

November, 2001

Appendix E

COURSE: Aviation - Helicopter Training	INSTRUCTOR:
TITLE OF LESSON: Interagency Helirappel Training	DATE:
TIME PERIOD (TOTAL):	PLACE:
TYPE OF LESSON: I - Introduction	
CLASSROOM:	ASSISTANTS:
TRAINING AIDS:	
OBJECTIVE(S):	

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<p>I. INTRODUCTION</p> <p>A. Definition Helirappelling is the deployment of certified personnel from a hovering helicopter by means of an approved rope, a descent device, and ancillary equipment. Rappelling is comprised of a smooth, controlled, expeditious descent to the ground or other suitable fixed object.</p> <p>B. History</p> <ol style="list-style-type: none"> 1. Late 1950s - U.S. Military 2. 1964, Bell 47 over Shasta Lake 3. 1966, USDA with Bell 204 on Klamath NF, test program 4. 1970, BLM in Alaska - Accident involving the Sky Slide 5. 1972, B.C. Forests, Canada Utilization for initial attack on fire 6. 1972, USDA at Redmond Air Center began test with Bell 205 7. 1974, Bell 212 was introduced to the program 8. 1982, Single turbine light helicopter introduced to the program by Yosemite NP. <p>II. AUTHORITY</p> <ol style="list-style-type: none"> A. Letter of Authorization B. Operating Authority C. Operating Plan D. Agency-Specific Policy, Fire Missions Only for FS <p>III. PURPOSE AND USE OF INTERAGENCY HELICOPTER RAPPEL GUIDE (IHRG)</p> <ol style="list-style-type: none"> A. Develop program standardization 	

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<p>B. Procedures guide C. Reference and source list.</p> <p>IV. INTERAGENCY HELIRAPPEL STEERING COMMITTEE</p> <p>A. Review helirappel operations and practices</p> <ol style="list-style-type: none"> 1. Direction 2. Interagency cooperation 3. Establish operating procedures 4. Training needs 5. Equipment development <p>B. Recommend actions</p> <ol style="list-style-type: none"> 1. Resolve problems 2. Exchange ideas 3. Disseminate information 4. Technical input 5. Training development <p>V. UTILIZATION (AGENCY POLICY)</p> <p>A. Search and Rescue</p> <ol style="list-style-type: none"> 1. Hasty team placement 2. Equipment deployment 3. Victim evacuation <p>B. Law Enforcement</p> <p>C. Fire</p> <ol style="list-style-type: none"> 1. Initial attack 2. Helispot construction 3. Hot-spot suppression 4. Equipment deployment 5. Rescue <p>VI. QUALIFICATIONS Reference IHRG, Chapter 2</p> <p>VII. DOCUMENTATION Unit log of all helirappels.</p> <p>VIII. PROFICIENCY Refer to IHRG, Chapter 2.</p>	<p>Go to IHRG, pull out copies of rappeller, rope, and genie logs and demonstrate proper completion of forms.</p>

Rappeller Training

COURSE: Aviation - Helicopter Training	INSTRUCTOR:
TITLE OF LESSON: Interagency Helirappel Training	DATE:
TIME PERIOD (TOTAL): 3 Hours	PLACE:
TYPE OF LESSON: II - Equipment Orientation, Issue, & Fit	
CLASSROOM:	ASSISTANTS:
TRAINING AIDS: (1) Interagency Helicopter Rappel Guide for each trainee; (2) All articles of rappel equipment.	
OBJECTIVE(S): * Demonstrate proper use and care of equipment. * Development of equipment confidence.	

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<p>I. RAPPEL EQUIPMENT</p> <p>A. All equipment will be monitored, and life expectancy will be followed in order to maintain an adequate margin of safety. Agency-specific direction will be followed.</p> <p>B. Equipment approval is by letter of request through Bureau or Agency Manager to the Director.</p> <p>C. Local procedures shall be followed.</p> <p>D. Repairs are to be made only by check spotter.</p> <p>II. PERSONNEL PROTECTIVE EQUIPMENT</p> <p>A. Helmet</p> <ol style="list-style-type: none"> 1. Purpose 2. Fit 3. Inspection <p>B. Fire Resistant Clothing</p> <ol style="list-style-type: none"> 1. Purpose 2. Fit 3. Inspection <p>C. Leather Boots</p> <ol style="list-style-type: none"> 1. Purpose 2. Fit 3. Inspection <p>D. Rappel Gloves</p>	<p>Demonstrate proper fit and care and use of all rappel equipment.</p>

Rappeller Training

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<p>1. Purpose - use only for rappelling. 2. Fit 3. Inspection</p> <p>E. Personal Gear Bag 1. Purpose 2. Fit 3. Inspection</p> <p>F. Rappel and Spotter Harness 1. Purpose 2. Fit 3. Inspection 4. Care</p> <p>G. Descent Device 1. Purpose 2. Fit 3. Inspection 4. Care</p> <p>H. Rope 1. Purpose 2. Fit - Must integrate with descent device 3. Inspection 4. Care 5. Avoid: a. Stepping on ropes b. Exposing to prolonged sunlight c. Dragging over rough surfaces d. Dragging on ground e. Allowing contact with chemicals f. Overload g. Placing near heat source</p> <p>I. Carabiners 1. Purpose 2. Fit 3. Inspection 4. Care</p> <p>J. Knife 1. Purpose 2. Fit 3. Inspection 4. Care</p> <p>K. Eye Protection 1. Purpose</p>	<p>If applicable, demonstrate proper use of PGB</p> <p>Refer to IHRG and manufacturer's instruction manual and technical bulletin</p> <p>See IHRG for particular details on rope care. Refer to SDEDC Technical Bulletin on Ropes 5/25/90.</p> <p>Refer to IHRG on Carabiners. Also demonstrate use of snub-strap</p> <p>Refer to IHRG Section on knives</p> <p>Approved safety glasses or goggles</p>

Rappeller Training

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<ul style="list-style-type: none"> 2. Fit 3. Inspection 4. Care <p>III. AIRCRAFT EQUIPMENT NOTE: Pilot should assist with this section.</p> <p>A. Rappel Anchor - Aircraft Specific</p> <ul style="list-style-type: none"> 1. FAA Supplemental-Type Certificate 2. FAA 337 Certificates 3. Aeronautical Accessories - Overhead anchors mounted above and outside the rear doors on the Bell 206 series of helicopters 4. Contractor - Built/Installed/Certified 	<p>are required</p> <p>Only agency-approved rappels will be used. Rappel anchors are model-specific.</p>

Rappeller Training

COURSE: Aviation - Helicopter Training	INSTRUCTOR:
TITLE OF LESSON: Interagency Helirappel Training	DATE:
TIME PERIOD (TOTAL): 1 Hour	PLACE:
TYPE OF LESSON: III - Ground Training	
CLASSROOM:	ASSISTANTS:
TRAINING AIDS: Training ropes, suitable open area, personal rappel gear, descent control device.	
<p>OBJECTIVE(S):</p> <ul style="list-style-type: none"> * Build rappeller confidence in equipment. * Demonstrate basic relationship between rappel equipment. * Develop individual proficiency in handling the descent device, rope, and lock-off procedures. 	

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<p>I. EQUIPMENT OPERATIONS DEMONSTRATION</p> <ul style="list-style-type: none"> A. Rope will attach to immovable object at waist-level. B. Descent device is attached to rope. C. Instructor will demonstrate hookup. D. Instructor will demonstrate "lock-off" configuration and will explain function and use of "lock-off." E. Demonstrate spotter checks. F. Lean backwards, testing the "lock-off." G. "Unlock" and demonstrate braking and controlled descent by walking backwards. H. Instructor will then start over and repeat process outlined in A-G, then demonstrate a lock-off to a tie-off using hand signals. <p>II. FIELD PRACTICAL</p> <ul style="list-style-type: none"> A. Instructor (and assistants) will now start individual trainee instruction on procedures and techniques just demonstrated. B. Follow the same sequence just demonstrated. 	<p>Assistants should set up ground area with proper equipment, i.e., ropes. Trainee group suited in complete rappel gear, (Nomex, harness, PGB, knife, helmet, gloves, descent control device) and assembled in suitable open area.</p> <p>The lock-off is a basic and important concept in the descent. The "lock-off" is used to prevent the rope from physically passing through the descent device, therefore making any downward travel impossible. The "lock-off" is used in the "pre-exit" phase of rappelling as well as in the emergency tie-off procedures that will be discussed later. Utilizing the "lock-off", the rappellers can safely stop and secure them self to the rope at any time during the descent.</p> <p>Stress that all PPE will be worn during training.</p> <p>Remember that we attain 100% proficiency before moving on to the next lesson.</p>

COURSE: Aviation - Helicopter Training	INSTRUCTOR:
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Rappeller Training

TITLE OF LESSON: Interagency Helirappel Training	DATE:
TIME PERIOD (TOTAL): 2 Hours	PLACE:
TYPE OF LESSON: IV - Ground Training - Elevated Platform	
CLASSROOM:	ASSISTANTS:
TRAINING AIDS: Training ropes, Low Tower Platform, Harnesses, Safety Strap, two instructors/spotters.	
<p>OBJECTIVE(S):</p> <ul style="list-style-type: none"> * Demonstrate controlled descent. * Demonstrate lock-off and tie-off. * Make three consecutive descents without procedural error. * Build confidence in equipment and procedures. 	

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<p>I. Instructor will demonstrate hand signals and procedures simulating the exit techniques required.</p> <p>A. Instructor will demonstrate low tower rappel.</p> <ol style="list-style-type: none"> 1. Hookup 2. Equipment check "Thumbs Up." 3. Move into position. 4. Unlock. 5. Exit platform and begin descent. 6. Demonstrate a mid-rappel lock-off. 7. Demonstrate emergency procedures and signals. 8. Demonstrate proper landing and unhooking technique. <ol style="list-style-type: none"> a. <u>Slow before landing, assessing landing area before final ground contact.</u> b. Take firm ground stance, squat, and pull slack in rope. No knee touching ground. c. Unhook from descent control device. d. Move away from simulator. <p>B. Trainee group will execute low tower rappel. See IHRG for minimum numbers of cycles.</p> <p>II. Instructor and assistants will now start individual trainee instructions on procedures and techniques just demonstrated.</p> <p>At local option, procedures can be duplicated using higher platform.</p>	<p>Assistants should set up low tower platform with proper equipment; i.e., ropes, carabiners, and safety strap(s).</p> <p>Refer to IHRG.</p> <p>Stress that at least one hand must be kept in a braking position throughout the rappel.</p> <p>Platform spotter and ground safety spotter will be assigned for each rope in use.</p> <p>Remember continual and repetitive training in these procedures is recommended to reach levels of confidence and proficiency. Spotters will emphasize exit procedures, movement when exiting skid, emergency procedures, "buddy checks," and hand signals.</p> <p>Remember that we will attain 100% proficiency before moving on to next section.</p>

Rappeller Training

COURSE: Aviation - Helicopter Training	INSTRUCTOR:
TITLE OF LESSON: Interagency Helirappel Training	DATE:
TIME PERIOD (TOTAL): 2 Hours	PLACE:
TYPE OF LESSON: V - Emergency Procedures	
CLASSROOM:	ASSISTANTS:
TRAINING AIDS:	
OBJECTIVE(S): * Demonstrate and practice emergency procedures.	

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<p>I. AIRCRAFT</p> <p>A. Pilot's Procedures</p> <ol style="list-style-type: none"> 1. Mechanical problems <ol style="list-style-type: none"> a. Hydraulic boost failure. b. Gradual oil pressure loss. c. Caution light. d. Power loss. e. Catastrophic failure. 2. Don't change the pilot's methods. Discuss emergency procedures. Pilots have formed habits which they will fall back on when things start happening, so we should adjust our procedures to fit their reactions. <p>II. RAPPEL CYCLE</p> <p>A. Identify the problem:</p> <ul style="list-style-type: none"> Rope entangled in helicopter Rappeller entangled in helicopter Rappeller hung-up on rope or in vegetation Rappeller oscillation Rope hung-up in vegetation Foreign material on rope Rope knotted or twisted Landing spot unsuitable <p>B. Corrective procedures</p> <ol style="list-style-type: none"> 1. Lock-off <ol style="list-style-type: none"> a. Stop the descent b. Hold rope tight in brake hand c. It helps to hold the descent control device steady with other hand. 	<p>Remember risks exist and consequences are potentially FATAL! Everyone must understand this concept.</p> <p>HINT: The trick to locking-off is to use a dynamic move rather than stopping and trying to hold your weight while moving rope.</p>

Rappeller Training

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<p>d. Let brake hand move towards descent device</p> <p>e. When 8” away, smoothly draw the rope over the top of the descent control device</p> <p>f. Wedge it down between descent control device and standing line.</p> <p>g. A second wrap will secure it</p> <p>2. Tie-off</p> <p>a. Complete lock-off</p> <p>b. Pull or run loose end of rope beneath attach point on rappel harness until 4-6 feet of slack is obtained.</p> <p>c. Use this slack to tie a half hitch around the standing line above the descent control device.</p> <p>C. Signals to spotter. “Spread Eagle” - descent no longer possible, awaiting spotter instructions.</p> <p>D. Rappeller in distress. In the event a rappeller, while performing a rappel, is injured or unable to proceed, the following procedures shall be implemented.</p> <p>1. If the rope becomes lodged in the descent device and descent is impeded:</p> <p>a. Immediately institute a double lock-off</p> <p>b. Signal the spotter “SPREAD-EAGLE”</p> <p>c. If “CUT” signal is received, proceed with emergency tie off procedures.</p> <p>d. Pilot and spotter will institute a fly-away to a suitable landing area.</p> <p>2. If rappeller or rope drifts into a tree or other hazard:</p> <p>a. Immediate lock-off</p> <p>b. Attempt to disentangle them self or the rope</p> <p>c. If unable to free entanglement, spotter may elect to lower rappeller to the ground if practical. If this is not possible the cut signal will be given.</p> <p>3. Rappeller entangled on the helicopter:</p> <p>a. Correct within 30 seconds or</p> <ul style="list-style-type: none"> - Rappeller re-enters helicopter. - Cut rope - Advise pilot “All Clear” 	<p>Practice cutting unloaded retired ropes.</p> <p>Spotter and Pilot may elect to lower rappeller to the ground while they remain locked off.</p> <p>ALL emergency procedures will be practice in training where a controlled environment can be maintained. Each trainee will be proficient in each procedure before advancing to helicopter rappels.</p>
COURSE: Aviation - Helicopter Training		INSTRUCTOR:
TITLE OF LESSON: Interagency Helirappel Training		DATE:
TIME PERIOD (TOTAL): 3 Hours		PLACE:

Rappeller Training

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
TYPE OF LESSON: V - Ground Training - High Tower/Helicopter Simulator		
CLASSROOM:	ASSISTANTS:	
TRAINING AIDS: Trailing Rope, High Tower Platform (min. 20' AGL) w/Simulator, Fully Equipped Rappeller/Trainees, Safety Strap, two instructors/spotters, and two ground safety spotters.		
<p>OBJECTIVE(S):</p> <ul style="list-style-type: none"> * Proficiency in exit from simulator. * Demonstrate controlled descent. * Demonstrate lock-off and tie-off. * Make five consecutive rappels without procedural error including 3 demonstrating emergency procedures prior to helicopter mock-ups. * Demonstrate emergency procedures and hand signals. 		

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<p>I. HIGH TOWER/HELICOPTER SIMULATOR DEMONSTRATION</p> <p>A. Instructor will give an orientation/review on operational function of the high tower. Instructor should respond to any questions the trainees have.</p> <p>B. Instructor will have at least two training assistants conduct a mock-up simulation and demonstration rappel from the high tower. Demonstrate:</p> <ol style="list-style-type: none"> 1. "Buddy check" 2. Rappel seating positions 3. Seat belts 4. Spotter equipment check 5. Simulate in-flight and pre-exit procedures Remove seat belts using appropriate signals. 6. Rope deployment 7. Moving to door 8. Position on skids 9. "OK" to descend 10. Unlock 11. Exit from skid 12. Descend <ol style="list-style-type: none"> a. Discuss speed of rappel <ol style="list-style-type: none"> (1) Too fast - adverse effect on equipment, glazing of rope, etc. (2) Too slow - increased hover time. b. Climatic conditions influencing rope speed c. Minimal braking and bouncing d. Maintain proper braking hand position 13. Landing <ol style="list-style-type: none"> a. Reduce rate of descent for safety and 	<p>Assistants should set up high tower platform with proper equipment, i.e., ropes, carabiners, and safety strap(s). Trainees suited in full rappel gear (Nomex, harness, PGB, knife, helmet, gloves, and descent device).</p> <p>Instructor will demonstrate the "thumbs up" signal delivered by each rappeller that indicates to the spotter that the rappeller has checked harness, carabiner, descent device, rope connection, and seat belt and that everything is operational.</p> <p>Be sure and give continued verbal description and instruction of what</p>

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<p><u>clearing of landing area before making ground contact.</u></p> <ul style="list-style-type: none"> b. Both feet firmly planted before assuming squat position while feeding to gain slack in rope. c. Unhooking procedure as fast smooth motion while standing up from squat. d. Clear rappel site. <p>14. Review emergency procedures 15. Dropping rope 16. Clearing helicopter for forward flight.</p> <p>II. TRAINEE HIGH TOWER/SIMULATOR RAPPELS</p> <ul style="list-style-type: none"> A. Instructor responds to questions concerning rappelling procedures, techniques, operations, and demonstrations that have been covered up to this point. B. Spotter will have trainees demonstrate emergency tie-off procedures at various intervals during the high tower training phase. C. Keep in mind that repetitious drilling is an effective tower training technique that improves and sharpens individual confidence and proficiency. <p>III. FIELD PRACTICE</p> <ul style="list-style-type: none"> A. Instructor (and assistants) will now start individual training instruction on procedures and techniques just demonstrated. B. Follow the same sequence as just demonstrated. 	<p>is occurring in the demonstration sequence.</p> <p>Model-specific directions for existing simulator must be followed.</p> <p>Be sure a ground spotter is in place to act as a rope tender.</p> <p>Remember that we will attain 100% proficiency before moving on to the next lesson.</p>

Rappeller Training

COURSE:	INSTRUCTOR:
TITLE OF LESSON: Interagency Helirappel Training	DATE:
TIME PERIOD (TOTAL): 3 Hours	PLACE:
TYPE OF LESSON: VI - Helicopter Mock-Up	
CLASSROOM:	ASSISTANTS:
TRAINING AIDS: Rappel-equipped Helicopter, Rappel-qualified Pilot	
OBJECTIVE(S):	
* Familiarize the trainee with the rappel equipment and procedures in the helicopter to be used.	
* Demonstrated ability to go through mock-up procedures without hesitation and/or error.	

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<p>I. INTRODUCTION</p> <p>Emphasis during the mock-up training is to learn proper positioning, loading techniques, in-flight responsibility, and proper off-load procedures during rappel sequence.</p> <p>II. CONFIGURE HELICOPTER</p> <p>A. Appropriate to helicopter type, rappel anchor installed and appropriate equipment on board.</p> <ol style="list-style-type: none"> 1. Cargo - have on board only those items essential to the mission. 2. Cabin configuration - set up to rappel as directed by pilot and spotter. 3. Anchor - installed correctly and secure. 4. Rappel ropes - sufficient number to accomplish mission (extra maybe carried for operational missions). 5. Safety snub strap - attached to ropes. 6. Ropes - attached to rappel anchor with carabiners locked. 7. Abrasion protection - in place. 8. Let-down lines - sufficient aboard for mission and include braking device. 9. Seat belts - secured and serviceable. 10. Hard-point connections - are secured. 11. Spotter's tether strap - is secured, attached to hard point, and adjusted to provide for sufficient movement. 12. Maps and mission information - accessible and secure. 13. Hand-held radio - accessible and secure. 14. Communication check - radios are operational and frequencies are correct. 	<p>Pilot must be present in helicopter. This is to acquaint the pilot with the rappel sequence and get the group working as a team. Trainees must be fully suited up and equipped during mock-up training. This is the real thing without being airborne.</p> <p>Explain and demonstrate complete mock-up procedure using these items.</p> <p>Demonstrate pilot/spotter coordination and discussion of selection and approval of rappel site.</p> <p>AIRCRAFT SPECIFIC. See appendix B for this lesson.</p> <p>Remember that we will attain 100% proficiency before moving on to the next lesson.</p>

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<p>III. BUDDY CHECK</p> <p>A. Rappeller <--> Rappeller "Buddy Check"</p> <ol style="list-style-type: none"> 1. Helmet - chin strap attached; no loose ends; long hair tucked in and approved eye protection. 2. Shirt or flight suit - tucked in; buttoned to top; flight suit (Nomex) completely zipped. 3. Sleeves - (Nomex) down. 4. Gloves - on; secure (sleeves over gloves and fastened). 5. Harness - correctly fitted; loose straps secured; no twists. 6. Buckles - secured and attached correctly. 7. Descent device - properly attached. 8. Forgecraft hook - gate function check. 9. Knife - (w/lanyard) easily accessible; lanyard secured, out of way. 10. Boots - leather, lace, tops covered by Nomex while sitting. <p>B. Spotter <--> Rappeller</p> <ol style="list-style-type: none"> 1. Helmet - aviator's protective-type, properly fitted; avionics cord long enough to accommodate movement in cabin; chin strap secured; long hair tucked in. 2. Shirt - tucked in; buttoned to top; flight suit (Nomex) completely zipped. 3. Sleeves - (Nomex) down. 4. Gloves - on; secure (sleeves over gloves and fastened). 5. Harness - correctly fitted; loose straps secured; no twists. 6. Buckles - secured and attached correctly. 7. Safety strap - properly attached. 8. Locking Carabiner - (for safety strap) locked. 9. Knife - (w/lanyard) easily accessible; lanyard secured, out of way. 10. Boots - leather, lace, tops covered by Nomex. <p>IV. LOADING</p> <p>A. Helicopter-type specific (see Appendix B).</p> <p>V. SEATING</p> <ol style="list-style-type: none"> A. Position - Helicopter-type specific. B. Safety belts - fastened; snugly tightened. C. Cargo placement <ol style="list-style-type: none"> 1. System-specific 2. Cargo deployment sequence <ol style="list-style-type: none"> a. Before rappel b. After rappel 	

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<p>VI. SYSTEMS CHECK</p> <p>A. Rappeller --> System. Check conducted by buddy and spotter.</p> <ol style="list-style-type: none"> 1. Rigging <ol style="list-style-type: none"> a. Carabiner on rappel anchor. b. Rope connection. 2. Equipment <ol style="list-style-type: none"> a. Descent control device. b. Forgecraft hook. c. Harness 3. PPE <ol style="list-style-type: none"> a. Shirt b. Sleeves c. Gloves d. Trousers 4. Seat belt <p>"Thumbs-up" as "OK" signal.</p> <p>B. Spotter <--> Rappeller(s) system - "Check" conducted by rappellers.</p> <ol style="list-style-type: none"> 1. Rigging <ol style="list-style-type: none"> a. Carabiner on hard-point. b. Spotter tether connection. 2. Equipment <ol style="list-style-type: none"> a. Safety tether b. Carabiner. c. Harness. <ol style="list-style-type: none"> (1) Full body (2) Connection points 3. PPE 4. Seat belt <p>"Thumbs-up" as "OK" signal</p> <p>VII. SIMULATED FLIGHT/APPROACH</p> <p>A. Determine rappel site.</p> <p>B. Rappellers' pay attention to spotter.</p> <p>C. Spotter Actions.</p> <ol style="list-style-type: none"> 1. Communication's with pilot. 2. Discussion about site. 3. Preparation of rappellers. <p>D. Power check.</p> <ol style="list-style-type: none"> 1. High hover 2. On-site. 3. "OK." <p>E. "Go Around"</p> <p>F. Short Final</p> <ol style="list-style-type: none"> 1. Pilot declares short final. 2. Spotter initiates rappeller. <ol style="list-style-type: none"> a. UNBUCKLE b. Prepare to rappel. 	

Rappeller Training

COURSE:	INSTRUCTOR:
TITLE OF LESSON: Interagency Helirappel Training	DATE:
TIME PERIOD (TOTAL): 3 Hours	PLACE:
TYPE OF LESSON: VI - Helicopter Mock-Up, cont.	
CLASSROOM:	ASSISTANTS:
TRAINING AIDS: Rappel-equipped Helicopter, Rappel-qualified Pilot	
OBJECTIVE(S):	
* Familiarize the trainee with the rappel equipment and procedures in the helicopter to be used.	
* Demonstrated ability to go through mock-up procedures without hesitation and/or error.	

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<p>VII. ESTABLISH HOVER</p> <p>A. Check power.</p> <p>B. Drop rope(s).</p> <ol style="list-style-type: none"> 1. Check for knots. 2. Assure they reach the ground. <p>C. Rappel sequence.</p> <ol style="list-style-type: none"> 1. Control rappel to minimize jerking motions and sudden stops. 2. Prior to ground contact, check for undiscovered hazards (i.e., logs, loose rocks, etc.). 3. Upon ground contact, squat while feeding to gain slack in rope. 4. Disconnect from rope while standing up from squat. 5. Clear rappel site. 6. Spotter drops rope(s). <p>D. Post-Rappel for Spotter</p> <ol style="list-style-type: none"> 1. Secure loose items in helicopter. 2. "OK" for pilot to initiate forward flight. 3. Fasten seat belt. 4. Establish contact with rappellers (Ground Personnel), either by radio or ground panels. 5. Area recon and report to ground personnel. 6. Contact dispatch. <ol style="list-style-type: none"> a. Establish flight following. b. Notify mission complete. c. Other requests. d. Information on other aircraft in the area. <p>IX. SIMULATE RETURN TO BASE</p> <p>A. Inspect remaining equipment</p> <p>B. Set-up helicopter.</p> <p>C. Documentation of mission.</p>	

Rappeller Training

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<p>X. CRITIQUE</p> <ul style="list-style-type: none">A. Spotter and pilot.B. Rappeller and Spotter. <p>XI. FIELD PRACTICE</p> <ul style="list-style-type: none">A. Instructor (and assistants) will now start individual trainee instruction on procedures and techniques just demonstrated.B. Follow the same sequence as just demonstrated.	

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<p>A. Loading</p> <ol style="list-style-type: none"> 1. Helicopter-type specific. See Appendix B. 2. Seating <ol style="list-style-type: none"> a. Position - helicopter-type specific. b. Safety belts <ol style="list-style-type: none"> (1) Fastened (2) Snuggly tightened 3. Cargo placement - system specific. <p>B. Systems check</p> <ol style="list-style-type: none"> 1. Rappeller --> System - "check" conducted by buddy or spotter. "Thumbs-up" as "OK" signal. <ol style="list-style-type: none"> a. Rigging <ol style="list-style-type: none"> (1) Carabiner on rappel anchor. (2) Rope connection. b. Equipment <ol style="list-style-type: none"> (1) Descent control device (2) Forgecraft hook (3) Harness (4) Knife c. PPE <ol style="list-style-type: none"> (1) Collar (2) Sleeves (3) Gloves (4) Legs d. Seat belt 2. Spotter <--> Rappeller(s) system. "Check" conducted by rappellers. "Thumbs-up" as "OK" signal. <ol style="list-style-type: none"> a. Rigging <ol style="list-style-type: none"> (1) Carabiner on hard-point. (2) Spotter tether connection. b. Equipment <ol style="list-style-type: none"> (1) Safety strap (2) Carabiner (3) Harness <ol style="list-style-type: none"> (a) Full body (b) Connection points (4) Knife c. PPE <ol style="list-style-type: none"> (1) Collar (2) Sleeves (3) Gloves (4) Legs d. Seat belt e. Extra rappel/cargo equipment 	<p>Rappeller Quals, Chapter 2.</p>

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<p>C. Flight/Approach</p> <ol style="list-style-type: none"> 1. Designate alternate rappel site. 2. Rappellers attention to spotter. Remember the spotter gives the commands, so watch what they are doing. 3. Spotter actions. <p>a. Communication's with pilot</p> <ol style="list-style-type: none"> b. Discussion about site c. Preparation of rappellers <ol style="list-style-type: none"> 4. Power check. <ol style="list-style-type: none"> a. On site b. "OK" c. "GO AROUND" 5. Short final. <ol style="list-style-type: none"> a. Pilot declaration b. Spotter initiates rappeller. <ol style="list-style-type: none"> (1) UNBUCKLE (2) Prepare to rappel. <p>D. Establish hover.</p> <ol style="list-style-type: none"> 1. Check power. 2. Drop rope(s). <ol style="list-style-type: none"> a. Check for knots b. Assure they reach the ground 3. Rappel sequence. <p>AIRCRAFT SPECIFIC</p> <ol style="list-style-type: none"> a. Control rappel to minimize jerking motions and sudden stops. b. Prior to ground contact check for undiscovered hazards (i.e., logs, loose rocks, etc.). <u>Slow before landing, assess landing area before final ground contact.</u> c. Upon ground contact, squat while feeding slack in rope. d. Disconnect from rope while standing from squat. e. Clear rappel site. f. Additional rappellers descent (helicopter and procedure dependent). <ol style="list-style-type: none"> 4. Spotter drops rope. 5. Post-Rappel. <ol style="list-style-type: none"> a. Rappeller(s) <ol style="list-style-type: none"> (1) Equipment packaging <ol style="list-style-type: none"> (a) Rope inspection (b) Package rope (c) Package rappel gear b. Spotter <ol style="list-style-type: none"> (1) Secure loose items in helicopter. (2) "OK" for pilot to initiate forward flight. 	<p>Rappellers should be exposed in practice sequences of rappel/cargo deployment. Deployment of cargo may be at either the beginning or at the end of the rappel sequence.</p> <p>The ground observer must critique each rappeller as soon as they get their rope and equipment packaged. Cover each point on the checklist.</p>

Rappeller Training

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<ul style="list-style-type: none"> (3) Fasten seat belt. (4) Establish contact with rappellers (ground personnel), either by radio or ground panels. (5) Area recon and report to ground personnel. (6) Contact flight following entity. <ul style="list-style-type: none"> (a) Notify mission complete 6. Return to staging area. <ul style="list-style-type: none"> a. Inspect remaining equipment. b. Set-up helicopter. c. Documentation of mission. 7. Critique <ul style="list-style-type: none"> a. Rappeller and ground spotter. <p>REMEMBER! - DO IT UNTIL IT'S RIGHT!</p>	

Rappeller Training

COURSE: Aviation - Helicopter Training	INSTRUCTOR:
TITLE OF LESSON: Interagency Helirappel Training	DATE:
TIME PERIOD (TOTAL):	PLACE:
TYPE OF LESSON: VIII - Cargo Delivery	
CLASSROOM:	ASSISTANTS:
TRAINING AIDS:	
<p>OBJECTIVE(S):</p> <p>* Trainee will be able to exit hovering helicopter safely and efficiently.</p> <p>* When exposed to different rappel problems or terrain, is able to complete rappel or corrective procedure without hesitation or error.</p>	

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<p>I. APPLICATIONS</p> <p>A. Fire</p> <p>B. Projects</p> <p>II. LIMITATIONS</p> <p>A. Size</p> <ol style="list-style-type: none"> 1. Weight <ol style="list-style-type: none"> a. Unit specific b. Recommend 70-100 pounds 2. Dimensions - helicopter-specific <p>B. Methods</p> <ol style="list-style-type: none"> 1. Let-down 2. Belly-hook method <p>C. Types of cargo</p> <ol style="list-style-type: none"> 1. Hazardous materials 2. Survivability <p>III. PACKAGING</p> <p>A. Concept</p> <ol style="list-style-type: none"> 1. Compact as possible 2. As securely as possible 3. No damage upon delivery <p>B. Containers</p> <ol style="list-style-type: none"> 1. Air boxes 2. Double boxes with compression padding 3. Cushion bottom boxes 4. Soft packs 	

TIME	LESSON OUTLINE	KEY POINTS & AID CUES
	<p>5. Equipment only! NO PACKAGING!</p> <p>IV. EQUIPMENT</p> <ul style="list-style-type: none"> A. Let-down lines B. Braking device C. Carabiners D. Knife E. Line bags F. Equipment bag G. Helicopter anchor point <p>V. SEQUENCING</p> <ul style="list-style-type: none"> A. Cargo only B. Pre-rappel C. Post-rappel <p>VII. OPERATING PROCEDURES</p> <ul style="list-style-type: none"> A. Pre-flight briefing B. Pre-flight inspection <ul style="list-style-type: none"> 1. Spotter's equipment 2. Helicopter equipment 3. Deployment equipment C. In-flight duties D. Deployment E. Administrative <p>VIII. EMERGENCY PROCEDURES</p> <ul style="list-style-type: none"> A. Problems <ul style="list-style-type: none"> 1. Helicopter <ul style="list-style-type: none"> a. Control b. Precautionary c. Power loss d. Catastrophic failure 2. Deployment <ul style="list-style-type: none"> a. In or immediate to helicopter b. During descent B. Corrective actions <ul style="list-style-type: none"> 1. Lock-off 2. Fly-away 	