



1 Top Ten Tanking Troubles

ORM Center

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By LCdr. John Flynn



from our squadron to divert because we could not find the tanker. In retrospect, my crew did almost everything right, and we got the skipper's jet home because we applied the ORM principles, starting with the brief and continuing throughout the flight.

While flying missions in support of Operation Southern Watch and Operation Iraqi Freedom, our junior officers devised a top 10 list of tanking scenarios ranked from easiest to most difficult. The objective of this ranking was to more effectively apply ORM principles, revisit fundamental procedures, and review policies on how to conduct refuelings.

At first glance, the list may seem humorous, until you realize each scenario actually occurred and, more often than not, over not-so-friendly territory.

The list was posted in our ready room. As we ended our deployment, we fondly looked back at what our squadron had accomplished, including lots of flight time, predominantly under combat conditions, and more chicken pucks than I care to mention.

I remember my crew was the only one

VAQ-131 ORM Top 10

10. Tanking.
9. Tanking at night.
8. Tanking at night in the clouds.
7. Tanking at night in the clouds as a section.
6. Tanking at night in the clouds as a section, with only 500 feet between tankers.
5. Tanking at night in the clouds as a section, with only 500 feet between tankers and with no comms.
4. Tanking at night in the clouds as a section, with only 500 feet between tankers and with no comms, approaching bingo fuel.
3. Tanking at night in the clouds as a section, with only 500 feet between tankers and with no comms, approaching bingo fuel, and with the tanker starting to do S turns.
2. Tanking at night in the clouds as a section, with only 500 feet between tankers and with no comms, approaching bingo fuel, and with the tanker starting to do S turns when Absolute gives you a snap to your tanker, putting you back into Iraq.
1. Tanking at night in the clouds as a section, with only 500 feet between tankers and with no comms, approaching bingo fuel, and with the tanker starting to do S turns when Absolute gives you a snap to your tanker, putting you back into Iraq not once, but three times.

This story began during a CATCC watch earlier in the deployment, while listening to two sections and one single from other air-wing squadrons state their intentions to divert. Each crew had to ask for a latitude and longitude for the primary divert and the associated TACAN channel. Based on that event, I now questioned how familiar my squadron's aircrew were with the operating area's divert information. As the safety officer, I made sure the required divert information was well ingrained into the aircrew over the next few days, including location, navigation aids, field data and support facilities. Soon thereafter, the JO's "top 10" list materialized, which I found humorous. However, I realized the importance of reviewing proper procedures should we have trouble finding the tanker's basket, as was to occur that night.

I could say, "It was a dark and stormy night," but, actually, we could see great with NVDs, and we planned on staying above the clouds. METOC had briefed the weather would be "scattered to broken clouds from 8,000 to 25,000 feet, with scattered rain showers in the central and western portions of the AOR."

"Great," we thought, "right in the middle of all the tanker tracks."

After our brief and a review of the aircraft-discrepancy book, we again launched in support of the "shock and awe" phase of OIF. We easily found our front-side tanker with the help of the NVDs, but the tanker pilot wanted to stick to his assigned track, which meant going through (instead of around) cumulus clouds. We got our gas and proceeded to station. Along the way, we climbed, then climbed some more—all the way to a very untactical FL320. From there, we provided jamming support before leaving to find our midcycle tanker.

We had heard from another Prowler crew that the weather between FL260 and FL280 was workable, at least partly VMC. We had the E-3 clear the path in front of us, and we found ourselves descending and ascending between FL200 and FL300 to find VFR conditions. We finally found a clear altitude at FL260 and turned toward the tanker track.

One radio was tuned to the tanker-control frequency and the other radio directly to the tanker. The tanker crew said they were IMC at FL220. We got a sweet lock on him at 35 miles and asked the controller for a SNAP (bearing, distance and altitude). The tanker crew said they were climbing to FL240 because FL220 was unworkable. We got our SNAP from the controller and descended to FL230.

Looking at the "top 10" list, we had experienced Nos. 10, 9, and 8. Fortunately, we were not in a section, but we were about to experience numbers 4 and 3, although we were told no other tankers were in the vicinity. We had excellent comms with the tanker and the controllers as they fought to have a Prowler meet a VC-10.

I could see the TACAN quickly tick down, indicating a head-to-head pass was coming. As it ticked down to 1.5 miles, with no tanker in sight—we still were in the clouds at FL230 feet—I started to get worried. My pilot put on a hard turn, and we got an updated steer to the tanker, 180 degrees behind us. The VC-10 pilot tried various altitudes and headings but could not find a clear area. The tanker crew suggested we simply follow him via TACAN as he flew back to his base, and, if we broke out, then we could get our gas. With no other tankers available, this plan seemed like our final option.

I asked for another SNAP to our VC-10 and his heading. I noted the TACAN read 7.5 miles. From the information we received from the controller and the VC-10, the crew figured we were behind our tanker. We increased speed but watched the TACAN gradually increase, which did not make any sense, so I again asked for the VC-10's heading and airspeed. They were on our heading and about 50 knots slower than us. The controller swore that the VC-10 still was in front of us. About that time, we hit strong rain showers, and I swore to myself. Our squadron just had experienced a flight involving severe hail damage, so getting hit by hail was not good. The rain subsided occasionally but then came back with ferocity. Meanwhile, the TACAN still was increasing, even as we slowed. We had calculated our bingo number to be 4,500 pounds; we were showing 5,500 pounds. With the confusion over the tanker's location, and after dueling with the controller and the tanker, I asked, "OK, who has had enough of this?" My pilot immediately raised his hand.

We eventually correlated the TACAN with what the controller and the tanker pilot were saying. Finally, I realized we were probably on slightly diverging flight paths; hence, the increasing TACAN, despite our speeding or slowing. I cried "uncle" with 5,000 pounds remaining and announced we were diverting. My pilot climbed at 0.7 Mach to FL330, and we finally were above the clouds.

I told the controller we were "emergency fuel" and were heading to our primary divert. I knew that, technically, we gave up 500 pounds early, but I added a few

hundred pounds for my very pregnant wife (she gave birth to our twin boys four days later) and because the tanker duel had proved fruitless.

Knowing we had gas for our divert and plenty of tailwind, we flew via deconflicted routing to the divert field. I couldn't establish communications with our foreign air-traffic controller, so I switched up approach and the supervisor of flying (SOF) at our divert field. The SOF expected us, and he said fuel was waiting upon our arrival, and the ship knew our divert plan. Just as the SOF gave us that message, the clouds disappeared below us, and we could see forever.

My pilot was busy reading the approach plate and getting positioned for an idle descent, while I talked on the radios. As we descended, the approach controllers asked if we had the field in sight. All we could see were a bunch of lights perpendicular to our flight path. From our earlier review of the airfield layout, we knew the runways were perpendicular to our flight path. We correctly surmised the lights were from the airfield facilities. However, we could not make out the runway lights. We knew from the field diagram the runway was west of the facility lights. As we turned to final, the runway lights appeared, with our fuel now down to 2,400 pounds. We were going to op-check some of our landing items that had not been used in five months, namely the anti-skid and the flaperon pop-ups.

My pilot configured the aircraft for landing, and we immediately got an anti-skid light. Fortunately, it had not been raining at the airfield, and tower confirmed a dry runway. My pilot flew a low glide slope to touchdown, using the VASI-light system. The aircraft touched down on the dry runway, and my pilot and I reported good pop-ups to complete a successful landing. Ground control directed us to the transient line, where we shut down with 1,700 pounds of gas and no low-fuel light.

It took us longer to get the gas we wanted. We were out of practice for what amounted to cross-country rules. But, we got enough gas to get to the ship and thanked the Marines who helped us out. I had to blow the dust off my ground-based checklists. We got airborne and made our assigned recovery time to an OK 3-wire.

I would like to impress on others these points:

- Know your operating-area-divert information: latitude and longitude, runway and field data, and available nav aids and communications frequencies.
- Communicate within the squadron and air wing. Many of the flights conducted during Operation Iraqi

Freedom were flown in IMC and led to a number of divers. I learned from others in the air wing some of the nuances of the divert fields that are otherwise not available from the publications. I then passed those lessons to others in my squadron.

- Compartmentalization can be critical. I always have felt comfortable with my ability and my crew's ability to compartmentalize, and this flight was no exception. Not only was the flight a combat mission, but my wife back at home was about to give birth. Yet, my crew and I knew exactly where we were and what we had to do to get home.

- Know when to say "when." I had heard of others getting below bingo fuel before finding the tanker, but I was not about to let that happen this night. Confusion as to where the tanker was, IMC flight, and rain, were factors that led our crew to say "when" at the appropriate time.

- Once the decision is made to divert, then divert. Our airborne controllers asked if we wanted to try to find a tanker south of our flight path. Knowing we really had 500 pounds of gas to play with (about five minutes), we declined.

- Crew coordination is always a factor in the EA-6B. I had our backseaters figure out our actual bingo fuel. Once we started the divert procedure, I let them know our intentions and kept them abreast of what we were seeing on approach.

- Be prepared. I always carry the necessary publications with me, regardless of the flight's length, complexity or location, and I thoroughly review divert data. Looking at the pubs for the first time at night or IMC on a bingo profile is not good preparation.

- Look for safety-of-flight clues any place you can. The JO's ORM "top 10" list, although humorous, highlighted our most prevalent risk during Operation Iraqi Freedom: IMC tanking.

Always assess the risks, and address those risks to best mitigate them, if not remove them completely. In-flight tanking will continue to be a challenge, especially in aircraft like the Prowler, which lacks air-to-air radar to facilitate rendezvous in IMC conditions.

Dependency on air-traffic controllers can be fatal if a fully developed plan of action has not been discussed. Knowledge of local operating areas and divert fields are a must, whether operating in the United States or in combat conditions. Can you avoid disaster when one of those "top 10" flights comes your way? 

LCdr. Flynn flies with VAQ-131.