

# Realistic Rescues: Is Your Agency Well-Suited for Hoist Ops?

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Hoist rescue is not suited for every organization. It requires a significant investment in aircraft, equipment and personnel training. If you cannot do it right, don't do it at all. Cutting corners is unacceptable and is courting disaster.

Before bringing hoisting capabilities into your agency, management must assess whether there is a demonstrated need to provide hoisting capabilities. The fact that there is a potential need may not make hoist operations cost effective. Costs include the initial purchase and installation of equipment, scheduled and unscheduled maintenance, initial and recurrent training and increased fuel consumption due to weight and drag.

Management may find that there is a limited demand for hoist rescue and that nearby operators such as county, state or federal organizations may be able and willing to provide such service at no cost. If management does decide that your aviation unit will conduct hoist operations, the mission and standards must be clearly defined in writing.

Hoist operations are almost always conducted out of ground effect. This makes aircraft performance a factor in most situations, especially when operating over water, in mountainous or uneven terrain, or in high-density altitude conditions.

The vast majority of law enforcement helicopters in the U.S. are light, single-engine aircraft with limited performance capability. When holding a crew of four (pilot, crew chief, hoist operator and rescuer) and the victim, light single-engine aircraft are not well suited for hoist operations. Even eliminating the crew chief does not solve the performance dilemma. Most hoist operations require medium-lift aircraft, which are not cost effective or well suited for traditional law enforcement missions like patrol and surveillance.

The hoist and its associated installation materials affect the performance capability of the aircraft. Some hoists do not permit a two-person load. And remember, when you install a hoist on your patrol aircraft, it affects every flight in terms of weight and balance, airspeed and fuel consumption.

When using aircraft that are not consistently configured for hoist operations, it requires additional time to remove doors and configure anchor systems for crewmembers and load equipment such as litters and other rescue devices. Care must be taken to ensure the pace of the operation remains manageable.

## Operating Environment

Hoist operations should only be conducted in environments that are unsuitable for landing or hovering close to the surface. Caution should be exercised when attempting operations that require operating at or near the operating limitations.

Rescues are complex and frequently require multiple attempts. Abandoning a patient because of engine performance limits represents poor mission planning. Performance capability should be determined before, not after, attempting the rescue. Exceeding operating limitations is equally unacceptable and violates all prudent safety standards.

Managers and supervisors should ensure that risk assessment models exist in order to assess go/no-go standards. Managers have the responsibility to deny any operation that does not meet organization standards, no matter the apparent urgency. No rescue can be completed when the rescuer becomes the rescuee.

## Personnel

Management has the responsibility to evaluate the qualifications of the aircrew prior to approving an operation. This must include the knowledge, skill, judgment, training and experience of each crewmember. We often focus on the pilot, forgetting that an experienced crew chief or hoist operator is equally important to the safety of rescue operations.

Primary and recurrent training standards must be established and adhered to. Skills can be perishable, especially for new, less experienced personnel. Training is an essential component of any hoist rescue operation and needs to be budgeted for. Some hoist manufacturers are willing to provide initial and recurrent training. The organization must be willing and able to invest the time and money for additional training.

## **Risk Management**

Risk management is a coordinated, comprehensive set of processes designed to direct and control resources to optimally manage risk. It takes each element of risk and builds a coherent structure to achieve a higher level of safety performance.

Risk management is the key to safe, effective hoist operations. An effective risk management system must be in place that incorporates the evaluation and management of each element of risk. This includes the complexity of the mission, capability of the aircraft, hoist and other equipment, training and qualifications of the personnel and environment of the operations.

Small increases in risk associated with each of these elements causes overall risk to go up exponentially. Any change to one or more elements of risk requires a new risk assessment. This requires that management oversee operations and work with the crew to manage changes in risk. Small changes in risk may necessitate aborting the mission.

The complexity of maneuvering the aircraft and operating the hoist generally requires the use of a hoist operator and a crew chief. The following safety principles should always be followed:

- Operate in the safest manner possible.
- Never take unnecessary risks.
- Safety is always the highest priority and completing the mission is a lower priority.

What do you do when your rescue helicopter goes down or the hoist fails? We must always plan for the worst-case scenario. Having an emergency response plan is an essential element of risk management. Hoist rescue is a complex, high-risk operation, and things occasionally go wrong. The time to plan is before the mishap occurs, not after. A plan is exactly that: a predetermined set of actions to respond to an emergency.

Rescue can be an effective tool, but we need to be realistic about our expectations and the capability of our personnel and equipment.