

BOAT CREW TRAINING

U.S.C.G. Auxiliary Sector Detroit AOR Helicopter Operations Jan 31,2018 DYRA Presentation North Star Yacht Club Chris Stevens





HELICOPTER OPERATIONS

Personnel Sailing Vessel Captain and Crew Training



Hoisting operations off a vessel can be hazardous to aircrew, boat crew and whoever/whatever is being hoisted. These operations require constant situational awareness by all involved.

Recheck GAR score before each evolution.



Warning

NOTE: Helicopter operations are exciting, dynamic environments. Be extremely vigilant and prepared to make immediate decisions to prevent a serious incident.

> If anyone is ever in doubt about the evolution or safety..."Breakaway, Breakaway, Breakaway".



Purpose of Training

- Explain what the different type of positions are on a vessel as compared to USCG
- -Swimmer Stand- By
- -Hoisting Crew
- -Hoisting Coxswain
- -Night Hoisting



Clothing

•The wearing of jewelry, including rings, wristwatches, necklaces or other items should not be worn by boat crew members engaged in hoisting, towing, or other deck evolutions where the potential for snagging exits Captains should address this during all per-underway briefs and captains shall ensure jewelry is removed prior to beginning all deck evolutions.



General Conditions

All crew members should be wearing gloves, helmets, goggles, PFDs or appropriate exposure gear and boat crew personal survival vests







Intro

Proper PPE
Proper Vessel and Radio Coms
Observers / What to look for
Safety Zones around the helo
Safety Eye Wear
Hearing Protection
Rain gear/extra clothing



Equipment Involved

Possible USCG RBM
Qualified Auxiliary Vessel
Helo
Swimmer Stand-by vessel
Station /Sector



HH-65 DOLPHIN

Top speed 165 kts
Hoist capacity 600 lbs
Carries two pilots, flight mechanic & rescue swimmer
Replaced HH-52







Helicopters can:

•Hover.

•Deploy rescue swimmers/EMTs or civilian divers. •

•Perform hoists using a rescue basket, stokes litter, or rescue strop. •

•Deliver equipment (e.g., dewatering pump and fire suppression kits) when available. •

•Deploy datum marker buoys. •

•Search with radar. •

•Provide night illumination. •

•Direction find. •

•Perform multi-mission patrols.

•Conduct supply/replenishment operations.

•Aircraft have night vision goggles



HH-65 DOLPHIN



- •Always stay clear of tail rotor
- -Approach in view of pilot





Limits

- •Maximum endurance with a crew of two pilots and one crewmember is approximately three hours.
- Maximum of four passengers or survivors
- •(besides the three crew) can be carried.
- •Hoist capacity is 600 pounds and the external cargo sling limit is 2,000 pounds.
- •It will not land on the water except in an emergency. It will float if it is not badly damaged and the flotation bags are deployed



RESCUE BASKET



- Occupant is protected from striking objects when hoisted
- Basket will float
- -Occupant wears PFD
- -Supports fold when unhooked







STOKES LITTER



Stokes litters are only carried when mission indicates it will be needed
Must be supplied by helo
Flotation collar, spreader bar, and restraining straps
Requires weight testing







HOISTING

Hoisting operations can present great hazards
Safety is greatly enhanced when proper briefings precede the evolution
Listen to the helicopter pilot or station briefing
Safety is a primary concern
Pilot or coxswain should stop evolution any time safety appears in doubt

International community uses "winch" instead of "hoist"



BOAT PREPARATION



- -No Extra Lights or spotlights to be pointed towards the aircraft
- •Skipper checks charts and boating traffic for hazards in anticipated area



Conditions

Sea State
Water Depth
Wind Direction and Speed
Vessels Involved in Evolution
Handing off Radio Guard to swimmer stand by Vessel if Available



BOAT PREPARATION

Communicate with approaching helo
-Working radio frequencies to use
-On scene weather
-Total number of POB on your boat
-Special conditions of hoist victims
Crew in proper protective gear
-PFDs and thermal protective gear
-Head, eye, hearing, and hand protection



BOAT PREPARATION

•Stow or secure all loose gear on deck

- -Remember the downdraft from the helo will be tremendous excess of 100mph
- Lower and secure any masts, antennas, flag staffs, and outriggers that can be safely removed – secure the deck

•Designate one crew member to give hand signals to the hoist operator usually primary



General Conditions

Stow and secure all loose gear on deck (19.B.3.d)

The downwash of a helicopter is very powerful. It can blow a person overboard and blow loose gear over the side. Loose objects such as articles of clothing can be caught in the air currents produced by the rotor blades and sucked into the engines.



Positions on Vessel During Hoists

- •Primary
- •Secondary
- •Safety officer
- •Captain



Primary

First contact with any type of hoist
Primary communicator with helo and winch personnel
Ground equipment with grounding stick if necessary
Determines how to guide the trail line, cable, basket, stokes, personnel aboard



Primary continued

•Follows the hand signal directions of rescue swimmer or helo winch Personnel

Deploy Equipment or Cables Out



Secondary

Is always in a stable position
Support the Primary
Gathers and flakes the trail line or cable
Keeps all lines from going overboard
Pay out lines when required
Provide physical assistance to primary if necessary



Safety Officer

Overseas for any needs of primary or secondary
Provides communication between crew and Coxswain
Remains ready to step in to help
Is observant of all surface and air traffic



Captain

Responsible for safety of crew
Facilitate Communication With crew and Helo
Responsible for holding Course and Speed
Constant Gar assessment with crew
Situational Awareness



BOAT PREPARATION

- •Brief crew before the helicopter arrives
- -Rotor noise will prevent conversation
- •Caution crew about falling overboard when blown by downdraft
- •Have people/equipment ready to hoist
- •Explain emergency breakaway procedures



Charts are checked for hazards that would prevent the boat from maintaining course and speed until the hoist is complete. (COMDTINST M16115.5 (series) 19.B.3.a)

Establish and maintain boat heading and speed as directed by the aircraft pilot.



EMERGENCY BREAKAWAY

- •When indicated by either the pilot or the skipper etc. from the helicopter over the stern to be free of the helo
- -Boat veers to starboard
- -Helicopter alters course to port



EMERGENCY BREAKAWAY



Causes for emergency breakaway –
Mechanical failure on the helo
Mechanical failure on the boat
Surface traffic forcing boat to alter course
Injury on the boat
Divert to higher priority SAR



Break Away

•Safety during helicopter operations cannot be overemphasized. Crewmembers must stay alert and report any danger signs. If either the coxswain or pilot feels the operation is unsafe, then a breakaway should be conducted



Break Away Procedures

•Direct the crew to push the loose cable, rescue device, and trail line over the side (toward the helicopter).

- •2 Transmit the word "BREAKAWAY" to the pilot.
- •3 Turn away from the helicopter (most often to the right).

 4 Energize the blue emergency light or identification light, if practical or

•applicable









STATIC ELECTRICITY





STATIC ELECTRICITY

- •Polypropylene trail lines do not (usually) carry static electricity
- •Deadman's Stick may be used to discharge electricity if you have one
- •You have a few (30?) seconds to grab items after they ground out before the charge builds up again



BOAT PREPARATION

•When the helo arrives on scene, the pilot will give the skipper a course and speed to maintain for the transfer





Speed and Direction

- •Vessels all have an ideal speed
- •Best working speed for exercises can be determined by observation and communication with the helo
- •Each vessel will ride the water displacement circle differently
- •Speed for example 8 knots



DIRECT DELIVERY



•For a direct delivery, the helicopter crew will do all the work

- •Stay clear as the helo maneuvers over the deck and lowers the basket
- •When the basket touches the deck, grab it to hold it steady as the person climbs in



DIRECT DELIVERY



When subject is ready, give "thumbs up" signal to helo –If there is going to be a delay getting the basket ready, disconnect the cable and let the helo move away –NEVER tie or attach the cable to the boat –Wait for hook to hit the deck before reaching to reattach it to the basket
Stand clear as helo hoists basket





•A trail line is a polypropylene line weighted with a small sandbag that is attached to the hoist cable hook

•A trail line permits the helo to hover away from the boat and have the crew pull the cable over to the boat





Helo will drop the trail line to the boat deck, then back away from boat
Boat crew takes in slack as helo pays out
When basket and cable start to lower, crew pulls trail line in to bring basket over boat to appropriate point
Allow basket to touch boat before grabbing it directly





•One crew member should haul in trail line hand-over-hand

•Second crew member coils slack out of the way







•When basket is hoisted, tend trail line to keep slack out of line

•When helo has taken in all extra trail line, allow weight bag to drop into water in direction of helo (usually port quarter)





•A 5-lb. weight bag is attached to the trail line and lowered from the helicopter to the vessel. The helicopter will then back off to a safe hoisting distance while paying out the trail line. The non-weighted end of the trail line is attached to the rescue device (weak link first) and lowered to the vessel. Boat crew members will tend the trail line by hand-over-hand method, exerting enough strain to guide the rescue device to the delivery point on deck. A second crew member should back up and coil the line.



INDIRECT DELIVERY









Indirect Delivery

- •Haul in trail line using hand-over-hand, keeping steady strain on line
- •Ground basket to deck or Deadman Stick
- •Place person in basket (wearing PFD)
- Reattach rescue cable hook
- •Give "thumbs up" sign when ready to hoist
- Properly tend trail line for recovery



If transferring a patient/survivor make sure they are wearing a life jacket and include all papers, medical records, etc is inside their clothing or blankets to prevent FOD (Foreign Object Damage).

When patient is securely loaded signal helicopter to lower the hook.

Do not touch the hook or cable as it is being lowered. Allow it to touch the boat first







Lower Cable













Disconnect From Hoist Hook

NOTE: Disconnect hook prior to giving the signal to prevent being inadvertently jerked into the water





Terminate Evolution





Back Away





Deploy Rescue Basket





Deploy Rescue Litter





Deploy Rescue Sling





Vessel Casualties

Engine Casualty

Maintain course and speed. Add power to good engine and steer towards good engine to maintain course and speed. Conduct normal breakaway.



Steering Casualty

Signal emergency breakaway. Use engines to steer to maintain course



Radio Casualty

Use hand signals for normal breakaway. Always have backup communications source (2ndradio, handheld)



There is always the possibility a helicopter may have to ditch in the water.





CG Air crews receive extensive training in escape procedures.

They may be disoriented due to injuries, aircraft attitude, damage and/or environmental factors.

Boat crewmembers must be familiar with emergency exits



CAUTION! DO NOT enter an inverted aircraft.

Ensure OPCON is advised of ditching. Approach bow on from leeward side of helicopter.

Make minimal wake so the vertical stability is not disrupted (helicopter will roll over).

Be alert to position of the rotor blades



Helicopter Ditching

Always be prepared to rescue survivors in the event the aircraft impacts the water. Procedures should be the same as a man overboard, with multiple victims.

Recovery of viable survivors is the first priority Recovery of remains is second priority.

If the aircraft sinks drop an anchor with a marker buoy for the investigators



Air/Surface operations are dynamic and exciting.

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It is very easy to get "tunnel vision" and lose situational awareness.

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Always be adaptable to changing conditions.



Questions on Materials coveredPowerPoint to be on avaiable on DYRA website