotter/Pilot may request/verify that the radio frequency is cleared for "emergency traffic"
   iv. Advise Flight Following entity when initiating operations (sterile cockpit) and when complete with operations
   v. Adjust radios to reduce potential external distractions
   vi. Once inserted, establish communications with short-haul personnel, ensure positive communications with Helibase, Dispatch, ATGS, etc.

D. Aircraft and Short-Hauler Communications
   i. Communications between the aircraft and the short-hauler are both verbal and non-verbal
   ii. All verbal communications must be clear, concise and understood
   iii. Verbal communications are reinforced with hand signals

2. Equipment

A. Inspection
   i. Review short-haul equipment requirements and standards in EMSHOP
   ii. Review short-haul equipment tracking documentation

B. Instruct trainee on the proper method for primary and secondary hook checks
   i. Discuss secondary hook capabilities and functions
   ii. Primary Hook check process
   iii. Secondary Hook check process
   iv. Ensure spotter understands installation process, visual check will be perfrom by spotter after mechanic/pilot installation

C. Instruct trainee on the proper method for installing the spotter anchor to aircraft
   i. Discuss verbal confirmation check from Pilot once Spotter is attached before live operations
   ii. Discuss the need for quick spotter egress during an aircraft emergency.

D. Discuss with trainee the Short-Hauler and Spotter Operational Equipment Checks
   i. Spotter is responsible to ensure all equipment is in working order and fitting properly

E. Short-Haul equipment failures
   i. Reporting procedures

***** *The spotter is ultimately responsible for monitoring the use and care of all short-haul equipment.*

3. **Emergency Procedures**

** Pilots are highly encouraged to be present at this stage of training.*

A. Roles and Duties
   i. The pilot and spotter must be thoroughly familiar with and able to accomplish emergency procedures
   ii. How can the spotter assist within the cockpit
   iii. Discuss the importance of dialog between the pilot and the spotter during an inflight emergency

B. Emergency Actions/Communications and Categories
   i. Immediate Response Emergencies
      a. Discuss what might cause this response
   ii. Delayed Response Emergencies
      a. Discuss what might cause this response

C. Have trainee demonstrate emergency procedures

D. Have trainee demonstrate emergency egress from the aircraft

E. Short-Haul Incident and Accidents
   i. Responsibilities for reporting

** It is imperative that the Spotter maintain composure during an emergency situation.*

Unit 4 – Helicopter Evolutions

Objectives: Demonstrate effective verbal and non-verbal communications. Under the direct supervision of a qualified spotter, trainee shall complete the required evolutions listed in EMSHOP chart 2.6. Final Qualification shall take place under the supervision of a Check Spotter from a base other than the Spotter trainee.

Training Aids: EMSHOP, Secondary release, Spotter Anchor, associated Spotter PPE, and cylinder.

Lesson Outline:

1. **Inert Load Evolutions**

Inert Load evolutions may consist of negotiating the Interagency Helicopter Pilot Practical Test Standards (PTS) course, Open Terrain and Typical Terrain. It is important to subject the trainee to differing haul line lengths and environmental conditions. The intent of inert load evolutions is to minimize personnel exposure while still providing quality vertical reference experiences.

A. Under the direct supervision of a Short-haul Spotter, Trainee will demonstrate:
   i. Primary and secondary hook checks
   ii. Proper attachment of haul lines and carabiners
   iii. Spotter Check (personal equipment check)
   iv. Cockpit communications
   v. Flight following procedure
   vi. In-flight procedures
   vii. Site selection

a. Proximity to incident/fire (cold/hot black and line/ballast considerations)
b. Size
c. Slope
d. Rotor clearance
e. Wind conditions
f. Hazards (wires, snags, loose debris/gear, etc.)
g. External load collision hazards

viii. Emergency Procedures

2. Live Evolutions

During live helicopter evolutions trainee will demonstrate skills, knowledge and competencies for insertion/extraction of HEC's. Typical terrain should include fields, light timber, open canopy, rock out cropping, slope, etc. Should at any point during live helicopter evolutions the trainee makes repetitive procedural errors, the instructor will return the trainee to the appropriate level of training for review (ground, tower, etc.)

A. Under the direct supervision of a Shor-haul Spotter, Trainee will demonstrate:
   i. Primary and secondary hook checks
   ii. Proper attachment of haul lines and carabiners
   iii. Spotter Check (personal equipment check)
   iv. Cockpit communications
   v. Flight following procedures
   vi. In-flight procedures
   vii. Site selection
      a. Proximity to incident/fire (cold/hot black and line/ballast considerations)
      b. Size
      c. Slope
      d. Rotor clearance
      e. Wind conditions
      f. Hazards (wires, snags, loose debris/gear, etc.)
      g. External load collision hazards
   viii. Emergency Procedures

3. Final Evaluation

Once the Trainee has completed the Spotter training syllabus under the supervision of a qualified spotter, the respective Base Manager or Regional Check Spotter will request a Final Evaluation be conducted. Should at any point during live helicopter evolutions the trainee makes repetitive procedural errors, the instructor will return the trainee to the appropriate level of training for review (ground, tower, etc.)

The following tasks will be completed under the supervision of a check spotter for final qualification. This evaluation will be completed by a check spotter from another base.

- Demonstrate knowledge of the inspection, care and maintenance of short-haul equipment.
- Demonstrate ability to rig the helicopter for short-haul, provide a safety briefing and conduct a safety check of short-haul personnel without procedural error.
- Demonstrate knowledge of emergency procedures.
- Demonstrate ability to work with the pilot.
- Demonstrate knowledge of risk assessment and mission structure.
- Before the check ride evaluation, all required evolutions have been performed as outlined in Certification and Proficiency chart, 2.7.
- Successful completion of check spotter evaluation.

APPENDIX C: SHORT-HAUL TRAINING PLAN

General

Short-Haul training promotes standardization of procedures and equipment and increases quality assurance, while promoting efficiency inside the whole program. The training provides individuals with high quality instruction from the most qualified individuals within the national program. It also promotes networking between individual programs which can foster cultures associated with crew cohesion and highly reliable organizations.

National Short-haul Training Cadre

The National Short-Haul Training Cadre (NSHTC) should be comprised of individuals from different Regions and bases, with check spotters as the primary cadre leaders. The NAHOS position will provide oversight to the NSHTC, a check Spotter and veteran Spotter will participate at each scheduled training to promote annual standardization Cadre selections should be finalized by January allowing program manager's sufficient time to plan and coordinate training sessions and travel.

The NSHTC will be comprised at a minimum of the following positions:

- National Assistant Helicopter Operations Specialist
- One Check Spotter
- One Veteran Spotter
- Veteran Short-Haulers
- Helicopter Inspector Pilot

All positions can be staffed by veteran short-haulers or individuals with expertise and qualification for the position. Short-haul trainees and cadre members should not hold any collateral role or duty in the listed ICS functions. Helicopters would be coordinated between the NAHOS, short-haul base managers and Regional HOS for each training session.

National Short-Haul Training Incident Management Team (IMT)

When conducting big academy style training events, one key component of large scale training is staffing key ICS positions to plan and coordinate logistics and training sessions. As the program develops and depending on complexity, the ICS structure will adapt to specific needs and opportunities and additional positions will be adjusted as needed. The National Short-haul Training Cadre would be looking to the local unit hosting the training to fill the positions identified. The training academy IMT can be comprised at a minimum of the following positions:

- Incident Commander
- Safety Officer
    - EMT
- Logistics
- HEB2 / ASGS
    - Two HMGBs
    - DECK
    - ABRO
- PAO/PIO *(NAHOS member might need to assist)*

Standardized Short-Haul Training

To conduct short-haul training an indoor classroom and Helibase with proximity to typical terrain is required.

Considerations for a location include:

- A training room large enough to accommodate the necessary number of cadre and trainees.
- An operations room that facilitates all the helibase requirements associated with consolidated short-haul training. Computer, PowerPoint projector and screen needed.
- Additional conference/meeting room for accommodating additional group needs (HIP, QA, and HOS's).
- Pre-established logistical requirements (Cache Orders, Food Vendors).
- Helibase is large enough to accommodate the necessary number of aircraft.
- Pre-identified typical terrain short-haul sites.

More than one Helicopter may be needed on site with ALL pilots for those contracts. Helicopter and training may be held before or during the official MAP start to save on ferry costs and vendor per diem. Check rides and aircraft carding will be completed prior to training (short-hauler and spotter need to be involved in PTS phase three and four).

Example Agenda for Single Crew & Spotter Training

Sunday	***Monday***	***Tuesday***	***Wednesday***	***Thursday***	***Friday***	***Saturday***
			A/C Inspected	PTS 3& 4 Performed.	PTS 3 & 4 Performed	PTS 3 & 4 Performed
Sunday	***Monday***	***Tuesday***	***Wednesday***	***Thursday***	***Friday***	***Saturday***
Short-Haul Recerts. ***Cadre Set-Up/Prep***	***Short-haul (T) Class Room***	***Short-haul (T) Ground***	***Short-haul (T) Ground/Live***	***Short-haul (T) Live*** ***AAR of SH(T)***	***Spotter Training*** ***Medical Training***	***Spotter Training*** ***AAR of Spotter(T)*** ***Closeout***

Initial Short-Haul Training and Short-Hauler/Spotter RT

Recertified spotters/haulers could assist the cadre with the training. New bases activating might have an opportunity to send some spotters to the short-haul academy. Spotters recertifying should be able to get their spots with the rookies. All times are approximate and adjustable.

Spotter/Short-Hauler Recerts.

Sunday, 0800

EMSHOP Updates		0.5 hr.
Procedure/Equip.		0.5-1.0 hr.
Mission Case Study		0.5 hr.
Live Operations		3.5 hrs.
	Total	7.5 hrs. (Est. drive time to field location and back= 2 hour)

Initial Short-Hauler Training

Monday, 0800

Introductions /Leader's Intent	1.0 hr.
CRM	1.5 hrs.

CRM is the 1.5 hour course for everyone. Initial 3 hr. CRM will be completed before training starts.

Power Points	3.5 hrs.
Total	6.0 hrs.

Tuesday, 0800

Aircraft Briefing	0.5 hr.
A/C Rigging Orientation	0.5 hr.
Equipment Checks	1.5 hrs.
Bauman/Screamer Configuration	1.0 hr.
Communication / Lift Training	2.5 hrs.
Total	6.0 hrs.

Wednesday, 0800

Communication / Lift Training	1.5 hrs.
Live Operations	4.0 hrs.
Total	7.5 hrs. (Est. drive time to field location and back= 2 hour)

Thursday, 0800

Live Operations	4.0 hrs.
AAR	2.0 hrs.
Total	8.0 hrs.

(Est. drive time to field location and back= 2 hour)

Friday, 0800

Hauler Medical Training Total 6.0 hrs.

Initial Spotter Training

Friday, 0800

Introductions and Intent	0.5 hr.
Procedure/Equipment	0.5-1.0 hr.
Rigging	1.0 hr.
Equipment Checks, Communication	1.0 hr.
Aircraft Briefing	0.5 hr.
Total	4.0 hrs.

Live HEC ops. (Est. drive time to field location and back= 2 hour)

Saturday, 0800

Live HEC ops. (Est. drive time to field location and back= 2 hour)
AAR
Cadre preps for Northern training.

Example Agenda for Multiple Crew Short-Hauler Only Training

Sunday	***Monday***	***Tuesday***	***Wednesday***	***Thursday***	***Friday***	***Saturday***
			A/C Inspected	PTS 3& 4 Performed.	PTS 3 & 4 Performed	PTS 3 & 4 Performed
Sunday	***Monday***	***Tuesday***	***Wednesday***	***Thursday***	***Friday***	***Saturday***
Cadre Set-Up/Prep ***Short-Haul / Spotter RT.***	***Class 3 Short-haul Class Room*** ***Class 4 Short-Haul Class Room Spotter Train.***	***Class 3 Short-haul (T) Ground*** ***Class 4 Short-Haul (T) Medical***	***Class 3 Short-haul (T) Ground/Live*** ***Class 4 Short-Haul (T) Ground***	***Class 3 Short-haul (T) Live*** ***Class 4 Short-Haul (T) Ground/Live***	***Class 3 Short-Haul (T) Medical*** ***Class 4 Short-Haul (T) Live***	***Contingency Day*** ***Cadre/IMT Training AAR and Closeout.***

Multiple Crew Initial Short-Haul Training and Short-Hauler/Spotter RT
Recertified spotters/haulers could assist the cadre with the training. Spotters recertifying should be able to get their spots with the rookies. All times are approximate and adjustable.

Spotter/Short-Hauler Recerts.
Sunday, 0800

EMSHOP Updates	0.5 hr.
Procedure/Equipment	0.5-1.0 hr.
Mission Case Study	0.5 hr.
Live Operations	3.5 hrs.
Total	7.5 hrs.

(Est. drive time to field location and back= 2 hour)

Spotter Training/Refresher
Monday, 0800 (start time dependent on addition of new hires)

Introductions and Intent	0.5 hr.
Procedure/Equipment	0.5-1.0 hr.
Rigging	1.0 hr.
Equipment Checks, Communication	1.0 hr.
Aircraft Briefing	0.5 hr.
Total	4.0 hrs.

Class 3 Agenda
Monday, 0800

Introductions and Leader's Intent	1.0 hr.
CRM	1.5 hrs.

CRM is the 1.5 hour course for everyone. Initial 3 hr. CRM will be completed before training starts.

Power Points	3.5 hrs.
Total	6.0 hrs.

Tuesday, 0800

Aircraft Briefing	.5 hr.
A/C Rigging Orientation	.5 hr.

	Equipment Checks	1.5 hr.
	Bauman/Screamer Configuration	1.0 hr.
	Communication / Lift Training	2.5 hrs.
	Total	6.0 hrs.

Wednesday, 0800

	Communication / Lift Training	1.5 hrs.
	Live Operations	4.0 hrs.
	Total	7.5 hrs.

(Est. drive time to field location and back= 2 hour)

Thursday, 0800

	Live Operations	4.0 hrs.
	AAR	2.0 hrs.
	Total	8.0 hrs.

(Est. drive time to field location and back= 2 hour)

Friday, 0800

Hauler Medical Training Total6.0 hrs.

Class 4 Agenda

Monday, 0800

	Introductions and Leader's Intent	1.0 hr.
	CRM	1.5 hrs.

CRM is the 1.5 hour course for everyone. Initial 3 hr. CRM will be completed before training starts.

	Power Points	3.5 hrs.
	Total	6.0 hrs.

Tuesday,

Hauler Medical Training Total6.0 hrs.

Wednesday, 0800

	Aircraft Briefing	0.5 hr.
	A/C Rigging Orientation	0.5 hr.
	Equipment Checks	1.5 hr.
	Bauman/Screamer Configuration	1.0 hr.
	Communication / Lift Training	2.5 hrs.
	Total	6.0 hrs.

Thursday, 0800

	Communication / Lift Training	1.5 hrs.
	Live Operations	4.0 hrs.
	Total	7.5 hrs.

(Est. drive time to field location and back= 2 hour)

Friday, 0800

Live Operations		4.0 hrs.
AAR		2.0 hrs.
Total		8.0 hrs.

(Est. drive time to field location and back= 2 hour)

SHORT-HAUL PILOT CERTIFICATION

PILOT(s) NAME:

APPROVED AIRCRAFT:

DATE OF SHORT-HAUL CERTIFICATION:

SHORT-HAUL BASE LOCATION:

CONTRACT NUMBER:

CERTIFYING SPOTTER:

The above named pilot/pilots have completed Short-haul Training for Certification as required by the Emergency Medical Short-Haul Operations Plan (EMSHOP) and have been evaluated in accordance with the current Helicopter Practical Test Standards (PTS).

PILOT QUALIFICATION REQUIREMENTS

1. Meets the appropriate requirements of the contracting document.
2. Pilot attended consolidated short-haul training including:
    A. Crew Resource Management (CRM).
    B. Preflight briefing and Risk Assessment.
    C. Briefing and Familiarization of secondary release installation.
    D. Hand signals.
3. Final approval for short-haul operations will be based upon:
    A. Demonstrated ability to pilot the helicopter during a series of simulated Short-haul operations including:
        1) Extraction procedures (Hook-up).
        2) Insertion procedures (short-hauler and equipment to the scene).
        3) Pilot/ground personnel actions in the event of an emergency.
    B. Demonstrated ability to coordinate with spotter and short-hauler.

Qualified Short-Haul Spotter/Date: _____

Upon completion of the using unit's short-haul initial pilot training, complete and return a copy to the Agency Helicopter Inspector Pilot which carded the pilot for short-haul.

D-1 Unit Log

Name: _____ Previous Operational Short Hauls: _____

ID# _____ Previous Short Hauls Other: _____

Calendar Year _____ Total Short Hauls: _____

Date	Incident/ Location	Purpose	A/C #	Pilot	Spotter	Short Haulers	Line Length	Configuration	Remarks

D-2 Individual Logs (Optional)

Name: ______________________ Previous Operational Short Hauls: ______________

Crew ID#: ___________ Previous Short Hauls Other: ______________

Year: ___________ Total Short Hauls: ______________

Date	Prof/Op	Spot or Short Haul	Terrain	Configuration	Line Length	Remarks

D-3 Spotter/Short-Hauler Harness Log

ID Number: _____ Date Of Manufacture: _____

Assigned to: _____ Date Retired: _____

Inspection Date	Evolutions	Inspector	Remarks/Problems
7/17/2016	3	I. Dangle	No Issues

D-5 Short Haul Line Log

ID Number: _____ Date Of Manufacture: _____

Length: _____ Date Retired: _____

Inspection Date	Evolutions	Inspector	Remarks/Problems
7/17/2016	9	I.Dangle	Small scuff on line near mid point, No factor.

D-6 Y-Lanyard

ID Number: _____ Date Of Manufacture: _____

Date Retired: _____

Inspection Date	Evolutions	Inspector	Remarks/Problems
7/17/2016	9	I.Dangle	Small scuff on line near mid point, No factor.

D-9 Bauman-Helitack Air Bag Log

ID Number: ____________________ Date Of Manufacture: ____________________

Date Retired: ____________________

Inspection Date	Inspector	Evolutions	Remarks/Problems
7/17/2015	I. Dangle	6	Used with rescue dummy, no issues

D-10 Screamer Suit-AVED Log

ID Number: ____________________ Date Of Manufacture: ____________________

Date Retired: ____________________

Inspection Date	Inspector	Evolutions	Remarks/Problems
7/17/15	I. Dangle	6	No Issues.

D-11 HD Runner Log

ID Number: ____________________ Date Of Manufacture: ____________________

____

Date Retired: ____________________

Inspection Date	Evolutions	Inspector	Remarks/Problems
7/17/2016	3	I.Dangle	No Issues

D-12 Spotter Anchor Log

ID Number: _____ Date Of Manufacture: _____

Date Retired: _____

Inspection Date	Inspector	Remarks/Problems
7/17/2016	I.Dangle	No Issues

Short-Hauler Training Record	**Initial Certification Short-Hauler Training**	**D-13**
Name:	Location:	*Date:*

Refer to training elements in the Forest Service Short-Haul Operations Plan

1. Open and Typical Terrain Evolutions
The individual will demonstrate an understanding of the relationship between short-haul equipment and proficiency with procedures.

Task	**Evolutions:** N=Fail/Y=Pass	***Comments***
1. **Buddy w/ gear** *(two min.)*		
2. **Single w/gear** *(two min.)*		*1. w/* *2. w/* *3. w/*
	Completed: X	
3. **Typical Terrain** **two min. (required within above tasks)*		
4. **250' Line** **one min. (required within above tasks)*		

Comments:

Instructors will consider the following items in the evaluation of the students: *equipment inspections and care, equipment checks, verbal and non-verbal communication procedures, hook-up procedures, in-flight procedures, un-hooking procedures, ground/equipment handling, emergency procedures, proper documentation, and attentiveness to spotter.*

The individual has demonstrated an understanding of short-haul equipment and is proficient with operational procedures.

Instructor Signature		Date

Short-Hauler Training Record	**Annual Re-Certification Short-Hauler Training**	**D-14**
Name:	Location:	*Date:*

Refer to training elements in the Forest Service Short-Haul Operations Plan.

1. Open and Typical Terrain Evolutions
The individual will demonstrate an understanding of the relationship between short-haul equipment and proficiency with procedures.

Task	**Evolutions:** N=Fail/Y=Pass	***Comments***
1. **2 Evolutions**		
	Completed: X	
2. **Typical Terrain** **one min. (required within above tasks)*		

Comments:

Instructors will consider the following items in the evaluation of the students: *equipment inspections and care, equipment checks, verbal and non-verbal communication procedures, hook-up procedures, in-flight procedures, un-hooking procedures, ground/equipment handling, emergency procedures, proper documentation, and attentiveness to spotter.*

The individual has demonstrated an understanding of short-haul equipment and is proficient with operational procedures.

Instructor Signature		Date

Short-Haul Spotter Training Record	**Initial Certification Spotter Training**	**D-15**
Name:	Location:	*Date:*

Refer to training elements in the Forest Service Short-Haul Operations Plan.

1. Open and Typical Terrain Evolutions
The individual will demonstrate an understanding of the relationship between short-haul equipment and proficiency with procedures.

Task	**Evolutions:** N=Fail/Y=Pass				***Comments***
1. **Inert Load** **min. 3 evolutions*					
2. **HEC** **min. 6 evolutions*					
	Completed:X				
3. **Typical Terrain** **min 2 evolutions (required within above tasks)*					
4. **250' Line** **min 2 evolutions (required within above tasks)*					

Comments:

Instructors will consider the following items in the evaluation of the students: *equipment inspections and care, equipment checks, verbal and non-verbal communication procedures, hook-up procedures, in-flight procedures, un-hooking procedures, ground/equipment handling, emergency procedures, proper documentation, and attentiveness to pilot & short-hauler.*

The individual has demonstrated an understanding of short-haul equipment and is proficient with operational procedures

Instructor Signature		Date

Short-Haul Spotter Training Record	**Annual Re-Certification Spotter Training**	**D-16**
Name:	Location:	*Date:*

Refer to training elements in the Forest Service Short-Haul Operations Plan.

2. Open and Typical Terrain Evolutions
The individual will demonstrate an understanding of the relationship between short-haul equipment and proficiency with procedures.

Task	**Evolutions:** N=Fail/Y=Pass	***Comments***
3. **2 Evolutions**		
	Completed:X	
4. HEC **min 2 evolutions (required within above tasks)*		
5. **Typical Terrain** **min 2 evolutions (required within above tasks)*		

Comments:

Instructors will consider the following items in the evaluation of the students: *equipment inspections and care, equipment checks, verbal and non-verbal communication procedures, hook-up procedures, in-flight procedures, un-hooking procedures, ground/equipment handling, emergency procedures, proper documentation, and attentiveness to pilot & short-hauler.*

The individual has demonstrated an understanding of short-haul equipment and is proficient with operational procedures.

Instructor Signature		Date

D-17 Forest Service Short-haul
New Equipment Testing Approval Request Form
Check with local unit for MASP requirements for flight testing

Unit Name:
Name of Requestor:
Date of Request:

1. Describe the equipment submitted for approval.

2. Describe the advantage to the program by utilizing this equipment.

3. How can the item be procured (commercially, custom, in-house)?

4. How will the equipment be tested?

5. How will the test results be measured?

6. Is this equipment currently in use for this purpose within another short-haul program? Where?
7. Using a Risk Assessment Worksheet describe how you propose mitigating the risks of the equipment.
Post Mitigation Risk Outcome:
8. Describe the equipment submitted for approval/testing.

D-18 Operational Short-Haul Report

OPERATIONAL SHORT-HAUL REPORT V3

This report captures details, the tracking of actions, personnel and equipment used.

Incident Name: Click here to enter text.	**Incident #:** Click here to enter text.
Mission Type: ☐SAR ☐FIRE ☐MIG/LE	**Incident Complexity:** Click here to enter text.
Incident Location: Click here to enter text.	**Incident Commander:** Click here to enter text.
Date of Op.: Click here to enter a date.	**Time of Op.:** Click here to enter text.

	Position	Name	Participated in:	
			GAR?	AAR?
Personnel	**Pilot**	Click here to enter text.	☐YES ☐NO	☐YES ☐NO
	Spotter	Click here to enter text.	☐YES ☐NO	☐YES ☐NO
	Medical Short-Hauler	Click here to enter text.	☐YES ☐NO	☐YES ☐NO
	Short-Hauler Attendant	Click here to enter text.	☐YES ☐NO	☐YES ☐NO
	Medical IC	Click here to enter text.	☐YES ☐NO	☐YES ☐NO
	On Site EMT/Paramedic	Click here to enter text.	☐YES ☐NO	☐YES ☐NO
	Others	Click here to enter text.	☐YES ☐NO	☐YES ☐NO
	Others	Click here to enter text.	☐YES ☐NO	☐YES ☐NO
	Remarks: Click here to enter text.			

Flight Conditions	**Aircraft/N#:** Click here to enter text.
	Pressure Alt.: Click here to enter text.
	OAT: Click here to enter text.
	Winds: Click here to enter text.
	Rotor Clearance: Click here to enter text.
	Visibility: Click here to enter text.
	Airspace: Click here to enter text.
	Remarks: Click here to enter text.

Patient(s)	
	Number(s): Click here to enter text.
	Patient: Agency, Civilian, or Cooperator: Click here to enter text.
	Patient Condition/Injury: Click here to enter text.
	Remarks: Click here to enter text.

Equipment	
	Length of Line: Click here to enter text.
	Secondary Release: Click here to enter text.
	Extraction Equip.: Click here to enter text.
	Medical Equip.: Click here to enter text.
	Were there any equipment issues: Click here to enter text.
	Remarks: Click here to enter text.

Commo		
	Aircraft ICS and CRM	☐Good ☐Adequate ☐Poor ☐N/A
	Short-Hauler with Aircraft - Verbal	☐Good ☐Adequate ☐Poor ☐N/A
	Short-Hauler with Aircraft – Hand Signals	☐Good ☐Adequate ☐Poor ☐N/A
	Aircraft with ground personnel	☐Good ☐Adequate ☐Poor ☐N/A
	Aircraft with Air Attack/flight follow entity	☐Good ☐Adequate ☐Poor ☐N/A
	Aircraft with air/ground ambulance	☐Good ☐Adequate ☐Poor ☐N/A
	Remarks: Click here to enter text.	

NARRATIVE/SEQUENCE OF EVENTS

It is critical to document mission related lessons learned, best practices as well as deficiencies Describe the events, actionable items, environment, timelines, flight distances, hazards, mitigations, Patient care and an overall summary of the operation. Attach any AAR outcomes, related pictures, video and documentation.

Narrative/Sequence of Events: Click here to enter text.

What were the successes of the operation? Click here to enter text.

What could have been done to improve this operation? Click here to enter text.

Report Prepared by: Click here to enter text.	**Date Prepared:** Click here to enter a date.
Once an operation has been completed, in addition to your own management, notify your agency short-haul point of contact and hosting agency aviation supervisor as soon as applicable. I.e. DOI or FS Helicopter Operations Specialist, FAO/UAO, AOBD/ASGS. A copy of this Operational Report will be submitted within 5 days of the completion of this Operation.	

ATTACHMENTS:

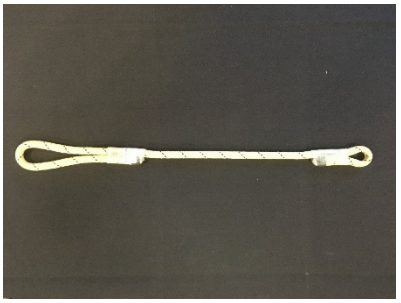
APPENDIX E: EQUIPMENT SOURCE LIST

The Equipment Source List specifies the procurement sources of supply for Short-Haul equipment; it is intended to aid in the purchasing activities. The source list is based on a one helicopter program. Needed quantities are in (red).

Picture of Item	Description and Equipment Source List
	**Short-Haul Lines, 100', 150' and 250'** 1) Priority 1 Air Rescue 250' Dyneema Short - Haul Lines with thimbles and map rings at each end. #100-R1012-250 (one) 2) Priority 1 Air Rescue 150' Dyneema Short-Haul Lines with thimbles and map rings at each end. #100-R1012-150 (two) 3) Priority 1 Air Rescue 100' Dyneema Short-Haul Lines with thimbles and map rings at each end. #100-R1012-100 (One) **Procurement Source:** Priority 1 Air Rescue,
	**Line Ballast (option 1)** ARS (Air Rescue Systems) 25 pound Line Ballast System. (Two) *only two needed select option 1 or 2 **Procurement Source:** Air Rescue Systems (ARS), Air Rescue Systems

Picture of Item	Description and Equipment Source List
	**Line Ballast (option 2)** Lift-It 25 pound Line Ballast System. WLC-C-14MM-2-Z-O-25LB-SP (Two) *only two needed select option 1 or 2 **Procurement Source:** NTDP Short-haul Equipment Specialist (special order item) Lift-It / 909-469-2251 Note: Prusiks do not come with the Ballast
	**BOOST Y-Lanyard System** BOOST HEC System, for use on the AS-350 and Bell 407 (Order one system and one Backup) Procurement Source: **BOOST Human External Cargo Systems** 604-561-4014
	**Carabiners** 72 kN ½" Steel Large D 3-Stage Quik-Lok Gold, NFPA or 72 kN ½" Steel Large D Keylock 3-Stage Gold NFPA ANSI (Six) **Procurement Source:** Air Rescue Systems (ARS) Omega Pacific

Picture of Item	Description and Equipment Source List
Pictured without captive pin 	**Model # 5105** Gemtor Model #5105 two-stage auto-locking carabiner **with captive pin** option. Gate strength: 3600 lbs. meeting ANSI Z359.12. Tensile strength: 10,000 lbs. (Two per crewmember and two per Screamer Suit and one per Bauman Bag plus backups) **Procurement Source:** Gemtor, http://gemtor.com/rescue.htm#carabiners
Pictured with the Gemtor Carabiner 	**Attendant Ring** Bourdon Forge 2004-1 3" forged steel ring. (copy of Foregecraft FC5011) (One per crewmember plus a few backups) **Procurement Source:** DJ Associates, http://catalog.dj-associates.com/item/military-hardware/round-rings/2004-1 Or Bourdon Forge
	**Spotter/Short-Haul Harness** 388-Yates Heli-Ops Harness. UL classified to meet NFPA 1983/2012 edition standards. (One per crewmember plus a few backups) S/M and L/XL most fit in S/M **Procurement Source,** Yates Gear

Picture of Item	Description and Equipment Source List
	**Short-haul Tether** (One per spotter/short-hauler, one per haul bag, plus a few backups) BlueWater single length Short-haul Tether. 22" in length, one large loop and one small loop ends. Individual serial # listed. **Procurement Source** NTDP Short-haul Equipment Specialist
	**Spotter Anchor** NTDP Tether Attachment NTDP946 (secondary option) **Procurement Source:** NTDP Short-haul Equipment Specialist
	**10mm Maillon Rapide Delta tri-links** (Two per Bauman Bag, plus two backups) Procurement Source: High Angle Associates
	**Bauman Bag** No longer Available for purchase, use Helitack Airbag item # 724247 "Short-Haul" model Item # 728002 **Procurement Source:** CMC Rescue

Picture of Item	Description and Equipment Source List
	**Helitack Airbag** (Two) Item # 724247 **Procurement Source:** CMC Rescue
	**Bauman Screamer Suit** No longer Available for purchase, use AVED **Procurement Source:** CMC Rescue
	**Ambulatory Victim Extraction Device (AVED)** (Two) Item # 100-H1012-BLU **Procurement Source:** Priority 1 Air Rescue
	**Patch Cords** HCC-A5B-C00 Cord Adapter from U-94 to Bendix-King Coiled. (One per radio) *if using DPH radios **Procurement Source:** Gibson-Barnes
	**Patch Cords** Relm (BK) KNG Adapter with Nexus Plug (One per radio) *if using KNG radios Item # AP-A019-NX-Gentex **Procurement Source** Astra Radio Communications

Picture of Item	Description and Equipment Source List
	**Rescue Randy** Item # 9000 (One) **Procurement Source:** SIMULAIDS Rescue Randy *weight should be representative of an average individual.
	**Knife** (One per harness plus a few backups) **Procurement Source:** NTDP Short-haul Equipment Specialist
	**Haul Bag** (Three) NTDP 'Short-Haul Bag' **Procurement Source:** NTDP Short-haul Equipment Specialist
	**Haul Bag (color does not matter)** (Two) 'El Cap' SKU# ELCA001 37" x 18", 9600 cubic inches, 8 lbs. **Procurement Source:** Metolius

Picture of Item	Description and Equipment Source List
	**Haul Bag** 'Quarter Dome' SKU# QUAR001 27" x 16" x 10", 4600 cubic inches, 5 lbs. 1 oz. **Procurement Source:** Metolius
	**Haul Bag** 'Centinal' SKU# EXPR001 21.5"x 15" x 9", 2380 cu in, 2 lbs. 10 oz. **Procurement Source:** Metolius

Emergency Medical Short-Haul Operations Review Job Aid

Base:

Inspection Date:

I. Introduction: The national aviation office in conjunction with regional representation will conduct an evaluation of helicopter Emergency Medical Short-Haul Programs as part of the current Emergency Medical Short-Haul Quality Assurance (QA) Plan as outlined in the Short-Haul Program Strategic Risk Assessment Action Plan Response. All short-haul programs should have adequate time, as acknowledged by the evaluators, to respond to the evaluation deficiency and to identify corrective action planned or already taken.

II. Purpose: The purpose of the Emergency Medical Short-Haul QA review is to ensure that all Forest Service Short-Haul Programs are meeting the intent of the national standardization effort, abiding by the Emergency Medical Short-haul Operations Plan (EMSHOP) and providing a Quality Assurance Program. This information will also be utilized to provide a detailed report to the National Aviation staff to ensure the Quality Assurance Program is progressive, appropriate and consistent with the mission.

III. Applicability: The format contained in the Emergency Medical Short-Haul Operations Job Aid was originally developed by the National Short-Haul Operations Sub-Committee (NSHOS) with oversight provided by the National Assistant Helicopter Operations Specialist (NAHOS). This document may be revised or updated as needed or applicable.

IV. The following items may be needed for the QA review.

- Helibase Operations Plan
- Unit Aviation Plan
- Latest Base Review Documentation
- Short-Haul Equipment Records
- Spotter/Hauler Records
- Short-Haul Ops Plan (EMSHOP)
- Aircraft
- Forest Emergency Response Plan

V. Team composition: The operation QA review team will consist of the National Assistant Helicopter Operations Specialist (NAHOS), and designated short-haul check spotter(s). The following positions may be utilized to conduct reviews; Aviation Maintenance Inspector (AMI), Helicopter Inspector Pilot (HIP), National Helicopter Operations Specialist (NHOS), Regional Helicopter Operations Specialist (RHOS), and Safety and Training Specialist (S&TS).

*All attempts should be made to fill the RHOS, AMI, HIP and Check Spotter from outside the geographical area.

VI. Responsibility and Instruction for Completion: Aviation management at the national level is responsible for conducting the evaluation. Annual reviews are recommended until such time as evaluation time frames are established. The crew should b be allowed a minimum of one week to prepare for the review.

Completion of individual items is self-explanatory. The following is recommended as an overall approach:

* The Short-Haul Base Manager should utilize the evaluation job aid to prepare for the visit by the team. It can also be used as a means of self-evaluation throughout the season.

* In order to cover the functional area in a reasonable amount of time, it is recommended that each member of the evaluation team cover a separate section of the functional area, with others on the team completing their assigned area.

* A closeout with local Line Officers, Regional Aviation members, and local fire management to review both deficiencies and positive aspects of the program is essential. A copy of the Emergency Medical Short-haul Operations Review Job Aid will be provided to the RAO, RHOS and local Line Officer.

* A formal follow-up should be made to ensure corrective action has been taken to rectify deficiencies.

VII. Routing and Filing: Formal submission to the local line manager is essential; with follow-up reply from the local unit to ensure the corrective actions have been accomplished. Regional aviation management should keep past evaluations on file in order to ensure that items identified in previous visits have been addressed and are nonexistent in future evaluations.

CONTRACT INFORMATION

Region | Dispatch:
Forest | Dispatch:
Availability Period:
Contract Officer / Representative:
Address:
Phone:
Fax:

CREW CONTACT INFORMATION

Please contact_____, regarding Crew/Supervisory inquires…
Please contact_____, regarding Short-Haul inquires …

Superintendent:
Captain:
Base:
Fax:
Email:
Address:

LOCAL FOREST FIRE STAFF

Forest Fire Management Officer
Name:
Office:
Cell:
Fax:
Email:

Depute Forest Fire Management Officer
Name:
Office:
Cell:
Fax:
Email:

Forest Aviation Officer
Name:
Office:
Cell:
Fax:
Email:

CREW QUALIFICATIONS

FFT1	ICT5	ICT4	HMGB	HEBII	HEBI	ASGS	AOBD

CREW TRAINEES

FFT1	ICT5	ICT4	HMGB	HEBII	HEBI	ASGS	AOBD

Region Check Spotter:

Short-Haul Duties Assigned

I.e. Medical Contact, Documentation, Training, Assurance, Etc…

Previous Corrected Items

*Completed by National Assistant Helicopter Operations Specialist

DUE DATE	REQUIREMENT OR RECOMMENDATION	ACTION	DATE COMPLETED

OPERATIONAL Q & A

FUNCTIONAL AREAS– SHORT-HAUL OPERATION

REVIEW CRITERIA	QTY	REMARKS
TOTAL NUMBER OF QUALIFIED SHORT-HAULERS AT BASE:		
NUMBER OF VETERAN SHORT-HAULERS:		
NUMBER OF FIRST YEAR SHORT-HAULERS:		
NUMBER OF HECM (t):		
NUMBER OF QUALIFIED SPOTTERS:		
NUMBER OF TRAINEE SPOTTERS:		
NUMBER OF QUALIFIED EMTS/PARAMEDICS		
ANNUAL CRM TRAINING COMPLETED BY ALL PILOTS, SPOTTERS AND SHORT-HAULERS		
HOW ARE SPOTTER TRAINEE'S USED IN SHORT-HAUL OPERATIONS:		
CHECK SPOTTER AVAILABLE AT BASE:		
CHECK SPOTTER DESIGNATION ON FILE:		

HOW OFTEN DOES A CHECK SPOTTER VISIT THE BASE:		
NUMBER OF IC4'S:		
HIGHEST LINE QUAL OF CREW:		
NUMBER HELICOPTER MGRS:		
WHAT OBSTACLES IMPEDE THE EFFICIENT MANAGEMENT OF A SHORT-HAUL PROGRAM:		

CODE KEY:
E = EXCEEDS STANDARD M = MEETS STANDARD NI = NEEDS IMPROVEMENT
NR = NOT REVIEWED

1. ADMINISTRATIVE

1. SHORT-HAUL AIRCRAFT

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a) AIRCRAFT APPROVED MAKE/MODEL:_____			
b) PILOT CARDED FOR LONGLINE AND SHORT-HAUL OPERATIONS:			
c) SHORT-HAUL PILOT CERTIFICATION ON FILE			
d) APPLICABLE SHORT-HAUL STC REQUIREMENTS MET			
e) HOW ARE WEIGHT AND BALANCE CALCULATIONS COMPLETED FOR SHORT-HAUL OPERATIONS, HOW OFTEN?			
f) SPOTTER/MANAGERS ARE AWARE OF WEIGHT AND BALANCE PARAMETERS			

2. CARGO HOOK (BELLY HOOK)

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a)WHEN WAS CARGO HOOK LAST INSPECTED: DATE: / /			
b)INSPECTION OF CARGO HOOK DOCUMENTED			
c)MAINTAINED IN ACCORDANCE W/MANUFACTURE'S RECOMMENDATIONS			

3. HELICOPTER/HELIBASE OPERATIONS AND UNIT AVIATION PLANS

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a) UNIT AVIATION PLAN ADDRESSES SHORT-HAUL OPERATIONS			
b) THE BASE OPERATIONS PLAN ADDRESSES SHORT-HAUL OPERATIONS			

4. FOLLOWING SHORT-HAUL REFRENCES ARE AVAILABLE (BASE/ROAD)

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a) EMERGENCY MEDICAL SHORT-HAUL OPERATIONS PLAN (EMSHOP)			
b) SAFETY ALERTS (Related to Short-haul)			
c) INFORMATION BULLETINS PERTAINING TO SHORT-HAUL FOR THE CALENDAR YEAR			
d)TECH TIPS FOR THE CURRENT CALENDAR YEAR PERTAINING TO SHORT-HAUL			

5. SAFETY AND TRAINING REFRENCES ARE AVAILABLE

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a) SHORT-HAUL HAZARDS/INCIDENTS BEING PROPERLY DOCUMENTED AND SUBMITTED USING SAFECOMS			
b) CA-1, SUBMITTED CONCERNING SHORT-HAUL			
c) PROFICIENCY REQUIREMENTS FOR SHORT-HAULLERS BEING METAND DOCUMENTED PER EMSHOP			
d) PROFICIENCY REQUIREMENS FOR SPOTTERS BEING MET PER EMSHOP			

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
e) HOW ARE PROFICIENCIES BEING TRACKED			
f) GAR MODELS BEING COMPLETED FOR SHORT-HAUL OPERATIONS			

2. EQUIPMENT

1. SECONDARY RELEASE

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a)ANNUAL INSPECTION COMPLETE			
b)INSPECTION LOGS CURRENT/UP TO DATE:			
c)MEETS INSPECTION CRITERIA			
d) MEETS SERVICE LIFE LIMITATIONS.			

2. SHORT-HAUL LINES

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a) NUMBERED WITH UNIQUE ID			
b) MEETS MANUFACTURES INSPECTION CRITERIA			
c)INSPECTION LOGS CURRENT/UP-TO-DATE			
d)GENERAL CONDITION			
e) MEETS SERVICE LIFE LIMITATION (5 YR.)			

3. SHORT-HAUL LINE BALLAST

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a)MEETS 25# REQUIREMENT			
b)SECURED TO SHORT-HAUL LINE PER MANUFACTURES INSTRUCTIONS			
c)GENERAL CONDITION			

4. CARABINERS

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a) APPROVED FOR SHORT-HAUL OPERATIONS			
b) WHEN ARE CARABINERS INSPECTED			
c)WHO IS RESPONSIBLE FOR INSPECTION			
d)WHAT CRITERIA IS USED TO INSPECT CARABINERS			
e)WHO IS RESPONSIBLE FOR RETIRING CARABINERS			
f)WHAT CRITERIA IS USED TO RETIRE A CARABINER			

5. HARNESS

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a)APPROVED FOR SHORT-HAUL OPERATIONS (YATES HELI-OPS 388)			
b)MEETS INSPECTION CRITERIA			
c)INSPECTION LOG UP TO DATE			

6. VITAL ZIP

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a)GERBER VITAL ZIP BEING UTILIZED			
b)CONNECTED TO HARNESS PER EMSHOP			

7. SPOTTER TETHER ATTACHMENT

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a)INSTALLED CORRECTLY			
b)ADJUSTED APPROPRIATLEY			
c)MEETS INSPECTION CRITERIA			
d)STAMPED W/MANUFACTURED DATE			

8. SHORT-HAUL TETHER

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a)MEETS EMSHOP CRITERIA (BlueWater Tether)			
b)GIRTH HITCHED TO ATTACHMENT POINT ON THE FRONT OF HARNESS			
c)INSPECTED WITH HARNESS			
d)INSPECTIONS DOCUMENTED			
e)STAMPED W/MANUFACTURED DATE			

9. HELMETS

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a)MEET NSHO REQUIREMENTS			
b)AVIONICS/PATCH CORD FOR INTERCOM AND RADIO COMMUNICATION INSERVICABLE CONDITION			

10. GLOVES

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a)APPROVED FOR SHORT-HAUL OPERATIONS PER EMSHOP			

11. EYE PROTECTION

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a)APPROVED EYE PROTECTION UTILIZED FOR ONBOARD FLIGHT ACTIVITIES			

3. SHORT-HAUL OPERATIONS

1. OPERATIONAL CRITERIA

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a)WHAT CRITERIA IS USED TO DETERMINE A SHORT-HAUL MISSION*			
b)WHO PICKS THE SHORT-HAUL SITE*			
c)WHAT CRITERIA IS USED FOR SITE SELECTION*			
d)WHAT CRITERIA IS USED FOR DESCENDING BELOW THE CANOPY			
e)WHAT INFORMATION IS SPOTTER RESPONSIBLE FOR SUPPLYING TO PERSONNEL			
f)HAVE SHORT-HAUL EMERGENCY PROCEDURES BEEN BRIEFED WITH THE PILOT			
g)HOW OFTEN ARE SHORT-HAUL EMERGENCY			

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
PROCEDURES DISCUSSED WITH THE PILOT*			
h)WHERE DO PROFICIENCY SHORT-HAULS TYPICALLY TAKE PLACE*			
i)AFTER ACTION REVIEWS PERFORMED AFTER EACH OPERATIONAL SHORT-HAUL			

2. SHORT-HAUL OPS PROFICIENCY CHECK

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a)LOCATION OF OPERATION			
b)NUMBER TO BE DEPLOYED			
c)MISSION AS APPLICABLE			
d)WHO'S INVOLVED			
e)RISK MANAGEMENT			
f)MANIFEST AND LOAD CALCULATION			
g) GAR COMPLETED			

3. AIRCRAFT CONFIGURATION

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a)AIRCRAFT CONFIGURED PER EMSHOP			
b)DOORS OPEN AND LOCKED OR REMOVED			

4. SHORT-HAUL RIGGING

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a)LINE ATTACHED TO PRIMARY ANCHOR APPROPRIATELY			

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
b)LINE ATTACHED TO SECONDARY ANCHOR APPROPRIATELY			
c) CARABINERS LOCKED AND ORIENTED CORRECTLY			

5. IN FLIGHT PROCEDURES

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a) HIGH LEVEL RECON			
b) LOW LEVEL RECON			
c) IDENTIFY PRIMARY AND ALTERNATE SITES			
d)SITE ADEQUATELY IDENTIFIED			
e)IDENTIFY HAZARDS AS APPROPRIATE			
f) HIGH HOVER POWER CHECK COMPLETED			
g) POSITIVE RATE OF CLIMB ESTABLISHED			

6. SHORT-HAUL SEQUENCE

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a) PILOT/SPOTTER EFFECTIVELY POSITIONS AIRCRAFT OVER SHORT-HAUL SITE			
b) SPOTTER INITIATES AND FOLLOWS SHORT-HAUL SEQUENCE AS IDENTIFIED IN EMSHOP			
c) SHORT-HAULER/SPOTTER/PILOT COMMUNICATION IS CLEAR, CONCISE, AND EFFICIENT			
d)SPOTTER CLEARS AIRCRAFT BEFORE DIRECTING AIRCRAFT MOVEMENT			

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
e) SHORT-HAULLERS FOLLOW SEQUENCE AS OUTLINED IN EMSHOP			
f) SPOTTER GIVES CLEAR IDENTIFIABLE APPROPRIATE HAND SIGNALS			
g)ADEQUATE ROTOR CLEARANCE MAINTAINED			
h) SHORT-HAUL SEQUENCE CONDUCTED IN MAXIMUM CONTINOUS PARAMETERS FOR SHORT-HAUL OPERATIONS.			

4. MEDICAL

1. EMS PERSONNEL

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a) MINIMUM OF 3 EMT'S ON CREW. TOTAL NUMBER OF EMT(S)___, AEMT(S)___, PARAMEDIC(S)___)			
b)ALL EMS PERSONNEL HAVE CURRENT REQUIRED CERTIFICATES ON FILE			
c)CONTINUING EDUCATION REQUIREMENTS ARE BEING MET OR APPROPRIATELY ADDRESSED			

2. TRAINING

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a) MEDICAL TRAINNG IS DOCUMENTED			
b) DOCUMENTATION SPECIFIES TOPICS, HOURS COMPLETED, AND ATTENDEES			
c) BOTH EMS PERSONNEL AND NON EMS CREW MEMBERS ARE ATTENDING			

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
APPROPRIATE MEDICAL TRAINING			

3. MEDICAL EQUIPMENT

EVALUATION CRITERIA	LAST REVIEW	CODE	REMARKS
a) ALL SHORT HAUL SPECIFIC MEDICAL EQUIPTMENT IS AVAILABLE AND SERVICEABLE. SEE APPENDIX J			
b) ALL MEDICATIONS AND EQUIPTMENDT ARE NOT EXPIRED			

5. EQUIPMENT AND UNIT LOGS

EQUIPMENT LOGS			
EVALUATION CRITERIA	**LAST REVIEW**	**CODE**	**REMARKS**
a) WHAT FORMAT IS USED FOR EQUIPMENT LOGS? BACKUP LOGS?			
b) WHAT IS YOUR PROCESS TO ASSURE BACKUP COPIES ARE ACHIEVED AND AVAILABLE REMOTELY			
c)ARE EQUIPMENT LOGS UP-TO-DATE, LEGIBLE, AND COMPLETE			
d)ARE EQUIPMENT LOGS CONSOLIDATED IN ONE LOCATION			
e) WHO IS RESPONSIBLE FOR MAINTAINING EQUIPMENT LOGS			
f) WHAT FORMAT IS USED FOR INSPECTION LOGS			
g)ARE INSPECTION LOGS CONSOLIDATED IN ONE LOCATION			

EQUIPMENT LOGS			
h)ARE INSPECTION LOGS UP TO DATE, LEGIBLE, AND COMPLETE			
i)ENTRIES IN INSPECTION LOGS ACCURATELY DESCRIBE CONDITION OF EQUIPMENT			

UNIT LOGS			
a)WHAT FORMAT IS USED FOR INDIVIDUAL SHORT-HAUL RECORDS			
b) WHAT IS YOUR PROCESS TO ASSURE BACKUP COPIES ARE ACHIEVED AND AVAILABLE REMOTELY			
c) INDIVIDUAL/MASTER SHORT-HAUL RECORDS UP TO DATE LEGIBLE AND COMPLETE			
d)MASTER SHORT-HAUL RECORDS CONSOLIDATED IN A SINGLE LOG IN ONE LOCATION			
e)WHO IS RESPONSIBLE FOR MAINTAINING INDVIDUAL SHORT-HAUL AND SPOTTER RECORDS			
f) WHAT FORMAT IS USED FOR INDIVIDUAL SHORT-HAULERS AND SPOTTER TRAINING RECORDS, BACKUP?			
COMMENTS:			

Evaluation Team Members

NAME	PHONE NUMBER	DUTY LOCTION	POSITION

NAME	PHONE NUMBER	DUTY LOCTION	POSITION

Notes:

GAR (Green-Amber-Red) Model

The GAR model allows for time critical risk assessment and generates communication concerning the mission risks. This communication then helps identify the risk and leads to the appropriate mitigation. The GAR model can be applied in a variety of situations. It can be used to help identify programmatic risk and is efficient enough to be utilized as a pre-mission risk assessment tool. The GAR model is not intended to replace pre-mission planning, briefings and debriefings, or post action follow-up, but to provide an efficient risk management tool for dynamic environments.

Making risk decisions at the appropriate level establishes clear accountability. Those accountable for the success or failure of a mission must be included in the risk decision process. The higher the risk the more mitigation may be necessary. If significant difference in the same rating categories are identified all team members will re-evaluate the mission and address any mitigation prior to continuing with the mission.

It provides a more general analysis of the operational system and provides a qualitative rating scale for each of the categories that correspond to the identified areas of risk. It is important to remember that risk management is a process that continues throughout the mission and each assessment model allows management to set the acceptable risk standards as they apply to each mission.

The GAR model should be applied to helicopter missions as appropriate. All short-haul personnel should receive training on the GAR model and its use. Short-Haul program managers/spotters will be responsible for implementing the GAR model with all members of the team.

Additional information on risk management can be found in Appendix M of this Plan.

A GAR Risk Assessment model, which creates a GO/NO-GO decision tool, should be conducted individually by each member of the Team prior to the mission on the Operational/Mission Risk Assessment Worksheet. Individual scores will be compiled on the Spotters/Manager Assessment Worksheet and reviewed and discussed by all members of the Team. Mitigation if any will be discussed and documented on the Worksheet.

Operations that have a total post mitigation score in the amber range can be conducted with pilot and Spotter concurrence. Short-haul operations with a post mitigation score in the red will need line officer or IC approval to proceed with the mission.

Risk Control Categories

Supervision
Supervisory Control considers how qualified the supervisor is and whether effective supervision is taking place. Supervision acts as a control to minimize risk. The higher the risk, the more the supervisor needs to be focused on observing and checking. A supervisor who is actively involved in a task is easily distracted and should not be considered an effective safety observer in moderate to high-risk condition.

Planning
Planning and Communication should consider how much information you, your team, and other resources with whom you may be interacting have: Does everyone have the same information? How accurate is the information? Is there adequate time to plan for and evaluate the existing and emerging conditions? What is the availability of contingency resources and how reliable is the communication infrastructure? Can effective CRM be established with this information?

Team Selection
Team selection for the stated mission should consider the knowledge, skills, proficiency, and competence of the individuals. On occasion individuals may have to be replaced during the operation, which will require an assessment of any new team members and how they will be able to interact with those already engaged.

Team Fitness
Team fitness should consider the physical and mental state of the crew to include the short-haulers, spotter, pilot, and helicopter. The amount and quality of duty/rest a team member has had as well as an evaluation of all internal and external stress are important factors to consider.

Communication
Evaluate how well involved personnel are briefed and communicating (CRM). An evaluation of the communication systems that are available should include; the technical capability, infrastructure, operational reliability, and organizational communication culture.

Contingency Resources
If the plan experiences failure what contingency is in place? Backup resources that can assist if needed. Contingency resource planning accomplished with cooperators. Evaluate shared communications plan and frequencies. Has alternate plan been evaluated?

Environment
Consider area of operation that would influence performance of the aircraft to include but not limited to; density altitude, temperature, wind, topography, etc. Known factors such as terrain, forest canopy, site selection should be eyed with caution as the operational environment is very dynamic.

Incident Complexity
Evaluate the experience level of the team. Generally, the longer one is exposed to a hazard, the greater are the risks. The situation includes considering how long the environmental conditions will remain stable and the complexity of the work. Potential for large fire growth or medical response and multiple resources responding to incident both ground and air.

Operational Risk Assessment Worksheet	Spotter	Pilot	EMT Short-	Short-hauler	Team Mitigation Score (Average)
Risk Rated 1– 5 for each category. Mitigation should be considered for each category, particularly when rated higher than 3.					
Supervision Presence, accessibility and effectiveness of leadership for all teams and personnel. Leaders not task overloaded. Clear chain of command.					
Planning Adequate mission planning time with planned face to face briefings. Team input solicited. Urgency not driving the mission. SOP's being followed, required equipment on-site. Airspace (TFR, FTA) Identified other aircraft known.					
Team Selection Level of individual training and experience. Team cohesiveness and atmosphere that values input/self-critique.					
Team Fitness Level of overall physical fitness of team. Level of crew member's rest/fatigue and overall morale. Team members with major life distractions.					
Communication Infrastructure: Radio communications clear throughout area of operations, communications plan established and checked. Last minute changes in the plan can be clearly communicated to IC/Ops and agreed upon or face to face re-briefing.					
Contingency Resources Known resource availability/response time for back-up plan or accident response. Shared freq., & known capabilities.					
Environment Extreme temperatures, elevation, difficulty of terrain (aspect, foliage, slope, etc) long approach, remoteness, current and expected weather, proximity to active fire.					
Incident Complexity Activities that require special technical knowledge or skills. Number of variables that impact the performance of the mission. How well understood and how controlled are those variables? Pace of operations, are other factors driving tempo? How much are we relying on perfect human performance for a successful outcome?					
TOTAL	0-13 Green	14-30 Amber	31-40 Red		

GREEN	AMBER	RED
0 - 13	14 – 30	31 - 40
LOW RISK	MODERATE RISK	HIGH RISK
Proceed With Mission	Proceed With Caution	Implement measures Prior to Proceeding

The ability to assign numerical values or "color codes" to hazards is not the most important part of risk assessment. Team discussion is critical to understanding the risks and how they will be managed. If the team's consensus mitigation score stays in the red, they will need Line Officer or IC approval to proceed with the mission.

Crew/Team Mitigations:

IC/Line officer Signature:

USDA FOREST SERVICE – FIRE AND AVIATION MANAGEMENT

NATIONAL EMERGENCY MEDICAL SHORT-HAUL STEERING COMMITTEE CHARTER

Background

The Forest Service chartered the National Emergency Medical Short-Haul Working Team (NEMSHWT) in December of 2013 to develop and oversee an emergency medical short-haul program. In 2016, five emergency medical short-haul modules located on five national forest units are operational. The transition from startup to operations necessitated a change in program leadership, and agency oversight and direction. To mindfully expand the program and provide standardization and operational oversight of the program, the Washington Office (WO) Director, Fire and Aviation Management is chartering the Emergency Medical Short-Haul Steering Committee (EMSHSC).

The NEMSHWT charter is rescinded.

Purpose

The EMSHSC will provide oversight of FS Short-haul training, standards and operations to support emergency medical short-haul for fire suppression, all hazard incidents and non-fire operations, including requested support to partners and cooperators. The EMSHSC recommends policy, standards, procedures and direction for all FS emergency medical short-haul training and operations to the Executive Committee.

Authority

The Committee is established pursuant to the authorities granted by the Director, Fire and Aviation Management. The deliberations of this Committee are exempt from the Federal Advisory Committee Act under section 204 of the Unfunded Mandates Reform Act of 1995.

The EMSHSC receives leader's intent from the Emergency Medical Short-haul Executive Committee, composed of the following Assistant Directors, FAM:

- Assistant Director Aviation (Lead)
- Assistant Director Operations
- Assistant Director Risk Management

The EMSHSC makes recommendations and does not have the authority to obligate funds or increase staffing.

The Executive Committee is the direct conduit to the Director, FAM and Forest Service leadership.

Membership and Organization

The NEMSHSC is comprised of:

- Regional Aviation Officer
- Regional Aviation Safety Manager
- FAM Medical Officer
- WO Branch Chief, Aviation Operations
- WO Branch Chief, Fire Operations & Risk Management

- Deputy Assistant Director, Operations
- Forest Fire Management Officer/Incident Management Team Member
- National Park Service Branch Chief, Aviation
- National Short-haul Specialist (Liaison)

The steering committee will vote on a chair with a tenure of two years. The EMSHSC will establish a standing Emergency Medical Short-Haul Operations Working Team (EMSHOWT) to focus on all short-haul operations. The EMSHSC will task the EMSHOWT with specific assignments to include; short-haul mission and technical requirements, helicopter contract specification development, operational compatibility, standards and procedures.

Emergency Medical Short-Haul Operations Working Team is comprised of:

- National Short-Haul Specialist (Permanent Chair)
- Regional Helicopter Operations Specialists (2) from regions with current programs (one will be co-chair)
- Short-Haul Check Spotters (2)
- Short-Haul Medical Coordinator

The EMSHSC/EMSHWOT may utilize technical specialists for technical support or focus on specific issues. These positions may include but are not limited to:

- Aviation Maintenance Inspector(s) (AMI)
- National Helicopter Operations Specialist (NHOS)
- Helicopter Inspector Pilot(s) (HIP)
- Regional Aviation Safety Manager (RASM)
- MTDC Equipment Program Specialist

The terms of tenure for the EMSHSC and the Working Team will be for the duration of this charter. The EMSHSC chair is authorized to convene meetings and schedule agenda items. The chair is also authorized to make contacts, negotiate work assignments, make commitments on behalf of the EMSHSC and to commit such resources as are available. The co-chair will assume duties in the absence of the Chair.

Decision Making Process

- Only EMSHSC members will be included in the decision process.
- The EMSHSC will strive for consensus in the decision making process. For the purpose of this document, consensus is defined as: "All members can fully support the decision although it may not be their personal choice or preference."
- If consensus cannot be reached, the chair will consider all points of view presented by the ASSC and make the decision.
- In cases of highly controversial or sensitive issues, the chair will present dissenting arguments to the Executive Committee along with the recommended decision.
- A quorum of five members must be present to be considered a voting body. A proxy may be designated with concurrence.

Cooperation and Coordination
The Committee will cooperate and coordinate with interagency partners and cooperators, the Interagency Short-haul Unit and other key stakeholders as identified.

Charter Amendments
Periodic review of the charter will be conducted to maintain accordance of the Committee's efforts with evolving agency business needs and information resource governance objectives. Changes to, or revocation of, this charter must be reviewed by the Executive Committee. Changes to, or revocation of this charter will be documented by official correspondence to the field in a Decision Memo or letter.

Charter Approval
This charter is effective as of the date of approval and shall remain in effect for five years from the date of approval.

Approved

Shawna A. Legarza, PSYD
Director, Fire and Aviation Management

9/28/2016
Date

APPENDIX I: RESERVED

APPENDIX J: USFS SHORT-HAUL MEDICAL COORDINATION, TRAINING, AND EQUIPMENT

EMS Coordinator Position:

This position is built to function as the lead within a crew for medical coordination between local medical direction, training, crew EMS personnel, and the Short-Haul Medical Group within EMSHOWT. The EMS Coordinator will help develop crew training and oversee internal crew medical functions. Duties and responsibilities for the EMS Coordinator are as follows:

- Lead for crew EMS training and documentation: including but not limited to; medical training logs, medical equipment inspections, medical scenario library, and equipment evaluations.
- Organizes training for both EMT's and non-EMT crewmembers to establish cohesion through training. The amount of training and types of training will be determined by crew needs and level of certifications present.
- Verifies and maintains certification documentation for EMS personnel.
- Identifies Continuing Education (CE) deficiencies and opportunities locally.
- Maintains a relationship with local Medical Program Director (MPD) or organizing body for medical direction.
- May fill the position of EMS Coordinator on QA Review Team.
- Serves as crew contact to EMSHOWT Medical Group.

Medical Training:

Basic equipment familiarization and packaging will be conducted at Short-Haul Training. Patient packaging and medical training will be conducted at the programmatic level following directives of the Local Medical Director under the supervision of the Local/Crew EMS Coordinator. Medical training will be documented for EMS Personnel and non EMS crewmembers. The documentation will consist of the topic being covered, the hours spent in the training under that topic, and a list of who attended the training.

For training purposes each module will maintain separately from the operational equipment (1) BLS Bag, (1) O2 Stand-alone Bag, and (1) AED trainer. The training kits will enable each module to train crewmembers with the tools and instruments that will be used in the field. Training can be conducted with the actual tools and instruments, and not alter the bag contents for operational use.

Medical Equipment:

The Short-Haul Medical Equipment Package provides a standardized platform for EMS personnel to stabilize, and transport patients by short-haul. The IFAK, BLS, and O2 Stand-alone bags are designed with the minimum contents. Additional equipment can be added allowing flexibility as level of training and protocol allow. Maintenance of the medical equipment will be within the manufactures recommendation. All equipment will be kept available, serviceable, and within expiration dates when applicable. Each Short-haul module will be required to have a minimum of two (2) complete Short-Haul Medical Equipment Packages.
This will include:

(1) Individual First Aid Kit (IFAK) for each EMT/Attendant
(2) BLS Bags
(2) O2 Stand-alone Bags
(2) Spine Stabilization Kits
(2) AEDs

Short-Haul Medical Equipment Packages

Individual First Aid Kit (IFAK)

QTY	UNIT	AIRWAY	ITEM #
1	EACH	Numask CPR Mask Basic CPR Kit	50-0155
QTY	UNIT	INSTRUMENTS / TOOLS	ITEM #
1	EACH	Shears EMT 5.5in	50-0660
1	EACH	NAR Combat Application Tourniquet (CAT)	20-0080
QTY	UNIT	DRESSINGS / BANDAGES	ITEM #
1	EACH	Israeli Emergency Bandage 6in	40-0300
4	EACH	4x4 Gauze Pad	40-0770
1	ROLL	Gauze roll 3”x5yd	40-0760
1	EACH	QuikClot Combat Gauze Z-Folded LE, 3"x 4yds	20-0073
QTY	UNIT	OTHER	ITEM #
2	PAIR	Titongrip SE Blue Nitrile Exam Glove L or M	40-0850
QTY	UNIT	BAG (Choose one per EMT)	ITEM #
1	EACH	NAR Operator BLS/IFAK Bag	70-1100
1	EACH	Conterra Infinity Expedition Modular Medical Pack	70-0620
1	EACH	Rip-Away EMT Pouch	70-0422

USFS Short-Haul BLS Bag

QTY	UNIT	AIRWAY	ITEM #
1	EACH	Cyclone pocket BVM Resuscitator	50-0314
1	EACH	King LT-D airway kit, size 3	50-0022
1	EACH	King LT-D airway kit, size 4	50-0023
1	EACH	King LT-D airway kit, size 5	50-0024
1	EACH	Nasopharyngeal 26 Fr Airway w/lubricant	30-1523
1	EACH	Nasopharyngeal 28 Fr Airway w/lubricant	30-1490
1	KIT	Oral airway Guedel Disp. airways 8 sizes	50-0040
QTY	UNIT	INSTRUMENTS / TOOLS	ITEM #
1	KIT	BP Cuff and Stethoscope Combo	50-0060
1	EACH	NAR Suction Device	50-0470
1	EACH	Fingertip Pulse Oximiter	50-0811
1	EACH	Shears EMT 7.5in	50-0670
1	EACH	NAR Combat Application Tourniquet (CAT)	20-0080
1	EACH	Sharps Container (For Epi Kit)	50-0430
1	KIT	Optimum EZ Glucometer Kit	BT 2761-10650
QTY	UNIT	SPINE / SPLINT / TRACTION	ITEM #
1	EACH	AMBU Perfit ACE-Adult	10-0520
1	EACH	SAM Splint Original	10-0330
1	EACH	SAM Pelvic Sling II	10-0070

QTY	UNIT	AIRWAY	ITEM #
1	EACH	Slishman Traction Splint	10-0262
QTY	UNIT	DRESSINGS / BANDAGES	ITEM #
1	EACH	Israeli Emergency Bandage 4in	40-0305
1	EACH	Israeli Emergency Bandage 6in	40-0300
6	EACH	4x4 Gauze Pad	40-0840
2	EACH	5x9 Gauze Pad	40-0130
2	EACH	8x10 Gauze Pad	40-0140
1	EACH	Trauma Dressing, Sterile, 10x30	40-0650
2	EACH	Triangular Bandage	40-0190
1	EACH	Coban 3in	40-0500
4	ROLL	Gauze roll 3”x5yd	40-0756
1	ROLL	Elastic Wrap 4in	40-0245
2	ROLL	1”x10yd Adhesive Tape	40-1185
1	EACH	Asherman Chest Seal	50-0090
1	EACH	H&H Sterile Burn Blanket	40-0672
1	EACH	QuikClot Combat Gauze Z-Folded LE, 3"x 4yds	20-0073
QTY	UNIT	OTHER	ITEM #
1	TUBE	Glutose 15gm	50-0202
4	EACH	Biohazard Bag 1 gal	90-0055
4	PAIR	Titongrip SE Blue Nitrile Exam Glove M	40-0910
4	PAIR	Titongrip SE Blue Nitrile Exam Glove L	40-0930
1	EACH	Numask CPR kit w/case	50-0156
QTY	UNIT	ORGANIZER	ITEM #
1	EACH	TCCC Medical Pack Insert, Empty w/ name	30-0945
QTY	UNIT	BAG OPTIONS	ITEM #
1	EACH	Conterra Flightline Aero-Medical Pack	70-0550

O2 Stand-alone Bag

QTY	UNIT	TANK / REGULATOR	ITEM #
1	EACH	O2 cylinder Size D - Carbon	2310-15820
1	EACH	O2 Regulator	388725
QTY	UNIT	O2 DELIVERY	ITEM #
2	EACH	Adult NRB Mask	D6144
2	EACH	Adult Nasal Cannula	D6132
2	EACH	Extra Tubing	D6146
QTY	UNIT	AIRWAY	ITEM #
1	EACH	Cyclone pocket BVM Resuscitator	50-0314
1	EACH	King LT-D airway kit, size 4	50-0022
1	EACH	Numask CPR kit w/case	50-0156
1	EACH	Nasopharyngeal 26 Fr Airway w/lubricant	30-1523
1	EACH	Nasopharyngeal 28 Fr Airway w/lubricant	30-1490
1	EACH	NAR Suction Device	50-0470
1	KIT	Oral airway Guedel Disp. airways 8 sizes	50-0040

QTY	UNIT	TANK / REGULATOR	ITEM #
QTY	UNIT	OTHER	ITEM #
1	EACH	Tank Wrench - Plastic	D4161
2	PAIR	Titongrip SE Blue Nitrile Exam Glove M	40-0910
2	PAIR	Titongrip SE Blue Nitrile Exam Glove L	40-0930
QTY	UNIT	BAG	ITEM #
1	EACH	Conterra Basic 02 (sub for special order)	BOK1

USFS Short-Haul Spine Stabilization Equipment

QTY	UNIT	STABILIZATION EQUIPMENT	ITEM#
1	EACH	Traverse Rescue Stretcher	0107977
1	EACH	Folding Backboard (plastic)	35940-P
1	EACH	Conterra VSB Vacuum Immobilizer	VSB1
1	KIT	Conterra Extremity Splint Kit	CES1
QTY	UNIT	STABILIZATION ACCESSORIES	ITEM#
1	EACH	Kendrick Extrication Device (KED)	0313676
2	EACH	Spider Straps	10-0512
2	EACH	STAT Head Blocks	260975

USFS Short-Haul AED Kit

QTY	UNIT	AED KIT	ITEM#
1	EACH	Philips Heartstart FRx	PFRXN
1	EACH	Philips Heartstart FRx Trainer	PFRXT

ALSE:

Aviation Life Support Equipment

Anchor Point(s):

For short-haul operations, the anchor point will be a keeperless cargo hook and/or the Secondary Release System located underneath the helicopter.

This term is also used to identify a location inside the aircraft to affix a "Tether".

A.N.S.I. (**A**merican **N**ational **S**tandards **I**nstitute):

ANSI develops standards that are referred to by rule-setting organizations such as O.S.H.A.

Auto Locking (carabiner):

A carabiner that incorporates a locking feature on the gate of the carabiner to prevent an accidental opening.

Carabiner:

Is an (opening/closing) metal link made of various metal alloy(s) used to link one or more systems together. Carabiners are most commonly used for linking full-body or short-haul harnesses to haul-lines, knots, or other weld less or non-opening links. They come in various shapes and sizes depending on specific needs. All carabiners have a spring-loaded hinged gate that is self-closing.

Depending on the need or application, carabiners have various "locking" methods, i.e., "Twist", "Screw", or self "Auto-Closing/Auto-Locking" features built in.

Carabiners are made up of a "spine", "hinge", "notch", "latch", "pin", and a "gate"; (those with) locking features will be found on the "gate". Carabiners generally have two minimum rated breaking strengths; one along the "major" (longitudinal) axis (a.k.a. the "spine") and one along the "minor" (latitudinal) axis. The minimum (carabiner) rated breaking strength(s) referred to, in this package, will be of the "major" (long) axis.

Cargo hook:

A manufactured and installed external load carrying hook; located at the center of gravity on the belly of a helicopter, that can be released either electrically or manually by the pilot.

Center of Gravity "CG":

An imaginary point where the resultant weight forces in the body may be considered to be concentrated for any position of the body. Consideration of center of gravity limitation is important in the loading of all aircraft, but it is particularly important and critical in helicopters.

CWN: (Call When Needed; pilot(s) and/or aircraft)

A pilot and/or aircraft "carded" (approved) for USFS aviation operations.

DORA (The Daily Operational Risk Assessment):

To be used in short-haul, will be the GAR Model. The GAR will be implemented prior to every mission and readdressed as conditions warrant.

D-Ring:

A drop forged steel alloy (metal) "D" shaped ring. D-Rings approved for primary and/or secondary attachment points must meet ANSI, CE, Mil-Spec, NFPA, OSHA, or UIAA (or any combination thereof).

Dual Hook System:
A short-haul Dual Hook system is defined as the point of attachment of the short-haul line to the helicopter. This system will include both a primary and secondary attachment point and the load must be fully jettisonable, utilizing two separate and independent actions. It is a redundant system designed to prevent a catastrophic loss of the entire short-haul load and, possibly, the HEC.

Evolution:

Any live helicopter vertical lift of a HEC or inert cargo and progression into forward flight.

Exclusive Use Contract:

An agreement used between an aircraft company and agency for the specific use of aircraft for agency purpose.

FAA (**F**ederal **A**viation **A**dministration):

The Federal agency that administers all commercial aircraft operations.

FAR's (**F**ederal **A**viation **R**egulations):

Federal rules and regulations that govern commercial use aircraft.

GAR: (**G**reen-**A**mber-**R**ed):

The GAR model allows for time critical risk assessment and generates communication concerning the mission risks.

Gate(s):

The opening portion of any carabiner. Some gates are designed to automatically lock once fully closed; others do not.

Ground Sequence:

Ground Sequence will consist of rigging, spotting, communications and demonstrated knowledge of standard procedures.

Hard Point(s):

An FAA approved location or device, located either inside or outside of a helicopter, and is secured sufficiently (to the aircraft) to tie-down or secure an item attached to the point.

Harness:

A full-body belt system made of flat nylon webbing. A harness contains leg, waist, chest and shoulder straps designed to fit snugly on the outside (clothing) of short-haul personnel. Harnesses will contain one or more approved lifting (attachment) points either at the front of the hip/waist, chest, tops of both shoulder (straps), or middle of the upper back (depending on the needed application). An approved solid metal "D-Ring" will be sewn into each of the approved attachment points by the manufacture at time of the original manufacture.

Haul Bag:

Bag used for hauling equipment. Sometimes attached to harness or haul-line.

HEC:

Human External Cargo.

NSHO:

NWCG Standards for Helicopter Operations (PMS510)

ICAR :

International Commission of Alpine Rescue.

Inert cargo: a load of equipment not including HEC. I.E.cylinder or bauman bag.

kilo Newton (kN):

An International Standard unit of force equal to 1000 newtons or 224.8 pounds. One newton is the force needed to accelerate one kilogram of mass at the rate of one meter per second squared.

Line:

Another term used for "rope", often used to refer to a synthetic rope, wire rope, or "haul-line".

Long or Major Axis:

A term used to describe the (carabiner) manufactures primary load-bearing design, along its "spine". Most carabiners have two minimum-rated breaking strengths; the higher rating is meant for forces that are pulled the long way along the spine. The low rating is meant for any kind of side loading the carabiner may be subjected to.

Minimum Breaking Strength:

The minimum amount of force required to break this object. Often referred to as tensile strength or breaking strength. Not to be confused with "Working Load Limit" or "Yield Strength".

O.S.H.A. (Occupational Safety and Health Administration):

A part of the Department of Labor tasked with enforcing safety in the workplace.

PIC:

Pilot In Command.

PPE:

Personal Protective Clothing; this can include: NOMEX, helmets, goggles, gloves, etc.

Spotter Anchor:

The Short-Haul Spotter Anchor is a safety strap that attaches to the Spotter harness to an approved helicopter anchor point. The Spotter Anchor is to prevent the Spotter from falling out of the aircraft while in flight, in the event of an inadvertent seat belt failure. The tether may also allow the Spotter to move freely from one side of the rear compartment to the other side, at the direction of the pilot.

Splicing (or "Spliced Eyes"):

A term used to describe a process and/or procedure, where one (or both) end(s) of a Double-Braided Nylon, Polyester, or "Tenex" rope, is blended back into it to form a closed "eye" or "eyelet" loop(s). Spliced eyes will normally contain a stainless steel thimble inside to reduce the wear or friction along the inside of the eye. Whenever possible, "spliced eyes" should be used instead of any type of knot(s), as knots can decrease the ropes strength by as much as 50%. Any rope splicing will be performed by an approved manufacture and/or (rope) distributing company certified to perform this procedure.

Swivel:

Helicopter accessory used with external jettisonable loads that hooks into either a cargo hook or "remote hook". The swivel allows the load to oscillate in flight without binding the hauling (rope and/or cable) lines.

Thimble:

A stainless steel or galvanized metal device designed to fit inside of a rope or wire cable(s) spliced eye. It provides wear protection for moving and/or shifting hardware manufactured and/or placed inside of the eye.

Tri-axial Loading:

A situation that occurs when a carabiner is pulled or "loaded" in three different directions at the same time. This shifts the load away from the spine, reducing the working load of carabiners, that are primarily designed for a straight pull or lifting situations.

UIAA (Union of International Alpine Association);

A European organization that certifies that equipment meets European mountaineering standards. The UIAA test fall is a laboratory simulation of the fall of a rock climber. The CE standard is replacing UIAA and new ropes will be carrying the new label.

Working Load Limit:

The Working Load Limit is the maximum load which should ever be applied to the product, even when the product is new and when the load is uniformly applied – straight line pull only.

APPENDIX M: RISK ASSESSMENT FOR SHORT-HAUL

Table 1 - Short-Haul, Personnel System

Personnel System											
			Pre-mitigation					Post-mitigation			Mitigation Comments
Sub-System	ID	Hazards	Prob	Severity	Rating	ID	Mitigation	Prob	Severity	Rating	
Pilot	PR1	Inadequately trained and unqualified for the mission.	Moderate	High	Extreme	PR1M1	Practical Test Standard (PTS) are officially established and referenced in the EMSHOP.	Very Low	High	High	EMSHOP Chapter 2
						PR1M2	Ensure the pilots meet and follow the standards.	Very Low	High	High	EMSHOP Chapter 2
						PR1M3	Ensure compliance with pilot proficiency test requirements.	Very Low	High	High	On-going with HIPs
						PR1M4	Develop and implement standardized training.	Very Low	High	High	Appendix B and Chapter 2 EMSHOP
						PR1M5	Vendor Implementing pilot-mentoring program during expansion of the program.	Very Low	High	High	Vendor pilot training will address vertical reference skill deficiencies.
	PR2	Not proficient in the Short-Haul mission.	Moderate	Moderate	High	PR2M1	Provide opportunity and funding for currency and identify proficiency protocols.	Very Low	Moderate	Moderate	on-going
						PR2M2	Add currency proficiency requirements in the EMSHOP.	Very Low	Moderate	Moderate	Completed
						PR2M3	Use contract specs to ensure the appropriate number of carded Short-Haul pilots.	Very Low	Moderate	Moderate	Completed
						PR2M4	Ensure the Short-Haul spotter has the authority to stop the operation if the pilot is not properly carded or proficient.	Very Low	Very Low	Very Low	Completed
	PR3	Not fit or prepared for duty.	Moderate	Moderate	High	PR3M1	Ensure the Short-Haul Spotter's authority to stop the operation if the person considers the pilot not fit or prepared for the mission, is understood and respected.	Very Low	Very Low	Very Low	Completed
						PR3M2	Short-Haul Spotter / HMGB and pilot ensure adherence to pilot duty limitations.	Low	Moderate	Moderate	IHOG/Contract
						PR3M3	Utilize the initial pre-operational briefing to establish expectations and positive CRM by the Short-Haul Spotter, Helicopter Manager and pilot.	Low	Moderate	Moderate	Chapter 2 and 4 EMSHOP
	PR4	Overly aggressive tendencies and flying techniques by the pilot.	Moderate	High	Extreme	PR4M1	Utilize the initial pre-use briefing to establish expectations and positive CRM management by the Short-Haul Spotter, HMGB and Pilot.	Low	High	High	Chapter 2 and 4 EMSHOP
						PR4M2	Ensure the Short-Haul Spotter's authority to stop the operation if the person considers the pilot not fit or prepared for the mission, is understood and respected.	Very Low	Very Low	Very Low	IHOG/CRM
	PR5	Pilots not communicating safety concerns.	Low	Moderate	Moderate	PR5M1	Short-Haul Spotters and HMGB establish open communication with the pilot to develop mission specific rapport and use CRM.	Very Low	Moderate	Moderate	EMSHOP Chapter 2 and 4
						PR5M2	Seek and encourage feedback during the GAR process, After Action Review (AAR) and debriefings.	Very Low	Moderate	Moderate	EMSHOP Chapter 5,6,7
Spotter and Short-Haul personnel	PR6	Short-Haul Spotters not qualified in the Short-Haul mission.	Moderate	High	Extreme	PR6M1	Develop and implement a Short-Haul Spotter Task Sheet.	Very Low	Moderate	Moderate	EMSHOP Ch. 6 and Appendix D
						PR6M2	Establish a Short-Haul Working Group to recommend a standard process for Short-Haul Spotter approval.	Very Low	Moderate	Moderate	EMSHOP Appendix H
						PR6M3	Adhere to the EMSHOP currency and performance standards for Short-Haul Spotters.	Very Low	Moderate	Moderate	Chapter 2 EMSHOP
	PR7	Short-Hauler not qualified in the Short-Haul mission.	Moderate	High	Extreme	PR7M1	Develop and implement a Short-Hauler Training Task Sheet.	Low	Very Low	Very Low	EMSHOP Ch. 6 and Appendix D
						PR7M2	Adhere to the EMSHOP currency and performance standards for Short-Haulers.	Low	Very Low	Very Low	Chapter 2 EMSHOP
	PR8	Short-Hauler/attendant or Spotter not fit for duty.	Moderate	Moderate	High	PR8M1	Ensure the Short-Haul Spotter and Short-Haul personnel follow CRM principles enabling all personnel to speak up.	Low	Moderate	Moderate	EMSHOP Ch. 4, 7 and Appendix G
						PR8M2	Ensure initial operational briefing includes expectations for Short-Haul personnel, which includes performance standards.	Low	Moderate	Moderate	Completed

EMT Short-Hauler	PR9	EMT Short Hauler incapable of providing adequate medical care.	Moderate	Moderate	High	PR9M1	Ensure the employee is qualified as an EMT Short-Hauler.	Low	Low	Low	Completed
Cooperating Agency Personnel	PR10	Lack of fundamental, foundational knowledge on the part of ground personnel for Short-Haul operations	Low	Moderate	Moderate	PR10M1	Brief cooperators and educate agency personel on Short-Haul operations	Low	Moderate	Moderate	Short-haul Program Brochure, IAP insert IRPG insert, and 6 mins for safety entry,
						PR10M2	Ensure communcations are established with ground personnel prior to insertion.	Low	Low	Low	Chapter 4 and 5 EMSHOP
	PR11	Cooperating agency personnel using different procedures, equipment and standards for Short-Haul.	Moderate	Moderate	High	PR11M1	Ensure that differences between agency procedures are briefed and understood before flight.	Low	Moderate	Moderate	Conitinued cross training opportunites and promoting program plan unity where applicable - On going.
Human Factors	PR12	Fatigue impacting agency personnel and pilot capability to perform their duties at the necessary level.	Moderate	High	Extreme	PR12M1	Short-Haul Managers will evaluate the fatigue level of the pilot and the crew.	Low	Moderate	Moderate	GAR Risk Assessment and Appendix G EMSHOP
						PR12M2	Ensure all short-haul personnel are trained in CRM and address limits to the number of short-haul evolutions completed by each pilot within an operational shift.	Moderate	Moderate	High	Completed
						PR12M3	Monitored by each crewmember involved in the operation.	Low	Low	Low	Completed
						PR12M4	Rotate people if performance degradation is evident.	Low	Low	Low	Comleted
	PR13	Rapid transition between mission types interfering with situational awareness.	Moderate	Moderate	High	PR13M1	Ensure adequate briefings and that Short-Haul Spotter is watching for procedural errors. Each short haul mission should get a GAR Risk Assesment.	Low	Moderate	Moderate	Chapter 4 EMSHOP and Appendix G
						PR13M2	Strengthen and enforce training and briefings for the Short-Haul mission to maintain focus during transitions between helicopter missions.	Low	Moderate	Moderate	Chapter 4 and 5 EMSHOP
	PR14	Spotter tether not attached to anchor by spotter	Moderate	High	High	PR14M1	Emphasize standard communication validation for tether connection is used between the pilot and spotter. Familiarity with equipment connection and release is needed.	Low	Moderate	Moderate	Chapter 4, Appendix B EMSHOP
	PR15	Lack of proficiency due to low frequency performance of mission	Moderate	Moderate	High	PR15M1	Ensure proper briefings and remind personnel to stay focused on the mission.	Low	Moderate	Moderate	EMSHOP Ch. 4 and 5
						PR15M2	Provide additional qualified management for focus and supervision.	Low	Low	Low	National Short-Haul Program Quality Assurance Plan

Table 2 - Short-Haul, Training System

Training System											
			Pre-mitigation				Mitigation	Post-mitigation			Mitigation Comments
Sub-System	ID	Hazards	Prob	Severity	Rating	ID		Prob	Severity	Rating	
Policy	TR1	Deviation from the intended mission of the Forest Service Short-Haul Program	High	Low	moderate	TR1M1	Ensure clear direction in policy and guide.	Low	Low	Low	Annual review/edits of plans incorperating organizational learning - On going.
						TR1M2	Conduct quality assurance reviews to ensure direction is followed.	Low	Low	Low	Chapter 1 EMSHOP, Appendix B and F, National Short-Haul Program Quality Assurance Plan Ch. 3
	TR2	Policy and training requirements are inconsistent between agencies participating in Short-Haul operations.	Moderate	Low	Low	TR2M1	Ensure procedures, process and equipment standards are in alignment with each agencies guidelines.	Low	Low	Low	Appendix B EMSHOP
						TR2M2	Conduct quality assurance reviews to ensure direction is followed.	Low	Low	Low	Chapter 1 EMSHOP
						TR2M3	Foster cooperation between agencies through interagency meetings, workshops, training and working groups.	Low	Low	Low	Appendix B EMSHOP
	TR3	Non standardized training procedures and equipment within the EMSH Program.	Moderate	Moderate	High	TR3M1	Develop and implement EMSH Program training.	Low	Low	Low	Appendix B, C EMSHOP
						TR3M2	Review training program through quality assurance process.	Low	Low	Low	National Short-Haul Program Quality Assurance Plan and Chapter 3 EMSHOP
						TR3M3	Forest Service NSHOS will incorporate recommendations to improve a stardardized training program.	Low	Low	Low	Appendix B EMSHOP
Training Delivery	TR4	Lack of Short-Haul Spotters/EMT Short-Haulers/HIPS during new program establishment.	Moderate	Moderate	High	TR4M1	Establish training plan along with successional planning strategies	Low	Low	Low	Appendix B, C EMSHOP
						TR4M2	Collaborate with Interagency partners to develop Short-Haul personnel.	Low	Low	Low	Appendix B EMSHOP
	TR5	Lack of standardized training curriculum.	Moderate	Moderate	High	TR5M1	Develop a EMSH Program standardized curriculum	Very Low	Very Low	Very Low	Appendix B EMSHOP
						TR5M2	Effectively deliver training curriculum through standardized training	Very Low	Very Low	Very Low	Appendix B, C EMSHOP

Table 3 - Short-Haul, Operations System

Operations System

Sub-System	ID	Hazards	Pre-mitigation Prob	Pre-mitigation Severity	Pre-mitigation Rating	ID	Mitigation	Post-mitigation Prob	Post-mitigation Severity	Post-mitigation Rating	Mitigation Comments
Site Selection	OP1	Selection of an inadequate Short-Haul insertion site could result in an unsafe environment for Short-Haul personnel also increasing the exposure to rotor strikes, and entanglements.	Moderate	High	Extreme	OP1M1	Rely on the Pilot in Command and Spotter for approval of all insertion and extraction sites.	Low	High	High	Chapter 4 EMSHOP
						OP1M2	Pilot should ensure site selections meet Interagency Helicopter Operations Guide (IHOG) standards during below canopy operations.	Low	High	High	Chapter 4 EMSHOP
						OP1M3	Use a reconnaissance flight with the pilot and Short-Haul Spotter to evaluate the proposed operation.	Low	High	High	Chapter 4 EMSHOP
						OP1M4	The first insertion at the site shall confirm and communicate any additional hazards and the suitability of the site.	Low	Moderate	Moderate	Chapter 4 EMSHOP
Standardization of procedures	OP2	Pilot confusion from non-standardized verbal, and non-verbal communcations.	Moderate	Moderate	High	OP2M1	Implement standardized verbal, and non-verbal communcations with pilot and Short-Haul personnel.	Low	Moderate	Moderate	Chapter 2 and 4 EMSHOP
Management	OP3	Uncontrolled personnel at configuration site or patient transfer site.	High	High	Extreme	OP3M1	Conduct reconnaissance flight and provide for scene safety	Low	Moderate	Moderate	Chapter 2 and 4 EMSHOP
						OP3M2	Coordinate with ground personnel, ATGS, and other functions involved in emergency extracation.	Low	Moderate	Moderate	Chapter 4 and 5 EMSHOP
	OP4	Lack of adequate helicopter crewmembers/Short-Haulers/EMT's for the overall mission.	Moderate	Low	Low	OP4M1	Ensure, develop and identify a pool of qualified personnel prior to mission.	Low	Low	Low	Chapter 4 EMSHOP
	OP5	Lack of program oversight to ensure standardization and quality assurance.	High	High	Extreme	OP5M1	Have in place standard unit organizational chart including; Unit Aviation Officer, Full compliment of helicopter management in place.	Low	Low	Low	Chapter 2 USFS Short Haul Quality Assurance Plan and EMSHOP App F
						OP5M2	Establish Forest Service National Short-Haul Specialist position for oversight and quality assurance.	Low	Low	Low	NTE Position filled in 2016
Briefings (Pre-operations and Post-operations)	OP6	Not all Short-Haul personnel have received a briefing resulting in confusion prior or during mission.	Low	Moderate	Moderate	OP6M1	Ensure all participants are briefed prior to the mission.	Very Low	Moderate	Moderate	Chapter 4 EMSHOP
	OP6.1	Post-flight debriefings are not consistently performed resulting in loss of mission information and lessons learned.	Moderate	Low	Low	OP6.1M1	Short-haul base managers will ensure all personnel are aware of the requirent and experienced in the completion of After Action Reviews (AARs) for each mission. Lessons learned from these AAR's will be shared with the respective Regional Check Spotter who will communicate them to the National Short-haul specialist.	Low	Low	Low	EMSHOP Chapter 6 and Appendix B - On going.
						OP6.1M2	Ensure mission documentation is completed and reported to the National Short-Haul Specialist.	Low	Low	Low	Chapter 6 EMSHOP
Medical Plan	OP7	Insufficient or unfamiliar medical plan for incident or local unit.	Moderate	Moderate	High	OP7M1	Ensure a medical plan with all pertinent information is in place and brief accordingly.	Low	Moderate	Moderate	USFS Short-Haul Program Quality Assurance Plan Introduction Chapter and EMSHOP Appendix F
						OP7M2	Prior to mission planning coordinate with IMT's, Dispatch centers, Local units as appropriate.	Low	Moderate	Moderate	EMSHOP Chapter 4
	OP8	Outside ground or air resource medical assistance is not available in some Short-Haul operations areas.	Moderate	High	Extreme	OP8M1	Ensure Medical Plan identifies sources of medical transport assets.	Moderate	Moderate	Moderate	USFS S-H Program Quality Assurance Plan and EMSHOP Appendix F
						OP8M2	Ensure Medical Plan provides for air evacuation and ground evacuation contingencies.	Low	Moderate	Moderate	Brief on incident ICS 206 or Unit EMR plan/Extraction Source List
	OP9	Short-Haul personnel lack adequate medical training for field emergencies.	High	High	Extreme	OP9M1	Require Short-Haul modules to have EMT Short-Haulers. (Recommend a mininum of 3 EMT's for 7 day staffing)	Low	Moderate	Moderate	Chapter 1 and 2 EMSHOP
						OP9M2	Ensure an EMT is a component of every Short-Haul mission.	Low	Moderate	Moderate	Chapter 2 EMSHOP
	OP10	Local unit, IMT's, Dispatch, unfamiliar with EMSH Program capabilities and limitations.	Moderate	Moderate	High	OP10M1	Communicate preseason and prior to conducting missions on capabilities and limitations.	Low	Moderate	Moderate	Chapter 4 EMSHOP and Appendix F
						OP10M2	Develop a Short-Haul resource users guide describing capabilities and limitations. (Helicopter/module Information Sheet)	Low	Moderate	Moderate	Completed
Short-Haul Procedures	OP11	Non-standardized operational procedures.	High	High	Extreme	OP11M1	Follow standardized operational procedures identified in EMSHOP.	Low	Moderate	Moderate	On going QA.
						OP11M2	Ensure Quality Assurance Teams review program annually.	Low	Moderate	Moderate	Appendix B, Chp. 4 EMSHOP , USFS Short-Haul Program Quality Assurance Plan
	OP12	Requesting a Short-Haul mission that exceeds the capabilities of the resource and personnel.	High	High	Extreme	OP12M1	Work within the scope of the EMSHOP and mission parameters.	Very Low	Very Low	Very Low	USFS Short Haul Program Quality Assurance Plan Introduction Chapter
	OP13	Improper rigging of Short-Hauler/attendant/litter to Short-Haul system.	High	High	Extreme	OP13M1	Perform an equipment/spotter check before each flight. Follow EMSHOP procedures.	Very Low	Moderate	Moderate	EMSHOP Chapter 3 and 4
	OP14	Improper rigging of Short-Haul system to aircraft.	High	High	Extreme	OP14M1	Consider shutting aircraft down at configuration site. Spotter and pilot check prior to starting mission. File safecom if applicable.	Very Low	Moderate	Moderate	Chapter 4 and Appendix B EMSHOP
	OP15	Human external cargo inadvertent contact with terrain or other objects	High	Extreme	Extreme	OP15M1	Ensure Short-Haul spotter in aircraft. In the event there is HEC collision with terrain or other objects take appropriate action to limit further adverse contact. Address issue in AAR and consider if safecom is necessary.	Low	High	High	Chapter 4 EMSHOP
						OP15M2	Positive communcations between pilot, spotter, attendant or Short-Hauler.	Low	High	High	Chapter 4 and Appendix B EMSHOP

Emergency Procedures	OP16	Lack of a crash rescue kit on an operation.	Extreme	Low	Moderate	OP16M1	Ensure crash rescue kits are available as needed on site during Short-Haul operations.	Very Low	Very Low	Very Low	IHOG
	OP17	Lack of emergency procedures training prior to actual missions	Low	Extreme	Extreme	OP17M1	Standardized EP's are in place. Short-Haul Spotters, Short-Haulers and pilots will review EP's periodically to prepare in the event of an emeregency.	Very Low	High	High	Complete
	OP18	Inflight aircraft emergency of an immediate nature.	Very Low	Extreme	Extreme	OP18M1	Implement emergency procedures identified in the EMSHOP.	Very Low	High	High	Chapter 2 and 5 EMSHOP
	OP19	Inadvertant human cargo release.	Very Low	Extreme	Extreme	OP19M1	Inspection of primary and secondary releases will occur prior to mission.	Low	Moderate	Moderate	Appendix B and I EMSHOP
	OP20	Intentional human cargo release	Very Low	Extreme	Extreme	OP20M1	Short-Haul Spotters, Short-Haulers and pilot will brief on expectations and alternatives to increase survivability in the event of helicopter loss of control or power failure.	Very Low	High	High	Chapter 4 and 5 EMSHOP
						OP20M2	Develop standardized procedures for intentional release.	Low	High	High	Chapter 3 and 5 EMSHOP
Human Factors	OP21	Pilot loss of vertical reference.	Low	High	High	OP21M1	Pilot and crew will assess the insert/extract site to assure the capability to maintain adequate references via recon.	Very Low	Low	Very Low	Chapter 4 EMSHOP
						OP21M2	Short-Haul Spotter on board to assist pilot with vertical reference and identify hazards.	Very Low	Low	Very Low	Appendix B and Chapter 4 EMSHOP
	OP22	Unclear/misunderstood communications.	Low	Moderate	Moderate	OP22M1	Utilize clear text and standardized challenge and response communications when applicable.	Low	Moderate	Moderate	Appendix B EMSHOP
	OP23	Exposure to traumatic events involving loss of human life or severe injury.	Moderate	High	Extreme	OP23M1	Preseason preparation using resources such as "Stress Control and Resilience Guide".	Low	Moderate	Moderate	Appendix B Unit 2 CRM
			Moderate	High	Extreme	OP23M2	Implement Critical Incident Stress Management post incident as needed.	Low	Moderate	Moderate	Appendix B Unit 2 CRM
	OP24	Overwhelming sense of urgency in life threating situation	Moderate	High	Extreme	OP24M1	During configuration phase, consider shutting down aircraft.	Moderate	Moderate	High	Chapter 4 and Appendix B EMSHOP
Environmental Hazards	OP25	Falling debris.	Moderate	High	Extreme	OP25M1	Utilize appropriate head protection when working under or in the vicinity of a hovering helicopter.	Moderate	Moderate	High	Chapter 3 EMSHOP
						OP25M2	Include hazard awareness in Short-Haul training and refresher courses as well as daily operation plans and briefings.	Low	Moderate	Moderate	Appendix A and B EMSHOP
						OP25M3	Ensure clearance and rotor height is adequate at site and check surrounding area for hazard trees. If nessessary relocate patient to more suitable site.	Low	High	High	Appendix B and Chp. 4 EMSHOP
	OP26	Fire Behavior	Moderate	High	Extreme	OP26M1	Ensure LCES is in place. If nessessary relocate patient to more suitable site.	Low	High	High	Chapter 4 and Appendix B EMSHOP
						OP26M2	Ensure helicopter does not impact fire behavior by maintaining sufficient height above ground.	Low	Low	Low	Chapter 4 and Appendix B EMSHOP
	OP27	Low visibility due to smoke, dust, darkness, etc	Moderate	High	Extreme	OP27M1	Follow IHOG standards. Establish trigger points to cease operations.	Low	Moderate	Moderate	Chapter 4 and 5 EMSHOP
						OP27M2	Select site so that the spotter can maintain positive visual contact with Short-Haulers to the ground, to insert and extract.	Low	Moderate	Moderate	Chapter 4 EMSHOP
Use of the Safecom System for Reporting	OP28	Lack of training short haul mishaps being reported .	Moderate	Moderate	High	OP28M1	ALL short haul mishaps will be reported through the SAFECOM reporting system.	Low	Moderate	Moderate	Chapter 3, 5, and Appendix B EMSHOP

Table 4 - Short-Haul, Equipment System

Equipment System

			Pre-mitigation				Mitigation	Post-mitigation			Mitigation Comments
Sub-System	ID	Hazards	Prob	Severity	Rating	ID		Prob	Severity	Rating	
Short-Haul Equipment	EQ1	Non-standard and non-agency approved equipment resulting in unfamiliarity in utilization of equipment.	High	High	Extreme	EQ1M1	Forest Service Short-Haul Program will ensure quality assurance and oversight.	Very Low	Moderate	Moderate	Appendix A, B, D, F and Chapter 3 EMSHOP
						EQ1M2	Use only equipment identified and approved in the EMSHOP.	Very Low	Moderate	Moderate	Appendix A, B, D, F and Chapter 3 EMSHOP
						EQ1M3	Involve NTDP to evaluate and validate equipment use.	Low	Moderate	Moderate	In progress and will be on-going
	EQ2	Short-Haul equipment damaged/expired.	Low	Extreme	Extreme	EQ2M1	Develop and implement inspection criteria as well as documentation in EMSHOP. Retire equipment as outlined in the EMSHOP and manufacturer requirements	Low	Low	Low	EMSHOP Chapter 3, 6 and Appednix D
	EQ3	Short-Haul equipment not adequately inspected.	High	Moderate	High	EQ3M1	Identify Short-Haul module personnel in the EMSHOP who are qualified to inspect equipment.	Low	Low	Low	EMSHOP Chapter 6
	EQ4	Harness and teather do not allow for emergency egress from A/C	Moderate	High	High	EQ4M1	Identify pilot/spotter equipment and associated training that promotes ease of release and egress without the use of a cut a away knife.	Very Low	Moderate	Moderate	EMSHOP Chapter 3, 4, Appendix B
	EQ5	Short-Haul equipment improperly rigged on the aircraft.	Low	Extreme	Extreme	EQ5M1	Pilot and Short-Haul Spotter will perform the initial rigging of the aircraft for Short-Haul operations.	Very Low	Low	Very low	Chapter 4 EMSHOP
						EQ5M2	Develop and implement an installation aide to be used at onset of operation.	Very Low	Low	Very Low	EMSHOP Appendix I
	EQ6	Pilot utilizing a length of line not proficient with.	Moderate	High	Extreme	EQ6M1	Ensure pilot carding completed and proficiency currrent prior to mission execution.	Low	Moderate	Moderate	Chapter 2 and 4 EMSHOP
Attendant Equipment	EQ7	Short-Hauler / EMT Short Hauler without personal protective equipment or supplies at Short-Haul landing site.	Moderate	Moderate	High	EQ7M1	Ensure standardized haul bag with personnel protective equipment.	Very Low	Low	Very Low	Chapter 3 and Appendix B EMSHOP
						EQ7M2	Identify minimum equipment/supply list with weight limitations identified in the EMSHOP.	Very Low	Low	Very Low	Chapter 3 EMSHOP
Cargo Letdown	EQ8	Multiple landings delaying patient care that results in not having medical supplies.	Moderate	Moderate	High	EQ8M1	Evaluate need to include cargo letdown operations into the Short-Haul Program.	Low	Low	Low	On-going for evaluation

Table 5 - Short-Haul, Medical Treatment System

Medical Treatment System

			Pre-mitigation				Mitigation	Post-mitigation			Mitigation Comments
Sub-System	ID	Hazards	Prob	Severity	Rating	ID		Prob	Severity	Rating	
Medical Equipment	MTS1	EMT unfamiliar with medical equipment	Moderate	High	Extreme	MT1S1	Standardized equipment for level of certified care needs.	Very Low	Very Low	Very low	Ongoing and Appendix J EMSHOP
						MT1S2	EMT will be trained on use and care of equipment as well as perform in scenarios.	Very Low	Very Low	Very low	Appendix J EMSHOP
Emergency Medical Technician	MTS2	Rendering services beyond scope of practice	Moderate	High	Extreme	MT2S1	EMT's knowledgeable of scope of practice limitations, and able to provide care only within scope.	Very Low	Low	Very low	On-going work with Medical Directors
						MT2S2	Ensure certification is current and all training has been conducted.	Very Low	Low	Very Low	On-going work with Medical Directors
	MTS3	Utilizing an inappropriate Short-Haul Extraction packaging system.	Moderate	High	Extreme	MT3S1	Accurate patient assessment by EMT.	Very Low	Low	Very low	On-going work with Medical Directors
						MT3S2	Correct selection of transport method. (Helicopter Rescue Bag/Litter/Screamer Suit)	Very Low	Low	Very low	Chapter 3 EMSHOP
Patient	MTS4	Patient injury or illness is beyond Basic Life Support.	High	High	Extreme	MT4S1	Preplanning at the unit or incident level will enable prompt response for packaging and transport of patient to Advanced Life Support.	Moderate	High	High	Module will brief on unit or incident medical response plans
						MT4S2	Communicate additional needs to Dispatch, ICP, ATGS.	Moderate	High	High	Appendix B EMSHOP
	MTS5	Delay of patient transport due to packaging and/or repackaging.	Moderate	High	Extreme	MT5S1	Standardized equipment across the Fire and Aviation Short-Haul community.	Low	Moderate	Moderate	Chapter 3 and Appendix J EMSHOP
						MT5S2	Develop Short-Haul medical equipment that will accept a variety of patient packaging systems.	Low	Moderate	Moderate	Chapter 3 Appendix J EMSHOP

Table 6 - Short-Haul, Aircraft System

Aircraft System

			Pre-mitigation				Mitigation	Post-mitigation			Mitigation Comments
Sub-System	ID	Hazards	Prob	Severity	Rating	ID		Prob	Severity	Rating	
Performance and Capabilities	AC1	Helicopter door damage at staging area or during mission flight.	Moderate	Moderate	High	AC1M1	Assess and evaluate pros and cons of hinged doors versus sliding doors.	Low	Moderate	Moderate	evaluation is on-going
	AC2	Exceeding the performance capability of the Type 3 helicopters.	Moderate	Extreme	Extreme	AC2M1	Operate per Interagency Helicopter Operations Guide (IHOG), Rotorcraft Flight Manual (RFM) and the Short-Haul Plan.	Low	Moderate	Moderate	Chp. 3, 4, 5 Appendix B EMSHOP
						AC2M2	Ensure make and model meet contract specifications.	Very Low	Low	Very Low	Reflected in contract exhibits and during TEB panel
	AC3	Environmental conditions such as terrain, density altitude, elevation, winds and temperature impacting helicopter performance.	High	Extreme	Extreme	AC3M1	Ensure environmental conditions within the load calc reflect actual mission conditions.	Low	Low	Low	Chapter 4 EMSHOP
	AC4	Aircraft not properly equipped for human loads.	Moderate	Moderate	High	AC4M1	During carding process, ensure all cargo hook systems are approved by the agency for human loads.	Very Low	Moderate	Moderate	Confirmed by AMI at time of carding
						AC4M2	Ensure Short-Haul Spotter verifies cargo hook system is approved by the agency for human loads.	Very Low	Moderate	Moderate	Chapter 3, 4 and Appendix E EMSHOP
	AC5	There is an inherent hazard posed by helicopters operating within the height velocity curve in the case of an engine failure.	Low	Extreme	Extreme	AC5M1	Consider a twin-engine aircraft. Single engine fly-away capability.	Very Low	Very Low	Very Low	A/C selected for SH will meet contract performance capability
Communications	AC6	Short-Haul Spotter not having intercom communication with pilot / EMT Short-Hauler.	Low	Moderate	Moderate	AC6M1	Prior to mission, ensure communication between pilot, Short-Haul Spotter/EMT Short-Hauler. If verbal comms are lost hand signals can be used to communicate and complete mission or mission can be terminated.	Very Low	Moderate	Moderate	Appendix B EMSHOP
Doors off operation	AC7	There is a likely hazard posed by flight missions when doors are open or removed.	Low	High	High	AC7M1	Ensure cabin objects/items are secured before flight commences.	Low	Moderate	Moderate	EMSHOP Chapter 4, Appendix B
						AC7M2	In addition to required seat belt use during takeoffs/landings, spotters will utilize a short-haul harness with tether and/or carabiner attached to appropriate A/C hard points as a secondary restraint which maintains the ability for quick release.	Low	Moderate	Moderate	EMSHOP Chapter 3, 4, Appendix B
Pilot Seating Position	AC8	Pilot ergonomics and diminished vertical reference.	Moderate	Moderate	High	AC8M1	Evaluate left side versus right side drive in A-Star 350.	Low	Moderate	Moderate	evaluation is on-going
						AC8M2	Helicopter Screening and Evaluation Board evaluates all makes and models for suitability for future mission needs.	Low	Moderate	Moderate	on-going.
Secondary Restraint System	AC9	Pilots hand off flight control in order to release the secondary release system.	High	Extreme	Extreme	AC9M1	Research, evaluate and test fixed secondary restraint system that is operated from the pilots flight controls or accessible to spotter.	Low	Moderate	Moderate	Completed
PA Communication System	AC10	No viable communication with ground personnel at or near the extraction site or configuration site.	Low	Moderate	Moderate	AC10M1	PA system may be required within the contract solicitation by each hosting unit.	Very Low	Low	Very Low	Completed

National Short-Haul Quality Assurance Residual Risk Rationale

Personnel System

Sub System	Pilot
Hazard	**(PR1)** Pilot inadequately trained and unqualified for the mission.
Mitigation	**(PR1M1 thru PR1M4)** Practical Test Standard (PTS) are officially established and referenced in the EMSHOP, Ensure the pilots meet and follow the standards, Develop and implement standardized training, and Develop and implement standardized training.
Residual Rating	High
Rationale	While the mitigations listed above limit the probability of encountering the associated hazard to very low, the outcome of having a pilot with less than optimal training or current qualification may result in high consequence.

Sub System	Pilot
Hazard	**(PR4)** Overly aggressive tendencies and flying techniques by the pilot
Mitigation	**(PR4M1)** Utilize the initial pre-use briefing to establish expectations and positive helicopter management by the Short-Haul Spotter, HMGB and Pilot.
Residual Rating	High
Rationale	With the use of CRM training, GAR risk assessments, pre-op briefings, and daily communication among team members may identify and mitigate potential aggressive flying behavior; however no one can adequately anticipate personnel response to situations with peak emotional and physical stressors that may arise due to medical emergencies. All pilots will be required to successfully complete the Short-haul Practical Test Standards, which should help identify pilots with aggressive tendencies.

Sub System	Human Factors
Hazard	**(PR12)** Fatigue impacting personnel capability to perform their duties at the necessary level.
Mitigation	**(PR12M2**) Improve education and information sharing for all personnel on heat, hydration, rest, and other physiological conditions issues. Complete daily internal crew checks.
Residual Rating	High
Rationale	The absence of some level of mental or physical fatigue is rare in the wildland fire or rescue environment. Short haul mission personnel shall be trained in team selection, identification of fatigue symptoms, and fatigue management methods to limit the occurrence of unrested personnel; however the elimination of all fatigue which may be a contributing factor to a high consequence is improbable. Crew Resource Management Training should lead to team members communicating and mitigating fatigue issues in a timely manner.

Training System

Sub System	Training Delivery
Hazard	**(TR6)** Lack of emergency procedures training prior to actual missions (This hazard is no longer found in the programmatic risk assessment spreadsheet due to the high number of collateral mitigations found in the assessment to defend against it being encountered.)
Mitigation	**(TR6M1)** Short-Haul Spotters, EMT Short-Haulers and pilot preseason and prior to missions discuss expectations & complete simulation training for any unplanned event.
Residual Rating	High
Rationale	Personnel will be trained to implement emergency procedures for known conditions and sequences of events to reduce the probability and limit the severity of adverse outcomes. Standardized training in an academy setting should alleviate inconsistencies that could

lead to errors in emergency procedures. Despite a very low residual probability rating, the potential severity of any emergency remains high.

Operations System

Sub System	Site Selection
Hazard	**(OP1)** Selection of an inadequate Short-Haul insertion site could result in an unsafe environment for Short-Haul personnel also increasing the exposure to rotor strikes, and entanglements.
Mitigation	**(OP1M2)** Pilot should ensure site selections meet NWCG Standards for Helicopter Operations (NSHO) standards during below canopy operations.
Residual Rating	High
Rationale	Maintaining rotor clearance and preventing rope entanglements will be a collaborative task for the pilot, spotter, and short hauler. Site selection is addressed during the Practical Test Standards for pilots as well as in the Short-haul Academy consolidated training for spotters. Despite a low probability of a rotor strike or rope entanglement with mitigations, the severity of any incident below a canopy top environment would still be high.

Sub System	Short Haul Procedures
Hazard	**(OP15)** Human external cargo collision with terrain or objects
Mitigation	**(OP15M1)** Ensure Short-Haul spotters in aircraft
Residual Rating	High
Rationale	Adequately trained and experienced pilots have unintentionally impacted the ground or other obstacles while performing other external load missions. It can be expected that short haul pilots that have received additional specialized training will be subject to this occurring with human loads much less frequently. Communication between the pilot, spotter and short-hauler is covered in detail during the Practical Test Standards as well as in the Short-haul Consolidated Training. As remote as this occurrence may be after this training and other mitigations are in place, the high consequence rating cannot be reduced further.

Sub Systems	Emergency Procedures
Hazard	**(OP17)** Lack of Emergency Procedures training prior to actual missions
Mitigation	**(OP17M1)** Develop emergency procedures and implement training
Residual Rating	High
Rationale	Personnel will be trained to implement emergency procedures for known conditions and sequences of events to reduce the probability of an inappropriate response on the part of the crew in an emergency setting. Standardized training in an academy setting should alleviate inconsistencies that could lead to errors in emergency procedures. Because of the numerous combinations of operational and environmental uncertainties an emergency that can occur, preparation will never eliminate a potential high severity outcome for some unforeseen factor.

Sub Systems	Emergency Procedures
Hazard	**(OP18)** Inflight aircraft emergency of an immediate nature.
Mitigation	**(OP18M1)** Implement emergency procedures identified in the EMSHOP
Residual Rating	High
Rationale	While this hazard probability is low with successful mitigations in place, in flight emergencies such as engine, hydraulic, or other mechanical failure resulting in limited or lack of control of aircraft can still occur. Emergency Procedures have been developed and implemented for the short-haul program; these procedures are addressed in the Practical Test Standards and at the Short-haul Consolidated Training. These measures

should lessen the severity should such an event occur. Due to the environment in which these events could occur, there still may be a high severity outcome. The extent of loss or injury is dependent upon the stage of short haul mission.

Sub System	Emergency Procedures
Hazard	**(OP20)** Intentional human cargo release
Mitigation	**(OP20M1)** Short-Haul Spotters, Short-Haulers and pilot preseason and prior to missions discuss expectations and alternatives to increase the survivability in the event of a helicopter loss of control or power failure.
Residual Rating	High
Rationale	Any intentional human cargo release will be intended to improve survivability of those onboard and external to the aircraft. . Emergency Procedures address situations which may require an intentional release of the external human cargo, and are addressed in the Practical Test Standards and at the Short-haul Academy Consolidated Training. These measures may lessen the severity should such an event occur. Despite the low probability of intentionally releasing human cargo to improve survivability for all parties, there is still the potential that this action will result in high severity consequence for crewmembers and or aircraft. The extent of loss or injury is dependent upon the stage of short haul mission.

Sub System	Human Factors
Hazard	**(OP24)** Overwhelming sense of urgency in life threating situation
Mitigation	**(OP24M1)** During configuration phase, consider shutting down aircraft.
Residual Rating	High
Rationale	While shutting down the aircraft will have an immediate effect on reducing operational tempo, this may not positively affect the sense of urgency felt by each individual team member.

Sub System	Environmental Hazards
Hazard	**(OP25)** Falling Debris
Mitigation	**(OP25M1)** Utilize appropriate head protection when working under or in the vicinity of a hovering helicopter.
Residual Risk	High
Rationale	There will be some moderate level of probability of falling objects or debris striking a person operating below hovering aircraft in a tree canopy environment. No mitigating factor can eliminate a moderate to high consequence rating associated with a strike to the head of a short hauler or other personnel.

Sub System	Environmental Hazards
Hazard	**(OP26)** Fire Behavior
Mitigation	**(OP26M1)** Ensure LCES is in place. If necessary relocate patient to more suitable site.
Residual Risk	High
Rationale	The wildland fire environment is inherently high risk dynamic environment. Even with mitigations in place there is a low probability of being affected by fire activity by expected events such as weather. With some degree of uncertainty of environmental factors, there will always be potential of a high severity outcome with unexpected fire behavior requiring a relocation of a patient to more safe location to complete a medical extraction.

Medical Treatment

Sub System	Patient
Hazard	**(MTS4)** Patient injury or illness is beyond Basic Life Support

Mitigation	**(MTS4S1)** Rapid transport to Advanced Life Support
Residual Risk	High
Rationale	Even with mitigations in place, due to the availability of Short-Haul resources and the remoteness of the wildland fire environment, there will be a moderate level of risk to the patient being able to receive timely transport to definitive medical treatment due to environmental and operational variables.

Sub System	Patient
Hazard	(MTS4) Patient injury or illness is beyond Basic Life Support
Mitigation	(MTS4S2) Communicate additional needs to Dispatch, ICP, ATGS, etc.
Residual Risk	High
Rationale	Even with mitigations in place, due to the availability of Short-Haul resources and the remoteness of the wildland fire environment, there will be a moderate level of risk to the patient being able to receive timely transport to definitive medical treatment. Develop contingencies to bolster resources on scene to establish care until transportation logistics can be established.

REGIONAL SHORT-HAUL PROGRAM
RISK ASSESSMENT

REGION _____ DATE_____

Management needs to review the checklist items specified against Appendix M, the Programmatic Risk Assessment for Short-Haul. The purpose of the checklist is to ensure the regions have fully reviewed the Assessment and either concurs or disagrees with the mitigations, and have the implemented the mitigations or have additions or alternatives to share with the national office. The response assures the national office that the regional personnel are reviewing the hazards/risks/mitigations and are signing off on the awareness of the "high" risk(s) that are represented even with mitigations accomplished.

Management is encouraged to add any hazards along with mitigations if they feel there are any that were not identified in the analysis.

Short-Haul, Personnel System:

PR2 **Not proficient in the Short-Haul mission.**

- ☐ *PR2M3. Utilize Contract specifications to limit the number of carded Short-Haul pilots.*
- ☐ *PR2M4. Ensure the Short-Haul Spotter has the authority to stop the operation if, the person considers the pilot not proficient for the mission.*

PR3 **Not fit or prepared for duty.**

- ☐ *PR3M1. Ensure the Short-Haul Spotter's authority to stop the operation if the person considers the pilot not fit or prepared for the mission, is understood and respected.*
- ☐ *PR3M2. Short-Haul Spotter / HMGB ensures pilot adheres to pilot duty limitations.*
- ☐ *PR3M3. Utilize the initial pre-use briefing to establish expectations and positive helicopter management by the Short-Haul Spotter, Helicopter Manager and pilot.*

PR4 **Overly aggressive tendencies and flying techniques by the pilot.**

- ☐ *PR4M1. Utilize the initial pre-use briefing to establish expectations and positive helicopter management by the Short-Haul Spotter, HMGB and Pilot.*
- ☐ *PR4M1. Ensure the Short-Haul Spotter's authority to stop the operation if the person considers the pilot not fit or prepared for the mission, is understood and respected.*

PR5 **Pilots not communicating safety concerns.**

- ☐ *PR5M1. Short-Haul Spotters and HMGB establish open communication with the pilot to develop mission specific rapport and use CRM.*
- ☐ *PR5M2. Seek and encourage feedback during the GAR process, After Action Review (AAR) and debriefings.*

PR6 **Short-Haul Spotters not qualified in the Short-Haul mission.**

- ☐ *PR6M3. Adhere to the EMSHOP currency and performance standards for Short-Haul Spotters.*

PR7 **Short-Hauler not qualified in the Short-Haul mission.**

- ☐ *PR7M2. Adhere to the EMSHOP currency and performance standards for Short-Haul Spotters.*

PR8 **Short-Hauler/attendant or Spotter not fit for duty.**

- *PR8M1. Ensure the Short-Haul Spotter and Short-Haul personnel follow CRM principles. Enabling all personnel to speak up*
- *PR8M2. Ensure initial operational briefing includes expectations for Short-Haul personnel, which includes performance standards.*

PR9 EMT Short-Hauler incapable of providing adequate medical care

- *PR9M1. Ensure the employee is qualified as an EMT Short-Hauler.*

PR10 Lack of fundamental, foundational knowledge on the part of ground personnel for Short-Haul operations

- *PR10M2. Ensure communications are established with ground personnel prior to insertion.*

PR12 Fatigue impacting personnel capability to perform their duties at the necessary level.

- *PR12M1. Short-Haul Managers will evaluate the fatigue level of the pilot and the crew.*
- *PR12M2. Improve education of all personnel on heat, hydration, rest, and other physiological conditions issues.*
- *PR12M3. Monitoring by designated safety personnel.*
- *PR12M4. Rotate people if performance degradation is evident.*

PR13 Rapid transition between mission types interfering with situational awareness.

- *PR13M1. Ensure adequate briefings and that Short-Haul Spotter is watching for procedural errors. Each short-haul mission must get a GAR Risk Assessment*
- *PR13M2. Strengthen and enforce training and briefings for the Short-Haul mission to maintain focus during transitions between helicopter missions.*

PR14 Lack of proficiency due to low frequency performance of mission

- *PR14M1. Ensure proper briefings and remind personnel to stay focused on the mission.*
- *PR14M2. Provide additional qualified management for focus and supervision.*

Short-Haul, Training System:

TR2 Policy and training requirements are inconsistent between agencies participating in Short-Haul operations.

- *TR2M1. Ensure procedures, process and equipment standards are in alignment with each agencies guidelines.*

Short-Haul, Operations System:

OP1 Selection of an inadequate Short-Haul insertion site could result in an unsafe environment for Short-Haul personnel also increasing the exposure to rotor strikes, and entanglements.

- *OP1M1. Rely on the Pilot in Command and Spotter for approval of all insertion and extraction sites.*
- *OP1M2. Pilot will ensure site selections meet NWCG Standards for Helicopter Operations (NSHO) standards during below canopy operations.*
- *OP1M3. Use a reconnaissance flight with the pilot and Short-Haul Spotter to evaluate the proposed operation.*

- *OP1M4. The first insertion at the site shall confirm and communicate any additional hazards and the suitability of the site.*

OP2 Pilot confusion from non-standardized verbal and non-verbal communications.

- *OP2M1. Implement standardized verbal and non-verbal communications with pilot and Short-Haul personnel.*

OP3 Uncontrolled personnel at configuration site or patient transfer site.

- *OP3M1. Conduct reconnaissance flight and provide for scene safety*
- *OP3M2. Coordinate with ground personnel, ATGS, and other functions involved in emergency extraction.*

OP4 Lack of adequate helicopter crewmembers/Short-Haulers/EMT's for the overall mission.

- *OP4M1. Ensure, develop and identify a pool of qualified personnel prior to mission.*

OP5 Lack of program oversight to ensure standardization and quality assurance.

- *OP5M1. Have in place standard unit organizational chart including; Forest Aviation Officer, Unit Aviation Officer, Full complement of helicopter management in place.*

OP6 Not all Short-Haul personnel have received a briefing resulting in confusion prior to or during mission.

- *OP6M1. Ensure all participants are briefed prior to the mission.*

OP6.1 Post-flight debriefings are not consistently performed resulting in loss of mission information and lessons learned.

- *OP6.1M1. Helicopter Managers and Short-Haulers are responsible to seek and encourage feedback during After Action Reviews (AARs) and debriefings at end of each phase of mission.*
- *OP6.1M2. Ensure mission evaluation documentation is completed and reported to the NAHOS*
-

OP7 Insufficient or unfamiliar medical plan for incident or local unit.

- *OP7M1. Ensure a medical plan with all pertinent information is in place and brief accordingly.*
- *OP7M2. Prior to mission planning coordinate with IMT's, Dispatch centers, Local units as appropriate.*

OP8 Outside ground or air resource medical assistance is not available in some Short-Haul operations areas.

- *OP8M1. Ensure Medical Plan identifies a source and location to meet outside medical transport assets.*
- *OP8M2. Ensure Medical Plan provides for air evacuation and ground evacuation contingencies.*

OP9 Short-Haul personnel lack adequate medical training for field emergencies.

- *OP9M2. Ensure an EMT is a component of every Short-Haul mission.*

OP10 Local unit, IMT's, Dispatch, unfamiliar with FSSH Program capabilities and limitations.

- *OP10M1. Communicate preseason and prior to conducting missions, on capabilities and limitations.*

- *OP10M2. Develop a Short-Haul resource user's guide describing capabilities and limitations. (Helicopter/module Information Sheet)*

OP11 Non-standardized operational procedures.

- *OP11M1. Follow standardized operational procedures identified in EMSHOP.*

OP12 Requesting a Short-Haul mission that exceeds the capabilities of the resource and personnel.

- *OP12M1. Work within the scope of the EMSHOP and mission parameters.*

OP13 Improper rigging of Short-Hauler/attendant/litter to Short-Haul system.

- *OP13M1. Perform a buddy/spotter check before each flight. Follow EMSHOP procedures.*

OP14 Improper rigging of Short-Haul system to aircraft.

- *OP14M1. Shut aircraft down at configuration site. Spotter and pilot check prior to starting mission.*

OP15 Human external cargo collision with terrain or objects

- *OP15M1. Ensure Short-Haul spotter in aircraft.*
- *OP15M2. Positive communications between pilot, spotter, attendant or Short-Hauler.*

OP16 Lack of a crash rescue kit on an operation.

- *OP16M1. Ensure crash rescue kits are available as needed at the helibase during Short-Haul operations.*

OP17 Lack of emergency procedures training prior to actual missions

- *OP17M1. Short-Haul Spotters, Short-Haulers and pilot preseason and prior to missions discuss expectations in the event of a helicopter loss of control or power failure.*

OP18 Inflight aircraft emergency of an immediate nature.

- *OP18M1. Implement emergency procedures identified in the EMSHOP.*

OP19 Inadvertent human cargo release.

- *OP19M1. Check cargo hook prior to mission, pilot and spotter familiarization and utilization of primary and secondary release system.*

OP20 Intentional human cargo release

- *OP20M1. Short-Haul Spotters, Short-Haulers and pilot preseason and prior to missions discuss expectations and alternatives to increase the survivability in the event of a helicopter loss of control or power failure.*

OP21 Pilot loss of vertical reference.

- *OP21M1. Pilot and crew will assess the insert/extract site to assure the capability to maintain adequate references via recon.*
- *OP21M2. Short-Haul Spotter on board to assist pilot with vertical reference and identify hazards.*

OP22 Unclear/misunderstood communications.

- *OP22M1. Utilize clear text and standardized challenge and response communications.*

OP23 Exposure to traumatic events involving loss of human life or severe injury.

- *OP23M1. Preseason preparation using resources such as "Stress Control and Resilience Guide".*

- *OP23M2. Implement Critical Incident Stress Management post incident as needed.*

OP24. Overwhelming sense of urgency in life threating situation

- *OP24M1. During configuration phase, consider shutting down aircraft.*

OP25 Falling debris.

- *OP25M1. Utilize appropriate head protection when working under or in the vicinity of a hovering helicopter.*
- *OP25M2. Include hazard awareness in Short-Haul training and refresher courses as well as daily operation plans and briefings.*
- *OP25M3. Ensure clearance and rotor height is adequate at site and check surrounding area for hazard trees. If necessary relocate patient to more suitable site.*

OP26 Fire Behavior

- *OP26M1. Ensure LCES is in place. If necessary relocate patient to more suitable site.*
- *OP26M2. Ensure helicopter does not impact fire behavior by maintaining sufficient height above ground.*

OP27 Low visibility due to smoke, dust, darkness, etc.

- *OP27M1. Follow NSHO standards. Establish trigger points to cease operations.*
- *OP27M2. Select site so that the spotter can maintain positive visual contact with Short-Haulers to the ground, to insert and extract.*

OP28 Lack of training short-haul mishaps being reported

- *OP28M1. ALL short-haul mishaps will be reported through the SAFECOM system until there is another system is approved.*

Short-Haul Equipment System:

EQ1 Non-standard and non-agency approved equipment resulting in unfamiliarity in utilization of equipment.

- *EQ1M2. Use only equipment identified and approved in the EMSHOP.*

EQ4 Spotter tether attachment point is not uniformly defined or tested in some aircraft leading to tether attachment failure.

- *EQ4M1. Ensure Spotter tether attachment point is approved, inspected and tested annually, installed correctly, inspected as manufacturer recommendations.*

EQ5 Short-Haul equipment improperly rigged on the aircraft.

- *EQ5M1. Pilot and Short-Haul Spotter will perform the initial rigging of the aircraft for Short-Haul operations.*

EQ6 Pilot utilizing a length of line not proficient with.

- *EQ6M1. Ensure pilot carding and approved prior to mission execution.*
- *EQ6M2. Limit pilot to line length carded for by HIP. Short-Haul Spotter is responsible for verifying the maximum line carding matches line length use in the operation.*

EQ7 Short-Hauler / EMT Short-Hauler without personal protective equipment or supplies at Short-Haul landing site.

- *EQ7M1. Ensure standardized haul bag with personnel protective equipment.*

Short-Haul, Medical System:

MTS1 EMT unfamiliar with medical equipment

- *MTS1S2. Trained on use and care of standardized equipment.*

MTS2 Rendering services beyond scope of practice

- *MT2S1. EMT's knowledgeable of scope of practice limitations, and able to provide care only within scope*
- *MT2S2. Ensure certification is current and all training has been conducted*

MTS3 Utilizing an inappropriate Short-Haul Extraction packaging system.

- *MT3S1. Accurate patient assessment by EMT.*
- *MTS32. Correct selection of transport method. (Helicopter Rescue Bag/Litter/Screamer Suit)*

Short-Haul, Aircraft System:

AC2 Exceeding the performance capability of the Type 3 helicopters.

- *AC2M1. Operate per NWCG Standards for Helicopter Operations (NSHO), Rotorcraft Flight Manual (RFM) and the Short-Haul Guide.*
- *AC2M2. Ensure make and model meet FAR Part 27 specifications.*

AC3 Environmental conditions such as terrain, density altitude, elevation, winds and temperature impacting helicopter performance.

- *AC3M1. Operate per NWCG Standards for Helicopter Operations (NSHO), Rotorcraft Flight Manual (RFM) and the Short-Haul Guide.*

AC4 Aircraft not properly equipped for human loads.

- *AC4M2. Ensure Short-Haul Spotter verifies cargo hook system is approved by the agency for human loads.*

APPENDIX N: USFS SHORT-HAUL BOOSTER TEMPLATE

At a minimum, Short-Haul booster packets should contain the following information. Copies shall be provided to incoming boosters in conjunction with a formal in-briefing of the crew the resource is boosting. These are the minimum requirements; additional information may be contained in packets given the wide degree of operating areas of USFS Short-Haul platforms.

 Dispatch office location, phone #'s. Explain Forest maps, layout of Districts, and other cooperating agencies.

 Explain Forest/Zone aviation resource location and availability.

 Special use airspace; MOA, Flight Routes, Restricted Areas.

 Forest Frequencies; air-ground, IA victor, admin, fire, and repeaters. Give frequency lists and repeater map.

 Crash-Rescue plan; show pages that refer to local and Regional contact phone numbers, and hospitals to include latitude/longitudes. Point out other agency phone number pages.

 Explain initial attack procedures and incident conduct.

 Explain on/off duty conduct and expectations.

 Ensure Employee Emergency Contact Information is exchanged to chief of party

 Ensure boosters are currently "short-haul" ready i.e. equipment checks/proficiencies/procedures.

 Ensure boosters are currently "fire ready" i.e. .fire-line equipment, PPE, R.O.N. accommodations, etc.

APPENDIX O: RESERVED

APPENDIX P: RESERVED