



## Crew Resource Management

Situational Awareness  
Assertiveness  
Decision Making  
Communication  
Leadership  
Adaptability/Flexibility  
Mission Analysis

# THE ICEMAN COMETH

By LCdr. John E. Rotter

We had taken off from NAS Brunswick at 0300 for a typical late night, ASW-training flight over the Atlantic. Before takeoff, we had learned a snowstorm was approaching Maine from the west. We received our usual weather brief at the tactical-support center, and the 2P went to weather to get the details. Because of the impending snowstorm, I told the 2P to look at every possible alternate, just in case we needed one.

The flight was uneventful until we had completed our training with a fast-attack submarine and were headed back to NAS Brunswick. En route, we learned the AGs were calling the field 500-and-a-half, slightly above the PAR minimums of 100-and-a-quarter.

For the approach, I put the 2P in the left seat to gain experience shooting an approach in something close to minimums. I was in the right seat, and one of our instructor flight engineers was in the flight engineer's seat. As we descended into the goo, we completed the descent and approach checklists. Because we didn't know the condition of the runway, we figured landing ground-roll distance for a land-flap landing, with moderate braking, and four inches of dry snow on the runway. We briefed an approach-flap landing if we broke out right at minimums.

We were turning final for the PAR approach to runway 1R, gear down, landing checklist complete, when a loud buzzing was heard in the flight station.

The 2P and I grabbed the glareshields in front of us to see if they were the source of the noise, as often is the case. The flight engineer (FE) began feeling the emergency-shutdown handles, and he determined the noise was coming from the No. 2 engine. The power lever had a vibration, as well. We were 10 miles out, in instrument-meteorological conditions (IMC), with all checklists complete, and about to begin final approach.

I queried the FE to see if he thought the engine would last another five minutes or until we were on deck. He said no, and that he could feel the vibration worsening. This particular FE was a mech who worked in QA, so I wasn't about to doubt his judgment. Also, NATOPS has a warning about impending blade separation with E-handle and/or power-lever vibrations, so we decided the engine needed to be secured.

I checked with the 2P to see if he had any input, and I made sure he was ready for the engine to go away. He confirmed he was ready. At this point, we had begun a turn away from final and were at 160 knots. I called for the FE to E-handle No. 2. The 2P checked him on the E-handle, and the engine was secured; the engine and prop successfully feathered. We now were at 3,000 feet MSL, and I told the 2P to continue his turn to a heading of 190 to set up for an extended final. The turn gave us a chance to brief the three-engine landing and conduct a seat swap, so I could make the landing from the left seat.

As the 2P began to turn toward the outbound

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course, he started to increase power toward the firewall on the three remaining engines. I noted his airspeed increase and called "airspeed" so he wouldn't overspeed the flaps. As the airspeed indicator sped past 190 knots (approach flap-limit speed) on my side, I took the controls, pulled back the power levers toward flight idle, and retracted the flaps from approach to maneuver. As I did this, I glanced at the pilot's airspeed indicator; it was stuck at 140 knots. The 3P, sitting on the radar console in the flight station, kept talking about true-air-speed heat, which I knew had nothing to do with the pilot's airspeed indicator. However, once I saw the pilot's airspeed indicator stuck at 140, I looked at the overhead console to see if indeed the pitot heat was operating. Simultaneously, the FE and I saw the pitot heat off, and he immediately turned it on.

The junior FE was a nugget straight out of VP-30. He dutifully had turned on the pitot and angle-of-attack heat when they were called for on the before-start checklist prior to taking off that morning. However, he then turned them off when he immediately didn't see a lineman. Until this incident, this action was customary for many FEs in the squadron, so that linemen wouldn't burn themselves on the pitot tubes or AOA probe. Unfortunately, he didn't tell anyone what he had done, nor did he turn them back on after a lineman appeared. Up until the engine shutdown, we had been flying, in IMC, with the pitot heat off the entire time.

Once the pitot heat was turned on, the pilot's airspeed indicator came up, and both gauges matched up. With the aircraft stabilized at 3,000 feet and 160 knots, with approach flaps, we declared an emergency and completed the emergency-engine-shutdown checklist. After completing the seat swap, we turned inbound at 20 miles.

Weather was our next issue. The snow storm we were flying in extended from New York to Canada. The winds at Brunswick were reported at four knots, nearly right down the runway, and I wasn't too keen on an extended transit in icing conditions, with one engine shut down. We decided to shoot the approach into Brunswick. The GCA controller did an outstanding job of guiding us in to the field. The 2P called field-in-sight at about 600 feet AGL. I transitioned outside and initially only could see the approach lights.

The runway came into view but was very difficult to make out as it had not been plowed. Four to six inches of fresh snow were on the runway. The contrast between the white edge, the centerline lights, and the snow was almost nil. I selected land flaps, and we touched down about 1,000 feet down the runway. Once the nosewheel was on the deck, the 2P assisted me by holding full left aileron and full forward yoke. I maintained centerline with the rudder, as I slowly brought the three remaining power levers into reverse. We slowed down, and, as speed decreased through 80 knots, the snow blown forward by the prop wash began to obscure our forward vision. We stopped the aircraft with 2,000 feet of runway remaining.

After we had taxied clear of the runway, I considered how our training scenarios never had come anything close to this one, which happened to be my first actual three-engine landing as a plane commander.

We learned quite a few lessons in crew coordination on this flight. If you do something nonstandard, make sure you let the other crew members know, so a potentially dangerous situation doesn't develop down the road. The danger of flying the aircraft outside its envelope is a very real possibility if airspeed indicators are not reading correctly.

Make sure you are backing up the other crew members. Four people missed the pitot heat being off until a critical phase of flight. We need to trust our junior people, but we still must be vigilant as they work toward their qualifications.

Finally, although we probably didn't think about it at the time, we were using ORM throughout the emergency. We decided the risk of leaving the motor running was too great, so we shut it down. We then decided to remain at Brunswick for the landing because of our proximity, the pilot's familiarity with the field, and lack of current weather data from any alternates.

As it turned out, the vibrations were caused by a failed bracket, not a prop blade about to go flying. Despite the risks, through management and experience, we brought the plane and the 13 of us aboard home one snowy December morning in Maine. 

LCdr. John E. Rotter was with VP-26 at the time of the incident and currently flies with VPU-1.