

Red Line Fuel (and

by Lt. Matt Cristo

During our transit home from WestPac, we finally had a chance to catch up on our night-shipboard-currency requirements. We transited from Darwin, Australia, to New Caledonia beneath a big, bright moon, and there's nothing that pilots who don't fly much at night like more than that. The only element not in our favor was the weather. The seas were about 15 feet, and relative winds were routinely blowing at 45 knots, with occasional gusts to 50. This created particular problems for flight operations. The ship had to maneuver off PIM whenever we engaged rotors, launched and recovered. Nevertheless, eager to renew our qualifications, each night, we scheduled a launch in hopes of getting our required night time and some deck work.

By the time it was finally my turn to requalify, the weather had not improved. The flight deck was pitching and rolling, and the winds were heavy. My HAC decided that we wouldn't work the deck at all. His plan was to have the ship turn for best winds, launch, burn a bag of gas, and then, based on the difficulty of recovery, either refuel and go back out or call it a night and shut down.

Once off deck, we spent most of our time practicing search patterns and SAR scenarios. The night grew considerably darker than we had anticipated, and unexpected cloud cover obscured the moon. With about 40 minutes of gas left, we informed tower that we were going to drop a smoke five miles astern of the ship. "Roger, be advised the ship is making 17 knots at this time," they responded. We rogered up to tower, but the significance of their call was not evident to us at the time.

After dropping the smoke, we began conducting a practice sector search. True winds were 37 knots, requiring huge corrections in our pattern in order to successfully pass over datum. The challenge of maintaining a good search pattern became the

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primary focus of our flight. We didn't notice a bigger problem. The prevailing winds were blowing us directly away from the ship.

With approximately 20 minutes of fuel left, we finally aborted our search pattern, advised tower of our fuel state, and told them we were heading back. Tower replied that they had set flight quarters and would be standing by to receive us. The TACAN said nine miles, but the ship was not in sight.

The first pang of nervousness hit me after a bit of quick mental math told me the fuel was going to be an issue. In negligible winds, we should have been able to cover nine miles in approximately five minutes. The ship, however, was running from us at 17 knots into a 37-knot wind. This meant that if we were

and How We Got There)



Helo photo by JO2 Charles Neff
Photo-composite by Patricia Eaton

indicating 100 knots, we were only making 46 knots over the ground. The full impact of our situation finally hit me. Nine miles at 46 knots was going to take us about 13 minutes. I began to quietly squirm.

The DME clicked off more slowly than I had ever seen. Eight minutes or so passed, and we were still at five miles, with both low-fuel lights beginning to flicker and the ship still not in sight. The cloud cover was making it hard to see. We continued to fly to the head of the needle, constantly cross-checking our mag compass. I finally spotted the ship at about four and a half miles. Seeing the ship did relieve some of my anxiety and I observed, "I was getting a little nervous there."

The HAC responded, "Yeah, me too." We both knew that we needed to get on deck without any undue delays.

The next few minutes and miles seemed to stretch on to infinity. My eyes must have scanned between the fuel gauge, the DME and the ship's lights a hundred times. By the time we were a mile astern of the ship, we were at about 300 pounds a side (10 minutes of fuel). We called tower to inform them of our position and low-fuel state. Tower informed us that the ship was making a turn and going dead in the water in order to get winds for recovery. I stirred in my seat, quietly furious that the ship had not made the necessary turn minutes ago. Talk about an undue delay. We

circled aft of the ship for what seemed to be another eternity, waiting for them to steady up.

We were down to 260 pounds of fuel per side when Tower gave us the go ahead: “You have green deck, winds are 15 to starboard at 33, gusting to 39 knots, pitch 2, roll 3.” The winds called for a left-seat, port-to-starboard approach, so I took the controls and began positioning the helicopter on final.

But I didn’t feel we were home free. Instead, that old feeling of anxiety resurfaced. Although we were indicating about 50 knots, we were only making 10 to 15 knots over ground because of the heavy winds and occasional strong gusts. With each gust, the helicopter rose and fell 40 feet, even though I was holding the collective steady. The

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power surges from the engines became audible in the cockpit. “This is going to be fun,” I said.

I slowed the aircraft and crept over the rolling deck. As I began to steady the aircraft and started to gently descend, a downdraft caught us, and I had to pull an armload of power to avoid meeting the deck with the delicacy of an anvil falling from a three-story building. My adrenaline-enhanced pull brought the helicopter level with the tower. The winds, from which we had been somewhat shielded when we were behind the superstructure, began to churn the helicopter with new ferocity.

I tried to calm my nerves and began to settle the aircraft slowly back down toward the deck, convinced that this undue delay was something that I actually could control. I found myself staring at the superstructure as my eyes hunted for something stable to use as a reference point. As all helicopter pilots know, spotting the deck is the last thing that you want to do while trying to land on the boat, especially in heavy seas. This is when the real bucking began. Finally, after about 20 seconds of pilot-induced oscillations, I began to settle the aircraft and come down over the spot. Just then, the crew chief called, “Wave off, let’s take it around.”

For a split-second, I felt steady over the deck and thought about ignoring his call. Later, while talking with the

HAC, he said that he thought I was going to go for it, because we finally were in a good position to make the landing. My training took over at this point. We had briefed that any member of the crew could call a waveoff, and I did what we had briefed.

The HAC took the controls on the climb-out and brought the aircraft around for what I believed would be our last shot at getting the aircraft on deck before we hit our red-line fuel state. I double-checked the fuel gauge. We were down to 230 pounds of fuel per side, which could mean five minutes or one minute of fuel left. The strong headwind continued to push us from the ship, widening our pattern and costing us precious fuel.

If I had looked at the fuel gauge a hundred times during our transit from the smoke to the ship, I looked at it a thousand times while the HAC flew the pattern and made his transition to final. The aircraft resumed its frightening oscillations as the gusts changed the lift on the bird every second. Again, the engines could be heard winding up and slowing down in reaction to the varying load demand. To my great relief, the HAC, flying cross-cockpit, brought the aircraft to a semi-stable hover and began to settle the aircraft to the deck. But the helicopter began to buck again. “Hold on everyone,” he said, “This is going to be a hard one.” He placed the helicopter over the spot, and the collective came down in a hurry. In a few seconds, we were solidly on deck.

Silence reigned inside the aircraft for a few moments. I sat there, confused about how quickly everything had gone so wrong. I knew one thing for sure, and I said it: “I think I’m done for the night!” The decision quickly became unanimous.

Our lack of situational awareness had put us into a serious dilemma. We had been comforted by how close the ship was, but the time required to arrive on deck was almost beyond our capability.

No training event is important enough to push the envelope. If weather is bad, pitch-and-roll limits are exceeded, and winds are out of limits, I will no longer launch on a training flight, no matter how big the moon is.

Finally, this experience reenforced the importance of waving off when someone calls for it. I can’t imagine how I would have explained to my crewman that I didn’t think his assessment of our safety was accurate. I had prided myself on the fact that I had never had to wave off in the H-46. I realize now that shouldn’t be a source of pride. We helo bubbas need to know our limits. That means doing ORM, including it in our briefs, and then flying what we brief. 

Lt. Cristo flies with HC-11.