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Approach

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Mishaps cost time and resources. They take our Sailors, Marines and civilian employees away from their units and workplaces and put them in hospitals, wheelchairs and coffins. Mishaps ruin equipment and weapons. They diminish our readiness. This magazine's goal is to help make sure that personnel can devote their time and energy to the mission. We believe there is only one way to do any task: the way that follows the rules and takes precautions against hazards. Combat is hazardous; the time to learn to do a job right is before combat starts.

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Back cover: Photo by MCAN Jimmy C. Pan.

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More Than Just a Parts Run

BY LT ROY WALKER

It seemed like a great idea at the time: drop off a few hydraulic pumps in Afghanistan to help our air wing maintenance detachment repair a stranded EA-6B (the pilot had diverted earlier that day), then launch and conduct our ATO assigned missions. Our aircraft had been holding up well on deployment and didn't let us down this time.

The flight from the ship to Kandahar, aside from deteriorating weather, had been uneventful. The jet had given us no reason to suspect a potential issue. We landed, dropped off the spare pumps, refueled, and headed back out to the runway to continue our mission – a nice diversion from what would otherwise have been six hours in a left-hand orbit.

A nice diversion, that is, until I raised the gear handle. "Starboard main's barber-poled," called ECMO 1 as I was beginning to turn on course. "Let's hang out overhead the field to troubleshoot." After a thorough read of the PCL, we achieved three down and locked and executed a sixty-minute show-of-presence, burning gas over Kandahar waiting for the arresting gear to be rigged.

With very little maintenance equipment and expertise available at Kandahar, our detachment did everything they could to inspect for obvious damage or component failures on the landing gear, finding nothing. The initial estimate from the ship was that it could take one to two weeks to get the required ground support equipment to Kandahar so that mechs could drop-check and inspect every component of the landing gear.

Given that the aircraft for which we had brought the hydraulic pumps was fixed and ready to return to the ship, we decided to launch as a section the following day. We intended to have our wingman visually determine if the gear appeared up (which would mean that the indicator had failed) or if not fully retracted (signifying a larger problem).

Sure enough, our problem went beyond a bad indicator. After we launched, our wingman reported that we had two gear fully up, with the starboard main hanging like a stick in the wind. We'd planned to bring the both aircraft back to the ship if we appeared to be in a clean configuration, but not like this. We detached our wingman so they could resume their flight to the ship, and the Soldiers, Sailors and Airmen of Kanda-

har got another Grumman air power demo while the arresting gear was rigged for our precautionary trap in accordance with our PCL.

After landing, we began to coordinate a plan with the ship and the CAOC to bring back the aircraft stiff-legged the following day.

"Nilla, have you ever stiff-legged a Prowler?" asked ECMO 1.

"Nope," I replied.

"Well, I've done this before for short distances and it's generally not that big of a deal. We'll fly a little lower, keep it just under 250 KIAS, gear down, flaps up, and we'll need a tanker to help drag us back to the ship. The biggest challenge will probably be tanking at 250 KIAS and at altitude with the gear down," he explained.

I was confident that the tanking wouldn't be an issue, since we were in the fifth month of my second cruise. I felt comfortable and proficient with tanking. ECMO 1 worked out the details of our recovery with the ship and confirmed our scheduled tanking with the CAOC. We agreed to discuss the plan more the next morning during the brief, and I left to find some food as well as some toiletries for our second night in Kandahar.

THAT EVENING, SHORTLY BEFORE I turned in, ECMO 1 remarked, "I think I want to request that we only pin the starboard gear instead of pinning all three, as the boat had told us." With three gear down and locked, the Prowler's fuel flow is about 8000-9000 pounds per hour flying 250 KIAS, at just about all altitudes. He was concerned that if we had trouble taking gas or ended up overhead the ship lower on fuel than we intended, we could still raise the two operating landing gear to lower our drag count and fuel flow. Once past the halfway point to the ship, there would be no friendly divert fields within 300 miles. This idea seemed reasonable to me, although I had never heard of only pinning one landing gear. He said he would confirm with the boat the next day.

We spent the following morning ironing out admin details. Leadership at the boat had briefed and agreed to the one-gear-pinned plan; we intended to fly back without raising the gear. We were scheduled with a KC-10 that was set to drag us out of Afghanistan and toward the boat. I thought that the brief was thorough. The plan seemed simple. Don't raise the gear after takeoff. Stay below 250 KIAS. Tank as needed. I considered myself prepared and ready.

The weather was beautiful as we departed Kandahar in the early afternoon. I reminded myself, "Don't bring the gear up. Don't bring the gear up." It's such an ingrained action, I was afraid that I would slap the handle up without thinking. Before long we were at altitude, gear down and flaps up headed to join our tanker. Our plan was to do a package check (confirm that the refueling system was working on both ends) while we were still close to Kandahar and then proceed towards the boat.

This was the first of a few things that our crew could have briefed more effectively. We neglected to contact our tanker crew before launching to brief them of our unique circumstance, and instead simply requested that he fly 240 KIAS for the rendezvous. We also failed to convey our intent to get a package check while still in Afghanistan. Our join-up quickly turned into a running rendezvous as our tanker proceeded out of Afghanistan.

The only problem was that we were still three miles in trail and NATOPS limited to 250 KIAS. Realizing this would take almost 20 minutes, we requested that the tanker slow to 220 KIAS so we could catch up. We were afraid of getting out of range of Kandahar without knowing that our refueling system was functioning. The tanker crew was helpful, and after a few more minutes, we were aboard with a good package check.

For those of you who haven't tanked from a KC-10, it's a forgiving evolution. For Prowlers, however, there are certain regimes of flight and fuel weights where you don't have enough thrust to stay in the basket. Even with our tanker flying 230 KIAS, in our current configuration, we were only able to refuel up to about 15,000 pounds (we would normally fill to 18,000 pounds). This was something I had neglected to consider, although I had seen it occur. It typically happens at higher altitudes or while the tanker is turning.

I found myself maintaining the throttles at MIL as our fuel state reached 15,000 pounds and despite my best efforts, we fell out of the basket. Well, 15,000 lbs should be plenty of gas, right? Yes – if the boat recovered us early. Thanks to a significant tailwind, we were now running ahead of schedule and would be overhead the ship exactly one cycle prior to our recovery time. If they couldn't recover us, gas would again become a factor. We were relieved when the ship recovered us ahead of schedule, and we ultimately had to adjust gross weight before coming aboard. The landing was uneventful (day MOVLAS straight-in!) and our adventures were complete.

Why is an article about things going well being published in *Approach*? There is always something to be learned from the experiences of others.

Why is an article about things going well being published in *Approach*? There is always something to be learned from the experiences of others. I had never considered only pinning one of the landing gear, and maybe you never would have either. I also failed to consider the aerodynamic effects of tanking dirty off of the KC-10 as well as how far ahead of schedule we were. If either of those factors had changed slightly (if we could have taken only 13,000 pounds of fuel, or if we had showed up 10 minutes after the recovery was complete and had been forced to wait until our planned recovery time), things could have gotten a lot more interesting.

LT WALKER FLIES WITH VAQ-133.

A Freezer in the Desert

BY LT DOUGLAS DEVUONO

Early in our careers, naval aviators are taught to "Aviate, Navigate, and Communicate" during an emergency. You go through the boldface for the emergency, then finish all remaining checklists for whatever indications you may have. Indications usually come in the form of warnings, cautions, and advisories displayed by the aircraft.

What happens when you come across an emergency that has neither a caution nor a procedure? The answer lies somewhere between test pilot and basic NATOPS systems knowledge. On one long flight over Iraq, I had a chance to deal with such an incident.

The flight was an NTISR mission. I was the wingman with my skipper as the lead. During the startup, I had an ECS DEGD. It cleared with troubleshooting, and the rest of the startup was uneventful. About an hour into the 6-hour mission, I noticed the temperature in the cockpit was getting significantly colder than normal. I turned the temperature up a few degrees and didn't give it another thought.

About 30 minutes later, the cockpit was still getting colder, so I turned the temperature to full hot. The vents were still putting out full cold air. I knew there was something wrong with the system so I checked the MSPs (aircraft generated fault codes) and saw the indication for a warm air valve failure.

I would not normally complain about the temperature being really cold. The heat index on the flight deck in the North Arabian Gulf in July is regularly in the 120s. Cold is normally a welcome relief, but this was something entirely different. I did a reset on the ECS system, but the temperature remained the same. My wristwatch had an integrated thermometer, which was showing a cockpit temperature of 36 degrees Fahrenheit and dropping. It would reach 31 degrees and hold there for the next 3 hours.

At the 4.5-hour point, things really started degrading, starting with me. For the first hour or two of the cold it had been uncomfortable but bearable. Roughly 10 minutes before our last tanker of the night, the temperature started dropping again, and it began snowing in the cockpit. The air/snow mix blowing out the vents at the base of the stick (and pointing directly at me) quickly numbed my hands. On top of that, the air vents at the base of the front canopy put out a cold rolling fog that took away visibility out the front of the windscreen. The temperature on my watch at this point read 22 degrees -- I was literally freezing in the desert.

I put the defog on full high and turned the anti-ice switch on. The visibility improved to the point that I could see out the front of the jet and felt comfortable joining up on another aircraft.

I finally told my lead what I was dealing with in the cockpit, saying that I was primarily concerned with keeping the jet under control on our last tanker. The KC-135 is tough but manageable on most days. Because of how cold my hands were, I was concerned about being stable and not making things worse by ripping off a fuel probe.

AFTER DISCUSSING THE SITUATION with lead, we needed to get fuel first and then concentrate on warming up the cockpit. We joined up on the tanker without issue. When it came time for me to tank, I joined up and began taking fuel. My hands were completely numb by the end of the tanking evolution, and I conveyed this to lead.

Because there is no procedure for cockpit temperature full cold, we worked through the problem using basic knowledge of the ECS system. In order to warm up the cockpit, we decided to descend below 10K and turned the ECS and bleeds off. Immediately, the warm air flooded the cockpit, which fogged the canopy up for a few minutes. The temperature on my watch showed 65 degrees and continued climbing. We continued our transit back to the ship at 10K.

Five to ten minutes later, I got an AV AIR HOT caution, indicating the avionics bay temperature was out of limits. We elected to turn the ECS and bleed air systems back on. The AV AIR HOT caution went away, but the cockpit temperature kept climbing. I turned the temperature control back to full cold, but only hot air came out. This time, the ECS valve was stuck full hot.

In order to subdue the flow of hot air, I turned the ECS off and placed the AV cool switch to EMERG, climbed to 21,000 feet, and maintained 325 knots for the optimum cooling profile. I turned all non-essential avionics off to the point that the only electronics on were the radios, TACAN, UFCD, and MPCD. The AV AIR HOT went away after a few minutes. I closely monitored my oxygen in case there were any issues with the OBOGS, but everything functioned normally. The cockpit temperature increased slowly all the way to the ship.

Checking into marshal, we informed the ship of my emergency and I was told to hold overhead Mom at 3K. On the descent back into the warm Gulf air, the AV AIR HOT came back and the temperature in the cockpit climbed to 104 degrees. I requested immediate vectors to final. The approach and landing were uneventful. I had full feeling in my hands for the landing and was happy to be back on deck.

Maintenance discovered that the ECS system had multiple bleed-air valve failures, causing both the temperature full cold and full hot conditions. I had not considered the physiological effects that full cold and full hot conditions would have on the body, and would struggle to get out of the jet once on deck, mostly due to shivering for 3 hours. It is important to remember that, as naval aviators, we often want to tough it out and keep minor issues to ourselves, especially in a combat environment. However, in this situation, a more conservative mindset should have been adopted. A night carrier landing by a nugget pilot who can't feel his hands is a Swiss cheese looking for that final hole. If I had been more transparent with my lead much sooner, the situation may have resolved quicker and placed both the aircraft and myself at less risk.

... the air vents at the base of the front canopy put out a cold rolling fog that took away visibility out the front of the windscreen.

LT DEVUONO FLIES WITH VFA-31.

How I Helped ATC Win an Award

LT BRANDON GASSER

I heard the intermittent radar altimeter (radalt) tone as I stabilized at minimum descent altitude on the TACAN approach to Runway 32L at Scott AFB. I peered over the leading edge extension of my legacy Hornet, first to my right and then to my left, hoping to make out anything resembling the runway environment beneath me. My chances for a successful landing diminished with each tenth of a mile that ticked off of the TACAN DME.

As I reached the missed-approach point, anxiety began to build as nothing but clouds filled the windscreen. I accepted that the approach was a lost cause and selected military power on the throttles to execute the missed approach. Glancing down at the fuel display, I developed a sudden case of cotton-mouth as I caught sight of the fuel remaining: 1,700 pounds. I was out of options, and nearly out of fuel.

How did I get to this point? I had been tasked with ferrying an F/A-18C from NAS Oceana to NAS North Island for depot-level maintenance. The jet had Enhanced Performance (EPE) engines and was completely slick with no tanks or pylons (total fuel load about 10,700 pounds). Depot personnel requested that the aircraft arrive at North Island by 1400 local. I determined that a three-leg trip across the country would enable me to make the desired 1400 landing time. With a three-hour time change from EST to PST, I would need to leave Oceana no later than 0900 EST in order to make it to North Island on time.

Given the constraint of not having an external fuel tank, the options for places to stop during a three-leg trip from Virginia Beach to San Diego were limited. Based on my experience flying from the East to West Coasts, I planned to use St. Louis and Colorado Springs as fuel stops. In order to get as far west as possible on my first leg, I would use Spirit of St. Louis airfield as my initial destination, as it would allow me to have a slightly shorter second leg to Colorado Springs. Spirit of St. Louis doesn't have a TACAN approach, so the weather would have to be VFR in order for me to land there. If I ran into bad weather, I could always stop short at Scott AFB and use the TACAN approach (weather minimums are 500-1).

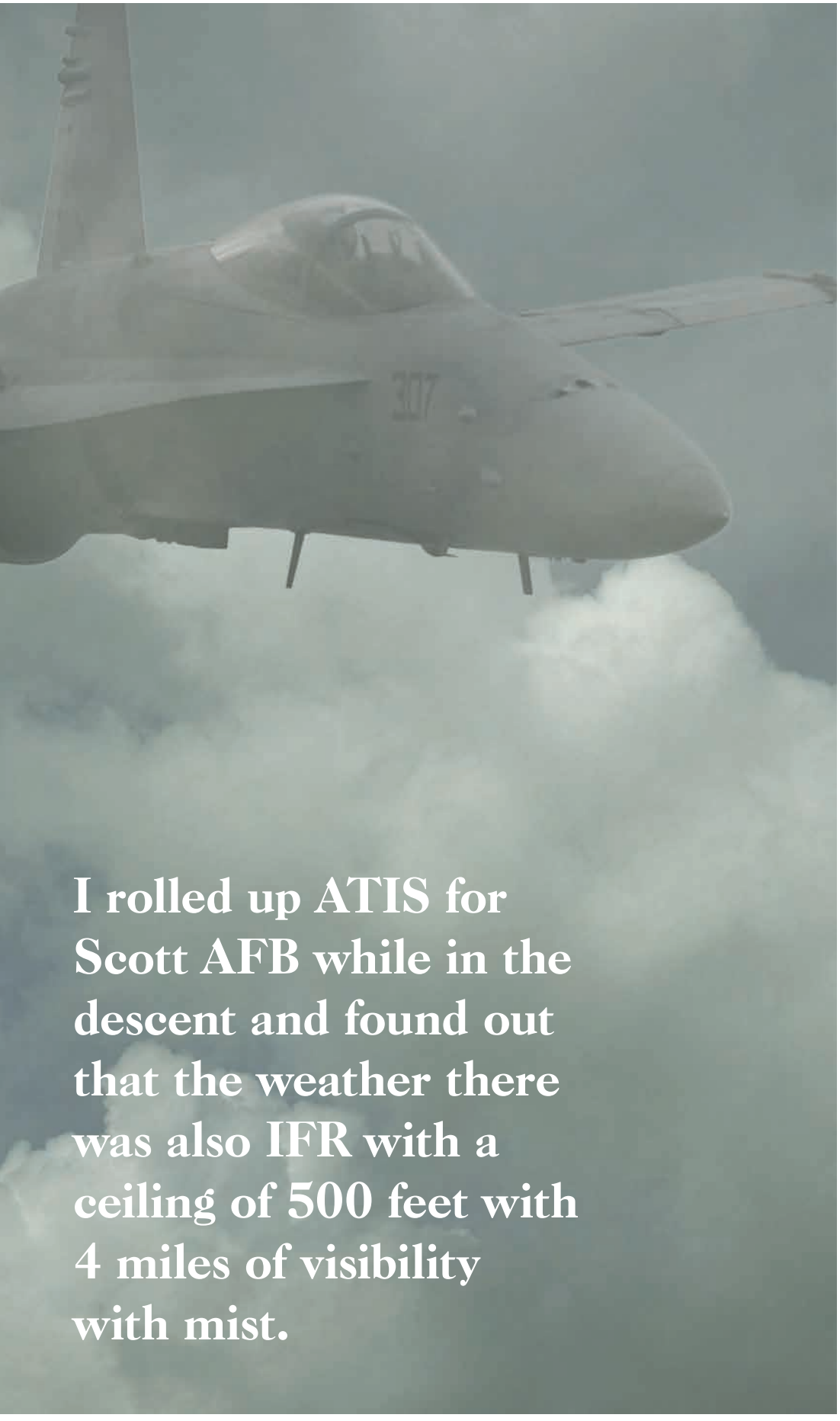
As I completed flight planning the night prior, the weather forecast for my route of flight looked good. I left the squadron spaces with the intention of launching by 0800 the next day.

I arrived at the squadron the next morning and checked the weather prior to filing my flight plan. While there wasn't much green or yellow on the radar, the St. Louis area was currently observing low ceilings with haze, mist, and some degraded visibility. Spirit of St. Louis was calling 000000KT 9SM OVC007 with no precipitation. The ceilings were forecasted to rapidly improve throughout the area, and the TAF plus/minus one hour of my land time was 03006KT 7SM BKN050.

Regardless of the forecast, I was apprehensive about filing a flight plan to a destination without a TACAN approach that was currently observing IFR conditions. My inclination at this point was to forget about St. Louis and my three-leg plan. I could simply file a four-leg route farther south that would allow me to make it safely around any weather. That way, I wouldn't have to worry about fuel.

However, I talked myself into pressing the weather for four reasons:

Time constraints would not allow for me to rework the plan and still arrive at North Island on time.



I rolled up ATIS for Scott AFB while in the descent and found out that the weather there was also IFR with a ceiling of 500 feet with 4 miles of visibility with mist.

The weather forecast was VMC for my time of arrival at Spirit of St. Louis.

If for some reason Spirit was IMC, I could use the TACAN approach at Scott AFB.

If the weather at Scott was below TACAN mins, I could execute a bingo profile to Terre Haute (which was forecast to be VMC) and still land above SOP min fuel (2,000 pounds).

The departure from Oceana was uneventful, and once established at FL430, I was cleared direct to Spirit of St. Louis. I tried to retrieve a weather update from the Elkins Flight Service Station (FSS) near Charleston, West Virginia, but had no luck establishing communications. Instead of breaking out the next sectional and finding another FSS to contact, I decided to wait and rely on ATIS at Spirit for an update. I made that decision based on the VFR forecast. Once within range, Spirit ATIS reported the field was still IFR with a ceiling of 900 feet and 5 miles of visibility. I immediately requested a change of destination to Scott AFB and I was given an immediate descent.

I rolled up ATIS for Scott AFB while in the descent and found out that the weather there was also IFR with a ceiling of 500 feet with 4 miles of visibility with mist. With the ceilings right at weather minimums for the TACAN approach, there was a decent chance that I would not break out. If I could go back in time to that moment, I would have

requested vectors to Terre Haute and not taken the chance, but hindsight is 20/20.

St. Louis approach acknowledged my request for the final portion of the TACAN 32L at Scott and turned me south of the field to continue a descent to 2,400 feet. Upon reaching 2,400 feet and traveling away from Scott, the communications quality with approach control degraded significantly. I was now heading away from the airfield at 2,400 feet and eagerly awaiting a clearance to the final approach fix. After reaching what I felt was a reasonable position to be vectored inbound and still unable to communicate with approach, I decided to turn inbound without clearance.

I established myself on the approach course and descended at the final approach fix while continuing to attempt radio contact with approach control. While nearing MDA, I heard an intermittent communication from approach that caused me to question my situational awareness (SA). I immediately executed a missed approach and during the climb realized that I was now 300 pounds below the bingo fuel state needed to reach Terre Haute. With no option to bingo, I had no other choice but to declare an emergency and reattempt the TACAN 32L at Scott.

I tried to conserve fuel and flew "my best approach" on the next attempt. The actual ceiling was lower than 500 feet and I failed to break out the landing environment on my second attempt. As I said at the beginning of this article, I was now out of options and nearly out of fuel.

AFTER THE SECOND MISSED APPROACH, I alerted the approach controller that I had about 15 minutes of fuel remaining, the weather was too poor for me to break out at Scott, and I was open to any suggestions as to where I might be able to land. Approach immediately put me on a vector to the northwest and let me know that St. Louis International (KSTL) was my best option, as they were reporting a ceiling of 700 feet. I leveled off at 15,000 feet and set maximum endurance airspeed in order to buy some time. The FUEL LO caution was illuminated and I had about 1,600 pounds of useable fuel remaining. Approach let me know that International was about 30NM away and that they were going to set me up for a modified ASR approach. I requested the coordinates for KSTL from the controller and followed vectors to the ILS corridor for 30L (the Hornet and Super Hornet do not have "civilian" ILS equipment). I initiated a 3 degree descent when told to do so by approach, broke out the runway at 700 feet, and landed on runway 30L at KSTL with 800 pounds of fuel remaining.

I've logged a hundred night carrier arrested landings in the F/A-18C, and not a single one of them even comes close in terms of the stress level I felt during the last 15 minutes of this flight. Once on deck, I spoke with the ATC supervisor and thanked him for the quick thinking and impeccable professionalism of his controllers. I would later have the opportunity to thank the two controllers who worked my emergency, Kevin Cook and Steve Clark, in person. They received a National Air Traffic Controllers Association safety award for their efforts that day, and I was fortunate enough to be able to attend the ceremony. This flight would have had a much different outcome if it weren't for their ingenuity and calmness under pressure.

I replayed this incident in my mind countless times and generated the following lessons learned. First, I let the perceived pressure of having the jet on deck at a certain time in San Diego weigh in to my decision making. This was certainly not a legitimate reason for risking a bad situation en route.

Second, a DD-175-1 is nothing more than ink on a piece of paper. I placed way too much faith in the weather forecast, when the actual flight conditions were what really mattered. I developed a plan that was contingent on receiving weather updates, and then I got complacent about retrieving them. There is no excuse for not having a weather update en route. FSS locations and frequencies can be found on every sectional chart, as well as in the Flight Information Handbook. As a last resort, asking center for a destination weather update is an option.

Third, I was overconfident in my ability to break out on a TACAN approach with the weather at minimums. The weather turned out to be lower than what was called, and I should have taken that possibility into account before deciding to shoot the approach, especially with limited fuel. I also could have been more prepared by loading a waypoint for KSTL into the jet and putting a copy of the TACAN approach for runway 30L in my flight bag. With that onboard, I would have had the option to shoot a legal approach into KSTL. However, I believe that a modified ASR was exactly what I needed given the circumstances at that point in the flight; it was all or nothing on that approach.

WHEN HE WROTE THIS ARTICLE, LT GASSER FLEW WITH VFA-106. HE IS CURRENTLY THE CVW-7 LANDING SIGNALS OFFICER.

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How CRM Saved My Jet

BY LT CONOR O'NEIL

One afternoon during Air Wing Fallon (AWF), I took part in a large force strike. The strike consisted of 26 aircraft. I was Dash 2 in the division of strikers. The overall mission commander was also the lead of my division, and my squadron CO was Dash 3. Since it was the third week of AWF, the flight was complex, but as a division we managed to make it to the target unscathed to deliver our ordinance.

We immediately turned east and descended to the deck in an attempt to outrun a recently launched air threat. We were fast, more than 500 knots. We followed the terrain as it tapered off into Dixie Valley. Then the first big test of my aviation career began.

"Bleed air left, bleed air left. Bleed air right, bleed air right." My jet raced toward the valley floor. "Aviate. Navigate. Communicate." I thought. I looked in the cockpit and saw the red bleed warning lights. I immediately began a climb and slowed down, all while my left DDI began to fill with cautions.

I made a radio call to my lead that I had an emergency and would be turning around direct to NAS Fallon. My lead quickly decided to detach my CO, who chased me down and helped manage navigation and communication for our flight back to the airfield. The cautions that quickly began to populate on my display (L Bleed Off, R Bleed Off and Gun Gas) indicated that the bleed-air leak-detection system was working to prevent further bleed air leaks.

We navigated the mountainous terrain back to the airfield, staying below 10K cabin altitude because of the lack of pressurization. I had finished the NATOPS immediate action items for a dual bleed air warning, but both bleed air warning lights remained illuminated. I had my PCL out and began going through the non-memory items for my emergency. By executing the NATOPS procedures, the warning lights should have gone out. The NATOPS manual states that bleed air warning lights indicate: "Bleed air leak or fire detected in common ducting and the overheat condition still exists." Just as I began to process the magnitude of that statement, my airborne emergency became even more complex.

"Engine fire left, engine fire left." We were only a minute and a half into the bleed-air emergency and still 30 miles from the airfield. I began to execute my single fire light procedures by first shutting down the left engine and pushing the left engine fire light. Before I could execute the next step, I heard: "Engine fire right, engine fire right." I now had dual bleed warning and dual engine fire lights; I had never even had a simulator this complex!

I CONFERRED WITH MY WINGMAN, and he reported that smoke was coming from the left side of my aircraft. We decided to continue with the left-engine fire procedures. I discharged the fire extinguisher bottle, the only one in the F/A-18. However, both fire warning lights remained illuminated, and for the first time during my short career I began to think about ejection.

NAS Fallon lay beyond one last ridgeline as I set up for an arrestment. The jet kept flying and I was able to make a successful arrestment. As I climbed out of the jet, I looked back to see smoke billowing from the turtleback above the engines.

Later, when reflecting on the incident with my skipper and safety officer, I began to realize how much Crew Resource Management (CRM) contributed to my safe recovery. Since my first day as an SNA, I learned the principles of CRM, which are incorporated into every fleet NATOPS check. During my career I have participated in CRM case study discussions, but I never imagined that those seven principles would be so instrumental in preventing a catastrophic mishap.

The Hornet community takes pride in being single-seat aviators, but we stress using our wingmen and squadron representative for CRM.

After the onset of the emergency, I was assertive in my decision to terminate and make the 180-degree turn direct NAS Fallon. Because of my concise communication to my flight lead about the nature of my emergency, he had the situational awareness to detach the other F/A-18C in our division to accompany me back to the airfield. As the only person who knew the severity of the initial emergency, I assessed that training had to cease and the priority was to get my aircraft safely on deck. Applying CRM to the early phase of my emergency enabled me to land within 10 minutes of the initial cockpit warnings and helped prevent catastrophic loss of the aircraft.

As my skipper and I navigated back to NAS Fallon and the emergency increased in complexity, clear and concise communication, combined with taking action based on situational awareness, became instrumental in successful CRM within our section and later, the SDO. At the onset of the second fire warning light, my skipper and I efficiently worked together to diagnose the problem and develop a game plan. Prior to the dual-engine fire, my skipper switched us to the base frequency and brought the SDO into the discussion. As a side note, at NAS Fallon, multiple squadrons share a base frequency, but good headwork by other CVW-2 squadrons helped keep that frequency, which then doubled as our tactical frequency, clear for us.

The SDO displayed exceptional situational awareness by following along in the big NATOPS passively, since we clearly communicated that all NATOPS steps had been completed.

Finally, understanding the level of concentration in my cockpit needed to fly the airplane while competing with multiple emergencies, my wingman took the navigation and communications lead. The combination of smart communications and timely decisions with the situational awareness to prioritize actions between various actors throughout the event was crucial to helping me solve the complex problem that I encountered.

The leadership of my wingman not only helped keep me calm as we went through the dual bleed air warning and dual fire lights, but it also helped me steer clear of terrain while flying the shortest distance to the runway.

As we approached NAS Fallon, in a decision that would ultimately prevent catastrophic loss of the jet, he described the fire to NAS Fallon tower and asked for the crash crew to be standing by on Runway 25.

The post-mishap investigation revealed that hydraulic fluid had leaked into the aft keel area and ignited when it came into contact with the outside of the bleed air secondary pressure regulating and shut off valve. Thermal blankets that tested positive for hydraulic fluid contamination then sustained the fire in the keel of the aircraft, which has no fire suppression. The fire extinguisher line, which routes through the keel on its way to the engine bays, melted in the heat. So when I had tried to discharge the fire extinguishing agent into the left engine, it actually discharged into the keel through the severed line. That bought me the time I needed to get on deck.

All personnel involved in my flight practiced sound principles of CRM. If any of the tenets of CRM had fallen out during this complex evolution, I probably would have lost the jet.

LT O'NEIL FLIES WITH VFA-34.

Crew Risk Management
Dangers

BY LT DAVID HICKS

WE HAVE ALL BEEN GIVEN SCENARIOS IN TRAINING, *in both the simulator and the aircraft, that we would rather not have during regular operations. We talk about how we'd handle contingencies, what we would say to our crew and how to keep it safe, but no training leaves the lasting impression or is as unforgiving as being in the actual situation.*

The day started out strong. We were deployed as the armed helicopter Det onboard USS Bonhomme Richard (LHD 6). However, that day we were tasked to support the ship and provide vertical replenishment (VERTREP) services. Because of the ship's limitations, we would not be permitted an early start, but would instead spin up at 1400 and conduct day-into-night VERTREP operations. Having never conducted night VERTREP, I was excited to get a grade card (and finish out a syllabus) and I didn't perceive the Helicopter Aircraft Commander's (HAC) discomfort with the proposition of slinging loads throughout the evening.

I was to be on the third go in the second aircraft. First up was a day card, followed by my HAC regaining his night VERTREP currency, and then we would finish up the evolution. Everything went smoothly. Weather was holding about 2000/5 with favorable winds, both aircraft were performing flawlessly and I was starting to feel comfortable after a few loads. The only hitch was getting optimal lighting between the two ships and the night vision goggles (NVG), but we were operating within expected parameters.

The night continued uneventfully. While our deck crew was readying the retro loads, they put my aircraft into the starboard delta and the other into a close port delta. It was a pitch black night, and this is where we made our first mistake. Not using all of our resources contributed to a degradation of situational awareness. We had a Multi-Spectral Targeting System (MTS) on the aircraft and yet we weren't monitoring the progression of the deck operations or the other aircraft.

After two laps in the pattern, Tower called in the other bird to pick up the first retro load and told us that we would be cleared in after they departed. I was sitting in the left seat and my HAC was flying from the right. I could search for our playmate visually during the close-in leg. We had heard them call inbound for the pick and wanted to be right behind them to make the evolution happen more quickly – we were already behind the airplan's land time.

Still blind on our playmate, the HAC decided to move the pattern in much closer from the 1 and 3 mile legs and extend further aft on the ship to help us get eyes on the evolution and be more in position to move in for our pick. I started to feel uncomfortable with this. I hadn't flown with him before, but I trusted his judgment

based on his reputation and the conviction with which he was making decisions. This was my second mistake, as I had effectively eliminated a second and third pillar of CRM by not communicating the feelings of unease I was getting and sandbagging when I should have been more assertive with questioning his decisions.

We found ourselves about half a mile on the ship's 5 o'clock at 300 feet and heading up her starboard side in tight when we both almost simultaneously declared that we were uncomfortable. It felt like minutes since playmate called inbound for the pick, we didn't have visual on them and we were significantly closer to the ship than tower had cleared us to be. We found ourselves in that scenario that I'd always thought I was too careful to be in.

I strained at the harnesses and leaned out the window as much as I could, searching on and around the ship for other aircraft. Conveying that I was blind to the crew, the second crewman and I began nervously scanning out as we were rapidly approaching the amidships position. I knew that the HAC couldn't see anything past me and if we needed to maneuver away from the deck, I would be the only one with a visual reference. As this thought crossed my mind, I saw a blur through my NVGs and some movement under the goggles. To my horror, I saw our playmate climbing directly towards us at about two rotors separation. Instinctively I slapped the cyclic to the right to open the distance while yelling out the danger to the crew.

We were close enough that I could make out my friends in the other aircraft doing the same thing as they stared directly at me at about 100 feet of separation.

After the near-miss, we put the aircraft back in the starboard delta to figure out what had happened and to determine if we were safe as a crew and a flight to continue. We decided it would be best if we knocked off the dual ship operations and sent the second bird to recover after she dropped her current of retro, allowing us to finish the last six loads as a single ship.

Looking back on the events of that night, it is still frightening to see the holes in the Swiss cheese line up. We all definitely learned a nearly fatal lesson that night. A simple slip and loss of situational awareness complicated with a further breakdown in CRM could have cost us dearly. I hope we didn't trade too much from the luck bucket to the knowledge bucket, and I know that I will forever be a proponent of CRM in and out of the cockpit. I'll pass that information to everyone that I fly with in the future.

Crew Resource Management: The effective use of all available resources by individuals, crews and teams to safely and efficiently accomplish the mission or task. CRM also refers to identifying and managing the conditions that lead to error.

LT HICKS FLIES WITH HSC-25.

Good Communication
Saves the Day … Again

BY LT JASON ORLETSKI

It was a sunny day in Corpus Christi, Texas, and the airfield was abuzz with numerous training aircraft. Pilots were taxiing, doing checks in the run-up, and performing touch-and-goes in the pattern. With the typical 10-15-knot breeze, my fellow instructor and I were the FCF duty pilots assigned to the VT-35 flight schedule on a nearly perfect flying day.

This day's FCF was a "B" card on one of our venerable TC-12B Hurons. We briefed the "deck" with the maintenance QA rep and stepped to the plane, anticipating a two-hour flight. This "B" card was to include the shutting down and restarting of an engine, in addition to propeller and pressurization system checks. As two experienced pilots, we had flown many of these checks, and, although we'd never come back single-engine after an FCF, both of us had landed the TC-12B single-engine before. So, with a single-engine contingency plan in place, we flew out to the Juliet working area to make an up aircraft.

Engine starts, flight controls check, and the engine run-up were routine. We were given a VFR takeoff clearance with a course rules departure that dictated a nearly straight ahead climb. I rotated and called for my co-pilot to raise the gear. I began a climb to 500 feet while he called departure control to coordinate flight following to Juliet that had several viable divert fields below us in the area. We were almost immediately given clearance to continue our course rules climb to 2,500 feet.

As I began to push the yoke forward to arrest our rate of climb, I applied a few small "handfuls" of elevator trim: 2,450 feet, 2,500 feet, 2,550 feet, 2,600 feet. The plane continued to climb as I attempted to push the yoke forward. I immediately pulled power to idle, thinking that maybe I simply had too much power on the aircraft. 2,700 feet, 2,750 feet, 2,800 feet, 2,850 feet. With power now at idle, I continued to roll-in forward elevator trim to overcome the steady nose-up attitude that the plane attempted to fly. It was apparent, after using all elevator trim, that there was something just not right with the aircraft and I communicated my concern to my copilot.

While maintaining forward yoke pressure, I transferred controls. We executed a quick scan of some of the usual culprits of control-surface difficulties, such as the autopilot, flaps and electric elevator trim system. The flaps were symmetrically retracted and neither system was on. As my copilot executed a slow turn to the left, we began to feel a pulsing of the yoke. With no real idea of what the problem was, I communicated our situation to approach control and declared an emergency. I opened NATOPS to the "In Flight Damage" section of the Emergency Procedures and began executing the checklist, beginning with a climb to 5,000 feet. Meanwhile, my copilot reached out on our base frequency to elicit help from our maintenance department and to

Photo by Richard Stewart

see if there was anybody formation-qualified in the area who could do a loose join-up to check for any damage.

Had we hit a bird? Had our elevator begun to come apart in flight? We discussed these possibilities. After executing the EP, we felt comfortable in our ability to slow the plane and lower the gear. A formation-qualified instructor was returning with a student and attempted a quick fly-by, but he didn't see anything out of the ordinary.

MAINTENANCE WAS UNABLE TO ADD any other insight into our dilemma. With the EP complete and now flying a modified Delta pattern, we told ATC that we wanted to fly an extended downwind to set ourselves up for a long VFR final. While on the extended vector, though, the pulsing returned. Before we found ourselves too far from the field, we decided to forego the extended vectors and get the plane on deck, as soon as possible. We descended, decelerated and configured just as we had done in the EP and communicated to tower to have the crash crew standing by. My copilot executed an uneventful landing.

As we taxied past the run-up area, another aircraft radioed that they could see something sticking up from the top of our T-tail. As we pulled into our assigned spot, maintainers were waiting to examine the mysterious malfunction. We exited the plane and waited curiously while they raised a stand to the top of the tail.

After a couple minutes, the QA rep motioned us up the stand to show us a 2-foot by 5-inch maintenance panel that was missing 15 of 16 screws, with the lone screw fastened on the aft side of the panel. Rising up into the airstream on the top of the horizontal stab in flight, the panel had acted like a speed brake.

After the ordeal, with the plane and crew safe on deck, we took a moment to discuss how much our communication helped during each stage of the event, from initial discovery of the problem to final touchdown. Then we went on to enjoy the rest of a beautiful day.

LT JASON ORLETSKI NOW FLIES FOR VR-62.

How a "Minor" Issue Got Upgraded

BY LCDR MATTHEW STEWART

It was mid-March and I was on a three-week detachment out of Bahrain. As a brand new 2P and on my first detachment, I was learning a lot. I'd just transferred to the VR community after completing nearly six years as an instructor pilot in the training command. The move from the T-6 to the C-130 was dramatic, but my prior P-3 experience helped to smooth the transition.

My crew had been busy over the past two weeks flying the C-130T on various logistics missions throughout the region. Most of our destinations were near the coast and, minus a few pop-up thunderstorms, the weather had been fantastic.

Our maintenance troubleshooters had been busy with avionics gripes and, after many hours, were still baffled with a few "minor" issues. The VOR/TACAN on the

The non-standard technique of the copilot verbally calling out the distance from the NAVAID was extremely helpful; the approach would not have been nearly as successful without it.

copilot's side would not display the proper course, and the pilot's distance measuring equipment (DME) indicator didn't work. The other NAVAIDS in the aircraft were fully functional, including the GPS and ILS/Localizer. The "minor" issues hadn't been problems so far because we'd been flying mainly visual and ILS approaches in VFR conditions. We would soon discover this would all change.

OUR NEXT MISSION WAS to Ali Al Salem Air Base in Kuwait. The weather brief prior to takeoff showed nothing extreme: mild turbulence at altitude, high ceilings and moderate winds on the surface. As we flew north, we were able to receive the ATIS at the airport from 100 miles out. Two items caused concern: visibility and Navigational Aid (NAVAID) outage. There were reports that high winds were blowing sand on the surface and the ILS/LOC was out of service. The visibility at the airfield was above the minimums for all published approaches and the VORTAC approaches were still available. My experienced TAC (Transport Aircraft Commander) for the mission reminded the crew of our NAVAID issues and decided to discuss our options. We deliberated and devised a game plan.

We contacted approach control and requested the VOR-TACAN approach to runway 30R. The only approaches available to the field are ILS and VORTAC approaches. Radar coverage in our area was not available. Since vectors to final was not an option, we were instructed to proceed via own navigation to the initial approach fix for the full arcing approach. We were also informed that there was another aircraft inbound for the approach, an Air Force C-17, approximately 5 miles in trail. Both aircraft were directed to report their position every two minutes.

Because of our aircraft's NAVAID issues, we knew that we needed a plan to fly this approach successfully and safely. During a normal approach with functional NAVAIDs, both pilots can back each other up during the approach. However, ours was definitely not a normal scenario. I was in the left seat and could identify our position from the field with my functional TACAN course indicator. The TAC, sitting in the right seat, couldn't see our position on the radial but was able to read our distance from the field (DME), which I couldn't see on my side of the aircraft.

As we flew the approach, the TAC verbally read out the distances to me while I maintained our position on the radial. Position reports were made every two minutes, and we continued our separation from the C-17.

As we intercepted the final approach course and began our descent, we noticed that the visibility was worse than forecasted. My TAC continued to read out the DME as we approached the missed approach point. If we were to go around because the runway was not in sight, our options would be very limited (in fact, no other approach options were available). Approximately a half mile prior to the missed approach point, our flight engineer called the runway in sight. We landed uneventfully and delivered our cargo.

Good CRM was paramount in safely completing this mission. Prior to the approach, the flight station crew thoroughly briefed how the approach would be flown. The non-standard technique of the copilot verbally calling out the distance from the NAVAID was extremely helpful; the approach would not have been nearly as successful without it. We could easily have become disoriented and posed a collision hazard with the other inbound aircraft.

As with all multi-piloted platforms, it is extremely important that everyone on board is on the same page at all times. Some situations arise in flight that are unavoidable and must be handled with caution. In this scenario, we knew about the aircraft issues prior to takeoff and decided to take the plane flying. Even though these issues were not "downing" discrepancies, they proved to add task-saturation to the crew's already heavy workload.

I never take my CRM training for granted.

LCDR STEWART FLIES FOR VR-62.

Over Malaysia, Your Signal Divert

Photo by MC3 Brian H. Abel

BY LT CHRISTOPHER NIGUS

During Fall Patrol aboard USS *George Washington* (CVN 73), I launched for a day "great deal" Dissimilar Air Combat Training (DACT) sortie against a Malaysian SU-30 MK2, a highly capable platform. As my flight lead and I flew into the working area to meet our opponents, we were informed that the SU-30s would not be able to train due to inclement weather at their home base of operations. While disappointed, I still was able to look forward to a day basic fighter maneuvering (BFM) flight off the boat with a fragged mission tanker.

After the first BFM set, I received a FUEL XFER (fuel transfer) caution. I immediately checked my engine-fuel display (EFD) and noted my internal tank states appeared normal with no indications of transfer irregularities. The F/A-18E has four main internal tanks (1 thru 4) plus a left and right internal wing tank. I had 8,600 pounds of gas, with the wings nearly empty, feed tanks (tanks 2 and 3) nearly full, and tanks 1 and 4 balancing.

I notified my lead of the FUEL XFER caution and the associated fuel states within each tank. He made the call to terminate the tactical portion of the flight and head back to the ship. Less than a minute after I'd received the fuel transfer caution, it cleared, indicating that the discrepancy was no longer present due to the aircraft re-scheduling fuel to correct an imbalance. I checked my EFD again and notified my lead I no longer had the caution and my tanks appeared to be transferring normally. Upon hearing the updated information we decided, with all indications normal, to execute our second BFM set.

Nearing the completion of our second set, I received another master caution tone, FUEL XFER caution, and the FUEL LO (1,125 pounds in each of the two feed tanks) caution. My EFD showed that I had 900 pounds of fuel in tank 2 and 1,200 pounds in tank 3. My total fuel state was 6,400 pounds.

I called a "knock it off" and notified my flight lead of the situation. I appeared to have only 2,100 pounds of useable gas. We immediately pointed toward our secondary divert of Kauntan, Malaysia, approximately 35 miles away. I began to climb and intercept a bingo profile. On the way to Kauntan we stepped through the NATOPS procedures for fuel transfer failure, and I placed the INTR WING (Internal Wing) switch to INHIBIT. The INHIBIT logic is designed to close off the internal wing tanks from feeding into the feed tanks. The logic allows gravity transfer of tanks 1 and 4 into the feed tanks. As I began my idle descent to the runway, it became apparent that fuel from tank 4 was slowly gravity feeding into the feed tanks. We backed each other up with our feet dry checks and I landed without incident. By the time I had shut down on deck, I had 4,400 pounds of useable fuel in my feed tanks.

We found three circuit breakers associated with the tank 4 fuel pump popped. It is standard operating procedure for the pilot and plane captain to check all circuit breakers prior to flight. During preflight, we had both noted that all circuit breakers were in their proper positions. Following a detailed debrief with maintenance control on the telephone, we assessed the circuit breakers were "soft popped."

It had been the aircraft's first flight since a Release & Control (R&C) inspection. The inspection checklist involves pulling certain circuit breakers prior to the R&C checks. Following the R&C inspection checklist, the circuit breakers are placed back to the "in" position. A phenomenon occurs when a circuit breaker is not pushed to the "in" position with enough force. The circuit breaker will look as though it is in the correct position, yet the circuit breaker has not been correctly closed. Visually, there is no way to tell. We reset the circuit breakers, coordinated refueling with our very hospitable Malaysian Air Force hosts, and filed our flight plan back to the ship.

Looking back, the problem was a failure of fuel to transfer normally from tank 4 with the transfer pump offline. This was not obvious until the highly dynamic portion of the flight during which I was using full afterburner. It is important to note that the rate of gravity transfer to the feed tanks cannot keep up with afterburner operations. Only after I transitioned to a fuel conservation mindset during my bingo profile did the rate of gravity transfer begin to exceed the fuel consumption of the engines.

The biggest lesson learned was my lack of preparation for executing a bingo profile. We had been operating in a "Blue Water" mindset for several months, and were thus not planning on a potential divert into a foreign country. I knew my range numbers for the primary divert airfield, but due to its closer proximity to the ship I disregarded all information about the secondary airfield. This led to several precious seconds wasted getting my flight publications out of my navigation bag while executing the bingo profile in a single-seat aircraft. Good Crew Resource Management and communication with my flight lead (the commanding officer of another FA-18E squadron onboard the ship) allowed us to handle the situation.

Photo by MCS Everett Allen

Upon noting that there was a semblance of a fuel-transfer failure, I should have resumed a fuel-conservation profile as opposed to trying to maximize training with a second BFM hack after everything "appeared" normal. The F/A-18E rarely fails to alert the aircrew if something is amiss but sometimes requires careful scrutiny for a correct diagnosis of the true problem. In this case, a maximum endurance profile would have cleared the Caution as fuel gravity-transferred into the feed tank, and I would have been able to land aboard the carrier and conduct a thorough debrief with Maintenance Control in person. In the end, we were able to enjoy dry land for a couple hours, get a once-in-a-lifetime tour of the SU-30 MK2 cockpit at Kuantan Air Base, and safely return our jets to the ship, with a few lessons learned about the Super Hornet's fuel system.

LT NIGUS FLIES WITH THE ROYAL MACES OF VFA-27.

Where'd That Bomb Go?

BY LT TOM CRISP

The Rampagers were in Alpena, Michigan supporting a NSWG-2 detachment to help qualify new JTACs that were soon to be deployed to combat theatres around the world. We had stumbled upon an air-to-surface gold mine: 12 live GBU-12s, more than 30 BLU-111s, and more .50 caliber ammunition than we would be able to shoot.

We were getting just as much training as the JTACs were. Grayling Range has a fantastic target set. MOUT complexes, multiple bullseyes, a runway environment, multi-story buildings, and tanks spread out over a large area in the south of the range complex. The first week had gone smoothly, and we felt comfortable with the range and the range procedures. Good lessons for both the pilots and the JTACs had been learned, but the biggest one of the detachment was about to happen.

After a great three-day weekend in Traverse City, a fellow junior officer and I (a newly minted section lead) would be the first to drop live 500-pound, laser-guided bombs in the target complex. We conducted a thorough brief covering preflight, in cockpit set-up, and employment of the weapon, as well as where we could drop live ordinance. Our only targets for live ordnance were tanks were well south of a berm that demarcated the inert and live portions of the range. The mission objective for us was the safe, accurate, and timely employment of a live GBU-12, followed by a safe recovery back in Alpena.

Our preflight was uneventful. After I had both motors online, I noticed that I was not getting a proper GPS signal in my aircraft. The horizontal and vertical errors were out of limits for our preferred method of position keeping. In the F/A-18C, our position keeping is kept via an INS, which is in turn updated by a GPS to prevent any drift or error in our aircraft location. When both are accurate, our position keeping is then called AINS (Aided INS). It is not unheard of to not get a good GPS signal, but it is not a downing discrepancy for the aircraft, and I had previously taken non-GPS jets flying without a second thought.

Per the brief, my wingman would not be able to drop his GBU-12 without having me flying as his lead. I did an alpha check to the main bullseye (a range and bearing from the target to our aircraft) with my wingman to double check my aircraft's position. We were drastically different. I turned off my INS, rechecked my waypoint zero, and reinitiated my INS alignment. I soon executed another alpha check, and both my wingman and I were seeing the same bearing and range. After several more minutes of troubleshooting the GPS without any success, I decided to take the jet with a degraded GPS signal. The troubleshooters told me not to select the GPS-assisted mode of position keeping due to the poor GPS signal.

As we were transiting to the Grayling Range complex, I had the flight turn on our tactical systems and then checked how my targeting pod (ATFLIR) was performing. In accordance with the brief, we designated the main bullseye as our target, and performed video calibrations to ensure that we got the best possible picture from our ATFLIR. When I designated the bullseye, my ATFLIR diamond snapped directly to the exact center of the bullseye. However, my video feed was not as clear as I would like it, which also is common with the ATFLIR.

With good correlation I was still confident that my jet was performing as expected. After arriving at our holding position, we got a SITREP update from our JTAC, and received our first bomb on target 9-line for a tank in the open in the live-weapon range. We gave an accurate read back to the JTAC, and I designated the given 6-digit coordinates from the 9-line.

I immediately knew something was wrong. My ATFLIR was showing the target in a group of trees west of the range complex. I asked my wingman if he was seeing the same thing with his targeting pod, and he confirmed that he was also looking into a tree line west of the range. I assumed that the JTAC had given us bad coordinates for the target area.

I asked for an updated 8-digit coordinate to get our ATFLIRs into the target area. With 8-digit grid, pilots can expect to have an accurate designation of the target. After I re-designated the target with the updated coordinates, I was no longer in the trees, but I could not break out any tanks. I tried multiple modes of the ATFLIR with no success. I could see large dark object in my field of view, but there was no way I could distinguish it as a tank.

My wingman called that he had the targeted tank under his ATFLIR designation. I still could not find the tank in the field. The JTAC then asked that we change the game plan; he wanted to use my wingman's laser to guide my bomb to the target, also known as a "buddy lase game plan." The buddy lase game plan was some-

My biggest error was letting perceived pressure

thing that we briefed and also practiced multiple times in training. While my wingman was still new, I felt confident that he could execute the game plan based upon his previous performance in the squadron.

Because I couldn't positively ID the tank, I elected to do a buddy lase game plan using high-quality coordinates from my wingman's ATFLIR (I didn't trust the coordinates being generated from the JTAC). I read back the coordinates to my wingman, and then designated them. Again, I had a large dark object in my ATFLIR, but still could not be sure that it was a tank. I double-checked that the coordinates from my wingman matched the coordinates that were displayed on my ATFLIR. I then used my Joint Helmet Mounted Cueing System to ensure that his designation was in the live-bomb range.

Everything seemed in order, and I had no doubts that we could successfully buddy-lase a bomb to the

to affect and rush my judgment.

target. As I called, "Pushing," I triple-checked that my wingman was in combat spread, that he would not mask his laser, and that my system set up was solid. We flew inbound. I recognized several features that the JTAC had used to talk our eyes onto the target on my ATFLIR, including a Y-intersection in the road with a string of vehicles alongside of it. I noticed that the dark spot that I thought was the tank was about 20 yards to the left of my designation, so I slewed my designation to ensure that I got the most accurate delivery possible. Approaching my release cue, I held down the pickle button and then let my wingman know that I had released my GBU-12.

AS THE WEAPON BEGAN its freefall flight path towards my designation, my wingman began lasing. He executed his role flawlessly. I watched my time-to-impact count down to zero. At 0 seconds, I still had not seen an explosion in my ATFLIR. My first instinct was that the bomb had been a dud.

"Knock it off, knock it off! You are way off!" boomed over the radio from range control. My stomach jumped into my throat. I began echoing the knock-it-off while looking outside to see where my bomb had landed. I couldn't see it anywhere in the live range. I then looked to the north and saw a large plume of smoke rising about 2,000 yards from the range tower and 1,500 yards away from my target – decidedly inside of the inert part of the range.

I wondered if anyone had been hurt. A call from range control confirmed that no one had been in that part of the range. I told range control that we would be RTB and that we would be calling shortly to figure out what had gone wrong.

After landing, my wingman and I reviewed our tapes and downloaded any tactical data from our mission cards. I also consulted with maintenance to try and understand if there were any issues with my aircraft. Maintenance data had revealed that my INS had drifted over nine miles in a 35 minute flight, which was very much out of limits. Typically that drift would be taken away due to the high precision updates from the GPS, but since I had elected to execute the flight without a solid GPS signal the drift was not recognized by the aircraft, or by me. Previous flights in the aircraft had a solid GPS signal, so there was no recognition that the aircraft had a bad INS. From the tapes we determined that the Y-intersection that was in my ATFLIR was actually an intersection near the location of my bomb's impact, and just so happened to look just like the one used in the talk-on from the JTAC.

While these factors are significant, there are several things I could have done differently to save the day. First, I could have refused to use that jet to drop a live bomb. A switch to a jet without live ordnance would have been a better decision. Due to a compressed timeline from troubleshooting and my desire to allow my wingman to drop his bomb, I also missed tactical considerations of flying a jet without the benefit of AINS.

The moment my ATFLIR showed the JTACs coordinates outside of the range, I should have plotted his coordinates on my chart of the range to double check my aircraft position. My wingman had confirmed that his designation was matching mine, but upon review of his tapes we determined that he was actually looking at a line of brush very close to our target tank.

I could have done a far better job of double-checking where my bomb was actually going. I checked my designation multiple times on the inbound leg from about 12 miles, but I did not recheck it once inside of six miles where the tools I had available would have been the most effective.

MY BIGGEST ERROR was letting perceived pressure to affect and rush my judgment. I believed that the JTACs needed to do a buddy lase game plan for their training, but further discussion revealed that it was just a scenario that they wanted to see executed.

I should have recognized that I did not have a jet that was capable of dropping a bomb on a set of coordinates without being visual of the target, especially when the JTAC asked for a bomb on target vice a bomb on coordinate. If you combine my aircraft issues, a junior wingman, a questionable designation, and a very lethal bomb, it is plain to see that using a more complicated and riskier buddy-lase game plan was an exercise in poor headwork and poor tactical-decision making.

LT CRISP IS WITH VFA-83.

Surprising the Guys in the Back

BY LT JOHN STUBER

Upgrading to Carrier Transport Plane Commander (CTPC) is an exciting milestone in a COD pilot's career. The skipper assigns the CTPC an airplane, a crew, and a mission to find the carrier at sea and deliver whatever high priority passengers or cargo they need. Multiple carriers in the area, international airspace, and a sturdy but aging airframe can complicate this.

I had recently upgraded and was conducting a routine carrier logistics mission for USS Theodore Roosevelt. As a new CTPC, I knew it was important to take nothing for granted and follow the procedures designed to keep me out of trouble. Helping me out in the back of the aircraft were two highly experienced enlisted aircrew and a motivated trainee. In the cockpit with me was one of the squadron's newer pilots, who already had built a good reputation for solid airwork and judgment. The deck was clearly stacked in my favor, crew-wise.

We dropped cargo off at the carrier, picked up another full plane of passengers and cargo, and headed to Cecil Field to drop them off. It was a beautiful day, and we were expecting one more flight to the carrier before returning to Norfolk. At 14,000 feet with land in sight and about to make our descent, we received a master caution light. "Main prop pump light, starboard side!" my copilot called out.

The C-2A has a constant-speed propeller giving the pilot instant power response and improved performance at all altitudes. However, this requires a complicated propeller governing system. SIRs and hazreps associated with the C-2's propeller system have, over time, changed our procedures for engine shutdowns to mitigate the risk of a disastrous fail-to-feather scenario.

The pump light indicated a problem with our propeller governing system that, if not dealt with, could lead to the engine shutting itself down and not feathering. A prop that fails to feather can create a huge amount of drag and make it impossible to maintain altitude. We ran the power up to check for normal operation of the propeller. This indicated we still had sufficient fluid to control the propeller pitch, though with no idea for how long. Knowing that time could be critical, we began running through the checklist for an engine shutdown.

The procedure specifies advancing the power to max immediately prior to shutting down, moving the prop as close to feather as possible. In the event that we had already lost too much prop fluid, this would make the aerodynamic forces of a windmilling prop less severe. With concurrence I pulled the T-handle and continued through the checklist to configure the aircraft for best single-engine performance.

The starboard engine shut down smoothly and the prop feathered. I got an angry call from the crew chief in the back. In my haste to shut down, I'd forgotten that it was a trainee on the intercom. The inexperienced trainee was still pulling out his NATOPS PCL when we shut down, and it had been a surprise to everyone in the back. Poor CRM on my part. We completed the shutdown and the post-shutdown checklist as a crew, which reminded us to override our air-conditioning system to hold pressurization.

With everything suitcased, we coordinated with Jacksonville Approach for a field arrestment. Planning had made us aware that, like many military fields, NS Mayport was closed for the weekend. NAS Jacksonville was the closest airfield with arresting gear and a crash crew. Arresting gear and the crash crew would mitigate the additional risk posed by a single-engine landing.

Approach informed us that the long field gear was rigged for runway 28, the active at Jacksonville, and it would take time to rig the short field gear. We knew winds were calm, so we elected to request runway 10. The aircraft was easily controllable and weather was perfect, so taking runway 10 instead was the obvious choice. There was nothing to be gained by staying airborne with one engine longer than necessary. We informed Jacksonville Approach, and they switched us to tower, who provided landing clearance for runway 10.

Within about 15 minutes of getting the light, we were being taxied out of the arresting gear by the crash crews. We were able to coordinate ground transport for the passengers and another aircraft to support the boat.

LT STUBER FLIES WITH VRC-40.

VT-6

Second Lieutenant Patrick Kelly, USMC, a flight student with Training Squadron Six at Naval Air Station Whiting Field, Florida, was standing wheels watch at Naval Outlying Field Barin. Monitoring landing pattern traffic at the end of a busy watch, he observed a light civilian twin-engine aircraft appear unannounced on final approach to the off-duty runway. He immediately alerted the runway duty officer, who hadn't seen the plane. The runway duty officer warned the Navy aircraft in the landing pattern and advised an immediate climb above pattern altitude. The civilian aircraft conducted a low approach to the off-duty runway and then climbed to within 300-400 feet of the other aircraft during departure.

BRAVO Zulu

VT-2

Ensign Sean Greiner, a flight student with Training Squadron Two at Naval Air Station Whiting Field, Florida, was on his initial T-6B solo flight. During a touch-and-go, with the aircraft still on the runway, the master-caution and check-engine lights illuminated. ENS Greiner immediately executed an aborted takeoff. Although an aborted takeoff from a touch-and-go is not normally practice during primary flight training, he stopped the aircraft on the runway centerline. He silenced the "master caution," taxied the aircraft clear of the runway, parked and shut down the aircraft. Inspectors found that the hydraulic system in the aircraft had completely failed. ENS Greiner's time-critical risk management allowed him to safely execute an aborted takeoff and to avoid further complications with a complete loss of hydraulics while airborne.

WE HAVE ALL BEEN GIVEN SCENARIOS in training, in both the simulator and the aircraft, that we would rather not have during regular operations. We talk about how we'd handle contingencies, what we would say to our crew and how to keep it safe, but no training leaves the lasting impression or is as unforgiving as being in the actual situation.

— LT David Hicks