

I Remember This

By Lt. Don Clemons

“I’ve done this before. It’s an easy mission. All I have to do is hover.”

I remember saying these words to myself in the early morning of a late fall day as I briefed my crew on our naval-surface-fire-support (NSFS) mission. I had flown nearly half a dozen NSFS missions in the past as a young copilot, but this flight was to be my first as the SH-60B aircraft commander.

We took the helicopter as a hot seat from the early morning SSC/range-clearing crew, and took off on time without a hitch. The weather was beautiful but was forecast to deteriorate through the morning. This cruise was my first as a helicopter aircraft commander. I had a brand new copilot fresh from the FRS, a well-seasoned aircrewman, and two spotters on board for the morning’s gun shoot.

After spending almost an hour trying to persuade a fisherman to leave the area, in our best attempt at a foreign language, we finally were ready to proceed with the mission. We found a good position to hover: a spot which kept us away from the island, about 1,000 feet from the water, and well outside the gun-target line from the ship. Knowing that the gun shoot was going to take some time because of the late start, I checked our fuel every 10 minutes. When the ship was not ready to shoot or needed a break, we flew in small orbits to minimize our burn rate. Exacerbating the fuel problem, our beautiful morning weather slowly deteriorated, as predicted. It started to rain; the ceilings began to lower.

“ASTAC, ATO. Two hours left on the gas. Weather still is doable. Ceiling is broken at 2,000 feet and pockets of rain. We can keep going.”

“Roger, sir. Ship is moving into position for the next event.”

With that, I knew I had time to fly around a bit,



get out of holding the hover, and save what little gas I could. After one lap of my orbit, and on the downwind of the second orbit, the ship said they were ready to send rounds down range.

I took the controls from my copilot and set us up on-station as quickly as possible. We were on the downwind, so my plan was to do a quick one-eighty and establish the 1,000-foot hover for the spotters. As I smoothly pulled back on the cyclic to quickly slow down, I watched my altitude to maintain 1,000 feet. As the airspeed bled down through 50 knots, I added left pedal to pull the tail through the one-eighty to help the spotters see the range out the cabin door.

My copilot and I simultaneously caught the first signs of trouble. We had lost 100 feet in the turn, and he called for power. I slightly pulled up on the collec-

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tive to get back on altitude. That move didn't correct the descent, so I figured I hadn't added enough collective and tweaked in a little bit more. He again called for power. This time, at 850 feet, I saw the VSI show a

1,000-fpm rate of descent; the instrument finally had caught up with the aircraft. While I called for power, this time, with the help of my aircrewman, I pulled in a good tug of collective. As I watched my instruments, I saw my VSI go from 0 to 1,000 to 2,000 fpm—all the while passing through 700 feet AGL.

It struck me at that very instant: Despite smoothly pulling the aircraft around, we had entered vortex-ring state. I had turned the helicopter and demanded lift so quickly that the helicopter began pulling dirty air through my rotor system. Not only did I fly through

my rotor wash, I tried to hover in it. At that moment, I thought, "I remember this."

Truthfully, I didn't remember the vortex-ring state discussion in NATOPS. I didn't remember when we were taught this situation in ground school. What I remembered was going through flight school, sitting in the ready room one night after being cancelled, and talking with one of my buddies. He talked about how he had entered vortex-ring state that same night while trying to do a steep approach. We had discussed how it happens, how he had gotten into it, what it feels like, and how to get out of it.

Flash forward to the situation at hand: We still were falling like a rock. Pulling power only aggravated the situation. While both crew members called for power, and I guarded the collective from going up any

farther. I swore, and told everyone to "Hang on!"

I immediately bottomed the collective and pushed the nose over to about 20-degrees down to get airspeed. My scan went back and forth from the radial to the airspeed. Airspeed still read zero as the altitude continued to diminish.

I finally got airspeed after what seemed an eternity. I slowly pulled back the nose, added collective to stop the descent, and leveled off at roughly 400 feet AGL. About 15 seconds had passed from the time I had turned the helicopter around and started falling until the time I was flying at 400 feet—grateful I had started this maneuver at 1,000 feet. Everyone was OK and nothing was damaged. I don't think the spotters realized we were in extremis. We climbed to altitude and flew the rest of the mission without incident.

I made a withdrawal from our "luck bag" and made a significant deposit in our "experience bag" that day. I had tried to expedite the evolution and, in doing so, put the aircraft and crew in a compromising position. In a hurry, we pushed the aircraft beyond its envelope. Fortunately, during one of those typical ready-room bull sessions we've all had, I learned about vortex-ring state and how to get out of it. I always will remember this valuable lesson, as will the rest of my crew. A lot of altitude and some learning from others combined to bring us back that day. 

Lt. Clemons flies with HSL-51.

The SH-60B NATOPS discusses vortex-ring state in Chapter 11. Although full-down collective and forward cyclic produced a recovery in this case, the crew was fortunate to have had enough altitude. A similar profile starting at a lower altitude might not have produced a favorable outcome. —LCdr. Bruce Bicknell, H-60 analyst, Naval Safety Center.

The "luck" and "experience" bags [buckets] the author mentions were discussed in an Approach article titled, "Three Buckets of Naval Aviation," by Cdr. Steve Baxter, in the November 2001 issue. The story also includes a third bucket, "knowledge." Read this story online at: <http://safetycenter.navy.mil/media/approach/issues/nov01/threebuckets.htm>. —Ed.