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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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C O N

Features

Front cover: P-8A Poseidon takes off from a Boeing facility for delivery to fleet operators, marking the 20th overall production P-8A aircraft for the U.S. Navy. This 20th overall delivery will help the U.S. Navy prepare the next squadron transition to the P-8A from the P-3C Orion. U.S. Navy photo courtesy of Boeing Defense/Released) Photo by MCSN Jennifer Fournier. Modified.

Back cover: Photo composite by John W. Williams

NTENTS

Tingling Sensations

Page 10

Departments

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Night Electrical Fire over the Northern Arabian Gulf

CDR SPENCER ABBOT

As I exited the 03 Level to make the night walk across the flight deck to my jet, I hoped that a large moon would illuminate my night SSC flight over the Persian Gulf. I was midway through a deployment to the Arabian Gulf aboard USS Harry S Truman as a department head with VFA-37. After numerous 6.5-hour OIF hops in the previous days, single-cycle SSC flights were beginning to feel like yo-yos. I was looking forward to a relaxing flight, searching for supertankers and dhows on a cycle that wouldn't require the use of multiple piddle packs.

As I emerged from the ship, I noted that a low overcast obscured any hope for a good-deal, 99% moon-illumination night trap. Little did I know how much the moon was going to help me out that night.

After launch, I climbed to 10,000 thousand feet, the altitude at which I was going to rendezvous with a Rhino tanker overhead the CVN. As I completed my climb and turned back toward the ship, all of my displays and cockpit lights began to flicker. Several seconds later, my HUD went black.

My first reaction, in true HUD-dependent Hornet driver fashion, was abject dismay at the disappearance of my friend the velocity vector, since I had a marginal-weather night trap staring me in the face. I then realized that along with the HUD, all the other displays and cockpit lights were out as well. I looked down for a battery-

switch caution light indicating that the flight control computers were still receiving electrical power and saw nothing illuminated. Then the jet pitched down abruptly and stopped responding normally to stick inputs.

Ten miles from Iranian airspace without electrical power or ground references is no place to be, especially if your flight controls are in MECH OFF/OFF. I placed the battery switch to override while hitting the FCS reset button. To my great relief, normal flying qualities were restored. I cycled the generators, first the left then the right, to no effect.

In disbelief at my predicament, I tried cycling the generators once more, and after the second effort to cycle the left generator, my left DDI and MPCD returned to life. I tried cycling my right generator again, and the R GEN caution on my MPCD remained illuminated, along with a GEN TIE caution on my right forward console. A number of other cautions were present on the MPCD, including CNI, VOICE/AUR, MC2, INS ATT, FC AIR DAT, and NWS, with the landing gear warning tone sounding in my headset. I tried pulling out the Comm #1 knob, but because the UFC was inoperative (thanks

to the CNI caution), it had no effect. I tried keying the Comm #1 mike to see if I could transmit on Button 2, which I had previously selected after calling Red Crown, but there was no sidetone and no reply. I tried selecting the frequency on the UFC Backup page on my left DDI, and once again, no luck.

I tried resetting the INS, but the INS ATT caution stayed illuminated. I pulled the HUD up on my left DDI. Given my lack of an INS and the FC AIR DAT caution, it was sorely lacking in useful information. My MPCD was similarly useless, with no INS-derived or even TACAN information displayed. I tried resetting MC2, for what that was worth, to no avail.

I looked in the vicinity of where I believed the ship to be, and could see some aircraft strobe lights. I wanted to avoid Iranian airspace while staying close enough to the ship to rendezvous on another aircraft if needed. I decided to turn toward the southwest, away from Iran, while trying to remain close to the ship's position and the jets overhead, who were potentially going to be my only options for finding the ship or a divert field given the poor weather if I couldn't reestablish radio contact.

I shined my flashlight on the magnetic compass, and while I felt that I was flowing generally south, the compass said that I was headed east, toward Iran. That got my attention, and I turned back to what I hoped was the northwest, trying to recage my sense of direction based on the magnetic compass.

I looked at the left console, and although the console lights were out, the moonlight was sufficient to help me find some switches that I don't use very often. I selected the left console IFF backup switch to squawk emergency, and the UFC Guard override switch to Guard. Before I could make a call, I heard marshal calling me on Guard, as they had seen my 7700 squawk.

I told marshal that I had experienced a dual-generator failure, and that I needed another aircraft to join on my position. Once they vectored an aircraft toward me, I told them that I had restored the left generator, but that I had a bunch of other inoperative equipment and wasn't sure whether I had T&R problems or something else. I requested a squadron rep.

I shined my flashlight on the magnetic compass, and while I felt that I was flowing generally south, the compass said that I was headed east, toward Iran.

I pulled out my PCL and poured over the lists of inoperative equipment in the electrical section with much more intense interest than during the few NATOPS checks in which I had actually consulted those. The chart light was no longer working, but the moonlight was sufficient to read the PCL without needing to hold the flashlight in my other hand, very helpful given my non-usable autopilot. I seemed to have a failed right generator with the generator tie open.

I also had a lot of other inoperative equipment that wasn't included on that list. Some of the equipment on the dual transformer/rectifier failure list had also failed (for instance, the TACAN). Given that both generators had failed initially and remained failed while I cycled both generator switches the first time, I was worried about the longevity of my operat-

ing left generator. Holding my flashlight to the battery gauge, I could see that the E BATT voltage was holding steady at 28 volts, indicating the left generator was continuing to charge the emergency battery and power the left generator bus.

I was relieved to see a Rhino joining on my right wing as I flowed on roughly a 330 heading toward Kuwait. I told them that I intended to take an arrested landing in Kuwait at Ali Al Salem, our primary divert, due to a nosewheel steering caution which would not reset. The Rhino flashed his external lights to take the lead (he later told me that my position lights were on, but my formation lights and strobes were off), and then turned right about 30 degrees, putting Ali Al Salem on the nose. One of our air wing's Prowlers joined our flight as well. They, in conjunction with the Rhino, quickly began coordinating our transit with Kuwait Center while determining the weather and arresting gear status at Ali Al Salem.

In the meantime, our rep had come up on Guard, and I tried once again to switch to Button 18 on my UFC backup, and told them to switch to Button 18, pogo Guard. The UFC backup once again did not give me a sidetone after deselecting the Guard override switch, so I went back to Guard and we continued our running commentary on 243.0, which was surely being monitored by the Iranian Air Defense officials who incessantly queried our air wing's aircraft.

The cloud layer below us dissipated as we approached the Kuwaiti coastline, and Ali Al Salem reported that the weather there was CAVU. I selected gain override in accordance with the FC AIR DAT procedure and began to dump gas as we approached the field. Not being certain about the functioning of my normal gear extension system, I asked the Rhino to dirty up at 160 knots. The flaps came down normally, and the gear extended, so I didn't have to resort to the emergency gear procedure. As we rolled out on final, the Rhino broke away, leaving me to fly the remainder of the approach off the steam gauges given the lack of usable information on the HUD display on the left DDI. The taxi light did not function, and I was relieved when my jet began to decelerate as my hook engaged the unlit and unseen arresting gear cable.

I set the parking brake, shut down the jet, and began doing what I could to safe the live ordnance that I had been carrying. When the USAF crash-crew firemen arrived, I thanked them and then asked them whether there was a bar on base. One of them replied, "Nope….there's nothing fun here."

The next day, two of our top squadron mechanics arrived in the COD, and they quickly determined the cause of my difficulties. An electrical fire had destroyed most of the equipment behind door 10R. The fire had apparently started at the connector which joins the right generator power cable to an electrical distribution panel. The fire had also destroyed the Generator Tie and the Utility Battery. The destruction of the distribution panels explained why I had lost other equipment in addition to the normally inoperative equipment in the event of a failed right generator with the bus tie open or failed. The utility battery did not provide electrical power to the flight controls after both generators kicked offline because it had been damaged.

THE INCIDENT PROVOKED a great deal of discussion within our squadron of the aircraft's electrical system, which was widely acknowledged not to be the best known of the FA-18's systems by most Hornet pilots. Electrical fires or other electrical malfunctions can cause complex multi-system failures in the FA-18, producing very high task loading, and they are worthy scenarios for review during NATOPS checks and squadron training. A dual generator failure is an in extremis situation, and I was very fortunate that the left generator reset given the damage caused by the fire.

Thanks in part to the superb assistance of many individuals, from the marshal controller to our squadron reps to the crews of the Rhino and Prowler, I was able to spend the night in a low-rent USAF trailer in Kuwait and not a life raft. Our CAG bird was repaired in an aircraft shelter still bearing the wounds from U.S. attacks during Operation Desert Storm seventeen years before, and in a testament to the superb Bull maintenance team, Ragin' 300 was put back in service in the skies over Iraq within a week.

CDR ABBOT IS COMMANDING OFFICER OF VFA-27

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Ship's in a Turn!

BY LT DANIEL ARMENTEROS

Our squadron was embarked on the USS *George H. W. Bush* (CVN-77). We had just transited through the Straits of Gibraltar, ultimately en route to the Fifth Fleet Area of Responsibility (AOR). On the way, we briefly stopped off the coast of Sicily to flex some "air power muscle" in the eastern Mediterranean.

My mission for the day was to conduct a patrol of the carrier's vital area. The brief, launch, and flight were uneventful. My flight lead and I returned back overhead Mom for the standard Case One arrival. After breaking into the pattern, I set up for my normal approach to arrive at the start — aft of the ship at approximately 320 feet, on centerline.

For a normal carrier landing, a series of small right-hand check turns are required in order to keep the aircraft on centerline. This is due to the slight angle of the landing area with respect to the ship's plane of motion. On this day, when I rolled out behind the ship, I noticed that I was having to put a large correction to the left, which was strange and definitely not a sight picture I was used to. Paddles came up on the radio and told me the ship was in a turn and that I was currently on glideslope and on centerline.

As I continued my approach, the ship stopped its turn. However, I still had a correction in to the left. I was crossing the ramp and noticed a large drift to the left. Trying to correct back to centerline, I added power and made a right wing down correction. The power addition was too much, causing me to bolter. As I executed bolter mechanics - advancing the throttles to military power and rotating to maintain on-speed angle of attack – I was well left of centerline. My tailhook struck the waist catapult ramp, commonly known as "Fast Eddie." The ramp detached from the flight deck and traveled aft until it hit the lower communications antenna on a parked helicopter.

After getting safely airborne, the Air Boss called for all aircraft in the pattern to hold overhead in the landing configuration, so the flight deck could be searched for FOD. At the time, I did not realize my hook had struck anything other than the flight deck. After completing one lap in holding, I was directed to proceed to one of the airborne tankers for a visual inspection and fuel. I joined on the tanker and received approximately 2,000 pounds of fuel, at which point the tanker and I proceeded to the initial for the break. Just prior to reaching the initial, the Air Boss again came up on the radio and directed me to divert to our primary divert field, NAS Sigonella, Sicily, approximately 130 nautical miles to the north.

I immediately put Sigonella on the nose and began a climb up to 23,000 feet. At this point, I still did not have an idea as to why I was diverting. In my mind, I thought my pass was so bad they were sending me to the "penalty box." Regardless, I compartmentalized and focused on the task at hand.

After a 30-minute flight, I was safe on deck, at which point I was informed that I had been diverted because my tailhook point had hit something other than

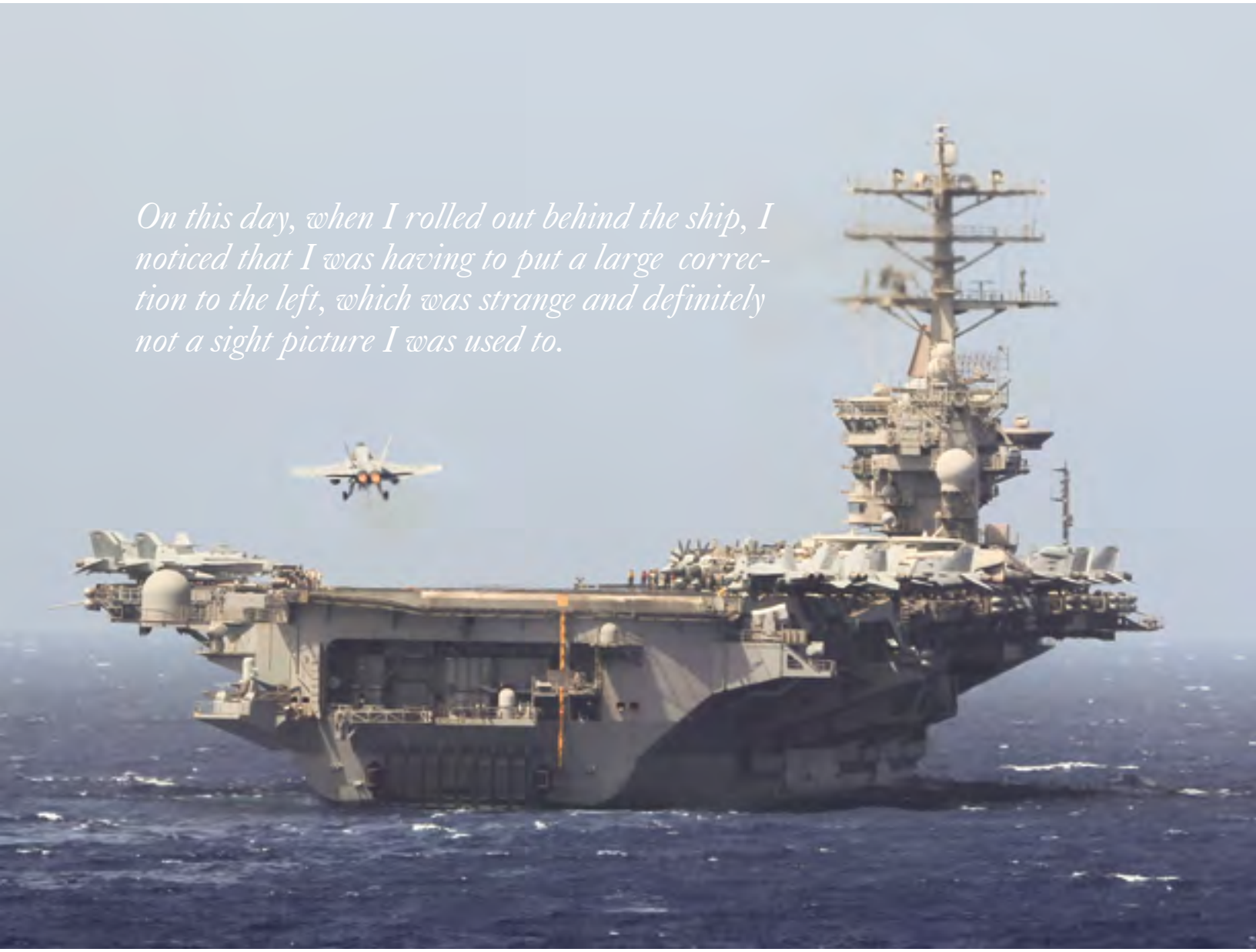


Photo by MC3 Preston Paglinawan. Modified

the flight deck; tailhook damage was suspected. Maintenance personnel were flown out via helicopter. They conducted a quick inspection and determined that the hook point was within standards, but they decided to replace the hook point as a precaution. A few hours later, I launched and recovered safely aboard the carrier.

After a few one-eyed jacks later that night at midnight rations, a few lessons learned came out. The decision process that ultimately led to diverting was based on "gouge" that an aircraft must divert if its hook point comes into contact with anything other than the flight deck. However, CV NATOPS states that an aircraft does not need to divert if the hook point touches a normal "flight deck protrusion" and lists cross-deck pennants, flight deck light covers, Integrated Launch and Recovery Television Surveillance (ILARTS) head, and the waist catapult ramp.

In this instance, the decision to divert was easy: a divert field was relatively close and I wasn't running out of fuel. Had we been operating farther from a suitable divert, this decision could have created a more dangerous situation.

The other big take-away was for our squadron rep. It is an important piece of Crew Resouce Management (CRM) to communicate to the pilot what exactly is going on and what the rationale behind the decisions being made are. As a new pilot to the squadron, it would have provided a warm fuzzy knowing that I was diverting not because of an egregious pass, but because of suspected tailhook damage.

LT ARMENTEROS FLIES WITH VFA-31

OK, Now It's an Emergency

BY LT JOHNATHAN BOSCH

I had been with VT-28 for four months, completing the Instructor Under Training (IUT) syllabus in the T-34C. For a newly qualified Instructor Pilot (IP), the first 10 flights as new instructors with Student Naval Aviators (SNA) are instrument training flights. My first two flights were scheduled as an out-and-in to Victoria, Texas.

At the beginning of the day, the weather seemed like it was going to be good for an instrument training flight. As the day went on, though, the forecasted ceilings began to come down. We completed our first event without issue. Reviewing weather for our return flight, we saw that the forecast called for 400 feet ceilings at Navy Corpus. That was above the minimum 360-foot ceiling for a Tactical Air navigation system (TACAN) approach and the minimum 213-foot ceiling for the Precision Approach Radar (PAR). Corpus International was calling no ceiling. We decided to take off and reevaluate the weather as we got closer.

After takeoff, we requested pilot's own navigation to BRASY to practice point-to-point navigation. Air Traffic Control (ATC) cleared us and the student set up what we thought was a direct course. A few minutes later, ATC called and requested we proceed direct to BRASY at this time. This was the first time I checked the wet compass after taking off, and it was 30 degrees off from our Radio Magnetic Indicator (RMI). After confirming this with my student, we started a timed turn towards the appropriate heading using the wet compass. Once on heading, I attempted to slave the RMI, but watched the RMI go past our heading and stop 130 degrees off.

I decided that the instructional portion of the flight was over. I reported to ATC that our RMI had failed and requested radar vectors to the PAR at NAS Corpus Christi. They asked if I wanted to declare an emergency, and I said no. Every minute or so, while on vectors, ATC would direct me to turn left. After a couple of these calls, my student mentioned that she didn't think the attitude gyro agreed with the turn needle. She was right: with the wings level on the attitude gyro, the turn needle was displaced to the right, and with the turn needle centered, the attitude gyro read about 15 degrees left-wing down.

This flight was becoming interesting. I was on my first out and in as an instructor, I had to fly through a solid layer of clouds, my RMI had failed, my attitude gyro appeared to be failing, and the T-34 does not have a standby attitude gyro. I was above the clouds, but it was hard to make out the horizon. The attitude gyro was wrong, but at least it was predictable and consistent. If I maintained 15-20 degrees left-wing down, I could keep the turn needle centered. I considered using the fast erect button to correct it, but I had just seen the RMI slave past the correct heading. Although they are different systems, I had little confidence in the attitude gyro.

After considering my options, I decided it was time to declare an emergency. The plan hadn't changed, I still wanted the no-gyro PAR into Navy Corpus, but the circumstances were now different.

After declaring the emergency, I asked if there were Pilot Reports (PIREPs) for both Navy Corpus and Corpus International. I wasn't expecting the answer: the most recent PIREP for Navy Corpus was from a T-44, and the pilot reported breaking out of the clouds at 100 feet. There were no PIREPs for Corpus International, but their ATIS was reporting ceilings at 600 feet. Although the weather at Corpus International was better than the weather at Navy Corpus, there was no ground-controlled approach. With a failed RMI, there was no way for me to execute a TACAN approach. My only option was to continue with the no-gyro PAR.

ATC continued to vector me towards home. About 30 miles out, they asked me to descend to 1,600 feet. I asked to stay at 3,000 feet, to remain above the minimum bail out altitude for night. In my mind, at any second the attitude gyro was going to flip upside down,

and I wanted that altitude. However, I knew that the only way this story would end would be with me landing, so about 15 miles out, I began my descent. That worked out well, because we didn't have to fly at 1,600 feet for long before we were on glideslope for the PAR. In order to keep my student engaged, I asked her to call out altitudes every 500 feet, until we get to 500 feet, and then every 100 feet after that.

We went into the clouds at about 1,500 feet. Although it wasn't very turbulent in the clouds, every bump we did experience caused the turn needle and attitude gyro to oscillate from side to side, making it difficult to keep the airplane stabilized. After my student told me we were passing 500 feet, the final controller announced that I was right of course, going further right of course, and asked me to confirm I was in a left turn. To the best of my knowledge, I was in a left turn, but had no real way of confirming it.

At about 250 feet, the controller told me I was too far right of course and directed me to perform my missed approach procedures. A light caught my eye off the left wing tip. Although I was still in the clouds, I could start to make out the lights around the runway. The emergency lights had caught my eye. I told the final controller that I had the runway in sight and would be continuing the approach. We broke out of the clouds at 200 feet, about a quarter mile right of the runway, heading approximately 45 degrees off of runway heading. The landing was uneventful.

Looking back on the flight, I can point to some things that went well, and some things that I didn't do so well. First, I should have caught the discrepancy between the turn needle and the attitude gyro. I was so wrapped up in trying to maintain the aircraft wings level that I didn't cross-check my instruments. Second, although I had just tried to slave my RMI unsuccessfully, I should have tried to fast erect the attitude gyro. I knew they were two separate systems, and I let the failure of one compound the failure of the second.

When the controller had told me to go missed, I'm not confident transitioning from a descent to a climb would have turned out well. I had a student who had a high enough level of situational awareness and assertiveness to recognize and call out the degraded attitude gyro. During this flight, sound CRM contributed to us landing safely.

Photo by Richard Stewart

LT BOSCH IS AN IP FOR VT-28 AT NAS CORPUS CHRISTI

Tingling Sensations

LCDR DANIEL BOYER

Our squadron had just returned from Air Wing Fallon, and I was excited to go on a flight that didn't require six hours of mission planning. You can't beat the training you get when flying a large force exercise on the Fallon range, but a local-area, unit-level training flight felt like a much-needed break from the rigorous work-up cycle.

The flight schedule called for an Electronic Warfare Close Air Support (EWCAS) flight. Our section briefed the event, which required one Growler simulating a strike aircraft while the other executed the Airborne Electronic Attack (AEA) mission. I was crewed up with one of our more aggressive junior officer pilots, so I knew I was in for a good time during the simulated ground attacks. We would simulate the striker for the first two runs, then reverse roles and become the AEA asset for the last two runs.

Because of troubleshooting delays on deck, my pilot and I went out as a single and assumed the role of striker. Our lead met us out in the working area. We checked in with them and began to run the CAS scenario. With our aircraft in a block altitude of 15,000-23,000 feet MSL, I had my mask on and off from takeoff to about 40 minutes into the flight. I didn't have my mask on for more than three to four minutes during the time we acted as the striker. I do remember feeling a sense of euphoria, which I attributed to the joy of flying over the beautiful terrain unique to the Pacific Northwest.

We reversed roles. Our planned AEA stationing altitude of 24,000 feet was Instrument Meterological Conditions (IMC) so we continued to climb. Passing 26,000 feet, I put on my mask. We achieved Visual Meterological Conditions (VMC) at 30,000 feet. Approximately three to four minutes after COMEX, I did not

Photo by MC2 Kilho Park

feel right. About a minute later, I suddenly experienced symptoms almost identical to the ones I experienced on the Reduced-Oxygen Breathing Device (ROBD) trainer: numbness and "pins and needles" from my elbows to my fingertips and mid-thigh to my feet. I alternated periods of confusion and clarity (some would say a normal flight for me). Once I really felt something was wrong, I told my pilot over ICS. He asked me what I meant and I said, "I think I'm hypoxic."

He immediately instructed me to pull my emergency oxygen green ring, and he pulled his. We initiated a rapid descent to below 10,000 feet cabin altitude. I thought I was fine at this point. I was on pure oxygen with my OXY FLOW knob secured, and I notified our lead that we were declaring an emergency and returning to base. I tried to switch the frequency on the primary radio to Seattle Center, but I spent some time staring at the up front control display (UFCD) trying to figure out how to change the frequency. I finally figured it out and declared an emergency to Seattle Center.

At this point, I fixated on the radar altimeter (RADALT) for what I estimate to be the next four to five minutes. I was focused on why it was not going off and why it was X'd out. I failed to recognize that we were above 5,000 feet Altitude Above Ground Level (AGL) and it was normal for the RADALT to be X'd out and not sounding a warning tone.

By this time my pilot had brought us beneath the overcast layer to VMC conditions, but I continued to focus on the RADALT. My pilot advised me that I could reset my green ring and take off my mask. I did so but could not figure out why air was still blowing in my face. I pushed my mask aside out of frustration. I then went back to figuring out what was wrong with the RADALT and cycled its power to try and get it to "work." Magically, it started to work when we were below 5,000 feet AGL.

We had either been on emergency oxygen or below 10,000 feet cabin altitude for an estimated five to seven minutes. I started to feel a lot better, with the numbness and tingling starting to subside. I also realized I had not reset my green ring. By the 10-minute mark, I was free of effects and able to focus on getting the aircraft on deck. We landed uneventfully on a visual straight in approach.

During this incident, my pilot had difficulty assessing my condition due to a lack of ICS communication from me on my state and my apparent ability to make radio calls to Air Traffic Control (ATC). He did a great job talking me through the procedures in order to get pure oxygen flowing into my body.

Although we were able to get the aircraft and both crewmembers on deck, there were ways we could have handled the situation better. When a crewmember or wingman experiences hypoxic symptoms, I caution against them securing their supply of emergency oxygen or removing their mask right after getting below 10,000 feet. As taught in our training, application of pure oxygen is the fastest way to recover and aircrew should remain on oxygen until all symptoms have dissipated. Obviously, this could have been a more difficult and dangerous situation had this been the pilot vice the NFO. But even in our case, I could have shed more tasks to a non-hypoxic crewmember and communicated my confusion over ICS. This could have prevented confusion and delays as I attempted to control the aircraft's communications, RADALT, and navigation systems.

My ROBD training allowed me to rapidly diagnose my symptoms -- remember your personal symptoms, and don't hesitate to execute the emergency procedure.

LCDR BOYER FLIES WITH VAQ-139.

Analyst Note: Emergency oxygen is your first line of defense against hypoxia and DCS. Wearing your mask and using emergency oxygen to depletion will ensure maximum recovery from hypoxia before landing. Removing your mask prior to depletion based on a belief that you are "free from effect" may lead to reintroduction of hypoxia or a reduced level of consciousness.

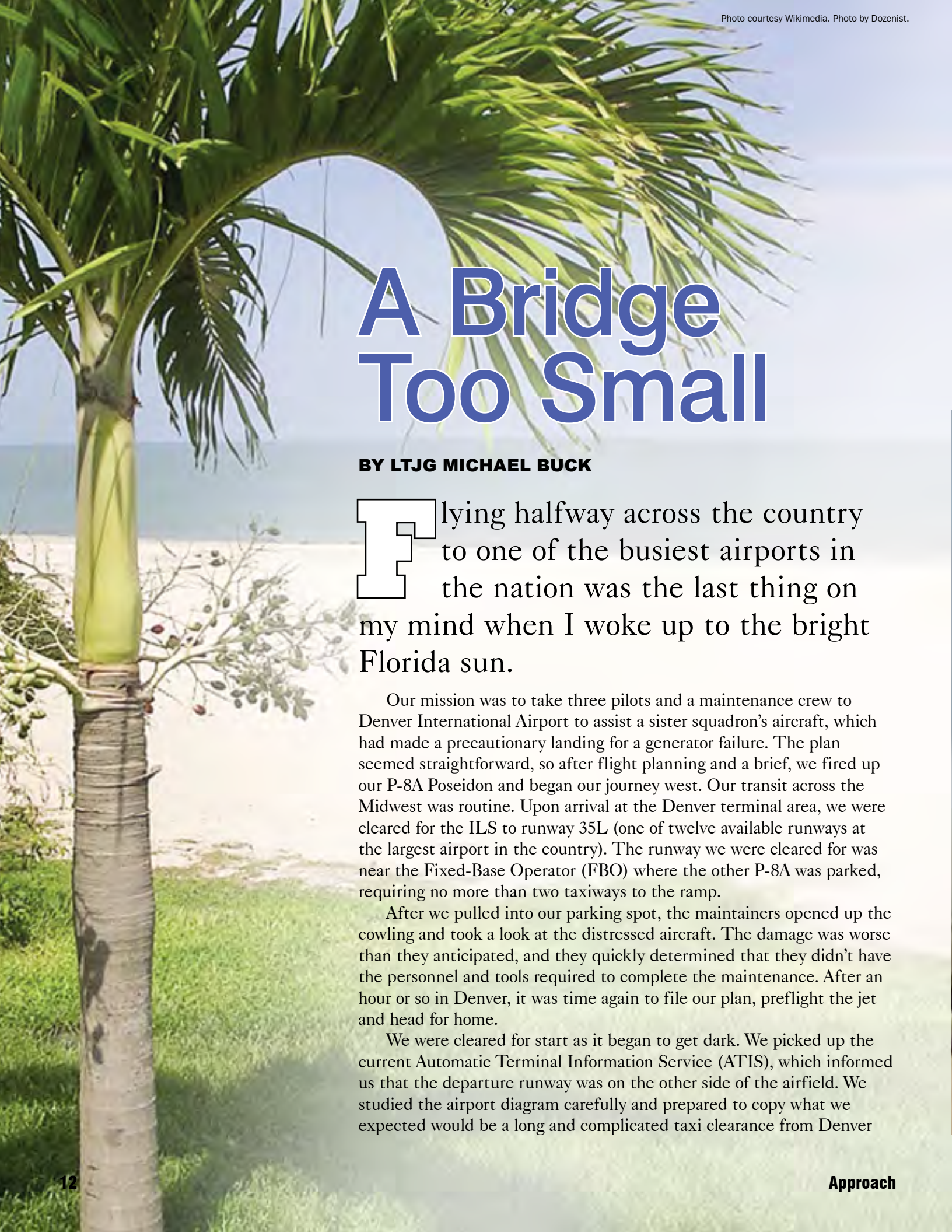


Photo courtesy Wikimedia. Photo by Dozenist.

A Bridge Too Small

BY LTJG MICHAEL BUCK

Flying halfway across the country to one of the busiest airports in the nation was the last thing on my mind when I woke up to the bright Florida sun.

Our mission was to take three pilots and a maintenance crew to Denver International Airport to assist a sister squadron's aircraft, which had made a precautionary landing for a generator failure. The plan seemed straightforward, so after flight planning and a brief, we fired up our P-8A Poseidon and began our journey west. Our transit across the Midwest was routine. Upon arrival at the Denver terminal area, we were cleared for the ILS to runway 35L (one of twelve available runways at the largest airport in the country). The runway we were cleared for was near the Fixed-Base Operator (FBO) where the other P-8A was parked, requiring no more than two taxiways to the ramp.

After we pulled into our parking spot, the maintainers opened up the cowling and took a look at the distressed aircraft. The damage was worse than they anticipated, and they quickly determined that they didn't have the personnel and tools required to complete the maintenance. After an hour or so in Denver, it was time again to file our plan, preflight the jet and head for home.

We were cleared for start as it began to get dark. We picked up the current Automatic Terminal Information Service (ATIS), which informed us that the departure runway was on the other side of the airfield. We studied the airport diagram carefully and prepared to copy what we expected would be a long and complicated taxi clearance from Denver

ground control. To our surprise, it seemed simple. Before we started to taxi, ground control asked about the height of our tail. The plane commander responded, "Just under fifty feet".

The pilot in the jump seat thought that this estimate might be conservative, so he consulted NATOPS to get the exact tail clearance height: 42 feet, 9 inches, well under the 50-foot estimate we gave the controller. The controller told us that we would be taxiing underneath a sky bridge and wanted to ensure we would clear. As a recently transitioned P-8A squadron, we are accustomed to questions about our new aircraft and its mission, especially at fields outside the local Jacksonville flying area.

We started engines, completed our pre-taxi checks and began our journey to the other side of the airfield, doing our best to follow the airport diagram, our taxi instructions and numerous taxiway signs. We switched ground controllers just as we rounded a corner leading straight toward the terminal, with the sky bridge a few hundred yards away. This was one of three handoffs we expected to occur before arriving at the hold short at our departure runway. As we continued taxiing toward the sky bridge, the second controller told us to continue our taxi and told us that the sky bridge clearance was 42 feet. It took less than a second to come to a complete stop. After realizing what had almost happened, we advised the controller our tail was in fact forty-three feet tall and would not be able to accept taxi clearance under the bridge. Nonchalantly, the controller acknowledged our transmission and shortly thereafter directed a 180 and alternate taxi instructions to RWY 34R via K, CS, 3W, F – in other words, around the sky bridge. Partially in shock and somewhat queasy about what had almost happened, we regrouped and executed our ground clearance to the active departure runway. Once the gear was up, we breathed a sigh of relief and executed an uneventful transit home.

While in the early months following transition, it's easy to get wrapped up mastering the knowledge and airwork aspects while losing sight of the basic "pilot stuff" we've been taught since the early days of flight school. Although this was a short-notice mission with minimal time for planning, it served as a reminder to continue the basic practices inherent to flight safety, especially with a new aircraft going into busy and unfamiliar airfields. A second reinforced lesson, pounded into pilots since day one, was to trust, but verify. ATC does their best to support aircraft on the ground and in the air, but they too can make mistakes and suffer from task-saturated inattentiveness. We were inside a couple hundred yards from an embarrassing mishap, for which both parties would have been at fault.

We were reminded how important the details of preflight planning are, especially for unfamiliar airfields. This includes taxiways you expect to use based on the prevailing wind and active runway, special clearances and notes which apply to your specific aircraft, and being prepared to adapt effectively when things change. These considerations are different when a squadron completes its transition to a brand new platform.

In-depth knowledge of your specific aircraft, even its physical dimensions, are important. As NATOPS says, "Read these publications from cover to cover. It is your responsibility to have a compete knowledge of their contents." This continues to be true no matter what aircraft you fly. It is every aviator's responsibility to know his aircraft well enough to adapt and overcome risky situations when they arise.

After investigating the details of the Denver sky bridge in the IFR Supplement, we noted a 42-foot tail clearance and a 118-foot wingspan limit, neither of which the P-8A Poseidon can clear. Not only would our tail have impacted the sky bridge, but our wings would have hit it as well, resulting in a costly and embarrassing static display to arriving and departing passengers at Denver International.

LTJG MICHAEL BUCK FLIES WITH VP-45

Managing My Gross Weight

BY LT JUSTIN CHALKLEY

The flight started out that evening like any other flight into Iraq: a benign launch out of the North Arabian Gulf and an uneventful transit. Our tasking was to conduct Non-Traditional Intelligence Surveillance and Reconnaissance (NTISR). We had briefed to yo-yo (stagger our timing to and from tankers) in order to maximize coverage time over the city.

Shortly after my flight lead departed to meet the tanker for our first scheduled aerial refueling of the evening, I received R LIM OFF, G LIM 7.5, and AOA TONE cautions. I pulled up the Built In Test (BIT) page, which displays the status of aircraft systems. I saw that the Stores Management Set (SMS) indicated "not ready" and my stores page indicated that I had no ordnance or external fuel tanks onboard, even though I was carrying a standard combat loadout, including several Joint Direct Attack Munition (JDAM) and a laser Maverick.

After looking outside and verifying my bombs were still on the wing, I radioed my flight lead on our tactical frequency to update him on what I was experiencing. We elected to forgo any troubleshooting until I was joined up with him on the tanker. Our goal was to ensure that I could still get fuel into my centerline tank, have an accurate reading of my total fuel quantity, and ensure the malfunction I was having was only being caused by the SMS.

After getting our fragged amount of gas and seeing a valid fuel reading, we started going through each of the cautions in the NATOPS pocket checklist (PCL). The R LIM OFF and G LIM 7.5 indicated that the aircraft's roll rate limiting and G imiting would not function normally. The AOA TONE caution indicated that I would have to manually calculate the lateral weight asymmetry of the aircraft. There were the expected indications of the SMS failing and the Super Hornet's mission computers (MCs) not being able to calculate how much the jet weighs. The PCL contained no applicable cockpit procedures, so we decided to cycle power to Mission Computer 2 (MC2) in an effort to recover the SMS. This action did not restore the SMS.

After executing the only reasonable troubleshooting step, we decided to continue the mission. With the ATFLIR no longer inventorying, my NTISR capabilities degraded to using my Mark 1, mod 0 eyeballs and night vision goggles. As expected with an inoperative SMS, I also found that I could not enter air-to-air or air-to-ground master mode.

The next few hours were uneventful. Just before we left our assigned airspace for the final aerial refueling of the night, the master caution went off with CAUT DEGD (degraded ability to display cautions) and NO

RATS (reduced authority thrust system, a critical system for CVN recoveries) Cautions present and my radar indicating an overheat condition. On the BIT page, the Signal Data Computer (SDC), which controls and monitors fuel quantity and transfer, now also indicated "not ready." I secured the radar to mitigate the overheat condition and broke out the PCL for my new set of cautions.

In the PCL there is a note for the CAUT DEGD caution that states "LOTs 21-24: Back-up TOTAL fuel quantity may be reset to zero following MC1 power cycle." I didn't realize that while I still had a readout for the amount of fuel in each of my fuel tanks, they were only estimated values since a failed SDC inhibits the aircraft's ability to determine the actual fuel quantity in each tank. I followed the steps in the PCL for resetting the SDC. As I was flying a Lot 29 aircraft (not 21-24), I elected to cycle power to MC1.

As soon as I hit the switch, the Engine Fuel Display (EFD) flashed "STANDBY." I popped an EFD DEGD on the BIT Page, and all of my tanks on the fuel page indicated "0." There was an estimated total fuel quantity of a little more than 13,000 lbs., which was close to what I had before the SDC Failure. Since our F/A-18Es are Lot 29, I incorrectly assumed that all the values on my fuel page would remain the same, when in reality the note in the PCL should have clued me in that only the total fuel quantity would still be present after cycling power to MC1. Because the estimated total fuel displayed did not account for the fuel I took onboard, we hacked the clock and used my flight lead's fuel state as my new fuel state with the idea that we would have 1,000 lbs. of slop (the last time we compared fuel states I was 1,000 to 1,500 lbs. higher on fuel).

All fixed-wing aircraft operating from an aircraft carrier have a maximum gross weight at which they can make an arrested landing aboard ship. This is commonly referred to as "max trap." The F/A-18E's max trap is 44,000 lbs., and with our current weapons loadout that equated to a fuel state of approximately 6,000 lbs. Without the jet indicating its approximate gross weight and no accurate indication of how much fuel I had, we were going to have to find a different way to determine when I was at my max trap. We pressed on to the tanker and decided we would take the same amount of fuel, place centerline fuel tanks to stop (inhibiting fuel from entering the tank), and take enough gas to get comfortably back to the ship with time to troubleshoot prior to our scheduled recovery. While en route to the tanker, we contacted the Tactical Command and Control (TAC C2) asset that was airborne in country to relay my jet's condition back to the boat.

DURING OUR JOIN ON THE TANKER, a section from our sister squadron (VFA-213) was finishing up their aerial refueling. We ran our game plan by their flight lead, who happened to be CAG and their XO, to see if they had any suggestions or saw any holes in our plan. They agreed with our course of action, but as they were departing the tanker the wingman's WSO came over the radio and said, "Hey, don't forget you can calculate your gross weight by what your airspeed is when you are trimmed to on-speed (8.1 degrees AOA)." It was a great piece of advice. We regularly use our weight and AOA to calculate our airspeed for an "on-speed" approach, but it had not dawned on me to use the calculation backwards and use my AOA and airspeed to calculate gross weight.

On the transit home my flight lead and I compared AOA flying at the same airspeed to approximate my gross weight compared to his. Once we were in communication with the boat, we passed all the indications I had in the cockpit, the procedures we had executed, and our game plan to use airspeed to confirm gross weight. After configuring for landing and determining that I was just above max trap, I reported to the ship that I was ready to come aboard and commenced my approach.

I told Paddles that I had a no RATS (Reduced Authority Thrust System) caution, meaning the arresting gear setting would have to be adjusted. Aside from not being able to uncage my HUD for the approach, the landing was about as normal as a night trap can be. The final casualty of the night was the aircraft's battery charger, which had failed during the flight. This resulted in a dead battery after I had shut down both engines. As a result, I was unable to electrically open the canopy. A special thanks to my Plane Captain, ADAN Ortegasilva, for manually cranking it open so I could make it to midrats in time.

While I was unable to contribute to the NTISR mission that evening, we were able to pull some great lessons learned out of the events. First, emergencies and system failures don't always present themselves in nice, neat cautions that tell you exactly what is wrong with your aircraft. Maintenance eventually traced the cause of the SMS, SDC, and battery-charger failures to a malfunction with the right generator, of which there had been no in-cockpit indications. With seemingly unrelated cautions manifesting for no apparent reason, our ability to troubleshoot was seriously hampered by a problem that was well beyond normal NATOPS systems knowledge. We had to deal with the symptoms of each new caution without knowing the root cause until a significant maintenance investigation located the cause.

Never assume that the person on the other end of the radio knows all of your emergencies unless you've told them. At some point between the TAC C2 that we relayed my situation to in country and the LSOs on the platform, the information about all of my system failures got lost.

Finally, CRM doesn't just include the crew of your own cockpit or section. It can include all the entities involved in the communication chain working to get you back aboard. We underscored the value of great air-wing-level CRM when the -2 WSO of a different squadron was able to add an "Oh, by the way" that become a crucial tool in managing my gross weight for a safe recovery.

LT CHALKLEY FLIES WITH VFA-31

Surprised by a Student

BY LT ANDREW EDWARDS

Waves of heat radiated from the vast landscape of reeds and tall grass; sun kissed my cheeks and nose. My student, head hung in shame, stood defeated next to our aircraft as it lay crippled at NOLF Santa Rosa. I lethargically turned my gaze to the RDO shack, wondering what I'd done to arrive here twice in one day.

Had I lost the favor of the gods? Had I been too brazen and too haughty about my abilities?

Granted, instructing students in the TH-57B was a far reach from instructing in the TH-57C, which I'd been doing for about a year. As a new Bravo instructor, I was confident in my abilities to fly but still not wholly poised as an instructor.

The first event had gone well. "Give 'em hell!" I hollered as my student and I floated to the deck during a sliding landing demonstration. I'm not sure why I was yelling, nor why that particular phrase would come to mind during a training mission, but I went with it.

On short final, my student pointed to the caution panel and said, "Sir, we've got a fuel pump light." I continued my beautiful profile to a gentle landing. I opened the pocket checklist and reviewed the EP to verify that my Land as Soon as Practical criteria had just been met. We shut down the aircraft and walked over to the RDO tower.

I normally never accept another aircraft after I've made a precautionary landing for any reason. I know from two deployments in hostile AORs and from flying with students for a year that this is an unforgiving business, fraught with dangers at every turn. When one aircraft goes down, I take that as a signal from the universe that I need to be riding the proverbial pine for the rest of the day. But that day I broke my own rule.

Little more than two hours later, I was in another aircraft flying with my second student. I didn't want to be the new Bravo IP who wasn't willing to step up to the plate at the bottom of the ninth.

I dropped my guard a bit flying with the second student. His maneuvers were coordinated and delicate in the pattern, so I decided to move on to autorotations. His autos were fine, but his power pull and yaw control close to the deck were about as expert as a palsy victim doing brain surgery with a monkey wrench (well, maybe he wasn't that bad). We moved into full autos. His turn to final was beautiful; nose attitude on final was immaculate; my seat cushion was slowly creeping out of my lower orifice. At fifteen feet he pulled sufficient power. He paused a decent amount of time, but the "level" portion of our ditty "Pull, Pause, Level" never came — he never pushed the nose over to level the skids. A shudder consumed me the likes of which I had never felt. I had never known how a tail strike felt. The damage to the aircraft was minimal, but the damage to my ego was a different story.

"How had I let this happen?" I asked myself with my head in my hands and tail between my legs. As the new guy, my "flight box", or comfort level, should have been a lot smaller. Even the best of us drop the ball from time to time, and students are no exception. I should have been more alert to that possibility.

Every instructor I had flown with to get my Bravo Qual had told me, "These students will surprise you, especially the good ones." I guess I didn't believe them, and as a result, my pride went rolling away with that helicopter on the back of that trailer.

I learned a couple valuable lessons that day. Exercising self-discipline means following the letter of the law and following your own constitution. Your comfort level and experience drive your decision making. But by the same token, getting too comfortable can get you stuck in an arid tundra of self-loathing.

LT EDWARDS FLIES WITH HT-28

BRAVO Zulu

While the senior flight engineer on Combat Aircrew 3, deployed to VP-4's AFRICOM detachment site, AWF1 David Lambert was conducting preflight checks for a tactical mission. He saw another P-3C taxiing for a post-maintenance functional check flight (FCF) with an unsecured propeller-servicing door. Recognizing the potential for FOD, he immediately called Maintenance Control to have the taxiing aircraft recalled. The aircraft returned to the line, where maintainers found that the screw that is supposed to hold the propeller-servicing door closed had failed. The entire top afterbody was replaced with one containing a good propeller-servicing door. After the maintenance action was complete, the aircraft was released safe for flight.

While supporting combat operations in Iraq, Strayhorse 72 had an engine-oil leak from the No. 1 engine. Because of the distance remaining in the flight, the crew elected to secure that engine in order to prevent an engine failure. The crew determined that there would be sufficient power available from the remaining engine to maintain flight. The aircraft had been traveling at 10,000 feet MSL and 220 KCAS. After the engine was secured, the aircraft was forced to descend to 6,000 feet MSL and slow to 160 KCAS in order to maintain level flight. Thirty miles prior to landing, the aircrew restarted the No. 1 engine without issue and made an uneventful landing. The subsequent maintenance inspection revealed that the left engine scavenge oil line had a hole between the oil conditioning unit and the engine oil tank. The crew of Strayhorse 72 showed excellent use of ORM and CRM in managing this emergency situation.

Left to right: Capt. Eric Marshman, Cpl. Cameron Colucci, Cpl. Bryce Buss, Capt. Kevin O'Malley, Maj. Mark Woodard

Ensign Shelby Smith, a flight student with Training Squadron Six at Naval Air Station Whiting Field, demonstrated exceptional airmanship and situational awareness while executing a T-6B solo flight at Naval Outlying Field Evergreen, Alabama.

On her second touch-and-go, ENS Smith noticed abnormal engine noise and vibrations shortly after taking off. The abnormal noise and vibrations continued and were subsequently accompanied by a master warning light with no associated warning message. ENS Smith immediately executed precautionary-emergency-landing procedures and notified the runway duty officer of her situation and intention to land. She made an uneventful climb to Pattern Low Key, lowered the landing gear and flaps, and successfully maneuvered the aircraft for a safe landing. Subsequent maintenance inspection revealed loose wires on the starter/generator.

Sergeant Nathanial Lubinus, a Flight Line Crew Chief and Collateral Duty Inspector with HMH-366 (deployed to Afghanistan during combat operations), was conducting maintenance on a CH-53E heavy lift helicopter.

He removed a seal on a vertical hinge pin on a main rotor blade in order to change it in preparation for flight operations. He noticed something different about the oil behind the seal and realized that the oil was burned. After more investigating, he also noticed metal fragments and concluded that something was wrong, given that there were indications of friction within the bearings. He immediately notified the Quality Assurance Division, who determined that the bearings indicated signs of an impending failure, which could have resulted in a catastrophic loss of the main rotor system and the loss of the aircraft and all personnel on board.

2nd Time Around

BY LT DAVID TARR

As naval aviators we train extensively to handle airborne emergencies. When the time arises to put this training to the test, the boldface procedures we practice and learn by rote are sometimes complicated by situational circumstances we didn't anticipate. We have to make decisions rapidly that perhaps aren't the same decisions we'd make if we had to do it over again. In my case, I got a second shot at handling an emergency that I didn't handle so well the first time.

As far back as anyone can remember, the jets of Carrier Air Wing FIVE (CVW-5) have been executing bombing sorties in support of the "War on Smoke." The campaign requires a constant barrage of Mk-76 "Blue-Death" training bombs to keep our ever-present adversary, "Smoke," at bay long enough to turn red squares green and satisfy our readiness reports.

As our strike group conducted exercises in the East China Sea, between China and the Koreas, my wingman and I were assigned to suppress two smokes with three Mk-76s and 150 rounds of 20mm that our Ordies had graciously loaded onto our F/A-18E Super Hornets.

The weather was bright and sunny, with a severe haze layer below about 5,000 feet that made target acquisition difficult with our Advanced Targeting Forward - Looking Infrared (ATFLIRs) as well as our Mk I eyeballs. There was a scattered layer at 3,000 feet that made us work a bit harder to select a run-in heading for our attacks once we had acquired the offending smokes that had been placed by our compatriots from HSM-77.

We each made three runs, expended our ordnance, and quickly exited the target area toward our egress flow point in order to de-conflict with an air-to-air evolution that followed.

We knocked it off just above our Case I ladder and spent the rest of the flight at maximum-endurance airspeed, executing Surface Surveillance & Control (SSC), looking for ships and awaiting recovery. My wingman 'fessed-up to having flown slightly below his ladder and, after coordinating with the tanker that was circling overhead the ship, I directed him to rendezvous with the tanker and take the last 1,000 pounds of opportunity fuel, just in case.

Thinking ahead, I elected to switch off of our tactical frequency and confirm that we were still expecting a Case I recovery. Despite the poor visibility, I thought the worst-case scenario would be a downgrade to Case II. After all, there were only a few scattered clouds at 3,000 feet, and we had routinely managed the Case I stack with worse visibility and cloud coverage. Much to my surprise, marshal reported a Case III

Photo by PH3 Bo Flannigan. Modified.

recovery. That put both my wingman and I well below the fuel states required for a Case III fuel ladder, though the extra fuel he received from the tanker put him closer to where we needed to be.

The deck was working slowly to launch the next event, and marshal provided the all too common "99, Delta+4" to confirm as much. Nearly everyone in the stack was reporting low-fuel states, and we hoped that the message was sent down the line to "Hurry up!"

My approach time arrived and I commenced uneventfully to 8 miles, where I was directed to dirty up. As I slowed to on-speed, now at about 6 miles, I noticed my angle-of-attack (AOA) indexers flicker, while the extended horizon line in the HUD disappeared then reappeared as my jet struggled to determine whether I was in the "up auto" flight-control mode (for normal flight), or "powered approach" (for the landing configuration). After a few seconds, the mippling between these two modes ceased, followed by a deedle-deedle and "Flight controls, flight controls" in my headset.

I looked down to find an FCES caution light and an FCS caution on my left digital display indicator (LDDI). I pulled up the FCS page to find all four channels of my AOA indicators X'd out, a condition caused by an unacceptable disagreement in AOA as reported by the probes on the left and right side of my aircraft's nose. By now I had traveled to within 3 miles of the ship and was establishing myself on glide slope. Touchdown was about a minute and a half away, and I hastily tried to calculate whether I had enough fuel to troubleshoot (should I choose to discontinue this approach and let everyone else land),or safely address the cautions prior to landing on this pass.

As I took the five or so seconds to make a decision, I thought that the situation felt a little bit too familiar, and for good reason: just about a year earlier, while I was in the first month of my nugget cruise aboard the USS *George Washington* (CVN73), I had experienced nearly the same emergency.

My Lot 23 Super Hornet had given me an FCS cautions off the catapult, which subsequently cleared, as well as an OIL HOT indication, so I was already

in contact with our squadron representative in the tower. We stepped through the procedures for the OIL HOT and decided on a pull-forward to recover me immediately. No FCS indications appeared until about three miles on a straight-in recovery to the ship. The indexers went dark, the HUD display mippled between the UA and PA displays, but this time the cautions didn't pop until about one mile, just outside the ball-call.

Up to this point, all I had reported to my squadron rep was that I was without my AOA indexers. Being inexperienced in my operations around the boat, my mind had moved past the emergencies and was focused solely on flying a safe pass to ensure that I got the plane on deck on the first try. I had seen the cautions, but they hadn't registered in my mind and I hadn't noticed any change in aircraft handling so I assessed the plane to be flyable enough to land. I also figured I was probably still on-speed, since I had been nicely trimmed prior to the cautions

My pass was decent enough, and Paddles had called out my attitude all the way to a comfortable 3-wire. It had felt good to be on deck, and everyone had said, "Way to not screw it up, new guy." That lasted only until the debrief with our squadron rep. As we watched my tapes and talked through what happened, he was shocked to find out what indications I had received, especially the FCS cautions. I hadn't communicated to anyone what I had seen at one mile, and with my jet at maximum-trap weight, I had plenty of fuel remaining to go around and sort through the issues that were affecting my jet. Instead I continued the approach with an aircraft with that was trying to tell me something had been wrong, and I'd kept the secret within my own cockpit, making it impossible for our CATCC rep, Paddles, or anyone else to help me in the event that something else unexpected had occurred.

OK, back to my original story. This time I was equipped with a brand-new Lot 35 Rhino, 16 months more FA-18E experience, and the lessons learned with it, but the same failure mode of the AOA system. I also had one serious new wrinkle to contend with: myself, and everyone else airborne, had fuel states hovering around tank, meaning that if I discontinued the approach to troubleshoot, I wouldn't get front-of-the-line privileges for recovery as soon as I felt ready to come aboard. I could end up stuck at the end of the conga line or be forced to rendezvous with the tanker, who reported that he had "barely enough" to give me the standard offload of fuel. I reasoned that tank states are set to allow a reasonable cushion and tankers hold a set amount of fuel as their stone for a reason, so I elected to discontinue my approach at about 2.5 nm,

Photo by MCSN Rob Gaston

with a fuel state of 4.3 (tank state was 3.0).

I climbed back to 2000 feet, flipped to the appropriate page in my pocket checklist, and contacted my squadron's tower rep to help develop a game plan. We quickly confirmed the first several steps that I had already taken and, with agreement from the CATCC rep, I ensured my airspeed was below the critical limit of 190 KCAS, flipped open the red switch guard and set the GAIN switch to ORIDE. The jet was now operating with fixed flight-control gains, effectively isolating one of the critical variables that would otherwise rely on accurate AOA information. I had also lost all modes of autopilot, increasing the necessity of good airmanship throughout the recovery.

In accordance with the NATOPS procedures, I tried to determine which AOA probe was providing the faulty indication that drove the tolerance-exceeding split. Initially I couldn't determine which one was faulty, so as our CATCC rep summarized the notes and handling characteristics I could expect in GAIN ORIDE, I directed my attention to other tasks, like my position and fuel state: I was on an extended downwind, 14 miles from the ship and with a 3.6!

"Approach, 210, ready to come aboard"

"210, roger, your interval is at 18nm, continue on present heading."

"210 is state 3.6," I said, hoping they would find a way to fit me in.

"Roger, 210." Not what I was hoping for.

I needed to save fuel but was hesitant to reconfigure my jet. I conferred with my CATCC rep about sucking up the gear, which I did, saving a bunch of gas by doing so. As I watched the green gear lights extinguish, still talking with my rep, the captain of the ship came on my approach frequency to offer a few words. Then another voice jumped on the rep frequency while approach, who was back on my primary radio, spat out more instructions for me. The radios had quickly become saturated with a cacophony of voices. "I'm not dealing with this", I thought, somewhat irritated. I preemptively turned down my MIDS Voc A and Voc B, just in case BP wanted to introduce their two cents into my single-seat cockpit. I said, "Roger", on my auxiliary radio, to acknowledge the last caller, and then turned it down to a barely audible level. It seems that everyone had something to offer, but I knew my rep and I had been thorough and I had confidence in the game plan we had agreed on.

As I finally turned inbound at 18nm I checked FPAS to ensure I was at maximum endurance airspeed and checked my fuel, a 3.4. It would be close to tank. At 5 miles, our squadron's head Paddles called me up to let me know he had been listening, knew the situation and our game plan, and told me that if I kept the ball energized, they'd get me and my jet aboard just fine. It was a concise call, delivered in a timely fashion during a lull in my workload – a great example of a supremely professional Paddles team.

Just before starting down glide slope once more, I dropped the gear, set the calculated airspeed for on-speed at my gross weight, and checked my FCS page to see if I could identify the failed probe. Sure enough, the right probe was indicating a significantly lower AOA than should have been the case. I selected the left probe for usage, and my indexers returned.

As soon as I moved to establish a healthy VSI in order to maintain glide slope, I noticed the changes in handling characteristics that NATOPS predicts: the nose needed significant influencing with the stick to remain on-speed, and rolling the aircraft produced a gentle yaw opposite the direction of roll that made line-up slightly more challenging. I focused on flying the plane and at the ball call my fuel state was 3.0 (tank).

Armed with the solid brief from my squadron CATCC rep, the changes came as no surprise and I was able to fly another decent pass, with an energized ball as Paddles requested, to a 3-wire.

In the debrief we talked through ways our parties could have communicated more effectively, but this time, unlike the last, the discussion was largely positive.

The 4-channel AOA failure I experienced is common in F/A-18E/F aircraft and straightforward to handle. Even on my most recent occurrence of this emergency, the factors of weather, fuel and radio-saturation could have complicated an otherwise minor problem, leading to a low-state tank situationor dangerous aviating at low-altitude in IMC conditions without autopilot/auto-throttles, or worse.

Thanks to good debriefing on my first 4-channel AOA emergency, effective communication and decision-making with our representative in the tower, the decision to de-saturate my cockpit of radio chatter, and a professional LSO team, my second shot at handling a 4-channel AOA failure at the boat boosted my confidence in how well teams of people work together, instead of leaving me with the "what just happened" feeling I had the first time when I tried to wing it on my own.

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

Photo by MC2 John Philip Wagner Jr.

Hypoxic in IMC

BY LT LOGAN RIDLEY

There are emergency procedures, and then there are emergency procedures. If you have until the next recovery to take care of an issue, then it's probably not a true emergency. However, if you are about to pass out at 30,000 feet, in solid Instrument Meterological Conditions (IMC) with embedded thunderstorms, without an Inertial Navigation System (INS), you have the real thing.

On the way up, at around 32,000 feet, my world suddenly got very confusing.

Continuing this line of reasoning, I have concluded that there are two levels of emergency procedures (EPs). The first level involves a malfunctioning aircraft. The second, higher level, combines a malfunctioning aircraft with a malfunctioning pilot.

On the day that led me to these conclusions, my squadron had been scheduled for a day Red Air event (we were providing two jets for the training). The brief was standard, but there were some questions about the weather in the working areas. No Pilot Reports (PIREPS) were available, but we were legal to fly.

We decided that we would at least check it out. Both my lead and I were comfortable with navigating around any embedded thunderstorms that might pop up. Everyone was prepared to cancel the training if it didn't make sense to fight that day.

On the way out, we quickly went into the clouds, and I took a welded wing position. The transit was uneventful, even though I was glued to my lead. Once in the area, we started a climb to find clear air. My lead soon announced that it would be unworkable due to weather.

He decided to split the section so that he could see where the tops were in order to get a thorough PIREP. His plan was to kiss me off at a lower altitude. However, during his communication to the blue air, I lost my INS and told lead that I wanted to stay attached.

On the way up, at around 32,000 feet, my world suddenly got very confusing. My heart started racing, I felt incredibly hot, I smelled something acrid, and the amount of effort it took to fly formation on my lead was incredible. I quickly recognized these symptoms as hypoxia. I reached down, pulled my emergency oxygen green ring, and turned off my oxygen flow knob before communicating my issue. I then told my lead that I was getting hypoxic and needed to descend. He was a great external copilot and walked me back through all the emergency procedures.

Later, he told me that he had watched my head move from his aircraft to the cockpit. My movements had been very deliberate, a certain indicator that I had required way more focus than normal for simple tasking.

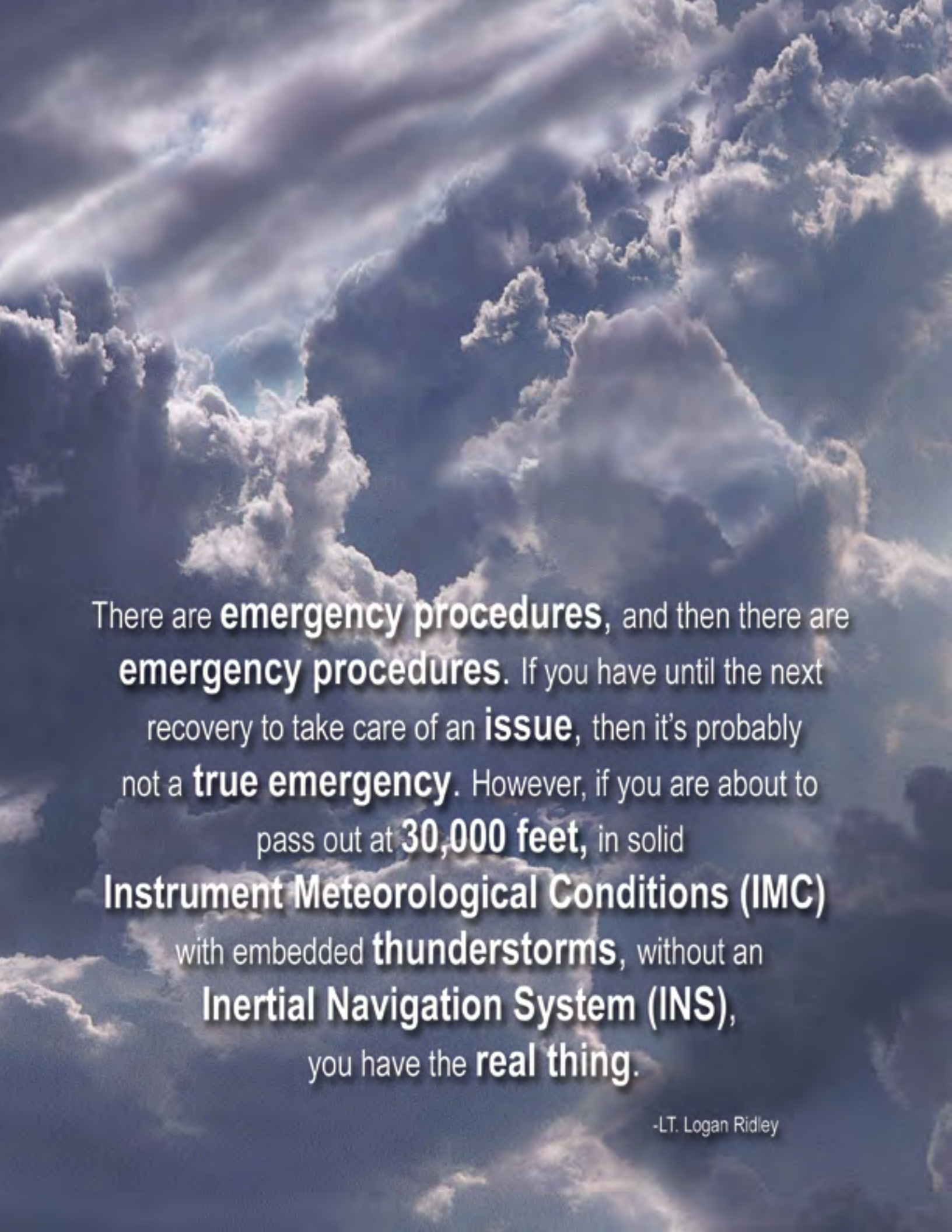
Since I had no INS, I hadn't peeled off and dived for the deck on my own , but I'm pretty sure that the space shuttle pilots couldn't descend more quickly and more controlled than my lead did on our way down. I think he was flying off of me more than I him. I began to feel much better while he was talking to me to see how I was handling the situation.

WE FOUND CLEAR AIR TO RELAX IN, but that didn't last long. We also managed to find a little pocket of convection. I held on for a couple of jolts through the air. Lead finally kissed me off and we took altitude separation.

Coming back to the field IFR, with no INS, and getting over hypoxia, I was keeping it together. Then I heard another squadron start to clobber the approach frequency, and I'd had enough. I declared an emergency and took the priority back to the field. Approach had no idea what I was dealing with, but they found me some clear air to fly through. The landing was uneventful. Post-flight analysis found that my oxygen regulator flow was below the acceptable levels.

I absolutely give credit to my Reduced-Oxygen Breathing Device (ROBD) training for teaching me to recognize the symptoms of hypoxia. I'd met other aircrew who hadn't had this training. It has since become part of our core SOP. I also credit the amount of emphasis placed on physiological training and the execution of boldface. A sub-par plane can usually be flown home, but a sub-par pilot may not be able to fly anywhere. Finally, my lead got me home safe. Single-seat platforms can still practice CRM, like we did that day, working through emergency procedures.

LT RIDLEY FLIES WITH VFA-31.


There are **emergency procedures**, and then there are **emergency procedures**. If you have until the next recovery to take care of an **issue**, then it's probably not a **true emergency**. However, if you are about to pass out at **30,000 feet,** in solid **Instrument Meteorological Conditions (IMC)** with embedded **thunderstorms**, without an **Inertial Navigation System (INS)**, you have the **real thing**.
-LT. Logan Ridley

Please note:

The SAS website has moved to a new location:

http://www.public.navy.mil/comnavsafecen/Pages/aviation/SAS/index.aspx

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