BEFORE AND AFTER

By Lt. Matthew Burns and Ltjg. Landon Jones

The lion's share of work in a successful flight is spent in preflight: studying, flight planning, weather briefing, and working out every logistical and operational detail, no matter how small. A critical but underappreciated part of the brief is when the crew talks through each leg of the flight, identifies the potential hazards, and develops ways to eliminate or mitigate them.

We've all studied the academics of operational risk management (ORM), whether in flight school or in a fleet squadron. Five steps, four rules, three levels—although not rocket science, but sometimes ORM can seem unwieldy and overly structured. The application of those ORM principles, however, couldn't be simpler: A crew discusses all the mission's risks and then decides how best to deal with them.

Sometimes the risks are not all self-evident on preflight. Some hazards are a result of being in the wrong place at the wrong time. In these cases, it's not until after the flight that ORM principles can be applied. Debriefs capture the lessons learned that may prevent future mishaps. Here's an example:

Our squadron was home for a few months between deployments, and my crew's mission was to update our night overwater currency in the Sagami Bay, 10 miles south of NAF Atsugi. The night was clear, and our SH-60F was flying well. We proceeded via course rules to the dip areas and completed our after-takeoff and automatic-approach checklists. We then practiced dip-to-dip navigation (used to rapidly reposition the aircraft and its dipping sonar during active ASW prosecution).

Night search-and-rescue (SAR) training was next on our agenda. Our crewmen dropped a Mk-58 smoke on a simulated datum, and we turned to enter our first windline-rescue pattern. During the turn, one of our crewmen saw another aircraft about four miles east of our position. He called the traffic, and, after noting it, the crew continued with the rescue pattern.

We flew to a hover above the smoke and began the verbal sequence, simulating the deployment of the rescue swimmer. While in the hover, the left seat pilot saw a neighboring aircraft appear to have moved much closer to us. He had dropped two smokes in the water about a mile east of our position. We discussed their close proximity and decided the other aircraft probably was not on NVGs (night-vision goggles) and hadn't noticed we were in the same area. Any aircrew on NVGs almost certainly would have seen our aircraft at this distance.

We were the only crew in our squadron flying that night, but NAF Atsugi is home to several other helicopter squadrons, American and Japanese. We decided the most prudent course of action would be to expedite our ongoing simulated rescue, then depart to the southwest to gain some distance before continuing the SAR training. The crewman in the cabin door began reeling in the rescue hoist, so we could depart the hover.

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I glanced down at the instrument panel to check the engine indications, when, suddenly, I saw streaks of light passing in front of the aircraft. The crewman saw the same streaks of light and immediately recognized them for what they were: tracer fire.

He urgently called, "Depart. Depart. Depart."

At that moment, I realized how incredibly dangerous our position was. We were between an aircraft firing a machine gun and its targets, and they had no idea we were in the same airspace.

The basic gun pattern for a helicopter is shaped like a racetrack. This pattern easily can be modified for different situations, and its simplicity makes it easy for multiple aircraft to fly. However, when only one aircraft is flying the pattern, gaps occur in the firing legs as the aircraft turns downwind and reloads. After a few seconds, the streaks of light had stopped flashing past our aircraft, but I knew we only had a few moments before the aircraft would complete its orbit and again open fire. My HAC pushed the nose over, rapidly accelerated, and exited the area as fast as our aircraft could fly.

Once clear, we called the other aircraft on guard but received no response. We all took a few moments to look around the cockpit and cabin, searching for signs of damage. Fortunately, our aircraft didn't seem to have been struck, but we agreed to abort the training mission and have the aircraft thoroughly inspected. We turned north and entered course rules for home, with all of us breathing a deep sigh of relief.

At night, objects appear very different to the human eye. Judging distance is considerably more difficult than in daytime, and depth perception is degraded badly. Using NVGs can dramatically improve one's visual acuity, but depth perception continues to be poor, and the field of view is reduced from 188 to 40 degrees. The most likely explanation for the other aircraft not realizing we were flying nearby is that they were not wearing NVGs. With them, they would have seen our exhaust and our anti-collision lights.

Clearing a range—visually or using radar and FLIR—before opening fire is a requirement for any gunex. At night, though, visually clearing a range without NVGs is very difficult, and the likelihood of a blue-on-blue engagement increases. All of this is strictly academic in this case, however, because gunexs are prohibited in the Sagami Bay dip areas; naval aircraft from both nations regularly use the airspace, and fishing boats are very active in the area. Fortunately, we escaped being shot. Unfortunately, mission planning and ORM would not have prevented this event because no reasonable assessment of the hazards would have included two aircraft flying 20 miles out to sea to the same section of Sagami Bay, with one of them conducting an unauthorized gunex.

My crew's application of ORM came after the fact as a mitigating control for future flights. We coordinated with all the other helicopter squadrons on the base, Japanese and American, and established a common deconfliction frequency for the dip areas. This new policy will help prevent any future close calls, and no one else will have to experience the same level of excitement we did. We also incorporated the lessons learned into our gunex events; we now discuss range-clearance procedures and authorized ranges in every brief.

"Good judgment comes from bad experience." ORM capitalizes on this saying: Capturing the lessons learned from past flights ensures future flights are as safe as possible.

Lt. Burns and Ltjg. Jones flew with HS-14.

One can look at the five steps of ORM and think of it as a linear process. In reality, the process is a continuous cycle. This crew identified a new hazard during flight, used a time-critical process to manage the immediate risk, but then did something we don't often do—they understood that this hazard might not be isolated to this one occurrence, could be symptomatic of other similar hazards at night in a working area, and implemented a control (the common frequency) after the event. What now? Step 5: Supervise! Leadership in the units need to ensure their crews adhere to the new procedure (risk-control measure), and enter this risk-management plan into TRACS so others might learn from their experience. ORM—don't let it end when you exhale with relief after surviving a near-death experience.
—Capt. Ken Neubauer, aviation safety director, Naval Safety Center