Rules of Reference: Developing a Rescue Capable Air Unit

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The three rules of real estate are location, location, location. For a pilot, the three rules of hoisting are reference, reference, reference. Simply put, the better the visual reference, the less difficult the hoist.

The best scenario is a daytime hoist to a stationary target on land. The worst involves a target moving due to rotor wash over water (e.g. a small raft or boat) at night in inclement weather. Any inexperienced crew could easily handle the first scenario with little, if any, training. The second case, however, requires experience, training, crew coordination and genuine skill. The only difference between a walk in the park and your worst nightmare is reference.

You may be surprised to learn that most of the critical skills required of the pilot, crew chief and down side rescuer have very little to do with the mechanical operation of the hoist, but rather focus on communication, coordination and basic head work.

Let's assume that your agency is new to hoist operations or conducts only a few rescues a year; this will leave you a little short on the experience ladder, but all is not lost. Your problem should not be the first scenario described above or even the second. Your concern should be how to raise crew competencies to a level that can handle the myriad cases in between. The best course is to start at scenario one and begin removing pilot reference while you increase crew coordination skills.

Crew coordination is the cure for lack of reference. The better your crews are trained together as a team, rather than as individuals, the better they will adapt and compensate during dynamic rescues. At this point, standardization becomes crucial in allowing all crewmembers to integrate with each other.

The U.S. Coast Guard displayed an excellent example of crew coordination and integration during the Hurricane Katrina response in 2005. Crews from Alaska and Miami, FL, flew together seamlessly due to worldwide standardization, good crew resource management and a culture of taking lessons learned and transforming them into lessons applied.

Currency & Competency

Hoist rescues are risky by nature, so crews require a high amount of training to remain competent. They also must remain current. Currency usually involves a time frame, while competency should involve an established standard. You might address currency at a minimum of every 45 days, and a standard task list for day and night operations should be used to address competency.

The tasks should be global and include hoist malfunctions, communications failure, aircraft emergencies and system malfunctions. This task list should have specific performance standards that are objective, measurable and realistic. It should include immediate fail or no-go items for each position. This standard applies to everyone who is mission-qualified on your aircraft, whether part-time or vacation relief, SWAT, fire/rescue or volunteer SAR members.

Crew Coordination

To coordinate your crew for a hoist mission, you need to think globally and not just inside the aircraft. Crew coordination can be broken into different segments: pre-dispatch size-up, actions en route and on scene and proper use of an incident command system.

"Size-up" is a common term used in the fire/rescue world, and it can be the base foundation for risk assessment and risk management. Unfortunately, many people believe size-up starts at the time of the call. Size-up really starts when you wake up in the morning and is a continuous process until the end of your shift. Size-up should include an assessment of your personal health, weather, crew configuration, local and world events and anything else that could affect your response.

Risk assessment is part of the risk management process and ranges from simple to complex. Risk assessment requires personnel to identify hazards, analyze the degree associated with each and place those hazards in a perspective relative to the mission or task at hand. Some examples would be reduced visibility, high, hot and heavy aircraft conditions, newly assigned personnel and operating at night. This assessment can be done pre-dispatch, allowing you the opportunity to make a go/no-go decision or modify your response plans prior to a call for service or while en route.

After making the decision to launch and establishing a game plan, you might arrive on scene to find a totally different scenario than the dispatcher reported. You have now entered the risk management phase, which requires the entire crew to remain flexible, adapt, make decisions and exercise on-scene initiative.

Another key component of crew coordination is the utilization of crew resource management, or what might be called total resource management. Your dispatch center can be one of your first lines in total resource management, especially between ground and air units.

With that said, do your dispatchers have rescue-specific questions to ask of reporting parties, and more to the point, do they have a list of questions that you as an aircrew would want answered prior to launching (e.g. latitude/longitude coordinates, altitude, temperature, weather, number of victims, estimated weight of each, their medical condition, history, etc.)? The answers to these questions should also be part of the ground crew size-up.

Your dispatchers and some of your ground crews may not be able to accomplish this task at this time. This is a training item and requires buy-in from the dispatchers, ground units and your command staff. It is not an impossible task, but it does require standardization, training and an objective quality assurance and quality improvement plan.

Standardization

There is a recurring theme in hoist operations, and that is standardization. This is a global topic and should address communications, terminology, pilot and aircrew configurations, training, emergency procedures, rescue equipment and interoperability with ground units and outside agencies. The list is long and complex and requires continuous evaluation, although there are two issues that have surfaced over the last year that need to be addressed.

The first issue is crew configuration, more specifically agencies conducting hoist rescues with only a two-person crew comprised of a pilot and hoist operator. While it can be done and is being performed by some very large agencies, a minimum of a three-person crew should be the standard for conducting hoist operations. A two-person crew does not allow for standardization in providing medical care and patient packaging prior to hoisting. While some will argue certain rescue equipment will eliminate this issue, no one application applies to all rescue events, especially when conducting operations with victims in the water.

The second issue that has surfaced is the choice of anchor points being utilized in the aircraft by crewmembers. The number one rule in rescue is that your anchors be “bomb proof” and that they always be backed up. According to interviews with various agencies, many of them are unfamiliar with the ratings for the attachment points in their aircraft, or worse, there is only one rated attachment point in the aircraft. This information can be difficult to find, but is usually located in the POH, maintenance manual, or in the case of the A-Star, it is an STC.

Lessons Learned vs. Lessons Applied

If you were to review most any after-action report, you would see a recurring theme of lessons learned. The top five would usually be communications, pre-planning, training, interoperability and incident management. It appears that the same types of incidents are still occurring, and what we have learned over the years has not been applied to future incidents.

Each flight, no matter how routine, should have a good debriefing and a quality improvement program in place. These programs should be non-punitive and focus on safety and how to continually improve operations. You should also implement standard operating guidelines. While similar to standard operating policies, they are uniquely different in that they allow a certain amount of flexibility and the option to think outside the box.