

IHRG Appendix B

Bureau of Land Management Stand Alone Cargo Letdown Operations

Cargo Letdown is a procedure used to lower cargo out of a hovering helicopter to the ground with the use of a nylon line and rappel anchor. This procedure is used by helitack programs to get needed equipment and supplies to the ground when conventional methods are not the most efficient option.

Agency approval is required to host a cargo letdown program. Requests for approval are initiated by a local unit and approved at the national level.

Policy allows for both internal and external (off the hook) cargo letdown operations. Initial approval will be based upon indicated need and limited to one field season. Subsequent conditional approval must be requested after the initial field season and validated based on proper utilization and justification of continued need. Approved cargo letdown programs will be re-evaluated in conjunction with new helicopter contract solicitations. Several administrative procedures need to be addressed as part of the request for approval:

1. Initial justification to include nomination of one Helicopter Cargo Letdown Spotter Trainee candidates (HCLS (T))
2. Request for Contract:
 - a. Provide for a contractor purchased cargo letdown anchor. Costs to the contractor would be recovered in an adjusted Daily Availability rate negotiated by the Contracting Officer (CO).
 - b. Add additional “Special Pilot Requirements for Cargo Letdown” language.
3. Approved copy of the complete Helibase Operations Plan prior to implementation.
4. Cargo Letdown Operations Plan. This plan would supplement the Helibase Operations Plan. The Cargo Letdown plan should describe all aspects of the letdown program to include:
 - a. Risk Management mitigation measures.
 - b. Decision Matrix (under what parameters will this operation be conducted).
 - c. Detailed operational procedures.
 - d. Detailed equipment and configuration descriptions.
 - e. Equipment certification/inspection/retirement intervals and documentation.
 - f. Personnel training, experience and proficiency requirements and record-keeping.
 - g. Letdown mission documentation and record-keeping.
 - h. Completed copies of the Interagency Cargo Letdown Spotter Trainee Qualification Record will be sent to the State Aviation Manager annually.

- 1 5. To be considered for cargo letdown spotter training, the trainee must:
- 2 a. Be a fully qualified Helicopter Manager.
- 3 b. Be a current member on an exclusive use helitack crew.
- 4 c. Meet the prerequisite experience, training, and currency requirements outlined in
- 5 the *Interagency Standards for Fire and Fire Aviation Operations* “Exclusive Use
- 6 Fire Helicopter Position Requisites” for the position they encumber.
- 7 d. Only the helitack supervisor, assistant and/or squad leader positions will be
- 8 qualified as cargo letdown spotter.
- 9 e. Any deviation from these additional requirements must be approved in writing by
- 10 the State or Regional level Aviation Manager.
- 11 f. Initial cargo letdown training shall be conducted by a DOI OAS training specialist
- 12 or a fully qualified spotter (HERS/HCLS). The DOI OAS training specialist or
- 13 cargo/rappel check spotter is responsible for conducting the final initial check ride
- 14 and certification of a HCLS(T).
- 15 g. Each component of training (tower, mock-up, and live helicopter) must allow
- 16 sufficient time to satisfy the training requirements; this may vary based on the
- 17 number of and progression of students. Requesting unit and trainees must be
- 18 prepared to commit to the necessary time frames and associated expense when
- 19 entering into agreement with Trainers.
- 20 h. This training is performance based and trainees will only move forward as
- 21 specific training targets are met. It must be understood that there is the potential
- 22 that a selected trainee may not be qualified due to inadequate performance.
- 23 i. Tower training (if utilized) can be generic. Mock-ups and live cargo letdown
- 24 training shall be helicopter model specific to the aircraft utilized by the trainee
- 25 and will follow the current model specific cargo letdown procedures in this
- 26 appendix.
- 27 j. All trainees will utilize the attached “Cargo Letdown Spotter Trainee
- 28 Qualification Record” to ensure all aspects of training are complete. This record
- 29 shall include further training recommendations and a clear picture of the trainee’s
- 30 current level of competence.
- 31 k. Refresher Training. Each year a spotter must:
- 32 • Attend or instruct annual helicopter cargo letdown training.
- 33 • Complete deployment of three loads of cargo from the helicopter to the
- 34 satisfaction of the appropriate agency certifying official. Subsequent re-
- 35 qualification certification may be conducted by a qualified spotter
- 36 (USFS or DOI). Typical terrain shall be utilized for at least one of
- 37 the three loads.

- 1 1. Spotter Proficiency:
- 2 • Individuals must make at least one cargo letdown spot every 14 days. If a
- 3 helicopter letdown is not completed within 14 days, the spotter may use a
- 4 simulation. If a simulation is used to maintain proficiency during the 14
- 5 day period, an airborne deployment must be done in the following 14 day
- 6 period.
- 7 6. To be considered for approval as Helicopter Cargo Letdown Check Spotter (HCCS), the
- 8 trainee must:
- 9 a. Be nominated by the State to the National Program Manager.
- 10 b. Be a current helitack supervisor or assistant on an exclusive use helitack crew.
- 11 c. Meet the position/prerequisites for check spotter in *IHRG 7.4*.
- 12 d. Meet the prerequisite experience, training, and currency requirements outlined in
- 13 the *Interagency Standards for Fire and Fire Aviation Operations* “Exclusive Use
- 14 Fire Helicopter Position Requisites”.
- 15 e. Subsequent recurrent certification may be conducted by a qualified Check spotter
- 16 (USFS or DOI) with the concurrence of the State Aviation Manager.
- 17 7. Pilots shall meet all the following requirements:
- 18 a. Meet the appropriate requirements of the procurement document to include
- 19 having logged additional experience as pilot-in-command as follows:
- 20 • 50 hours – Total hours in make, model and series offered.
- 21 • 25 hours – Rappel, cargo letdown or long line requiring precision
- 22 placement, last 12 months.
- 23 b. Annually attend a cargo letdown training/refresher training session. This training
- 24 shall be conducted and documented by a qualified spotter and will include:
- 25 • Briefing and familiarization on letdown bracket and hard points for the
- 26 specific model.
- 27 • Seating arrangements for cargo and spotters.
- 28 • Cargo placement/location and deployment sequence and method.
- 29 • Exit procedures and sequence.
- 30 • Perform a minimum of six ground mockups in the aircraft model to be
- 31 used, including rigging the aircraft for cargo letdown mission and
- 32 deploying cargo.
- 33 • Briefing on any peculiarities of the specific model.
- 34 • Demonstrate ability to operate helicopter during three cargo letdown
- 35 sequences.
- 36 • Demonstrate ability to work with spotter.

- 1 c. Upon meeting the above requirements, the pilot may be approved for helicopter
2 cargo letdown operations by an OAS or USFS helicopter inspector pilot.
- 3 d. The pilot shall maintain currency in helicopter cargo letdown at the same
4 frequency required of the spotter (every 14 days).
- 5 e. If currency is not maintained a mockup and proficiency flight must be completed
6 prior to any actual operational mission.
- 7 f. The helicopter must meet the requirements of the departmental manual and the
8 procurement document.

9 **Cargo Let-Down Equipment**

10 **Any new equipment that a unit wishes to test or incorporate into standalone cargo letdown**
11 **must be approved by the BLM representative to the Interagency Helicopter Rappel Unit.**

12 **NOTE:** Any equipment item with time life criteria of 10 years must be removed from service
13 once it meets that time limitation. If manufacture date stamps for equipment become illegible,
14 damaged, or lost, they will be replaced and then documented in the applicable equipment log.
15 Replacement tags must correspond with the original manufacture date in the equipment log. Any
16 equipment with a time life limitation that cannot be age verified must be removed. Equipment
17 removed from service will be disposed of in accordance with Bureau of Land Management
18 Personal Property Management Manual 1520.

19 **Gloves**

20 Spotters may wear any glove approved for flight operations in the IHOG. Spotters needing
21 additional heat protection may wear a rappel type glove for cargo letdown. Currently Sullivan
22 PV or PVG and the PMI GL2200x rappel glove and the Metolius climbing ¾ finger glove are
23 approved for cargo letdown operation. The Metolius glove shall only be used in conjunction
24 with a flight glove.

25 **Spotter Harness**

26 Cargo Letdown Spotters will wear the Miller Revolution Harness® during all helicopter
27 rappel/cargo letdown and tower operations. The harness shall be issued and tagged with a
28 unique identifier that corresponds to an in-service date. Harness tags from the manufacturer may
29 be used. Two sizes are available:

- 30 • Small/medium size model RDT-QC/S/MBKU (will fit most spotters).
- 31 • Larger size harness model RDT-QC/UBKU is also available.

32 ***Inspection:***

- 33 • The spotter harness must be inspected by the user prior to operation.
- 34 • Inspect stitching and webbing for abrasion, wear or other damage.
- 35 • Check leg strap buckles, chest strap buckles, dorsal D-ring and Cam Buckle adjusters for
36 correct adjustment and function.
- 37 • Check PivotLink® connectors for correct function.

1 **Extendable Spotter Harness Tether**

2 The extendable harness tether is the interface between the spotter harness dorsal attach point and
3 approved hard point. The extendable spotter tether for the Miller Revolution Harness® RDT-
4 QC/S/MBKU will be manufactured in accordance to drawing # MTDC-1039 Extendable Spotter
5 Tether.

6 The harness tether must adjust to prevent the dorsal attachment point from extending past the
7 door plane of the helicopter in the non-extended configuration.

8 The Rock Exotica Rock D® carabineer is attached to the free end of the spotter tether connecting
9 to an STC or manufacturer approved helicopter hard point, tower hard point, or other approved
10 tether attachment point.

11 The extendable spotter tether comes in two sizes, large and small. The tether is designed to
12 extend an additional 9 inches of length, as necessary to clear a letdown line. To deploy, the
13 spotter will free the red pull snap and lift the ejector snap releasing the v-ring. The additional
14 tether webbing will deploy as tension is added to the tether. There is no need to manually deploy
15 or unfasten DOT snaps.

16 When the extended length is no longer required, the spotter will recapture the v-ring into the
17 ejector snap as soon as practical. Tether webbing within the pull DOT snaps will be repackaged
18 when mission has ended.

19 When an extendable tether is operationally deployed, it is considered a reportable event. The
20 SAFECOM system will be used for facilitated learning purposes.

21 ***Inspection:***

- 22 • Tether is inspected with spotter harness prior to operation.
- 23 • Inspect stitching and webbing for abrasion, wear or other damage.
- 24 • Metal hardware should be free from cracks, dings, or other damage.
- 25 • Extendable tether material must be stowed by dot snaps.
- 26 • The tag end of webbing that locks the adjuster shall be tacked onto the webbing loop that
27 passes through the dorsal D-ring using nylon 5 cord as shown in appendix I.
- 28 • Meets lifetime criteria for use (10 years).

29 **Non-Extendable Spotter Harness Tether**

30 The non-extendable harness tether is the interface between the spotter harness dorsal attach point
31 and hard point for the Miller Revolution Harness manufactured in accordance with drawing
32 #MTDC-1062 Rappel Spotter Tether.

33 The harness tether must adjust to prevent the dorsal attachment point from extending past the
34 door plane of the helicopter in the non-extended configuration.

35 The Rock Exotica® Rock D carabiner is attached to the free end of the spotter tether connecting
36 to an STC or manufacturer approved helicopter hard point, tower hard point, or approved aircraft
37 tether attachment point.

1 **Inspection:**

- 2 • Tether is inspected with spotter harness prior to operation.
- 3 • Inspect stitching and webbing for abrasion, wear or other damage.
- 4 • Metal hardware should be free from cracks, dings, or other damage.
- 5 • The tag end of webbing that locks the adjuster shall be tacked onto the webbing loop that
- 6 passes through the dorsal D-ring as shown in IHRG appendix I.

7 **Cargo Letdown Spotter Tether Attachment**

8 Cargo Letdown Spotter Tether Attachment(s) will be manufactured in accordance with drawing

9 # MTDC-946, or the Air Rescue Systems® Primary Anchor. The spotter tether attachment will

10 secure the spotter harness tether to the aircraft, positioning it to the centerline of the aircraft.

11 The Spotter Tether attachment will be installed in the aircraft according to model specific

12 configurations.

13 **Inspection:**

- 14 • Inspected by a spotter prior to each use.
- 15 • Inspect stitching and webbing for abrasion, wear or other damage.
- 16 • Metal adjusters and attachment ring should be free from cracks, dings, or other damage.
- 17 • Meets lifetime criteria for use (10 years).

18 **Carabiners**

19 Carabiners certified by the National Fire Protection Association (NFPA), compliant with the

20 American National Standards Institute (ANSI Z359.12), or approved by the Federal Aviation

21 Administration (FAA) will be used in cargo letdown operations.

22 The Rock Exotica® Rock D or SMC Lite Alloy Steel Locking carabiner is authorized for all load

23 related cargo letdown use.

24 The Rock Exotica® Rock D carabineer will be used for all life bearing/human load attachments.

25 Exception: carabiners specifically identified by supplemental type certificate (STC) for direct

26 attachment to anchor.

27 **NOTE:** Carabiners are designed to be loaded longitudinally. If load occurs on the side(s), gate failure

28 may occur.

29 **Inspection and Use:**

- 30 • Inspect in accordance with manufactures data sheet.
- 31 • Inspect to be sure that gates and locking mechanism function properly. If gate becomes
- 32 sticky, remove from service.
- 33 • Look for abrasion, burrs, or rough edges. If there is any visual indication that raises
- 34 question, retire it.

- 1 • When using for cargo letdown operations make certain that gates are locked when in use
- 2 and that tension is not on gate.
- 3 • Do not drop on ground or hard surface. Rough handling is avoided.
- 4 • Keep clean.
- 5 • Must be inspected by a spotter prior to each use.

6 **Knife / Knife Sheaths**

7 Spotters are required to have a hook knife, with lanyard, readily accessible for emergency use.
8 The Raptor® knife is required for use by cargo letdown spotters.

9 The spotter Raptor® knife shall be enclosed within the MTDC rappel spotter Raptor® sheath
10 (MTDC drawing # 1042) and attached to the spotter harness in the manner shown in rappel
11 bulletin 051005.

12 Certain STC's for rappel anchor installations require an additional Raptor knife be installed
13 inside the aircraft.

14 ***Inspection:***

- 15 • Knife sheaths are to be inspected with any harness inspection.
- 16 • Knives shall be inspected annually or prior to being installed on a harness. Ensure knives
- 17 used for rappel have properly installed blades.
- 18 • Knife blades must be changed after any use.
- 19 • Handle/body of knife should be free from damage, screws should be tight.
- 20 • The sheath should be in good condition.
- 21 • Ensure the lanyard is stowed and attached correctly.
- 22 • Pull snap(s) should close/open with enough resistance to prevent inadvertent opening.

23 **Rappel Anchors**

24 Rappel anchors are evaluated for use by the Office of Aviation Services (OAS) for DOI. Each
25 helicopter model will be evaluated for anchor hard points and design to determine the proper
26 rappel bracket or brackets that may be used.

27 ***Rappel Anchor Inspection:***

28 Rappel Anchor inspection will occur in accordance with the applicable STC, continuing
29 airworthiness instructions, or manufacturers standards in the flight manual or maintenance
30 manual. In addition an annual inspection shall also be conducted.

31 The designer or manufacturer of the anchor is responsible for developing maintenance inspection
32 criteria, which ensures the continued airworthiness of the anchor. The owner of the anchor is
33 responsible for ensuring that the inspection(s) is conducted. Prior to each use, the rappel anchor
34 will be visually inspected by the spotter for general condition and documented on the daily diary.

35 Additional information regarding existing rappel anchors is available from MTDC.

1 **Figure 8 with ears**

2 For wildland fire cargo-letdown operations the steel or aluminum CMC rescue 8 with ears are
3 the only approved letdown devices.

4 ***Inspection:***

- 5 • Inspect in accordance with manufactures data sheet.
- 6 • Inspect for grooves developing or flaking occurring in aluminum figure 8's. When a
7 groove develops beyond the anodized surface of the aluminum figure 8, wear will rapidly
8 occur. If the groove is beyond 1/16-inch deep, retire the figure 8.
- 9 • Inspect the figure 8 for aluminum flaking. This develops rough edges that could cause
10 excessive wear on the line. If flaking is evident, remove the figure 8 from service.
11 Although the acquisition cost is double, steel figure 8's have proven more durable and
12 service life is considerably longer than aluminum, however, steel may cause heat damage
13 more easily because it does not dissipate heat as readily as aluminum.
- 14 • Inspect for cracks or breaks. If cracks are evident, retire figure 8.
- 15 • Figure 8's must be inspected by a spotter prior to each use.

16 ***Take care to:***

- 17 • Avoid rough handling
- 18 • Not drop or drag on ground
- 19 • Keep clean

20 **Cargo Letdown Line**

21 To maintain even wear and maximize each lines useful life, line ends will be rotated after each
22 use. To track equipment use, each end shall be marked A or B.

23 Let-down lines are available in lengths of 250ft or 300 ft. Both let-down lines shall conform to
24 Mil-W-5625K Webbing, Textile, Nylon, Tubular, ¾". Webbing conforming to this standard has
25 a minimum breaking strength of 2300lbs.

26 Let-down lines 250 feet in length will be of white tubular nylon webbing and conform to
27 drawing #MTDC-983; let-down lines of 300 ft. will be of yellow tubular nylon webbing and
28 conform to drawing #MTDC-983.

29 Accordion packs will be constructed as to easily identify a 250 ft. let-down line from a 300 ft.
30 let-down line. Accordion packs for 250 ft. let-down lines will be constructed of white cotton
31 duck cloth, and accordion packs for 300 ft. let-down lines will be made from white cotton duck
32 cloth with yellow seam tape. To further identify accordion packs, 1 inch stencils will be used to
33 mark the outside surface of accordion packs with the length of let-down line to be used with each
34 size accordion pack. 250 ft. Accordion Packs will conform to drawing #MTDC-974 and 300 ft.
35 Accordion Packs will conform to drawing number #MTDC-1037. Both lines will be packed in
36 accordance with the Wildland Fire Helicopter Rappel Cargo Letdown Accordion Pack video
37 produced by MTDC. Edge Protection may be necessary along helicopter door edge or helicopter
38 skids to prevent abrasion of the line.

1 **250 foot line:** White ¾” tubular nylon webbing, dyed appropriately, with stenciled accordion
2 pack.

3 **300 foot line:** Yellow ¾’ tubular nylon webbing, dyed appropriately, with stenciled accordion
4 pack.

5 ***Inspection:***

- 6 • Let-down lines will be inspected for wear and burns after cargo deployment, and ends
7 reversed for the next let-down sequence.
- 8 • Inspect stitching and webbing for abrasion, wear, cuts, chemical contamination or other
9 damage.

10 ***Marking:***

- 11 • A twenty five foot section from each end of the let-down lines shall be clearly marked in
12 red and a ten foot section in the center of the line should be marked with a contrasting
13 color.
- 14 • Use only Rit dye to mark lines.

15 **Let-Down Containers**

16 Bags are to be manufactured with high strength abrasion-resistant materials. The attachment
17 points on the bag must be reinforced to ensure there is not a failure during deployment. Sources
18 for approved cargo letdown containers are also listed on the rappel website. Maximum
19 allowable suspended weight per internal cargo let down container shall be 125 lbs. Approved
20 cargo let down containers shall pass a static strength test with no failure or ruptured stitches
21 when loaded to a minimum weight of 468.75 lbs. (safety factor of 3.75 to 1).

22 ***Internal cargo letdown containers shall consist of the following:***

- 23 • Cardboard box with harness, the cardboard box shall consist of double wall construction
24 and shall be certified by manufacturer as having passed Edge Crush Test of 71 pounds
25 (71-ECT). Cargo boxes must be girded with an approved box harness for deployment.
- 26 • The box harness and attachment hardware shall have a minimum tensile strength of 1125
27 lbs.
- 28 • A-5/Metolius style Haul Bag.
- 29 • Large Klamath Bag.
- 30 • Small Klamath Bag.

31 ***External cargo letdown containers shall consist of the following:***

- 32 • Tuna Net (NFES #000795)
- 33 • Large Klamath Bag
- 34 • Small Klamath Bag

35 The maximum weight and the minimum weight for the large and small Klamath bags will be
36 stenciled on the container with 3 inch letters in a high contrast color.

37 The limitations will be illustrated on opposing sides of the container.

1 Maximum weight and minimum weight for external cargo deployment containers:

- 2 • Large Klamath Bag
 - 3 ○ Maximum Weight: 300 lbs.
 - 4 ○ Minimum Weight: 150 lbs.
- 5 • Small Klamath Bag
 - 6 ○ Maximum Weight: 300 lbs.
 - 7 ○ Minimum Weight: 80 lbs.
- 8 • Tuna Net
 - 9 ○ Maximum Weight: 300 lbs.
 - 10 ○ Minimum Weight: 40 lbs.

11 **NOTE:** Bags and other containers should be frequently inspected and not used if damaged.

12 **NOTE:** During flight testing of external containers, loads became unstable above 60 knots indicated
13 airspeed. External load operations shall be conducted at an airspeed that ensures the load remain stable.

14 **External Cargo Deployment (Break-away strap and Cargo Strap)**

15 For external cargo deployment the break-away strap which is the connecting line between the
16 external load or cargo strap and cargo let down line shall conform to Mil-W-5625K and be 1”
17 tubular nylon. The minimum breaking strength of 1” tubular is 4000 lbs. External cargo
18 operations shall use the model specific Break Away and Cargo Straps manufactured in
19 accordance with drawing # MTDC 980 Helicopter Rappel External Cargo Break Away strap and
20 drawing # MTDC 982 Helicopter Rappel External Cargo Strap.

21 **Inspection:**

- 22 • Equipment will be inspected prior to use by a qualified spotter.
- 23 • Inspect stitching and webbing for abrasion, wear, cuts, chemical contamination or other
24 damage.

25 **Figure 8 Extender**

26 The extender relocates the Figure 8 away from an aircraft hard point. Figure 8 extender
27 conforms to MTDC Drawing # 1040.

28 **Inspection:**

- 29 • Equipment will be inspected prior to use by a qualified spotter.
- 30 • Inspect stitching and webbing for abrasion, wear, cuts, chemical contamination or other
31 damage.

1 **External Cargo Swivel**

2 All external cargo-letdown loads must be attached to the helicopter with an approved swivel.

3 The Petzl P58 S, P58 L and swivels approved for cargo in the IHOG are the approved swivels for
4 external cargo letdown operations.

5 ***Inspection:***

- 6 • Inspect in accordance with manufactures data sheet.
- 7 • Equipment will be inspected prior to use by a qualified spotter.
- 8 • Spinning action of the swivel.
- 9 • Physical damage.

10 Inspection criteria as outlined in chapter 9 of IHOG approved equipment.

11 **Cargo Letdown Documentation**

12 All standalone Cargo Letdown Operations will be conducted in accordance with IHRG Chapter 4
13 Documentation.

14 **Cargo Deployment Procedures**

15 All training and actual deployment missions will use the following steps and procedures. The
16 intent is to standardize and maintain continuity between units.

17 **Internal Cargo Deployment Procedures**

18 A. Pre-Flight Duties for Cargo Only Missions

- 19 1. Prior to departure, the pilot(s) and involved personnel shall receive a briefing on
20 mission objectives, communications, known hazards, and emergency procedures.
- 21 2. Load calculations and manifests complete and posted.
- 22 3. Spotter puts on harness, ensures raptor knife is attached to harness.
- 23 4. Spotter completes necessary pre-flight inspections.

24 B. Equipment Check of Spotter

25 Prior to flight, the spotter must receive a spotter equipment check. When ground
26 personnel are unavailable, the spotter shall have the pilot perform this check. Positive
27 communication between the spotter and pilot must occur to ensure Spotter has attached
28 their tether to an approved hard point.

29 1. Flight Helmet

- 30 • Good Condition – no cracks or damage, avionics in place
- 31 • Eye protection
- 32 • Chin strap secured, adjusted to fit snugly, with no loose ends

- 1 2. Nomex[®] Shirt/Flight Suit
- 2 • Good condition – shirt tucked in collar up, buttoned to the top, flight suit
- 3 fully zipped up
- 4 • Sleeves rolled down covering arms (no holes, clean & tight at wrist)
- 5 3. Gloves
- 6 • Good condition – fastened with no loose ends, and free of pitch or
- 7 contaminants
- 8 4. Miller Harness – Front Side
- 9 • Risers
- 10 ○ Visible webbing & stitching in good condition
- 11 ○ No twists, buckles secured with no cracks, keepers in place
- 12 • Chest Strap
- 13 ○ Positioned mid-chest
- 14 ○ Buckled & snugly fit
- 15 • Leg Straps
- 16 ○ Buckles attached, no fabric caught
- 17 ○ Visible webbing & stitching in good condition
- 18 ○ No twists, snug fit, loose ends secured, keepers in place
- 19 • Raptor Knife
- 20 ○ Secured in sheath on left riser
- 21 ○ Horn facing to left side
- 22 ○ Lanyard stowed
- 23 5. Nomex[®] & Boots
- 24 • Nomex[®] pants/flight suit in good condition, no Velcro showing
- 25 • Pant cuffs over approved boots
- 26 6. Indicate spotter to turn around with a tap on the left shoulder
- 27 7. Spotter's Back Side
- 28 • Helmet in good condition
- 29 • Collar up
- 30 • Harness - visible webbing & stitching in good condition with no twists
- 31 • Spotter tether attached to dorsal O-Ring through double pass adjustor and
- 32 tacked
- 33 • Extendable tether stowed, all snaps in place

- 1 • Ensure carabiner in place at end of tether
- 2 • Buckles & loose ends secured
- 3 • Nomex shirt, pants or flight suit in good condition, no Velcro showing
- 4 • Pant cuffs over approved boots
- 5 8. Tap on shoulder to indicate spotter to turn around.
- 6 9. Exchange thumbs-up - "YOU ARE O.K., I AGREE".

7 C. Rigging and Loading Cargo

- 8 1. Spotter will configure helicopter to meet the needs of the specific cargo mission.
- 9 2. Rig cargo with Carabiners(s) and secure in helicopter. Cargo should be secured in
- 10 accordance with model specific configurations in Appendix B.
- 11 3. Check cargo delivery equipment to ensure proper number of letdown lines, extra
- 12 carabiners, and figure 8 are available and secured in accessible location.
- 13 4. Spotter visually inspects anchor. (See Chapter 3, Rappel Anchor Inspection).
- 14 5. Spotter connects tether, plugs into avionics, boards aircraft, and secures seatbelt.
- 15 6. Spotter tells pilot, "Tether attached OK to depart,"
- 16 7. Pilot Responds "Tether attached, departing."

17 D. Pre-Cargo Delivery Sequence

- 18 1. Pilot(s) flies a reconnaissance of the area to look for hazards and works with
- 19 spotter to select an appropriate cargo delivery site.
- 20 2. Contact appropriate flight following authority (ATGS, HLCO, dispatch, etc.)
- 21 prior to commencing the cargo operation. Spotter communicates with flight
- 22 following authority & pilot regarding number of loads to be deployed.
- 23 3. Inform ground personnel to stay clear of cargo during deployment.
- 24 4. Adjust radios as needed to ensure pilot and spotter communication will not be
- 25 compromised by excessive radio chatter. Radios must remain on and dialed to the
- 26 appropriate flight following frequency.
- 27 5. Where possible helicopter should maintain at least 50 ft. clearance above any
- 28 obstacles before starting a cargo operation.
- 29 6. If this is not possible and helicopter must descend below the canopy, helicopter
- 30 will operate within an opening no less than 1 1/2 times the main rotor diameter
- 31 (e.g. an aircraft with a 36 ft. main rotor diameter would require a 54 ft. diameter
- 32 opening).
- 33 7. Before starting cargo operations, A HOGE Power assurance check is
- 34 accomplished at an altitude comparable to the cargo site or greater. A positive rate
- 35 of climb must be established without exceeding aircraft limitations. Pilot states,
- 36 "Hover established. Positive rate of climb. Power is good."
- 37 8. Spotter responds "Power is good."

- 1 9. Spotter activates hot mic if not done already.
- 2 10. If not performed on the ground, spotter rigs Figure 8 with cargo letdown line and
- 3 attaches figure 8.
 - 4 • If using overhead bracket on a type III helicopter connect two (2)
 - 5 carabiners in anchor bracket, barrel down, gate facing inboard. Connect
 - 6 one (1) carabiner to the upper carabiners, barrel down, gate facing aft.
 - 7 • If using floor bracket connect one (1) carabiner in anchor bracket, (barrel
 - 8 inboard, gate facing aft) with extender strap and one (1) additional
 - 9 carabiner attached to figure 8.
- 10 11. Cargo letdown pack must be connected to a hard point.
- 11 12. Spotter removes restraining straps from cargo, ensure remaining cargo is secure,
- 12 and positions cargo in doorway. Spotter relays to pilot when rigging is complete.
- 13 13. Aircraft with sliding doors in the closed position will follow the procedures in the
- 14 following two (2) bullets.
 - 15 • Pilot states to spotter “Clear to open door(s).”
 - 16 • Spotter states to pilot, “opening aircraft door(s).” Once spotter has opened
 - 17 aircraft door, spotter states to pilot “door open and locked.”
- 18 14. Spotter finalizes proper position over cargo site. Using pilot’s perspective (left,
- 19 right, forward, back, and up or down relative to altitude above the ground).
- 20 E. Cargo Deployment Sequence
- 21 1. Spotter will communicate with pilot regarding adequate main and tail rotor
- 22 clearance, power assessments, and cargo spot status throughout the cargo
- 23 operation. Using pilot’s perspective (left, right, forward, back, and up or down
- 24 relative to altitude above the ground).
- 25 2. Spotter states to pilot, “Cargo ready. How is the power?”
- 26 3. Pilot, “powers good send cargo,”
- 27 4. Spotter states to pilot, “Sending Cargo” then eases cargo out the door, over the
- 28 flight step and skid (Bell 206L4 cargo goes between skids).
- 29 5. Begin lowering cargo with positive control of letdown line; do not allow un-
- 30 arrested descent of cargo. Keep pilot informed of actions and progress of cargo
- 31 descent.
 - 32 • “Cargo out the door”
 - 33 • “Cargo halfway down”
 - 34 • “Cargo on the ground”
- 35 6. When cargo is on the ground, unhook figure 8 from carabiner/Anchor and remove
- 36 letdown line. Hold slack in line to prevent billowing and unhook letdown line
- 37 bag from hard point. Wrap excess letdown line around bag and throw clear of
- 38 aircraft.

- 1 7. Inform pilot if more cargo is to be lowered. Pilot/spotter will determine whether
2 to hold hover or orbit area until cargo is ready for subsequent deployment.
- 3 8. When cargo deployment is complete spotter states to pilot, “Lines are away, clear
4 to depart.”
- 5 9. Pilot responds “lines away, clear to depart.”
- 6 10. Spotter closes doors (if necessary), returns to seat and fastens seatbelt.
- 7 11. Radio returned to normal operational mode and flight following authority is
8 informed that cargo operation has been completed.

9 **External Cargo Deployment Procedures**

10 A. Pre-Flight Duties for Cargo Only Missions

- 11 1. Prior to departure, the pilot(s) and involved personnel shall receive a briefing on
12 mission objectives, communications, known hazards, and emergency procedures.
- 13 2. Load calculations and manifests complete and posted.
- 14 3. Spotter puts on harness, ensures safety knife is attached to harness.
- 15 4. Spotter completes necessary pre-flight inspections.
- 16 5. Prior to flight, the spotter must receive a spotter equipment check (see Internal
17 Cargo Deployment Procedures above). When ground personnel are unavailable,
18 the spotter shall have the pilot perform this check. Positive communication
19 between the spotter and pilot must occur to ensure Spotter has attached their
20 tether to an approved hard point.

21 B. Rigging and Loading Cargo

- 22 1. Loaded cargo container is set up in the front of the helicopter.
- 23 2. Attach one end of the cargo strap to the cargo container and the other end to the
24 swivel. External cargo must be attached to the belly hook, utilizing approved
25 equipment.
- 26 3. Spotter performs all appropriate hook checks, attaches single hard loop end of
27 breakaway strap to the top end of the swivel hardware, and then connects swivel
28 system and cargo to helicopter cargo hook.
- 29 4. Rig letdown line through figure 8 and attach a carabiner to the hard loop on the
30 free end of the line.

1 5. Anchor

- 2 • Overhead Anchor: Attach the rigged figure 8 to the overhead anchor
3 carabiners with a third carabiner barrel down, gate facing aft. Once
4 complete, pull the free end of the line and carabiner down to the floor and
5 attach to the Velcro® loop on the breakaway strap. Spotter must secure
6 the breakaway strap attached to the carabiner during flight.

7 **Figure 1 – Overhead Anchor**



- 9 • Floor anchor: Attach the rigged figure 8 with extender strap to the forward
10 attach point on of the floor anchor, typically the opposite side of the pilot.
11 Attach locking carabiner on rigged letdown line to the Velcro® loop on
12 the breakaway strap.

13 6. Lock off letdown line on figure 8.

14 7. Cargo letdown pack must be connected to an appropriate hard point.

15 8. Spotter connects tether, plugs into avionics, completes necessary external cargo
16 checks, boards aircraft, and secures seatbelt.

17 9. Spotter tells pilot, “Tether attached. Load on the hook. OK to depart.”

18 10. Pilot Responds, “Tether attached. Load on the hook. Departing.”

19 C. Pre-Cargo Delivery Sequence

20 1. Pilot(s) flies a reconnaissance of the area to look for hazards and works with
21 spotter to select an appropriate cargo delivery site.

22 2. Contact appropriate flight following authority (ATGS, HLCO, dispatch, etc.)
23 prior to commencing the cargo operation. Spotter communicates with flight
24 following authority & pilot regarding number of loads to be deployed.

25 3. Inform ground personnel to stay clear of cargo during deployment.

26 4. Adjust radios as needed to ensure pilot and spotter communication will not be
27 compromised by excessive radio chatter. Radios must remain on and dialed to the
28 appropriate flight following frequency.

29 5. Where possible helicopter should maintain at least 50ft. clearance above any
30 obstacles before starting a cargo operation.

31 6. If this is not possible and helicopter must descend below the canopy, helicopter
32 will operate within an opening no less than 1 1/2 times the main rotor diameter
33 (e.g. an aircraft with a 36 ft. main rotor diameter would require a 54 ft.
34 diameter opening).

- 1 7. Before starting cargo operations, A HOGE Power check is accomplished at an
2 altitude comparable to the cargo site or greater. A Positive rate of climb must be
3 established without exceeding aircraft limitations. Pilot states, "Hover
4 established. Positive rate of climb. Power is good."
- 5 8. Spotter responds, "Power is good."
- 6 9. Spotter activates hot mic if not done already.
- 7 10. Spotter states to pilot "removing seatbelt" and "moving into position". (Some
8 spotters may elect to remain in the seat with seatbelt fastened).
- 9 11. Spotter attaches hard loop on the breakaway strap and ensures carabiner is locked.
10 Spotter states to pilot, "Hard loop connected" Pilot confirms, "Hard loop
11 connected."
- 12 12. Spotter unlocks the figure 8 and ensures the carabiner is clear of the skid.
- 13 13. Spotter finalizes proper position over cargo site. Using pilot's perspective (left,
14 right, forward, back, and up or down relative to altitude above the ground).

15 D. Cargo Delivery Sequence

- 16 1. Spotter will communicate with pilot regarding adequate main and tail rotor
17 clearance, power assessments, and cargo spot status throughout the cargo
18 operation. Using pilot's perspective (left, right, forward, back, and up or down
19 relative to altitude above the ground).
- 20 2. Spotter states to pilot, "Cargo is ready for deployment on your count."
- 21 3. Pilot gives a three (3) count and releases cargo from belly hook.
- 22 4. Spotter begins lowering cargo with positive control of letdown line; do not allow
23 un-arrested descent of cargo. Keep pilot informed of actions and progress of
24 cargo descent:
 - 25 • "Cargo away"
 - 26 • "Cargo halfway down"
 - 27 • "Cargo on the ground"
- 28 5. When cargo is on the ground, unhook figure 8 from carabiner/anchor and remove
29 letdown line. Hold slack in line to prevent billowing and unhook letdown line bag
30 from hard point. Wrap excess letdown line around bag and throw clear of aircraft.
- 31 6. When cargo deployment is complete spotter states to pilot, "Lines are away.
32 Clear to depart."
- 33 7. Pilot responds "Lines away. Clear to depart."
- 34 8. Spotter closes doors (if necessary), returns to seat and fastens seatbelt.
- 35 9. Radio returned to normal operational mode and flight following authority is
36 informed that cargo operation has been completed.

Cargo Letdown Emergency Procedures

There are many circumstances that can constitute an in-flight emergency. Pilots and spotters must understand that the consequences of an emergency change significantly once cargo has been deployed. It is extremely important for a pilot and spotter to have a firm understanding of the situation and discuss up front as many circumstances as possible prior to operations.

“Emergency procedures” are defined as the standard established procedures used to respond to a situation, serious in nature, developing suddenly or unexpectedly, and demanding immediate action. In the cargo delivery environment, clear and concise communication culminating in a coordinated response between the spotter and pilot is critical to a successful outcome.

There are two (2) basic categories of emergencies:

Those that require an immediate response:

There are a limited number of emergencies that fall into this category. In the cargo delivery environment these emergencies are characterized by a need to depart the hover without delay. In this type of emergency, the possibility of affecting a positive outcome will be impacted by the ability to jettison lines quickly.

Examples of possible emergencies that require an immediate response:

- Engine Failure
- Tail Rotor Failure
- Hard over of controls
- Engine over speed/driveshaft failure
- Compressor Stall (Single engine)
- Governor Failure Low Side (Twin Engine)
- Governor Failure (Single Engine)

Those that permit a delayed response:

There are any numbers of events, typically mechanical or environmental, that fall into this category. In the cargo delivery environment, these events are characterized by an ability to delay the departure from the hover. In events of this nature there is typically time to complete a cargo sequence prior to departing the hover.

Caution: These procedures may not require immediate action and responses can vary in time from seconds to minutes.

Examples of possible events that may permit a delayed response:

- Transmission/Engine/Tail Rotor Gear Box Chip Light
- Hydraulic Failure
- Oil temp/Oil pressure light
- Hydraulic temp or pressure light
- Unknown Master Caution

- 1 • Fire light (require pilot check of controls and for fire on board)
- 2 • Stuck pedal
- 3 • Fuel control or governor failure high side (Twin Engine)
- 4 • Electrical failure
- 5 • Fuel/air filter clog
- 6 • Fuel pump failure
- 7 • Decrease in rotor RPM
- 8 • Compressor Stall (twin engine)
- 9 • Severe up or down drafts

Cargo Letdown Emergency Procedures: Internal Cargo

Challenge/Response Communications - Immediate Response Emergency

PILOT states, “Abort. Abort”

A. If cargo is still secure:

- Spotter states, “Clear”
- Immediately take seat and buckle seatbelt
- Aircraft will depart immediately and pilot will comply with Rotorcraft Flight Manual direction

B. If the cargo process has begun and the cargo has been unsecured:

- Spotter states, “Clearing cargo”

C. If cargo is still in the aircraft:

- Re-secure cargo or Cut line directly above cargo container and Jettison cargo out open door
- Spotter states, “Clear”
- Immediately take seat and buckle seatbelt

D. If cargo has been delivered outside the aircraft:

- Cut line
- Spotter states, “Clear” when the cargo container has cleared the aircraft
- Immediately take seat and buckle seatbelt

NOTE: The “Abort. Abort ...” and the subsequent actions taken by the pilot and spotter will occur almost simultaneously. Pilot, will attempt to gain forward flight, if possible, which will require that the spotter clear the cargo without hesitation. The pilot is not expected to wait for the “Clear” from the spotter before taking action to appropriately respond to the emergency. Any failure to immediately clear the aircraft of cargo and line may pose a threat to the aircraft and personnel onboard.

1 **Challenge and Response Communications – Delayed Response Emergency**

2 When experiencing this type of emergency, “**EXPEDITE. EXPEDITE**” is intended as the
3 initial alert for the crew communicating that the cargo deployment must be curtailed due to an
4 aircraft malfunction or environmental condition. Communication shall not be limited and pilot
5 should advise the crew of the status of the aircraft and the intended duration of the flight.

6 Unnecessary delays should be avoided due to the critical nature of the flight profile. The only
7 time there should be any delay is during the cargo deployment sequence. If there is to be a
8 delay, the spotter should advise the pilot as to the amount of time needed to get the cargo on the
9 ground and cut line.

10 Events of a mechanical nature require termination of the cargo mission until such problem(s) can
11 be resolved. An event of this nature requires that the pilot announce the problem, describe the
12 problem and inform the spotter of the actions required to address the event. The ensuing
13 discussion between pilot and spotter will determine a course of action and the time available.

14 **Pilot states, “Expedite. Expedite.”**

15 A. If cargo is still secure:

- 16 • Spotter states “Clear”
- 17 • Immediately take seat and buckle seatbelt.
- 18 • Aircraft will depart immediately and pilot will comply with Rotorcraft Flight
19 Manual direction.

20 B. If cargo has been unsecured but not delivered outside the aircraft:

- 21 • Spotter states, “Clear”
- 22 • Secure the cargo as quickly as possible
- 23 • Immediately take seat and buckle seatbelt

24 C. If you are in mid sequence (cargo has been delivered past the skids):

- 25 • Continuation of the cargo delivery may be permissible if circumstances warrant
- 26 • Once cargo is on the ground the spotter will cut the line freeing the aircraft for
27 immediate departure and compliance with POH direction

28 Events of an environmental nature may be resolved by waiting for the event to subside or
29 relocating to an alternate cargo site. An event of this nature requires that the pilot inform the
30 spotter of the actions required to address the event. The ensuing discussion between pilot and
31 spotter will determine a course of action and whether relocation is necessary.

32 A. If relocation is not required:

- 33 • Once the pilot and spotter concur that the event is no longer of concern cargo
34 operations can resume

35 B. If relocation is required: Pilot states, “Expedite, Expedite.”

- 36 • If cargo is still secure:
 - 37 ○ Spotter states, “Clear”

- 1 ○ Immediately take seat and buckle seatbelt
- 2 ○ Aircraft will depart immediately and pilot will comply with Rotorcraft Flight
- 3 Manual direction
- 4 • If cargo has been unsecured but not delivered outside the aircraft:
- 5 ○ Spotter states, “Clear”
- 6 ○ Secure the cargo as a quickly as possible
- 7 ○ Immediately take seat and buckle seatbelt
- 8 ○ If you are in mid sequence (cargo has been delivered past the skids)
- 9 C. Continuation of the cargo delivery may be permissible if circumstances warrant.
- 10 D. Once cargo is on the ground the spotter will cut the line freeing the aircraft for immediate
- 11 departure and compliance with Rotorcraft Flight Manual direction.

12 **Cargo Letdown Emergency Procedures: External Cargo**

13 **Challenge/Response Communications – Immediate Response Emergency**

14 **Pilot states, “Abort. Abort.”**

- 15 A. Cargo still secure on the belly hook and cargo process has not yet commenced while
- 16 aircraft is in a hover or in forward flight with breakaway strap hooked “Soft”:
- 17 • Pilot jettisons external cargo from the aircraft
- 18 • Spotter states, “Clear”
- 19 • Immediately take seat and buckle seatbelt
- 20 B. If cargo process has started, break away strap is hooked “hard” w/ figure 8 locked off and
- 21 cargo is still on the hook:
- 22 • Spotter states, “Cutting Line”
- 23 • Spotter cuts line below the figure 8
- 24 • Spotter states, “Clear – Jettison Load”
- 25 • Immediately take seat and buckle seatbelt
- 26 C. If cargo process has started break away strap is hooked “hard” w/ figure 8 unlocked and
- 27 cargo still on the belly hook:
- 28 • Spotter states, “Cutting Line”
- 29 • Spotter cuts line below the figure 8
- 30 • Spotter states, “Clear – Jettison Load”
- 31 • Immediately take seat and buckle seatbelt
- 32 D. If the cargo process has begun and the cargo has been released off the belly hook:
- 33 • Spotter states “Cutting Line”

- 1 • Spotter cuts line below the figure 8
- 2 • Spotter state “Clear” when the letdown line has cleared the aircraft
- 3 • Immediately take seat and buckle seatbelt

NOTE: The “Abort. Abort ...” and the subsequent actions taken by the pilot and spotter will occur almost simultaneously. Pilot, will attempt to gain forward flight, if possible, which will require that the spotter clear the cargo without hesitation. The pilot is not expected to wait for the “Clear” from the spotter before taking action to appropriately respond to the emergency. Any failure to immediately clear the aircraft of cargo and line may pose a threat to the aircraft and personnel onboard.

9 **Challenge/Response Communications – Delayed Response Emergency**

10 When experiencing this type of emergency, “**Expedite. Expedite**” is intended as the initial alert
11 for the crew communicating that the cargo deployment must be curtailed due to an aircraft
12 malfunction or environmental condition. Communication shall not be limited and pilot should
13 advise the crew of the status of the aircraft and the intended duration of the flight.

14 Unnecessary delays should be avoided due to the critical nature of the flight profile. The only
15 time there should be any delay is during the cargo deployment sequence. If there is to be a
16 delay, the spotter should advise the pilot as to the amount of time needed to get the cargo on the
17 ground and cut line.

18 Events of a mechanical nature require termination of the cargo mission until such problem(s) can
19 be resolved. An event of this nature requires that the pilot announce the problem, describe the
20 problem and inform the spotter of the actions required to address the event. The ensuing
21 discussion between pilot and spotter will determine a course of action and the time available.

22 **Pilot states, “Expedite. Expedite.”**

23 A. If cargo is still secure on the belly hook and cargo process has not yet commenced while
24 aircraft is in a hover or in forward flight with breakaway strap hooked “Soft”:

- 25 • Spotter states, “Clear” Cargo can be jettisoned at pilot discretion
- 26 • Immediately take seat and buckle seatbelt
- 27 • Aircraft will depart immediately and pilot will comply with Rotorcraft Flight
28 Manual direction

29 B. If cargo process has started, break away strap is hooked “hard” w/ figure 8 locked off and
30 cargo is still on the hook:

- 31 • Spotter states, “Going to soft loop”
- 32 • Spotter disconnects breakaway strap from carabiner and connects carabiner to soft
33 loop. Spotter states “Clear- to Jettison Load” at pilot discretion
- 34 • Immediately take seat and buckle seatbelt

35 C. If cargo process has started break away strap is hooked “hard” w/ figure 8 unlocked and
36 cargo still on the belly hook:

- 37 • Spotter states “Clearing Breakaway Strap”

- 1 • Spotter disconnects Breakaway strap from carabineer or cuts letdown line below
- 2 the figure 8
- 3 • Spotter states “Clear to Jettison Load” at pilot discretion
- 4 • Immediately take seat and buckle seatbelt
- 5 D. If the cargo process has begun and the cargo has been released off the belly hook:
- 6 • Continuation of the cargo delivery may be permissible if circumstances warrant
- 7 • Once cargo is on the ground the spotter will cut the line below the figure 8 freeing
- 8 the aircraft for immediate departure and compliance with Rotorcraft Flight
- 9 Manual direction
- 10 • Spotter states, “Clear” when the letdown line has cleared the aircraft
- 11 • Immediately take seat and buckle seatbelt
- 12 Events of an environmental nature may be resolved by waiting for the event to subside or
- 13 relocating to an alternate cargo site. An event of this nature requires that the pilot inform the
- 14 spotter of the actions required to address the event. The ensuing discussion between pilot and
- 15 spotter will determine a course of action and whether relocation is necessary.
- 16 A. If relocation is not required:
- 17 1. Once the pilot and spotter concur that the event is no longer of concern cargo
- 18 operations can resume
- 19 B. If relocation is required Pilot states “Expedite, Expedite”:
- 20 1. Cargo still secure on the belly hook and cargo process has not yet commenced
- 21 while aircraft is in a hover or in forward flight with breakaway strap hooked
- 22 “Soft”.
 - 23 • Spotter states, “Clear” Cargo can be jettisoned at pilot discretion
 - 24 • Spotter immediately takes seat and fastens seatbelt
 - 25 • Aircraft will depart immediately and pilot will comply with Rotorcraft
 - 26 Flight Manual direction
- 27 2. If cargo process has started, break away strap is hooked “hard” w/ figure 8 locked
- 28 off and cargo is still on the hook:
 - 29 • Spotter states “Going to soft loop”
 - 30 • Spotter disconnects breakaway strap from carabiner and connects
 - 31 carabiner to soft loop. Spotter states “Clear- to Jettison Load” at pilot
 - 32 discretion
 - 33 • Immediately take seat and buckle seatbelt
- 34 3. If cargo process has started break away strap is hooked “hard” w/ figure 8
- 35 unlocked and cargo still on the belly hook:
 - 36 • Spotter states, “Clearing Breakaway Strap”
 - 37 • Spotter disconnects Breakaway strap from carabineer or cuts letdown

- 1 line below the figure 8
- 2 • Spotter states, “Clear to Jettison Load” at pilot discretion
- 3 • Immediately take seat and buckle seatbelt
- 4 4. If the cargo process has begun and the cargo has been released off the belly hook:
- 5 • Continuation of the cargo delivery may be permissible if circumstances
- 6 warrant
- 7 • Once cargo is on the ground the spotter will cut the line below the figure
- 8 8 freeing the aircraft for immediate departure and compliance with
- 9 Rotorcraft Flight Manual direction
- 10 • Spotter states, “Clear” when the letdown line has cleared the aircraft
- 11 • Immediately take seat and buckle seatbelt

12 **Cargo Letdown Training**

13 **Objectives**

- 14 1. Describe the function of all cargo letdown equipment
- 15 2. Demonstrate proper cargo letdown configuration
- 16 3. Demonstrate proper cargo letdown procedures without error
- 17 4. Demonstrate effective communications with pilot

18 **Key Points:**

- 19 • Gather cargo letdown equipment
- 20 • Reference procedures, Challenge and response in Appendix B
- 21 • Pilot should be present during this phase of the training
- 22 • Utilize Cargo Letdown Spotter Qualification Record, Appendix B

23 **Lesson Outline**

24 **A. Ground Training**

- 25 1. Review cargo letdown procedures.
- 26 • Familiarize trainee with equipment.
- 27 • Review applicable portions of IHRG.
- 28 2. Familiarize trainee with spotter equipment checks and spotter “buddy check”.
- 29 • Stress that the spotter is responsible to ensure all equipment is in good
- 30 condition and properly fitted.
- 31 3. Cargo letdown training should be accomplished utilizing a Cargo Letdown tower
- 32 in addition to helicopter mock-ups, but utilizing helicopter mock-ups as the sole
- 33 means of ground training is acceptable.

- 1 4. Demonstrate anchor inspection.
- 2 5. Demonstrate placement and securing of cargo.
- 3 6. Demonstrate pre-flight checks, e.g., spotter equipment check, hook checks, etc.
- 4 7. Demonstrate cargo configuration procedures.
- 5 8. Demonstrate cargo letdown procedures, including spotter and pilot
- 6 communications, and emergency procedures.
- 7 9. Trainee will perform the following until instructor deems competency is
- 8 accomplished (minimum of three (3) complete cycles without procedural error):
- 9
 - Anchor inspection
- 10
 - Secure of cargo
- 11
 - Cargo letdown procedures
- 12
 - Spotter and pilot communications
- 13
 - Emergency procedures

14 B. Helicopter Deployment

- 15 1. Under the supervision of a qualified spotter, trainee will inspect equipment,
- 16 prepare cargo load, configure the helicopter and deploy a minimum of ten cargo
- 17 letdown cycles, without procedural error, at low, medium, and high heights. Five
- 18 (5) of these deployments will be in typical terrain. Final evaluation will be
- 19 completed by a Check Spotter.
- 20 2. Should at any point during live cargo deployment the trainee makes repetitive
- 21 procedural errors, the instructor will return the trainee to ground training for
- 22 additional training.

INSTRUCTIONS FOR COMPLETING QUALIFICATION RECORDS

Each requirement or task for each qualification record shall be completed under the direct supervision of a qualified HERS/HCLS and signed and dated by the evaluating Spotter Trainer. Comments should be included in the space provided to ensure appropriate documentation of performance and to provide feedback to trainees. The number of evaluations of each task is not limited to the number of signature lines provided within the Evaluator/Date column.

CARGO LETDOWN TRAINEE:

--	--	--

TRAINEE'S NAME

DUTY STATION

PHONE NUMBER

TRAINEE RECOMMENDED BY:

--	--	--

NAME

TITLE

PHONE NUMBER

QUALIFICATION RECORD INITIATED BY:

--	--	--

NAME

TITLE

PHONE NUMBER

Helicopter Make/Model:

Notes:

--	--

SIGNATURE

DATE

Position: CARGO LETDOWN SPOTTER **Trainee:**

TASK: CARGO LETDOWN GROUND TRAINING	Evaluator	Date	Comments
1. Review IHRG Chapters 3,4,7, and Appendix B			
2. Equipment inspections procedures			
3. Documentation of equipment			
4. Discuss model specific procedures			
5. Review Go-No Go checklist & Discuss mission specific Risk Mgt.			
6. Discuss CRM and spotter directions with pilot			
7. Discuss emergency procedures with pilot present			
TASK: CARGO LETDOWN SIMULATOR (optional)	Evaluator	Date	Comments
1. Tower, simulator briefing			
2. Cabin configuration and rigging (model specific)			
3. Challenge and Response with pilot			
4. Proper equipment checks			
5. Cargo configuration			
6. Cargo equipment orientation			
7. Rigging and deploying cargo			
8. Maintain visual on cargo			
9. Emergency procedures			
TASK: CARGO LETDOWN MOCK-UPS	Evaluator	Date	Comments
1. Proper Briefing crew /pilot			
2. Proper rigging /model specific			
3. Verbalization with pilot			
4. Proper equipment checks			
5. Cargo configuration			
6. Cargo equipment orientation			
7. Maintain control during deployment			
8. Maintain focus and control of mission			
9. Emergency procedures			
TASK: CARGO LETDOWN INITIAL LIVE HELICOPTER	Evaluator	Date	Comments
1. Proper rigging /model specific			
2. Proper Briefing crew /pilot			
3. Proper Equipment Checks			
4. Proper Verbalization			
5. Ensure power check completed			
6. Select adequate cargo letdown site and alternate sites and notify ground resources of mission (Stay Clear)			
7. Maintain aircraft and rotor clearance throughout sequence			

8. Maintain visual on cargo letdown line and cargo			
9. Maintain controlled decent of load to the ground			
10. Maintain focus and control of mission			
TASK: CARGO LETDOWN CHECKRIDE	Evaluator	Date	Comments
1. Configure helicopter with proper Cargo rigging and perform appropriate equipment checks			
2. Maintain communication with appropriate flight following authority			
3. Identify flight hazards			
4. Identity adequate cargo letdown and alternate emergency sites			
5. Assess helicopter performance capabilities at local temp. and altitude, perform power check			
6. Assist pilot to position helicopter over cargo letdown site			
7. Deploy cargo using appropriate verbiage with pilot			
8. Maintain clearance of cargo from all obstacles			
9. Maintain aircraft and rotor clearance throughout cargo sequence			
10. Deploy cargo maintaining controlled decent at all times			
11. Establish communication with firefighters on the ground. Report to appropriate flight following authority			
12. Debrief with HERS/HCCS			
TASK: ASSIST IN INSTRUCTION OF CARGO LETDOWN TRAINING	Evaluator	Date	Comments
BASE NAME:			
1.			
2.			
3.			
TASK: CHECKRIDE PROCEDURAL ERROR FREE CYCLES	Evaluator	Date	Comments
1. Low < 75' AGL			
2. Low < 75' AGL			
3. Medium 75' to 150' AGL			
4. Medium 75' to 150' AGL			
5. High Above 150" AGL			
6. Low - Typical Terrain			
7. Medium - Typical Terrain			
8. Medium - Typical Terrain			
9. High - Typical Terrain			
10. High - Typical Terrain			

