THE NAVY & MARINE CORPS AVIATION SAFETY MAGAZINE

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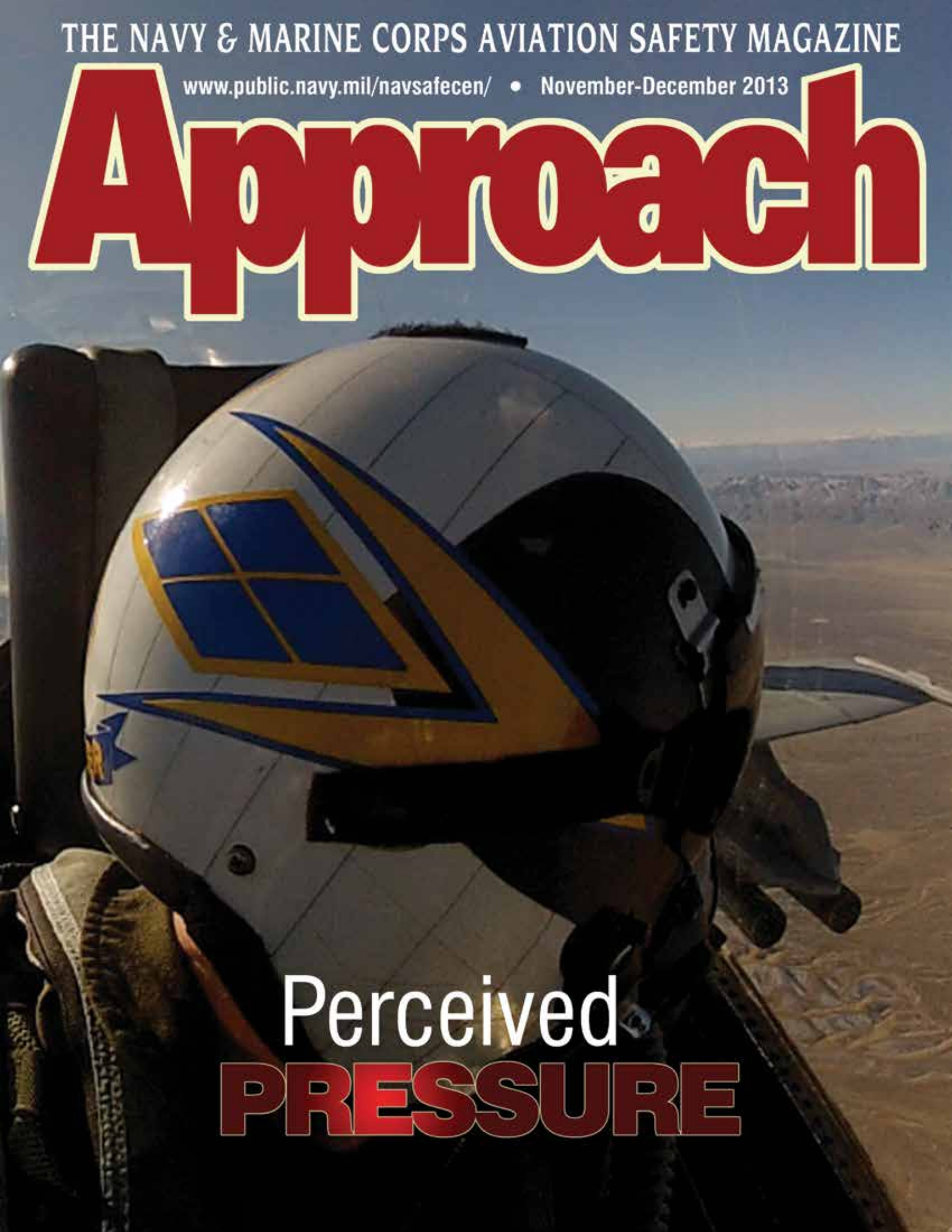
Approach



Perceived PRESSURE

The Navy & Marine Corps Aviation Safety Magazine

November-December 2013 Volume 58, No. 6

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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November-December Thanks

Thanks for helping with this issue…
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LCdr. Patrick Smith, VR-55
LCdr. Don McIlvaine, VAW-120
Lt. Tommy Powers, VAW-121

Departments

Safety Awards

It's time to nominate your command and be recognized for a solid year of accomplishments. Command excellence through safety is at the core of Naval Aviation, and the following awards will showcase high achievements: CNO Aviation Safety Awards, Naval Aviation Readiness Through Safety Award, Admiral James S. Russell Naval Aviation Flight Safety Award and the Admiral Flatley Memorial Award.

Don't forget the highly coveted Grampaw Pettibone Awards, with unit and individual categories that recognize promoting safety through publications (such as *Approach* and *Mech*), and the media category (unit or individual) for the use of digital and media resources (such as videos and websites) to promote aviation safety.

The reference is the CNO Aviation-Related Safety Awards, OPNAVINST 1650.28A.

PERCEIVED PRESSURE

BY CAPT CHRIS SAINDON

If you're wearing wings, managing risk is probably something you do fairly well, every day as part of your daily routine, without ever thinking much about it. Whether it's spending the time to thoroughly plan for an upcoming mission, making sure that you get a good night's sleep before an event on the flight schedule, or planning for the next family vacation, you probably already do a pretty decent job of managing risk because of your Naval Aviation training and experience.

From our very first day in flight training, we're taught valuable lessons about managing risk that we take with us to the Fleet. But what happens when "operational pressure" and other factors creep into the equation? I put quotes around "operational pressure" on purpose, because in most cases "operational pressure" is really only perceived pressure misinterpreted as operational necessity. So what is the definition of operational necessity? "A mission associated with war or peacetime operations in which the consequences of an action justify accepting the risk of loss of aircraft and crew" (OPNAVINST 3710.7U).

I would venture to speculate that in Naval Aviation today, there are not too many missions that fall into the category of "operational necessity." Troops in contact scenarios, real-world SAR missions, life-or-death medevacs, and other selected missions might very well fall somewhere in the spectrum of "operational necessity," but those missions are few and far between.

So let's get back to perceived pressure. In the spirit of "true ready room confessions," I'll share one of my "Well, I'll never do that again" stories about perceived pressure influencing my decision making and risk management. During my department head tour in a VP squadron at NAS Whidbey Island, I was assigned as the new Mission Commander for one of the most experienced and top performing ASW crews in the squadron. Shortly after joining the squadron and going through a brief tactical syllabus with the crew, we were scheduled to be one of the first Operational Readiness Evaluation (ORE) events on what was to be a 3 day "flap-ex" against a U.S. sub. ORE is the final event that a VP squadron must complete before being deemed ready to deploy and, as the new Mission Commander of my crew, I wanted to make sure that my crew went out on-time, gained contact and completed the mission as scheduled.

But Mother Nature was not on our side that day at NAS Whidbey and the weather was well below minimums at brief time. In fact, all 3 events before ours were CANX for weather below minimums. We pressed ahead with the preflight, and we were ready to go well before our scheduled takeoff time. Thirty minutes prior to takeoff, my copilot called for a weather update. "No change ... still calling zero-zero boss," was the update. Nevertheless, I was determined to bring one home for the team and be the first crew to deliver the "on-top" for the squadron's ORE.

So we started engines and taxied out to the runway to take a peek at actual conditions. I could just about see the 6 board as we taxied into position-and-hold, giving us about 2,000 feet horizontal visibility observed. I had a quick discussion with my fellow pilots and the flight engineers up front. Having almost 3,000 hours in the P-3 and recently earning my Special Instrument card, I felt like conditions were acceptable and managed to convince the crew that taking off on this mission was worth the risk. Off we went down the runway and out over the Pacific for what would turn out to be a "successful" event where we gained contact and conducted numerous simulated attacks on the sub.

However, getting back into Whidbey was a different story. Conditions had changed little when we returned six hours later, and the field was still reporting at minimums for the ILS runway 7. It took us three passes to get the plane on deck, and we were just above bingo fuel when we did.

Looking back on that event with perfect hindsight, I realize that I pushed the limits or prudent airmanship entirely too far. Was there any "operational necessity" there to complete the mission? Absolutely not! There was only perceived pressure on my part to complete the mission for the sake of ORE. But what did we (the squadron) really gain from that event, and was it worth the additional risk that I elected to assume by taking off using my Special Instrument card? Definitely not! Had we had ANY malfunction on the wet runway during either the takeoff or the landing, things might have ended very differently. A few years later as a squadron CO in Whidbey Island, I would have never allowed that same scenario to play out because it simply would not have been worth the risk. Losing an aircraft and an irreplaceable crew would have a far more lasting negative impact on squadron readiness than missing what was essentially a training mission.

The moral of the story is don't let perceived pressure influence your decision making — ever! Understand where the "pressure" is really coming from and address it properly. Don't let it cloud your judgment and airmanship. There are many sources of "pressure" out there that can influence your decision making if you allow it, including perceived pressure to get the airplane back to home plate when you have a malfunction, to get the "X" on a pilot trainer, and to get home from a cross-country even though the weather is near prudent limits, etc. All of these can influence your decision making and make you convince yourself to accept more risk than you should for routine operations.

If you land safely at a remote field after a malfunction, incomplete the "X," or don't get back on time from the cross-country and you, your crew and the aircraft are safe, you can regroup, figure out a safe course of action, and live to fly another day. But in contrast, if you elect to take that additional risk and push the envelope, be aware that the mishap files at the Naval Safety Center are FULL of mishaps where the crew pushed a little too hard due to "perceived pressure" of some sort.

Don't be the next addition to our mishap archives. Understand and recognize perceived pressure, balance the risk appropriately, and live to fly another day. – *Capt. Chris Saindon, Director Aviation Safety Programs, Naval Safety Center*

The Pressure is On

BY LT. KIRSTEN CARLSON

By a thorough selection and training process, aviators are chosen not in small part based on their ability to carry out their duties in the face of difficult circumstances. This is undoubtedly a crucial trait for mission readiness and completion of time-critical operations.

Aviators are well-familiarized with perceived pressure; pressure to perform well, obtain qualifications, maintain currency, and to "get the X out." Additionally, the pressure can seem to come from all angles: there's pressure we put on ourselves, pressure from those in charge, pressure from the Fleet, as well as pressure from factors beyond our control.

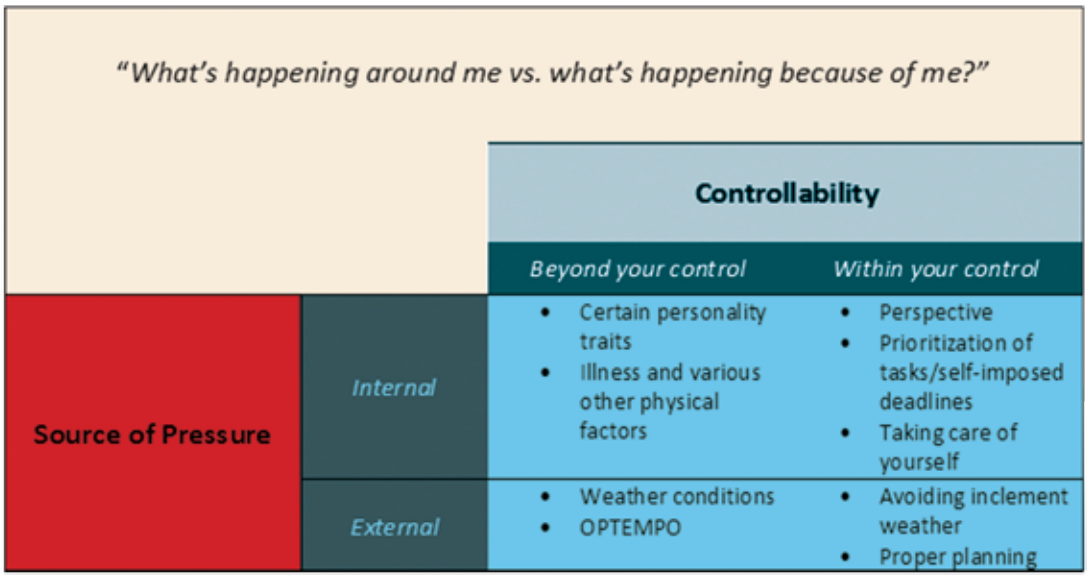
To be sure, perception is reality and the pressure does exist. We routinely balance numerous responsibilities that can seem to have conflicting endpoints. For example, we're told to outperform, outdeliver, make our mark – but don't make mistakes. At best, we operate in a culture of "Hurry, but do it safely." At worst, it can become "Hurry, I'm sure it will be fine." There may be lucky breaks, but unless you're willing to bet your life on it, you've got to have a plan to deal with pressure and mitigate the risks associated with it.

From an aeromedical perspective, perceived pressure can result in an aviator taking to the skies under less-than-healthy conditions. We have a tendency to press despite our body's protests. IMSAFE (illness, medication, stress, alcohol, fatigue, eating) is just one policy that has been put into place to address this concern, offering what is intended to be a nonpunitive "time-out" if necessary. Operational Risk Management (ORM) is yet another. However, there exists in some circles a perception that "calling an IMSAFE" or "ORMing" out of a flight is equivalent to dropping the ball. Perceived pressure may sometimes influence someone from speaking up to say, "This isn't a good idea today" due to the potential risk of being pegged as unwilling, uncooperative, or worse, unable.

It's important to separate those factors that we can control in order to reduce the pressure we experience. Why? Because as perceived pressure increases, so does our tolerance for risk.

LT. CARLSON IS WITH THE AEROMEDICAL DIVISION, NAVAL SAFETY CENTER.

The chart below illustrates just a few examples of how we might categorize pressure to better recognize methods to reduce it.



Red Range

BY LT. GRANT STRICKLAND

It was the final day of my first Air Wing Fallon, and I was scheduled to employ 14X2.75in rockets for the first time at a moving-vehicle target (MVT), which is a white truck pulling a sled. In the mass brief at Naval Strike Air Warfare Center (NSAWC), my flight lead and I received kneeboard cards (KBC) and a PowerPoint brief that covered admin, tac admin, and run-in restrictions. These restrictions covered employment information and limitations for each of the weapons that would be fired on the MVT over the three-hour vulnerability (VUL).

The MVT is a white truck pulling a sled along a dirt track that is several miles long to the east of the B-20 complex and west of Lone Rock (the only large rock formation on the range), which is a visually significant feature in the middle of a dry-lake bed in the range.

The brief made it clear that the MVT would be operating on one of two routes, both of which were oriented from SSW to NNE. The KBC showed the B-20 dry-lake bed with straight lines drawn in PowerPoint depicting the general orientation of the tracks. Waypoints to the fourth decimal place for the north and south ends of each route were also on the KBC. After the brief, my flight lead and I reviewed section specifics. We were ready to go.

The section taxied, took off, and soon we were checked in with strike coordination and reconnaissance/armed reconnaissance (SCAR/AR), call sign Wolf, in B-20. As we circled overhead the large, dry-lake bed that consumed the target area, I soon realized I had made a poor assumption that the tracks would be visable.

The previous section was late leaving the target area, so we were compressed for time to get our ordnance off during our remaining VUL time. Our initial prebriefed plan was for DN 21 to drop a GBU-54 Laser JDAM on the MVT followed by rocket employment by DN22. DN21 directed me to setup for my attacks first while he troubleshot his weapon. My lead called "captured" on the target using his targeting pod (TPOD) and confirmed target acquisition with Wolf. My TPOD had no video at the time because it was still in its tests at initial video power up. I did not return to the TPOD page on my displays for the remainder of the visual talk-on. The comm was as follows: DN21: "DN22, do you have the target?"

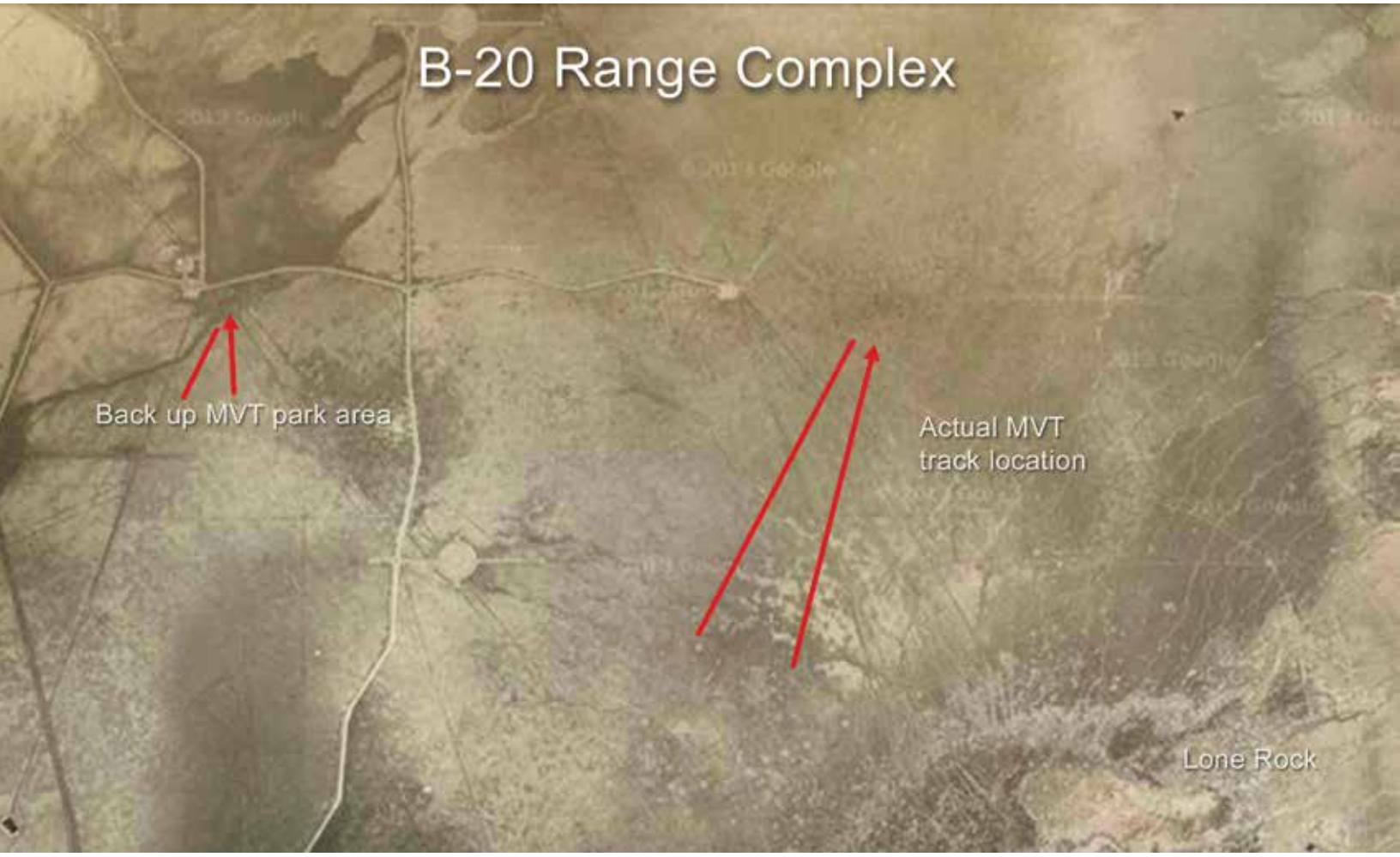
DN22: "Negative, my FLIR is bad."

DN21: "OK. Look out the window. Do you see Lone Rock?"

DN22: "Yes."

DN21: "Do you see the two tracks to the west of Lone Rock, with bowls in the road at the north and south ends?"

DN22: "I see the tracks."



DN21: "OK. Go down to the altitude you need over the track to see the truck."

It was easy to see Rock as I circled overhead the target area in a left turn. As I circled over the target area, I referenced the horizontal situation indicator (HSI) to get a rough idea of where the tracks were in relation to my position, as an aid to the talk on my lead was giving. I looked west and found two roads that ran north to south that funneled toward each other at the northern tip. Both of these roads were straight and had turnaround areas on the north and south ends for the truck and sled.

I descended to pick up visual of the MVT. As I followed the east road north, I saw the distance to the target count down in the heads-up display (HUD). Off the left of the aircraft I saw a truck and sled stationary at the northern end of the track pointing south. Because I was now in the mindset of executing a visual delivery on the target, I deselected my waypoint designation. I did not use the preplanned coordinates to verify the target position.

DN22: "Confirm the truck is stationary?"

DN21: "The truck is not moving."

DN22: "Tally target."

DN21: "Yes, the track the truck is on is the eastern most of the two tracks."

DN22: "Tally target."

Wolf: "DN22 attack immediate TOT."

I confirmed that the target was stationary because I expected to see a moving target. On my spacer pass I noticed that the sled was 200 to 300 meters southwest of a building. There was no mention of buildings in the brief in the vicinity of the MVT. At the time I wasn't concerned about the building because I remembered from the RAG that straight roads on bombing ranges lead to targets on training fields while access roads are zig zagged.

Before my first employment, I noticed that I had good TPOD imagery but disregarded it because I was working hard at maintaining visual of the target. At the abeam in the attack pattern, I thought I saw slight movement from the truck. At that point, my lead was watching the actual target vehicle beginning its run from the north side of the track.

DN22: "Understand the target is flowing south?"

DN21: "Affirm, flowing south."

DN22: "Diamond 22 in."

I rolled in undesignated so that I would get proper ranging, but did not employ due to parameters. On my second roll-in, I fired two rockets. Both missed the sled by 10- to 15-feet long in the direction of the tower. My lead did not see the spots for my rockets on his TPOD, and he assumed that they had fallen outside the selected field of view (FOV) on his TPOD. On my third and final attack, I rolled-in and employed three rockets. Immediately after, there was a red-range call.

The truck and sled I'd seen on deck were the spare MVT target parked about three miles west of the MVT target track, positioned next to the manned tower. The actual target was off the right side of the aircraft when I saw the spare MVT. The track and turnarounds I had seen were a result of repetitive parking and moving MVTs when not in use.

I ignored inconvenient data in pursuit of making my false perception a reality.

I took many lessons from this event. I failed to adequately reference my aircraft system and sensors to confirm the target location. I assumed there was only one MVT on the range, and I convinced myself that I saw the correct target without having an additional system reference. Had I rolled in with a waypoint from the track selected, I would have immediately recognized that I was significantly off the target track. Most importantly, I used misleading comm and failed to communicate to my flight lead regarding the building in close proximity to MVT. I ignored inconvenient data in pursuit of making my false perception a reality.

Despite range time availability, this flight was not a time-critical event. There was no need to push employing ordnance; returning with ordnance was preferable to employing with low situational awareness (SA). Tactical patience, disciplined execution and concise communications will minimize the risk of employing against the wrong target.

LT. STRICKLAND FLIES WITH VFA-146.

Red Range from another view

BY LCDR. JOHN PETERSON

It was the final day of Air Wing Fallon, and I was scheduled to take one of our nuggets out to shoot rockets on a moving-vehicle target (MVT) in B-20. I was also scheduled to employ a GBU-54(I) inert-laser JDAM. I had flown a detached pop hop in B-17 a few days earlier with the same nugget, and he had done very well, hitting his target with no switchology errors on all passes.

We launched from Fallon and checked in over the target with the strike coordination and reconnaissance/armed reconnaissance (SCAR/AR). We received our talk-on to the MVT, and using the briefed waypoint, I captured the target on the FLIR within a few seconds. When I called captured, my wingman let me know that his FLIR was down with no video over AUX. We stayed in formation as I set up for the attack on the target.

As I validated my system prior to release, it became clear that the weapon had failed, and I would be unable to drop until the weapon had been troubleshot. I informed my wingman that he would attack the target first while I worked on my system. I began a talk-on.

Using Lone Rock as an anchor point, I described the tracks as being west and oriented parallel and running north to south. I intended to bound the west side of the tracks with the large improved road to the west of the tracks. However, my wingman immediately called contact of the tracks, and the waypoints from our mission planning were accurate for the north and south sides of the tracks.

Once I had my wingman's eyes on the tracks, I then described the MVT target. I told my wingman to descend to get eyes on to the MVT on the track. After a few minutes of talking back and forth, my wingman told me that he was tally the MVT flowing south. I looked out the cockpit and saw him in formation, about one mile abeam, and cleared him to roll in on his dry pass. I went heads down in the cockpit to capture the MVT using the FLIR, moving-target track mode, and began to troubleshoot my weapon.

My wingman called in dry and off safe. I looked out and saw that he was in a left hand turn, flowing away from the target about two miles away. I then set an orbit over the MVT to ensure that I captured BHA, because we were preparing for combat, where we would need video of weapon hits. I knew that my wingman would be unable to record his battle-hit assessment (BHA) without a FLIR.

On the next attack, I was cross circle from my wingman as he called in. I had the MVT captured in narrow field of view (NFOV). My wingman aborted the next pass for parameters and then rolled in a third time. I was focused on getting BHA for the attack. My wingman called off safe, but there were no hits within the NFOV. I came up on AUX and my wingman told me he had employed two rockets, but they had hit long. I then opened the FOV of my FLIR to find the spots. About one minute later my wingman rolled in for his fourth and final attack. Again, I heard off safe. This time my FOV was significantly larger, but there was still no spot.

Before I could make a call on AUX, range control called a red range and directed that we discontinue our

attacks. Our flight then checked out of the range and returned to the field. I had a sickening feeling, knowing that rockets had been employed, and also knowing that they had not landed on the MVT track.

IN THE DEBRIEF IT BECAME CLEAR that my wingman had employed five inert rockets against a backup MVT that was parked about three miles from the MVT track. When we checked in and the FLIR was reported as down for video, it was in fact in bit. Without a FLIR during the initial talk on, my wingman had reverted to purely visual target talk on. Because I did not bound the target area and allowed my wingman to confirm contact on two dirt tracks, I had failed to recognize that he had padlocked two parking areas used to store the MVTs when not in use. The parking tracks were about a tenth of the length of the actual tracks and were on the west side of the improved road that ran north to south through the complex. They were about 300 meters south of the manned spotting tower on the range.

When my wingman told me that he was tally a MVT flowing south, and was in combat spread over the actual target, I allowed myself to believe that he had found the only MVT moving on the range, which was on the actual target track. Instead, having found the briefed truck and sled in the storage area which was oriented to the south, he had convinced himself that the stationary truck was moving very slowly.

Having lost the opportunity to determine there was an issue with my wingman's target acquisition through comm and an effective talk-on, I then missed the opportunity to prevent disaster by going heads down at the worst possible moment. My wingman rolled in and continued to turn an additional 50 degrees on the spacer pass. Noticing that the waypoint in his system did not match the briefed target location, he selected an undesignated delivery profile. On the aborted run, while we were still in a formation and attack geometry that made sense for the actual MVT, he again turned over 50 degrees past the target, putting him outside the briefed run-in restrictions. On the third pass, I again failed to watch his roll-in parameters. He had split from the formation by about 2.5 miles and rolled-in to employ on the wrong target.

When I did not see a spot on the deck, I should have immediately ended the engagement of the target. But, I convinced myself that it was my error in capturing BHA because I had used too small a FOV and the inert rockets were simply difficult to pick up on the sensor after the fact.

As the flight lead, I am ultimately responsible for everything that occurs on the flight. Looking back at the event, several actions could have broken this chain of events:

I should have spent more time in the brief covering the overall range space and layout, instead of assuming that the mass brief and preflight study by my wingman would be adequate.

I should have ensured that I prioritized QA of safe delivery parameters over capturing BHA.

I should not have assumed that an aborted run was due to mechanics in the aircraft rather than difficulty in target acquisition.

I should have immediately called a knock-it-off (KIO) when no ordnance was seen on the FLIR after the first delivery.

We were very fortunate in this incident that no one was hurt or killed. The tower north of the spare MVT was manned at the time of the flight, and the personnel in the tower heard thuds after the first attack. Not knowing what had caused the noise, one of the people in the tower actually walked outside in the direction of the sound before the final attack run and saw three additional rockets land about 200 meters away.

While personal preparation for flights is critically important, we can never lose sight of the difference in ability and experience between pilots. I failed my wingman on this flight and learned a valuable lesson: never assume. Aviation is a profession in which failures, while being statistically rare, have severe and catastrophic consequences. We can never afford to drop our guard.

LCDR. PETERSON FLIES WITH VFA-146.

Rushed a Checklist? Me? NEVER

BY LCDR. JASON RUSSO

As a fleet replacement squadron (FRS) instructor pilot, one of the toughest X's to complete is a flight to the boat with a group of nugget students for deck-landing qualifications (DLQs). It's also one of the most challenging flight environments for a helo bubba. The pilot at the controls (PAC) is usually inexperienced, the small-boy DLQ pattern is unforgiving, and fatigue and vertigo can set in quickly. A number of factors can affect the completion of the event: weather, flight-deck-crew proficiency, OOD capabilities, aircrewman experience and ship flight-deck facilities. These factors feed into the witches brew that is the dreaded DLQ X.

I was about halfway through my instructor-pilot tour at the LAMPS FRS. I had earned various qualifications as an instructor, including the coveted DLQ instructor qual. I felt salty and confident one brisk October day as I saw my name on the schedule as the helicopter aircraft commander (HAC) for a single-bird, DLQ flight to a DDG Flight IIA. The flight schedule was a cold-go, six-hour event with two students and an instructor LSO. My mission was to execute day-and-night, unaided, initial landing qualifications for the two student FRS pilots.

One of the first things you're taught as a new "boat instructor" is that time is of the essence. The ship you're going out to land on is usually on a tight schedule, and sunset is normally only a few hours after launch. The requirement to complete 12 free-deck landings plus four recovery-assist (RA) landings per student means the flight could be very long. Furthermore, the aircraft has to have a working airborne computer and a functional recovery, assist, securing, traversing (RAST) probe. Lastly, there can sometimes be perceived pressure to get the students their X because they are normally very close to graduating from the FRS, and the fleet is expecting them to be delivered on time.

We completed our NATOPS and ORM brief, got the ship's information and overhead message from the SDO, and walked downstairs to maintenance control to read the aircraft discrepancy book (ADB). We noted no abnormal MAFs, did our performance calculations, and quickly headed out to the aircraft to preflight.

As I opened the cockpit door to put my flight bag in the left seat, I noticed something was wrong. I looked around to see if there were any maintainers or plane captains in the vicinity but didn't see anyone.

"Well, this is not off to a good start," I thought.

As I hurried back inside to maintenance control to find out why there was a missing faceplate and resulting hole in the center console, I began to examine the consequences of delaying the launch.

If we were delayed, the ship might in the expected position when we eventually launched, which meant I would have to spend more time finding it. I might have to fly further off the coast, causing even more of a delay. It would also mean that we would have to push hard to finish our day landings, because if we didn't finish them before sunset, we wouldn't complete the night landings. Also, these two students were getting ready to graduate later in the week and needed this event to make it to the fleet.

As I contemplated the impending failure of the mission before it even began, maintenance control assured me that a technician would be out as soon as possible to "patch the hole" and get us on our way. I told our instructor LSO to get in the front with me so that we could quickly fire up the aircraft and get on our way. Sunset was only a couple hours away, and I didn't want to waste time watching a student fumble through the prestart checklists.

By the time we finished our preflight, our maintenance personnel had put a faceplate over the center console and all seemed normal. I strapped into the left seat as my fellow instructor sat right seat. The students buckled themselves into the cabin seats with our aircrewman. They were eager for their first chance at landing on a fleet vessel. We hammered through the checklist as I had done what seemed like a thousand times. In true instructor fashion, we had the bird turned up and ready to launch within minutes. Ground gave us an immediate taxi clearance, and tower cleared us for takeoff and a right turn to head to the ship. The weather was CAVU and the beaches of Jacksonville were soon in our rear-view mirrors.

To my surprise, we got communications with the ship's controller almost immediately. Even more surprising was that as soon as we cleared tower's airspace and changed TACAN channels to the ship, the needle immediately swung to 090 and the DME showed 15 miles.

"Wow," I thought, "this is going better than I could've expected."

The ship was already at flight quarters and the helicopter control officer (HCO) granted us a green deck when we got within two miles. We finished our landing checklist and my copilot made an uneventful clear-deck landing. Finding the ship, gaining communications and obtaining a green deck had taken me 45 minutes to an hour on previous DLQ hops.

The first student jumped in up front as the LSO got out of the aircraft and went to find the ship's captain to brief him on our DLQ plan. Once my copilot was strapped in, I gave him the controls and opened my PCL to the takeoff checklist. I completed the checks, requested a green deck to launch from tower and glanced over the cockpit one last time to make sure the aircraft was ready. As I had been taught by my first officer in charge (OinC) way back as a young helicopter second pilot (H2P), I reached down to

the center console to put my hand on the guarded fuel-dump switch. My OinC had told me that as the nonflying pilot during shipboard takeoffs, I should keep my hand on that guard in case the bird had an engine failure on climb-out. Fuel would immediately be dumped to decrease power-required to scoop the aircraft out from impacting the water. However, as I reached down and looked for the fuel-dump switch, I had a bad feeling.

I INSTANTLY REWOUND TIME to the event back on the flight line. I remembered the hole in the center console, which I had thought was a missing blank-out faceplate. As I searched and searched for a fuel-dump switch, I realized it was actually a missing emergency fuel-dump panel. The panel must have been removed by maintenance personnel, and in their rush to get the bird ready for our event, they had forgotten to put it back in. I could not believe I had overlooked something so small yet so critical to flight.

"Do you ever really check to make sure a fuel-dump panel is installed?" I asked myself in my own defense. Then I remembered the third step in the preflight checks: "Circuit breakers and switches – checked and off." As the aircraft commander I had hammered through the checklist but had overlooked that a major-system component was missing from the aircraft.

We all have felt urgency during a mission. Sometimes the urgency may be driven by a high-profile tactical event in which time-on-target is critical to mission success. Other times we might feel a sense of urgency when we're at home to complete a high priority X in a training environment. The bottom line is that even when we think we feel this sense of urgency, we should never rush. Rushing leads to omitting, as maintenance control and I learned the hard way that day.

Preflight and prestart checklists exist to make sure the aircraft is ready to go before its wheels are off deck. Had the maintenance controller taken the time to look into the reason why there was a hole in the aircraft, they may have discovered that the fuel-dump panel had been removed to troubleshoot another aircraft on the flight line. If I had taken the time to check that the fuel-dump switch was in the off position, I would have noticed that a fuel-dump panel was not even installed in the aircraft.

As the aircraft commander I had hammered through the checklist but had overlooked that a major-system component was missing from the aircraft.

LCDR. RUSSO FLIES WITH HSL-48.

Mishap-Free Milestones

HMH-466	90,000 hours	29 years
VR-62	77,000 hours	28 years

Inadvertent Near Whidbey

BY LT. ROBERT ADAMS

It didn't take long for me to figure out the importance of planning and being assertive. One of my first missions after joining the squadron was to fly to NAS Whidbey Island in a flight of three MH-60Ss to support USS Abraham Lincoln's (CVN 72) flight-deck certification. The helicopter aircraft commanders (HACs) of the echelon were the XO, OpsO, and a junior officer (JO) HAC; I was flying with the JO HAC.

After a delay waiting for weather to improve at the carrier, our fly-on got airborne. We didn't consider going IFR, and we also didn't consider going single or dual ship. Our primary concern was getting to the ship after a long day of sitting at the airport. We briefed overwater inadvertent-instrument-metrological-conditions (IIMCs) procedures. The plan called for the first and last helicopter to turn away from the formation for 170 degrees, and the middle one to fly straight for a period of time then turn either way for 180 degrees.

As we flew toward the ship, fog moved directly into our flight path. Nobody in the flight initially mentioned turning back; however, we quickly changed our minds after seeing a solid fog bank directly in front of us. Barely maintaining VMC and staying clear of the fog, we made a 180-degree turn and headed back to Whidbey. Even though the fog was behind us, we went inadvertent IMC at 300 feet with 400-foot terrain ahead and to the right of us. The other two helos were to our left. We couldn't remain in formation, and we didn't have a feasible IIMC breakup plan for rising terrain.

Dash 1 and Dash 2 remained in formation and started a climb to the left. We chose not to turn right because of terrain, and decided not to climb or turn left because of the unknown position of our wingmen. We continued flying straight, oblivious to the rising terrain directly in front of us. I could see below that we were flying over land, and I recommended to the HAC that we turn around and head back over water.

Our radar-altimeter-hold kicked off. This gave us a slew of automatic-flight-control-system (AFCS) cautions and the master-caution advisory. I punched out the warnings and deselected baralt-hold. We turned back toward the water at 300 feet MSL while in the clouds. Being task-saturated, we lost our vertical-speed-indicator (VSI) scan, resulting in a 1,000 fpm decent. I noticed the decent and started pulling power as the HAC was on the controls.

We came out of the clouds at 150 feet with a 400-foot, tree-covered mountain in front of us. I continued to pull power as the HAC did a cyclic climb to avoid the terrain by 20 feet. We went right back into the clouds and turned toward land in a shallow climb. As we broke out of the clouds, a helipad appeared in the middle of nowhere and we landed.

During this entire emergency procedure our wingmen were calling out their positions, but their calls didn't register with us because it all happened so fast.

Our crew had enough flying that day, so we shut down the helicopter and stayed the night.

It's important for a junior pilot in your first command to be assertive. Lack of experience can breed apprehension when questioning higher authority. If one person during this flight would have spoken up about filing IFR or pushing this ferry flight to the next day, we may have not been in this situation. Senior personnel should ask for and encourage the opinions of junior personnel when the holes in the Swiss cheese start to line up. We should have planned for a better IIMC breakup that day.

Planning for IIMC overwater only is not sufficient when also operating over land. Plan and discuss as a crew for all basic contingencies before and during the flight.

All our problems could have been prevented with more assertive planning or a decision to not complete the mission that day.

LT. ADAMS FLIES WITH HSC-12.

The Day Started Out Perfect

BY CDR. CHRISTOPHER MCANALLY

This story begins with a great training command day, with ideal weather and an above average student on his first safe-for-solo check ride. I had been instructing in the T-34C for two years and felt I had hit a groove in all aspects of instructing new pilots. With a strong performer in the front seat, I anticipated this would be an easy few hours over the sunny Florida coast.

We did the standard high-work stalls and spins, simulated engine failures at high and low altitude, and finished with strong pattern work. On schedule, we departed the area to head home. We could see that the weather was deteriorating with a cloud layer moving in from the sea, which would likely preclude us from flying the course rules home in VFR conditions. I really wanted to complete the flight in VFR so he could solo tomorrow and not have to do another check ride for just the course-rules aspect of the check. I wanted to push the VFR as far as I could to see if we could make it home.

We were established on the VFR return when a wall of clouds began to surround us, and it was obvious we couldn't proceed without a clearance. I contacted Pensacola Approach Control at the VFR check-in point and told them I needed to pick up an IFR clearance. The clouds were now surrounding us. I started an easy 15-to-20 degree, angle-of-bank turn to the left as I waited to pick up my IFR clearance for the 10-minute flight home. I was not the only plane picking up a clearance, so there was the inevitable delay as I continued my tighter and tighter left hand orbit. But no worries, I had plenty of gas to wait my turn in my nice, clear VFR oasis in the clouds. Five minutes later, we picked up our clearance and heading, then turned straight to the vector for final-approach course. I was still flying the aircraft.

As soon as I penetrated the clouds, I transitioned to my instrument scan and could not believe what I saw: straight and level flight. I felt as if I was still in a 30-degree, left, angle-of-bank turn. I was instantly disoriented. I asked my student what he was seeing, and he confirmed that the gyro was straight and level. I had what seemed like a panic attack as my heartbeat increased rapidly, and I began to breathe heavily. Sweat began to fill my helmet, and my mind was racing. It took all of my strength to not rapidly fix this vertigo-induced perception that I was in a hard, right hand turn. I wanted to roll the aircraft 90 degrees to the left to commence my graveyard spiral straight into the Florida panhandle.

I had to quickly come to grips that this was my new normal, and I had to find a way to deal with it. Being a self-proclaimed salty instructor, with a student who had not even soloed and had never shot an actual approach on instruments, I hesitated to give him the controls. Instead, in a panicky voice, I asked him for updates every few seconds, confirming that he was still seeing straight and level on the attitude gyro. I flew the entire approach in this condition. It was the most challenging 10 minutes of my life.

After we broke out and landed, I climbed out of the plane, feeling like I had just survived the most difficult endurance test possible. We had a thought-provoking discussion of what had happened to me.

I quickly went back to the ready room and met with the other instructors to figure out what had happened. I had picked up instrument clearances in the past after maintaining holding patterns, so there was nothing to give me an indication that I was setting myself up for

vertigo. I had entered the banking left turn and had the correct sensation of a turn in the same direction. As the left turn continued for over a minute, I experienced the sensation that the T-34 was no longer turning to the left; I was concentrating on the ATIS and clearance information from approach. When I leveled the wings, this action produced a sensation that the airplane was turning and banking in the opposite direction (to the right). I believed my inner ear was convincing me that the aircraft was turning hard right. I wanted to reenter the original left turn to counteract the sensation of a right turn. I basically had instrument lag in my head.

I am happy that I had the sense to 'fess up. It was more a survival instinct than a deliberate use of any CRM skills. Why I didn't pass him the controls is a different issue altogether. He was a student with limited instrument experience, and I suspected he might have been suffering from vertigo as well. But these were not the reasons that I kept control. The fact is that I was embarrassed to relinquish the controls as an instructor to a student on his first safe-for-solo check ride. In retrospect, he could have easily handled the flying aspect of the approach better than the panicked, heart pounding, soaking wet, salty-dog instructor in the back.

CDR. MCANALLY IS THE COMMANDING OFFICER OF VR-55.

Trust the Instruments

Be constantly aware of the danger in shifting between the instrument panel and the exterior visual field when the latter is poorly structured or obscured. Avoid sudden head movements, particularly when the aircraft is changing attitude. Don't fixate too long on a single instrument. Keep your scan moving. Most important, when your senses seem to disagree with the instruments, trust the instruments — they will save your life.

The Long Green Table

BY LT. PAT DUNN

As aviators, our jobs are filled with choices. Unless you're on an instrument flight, you can choose nearly every aspect of how you will fly, so long as you complete your mission. Would you rather do multiple approaches to build your skills and proficiency or just do the minimum?

Crew resource management (CRM) and operational risk management (ORM) are tools to make those choices and engender mission success. When either degrades, sound decision-making proceeds into a vacuum, and so does your chance of success. As the helicopter aircraft commander (HAC) of a recent Class B mishap, I can tell you that the vacuum can be sneaky, slow and destructive.

This is my account of a mishap that grounded my copilot and I for 148 days, and the lessons I learned during that time. If youve ever read one of these articles and thought, "That's a great lesson, but it's not me; I'd see that coming," then you and I have something in common.

I never expected to find myself at the wrong end of a FNAEB. I will walk you through the events leading up to my mishap, the critical moments before it happened (all of 30 seconds), and some lessons to take from my experience.

Field Naval Aviator Evaluation Boards (FNAEBs)

FNAEBs are administrative boards convened to evaluate the performance, potential, and motivation for continued service of any Naval Aviator ordered by competent authority to appear before such a board. These boards shall review and evaluate the overall performance and the specific element of performance or behavior that is the cause of the evaluee's appearance before the board. These boards are fact-finding, evaluative bodies which shall make recommendations as specified in the "Recommendations" paragraphs of this article, through the chain of command to the type commander (TYCOM). These boards are not bound by formal rules of evidence and may consider and include in the record any type of evidence deemed credible, authentic, and relevant to the case. These boards are neither judicial nor disciplinary bodies and shall make no recommendation for disciplinary action as a result of their evaluations. Any disciplinary action accruing from the same circumstances or events that are the reason for convening an FNAEB shall be kept completely separate from such boards. — MILPERSMAN 1610-020

The Lead-Up

It was the end of work-ups, COMPTUEX was over, and the squadron would deploy soon. We had just finished our last day being evaluated and were preparing for a night of foc'sle follies. I had been awake from 0140 to 1800. I was informed that I would have a 0500 brief for a three-hour plane guard and flyoff. I didn't think anything of it; after all, everyone was going to follies at 2045, and I didn't have the earliest flight. I reasoned that being at follies was the same as being in my rack resting — both were low stress — and that I would be fine with a 0445 wake up.

After going to bed around 2300, and waking up at 0445, I was tired but ready to get off the ship. I had a cup of coffee and a pop tart for breakfast. Not exactly the breakfast of champions, but I figured it would get me through until I could get back to San Diego.

The brief and preflight were unremarkable. There was a small gripe, but I discussed it with my CDQARs and we moved on. Startup and takeoff went quickly, and we settled in for our 3.0 hour flight. We investigated surface vessels and practiced search and rescues for training.

After our first fuel hit, we realized that some jets were having troubles, and we might be out for a little longer than planned. As the hours ticked on, the crew's mood soured. We were getting impatient. The only things prohibiting our return were four FA-18s that wouldn't start.

The Hornets took off eventually, about an hour late. We landed, picked up our passengers, and then departed for the 60-mile transit home. I had the controls for that entire leg, and I just wanted to get everyone back to their families. We checked weather at North Island, noted nothing unusual and proceeded toward the field. It was there, in the last .1 of flight time (of our now 4.8 hours), that things broke down.

The Critical Moments

At 10 miles from the field, I contacted tower and we were immediately cleared to land. Because it was a Saturday, I gathered that tower just wanted us to land so that they could also go home. I internalized that ATIS had called for winds from the west, but I didn't say anything because it was nothing out of the ordinary.

As we closed the field, I told my crew that we'd go to the birdbath to wash the past two months of salt-water from our rotors.

Crossing the field boundary, I set up for an approach to our birdbath landing pad. The approach lined me up with a tail wind of about 10 knots. However, having landed at the pad with a tail wind many times before, I didn't say anything or make changes to my approach. As we neared touchdown, I confirmed the wind with the windsock ahead of me, but still didn't verbalize the tail wind. Trying to be expeditious, I went for a no-hover landing, a maneuver that would save about 10 seconds. On final, my junior aircrewman began to call the deck. He was quickly quieted by my crew chief because the calls were unnecessary. We landed without incident and taxied to the bird bath. We then taxied out, ready to take off and head to our normal landing pad.

I noted the wind sock, but only as an obstruction. I received clearance to take off for an air transition to pad 9 (not more than 2,000 feet away) and got airborne.

The layout of the field allowed me to land at either of two pads. One would have resulted in a 90-degree crosswind (pad 11) while the other a straight tail wind (pad 9). We rarely landed at pad 11, so I continued to pad 9 without giving it a second thought. My copilot called me abeam the spot, and I made a 180-degree turn to line up with the landing zone.

Before executing that turn, I thought I said, "coming right." However, some of my crew remember "buttonhook right." In either case, the disagreement highlights our low CRM. While it was not my intent to fly the buttonhook (a tactical maneuver), I rolled into a sharper than necessary turn. This resulted in a final approach path that was slightly off altitude and high on speed, consistent with an improper buttonhook or messed-up approach.

As I began my descent, I said nothing, nor did my crew. I assumed that they would know what I was doing, as I had just made a no-hover landing. They assumed that I knew what I was doing and didn't need their assistance. I felt slightly fast on final but thought I had the approach under control. No one on the crew said anything. The tail wind had distorted my perception of relative motion, and my corrections were not enough.

Continuing to touchdown, my nose attitude was high and the tailwheel touched earlier than expected. Again, I did not verbalize my perceptions, and I simply made what I thought to be the appropriate control inputs. As I did, unbeknownst to me, my copilot had begun to reach for his pocket checklist to start the postlanding and shutdown checks. Within the blink of an eye, the aircraft pitched violently forward and settled on the mainmounts.

The idiom "Set yourself up for success" has never been truer than in this incident.

I would later learn the aircraft pitched 20 degrees (10 up to 10 down) in that split-second. The pitch change, caused by my incorrect control inputs, the tail-wind landing, and a pitching moment about the tail-wheel, caused the $1.6M multispectral targeting system (our FLIR) to slam into the ground and be ripped from the aircraft. Normally, the FLIR sits 15 inches from the ground, but the force of my landing was enough to crack the FLIR housing and damage the internal components beyond "economical repair" (a phrase, I would learn later, that means "totaled" in Navy terms). My 30-second turn to final and no-hover approach was expensive and would forever change my career and understanding of life as an aviator.

The Lessons

The idiom "Set yourself up for success" has never been truer than in this incident. In the preceding 16 hours, there were numerous choices, decisions, and actions I could have done to have lessened the chance of — if not prevented — this mishap.

The investigation showed me how poorly I had set myself up for success in regards to sleep and nutrition. The sleep debt I had acquired over the course of COMPTUEX was not alleviated by my six-hour sleep. My 200-calorie breakfast put me at dangerously low levels of nutrients and hydration. There are countless studies that link fatigue, nutrition and hydration to flight performance. Even slight amounts of dehydration

and fatigue can decrease reaction time by seconds. With good nutrition and rest, my reaction time might have been higher, allowing me to more quickly recognize my off-parameter approach and landing.

The worst person to judge your level of fatigue, nutrition or hydration is yourself. By the time you feel tired, hungry or thirsty, it is too late. Now that I am returned to flying duties, you will never catch me without adequate sleep, food, or water before I fly. I fly with water and a granola bar just in case my flight gets extended. The only way to achieve success is to be prepared.

BEYOND THE FATIGUE AND NUTRITION, the CRM process throughout my flight, and most especially in the last 30 seconds, was woefully inadequate. The MH-60S NATOPS states, "The goal of Crew Resource Management (CRM) is to improve mission effectiveness, minimize crew-preventable errors, maximize crew coordination, and optimize risk management … . Proper CRM requires that all crewmembers actively participate in each phase of flight." My flight was marked by breakdowns in the each of the seven critical CRM skills, crew-preventable errors, and a marginalized crew.

As the delay at the carrier continued, our ability to effectively adapt, flex, and maintain our focus on the mission waned. As the HAC, I should have limited our frustration, refocused my crew on the mission at hand, and kept the crew engaged despite our delay. By getting frustrated, I allowed a sense of get-home-itis to develop that would continue until our final landing. Get-home-itis is insidious and can creep into any crew, especially on flyoffs. It is inevitably linked to degraded CRM. We had mentioned it in the brief, but as an aircraft commander, I never took steps to guard against the threat, I simply gave it lip service. Have a plan to fight it. Use tools such as training opportunities, conversation topics that don't exacerbate your problem, or other means of warding off the CRM challenge.

The CRM breakdowns during the minutes leading up to the final landing were disastrous. By not communicating about factors such as winds, I didn't let my crew help me make the best decision. There was no talk of mitigating the inherent risks of a tail-wind landing because there was no talk about the landing. Whether you are the aircraft commander, a crew member, or a passenger with ICS, you should always have an idea of what your pilot is thinking. If you do not, ask. Never make an assumption when clarification is only a few words away.

Had I analyzed the situation or understood the get-home-itis impact on my mission analysis, I could have easily approached pad 11 (eliminating the tail wind), transitioned to a normal-hover, prior to landing (mitigating the risk), or gone around (reassessing the hazard for better controls). There was no need to push the approach to a no-hover landing when I could have simply transitioned to a normal approach. However, I relied on my understanding and perception, forgetting I was only one part of a full crew. I allowed myself to continue a flawed approach because my situational awareness was poor.

My leadership of the crew failed to address all these issues, including complacency among the crew. Having landed at our home field countless times, and having just completed an approach in the same direction, I allowed complacency to build. That complacency even allowed the copilot to focus on an ancillary task rather than the critical phase of flight in which we were operating. As the aircraft commander and pilot at the controls, I needed to make sure that the crew maintained its focus and integrity with the same dedication we had for the past 4.8 hours. The 30 seconds before landing are just as critical as any other phase in the flight.

Parting Shots

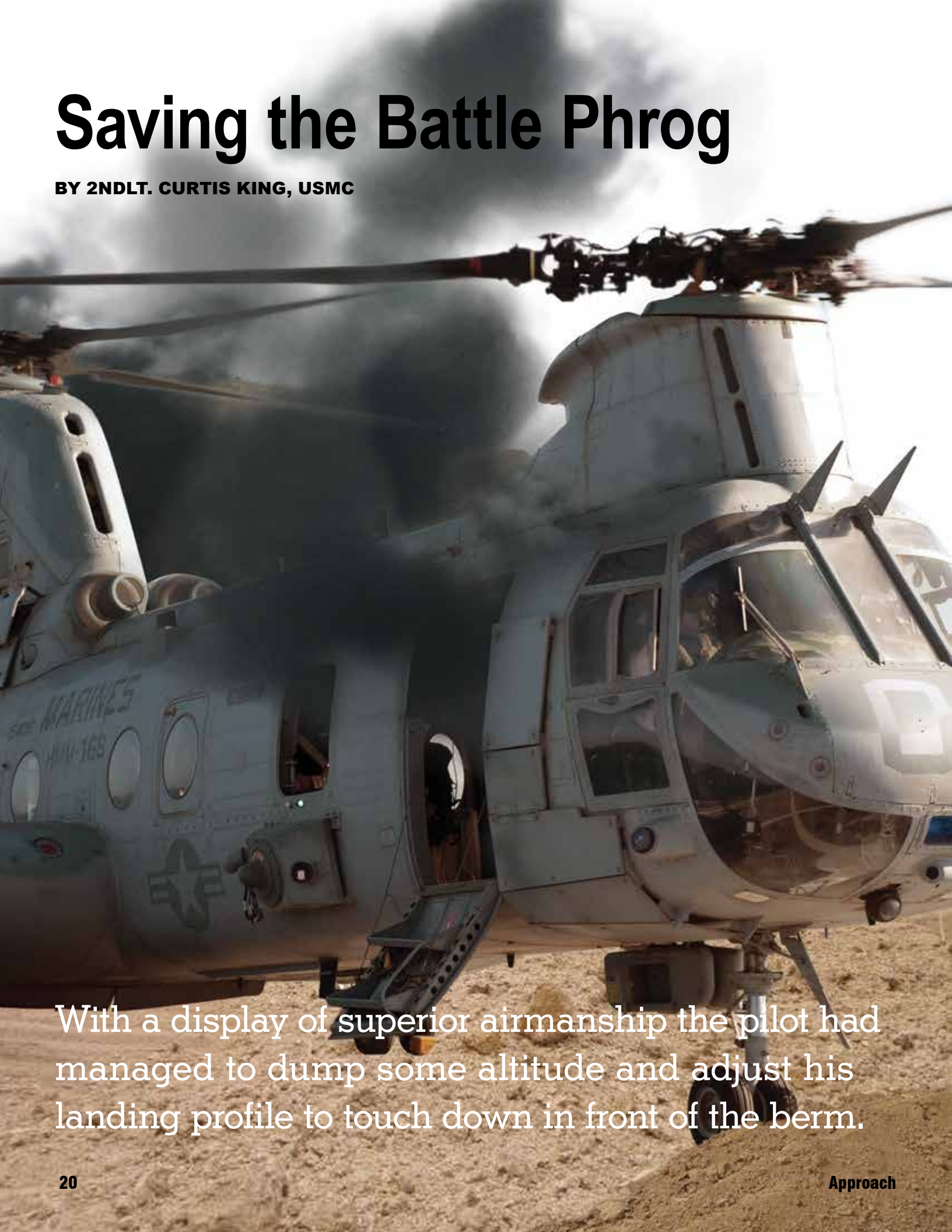
Small changes in the decision-making process, ORM, and most importantly CRM could have changed my crew's fate. At any point, I could have taken 30 seconds to step back, remember the seven skills, reassess my decision-making process, and evaluate my execution.

Had the FLIR not been installed, this would have resulted in a poor landing, but the FLIR turned this into an incredible learning experience. Never think you are immune, always reevaluate your situation, and continually communicate. Effective CRM requires the whole crew, and believe me, you'd rather take the 30 seconds than spend the money.

LT. DUNN FLIES WITH HSC-6.

Saving the Battle Phrog

BY 2NDLT. CURTIS KING, USMC



With a display of superior airmanship the pilot had managed to dump some altitude and adjust his landing profile to touch down in front of the berm.

The incident took place on July 21, 2008, while I was a part of HMM(REIN)-165, 15th MEU. I was a Sergeant and one of the senior instructors in the squadron. Now I'm a 2ndLt. and currently going through flight school in Pensacola. I think this story could help others understand what CRM is and how it is capable of saving your life if used or ending it very quickly if not used. — Note from the author to the Approach *editor.*

At the time of this event, I wasn't the pilot or even the copilot. I was the guy in the back of the plane. No, not the NFO, but the crew chief. If you are one of those jet guys, pay close attention because I know you have no idea what we do, and you're always wondering why we're in the ready room.

Our squadron was about halfway through our 15th Marine Expeditionary Unit deployment, and we had left our AV-8s and CH-53E in Iraq while the rest of the air-combat element reloaded back to the boat from Udairi Army Airfield in Kuwait. Our section was about six hours into our forecasted eight-hour mission of ferrying gear and personnel back to the ship. With the exception of the 135-degree heat and the squadron traffic, it was a nice day for flying the trusty CH-46 Battle Phrog.

I was flying in Lady Ace 14, which was my least favorite plane on the line (yes, crew chiefs have favorites). In the right seat I had an experienced helicopter aircraft commander (HAC), who was also the section lead. In the left seat, serving as copilot, I had a JO who was on his first deployment, but was known for being a level head and a good stick. In the back of the plane I had a very junior aerial observer (AO) in the left window, who was on her third or fourth flight in the aircraft. I would be signing off some Xs for her that day. I also had a second AO to help with cargo responsibilities. He was highly experienced and on his second deployment. I sat in the crew-chief seat, getting a 140-degree wind in my face.

We had dropped off squadron maintainers on the boat and topped off our fuel tanks for the hour-long transit back to the army airfield. I was hopelessly staring into the vast, empty desert of Kuwait, looking for VFR traffic, when I heard the dreadful and alarming sound of a motor winding down and the NR (rotor speed) plummeting. I immediately turned my head to look up the tunnel into the cockpit at the engine gauges (an easy thing for the crew chief in the Phrog), and could see the NG needle for the No. 1 engine dropping below idle.

We were at 700 feet AGL. We had briefed that because of the heat we would not be single-engine capable, not even when empty, let alone after just taking on fuel for our return trip to the army field. Because we couldn't maintain power and were at 700 feet, it was clear to me that in a very short time the aircraft would be on the ground in some fashion.

This situation can be more of a problem for a CH-46 than your average single-rotor helo. When the Phrog hits the ground really hard, the rotor blades tend

to come through the main cabin. In a Phrog, the safest place for aircrew is in the cockpit tunnel sitting on the map case. It's not only a strong point in the airframe, but it can provide cover from a rotor blade striking the cabin. The only problem is that there is only room for one, maybe two people in that spot.

Now back to this engine winding down. I knew that Lady Ace 14 was going to be on the ground soon. The question was, "How fast?" I grabbed the junior AO who was in the left window and threw her on the map case. I thought there was little that her inexperience could do to help the situation, and it was best to have her in the safest place.

THE MORE EXPERIENCED AO immediately took the junior AO's position in the left window, which was more forward in the cabin than his initial position. This move also was his attempt to clear the main danger area of the cabin. Simultaneously, the HAC dropped the nose of the aircraft and called over ICS that we had lost No. 1. The next five seconds was a quick audible, bold-faced, single-engine EP from the copilot that ended with "dumping fuel." The copilot then confirmed the HAC had, "Arm manual trim, beep to max." The HAC confirmed as he struggled to get some turns out of old Lady Ace 14, as we dropped past 300 feet AGL.

Six or seven seconds had passed since the engine had rolled off-line.

Just as he finished his confirmation that manual trim had been armed, I said, "Get a call out." This was my attempt to let Dash 2 know what was going on and to have some aircraft vector to help pick up the pieces, should we need that.

Just as I heard the audible tone of the outgoing radio key, I turned my head to see what I could throw out of the plane (I always wanted to throw gear out in an emergency), and that's when I saw flames around the No. 1 engine bay door.

I called out, "No. 1 engine is on fire, secure fuel dump."

I once had heard the story of a CH-53 going down on fire in Iraq while dumping fuel, and I didn't want the same bad outcome for us.

My hopes of that radio call going out ended as the copilot shifted his focus to securing the fuel dump. As I reached to grab the forward fire bottle, I noticed that we were at about 100 feet AGL, and the pilot had managed to spin up some turns for an autorotation. The more experienced AO had seen me grab the fire bottle, and knew that he would be responsible for calling the aircraft to the deck. I heard him call out, "Hill off the nose." The Swiss-cheese holes were really starting to line up.

For those of you who haven't flown around the vast Kuwaiti desert at low altitude it's rather flat. Not counting the typical brown out, almost everywhere is great for an emergency landing except for the one place that we were currently pointed at. This call from the AO alerted the pilot, who was currently wrestling to keep turns up, and the copilot, who was securing fuel dump, that our landing profile was going to take us directly into a sand berm.

As we passed through 75 feet AGL, the HAC did not have the turns or altitude to clear the obstacle. In rapid succession, our primary concern had gone from engine loss/autorotation, to fire and then to clearing an obstacle in the short span of about 15 seconds. In the back of the aircraft my concern was still the fire, so I visually confirmed that the fuel dump had stopped.

As I unlatched my gunner's belt to grab the forward fire bottle and fight the fire, I had a flash of, "Wow, bad move."

Releasing my one restraint in the aircraft at 40 feet AGL before we crashed probably wasn't the smartest thing to do. I realized this was a bad choice as I heard the altitude calls from the copilot. I relatched the belt just as I heard the copilot giving the last few altitude and airspeed calls before he gave the standard, "You've got it in back." This signified it was now the responsibility of the aircrew in the back to give landing instructions below 25 feet AGL.

I turned to the window and began calling the last few feet to touchdown. To my amazement I looked up and saw the ominous berm slightly out of our blade-tip path; we had missed it. With a display of superior airmanship the pilot had managed to dump some altitude and adjust his landing profile to touch down in front of the berm. Lady Ace 14 settled about 10 feet short of the hill, without overtorqueing our one good motor and

without scratching the paint. To my astonishment and joy, we had made it to the deck. The blades were still where they needed to be, not inside the cabin. From the time of engine loss to being on the deck took less than 25 seconds.

I quickly realized we still had this whole fire thing to contend with. I dropped my gunner's belt and ran toward the back of the plane with the forward fire bottle. As I pressed the handle to begin discharging the bottle on the flames whipping around the door, I heard the copilot going through the engine-fire EP. He was knocking out the emergency-shutdown checklist as the rest of the aircrew tried to egress.

When the pilot initially pulled the engine-condition levers (ECL) to stop, the manual trim was armed. In the Phrog this essentially overrides the ECLs. I heard this action being called out, and before I could say anything, he quickly recognized the problem, reset manual trim and shut down the good engine. The copilot pulled the fire T-handle to the No. 1 engine, which was not illuminated. I heard this over the ICS and thought, "Damn."

I was standing under the engines with halon about to be dumped into the air, and the last place I wanted to be incapacitated by halon was under burning engines. I can't remember if I yelled not to dump the bottles or if the copilot saw me under the engines. Either way, he knew I was in danger if he released the bottles. He then asked if I was clear, which is not part of the standard EP, and that action probably saved my life. In a mad dash up the cabin, I quickly yelled "Clear" over the ICS, which allowed him to discharge both bottles into the effected engine.

As I made my way back up the cabin, I saw that both the AOs were trying to egress the helicopter out of the main cabin door. One reason I disliked Lady Ace 14 was that the main cabin door was always difficult to get open. It always took some jiggling or caressing that the airframes folks could never completely fix, and given the current state of affairs, the AO couldn't get it to open.

In my haste to get them out, I grabbed the emergency/normal open handle and turned, to no avail. Then I did what any good Marine and crew chief would have done: I used my size 13 safety boot to persuade the door open. With one fell swoop the door was open. I grabbed the junior AO by the back of her survival vest and threw her out of the plane. The other AO was able to quickly egress behind her. Just before they got out the pilot had hit the rotor brake, and I felt the plane shudder to a stop. Both fire bottles had been discharged, confirmed by the copilot, and the plane was now completely shut down.

I returned a third time to the back of Lady Ace 14 to finish fighting the residual fire. As I pulled down the engine-bay door, I found myself in a bit of a flash fire. As I looked up to egress through the aft hatch, I remembered that as part of the "fire in cabin" EP, I had closed it. I decided the best thing to do was to continue to fight the fire from the cabin.

At the same time the senior AO turned and ran back into to the burning aircraft, grabbed the aft fire bottle, and began fighting the fire with me. I hadn't even realized he was there until my fire bottle was empty. I looked over and saw him standing next to me as we put out the flames.

I walked out of the main cabin door, threw the empty fire bottle on the ground, and thanked the -46 gods for letting me walk out of the plane in one piece. Every crew member walked away without a scratch.

With roughly only 30 words spoken during the entire duration of three to four minutes, our crew managed to clearly and effectively relay key pieces of information that were instrumental to decision making and helped save our lives.

Whether that was seeing the hill off the nose, not discharging the fire bottles immediately, or visual detecting that we were on fire, critical information flowed throughout the event.

Lady Ace 14 had suffered an internal compressor FOD incident (a known problem in the Phrog world at the time) and fire. My crew and I flew Lady Ace 14 back to the ship only 24 hours later, after field repairs and an engine change. If you ever want to see Lady Ace 14, she sits next to the helo dunker at MCAS Miramar in a dirt field, faithfully serving as their egress trainer. I hope someone fixed the door.

2NDLT KING FLEW WITH HMM(REIN)-165.

Please send your questions, comments or recommendations to:
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375 A St., Norfolk, VA 23411-4399
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The Biggest Concern

BY LT. SHAWN MACEWAN

We were on the second go of the day, scheduled for a touch-and-go trap to get a carrier aircraft plane commander (CAPC) current before a night flight that evening. I was the copilot and had arrived at the ready room almost two hours before the brief. I wanted to make sure I didn't forget anything in my preflight preparation.

This was only my fourth flight since we started the deployment, and the CAPC's first time back in the cockpit since our squadron had completed carrier qualifications (CQs) almost three weeks earlier. During the crew brief we discussed the fact that the CAPC and I had never flown together, and that the focus of the flight was pilot currency. Neither of us were proficient nearly a month into the deployment.

Following the brief, we dressed out and headed to the aircraft. The CAPC and I did our respective walkarounds. After pointing out some minor hydraulic leaks to maintenance, we pronounced the aircraft ready to fly. Following engine starts and the taxi to the catapult, we spread our wings and finished the takeoff checklist. As the aircraft pulled forward into tension, I turned on the TACAN and transponder. Contrary to my normal habit pattern, I visually checked that the overhead circuit breakers were in and that the generators and busties were "ON"; usually, I physically checked the switches. With engines run up, the salute was given and we launched.

During the climb checklist, I called out "lights" and reached up and shifted the anticollision light switch from upper-only to both. However, when the CAPC looked up to check, the switch was still in the upper-only position, and he reset the switch. Once on-station, the autopilot was engaged, and we proceeded with the mission.

The CAPC and I discussed how little flying the squadron had been doing on the translant, and we realized that neither of us had flown in the left seat since CQ a month ago. Even though the CAPC had briefed that neither of us had flown together, we had not realized that the two pilots with the least currency were scheduled together. Experience aside, it was an operational risk management (ORM) issue that should have been addressed.

As the mission came to a close, we prepped for the recovery and flew an uneventful entry into the Case I stack. Following our interval into the break, I completed the landing checklist, leaving the hook up for our touch-and-go. I then turned my attention outside the cockpit for the pass.

On touchdown I saw the CAPC add max power, but I didn't feel the normal acceleration as we took off. The aircraft was slow to accelerate and climb away. We needed the entire length of the landing area to get airborne. The second thing that caught my attention was a series of loud clicks and flickering lights. It was the kind of thing I had seen every time we shut down both generators on deck. As the aircraft began to climb away, we lost all electrical power.

My first thought, going back to the nightmare scenarios that FRS simulator instructors use to drill their students, was a shorted bus resulting in the simultaneous failure of both generators and transformer rectifi-

ers. The emergency generator should provide power to the caution and warning annunciator lights for diagnosing the failure, but when I checked, there were no lights on the panel.

With no ICS, instrumentation or annunciator lights, I took a quick look outside at the right engine to see if there was any indication of damage or shutdown, but everything looked normal. It was then that I noticed the CAPC reaching for a switch in the overhead. I turned back to the cockpit.

He pulled his hand down, pushing his boom mike out of the way and shouted, "E-gen manual select." He then reached to raise the gear.

I looked up at the master power panel and saw that the AC and DC bustie switches were in the off position. The busties allow the electrical busses that normally receive their power from a generator that has failed to receive power from the operating one. In this case the switches were off, which prevented the transfer of power from the still-functioning left generator.

As I turned on the AC bustie switch, electrical power was restored to the cockpit. The CAPC brought up the landing gear and set the flaps to one-third in an effort to reduce drag and get more altitude. While scanning the engine instruments, I noticed that the right engine was rolling back below 71 percent.

On touchdown I saw the CAPC add max power, but I didn't feel the normal acceleration as we took off.

The CAPC called out "Right T-handle, pull!" I reached for the right T-handle, called for concurrence from the pilot, and pulled it to shut down the right engine and feather the propeller. I looked outside to check the prop as the right engine stopped with the blades parallel to the air flow in the low-drag, feathered position. We climbed to 1,500 feet and declared an emergency, letting tower and paddles know that we would be making a single-engine, straight-in approach from five miles.

The combat-information-center (CIC) officer contacted the Hawkeye rep in the tower and passed that we had lost power and had shut down the starboard engine. I mentioned that the DC bustie switch was still off. After a quick discussion, the decision was made to turn it on, reducing the chances of another electrical problem.

We made our turn at four and a half miles to intercept the final bearing, using the aircraft-approach-control system to assist with the approach. The CAPC configured for the trap, and I ran the landing checklist on final. The CAPC made an uneventful single-engine arrestment. We turned it over to maintenance to figure out what caused the engine to roll back on us.

DURING OUR DEBRIEF, we discussed the biggest concern during the emergency, which was the loss of electrical power. Without it, the crew had no ICS or caution and warning information, and only a limited ability to affect configuration changes to the aircraft.

Walking back through the events leading up to and following the touch-and-go, we realized that the two bustie switches were in the wrong position when the right engine rolled back, causing the generator to trip offline. We asked ourselves how the switches ended up in the wrong position. Were they off when we took the cat shot, and I had missed it by not following my normal habit patterns? Did I switch one off when I reached for the light switch instead of letting the pilot in the left seat move the switch? They are in different locations, and the throw is in different directions, so there is no way to rule out that possibility. Or did the CAPC turn them off when he reached for the E-gen switch after the touch-and-go? He remembered reaching for a switch and not getting the desired response, but even he was uncertain as to what he did.

Maintenance later determined that a mounting bracket associated with the negative-torque-sensing section of the prop-control system had shifted on touchdown. The electronic propeller-control system on the Hawkeye is designed to respond to situations where the prop is being driven by airflow rather than engine torque by increasing blade angle. This is one means of minimizing the drag caused in the event of a windmilling propeller.

In our scenario, the bracket's movement activated the sensor for the negative-torque-sensing system. Even though the engine and propeller were functioning normally to that point, the electronic propeller-control system increased the angle of the blades in an attempt to correct for the sensed negative-torque condition. As the angle of the propeller blades increased, the drag on the engine increased, ultimately resulting in an engine bog down. As rpm decayed, the generator couldn't support its loads and tripped offline. The engine continued to roll back until we secured it with the T-handle.

There are advantages to being in a multipiloted aircraft, especially during time-critical situations. Sharing tasks and seamlessly operating as a crew can mean the difference between success and failure. Our climb and landing checklists permit either the pilot or the copilot to set the external lights, but it needs to be completed and verified. There is also no specification for checking the bustie switches "in-and-on" on the catapult prior to launch. It's all habit-pattern driven, but important because after takeoff there is no procedural requirement to check the busties again. The pilot and copilot must perform their assigned tasks efficiently and rely on other aircrew to back them up when assigned to do so.

"No fast hands in the cockpit" is a difficult mantra to abide by when your altitude is measured in double digits and the aircraft is not responding as you anticipated.

LT. MACEWAN FLIES WITH VAW-121.

Morale – The Larger Issue

BY LCDR. TOMMY MORROW

As a first-tour pilot I deployed multiple times but never for more than six months straight. I left home each time with trepidation, but I was motivated and excited to go. I believed my country had called me to do my duty. At the end of each deployment I was proud of what I had accomplished, but was more than glad for it to be over. The excitement to complete the mission had been replaced with a new excitement to return home and see my family. My motivation to fulfill my patriotic duty was far less at the end of deployment than where it had been a few short months earlier. Moreover, that motivation seemed to wane more and more with each subsequent deployment. By the end of my first tour I was much in need of a shore-duty break.

As I returned to sea duty years later, standard deployment lengths were starting to increase. I was also preparing to face new challenges as the officer-in-charge (OinC) of a detachment. We were originally scheduled to deploy for nine months, and I knew that maintaining positive morale for such a long time would be one of those challenges. After five months, the positive attitudes of my officers and Sailors started to fade as expected. We were then told that after the six-month mark, we would be heading home for the holidays, but only to return for at least four more months.

Throughout the schedule change we were constantly told what a good deal we were getting. While we were all thankful to have cherished time with our families, we dreaded our looming redeployment date. We were trading family time for even more time away in the end. To maintain readiness, many of us were facing order extensions. This required longer sea-duty tours, which meant changing life plans, as many military members have become accustomed to.

The brief break at home was nice and helped to recharge our batteries. However, even our revived motivation started to wear off after a couple short months of being underway again. Our detachment then experienced a few problems. We lost the back cowling of our rescue hoist in flight because of missing screws we had failed to install. We inadvertently bent a trim tab on the main rotor blade. The tail-rotor indexer was found

bent and needed replacing. Finally, before a functional-check-flight (FCF) launch, we found several loose adel clamps on the rotor head and two washer shims lying in the tail drive shaft.

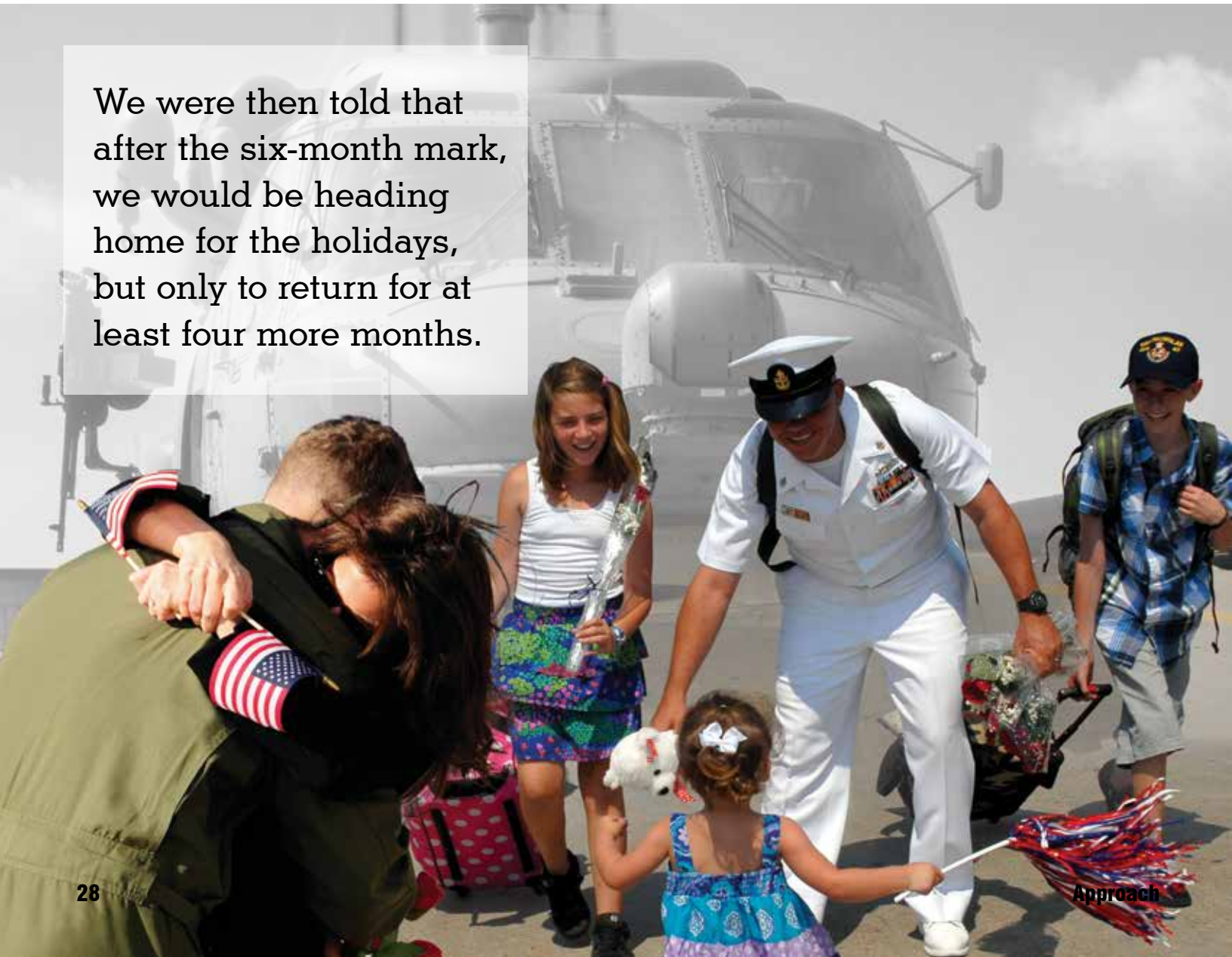
We stopped for a safety stand-down and conducted a safety survey to identify the root causes of our issues and to correct them. We had been deployed for about eight months total, but it had been 10 months since we first deployed the previous summer, and almost two years since we first started to prepare for the deployment with training and workup periods. I was fully prepared for the data from the survey to show complacency as a leading cause for our problems.

To my surprise, morale seemed to be the larger issue. We had become disgruntled and cynical. I believe our poor attitudes were directly linked to our poor performance.

Fortunately, we had the luxury of slowing our operational tempo and focusing on our wellbeing and training.

Now, as the deployment winds down and I prepare my lessons learned, I am reminded of the morale issues we faced a few months back. I realize that I recognized this potential problem early but failed to truly plan for it. When preparing for deployments of any length, but particularly longer ones, I encourage everyone to consider how to maintain high morale as an important safety factor. My detachment recovered from our issues and we are returning home safe and mission accomplished.

LCDR. MORROW FLIES WITH HSL-48.



We were then told that after the six-month mark, we would be heading home for the holidays, but only to return for at least four more months.

Morale is ...

While not conventionally thought of as a human factor, morale can have a significant impact on the performance of duties. The very definition of morale makes this connection between psychological state and actions. According to Merriam-Webster, morale is defined as:

A. the mental and emotional condition (as of enthusiasm, confidence, or loyalty) of an individual or group with regard to the function or tasks at hand;

B. a sense of common purpose with respect to a group (esprit de corps);

C. the level of individual psychological well-being based on such factors as a sense of purpose and confidence in the future.

Service members have long known the realities of military life, and we can stand proud in our sense of purpose and accomplishments. However, long deployments, unexpected delays and/or extensions, reduced resources, and uncertainty with respect to the future can all upset the balance between the call to serve and our basic need for maintaining personal welfare. Once the scales have tipped in the wrong direction, it's simply a matter of time before mistakes are made and safety is compromised.

The Department of Defense Human Factors Analysis and Classification System (DoD-HFACS) is used to identify hazards and risks. Preconditions are factors in a mishap if active and/or latent preconditions (such as conditions of the operators, environmental factors or personnel factors) affect practices, conditions or actions of individuals and result in human error or an unsafe situation. Of particular importance in the context of morale are personnel factors and the condition of the individual. Below are several human-factors preconditions that may be directly or indirectly influenced by low morale:

- Cognitive factors (inattention, confusion, distraction)
- Psycho-behavioral factors (emotional state, complacency, inadequate motivation, motivational exhaustion [burnout])
- Adverse physiological states (fatigue – physiological/mental)
- Physical/mental limitations (learning ability/rate, memory ability/lapses)
- Coordination/communication/planning (crew/team leadership, assertiveness)
- Self-imposed stress (physical fitness, alcohol, drugs/supplements/self-medication, nutrition, inadequate rest)

In a perfect world, morale would never falter despite the most trying of circumstances. Given that fluctuations in morale are likely unavoidable, it is especially important to recognize when morale-influenced preconditions may factor into a mishap. — *Lt. Kirsten Carlson, aeromedical division, Naval Safety Center.*

VMU-1

British Group Capt. Tim O'Brien, the Commanding Officer of 903 Expeditionary Air Wing presents the Good Show award to 1stLt. Travis Horner, USMC, and Capt. Jonathan Schiler, USMC.

A VMU-1 cargo resupply unmanned air system (CRUAS) helicopter was operating at dusk from the fuel and armament resupply point on the South Eastern area of Bastion Airfield, Afghanistan. The CRUAS operating crew was also monitoring the tower and ground air-traffic-control (ATC) frequencies.

During the CRUAS mission, a Marine C-130 aircraft had taxied for a runway 01 departure. The C-130 had been given clearance to take off when Capt. Jonathan Schiler and 1stLt. Travis Horner of VMU-1, who were working on the Camp Bastion flight line, noticed a pack of foxes on an adjacent runway. They broke onto the tower frequency to tell the tower controllers and the aircraft crew about the foxes. The C-130 was subsequently told to hold on the runway by the tower controllers until the crew and the tower personnel could confirm that the animals had dispersed.

It was clear the VMU-1 crew felt the animals posed a significant risk to the departing aircraft. Considering the failing light and poor visibility, these animals would have been extremely difficult to see from the tower and the C-130 cockpit.

In recognition of the excellent flight-safety awareness displayed, and the speed of reaction in passing vital information in a clear and timely manner, VMU-1 was awarded a British Good Show award.

In the United Kingdom, the Good Show award is presented to units as an incentive for their vigilance. According to British Group Capt. Tim O'Brien, the Commanding Officer of 903 Expeditionary Air Wing, only five or six citations are awarded each year.

BRAVO Zulu

VR-62

LCDR Todd Nichols (Aircraft Commander)
AWF1 Joshua Simmons
AWF1 Robert Stanley
AWF1 Pedro Blandin
LCDR Marius Drozdzowski
AWF1 Chip Hamner
AWF1 Troy Rudisill

The crew was on a scheduled overnight stop in Guam when they were contacted by U.S. Coast Guard Sector Guam and asked to assist with a search and rescue mission off the coast of Chuuk Island, Micronesia. Their C-130 was the only asset available in Sector Guam to respond. However, it was not equipped for a search and rescue mission. With a change in mission they became Rescue 313.

The Nomad crew launched at 5:00 a.m, and proceeded to the search area 550 miles southeast of Guam. Rescue 313 arrived on-scene at 0700, and began a search pattern using the Coast Guard drift algorithm. Three hours later, LCdr. Todd Nichols, the aircraft commander, noticed a flash of light about five miles ahead and directed all eyes in the flight station to the area. They descended to 500 feet for a closer look and soon realized it was the vessel they were looking for. All five occupants were aboard and alive after drifting for seven days.

Rescue 313 stayed on-station until Zeus Leader, a transport ship, was directed to the scene for rescue. Five and a half hours later the ship arrived and rescued the five people.

Rescue 313 was low on fuel and diverted to Chuuk Island for refueling. While on the ground, LCdr. Nichols called the Coast Guard for an update and was told, "All five souls alive and well." The crew later learned that the flash of light was a signal from the bottom of a soda can, a good survival lesson on using any available resource.

The CH-53E crew of Hustler 11 departed MCAS Futenma with Maj. Christian Oliver (left seat), Maj. Paul Lee (right seat), GySgt. Timothy Longbine (left window), Cpl. Michael Hoie (right window), SSgt. Derek Torrellas(in the tail) and SSgt. Chad Jones (in the cabin). After dropping off five Marines at a training site, Hustler 11 conducted crew training and then extracted the Marines to return to Kadena AB.

Hustler 11 made the required radio call to Kadena Tower requesting a VFR arrival to drop off their passengers. At 140 knots and 500 feet, Maj. Lee realized that he could not lower the collective. The aircraft initially climbed to 800 feet because of the aft cyclic input without the requisite reduction in power. Maj. Lee tried to push the collective down with considerable force two more times. Maj. Oliver then took the controls to evaluate the situation and notified the crew. SSgt. Jones moved to the jump seat to assist with the emergency procedure, while the rest of the crew kept eyes outside for traffic and ensured the passengers were strapped in. SSgt. Jones inspected the collective boot and flight controls that he could see in the cockpit and cabin.

The crew referenced the NATOPS pocket checklist for the EP closest to the diagnosed problem: Restriction or Binding in The Flight Controls. This procedure does not explain how to recover from a stuck collective, nor is it common practice for pilots to be trained on how to manage a stuck collective. The crew turned off the flight-control-force trim, the automatic-flight-control system (AFCS) and the AFCS servos, and then cycled AFCS computer power. None of these actions worked.

The crew determined the only way to simultaneously descend and slow for landing would be by reducing lift by slowing rotor rpm. They retarded the engine-speed-control levers (SCLs). Maj. Lee started the auxiliary-power plant (APP) to maintain electrical and hydraulic power. SSgt. Jones double-checked APP engagement and passenger seat belt/harness integrity while Cpl. Hoie and GySgT. Longbine manned the windows. Hustler 11 made an approach to land.

The first attempt was too high and too fast. The waved off. The crew learned from the first attempt how to manipulate the SCLs to manage power to control altitude. Maj. Oliver maintained the controls, manipulating the nose attitude to control airspeed. Major Lee manipulated the engine SCLs to increase/decrease main-rotor rpm as necessary.

On the second and final attempt. Maj. Lee set rotor rpm between 60 and 70 percent. SSgt. Torrellas checked passenger seat belt/harness security. Maj. Oliver set the aircraft down at 90 knots, hitting the tailskid, main-landing gear and finally the nose; this jarred loose the collective. Maj. Oliver reduced the collective to full down and used cyclic to keep the helicopter on the runway. Maj. Lee called for brakes and Maj. Oliver applied differential breaking to arrest forward movement and to maintain directional control. Maj. Lee pulled all three engines to ground idle. The helicopter came to a full stop.

Maj. Paul Lee III, Copilot
SSgt. Chad Jones, Crew Chief
SSgt. Derek Torrellas, Crew Chief
Maj. Christian Oliver, Aircraft Commander
GySgt. Timothy Longbine, Aerial Observer
Cpl. Michael Hoie, Crew Chief

HAWKEYE WORKOUT

BY LT. GREG VASILOFF

All instructor pilots (IP) knows that they may have to grab the controls at any time to save the day, but that moment rarely comes when or how you expect. As an IP for my sixth E-2/C-2 FRS field-carrier-landing-practice (FCLP) detachment at NAS Jacksonville, I was accustomed to the usual student mistakes. I got into that "zone" where you feel as if you can handle anything, even with a Cat 1 student at the controls who's constantly "trying to kill you."

FCLP detachments are a busy. Normal operations consist of 10 days of day and night events, transiting to and from NAS Jacksonville and NOLF Whitehouse for FCLP, and multiple crew switches. This detachment was different because I was primarily flying the CNS/ATM glass cockpit at the ship for the first time and instructing the students in that pipeline. Our workhorse aircraft of choice was aircraft 661, a stripped down TE-2C used primarily as a front-end mission aircraft.

It had been running flawlessly up until the fourth day of the det. While at the 180 position in the FCLP pattern, I noticed that my student had an unusual amount of nose-up trim. I brushed it off and decided to let the student flail a little bit. I want the students to learn to feel-out the plane during early stages of the FCLPs.

On the touch-and-go, my student reported, "Sir, I don't think the elevator trim is working."

I tried my trim hat switch, with no luck, and immediately assumed the student had accidentally hit the T-button on the yoke. This action would disconnect the hat switch from the trim actuator. I reached up to the overhead panel and reset the trim circuit breakers and tried the hat switch again. That didn't fix it. I then reached for the standby trim switch, which should move the trim in the event the T-button is pressed. Still, no trim available.

I departed the FCLP pattern and made the short trek back to NAS Jacksonville. I kept working through the trim-failure emergency procedure (EP), so we could ultimately relieve control pressures with manual pitch-feel (a system that provides an artificial feel to the yoke, which can relieve control forces, much the same way as trim). We landed without incident.

We pulled into the line. Our mechs took a look and confirmed the aircraft was down. While writing the discrepancy in maintenance control, I was informed that the aircraft trim was working normally while hooked up to the power cart, and that I could jump back in the aircraft and take it flying. This made the hairs on the back my neck stand up. It was too late to make it back to Whitehouse before the FCLP period ended.

The following day I was again assigned to fly 661 for a "confidence" flight for a formation-training flight, followed by FCLPs. Having a few hairs still standing on the back of my neck, I mentioned in my NATOPS brief with the students to expect this trim failure to happen again and to be ready for it.

The formation flight went without incident, just the usual student mistakes and ugliness coming into the break at Whitehouse. Upon the completion of the first touch-and-go, my student reported, "Sir, I think I have runaway trim."

I looked at the trim gauge and saw the elevator trim racing toward the full nose-down position.

"T-button! Hit your T-button!" I yelled as I also raced to my button, which is the first step of a runaway-longitudinal-trim EP. Too late. The trim was full nose-down by the time we had hit the button.

Climbing through 400 feet, the aircraft started to pitch over through the horizon back at the runway. The student arrested this unsolicited control movement. Suddenly, there was a loud "Pow!" as the failure in the flight controls was accompanied with an audible bang.

Our aircraft's nose began to porpoise up and down, and I called, "I've got the controls! I've got the controls!"

The first thing I noticed was what felt like at least 40 to 50 pounds of aft pressure was needed to keep the nose level, and any input that I made caused the nose to pitch sporadically up and down. Oddly enough, I had just watched, "Flight," which is a movie where an alcoholic pilot played by Denzel Washington encounters

a full-nose-down, elevator failure in his airliner. That vision ran through my mind.

"I need to get away from this pattern and just keep flying," I thought, as I oscillated through the crosswind turn.

I reported, "Paddles, 61 has a control malfunction. I'm departing the pattern."

Paddles gave a "Roger," as I climbed away from the pattern and headed for NAS Jacksonville.

I had my hands full. I had a Cat I student in the left pilot seat and another in the back; neither had a clue what was happening. I needed to coordinate with my base and NAS Jacksonville tower for an arrested landing. Because I was now using two hands to fly an aircraft with full-nose-down trim, I instructed the student in the pilot seat to start "parroting" my requests to tower. I also had him request the gear to be rigged at NAS Jacksonville. I continued diagnosing the failure.

Once established in the delta pattern over NAS Jacksonville, I scanned the cockpit for other clues to our problem. The student noticed that the elevator-trim gauge was erratic whenever I moved the yoke fore and aft. This caused the nose to porpoise, making it difficult to maintain altitude.

"Am I going to be able to land this thing?" I wondered.

Any elevator inputs were causing the nose to buck up and down. Flying an AOA approach to the short-field arresting gear was going to be a challenge. The hairs on the back of my neck stood back up.

"I know what's wrong," I said over ICS.

I remembered a question about this very failure on the NATOPS unit-evaluation test just a few weeks earlier. "It's an elevator trim disconnect failure," I said over ICS to the students.

We executed the Trim Runaway EP and the Flight Control Malfunction EP. The second EP addresses this type of failure in a warning. We completed every step of the procedures, including a controllability check. I flew the plane, my student pilot in the back read the PCL, and my student in the pilot seat talked with tower.

Finding time to finally talk to my base on the radio, I asked for an LSO to help get us down. By this time, tower had kept saying that it would be just "ten more minutes" before the gear was rigged (which is what they had told me twice, 15 minutes ago). Tower also decided to delta a C-130 that was having an engine problem just 500 feet above me, adding traffic lookout to my list of problems.

As the LSO scrambled to the end of the runway, the RDO informed him that there was no radio to allow him to talk to me. This made it pointless for him to be out there. Instead, he went to the control tower to offer some help.

"My arms are getting tired. How much longer until the gear is ready?" I radioed to paddles.

I had been flying for almost 30 minutes with full nose-down trim, fighting to keep the plane in the delta pattern and avoiding the C-130 above me. My student offered to fly to give me a break, but that option made me even more uncomfortable with the situation. I decided to tough it out.

"It's almost ready. Should just be another minute. Hang in there," called paddles.

With relief of my burning arms in sight, the C-130 above me asked tower if they could land first because they had to make the dreaded three-engine approach. Tower cleared the C-130 to land, adding another five minutes of pain of holding 661's nose away from the dirt.

"Greyhawk 61, runway 28, short-field gear rigged, cleared to land," I heard.

As I started to make a right downwind for the runway, a helo asked for a transition across centerline through my flight path. To my amazement, tower granted it, canceled my clearance, and requested another lap in the delta pattern before commencing. With everyone and their brother now out of our way, I finally maneuvered to an extended final while flying a slightly fast, albeit squirrely, approach to an uneventful arresting landing.

Upon shutdown, maintenance found a complete mechanical failure of the elevator-trim actuator.

Solid CRM with both students greatly improved our ability to work through the NATOPS procedures once the problem was identified, and to coordinate a field arrestment despite the unwelcome delays. We were expecting a possible trim issue, and because we covered this in the brief, we were on guard. However, no one expected the type of failure that actually occurred. The failure required effective CRM both internal and external to the aircraft while I assessed the severity of a failure I had not seen before.

The lesson is to always be ready for the unexpected. That moment could be on your next flight.

LT. VASILOFF FLIES WITH VAW-120.

Editor's note: ATC will provide priority handling only if you convey the nature of your situation and declare an emergency.

I think this story could help others understand what CRM is and how it is capable of saving your life if used or ending it very quickly if not used. — Note from the author of the article, "Saving the Battle Phrog," (in this issue) to the Approach *editor.*

CRM