Personal Pre-Flight 5-10-07 ©Tim Kovacs

- IMSAFE
  - **Illness:** No go.
  - **Medication** OTC, etc. Maybe No go.
  - **Stress**: family, personal, professnl. Probably No go.
  - **Abstain:** Alcohol/drugs in system/hangover: No go.
  - **Fatigue**: short/ long term, chronic. May be.
  - **Emotion**: argument, stress, mental ill, stress event. Probably No go.
- Aircraft appropriate to mission
- Pilot approved for type of flight
- Flight Following used
- PPE and Buddy check
- Pilot briefed; mission, parameters, flight hazards
- Passenger/Safety Briefing done
- Report your total weight (with gear)
- You may refuse a flight
- Secure belt behind you before exit

Aviate– Navigate– Communicate- Coordinate!

Safety 5-10-07

Firebird: approach from side, NOT front
Not from uphill. Not from rear.
Keep Long objects low.

Mission Pre-Flight Briefing & Checklist

- Portable radios on low volume
- Headlamps off, or, low & aim down 05-07 ©timk
- Mission & trip expectations
- Approach to & Departure from A/C (paths)
- If A/C comes down, where will PIC go?
- Storage of Equipment, Weight Report
- HazMat, Firearms
- PPE
- Seat belt use
- Fire Extinguisher & Purpose
- ELT & Activation
- Battery & Fuel Shutoffs
- Emergency Exits
- Extra eyes & ears for crew
- Headset/ ICOM/ Radio Use
- Crash Positions
- Aware of geographic position during flight

PPE 5-10-07 tk

- Eye & Ear Protection	Helmet
- FR/ Leather Gloves	FR/Non-Synth.Clothes
- Knife	No/little skin showing
- Tech Gear	Radio & Earphone
- PFD (SW Rsq or >shore glide)	Leather Boots

- Survival Gear & Pack

SAR Subject-Passenger Briefing 5-10-07©Tim Kovacs

Rescuer maintains positive physical control.

- Secure chinstraps, remove ball caps/hats
- No Smoking
- Never go behind of skids or approach fr rear
- Approach only when directed by crew or rsqr
- Approach/ depart fr. side or front, crouching
- Approach in view of pilot
- Carry items below waist level
- Do not operate latches or handles w/o crew
- Stay buckled until told otherwise by crew
- Survival and First Aid Kits
- Emergency: Belts snug, PPE in use
  - Keep away from flight controls
  - Secure loose gear (should be none)
  - Note exits, establish ref. point
  - Wait till all motion and parts stop
  - Rescue other passengers as needed
  - Report to 12 o'clock position…
  - Note Extinguisher, Fuel & Batt Shutoff, Door jettison handles, punch out windows

Emergency 5-25-07 ©Tim Kovacs

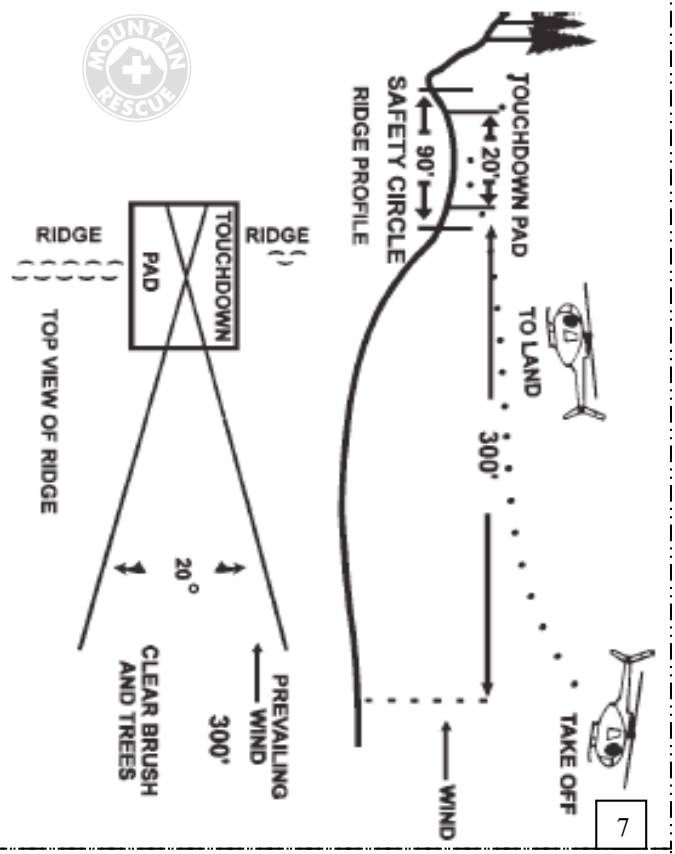
- "Mayday, Mayday, Fox/ Mustang X at ___"
- Visor down, sweep mic
- Snug Belts, Adjust PPE
- Crash Position
- Splash: HEED?
- Splash: Locate handle, crack door
- Splash/Crash: 10 count/Parts stop
- Unplug Comm./ D/C Headset
- Confirm exit path is safe
- Open door, Unbuckle
- Splash: Swim away, then up; Inflate Vest
- Crash: Exit, battery & fuel off
- Activate ELT
- Assist others; Get a PAR
- Triage. Treat life threats
- Get needed equipment from aircraft
- Make Radio contact

HeliSpot & LZ Mgmt 9-02-08 ©Tim Kovacs

- LZ Kit: Flagging, Saw, lights, vest, wt scale, HS Mgr Vest, Wands, Comm compatible w/ Helo
- Reasonably Flat; Clear of people, vehicles, obstructions (trees, poles, overhead wires, etc.)
- Consider wind direction.
- Away enough from ICP (noise)
- Helipad made free of anything else over 18".
- Safeties needed? (sides, tail, warm perimeter)
- Secure FOD & loose items
- Wind indicator; Dust Abatement
- Ensure constant RIC
- RIC; One 20lb BC Extinguisher per A/C
- Ensure min. # load receivers, bottom belayers
- Ensure Load Calc to Command
- Radio a/c w/ X Load height once on final

- Type I: 110 ft. Helipad 30' x 30'
- Type II: 90 ft. Helipad 20' x 20'
- Type III: 75 ft. Helipad 15' x 15'
- Anticipate need for >1 helo to land.
- Mark: Day (□) vs. Night (T)
- Remind Media to stay ≥3000+ft AGL
- Maintain cold-warm-hot zone discipline/control
- Listen to helicopter sounds (rotors, engine)
- Anticipate need for fuel/ fuel trailer
- Order air/grnd ambulance anticipating response time

One-Way Helispot



Inbound Report 9-02-08 © Tim Kovacs

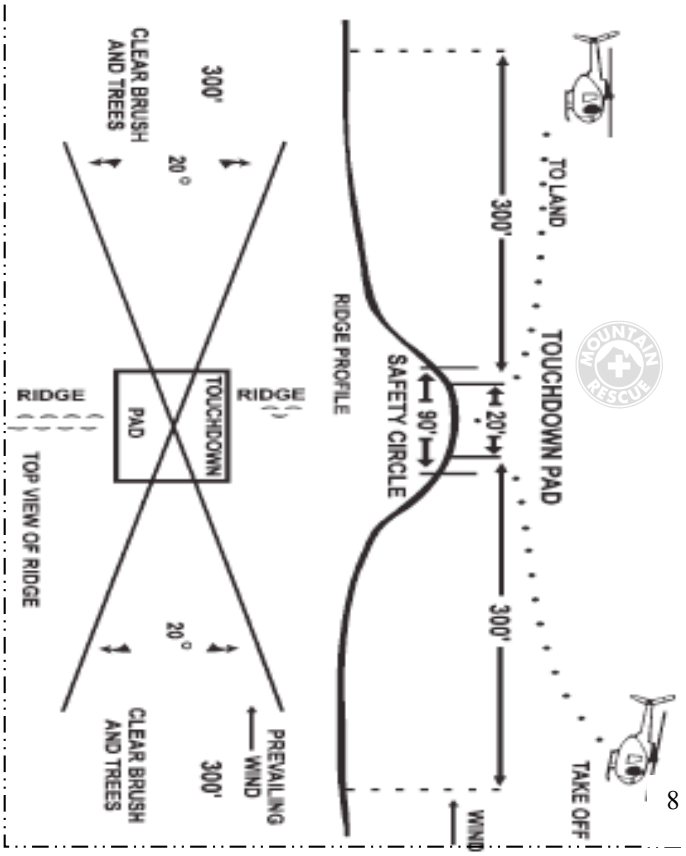
- HS Mgr is (IDed by clothing & call sign)
- Obstructions & other aircraft in air & at HS
- Wind Speed, direction, gusts
- Visibility
- Ceiling
- Cold or Stay Hot
- Advise a/c if HS may be questionable
- Aircraft: Sm Fixed, 6 o'clock level, climbing…)
- Call Load Height x1 for Xloads

If it's not a factor, you don't need to say it !

RIC

- ALL PPE on, zipped & no skin
- Put out people, pull to safety
- Extinguishers, cutting & shoring tools in safe zone

Two-Way Helispot



Air & Tech Rescue- Situational Awareness

05-28-07 ©Tim Kovacs

Refers to your ability to;

- Maintain accurate perception of ext. environment
- Identify source & nature of problems
- Detect a situation requiring action

Factors that reduce situational awareness; Fix 'em or else No go!

- Insufficient communication
- Fatigue/ stress
- Task overload or task underload
- Group mindset (bandwagon…)
- "Press on regardless" philosophy
- Degraded operating or unity conditions

Prevent the loss of situational awareness;

- Actively question & evaluate mission progress
- *Analyze* your situation
- Update & revise your image of mission
- Use assertive behaviors when necessary,
  - Make suggestions
  - Provide relevant information w/o being asked
  - Ask questions as necessary
  - Confront ambiguities
  - State opinion on decisions & procedures
  - Refuse unreasonable requests

12 Continuous Questions that Can Save Lives;

1. Is this flight necessary?
2. Is someone clearly in charge?
3. Are all hazards IDed? Made known?
4. Should stop due to
   a. Communications issues?
   b. Weather here or coming?
   c. Turbulence?
   d. Personnel?
   e. Conflicting Priorities?
5. Is there a better way to do this?
6. Driven by overwhelming sense of urgency?
7. All actions pass the headline test?
8. Are there other aircraft in the area?
9. Have an escape route?
10. Any rules being broken?
11. Communications getting tense?
12. Deviating from assignment, plan or flight?

WHEN IN DOUBT, DON'T 5-10-07

Adapted by Tim Kovacs ©
from Ken Phillips, Grand Canyon Ntl Park SAR

Helicopter Hand Signals

Low to High Risk Continuum 5-25-07 ©Tim Kovacs

1. Ground Based Operation
2. Helo xport, LZ to LZ or HS to HS: Cold, Hot
2. *Hover ingress/ egress
3. *One Skid ingress/ egress
4. **Toe in ingress, egress
5. **HeliRappel
6. *Lowering equipment from helicopter
7. *Short Haul of equipment
8. **Short Haul of people
9. **Skid Ride
10. **Cable Hoist

* Higher Risk Methods
** Highest Risk Methods

Factors Against High & Higher Risk Methods

1. Not/Minor Injured or is able to assist
2. Non Viable/ deceased
3. Non Human cargo
4. Non Critical Injuries
5. Non Critical Pt reasonably declines method
6. Unpracticed or untrained air crew or responders

Factors in favor of High Risk Methods

1. Life Threatening Injury
2. Injured and fragile elderly or infant
3. Serious Hypothermia or Serious Hyperthermia
4. ↑exposure to mbrs in multiple hazard terrain
5. Impending sunset + incoming bad weather but sufficient time to perform
6. Highly trained air crew and highly trained team

Crew Member Pre-Flight

03-27-08 ©timk

- Perform Personal Preflight Checklist
- Perform Mission Preflight Checklist
- Log book
- Check in w/ crew; role, shift plans/events
- Signed on with Radio (dispatch)
- Wx forecast, A.D.s, NOTAMS, etc.
- Status of other SAR aircraft in central AZ
- PPE, Weapon(s)
- Replace EMS & O2 Kit with own/etc.
- Body Bag in rear comp (as carryall)
- Check AED, Glucometer
- Seasonal Pack, Water, Vest, Tech gear
- Consider Body Armor
- NVG check
- Cargo Hook (2,000 lb capacity) check Manual, PIC Mechanical & Electrical.
- Rappel Hard Points & Carabiners check
- FLIR check
- Check & set rear monitor and radio settings
- Team headset (team helmet compatible)
- Consider SW Gear, Short Haul gear
- Check drop kit & FRS batteries. Consider Drop Kit
- Portable Com: Team, FRS, 800, Navcom, Sat Phone
- Consider frozen water bottle for a subject

Radios

5-10-07 ©Tim Kovacs

VHF 1 – ATC (Air Traffic Control)
VHF 2 – Air to Air
TAC 1 – Search, etc.
TAC 2 –
TAC 3 – 800 mHz

NVGs

11-07 timk

- Lanyard
- Helmet mount
- Batteries & Adjustments
- Prep cockpit front & rear
- Rear monitor to NVG screen:
  - ▼ + Video, select NVG

Wildland Fire Ops

5-10-07 ©Tim Kovacs

- Know their incident frequencies
- 5 Nautical Mile (NM) AO (area of operations)
- Helo: 500 ft AGL
- Air Tankers: 2,500-3,500 ft AGL
- Air Tactical Group Supervisor: 5,000 ft AGL
- Make radio contact at 12 NM
- Do NOT enter ≤7nm & no contact (no comm.)

Common Frequencies

- Air to Air, A-G, G-A 123.025
- MCSO "Search 8" splx 159.090, 127.3 tone
- MRA/SAR Mutual Aid 155.160
- Fire Mutual Aid 154.280, 173.8 tone

Weight Estimates

7/16" Static rope: 6.5lb/100ft

Signals

- Siren Toot/Blast: Danger
- Light flash (night): OK to approach

FLIR 8000

03-27-08 ©

Pre-Flight

- Inspect cables, connections, visible damage
- Ensure control unit is off
- Inspect lenses (Stby, Reset)
- Don't force elevation axis when brake applied

Power Up

- Verify stable aircraft power
- STBY (OK to leave on STBY all the time)
- IR Cooler starts in ~15 secs. Prefer leave on.
  - 5-7.5 min cool-down
- Airborne 30 feet+ asl: Power On.
- Perform initial menu setup if needed

Shut Off

- ~100mtrs agl hangar: STBY
- Power Off (takes ~15 secs). Reset?
- Power down Aircraft
- Reset FLIR?

Post Mission

- Check visible damage
- Clean Lens, w/ turret on (cotton, lens tissue, microfiber)
  - Water or isopropyl alcohol. Low pressure air ≤90psi
- Reset

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FLIR 8000 (2 of 2)

03-26-08
©timk

Camera

- Power on if not already
- Select CCD (trigger button)
- LLTV= Low light TV

Calibrate

- Calibrate when image noisy, temp changes, & after 2-3 hrs of operating
- Wait for IR to be cooled
- Shift + CAL/AF to calibrate

Misc.

- Rate Mode: stays on target
- Heading Hold: points from nose
- Position Mode: goes home
- Polarity (Black hot/White hot): Pol/LLTV
- Gain=Contrast
- Level=Brightness
- 256 shades of gray

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1. Convince 'why SH' vs. 'why not short haul'
2. Appropriate aircraft w/ qualified pilot:
   a. No? No go.
   b. Yes: Weather & lighting permit the technique?
   c. No: No short haul.
   d. Yes: Load Calc done? W/n limits?
   e. No to either: No SH.
   f. Yes: Does Pt meet any 1 of these criteria?
   g. ALOC, Airway/ Cardiac Probs, Serious Fx, Fall > 20', Unstable Vitals, Significant MOII
   h. Yes: Short Haul only if safe.
   i. No:
      i. Forecast call for ↓weather?
      ii. Safety prob for a ground evac?
      iii. Grd evac pose >risk to rescuers?
      iv. No: Short Haul only if safe
      v. Yes: Grd evacuation to LZ or CP.

From: Tom Pendley, TRT FOG

Other: _____

	Fox/ M 1	Fox 3/4
1. Depart. Base Pressure Alt Temp	_____	_____
2. Destination Pressure Alt. Temp	_____	_____
3. Helicopter Equipped Weight	_____	_____
4. Flight Crew & Gear Weight	_____	_____
5. Fuel Weight (gals x 7 lbs =)	_____	_____
6. Operating Weight (3+4+5)	_____	_____
	IGE	OGE
7. Computed Gross Weight	_____	_____
8. Fixed Wt Reduction	_____	_____
9. Adjusted Weight (7 minus 8)	_____	
10. Takeoff/Landing Limits	_____	
11. Selected Weight	_____	_____
12. Operating Weight (line 6)	_____	_____
13. Allowable Payload	_____	_____
14. Passengers & Cargo Wt	_____	
	_____	_____
	_____	_____
15. Actual Payload	_____	
16. Actual Gross Weight	_____	

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Step 2/ 3. Rescue Risk Flight Score Guide

for Type III Helo. 5-10-07. Tom Pendley

Time:	Points
Day	1
Night	5
Wind Speed in Knots (per pilot):	
10-15 knot steady wind = best performance	0
0-5 knots	3
Gusting more than 10 knots over base speed	+5
Gusting more than 15 knots over base speed	+10
Type of Use:	
Normal	1
Special	10
Load Calculation (Helo useful load):	
> 800 lbs	1
600-800 lbs	2
400-600 lbs	3
200-400 lbs	5
Air Temperature:	
< 80° F (27° C)	1
80-100° F (27-38° C)	2
> 100° F (38° C)	5
Total Score:	

5-10 = Lower Risk 11-20= High Risk
21-30= Extreme Risk >30 = **No** go

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Load Calculation Guide 05-10-07

Complete for all rescue flights. Repetitive flights; 1 calculation is valid between like points of similar evacs as long as loads do not exceed that authorized by calculation for the initial flight, and weather conditions do not change.
Pilot usually completes 1-13. Balance can be completed by Pilot or Helispot Manager.

1. Read altimeter set to 29.92
2. Use MSL/ Elevation
3. Empty weight of A/C + wt of accessories required for mission + weight of oil.
4. Weight of Pilot, Flight Tech, Rescuer(s) + personal gear
5. AvGas = 6 lbs/ gal. JP = 7 lbs/ gal
6. Add 3, 4, and 5
7. Obtain weight from A/C's HIGE chart using XLoad chart if available. XLoad missions, adverse terrain or weather, etc. flights: use A/C's perf. HOGE charts.
8. Enter applicable weight reduction for helicopter model.
9. 7 minus 8
10. Enter applicable Takeoff and Landing Weight Limit as found in Limitations section of a/c Handbook.
11. If line 9 >line 10, may use line 9 for jettisonable loads. Use lowest Wt, line 9 or 10 for non-jettisonable loads.
12. From line 6
13. Max allowable weight (passenger &/or cargo that can be carried for the mission).
14. Passenger Weights &/or type & weights of cargo.
15. Total all weights listed in item 14.
16. Total of weights in 12 & 15. Must not >line 11.

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3/3 Load Calculation Guide 5-10-07 © Tim Kovacs

BH-407 Fox 1/N905MC: 3289 lbs. Mustang 1/ N407BB

Insertion & Extraction by Heli-Rappel or Short Haul – Considerations in Favor

08-31-08 ©TimKovacs

- Lack of safe landing area near scene
- Pt safety & possible medical complications
- Available daylight source
- Rescue personnel available
- Location- terrain and distance
- Approaching bad weather
- Ground personnel high(er) risk exposure in given ground evacuation
- Tactical advantage

Abbreviations

SH = Short Haul
POA = Point of attachment
CHAL = Cargo Hook Attachment Line
CC = Crew Chief (AKA Spotter)
PIC = Pilot in Command
SW = Swift- and Flood water
LSA = Load Sharing Anchor
RIC = Rapid Intervention Crew (Helo crash rescue)

Crew Chief X-Load Prep Checklist

8-31-08 ©Tim Kovacs

- Strip a/c. Remove Doors as needed.
- 1+ helmet friendly headset(s) ready in back
- Tape tub.
- Rig.
- SH of SW, Bodies, & Gear: load line to hook only
- Secure all loose/weak gear & seatbelts
- Test hook x3:
  - Outside Manual
  - PIC Mechanical
  - PIC Electric.
- Test Capewell
- Cutting device ready
- Other Gear as needed (see next lists)

XLoad Rigging Gear

9-02-08 ©Tim Kovacs

- X Cabin Multi Loop Strap (rear Comp blue bag)
- 4 Hard Point Carabiners in rear cabin
- CC POA: pickoff strap, carabiner(s)

Rappel Ropes

- 2x 100’ 7/16” Static, reg. stuff, tied in bag, 2 loop Fig8

Short Haul Gear

- Duct Tape
- Belly Harness with CHAL. FAA Cert. to 1,000 lb, tested to failure at 9500 lbs.
- Load line, desired length, reflective flag
- Capture Ball, master carabiner

Bauman Gear

- Bauman, Trifold Board, Spider, Tape, C-collar
- 4 Trash Bags, Suction
- Trail Line, 200’ x 6mm. Weak link to TriLink (only when attended, attendant d/cs)

Misc. Gear, per mission

- Pickoff Harness/Screamer, Helmet
- Survival Kit; Hypothermia Kit

SW Gear

- PFDs, Wetsuits, Dry Suits
- 50’ Load Line (to hook, no belly harness)
- Emergency option; Load line/rope, Capture Ball, Cinch Collar/ Rsq Strop to rappel points

Skid Rider POA

09-12-08 ©TimKovacs

- Both rappel hard point carabiners in
- Long Adjustable (Purcell, etc) w/ twist lock carabiner
- Clip into both carabiners (LSA & capacity reasons)

HeliRappeler Checklist

- Buddy Check on grnd. PPE, gear, radio check. Report lbs.
- Pack on back or to leash?
- Headset on.
- Secure into device, lock off. Seatbelt, buddy check
- Order to deploy ropes, confirm reach ground.
- Order to skids, Dc headset & seatbelt, Eyes on partner.
- Order to rappel. Eye contact between Partner, CC & Ground
- Do not hang up device on tub
- Partner “Leg Lock”; About 5 fps. SRT: rope between legs
- Through 10’ signal
- 1 rappeller always looking up. D/C, OK, move to protection
- Bottom belay when available
- Review CC HeliRappel checklist
- CLIMB for emergency clearance of obstacles

Short Hauler Checklist

- Buddy check PPE, gear. Radio chk. Trail Line? Report lbs.
- Hook in, OK signal, through 10’ signal
- Regular eye contact w/ CC, Pt, rigging, surroundings
- D/c, 1 always looking up, OK signal, move to protection
- 50’ clearance before Forward Flight
- Ground calls height x1 on departure & final
- CLIMB for emergency clearance of obstacles

Misc. Rigging Improvised Belly Harness

09-02-08 ©TimKovacs

1. When commercial rig unavailable or suspect or aircraft w/o cargo hook
2. 20+ ft of 7/16" or greater static rope
3. Double grapevine to secure ends. Ends inside aircraft.
4. Cutting surface
5. 44" (B407) CHAL rope or webbing
6. Load ring can be figure eight on bite, etc.
7. Add retrieval line

Improvised Load Line

1. When commercial rig unavailable or suspect.
2. ≥7/16" to desired length.
3. New, stiff rope can cause High Frequency Vibrations to Aircraft. Advise PIC.
4. Figure 8s at ends
5. Autolock or screw carabiners
6. Reflective flag
7. 5-10lb weight or capture ball

Cargo Letdown

1. ≥8mm rope of desired length
2. Friction device or pulley & prusik to rappel hard points
3. Cutting device ready

Securing Litter in Aircraft

10-10-07© T im Kovacs

- Doors removed
- Sideways, feet hanging out
- Use Seatbelts, webbing or cordelette to hard points
- Air Rescue Tech/Medic inside aft facing seat, harnessed w/ safety strap (pickoff strap, multi-loop strap, etc.).

Bambi Bucket

- 108 gal. @ 8.8 Lbs/Gal = 950 lbs
- Usually at 70%: 76 gal = 684 lbs
- 50 & 100 ft lines
- Ensure Load Calc & recon at site
- Remove PIC door
- Ensure cables, straps, buckles lay OK
- Connect rig to hook
- Connect Plug & Tape
- Test manual & electric releases
- Rig weight: _____

CC HeliRappel Checklist Part I 8-31-08 TimKovacs ©

1. Crew Chief PPE, Hot ICS
2. X Cabin line & Crew Chief POA
3. Air Recon, Power & Hover Check, Load Calc. Go/No Go
4. Brief. Discuss Plan & ECAs/Escape Route, # of rappellers…

CC HeliRappel Checklist Part II

1. Rappel Lines attached properly. 2nd inspector.
2. Cutting device ready
3. Spotlight fuse pulled (nighttime)
4. SH Load Line clipped to XCabin, as needed.
5. Rappel Ropes in bags, secured inside a/c.
6. Rescuers PPE, Seat-belted for Pt A-B, headsets
7. Rescuers secured w/ min 1 POA for final approach
8. Rappel devices rigged properly, locked off
9. Emergency procedures & route known to all. Go/ No Go
10. PIC: Altitude, Heading, "Proceed with Rappel".

HeliRappel

1. Signal Rsqrs; undo & redo seatbelts; DC & Stow Hdsets
2. CC-PIC: Ready to deploy ropes. Signl Rsqrs: deploy ropes.
3. Rsqrs & CC confirm ropes reach ground. CC advise PIC
4. Signal Rsqrs & advise PIC, "Going to Skids"
5. Signal Rsqrs & advise PIC, "On Rappel"
6. Give PIC directions to target & distance of load to ground ("through skids", etc.)
7. Rsqr: Through 10 feet signal, OK signal when clear.
8. CC – PIC; Load is clear & how far to lift to clear obstacles.
9. When clear Flight Path and of Obstacles, advise PIC, "Secure for Forward Flight".

CC Short Haul Checklist Part I 09-02-08 ©TimKovacs

1. Crew Chief PPE, Hot ICS
2. X Cabin line & Crew Chief POA
3. Air Recon, Power & Hover Check, Load Calc
4. Brief. Discuss Plan & ECAs/Route
5. Use of Trail Line? (only w/ attendant who must D/c)
6. Bodies: no attendant

CC Short Haul Checklist Part II

1. SH Harness proper, 2nd inspector. Capewell exposed.
2. Cutting device ready
3. Spotlight fuse pulled (nighttime)
4. SW: DC Electric Hook release
5. SH Load Line looped & clipped to XCabin.
6. Ground Rescue Site Communications
7. Rescuers PPE & Comm check
8. Emergency procedures & route known to all
9. PIC: Altitude, Heading, "Proceed with Short Haul"

Short Haul Retrieval from & Deployment to Ground

1. Load Line deployed, reaches, end visible
2. Rsqrs, CC, PIC: Confirm load weight
3. PIC in high, stabilize load, bring line down w/ CC assist
4. Rsqr Buddy check PPE, riggings, comm.
5. Hook up (2 rsqrs, 1 looks up), Buddy Check, OK Signal
6. Through 10' signal & advise PIC
7. One report from ground on height of load & obstacle clearance. D/c attendants first, then litter/ package.
8. CC direct PIC when clear & how far to lift to clear obstacles
9. When clear Flight Path and of Obstacles, Lines, in, advise PIC, "Secure for Forward Flight".

X Load (HeliRappel & Short Haul) ECAs

08-31-08 ©TimKovacs

Emergency; Aircraft w/ Power & Control

(warn light, gradual pressure loss, hydraulic pump fx…)

1. PIC may opt to continue mission, then makes precautionary landing, notifying CC, Load & Ground
2. PIC may advise CC to signal rappellers to max speed to beat rope being cut. If SH, prepare for hard landing.
3. Rsqrs then DC ASAP & seek protection.

Emergency: Loss of A/C Control or Engine Failure
(tail rotor, transmission, compressor, engine Fx)
1. PIC pre-establish with CC & Rsqrs which direction PIC may go.
2. Rappellers descend & D/C ASAP & seek protection.
3. PIC or CC may cut ropes / jettison load at any time.

Comments
1. 1. If load within 10' of ground, consider jettison/cut
2. Signal Rsqrs "Cut" signal so they can also DC/ unhook, etc. OR
3. Signal Rsqrs to lock off, into short haul mode, prepare for hard landing
4. PIC may try to land to side of load OR
5. If rappeller w/n reach, consider securing w/ strap

Jammed Descender
4. Lock off & Clear & continue rappel OR
5. Lock off, tie off, cut or control rope below, signal for SH to ground & clear.

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2. With proper a/c & crew, Helo may be considered in place of any of above;
   a. One skid to victim, SH victim/Rsqr to safety.
   b. SH Rsqr to victim, SH both to safety.
   c. Swim/ Boat Rsqr to victim, SH both to safety.
   d. Extract victim via one skid or low hover.
   e. CC lowers cinch collar or Rsq Strop to capable victim.
3. Use a trained ground observer w/ comm. To A/C.
4. Employ all other SW tactics: up-streamers, down-streamers, plan b & c, control water flow,
5. Air scout 1 mile down river for hazards, etc.
6. Follow Short Haul checklists
7. Confirm Emergency Plans for ICOM Fx, Rsqr Swept Away, Hook Fx, Power Fx
8. Confirm all hand signals
9. PIC turns off all radios except ATC & Rsq Channel

Discuss considerations of technique to be employed, per DPS and Team manuals;
1. In vehicle, in waterway, moving water
2. On vehicle or object, in waterway, moving water
3. Subject drifting with current in waterway.

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Short Haul ECAs

09-02-08 ©TimKovacs

1. Load w/n 10' of ground, consider jettison;
   a. PIC or CC announce emergency
   b. CC DCs Capewell
   c. PIC has final. May be simultaneous…
   d. CC ensure jettisoned harness clears steps, etc.
   e. Signal load if possible so they can also unhook/d/c, etc.

OR
1. Hard landing with load, attempt land to side
2. Signal to Load if possible

ICOM Fx (SH and Rappel)
- PIC…aborts or informs Ground Observer to take over calling load, etc.

CC X Load Swing
Coordinate w/ PIC: where load is (coming under belly L-R, clockwise, etc.).

CC Misc;
1. Give preparatory before execution: "ready to drop left rope" pause… "dropping left rope".
2. Emergency, gain altitude "CLIMB" +directions.
3. Debrief/ Critique!

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SW ECAs

09-02-08 ©TimKovacs

Load Entangled
1. Do not lift A/c
2. Clear entanglement, if possible OR
3. Jettison line, use new line or different technique.

Rsqr swept away
1. Track, Lower Line, Extract to safety
2. Downstream back up plan

Cargo Hook Fx, Load into water
- Rsqr D/C from line and possibly from victim
- PIC/CC advise Command
- Employ pre-established back up

Partial Helo Power Fx
- Load close to short as possible & into water to lighten load
- PIC trouble shoots or jettisons
- Rsqr D/c from line and possibly victim
- Employ pre-established back up

Complete Engine Fx
- PIC AutoRotates, etc.
- Navigate away from load & ground personnel, as possible
- CC & Rsqr prepare for hard landing

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Swift- & Floodwater Helicopter Rescue

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Techniques & Continuum for MCSOMR/ HERT
1. Talk-Reach-Throw-Row-Go