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Flight Comment

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Canada 

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Flight Comment

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BIG BROTHER ISN'T WATCHING

Although the first hour of the day was normal, it also had an air of excitement about it. The normal part was the alarm at 0600, a quick breakfast, and looking in on the sleeping children on the way out. The exciting part was the kiss at the door on the way out, a clear and sunny day, and one of those “few and far between” weather check flights at “The Big Z.”

In case you have forgotten, or you haven't been there, the “weather check” took on a special incentive when the Moose Jaw flying area was clear of weather obstructions to scheduled dual and solo missions. If your draw on that day allowed for minimal weather checking then you and your qualified flying instructor (QFI) partner were afforded an opportunity to do some aerobatics, to do some basic proficiency work, and to just “slip the surly bonds of earth.”

The turn of events started when my right seat weather check pilot couldn't make it due to illness. There I was — a solo instructor and a full tank of

fuel. After a quick look at 50+ visibility and a few high, scattered clouds, and a report back to operations for restrictions on scheduled missions, it was time to do my aerobatic sequence before any other aircraft arrived to crowd up the area. However, after this disciplined approach to flying, something on the “darker” side took over. Who would know if I descended down and just buzzed around Cypress Hills? Cypress Hills is the highest point of land in Canada between “Les Roches” and the mountains of Boffino Island. No one — big brother wasn't watching! The normal constraints were gone. To be honest, I don't remember exact altitudes and speeds — maybe 500 AGL and 250 knots at times. The scenery was unique. It was quiet; no one else was there, right?

After only four or five minutes of this a thought came into my mind. What if I took a bird? Never mind dangerous — how embarrassing, how dumb, how about those

sleeping children and that “last” kiss. I levelled the wings, pushed the throttle fully forward and climbed up to about 60,000 feet and cruised home. It's amazing how the conscience works. I couldn't wait to get to 50 nautical miles just in case something legitimate happened and I would not appear suspicious.

Nothing did happen, at least not to the aircraft. But something changed in my head. I realized that even my usually disciplined approach to flying was still, occasionally at least, subject to clandestine forces stronger than my personal will not to “go there.” I sensed the urge two other times that I can remember — but resisted. Unscheduled solo's, last flights on squadron, and air show departures are equally tempting times. In our minds, these flights are always justified for something special. That day, I learned something important about myself and was blessed enough to still be here to prompt you to think twice if you get the urge when “Big brother isn't watching!” ♦

COCKPIT COMMUNI



CATION???



It was just another VIP trip, with an overnigher in Flin Flon. All we had to do was drop the VIP off so he could attend a Militia parade and then a mess dinner. That freed us up for a little R&R time, since take-off the next day wasn't until noon. The flight north from Winnipeg was quite uneventful and routine, and after a quick debrief, we were free for the night. Unfortunately, there is not much to do in Flin Flon but wait until morning to go home.

As on all other VIP trips, the aircraft preparation and flight planning is to be finished two hours before departure, and then the "hurry up and wait" game begins. As always during this waiting game, I leave the main gear pins in and the nose lock engaged, you never know how long you have to wait and what kind of prop wash or jet blast you may have to deal with during the wait. We had just hunkered down in the cockpit and who do you think wheeled around the corner in his staff car? Did you guess the VIP? He didn't even wait for his driver, he just took the car like he wanted to take off yesterday. The panic was on and the aircraft commander (AC), wanting to save some time, said he would get the main gear pins and the nose gear safety if I would get the VIP on board safely and stow his luggage. We were taxiing in no time, and why not...we had done these VIP trips together a 100 times. Take-off power, rotation,

and gear up...why was that horn going off? No nose gear up and locked indication!!! This was not good; we needed to land and see what is up. Once we were on the ramp it was a pretty easy snag to fix; the nose gear safety just had to be pushed in and we were on our way again.

Once we had settled in and were en route back to Winnipeg, I mentioned that a Flight Safety report would have to be raised on the incident on our return to base. A cockpit discussion ensued on whether or not the report should be raised. I won and the agreement was to raise the report (although, to this day I could never figure out why a discussion on the matter was ever required.). The rest of the trip went uneventful — almost. Gear down, full flap, and nicely lined up for a landing... At this moment, the AC decided to revisit the issue of the requirement for the report. As he was stating his case again, he also wanted to know why he was hearing a horn going off. Well, that would have been the old "you're over-speeding the flaps" horn, which we all know, is another Flight Safety report. Things got real quiet in that cockpit after that.

Now, I have always believed that crew and cockpit communication is of the utmost importance, but please, an appropriate time and subject for that cockpit communication is just as important. ♦

Sergeant Corley

At the End of the Day... IT COULD BE DISASTROUS

It was nearing the end of the summer training program of the Air Cadet Glider Scholarship course and we were behind due to the weather that we are always so dependent on. As the launch control officer (LCO) of the operation at the time, it was my responsibility to shut down the operation at 2000 hours. This was the end of our flying day and the end of the L-19 tow-plane pilot's after-supper shift. The normal shift for the tow-plane is two hours due to the fuel consumption of operation at full power — releasing gliders at altitude.

The push was on to launch as many flights as we could each day, so as to finish all of our cadet's training for their glider "wings" by the end of the summer. It was nearing 8pm

and, with the added pressure of my Flight Commander pushing for more launches, I fell into the trap of asking each individual tow pilot to check his/her fuel level to see if they were able to "squeeze off another launch" before the final landing. After successfully completing a few launches after our shut-down time, I asked one more tow pilot if he could launch the last glider of the night at a lower altitude that would not require so much fuel. He agreed and I authorized the launch at approximately 2020 hours.

The climb-out went without incident and, after the glider released, the tow-plane made his "downwind" call. Being the last glider in the air, I began asking the cadets to pack up the site and prepare for

shutting down. As I heard the tow-plane call his final approach turn, I focused my attention and watched as he flared for landing. Just as he began to touch down, I heard the sputter. **He had run out of fuel!!!**

His engine cut out and the aircraft rolled to a stop just in front of me. The pilot then tried to restart for a quick taxi but to no avail. I sent a crew to push the plane off the runway and into the grass, as the tow pilot drove to the hangar to get a can of fuel. It is no secret that carelessness often sets in as we near the end of the shift or flying day. Pushing the limits at any time, for any reason, is inherently dangerous. But...at the end of the day... it could be disastrous. ♦

2Lt. Pynn





Are Checklists **WEATHER DEPENDENT?**

We were deployed in Kosovo with the Kosovo Rotary Wing Aviation Unit (KRWAWU) and were returning from a night mission when we were instructed to refuel the Griffon helicopter via Hot Closed Circuit Refueling (HCCR) before shutting down. It was around 2200 hours and the outside temperature was around -10° Celsius. The ground crew marshaled us and we landed at the HCCR point. We then followed the checklist for HCCR, which consists of turning off many systems, including the cabin heater, before we instructed the technicians to start hot refueling the helicopter. However, after many attempts, the refuellers were unable to clamp the fuel nozzle correctly to the aircraft. They then advised us that there would be a long delay since they

decided to go get another fuel nozzle to replace the unserviceable one.

During that time, it was getting quite cold in the Griffon cabin and we decided to turn the cabin heater temporarily back on. About twenty minutes later, the ground crews finished replacing the fuel nozzle and they were ready for another try at refuelling. During this attempt, the refuellers were unable to get a good seal between the fuel receptacle and the fuel nozzle. A fuel leak occurred and the fuel flowed down on the side of the aircraft and got to the proximity of the heater, air-mixer intake. Immediately we, the aircrew, detected a strong fuel smell inside the aircraft cabin. At first, we suspected that one of the fuel tanks leaked inside the helicopter. We then executed an immediate shut-down and an emergency egress.

After the egress, we discussed with the technicians about the possible causes of this smell when, suddenly, one of them asked if the cabin heater was still on. We then realized our mistake. That was the cause of the incident; we forgot to switch the cabin heater back off before re-attempting to refuel the helicopter.

I, and many other Griffon aircrew, learned a lot from this incident. The main lesson learned was that the checklists must be followed. Checklists have been developed to avoid this type of incident from happening and, if we deviate from them for any reasons, we must go back and complete all the required steps before proceeding for a particular maneuver or operation. ♦

Captain Boulanger

“Crew, Carry Out Cabin Fire of UNKNOWN ORIGIN

In Aurora flight operations, and most other aircraft for that matter, it's uncommon for pilots to think that the crew in the back of the aircraft can do anything that can directly affect the flying attitude of the aircraft. The “cargo” in the tactical compartment can't inadvertently do anything that might make the aircraft crash, can they? Or can they?

It was a typical 404 Squadron Maritime Operation Aircrew Training (MOAT) mission. Reasonable weather, a few bumps from low-level turbulence, but generally good visibility and mid-level ceilings. The Aurora was crowded with a full crew of students and instructors. I was the Navigator-Communicator (NAVCOM) instructor that day.

The mission was busy, as are all MOAT training trips, with the students rotating through their respective seats. As this flight was past the mid-point of the MOAT course syllabus, the instructors were feeling fairly confident in the students' capabilities. The students had demonstrated a good knowledge of systems at the NAVCOM station and I was not watching them as closely as I had at the start of the course.

As was the case with every MOAT trip, the instructors had pre-arranged an emergency drill. At the appointed hour one of the instructors acted out the required stimulus and the aircraft captain called over the

intercom, “Exercise, Exercise, Exercise...Crew, carry out cabin fire of unknown origin drill.”

Now, this particular drill is a great teaching drill because everyone on the crew has something to do, both on and off the flight deck. It is also a tough drill because the Tactical Navigator (TACNAV) must communicate with the flight deck and coordinate the activities of crewmembers that are both on and off intercom. The student crew reacted very well, but with the number of instructors onboard and the requirement for the student TACNAV to coordinate activities both on and off intercom, the tactical compartment soon became very busy.

My student had completed his communication and navigation duties for the drill and disappeared beneath the console to search through the avionics racks underneath the NAVCOM station for the simulated fire. I noticed a flash of the analog repeater fault light at my station and then a real problem erupted in the Flight Deck.



The aircraft pitched forward into a shallow dive and the student pilot stated that the control columns had locked-up!

Intercom communications broke down rapidly as the instructor pilot tried to sort out the problem and tell the crew what was going on. Meanwhile the student TACNAV had missed the pilot's call of a real-world problem and was still fighting the simulated fire. Half of the student crew was off intercom and I was dragging my student back up into his seat. Chaos!

Having recently experienced a similar problem, the instructor pilot executed a full manual disconnect of the Automatic Flight Control System (AFCS) and regained control of the aircraft. As the cause of the problem dawned



DRILL..."

on me, I looked at my student and watched the colour rapidly drain from his face as the cause of the problem dawned on him. He had done what I had thought unthinkable. All the nav students knew better, didn't they? We taught them all never to touch "it" with the AFCS engaged. There was a caution in the AOI! We had warned them more than once of the potential for "an impromptu airshow." How could he forget? Why hadn't I watched him more closely? He had pushed the Analog Repeater push-to-test button under the NAVCOM station, resulting in erratic electrical inputs into the AFCS and its eventual failure.

There were more than a few lessons learned (re-learned?) from this incident. The initial investigation focused on the NAVCOM training syllabus, which wasn't really the

problem. The students were aware of the hazard and had been reminded of it several times during the MOAT. So why had my student suffered from a "brain-fart?" A key cause factor could have been my supervision of the student, in that I did not watch exactly what he did and exactly which buttons he pushed. If I had done that, would the incident have occurred? No, it would have been avoided, but then my student would not develop any self-confidence either.

My real mistakes were in not recognizing that my student was flustered and in not realizing that I was putting him in a dangerous position. If I had fully appreciated his situation I would have reminded him of the hazard and, I believe, the incident would never have

occurred. The other key lesson that came out of the incident is the one I want to emphasize. The pilots were not aware that the NAVCOM, in the conduct of his emergency checks, had the opportunity to affect the flight controls of the aircraft. The pilot students were aware of the AOI caution about the Analog Repeater, but they did not appreciate that part of the NAVCOM's emergency drill was to examine the rack where the analog repeaters are located. All aircrew must be aware of the impact of their actions on other aircraft systems, and all pilots must be aware of the potential impact that other crewmembers can have on the flight controls. If the instructor pilot had not had recent experience with a similar problem, the outcome of my mistakes could have been a lot worse. ♦



Do What I Say...

DON'T DO WHAT I'VE DONE!!!

While I was in Bagotville, I was a flight engineer (FE) on the Iroquois helicopter and I was working at base rescue flight (BRF). I was the FE in charge of the standards section, which provided me with a good opportunity to see how the team was doing.

On an annual check ride where I was evaluating a member, something happened that I have remembered for the rest of my life. The flight started normally enough, with a thorough briefing on what was to be expected. As part of the evaluation, we had to land in a confined area. The other FE positioned himself on the left of the aircraft and made his normal check, which included making sure he was properly secured to the aircraft frame before he opened the door to give his directions. Myself, I was seated

on the right side of the aircraft and did the same thing before opening the door on the right.

After the landing was achieved, we decided to go for a walk to see the distance we had between the main rotor blades and the tree line. On the way back, we each went in on our own side and sat on the floor of the aircraft. We started talking to the pilots and, as we were doing so, I told the other engineer to make sure he was secured to the frame before we took off, which he did. The weather was very hot and so we decided that we were going to leave the doors open for the 800' circuit above the ground. The departure took place without a problem and, once airborne, the other pilot said he was going to try it too, so I told them that this time I would be the one giving directions.

The pilot took control and started to do a short circuit to position himself on the approach path. We landed again and were ready to take-off when I asked the other engineer if he was still secured and ready to go. It was at that time that he told me: "yes, I am secured...but are you?" At that time I moved my hand behind me to check my belt to ensure that I was secure. Then my heart stopped, I turned white and stopped breathing — my belt was on the floor and not attached to my harness. It was where I had put it when we had detached ourselves to go look for distance on the previous landing. After what seemed like hours but, in reality, was only a few seconds, I took the belt and secured it to my harness. I told the pilots that the cabin was secured and we completed the check ride without further incident and returned to the base for a good debrief.

After this incident, which had the potential to turn into an accident, I continued to press the point about ensuring that all of the FE's were doing a manual check of their belt every time they landed somewhere, before they departed, and even if they did not leave the aircraft. About this particular point, I make sure that I **always** do what I say! ♦

Sergeant Harvey

Luckily, Only My Ego Got Bruised!

It was a nice, rainy morning in Germany, like so many of the mornings there. I was the number two of a two men start team for the CF-104 Starfighter jet. I was waiting in front of the right wing, after checking the bleed air over the flaps. I was waiting for the number one man to give the pilot the signal for the automatic pitch control (APC) check. The APC on the CF-104 was designed to lower the nose of the aircraft in a high angle of attack to prevent stall. To lower the nose of the aircraft, the APC would kick the leading edge of the horizontal stabilizer up, thus forcing the nose of the aircraft down.

The APC system would become operational only when the nose landing gear door would close. My job, as number two man, was to wait for the signal from my partner and proceed to the nose landing gear door and manually activate the micro-switch. I had done this many times; I could have done it in my sleep. I knew exactly where the micro-switch was and could activate it without looking.

Finally, I got the signal. As I moved towards the nose landing gear door, I reached the halfway mark when suddenly something pulled my rain-gear hood off of my head and my

rain-gear jacket started to tighten around my neck and pulled me backwards. I finally realized that the intake was pulling me towards it. I dropped to the ground and was able to break the suction. I picked myself off of the ground and finished the start with nothing more than a bruised ego. I was, however, not the same person. I can no longer walk near a running aircraft without recalling that frightful morning. On that day, I gained a great deal of respect for jet engine intakes and I am all too familiar with their awesome power. ♦

Mr. Bergeron



DO YOU FEEL LUCKY



The event I am about to describe happened over sixteen years and umpteen flights ago, yet I still remember it like it happened yesterday. However, it wasn't until later, after meeting some of the other folks involved, that I fully came to appreciate the impact that this occurrence had, or could have had, on all of us.

I was the lead pilot of a two-ship formation of F-5's tasked to conduct close air support (CAS) against enemy targets in the Wainwright exercise area for RV-85. My wingman and I would be firing live 20mm rounds against targets assigned by a forward air controller (FAC). We attended all the required pre-mission briefings and set off from Edmonton with two armed aircraft. It was a beautiful day, no clouds and light winds, and I

remember thinking that there should be no problem acquiring or tracking targets in these conditions.

Approaching the exercise area, I contacted the Tactical Air Control Party (TACP) for initial holding instructions and primary FAC assignment. The TACP directed me towards an initial point (IP) and advised me to contact our FAC on a designated frequency. After numerous unsuccessful attempts to contact the FAC, I directed the formation to go back to the TACP frequency and advised that I was unable to contact the assigned FAC. The TACP, using a different radio, was in contact with the FAC and directed us back to the original frequency and FAC. After doing a radio check with my

wingman to assure our radios did work, I was still unable to contact the assigned FAC. Now, every minute of delay in a fighter aircraft means less time attacking something. In mild frustration, I was about to go back to the TACP frequency when I was suddenly contacted by a different FAC suggesting that he could control the attacks. This did not concern me as we have a means of authenticating agencies to ensure that they are not the enemy trying to spoof us. The new

FAC correctly responded to my authentication request and I was more than happy, and ready, to proceed with the mission.

That FAC gave me our first attack instructions and I briefed my wingman on the attack plan in which he would follow me with no less than twenty seconds spacing. In addition to being briefed on some run-in features to use, I was briefed that the target was a headquarters consisting mainly of vehicles along the edge of a wooded area. As required, I advised the FAC when I crossed the IP so that he would be prepared to visually control me into the target. I proceeded inbound and climbed as planned (“popped”) to begin target acquisition. I called “popping;” the FAC acquired me visually and proceeded to describe features to guide my eyes onto the target. Everything to this point was still going as briefed. I acquired the lead-in features, then the section of woods, and finally the target, which were the vehicles along the tree line. I radioed, “contact target” and the FAC, after verifying that my aircraft was pointing towards the target,

transmitted “cleared hot.” I armed the gun and proceeded to fine-tune the firing parameters.

The army has a habit of using camouflage to hide targets making acquisition and recognition, even in the best environmental conditions, very difficult. As I approached 4000’, the target was becoming a little more defined, and I began to feel that something was not right. The telltale “hairs on the back of my neck” stood up, but I wasn’t sure why. It took just a moment longer for the reason to become clear but, in that moment, the gun sight reached the target and I reacted instinctually by squeezing the trigger. Almost simultaneously, I released the trigger, pulled out of the dive, and directed my wingman to stop his attack run.

When my wingman replied “guns safe,” I steered us back towards the IP and advised the FAC of my reason for aborting the attack. I told him that the targets appeared too new and that the vehicles still had canvas. The FAC’s response was that I had attacked the correct exercise target and I was promptly cleared back to re-attack the same target. However, before I had a chance to question this clearance, the TACP came up on the emergency frequency and terminated the exercise. All firing was ceased and all aircraft were directed to return to base.

The flight home was a sombre one for me because, even though it was not made clear as to why the exercise had been terminated, I had a pretty good idea it had something to do with my strafe attack. I made certain not to erase my attack brief, as it may have been the only thing that proved I was where I was directed to be. I was not sure what I had attacked, but I was

certain that it was not an exercise target as the vehicles did not resemble the usual beat up, burned out hulks used for simulated targets.

When we arrived back in Edmonton, my wingman and I were asked to contribute evidence, including bodily fluids, flight notes, and a statement to a flight safety investigation. Shortly thereafter, the details of what happened were released. I had, indeed, attacked a manned observation post. There were approximately fifteen people at the exercise observation post and, fortunately, nobody was hurt. When my aircraft was unloaded, it was determined by the small number of bullets fired that I had held the trigger for less than half a second. The individuals at the observation post estimated that he bullets stopped less than fifty feet from their position. People would certainly have been killed and/or seriously injured had the attack not been terminated.

The investigation determined that the alternate FAC did not have a complete target area brief and, although visual with the observation post, was unable to verify that it was a friendly installation. It has been said that fighter pilots do not see the human aspect of an attack mainly because they don’t see the people in the aircraft, tank, ship, etc. that is being shot at. In this case, although after the fact, I got to meet some of the people that were at the observation post — people that I didn’t kill. We were able to recall the events without a dark side to the story. When asked what made me abort the attack, I could only reply that I wasn’t sure, only that something didn’t look and feel right. It doesn’t sound like much of a reason to abort an attack and I am sure that, like me, they feel extremely lucky that the outcome was as it was. ♦

Major Jaques



AIRCRAFT COMMANDER'S RESPONSIBILITIES

I was reminded about getting back to the basics of flying during a Medevac in the South Pacific. It was night when we launched a Sea King helicopter to New Zealand off of one of the Canadian Frigates. It was to be a 45-minute flight. All of the pre-flight preparations were made and we launched. The clouds were scattered to broken with a base of 5000' above sea level. We were out of range of the navigational aids (navaids), but the navigator gave me a readout using our global positioning system (GPS) and we followed the needle on it. Very early in the flight, I had radio contact with an ATC service ashore and we used them for flight following. Twenty minutes into the flight, I could start to make out land and the lights of the towns. We followed our position on the chart, verified airspace and obstacles, and landed at the airfield.

It was a relatively easy flight considering we were flying at night in a foreign country in an unknown airfield.

We were on the ground for about two hours before we launched to return to the ship. The ship had been closing the island and had given us a course and speed before we had departed. The navigator plotted the ship's approximate position and put the position on the GPS read-out. We launched and again received flight-following services with ATC. The controller said he would have us on his radar screen for a while and we sorted out some procedures for when he lost radar contact with us; hopefully, we would be in contact with the ship before too long. It was very dark out due to the cloud cover, but we had reached the shoreline and

were heading off into open ocean. Things were relaxed.

Over the radio, I heard ATC call us. "Confirm you know you are heading towards an active volcano?" he asked me. "Uhhh, hey Tacco (Tactical Control Officer), do we know we are heading towards a volcano?" The Sea King has a blind spot in the radar directly in front of the aircraft. A slight turn confirmed that we were twenty miles from a land mass and a glance at the chart that had not been looked at since we landed confirmed that it was the volcano. I replied sheepishly to terminal, who then advised me that the restricted airspace was a 5-mile radius. He also said that he didn't have the volcano mapped on his radar scope, but it looked like we were headed in that direction. I thanked him and altered course.



ITIES

The navigator put up a new readout and I realized that I had not even glanced at the chart on the departure.

I assumed that the course would be clear even though I knew that the ship was not in the same place. I had grown so used to working with a crew and depending on the navigator that I never even checked to confirm our position. It is the aircraft captain's (AC's) responsibility to ensure that we don't violate airspace or collide with anything. We passed ten miles around the mountain and I never saw a thing although the volcano showed up very clearly on the FLIR. We all laughed about it, but it did make me realize that is still the AC's responsibility to verify airspace and clearance and it is always a good practice to check your position, especially when flying in unfamiliar airspace. ♦

IMAGINE... THE CFTO WAS VALID!

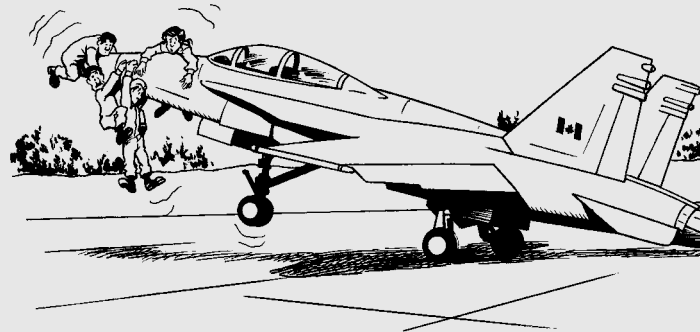
It was the last day of the weapons phase. Morale was high, yet everyone was tired. The jets weren't refueled because we were tasked with removing all of the wing tanks. The process was quick; everyone had their job and knew it well. Most of the jets were done outside while the servicing crews did their checks. They caught up to us and started towing quickly. My partner and I were just about done when the Sergeant came over and told us to finish this one and then to start the gun change on aircraft #774. It was due for its six-month inspection.

This would be our third gun change of the week and we didn't anticipate a problem. Off we went to gather our tools. We located the plane and started. We knew each other well enough to not have to discuss the task at hand. He started at the front and I at the back of the gun. Ten minutes later, we were ready to elevate the gun platform using gun rails so as not to damage either the aircraft or the gun package. Once the platform was in place under the gun, he climbed on the nose and started on the bolts. The first three came out without a problem. As soon as he started on the last one, he complained that it was really hard to unscrew. I, of course, teased him

about not eating his Wheaties in the morning. We laughed and carried on, he was still struggling with the bolt though. Finally, after a few minutes, he said he was just about done.

I took my position under the plane and was ready for the package to be lowered. All of a sudden, I heard a "whoa" from him and the jet raised a good 15 cm. This was somewhat normal, but a little more than expected. We were done, or so we thought, but the jet kept creeping in the nose-up attitude. We were quick to assess that we were in trouble. We screamed for help and had people hang off the nose while we reattached the gun package. That done, we assessed our problem. The note in the Canadian Forces Technical Orders (CFTO) that said "while in a low fuel state, use a tail steady when doing a gun change" was indeed valid. With that sorted out, we finished the job. We learned a few lessons on this particular task and alleviated a most embarrassing moment with a close call. ♦

Master Corporal Proulx



MAINTAINER'S CORNER

To read or not to read the CFTO — Not the right question to ask before a maintenance task!

The following are quotes from Flight Safety incident reports:

"In that the periodic maintenance technician did not install the control panels IAW CFTO references." Cause factor for an incident in which four control panels in a cockpit were installed in the wrong location.

"The tech acting as SKAD supervisor stated [... that he] did not use a checklist..." Excerpt from the investigation narrative of an incident in which the SKAD (Survival Kit Air Droppable) thruster was fired while it was being downloaded.

"In that while training junior personnel, the senior technician did not comply with the requirements of the CFTO resulting in an inadvertent fire bottle discharge." Cause factor in an incident report.

I'm still surprised, when I see a cause factor in a Flight Safety incident report such as the ones above, and invariably, I wonder why that person failed to consult the reference. There must be a valid reason, right? So, in my quest for the answer to that question, I carried out a very informal survey of the people working in my cubicle — hey, there are three of us — and I asked them if they knew what motivates people not to follow checklists or CFTOs. Then, I put together a list of what I think are the top 10 reasons a technician doesn't consult the appropriate CFTO before carrying out a maintenance activity. As you will see, it's not a pretty picture!



10 *Pride*

Normally affects a technician who has been in the job for quite a while and has been assigned to work on a task with personnel as experienced as he/she is. The technician has too much pride and doesn't want to appear "weak" in front of his/her peers by consulting the CFTO.

9 *Laziness*

In this case, the CFTO is located at the other end of the hangar and the lazy technician just doesn't want to walk all the way there to pick up the book and look up the information.

8 *Overestimating own memory*

This technician has done the job many times and perfectly remembers (he/she thinks so, anyway) the procedure to be carried out: the 35 steps to do, the 15 torques to apply, the 8 parts to replace and the 3 pieces of special equipment required for the job. I sure wish I had a memory like that!

7 *Misplaced trust*

The trusting technician believes that the information in the CFTO is set in stone and never changes therefore the CFTO doesn't need to be consulted because he/she remembers it all (see number 8). This is often seen in technicians working on older fleets. For the lucky technicians working on newer fleets, this different breed of trusting people thinks that print-out copies are good forever, no matter how long they have been in the person's coveralls.

6 *Lack of confidence in the reference*

This is the opposite of number 7. The experienced technician is aware of an inaccuracy in the CFTO, for example a particular procedure is wrong, but he/she knows the right way so why bother to get the book. The question I always ask is: "How come nobody initiated a publication change request to fix the CFTO?"

5 *Allergic to computers*

This is a tricky one. Most technicians nowadays are familiar with computers and can navigate their way through basic programs but some are still resistant to the fact that quite a few CFTOs are now on CD ROM. Technicians allergic to computers will have to take their pills and get familiar with the program.

4 *More portable references available*

The clever technician has everything he/she needs in the handy little black book (torques, WUC, part numbers, etc.) The problem is that those little black books don't get amended when the CFTOs are updated.

3 *Physical condition of the CFTO*

The pages are worn out or dirty, and the book is unreadable. Soon that won't be a problem. See number 5.

2 *The book wasn't where it should have been*

It wasn't on the shelf, and the harried technician just doesn't have the time to go and look for it. (The dog ate my homework syndrome!)

And the Number **1** *reason*

Just plain not caring

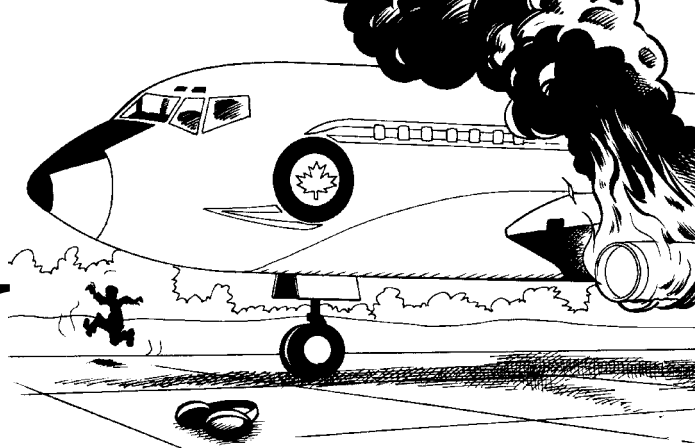
The technician is having a really bad day. All the previous reasons contributed to a really bad PER. So, why bother!

All these reasons seem pretty funny, don't they? Although they were meant to be somewhat humorous, I don't think they are completely fictitious, unfortunately.

I will not tell you to consult the CFTO when in doubt because, most of the time, a person is convinced that he/she knows the right procedure and therefore doesn't need to look up the reference. Of course, when problems surface later, the person then realized that one's memory is often unreliable. Save yourself some grief, not to mention the ulcers and regrets that may follow an incident or — God forbid — a fatal crash caused by a lack of professionalism. Make it a habit of having the CFTO with you or close by and using it. It's also a good way to train apprentices because if you do not use the references to train inexperienced technicians what do you think they will do when, later, they will be training themselves? Good practices starts early on in someone's career. You can even use my list as a "what not to do" tool! ♦

Sgt Anne Gale
DFS 2-5-2-2

Empty Headset



As a brand new TQ3, Aero-Engine technician Private, my first exposure to flight safety came early in my career. About a month into my first posting, I was thrilled to be tasked as part of a B-707 Post-Maintenance Inspection run-up team.

Prior to the run-up, the Master Corporal reminded us that the engines on this aircraft had a tendency to torch on start-up, but that it would blow itself out so not to worry. When these engines are idle for long periods, there is a tendency for fuel to pool in the bottom of the combustor section and a torching condition could exist. The average maintenance inspection duration was two weeks, so torching was not considered unusual.

The preparations went smoothly; we towed the aircraft to the run-up site and were soon ready to proceed. A senior private and I were the ground section with a Master Corporal, a Corporal and another Private completing the cockpit crew. The senior Private manned the communications headset while I prepared to do leak checks of the engines during the start. Once the four engines were started and stabilized, the cockpit Master Corporal would relay trim information to the Private on the communications set.

Trimming involves using a long Allen-key tool to adjust the minimum and maximum fuel settings in the engines fuel control unit. This procedure is much like adjustments made on a car's carburetor. The member on the communications set would then relay trim information (as to which engine and what adjustment) to me through a series of hand signals.

The signal was given to start the #2 engine. I was positioned by #2, watching for leaks and any other start abnormalities. As advertised, the engine torched. A fireball exited the tail pipe of the engine and the flames were continuous. Being a "first timer," I was a little afraid, but confident that the experienced members had it well in hand. I watched for what seemed like an eternity and the flame was still present. Unsure if this was normal, I looked towards the front of the aircraft to the member on the headset for reassurance. Imagine my surprise when all that I could see was an empty headset!!! Now I was just plain afraid!

I ran to the front of the aircraft and jumped up and down while attempting to signal "fire on #2 engine." The cockpit of this aircraft sits up high so, needless to say, it was hard for them to understand

my frantic signals. The Master Corporal was signaling for me to put the headset on so we could communicate. He kept calmly placing his hands over his ears until it registered with me. I ran to the headset, placed it on and rapidly told him there was a fire and the flame was still there! He aborted the start and motored (restarted with external air) until the engine temperature was sufficiently cooled.

During the motoring he asked where the member on the headset was. I told him to look across the field. The member had crossed the entire field and was just entering the hangar when we spotted him. Needless to say, the run-up was cancelled for the day while this mess was sorted out. What seemed like an eternity was, in reality, only a few **long** minutes.

The potential for an accident was high. The bottom line lesson was: Know your people! Talk to them, ensure that they know the plan and are confident enough to handle unusual situations. Will they panic? Are they ready to train new people? Only you can make that judgment. Avoid the "empty headset!" ♦

Sergeant Lecaine

Convenience...

Does it Cost Time or Save Time?

Five years ago, I was one of two technicians en-route to Victoria with a Challenger from Greenwood. I had been fully qualified to do all trades after-flight ("A") and before-flight ("B") checks for three years and considered myself to be quite proficient and thorough. There was one planned stop along the way in Brandon, Manitoba where we would refuel and carry out a combined "AB" check. The other technician and myself had decided, before landing, that he would do the airframe check and refuel while I checked the engines.

During the engine check, I discovered that the # two engine was short of oil by approximately one litre. This was quite normal for the Challenger and it would have been fine to wait until our arrival in Victoria to top it up. I decided to do it right away though, so that we would have one less thing to do at the end of the day. Adding oil to the # two engine on the Challenger is not an easy task as the reservoir is on the inboard side of the engine and the fill point is on the outboard side. The common practice while replenishing the oil was to place the filler cap/dipstick beside the filling point by sliding the dipstick portion through some plumbing. This was much easier than getting down from the ladder and placing it on the ground. After five or ten minutes of slowly getting oil into the reservoir, I closed

up the cowlings and stowed the ladder back on board. We then proceeded on to Victoria where once again I began the "A" check. When I opened the number two engine cowling, there was a lot of oil covering the inside of the cowling. I immediately looked at the engine oil fill-point and saw the cap/dipstick exactly where I had left it.

The engine had lost about four litres of oil, which luckily was not enough to cause any problems, although it took a long time to replenish. Would I have forgotten to replace the cap if I had put it on the ground instead of conveniently placing it in a location that was not readily apparent? Probably not! Convenience can create serious safety problems and, sometimes, costs more time than you tried to save. ♦

Corporal Martin



Don't Get Trapped

I had been called to the Buffalo maintenance hangar to assist technicians with some pre-maintenance functional checks. As an electrician, we worked on both Buffalo and Labrador maintenance. As the Labrador was conducting test flights over the last few days, the majority of my time lately had been spent in that hangar.

As I entered the Buffalo hangar, I noticed that the floorboards had already been removed and routed to refinishing and the temporary floorboards had been installed. "WOW, fancy new flooring," I remarked to the crew chief. The old black matting we had been using for years to prevent tripping and splintering at the joints of the temporary floorboards, had been replaced with new, blue, anti-static matting. "Only the best for you!" he remarked.

After a quick briefing, we went to work. I would carry out the functional check from the cockpit while fellow

technicians would confirm proper operation of components elsewhere. During the process, I was called to the cabin of the aircraft to help identify system components for the airframe techs. As I made my way towards the aft cabin with my eyes searching upwards for the elusive component, I could see that I was coming close to the end of the temporary floorboards. Nearing the valve we were seeking, I stepped on the last foot of matting. To my surprise, my body kept going down until I reached the outer skin of the aircraft and my shins contacted, and were cut by, the next stringer. I must have looked like a stringed puppet gone mad; my body tilted 45° forward and my arms were flailing in vain, reaching for something to support myself that wasn't there.

Quick chuckles from my fellow techs were short-lived as my predicament became clear. I was assisted out of the hole and heart-felt apologies ensued. It seems that the matting was two feet longer than the temporary floorboards and had not yet been trimmed. I gladly accepted the apologies, as it felt much better than the embarrassment that was welling up inside me.

Looking back, I can see a number of lessons to be learned from my incident. Whether you reach for a handhold that has been removed, step for a platform that is no longer there, or fall through a floorboard that isn't there, there is one common factor we have to consider. We must remember that as maintainers, during the first stage of periodic inspections, we are subjected to rapidly changing work environments. Don't get trapped by what you think should be there! ♦

Sergeant Rowlands





Enough is Enough!!!!

I was an avionics (AVS) technician in 423 Squadron located in Shearwater, Nova Scotia. It was the last night for Headquarters (HQ) Detachment to be on night shifts for this week. I expected it to be like every other evening shift, with the usual routine: recover flights from the dayshift, gas, wash, and repair snags; repeat if necessary, etc. The one difference was that we had been working very long hours for the last week preparing the helicopter air detachments (HelAirDets) for a deployment down south. Being short-staffed like every other unit in the Air Force, we were all tired and happy that Friday was finally upon us. Surprisingly, there was only one flight scheduled for that evening and six of the seven Sea King helicopters were serviceable. Amazing! “Too easy,” I said to the Corporals working with me, “we’d be out of here by 1900.”

Boy, was I wrong; very quickly, things were changing! All we had to do was tow out one helicopter to launch and later recover. We got it outside and it went unserviceable on start. It wasn’t a big problem as we had five more serviceable in the barn. So, we towed out the second one. It was a cold night and, apparently, the Sea King does not like going from a warm hangar to a cold flight line. No problem, there were still four more left! At

this point, I was starting to wonder how important this one flight was. Patience amongst the troops was growing thin.

Back in the hangar, we were researching the snag on the first Sea King we towed out. CRACK!!! There was a loud bang and one very confused technician. The portable power unit had exploded when he applied power. It took the lights out in the entire hangar; fortunately, there was no injury to the technician, other than a good scare. Now, things were deteriorating. We still had not launched a helicopter and we were in the dark with three unserviceable Sea Kings. Not bad for only being at work for one hour!

We hit the hangar with the next helicopter we tried to get out the door. Four down, three to go! Back in it went for a blade tip change. We hitched up to the fifth Sea King and broke the tail wheel steering pin. Five down! At this point, it was time for a meeting of the minds in the centre of the hangar floor to discuss the already deteriorating situation. As I was discussing the events with my Master Warrant Officer in front of a Sea King that was originally unserviceable for a flight control problem, an AVN technician was having a hard time getting the cyclic stick to come off on the pilot’s side.

Well, he got it off; unfortunately, his follow-through was a little too far and he punched a hole in the pilot’s window.

It was at that point that the Master Warrant Officer made a sound risk assessment decision based on the current situation and stood down our crew for the night, before somebody got seriously hurt or we broke any more helicopters. He sure had to explain that decision the next day when the crew came in to see six unserviceable Sea Kings when we had only one flight.

Complacency? Yes. Pressing? Yes. Can do attitude? Yes. Bad luck? Yes. Poor judgment? Yes. Did we mean for all that to go wrong? NO! With today’s limited resources, limited manpower, and quickening ops tempo, sometimes you have to step back and realize the limitations ahead of you and say “enough is enough!!!!” ♦

Lieutenant Tulloch

I LEARNED

In a training exercise, our flight of four CF-18's was poised to sweep through our area of responsibility, a specified airspace north of Bagotville, Quebec. Offensive counter air(OCA) operations are one of the many roles the CF-18 can be tasked with and, as such, we practice whenever possible. That day, I was having electrical glitches during start-up and I was also seeing some rather unusual indications in the heads-up display (HUD). Apart from these apparently minor glitches, the ground checks all appeared normal and functional, so I decided to continue on, what was to become, an exciting mission.

I was number four in our formation and was also the least experienced. We were in our allocated airspace in a battle formation, where all four aircraft must be within two miles of each other. This formation requires good observation on the part of the pilot, both to detect other hostile aircraft and to avoid the other three aircraft in the formation. The aerospace ground control intercept (GCI) controller had informed us of possible targets north of our position. Our formation was subsequently divided in half, with the first pair tracking northwest and our pair tracking northeast. After my lead and I had split off from the main formation, I felt able to



ABOUT FLYING FROM THAT

effectively employ my Air-to-Air radar to gain some situational awareness (SA) on the position of the targets. Maintaining my position at a mile and a half abreast of my lead, keeping track of my radar contacts, and executing various changes in heading were occupying a good part of my concentration.

While airborne, I had initially experienced several anomalies with the HUD, but they had yet to restrict me from carrying out my task. As the flight progressed, it became quite clear to me that the HUD was degrading — I had lost several important displays including the heading display. All of the digital

readouts for heading were superimposing themselves on the previous numbers and therefore became illegible. Several changes in heading, my efforts to maintain position relative to my lead, and my ongoing radar analysis had all contributed to a lowered awareness as to which direction our formation was headed.

There were five of us on our radio frequency including GCI, and I was having a hard time keeping up with where everyone was and what they were doing. One radio transmission came through clearly to me — GCI was telling my lead and I of a threat “bearing 040, no range given.” From one and a half miles away, an ingeniously painted CF-18 can deceive even the most familiar. You may have noticed that Canadian Hornets have a false canopy painted underneath the real one. This can make it difficult to distinguish which side you are looking at — the top or the bottom. Specifically, at a glance from 9000 feet away laterally, it can be very difficult to assess which direction the aircraft is turning — towards you or away from you.

My primary heading indicator was malfunctioning and I assumed that we were traveling roughly north. In fact, we were tracking eastward. When the “snap” (turn to target) call came from GCI, I observed my lead in a turn. I reacted by turning towards where I thought the threat was. Because of my directional assumption, I turned **right** towards what I thought was the direction of

the threat. My lead, on my right, turned in the correct direction, which was to his **left** bearing 040. You can see where this is going. I gave myself several seconds of “heads down” time while in the turn to adjust my radar parameters. When I looked up, I saw that I was on a near collision course with my lead. I pushed my nose down and missed his aircraft by roughly one thousand feet vertically.

I learned several lessons from this mission. I discovered that putting my head down to adjust my radar parameters while in a turn reduces the amount of time needed to avoid a collision. I also realized that maintaining visual contact with the lead aircraft, while manoeuvring, is a longevity-guaranteeing procedure. With respect to my HUD failure, I should have attempted to use other directional references that were functioning and available, such as my Horizontal Situation Indicator (HSI). Finally, I understood that a supposedly minor electrical glitch might contribute to reduced situational awareness. By accepting a less than ideal aircraft, one must account for the additional distraction.

Sometimes the mission may dictate the use of a degraded aircraft system, but we must respect the extra diversion caused by the malfunctioning system. In the extremely dynamic environment of the CF-18, distractions or systems that deplete SA can reduce one’s life expectancy. ♦

Captain Rennison



EPILOGUE

Aircraft Accident Summary

TYPE: Cessna L-19 (305) C-GRGS

LOCATION: Campbell River, BC

DATE: 17 June 2001

The aircraft was being flown in support of the Tow Pilot Conversion Course at 19 Wing Comox. The instructor pilot was a Civilian Instructor (CI) with the Air Cadet organisation. (The expression "Civilian Instructor" denotes a person that is hired by the Cadet organisation but that is not recruited into the Cadet Instructor Cadre (CIC) and does not wear the uniform). The student was a CIC officer and a staff member of the Pacific Region Gliding School. On the day of the accident, the crew performed some circuit work at Comox before proceeding to the Campbell River airport for some more circuit work at a less familiar airfield.

On the third landing on runway 29 at Campbell River, the aircraft experienced a "ground loop" and exited the paved surface to the right. The aircraft came to rest on its nose slightly off the pavement, 500 feet from the threshold. The crew exited the aircraft through the main door and were uninjured.

The aircraft received B Category damage. The landing gear leg was bent inward allowing the wheel hub to make contact with the ground. There was also extensive structural damage to the landing gear attachment points inside the fuselage. The left wingtip and the nose areas were damaged when the aircraft came to rest on its nose. The aircraft has since been repaired by a local contractor and has been returned to service.

This accident was caused by the student not adequately controlling the aircraft yaw on landing and allowing a ground loop to develop. The instructor's hands were not near the controls and, although he was able to prevent the aircraft from yawing further to the right, he was not able to recover it before exiting the runway surface.

The presence of a slight quartering tailwind over the runway threshold initiated the ground loop. The fact that the student did not have the required minimum experience did not allow her to recognize the impending ground loop in time and to instinctively take corrective action.



The strong performance of the student on the course combined with the instructor being unaware of her low experience lulled the instructor into a false sense of security and led him to lower his guard during a critical phase of flight.

Other factors were identified during the investigation which led to the following recommendations:

All Regional Cadet Air Operations Officers ensure that students' qualifications are checked at the beginning of courses to ensure that candidates that were expected to meet the minimums before the start of the course did get the additional experience they required.

All Regional Standards Officers regularly remind their instructors that even strong students can very quickly bring an aircraft to the point where immediate action is required to recover. Keeping one's hands close to the controls, especially during critical phases of flight, is the best way to ensure that one can quickly recover from such mishandling.

All Regional Cadet Air Operations Officers regularly remind all their pilots of the medical requirements outlined in the B-GA-100 and the A-CR-CCP-242. More specifically, the requirement to consult a Flight Surgeon or a Canadian Aviation Medical Examiner before taking any medication, including over the counter drugs.

DAEPM (TH) and DRDC Toronto/ALS (DCIEM) research the feasibility of procuring and approving a helmet for use in the Air Cadet tow aircraft. ♦

EPILOGUE

Aircraft Accident Summary

TYPE: Bell 206 Jet Ranger

LOCATION: Namao, AB

DATE: 10 October 2001

On 10 October 2001 a civilian registered Bell 206 Jet Ranger (C-GBXK), operated by 408 Squadron crashed while practicing an extended range autorotation. The pilots received minor injuries and the aircraft sustained "A" category damage.

The flight was a proficiency trip for two squadron pilots. The Aircraft Commander (AC) was a Qualified Flying Instructor (QFI), and the co-pilot was a 408 Sqn Regular Force rotary-wing pilot awaiting the CH-146 conversion course. The flight began with a navigation route and culminated in a series of autorotations to a grass strip adjacent to an abandoned runway at CFB Edmonton. On the fifth and final autorotation, the QFI attempted an extended range autorotation to the grass strip.

The 'Extended Range' autorotation is an emergency procedure designed to maximize the distance travelled during autorotative flight. Crews practice this manoeuvre for the express purpose of extending the gliding distance in order to reach a suitable landing area. The pilot will enter the manoeuvre by rolling the throttle to idle and lowering collective. The aircraft attitude is adjusted to achieve 69 knots and the collective set to maintain 90–107% Rotor RPM (RRPM). In practice, the collective is raised to reduce the RRPM as close as possible to the 90% end of the RRPM range, as this maximises the distance covered during the autorotation. Once the pilot judges that the landing spot will be made, the speed and RRPM are adjusted to meet the requirements of the 100 foot check: area made, RRPM in the green (90–107%), airspeed minimum 50 knots (60 kts desirable) and bank, drift and crab are eliminated. If any of these parameters is not met, an overshoot must be initiated. The normal descent rate for an autorotative glide in the Jet Ranger is 1500 feet per minute or 25 feet per second. The time from the '100 Foot Check' to touchdown is thus only 4 seconds. The purpose of the '100 Foot Check' cannot be overstated; it allows sufficient time and altitude to safely recover if the aircraft is not in a position to land.



The QFI made a late decision to overshoot and did not effectively execute either the overshoot or an autorotative flare and landing. The aircraft hit the ground very hard, in a near level attitude with at least 69 knots of speed. It slid along the ground for approximately 60 feet then became airborne again due to flight control inputs. As the aircraft came off the ground the QFI applied aft cyclic to reduce speed and, coupled with the low rotor RPM, this caused the main rotor blades to sever the tail boom. The helicopter lost tail rotor thrust, rotated about its vertical axis through 720 degrees, hit the ground a second time and then came to rest on its left-hand side.

Although the fire trucks were on scene within 3 minutes, the medical response was delayed due to communication problems within the base. The crash bells were not functioning in the hospital and the ambulance had difficulty getting clearance to enter the airfield. Had the crew been more seriously injured this could have proved fatal. The Squadron and Base have since rectified these deficiencies.

The co-pilot had been assessed as too tall to fly the Jet Ranger and was required to use a modified (thinner) seat cushion when flying the helicopter. The investigation revealed shortfalls in the tracking of aircrew anthropometric restrictions and the standardisation of seat configuration in Jet Ranger aircraft. 1 CAD is pursuing a more efficient means of achieving this.

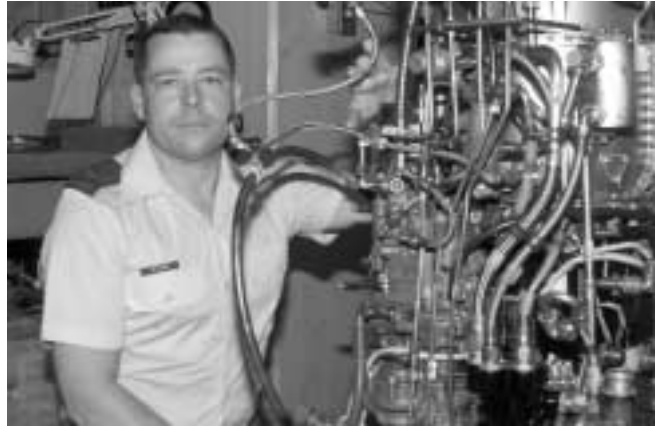
Pilots tread a fine line between success and failure when practicing autorotations to touchdown, but rigid adherence to meeting the parameters of the 100 foot check will tip the balance significantly in their favour. ♦

GOOD SHOW

CORPORAL ANDREW BILLARD

Corporal Billard is an aviation technician (AVN) employed in the Integrated Health Monitoring section at 12 Air Maintenance Squadron (AMS) Shearwater. On 26 March 2001, he was carrying out a filter debris analysis on a main gearbox torque meter filter removed from Sea King aircraft #124412, located at 443 Squadron in Patricia Bay, British Columbia. During this check, Corporal Billard noticed a washer in the filter contents, that is normally installed internally as a critical component of the aircraft filter bowl and stud assembly, packaged with the filter. Suspecting the washer was part of the hardware stack-up for the torque meter filter from aircraft #412, and knowing the potential repercussions, he immediately contacted 443 Squadron by phone with his findings.

At the time of the phone call, the aircraft was taxiing for a ferry flight to HMCS Regina where it would join the helicopter air detachment deployed for 3 1/2 months as part of Pacific Exercise 01. The aircraft was radioed to return to the squadron and was shut down for an inspection of the torque meter bowl filter assembly. The inspection confirmed



Corporal Billard's suspicions that the washer was missing from the aircraft filter assembly.

Had the omission of the washer gone undetected, catastrophic loss of lubrication oil from the main gearbox could have occurred. As a result of his keen sense of responsibility, prompt decision-making, and exceptional professionalism, Corporal Billard was responsible for the discovery of a serious flight safety hazard and for averting the failure of a system that has resulted in the loss of several Sea King aircraft in the past. ♦

CAPTAIN JEFF TUPPER



Captain Jeff Tupper is a student on the Maritime Helicopter Tactical Officer (MH Tacco) Course at 406 Maritime Operational Training Squadron. On 28 February 2002, he was acting as "hook up" man for a sling-exercise on the CH-124

Sea King helicopter. As the aircraft was in the hover, approaching the load, Captain Tupper noticed the tail wheel swaying back and forth in a manner that suggested it was out of allowable tolerances. Captain Tupper brought this to the attention of the Aircraft Commander (AC) after returning to the aircraft and subsequently recommended that the technicians inspect the tail wheel prior to the planned hot fuel/crew change (CC) about to take place.

A technician was summoned after landing and pronounced the tail wheel as serviceable, after which Captain Tupper pointed out that this problem was only visible with the weight off the wheels. Captain Tupper pushed this point with the AC and, as a result, after completion of the CC, technicians accompanied the aircraft in a ground vehicle to inspect the tail wheel in the hover. The technicians found the tail wheel to be out of tolerances and the aircraft was shut down.

Further inspection revealed that the spacer assembly at the junction of the yolk and tail support was worn, requiring eight hours of maintenance to correct the problem. Captain Tupper is to be commended for his persistence in pursuing a problem that could have lead to aircraft damage or injury of personnel. ♦

GOOD SHOW

CORPORAL STEPHEN BIRD



Corporal Bird is an Aviation (AVN) technician with 431 Air Demonstration Squadron. On 15 June 2001, while carrying out an engine start on a CT-114 Tutor "Snowbird" aircraft, the smoke tanks pressurized and the smoke system activated automatically. One of

the smoke indicators was not properly seated, which caused 28 volts of direct current to short across the connector pins and the smoke valve to open.

The pilot unsuccessfully attempted to shut down the generating system, and then proceeded to shut down the aircraft. However, with the smoke

tanks still pressurized, diesel fuel was being sprayed onto the hot jet pipe, thus igniting a fire. As Corporal Bird approached the side of the aircraft with a fire extinguisher, he noticed flames coming from the area of the exhaust. He also observed the smoke nozzles still spraying diesel fuel, thus feeding the fire. He immediately moved to the smoke tank under the aircraft and activated the pressure relief valve. By releasing the pressure in the smoke tank, the diesel fuel stopped supplying the fire and the flames went out. The fire department arrived and the area was secured.

Corporal Bird's outstanding situational awareness and quick actions prevented a potentially serious accident and the potential loss of an aircraft. ♦

GRIFFON 146451 CREW

LIEUTENANT COLONEL JIM SULLIVAN
CAPTAIN PETER DOHERTY
MASTER CORPORAL JIM SOMERVILLE

On 10 September 2001, Lieutenant-Colonel Sullivan, Captain Doherty, and Master-Corporal Somerville were on an aerial reconnaissance mission aboard a Griffon helicopter. They were only three hundred feet above the ground when a strong shudder was suddenly felt in both the tail rotor pedals and the airframe. Lieutenant-Colonel Sullivan, who was the aircraft commander (AC), recognized the shudder to be a serious problem with the tail rotor and immediately lowered the collective and initiated a rapid descent. During descent, the shuddering ceased.

During descent, Captain Doherty, the first officer (FO), initiated a "PAN" call on the radio while Master-Corporal Somerville, the flight engineer (FE), opened the cargo door and called out heights and distances to the intended point of landing, as briefed by Lieutenant-Colonel Sullivan. As the Griffon approached the recently harvested surface of a field, Lieutenant-Colonel Sullivan flared the helicopter and reapplied power for the level-off and landing. At this point, the shuddering recommenced in proportion to the amount of collective being raised. Due to the loss of tail rotor control, Lieutenant-Colonel Sullivan applied full left pedal



deflection but to no avail. Following the emergency checklist response, he then ran the aircraft onto the field with forward speed. However, to prevent the aircraft from rolling to the right while it slid over the ground in a 45-degree arcing circle, Lieutenant-Colonel Sullivan followed the helicopter's movement with the cyclic control until the aircraft slid to a stop. With the strong shudder still evident, the crew shut the Griffon down. Upon exiting the aircraft, Master-Corporal Somerville inspected the tail rotor and discovered that one of the two tail rotor pitch links had sheared.

From the onset of the emergency through to the final shuddering stop of the helicopter's forward motion, this crew combined their efforts into quick and decisive actions. The quick analysis and outstanding airmanship demonstrated by the crew helped prevent a serious accident and the possible loss of life. The levels of skill and crew cooperation are truly commendable. ♦

**MR. ROBERT BLIZZARD
MR. MICHAEL MEALEY**

On 14 January 2002, DEMMN, a Cessna 210, departed from Goose Bay and experienced an electrical failure shortly after take-off. The pilot advised Mr. Mealey, the terminal controller, that she had lost the attitude indicator, altitude indicator, airspeed indicator, vertical speed indicator and compass. The weather sequence at the time was "one mile visibility in light snow with a vertical visibility of 800 feet." Mr. Mealey recognized the seriousness of the situation and constantly updated the pilot of her Mode-C altitude readout and instructed her to maintain straight and level flight. While Mr. Mealey declared an emergency on behalf of the pilot, Mr. Blizzard, the duty ground controller, was informed of the incident and was requested to proceed to the radar and terminal control (RATCON) building to conduct a precision radar approach (PAR) to recover the emergency aircraft. Since PAR services are normally only available with 48-hours notice during winter operations, Mr. Blizzard hurried to the RATCON and verified that the PAR was aligned and serviceable for an approach to runway 08.

While waiting for Mr. Blizzard, Mr. Mealey briefed the pilot about a "no compass" approach and instructed her to climb from 3400 feet to 7000 feet to provide more manoeuvring room in the event of any control problems. A plan to take the aircraft on a long downwind leg was calmly discussed with the pilot. To give the pilot sufficient distance to get used to a set descent rate, the aircraft was



positioned for a 25-mile, no compass, PAR final approach. The Cessna 210 pilot had difficulty maintaining altitude and a level attitude, but Mr. Blizzard calmly guided her, ensuring that no severe pattern corrections would be required. Mr. Blizzard's steady and frequent advisories kept the plane on an effective flight path, permitting a successful landing forty-six minutes after the emergency was declared.

Following the incident, the experienced ferry pilot (5000+ hours on sixty-four different aircraft types) and her passenger visited the ATC staff to voice their gratitude. She said, "Weightlessness in a C-210 was not something she wanted to experience and hoped she wouldn't ever experience it again." She also said that only two things saved their lives: one — she had experienced a similar failure only two weeks before (in a different aircraft and in VMC) which helped her to get the "feel" of the aircraft; and two — the calm voices and expert control technique of both Mr. Mealey and Mr. Blizzard.

Mr. Mealey and Mr. Blizzard are very modest about the role they played in this incident. Their control expertise, calm demeanor, and teamwork undoubtedly averted a tragedy and saved one aircraft and, more importantly, two lives. ♦

CAPTAIN ROBERT REICHERT



On 7 January 2002, Captain Reichert, Snowbird 9, took off from 15 Wing Moose Jaw accompanied by Snowbird 8 to practice some two-plane solo maneuvers. Several head-on crosses were completed without incident before the pilots prepared to execute a "cross to a half-roll to inverted." Captain Reichert's aircraft was 500' above the ground (AGL) and traveling at a speed of 300 knots. He completed the half roll to inverted move, establishing approximately negative 1 G. After two seconds of inverted flight, the lap belt in Captain Reichert's aircraft came undone, releasing him from the seat and throwing him headfirst into the canopy.

The force of the contact caused Captain Reichert to let go of both the control stick and the throttle and left him pinned to the canopy ... inverted at approximately 500

**CAPTAIN CRAIG ROBERTSON
CAPTAIN KARYNE FRAMAND
CORPORAL DARLENE ARSENAULT**

On 5 January 2002 at 1605 hours, Captain Robertson, the duty Aerodrome Controller at 4 Wing Cold Lake, received a call from a Cessna 172 with two passengers on board enroute to Cold Lake Regional Airport (EN5) on a visual rules (VFR) flight plan. When the plane was forty-three miles west of Cold Lake, the pilot contacted Air Traffic Control (ATC) and was advised that the visibility at Cold Lake was twelve miles and the ceiling was only five hundred feet. The Terminal Controller, Captain Framand, after receiving a thorough brief from Captain Robertson, radar identified the civilian aircraft and confirmed their intentions to land at EN5. Captain Framand asked the pilot if he was instrument (IFR) qualified and the pilot advised of limited IFR experience (20 hours total) with no IFR rating.

The pilot, with assistance from ATC, made several attempts to maintain VFR and proceed to EN5 but was unable. Without success, the pilot reluctantly decided to proceed to Lac La Biche, the closest airfield that had meteorological conditions suitable for a visual approach (VMC). It was at this point that the pilot recognized that the aircraft was very low on fuel and would not be able to make it to Lac La Biche. Captain Framand, sensing the uncertainty in the pilot's voice, suggested that the pilot conduct a precision radar approach (PAR) to Cold Lake and, once the airfield was in sight, proceed special VFR (SVFR) to EN5. The pilot had never flown a PAR but, at this point, options were

feet AGL. Initially disorientated, he promptly recovered, assessed the situation and immediately took action to correct what had very quickly become an extremely precarious and dangerous situation. With the aircraft now in a descent, and fully aware that ejection was no longer an option, he reached down into the cockpit and forced the control stick to the left, rolling the aircraft upright. This action allowed him to tumble back into the ejection seat. Unfortunately, however, the seat pack had come fully out of its retainer and was now caught on the front of the ejection seat. As a result, Captain Reichert was positioned in an extremely difficult attitude, hung up on the ejection seat and forced forward in the cockpit.

With the ground fast approaching, Captain Reichert immediately pulled back on the control stick and



limited. Eight miles downwind of Cold Lake, a very nervous pilot advised terminal that they were "a little low on fuel." Captain Framand acknowledged and switched the pilot over to the final controller, Corporal Arsenault, for the PAR approach. The pilot, not being familiar with and never having flown a PAR approach, was informed by Corporal Arsenault in plain language of what was going to happen and, then, was gently turned to the on-course.

At one mile on final approach, a very surprised pilot reported the airfield in sight and was monitored while proceeding SVFR to EN5. The pilot later reported that the aircraft had 1/8 inch layer of ice over all leading edges and only ten to fifteen minutes of fuel remaining. The pilot sent a letter of thanks to the Wing Commander expressing sincere gratitude to Captain Framand, Captain Robertson, and Corporal Arsenault for a safe recovery under very stressful circumstances. Captain Framand, Captain Robertson, and Corporal Arsenault displayed an excellent knowledge of procedures, exemplary teamwork, and professionalism in rendering assistance to an inexperienced and nervous pilot. Their superb efforts contributed to a successful outcome and quite possibly saved two lives. ♦

climbed away from the ground to an altitude of 300 feet. Only after sufficient altitude was regained was he able to correctly align the seat pack back into position and recover familiar control of his jet. Still suffering from the force of the impact and uncertain as to the extent of his injuries, Captain Reichert declared a physiological emergency and returned safely back to Moose Jaw.

Captain Reichert's quick thinking, skill, and outstanding professionalism in the face of a potentially catastrophic situation, partnered with superb situational awareness, averted a potentially fatal aircraft accident. His truly exceptional performance under incredibly trying circumstances undoubtedly saved his life and his aircraft. ♦

FOR PROFESSIONALISM

CORPORAL KEITH NEWMAN
CORPORAL JAMIE BURTON



While working on a reoccurring crew door snag on Hercules #CC130323, Corporal Burton and Corporal Newman changed over all bushings, hinges, and other hardware.

Although they followed all steps in the Technical Orders, they kept coming up with an “out of adjustment” indication shortly after having adjusted the door.

After having peeled some of the insulation blanket, Corporal’s Burton and Newman realized that something was amiss since the striker for the emergency door jettisoning kept sliding off its assigned position. Believing that a more complex problem existed, Corporal Newman and Corporal Burton went beyond normal maintenance requirements and systematically investigated every operating component of the crew door. Through further

trouble-shooting and excellent investigative skills, these two individuals finally saw that the inside portion of the door handle, an area that you would not suspect in this case, was missing a locking pin. The locking pin not only ensures alignment of the emergency release of the door mechanism, but it also locks the door in place while closed. This snag had eluded many previous technicians from more than one Hercules unit over a lengthy time frame, and the total efforts, at the home unit alone, to rectify this snag had exceeded 129 man-hours.

Their diligence and persistence in addition to their excellent teamwork resulted in the discovery of a very small retaining ring that was missing on the backside of the crew door handle. This missing retaining ring could very likely have led to the door failing to jettison in an emergency or possibly falling off during flight. In either case, a serious threat to the safety of the airplane, crew, and passengers was averted by their actions. ♦

CORPORAL TODD CHEAL



On 29 November 2001, during the preparation of engine #376118 for a maintenance periodic inspection, Corporal Cheal noticed that the expandable pin was unusually easy to install and did not feel secure when locked. When the engine was lowered and inspected,

he noticed that the bushings were missing from the rear mount ring (RMR) assembly of the engine. The engine was returned to second line maintenance, where bushings were installed. Realizing that the bushings are normally installed during third line rework, he took it upon himself to investigate the remaining engines that were in the engine bay. During his inspection, he found two more engines that were missing the bushings.

Corporal Cheal immediately recognized the potential for other improperly assembled RMR’s to exist in issued engines and notified his supervisor and the Orenda technical services representative. His proactive maintenance action led to a 4 Wing local supplementary inspection, resulting in seven engines found without bushings, one of which was installed in aircraft CF 118-784. A risk assessment conducted during the local supplementary inspection concluded that failure of the RMR could result in severe vibration damage and potential aircraft loss.

Corporal Cheal’s outstanding diligence and attention to detail resulted in the discovery of an engine assembly oversight, which could have resulted in a critical in-flight emergency. Corporal Cheal is to be commended for his outstanding professionalism, alertness, and dedication. ♦

FOR PROFESSIONALISM

SERGEANT DEVIN BEAUDRY
CORPORAL CHRIS TOWNSON



Sergeant Beaudry and Townson Corporal both work at the Canadian Forces School of Survival and Aeromedical Training (CFSSAT), at 17 Wing Winnipeg. While passing through another section on the Wing enroute to conduct other business

in the hangar, they observed that oxygen was being used as a supply source to the new Life Support Integrated Test Set (LSIT-1A).

Having a suspicion that this was improper, they decided to investigate. Sergeant Beaudry referred to the GENTEX technical manual that states that

“the test set requires a pressurized source of breathing air.” The Directorate of Technical Authority (DTA) was notified, and a priority message was sent out informing personnel that the use of oxygen with the LSIT-1A should cease immediately. The consequences of using oxygen with a piece of electrical equipment that has not been certified “intrinsically safe” could have had catastrophic results.

Sergeant Beaudry and Corporal Townson were not present at this unit as part of their normal duties; they were simply passing through when they observed this potentially dangerous situation. Sergeant Beaudry and Corporal Townson are to be commended for their initiative and their actions that resulted in the elimination of a significant flight safety hazard to both aircrew and ground crew. ♦

CORPORAL MARC THIBODEAU



Corporal Thibodeau, a non-destructive testing technician with 3 Air Maintenance Squadron Bagotville, was preparing a hydraulic fluid sample for analysis. During his preparation for particle analysis, Corporal Thibodeau noted an abnormal amount of

foaming in the supplied sample. This observation was not part of his normal duties. He immediately contacted the technician that had taken the original sample and asked for a second sample from the test stand. Using foresight, he also acquired a full can of fluid from the batch that filled the test stand and one from another batch. He compared the samples and concluded that the suspect batch of hydraulic fluid was foaming excessively.

Not being equipped to measure the degree of foaming, Corporal Thibodeau arranged for priority courier shipping of samples to Quality Engineering Test Establishment (QETE), all within the same working day of his initial findings. The tests returned from QETE confirming the suspect batch was indeed at fault, foaming in excess of 400 percent. Subsequently, the hydraulic fluid was quarantined and all suspect aircraft and test stands underwent extensive verification for contamination.

Corporal Thibodeau’s professionalism, attention to detail and quick actions prevented the possibility of further damage and the potential for a serious in-flight emergency. The outstanding initiative displayed by Corporal Thibodeau undoubtedly contributed to the protection of valuable resources, the most precious being human life. His immediate and decisive actions coupled with a rapid assessment of a complex set of factors played a key role in the effectiveness of the flight safety program. ♦

CORPORAL JEFF PHINNEY



On January 14, 2002, Corporal Jeff Phinney was called to assist a CT-114 Tutor pilot who was experiencing difficulty in securing his lap belt. Corporal Phinney is an aviation (AVN) technician who works at Aerospace Engineering Test Establishment (AETE).

Upon his arrival, the pilot had appeared to rectify the situation and was preparing to depart on his mission.

Corporal Phinney, who was aware of arming key problems with this particular type of lap belt, asked to further inspect the lap belt buckle assembly, as it appeared to him that it was not positively secured. Instructions to the pilot to give "a good

tug" on the belt resulted in it's coming apart. The arming key was removed from the belt and replaced with a serviceable item and the mission continued without further incident. Had the flight continued without Corporal Phinney's insistence on a thorough inspection, the lap belt would likely have separated in flight. An identical situation had occurred earlier in the year with a 431 Demonstration Squadron aircraft, and the pilot and seat contents were literally thrown into the canopy when the lap belt separated in inverted flight.

Corporal Phinney's outstanding technical knowledge and his remarkable ability to recognize subtle clues were instrumental in preventing a potentially serious in-flight emergency. Thanks to the alertness of Corporal Phinney, his professionalism and prompt actions averted a possible loss of an aircraft and crew. ♦

CORPORAL RICK DOLHAN



In May 2000, while going through the minor snags on Hercules #341, Corporal Dolhan, a maintenance technician, found one that had not been fixed from the previous day. The snag was written up as "#4 engine oil temperature reads 55-60 degrees at flight level 250, and all other engine oil temperatures

read 75-80 degrees." According to the Canadian Forces Technical Orders (CFTO's), the oil temperature bulb needed to be replaced.

Corporal Dolhan located a spare temperature bulb and replaced it. In the process of replacing the bulb, a very small amount of oil spilled from the

engine. As Corporal Dolhan began wiping up the spilled engine oil, he decided to open the lower right-hand engine cowling to check if any oil had spilled down there. While looking for the oil, he noticed that the canon plug for the temperature datum (TD) system electrical harness looked like it was pulling away from the junction box. Upon closer inspection, he realized that the four mounting screws for the canon plug had pulled through and the only thing holding the plug to the function box was the lock wire on the canon plug. Corporal Dolhan alerted his supervisor and the aircraft was declared unserviceable until the harness could be replaced.

Thanks to the diligence of Corporal Dolhan in carrying out this routine maintenance task, his professionalism and attention to detail prevented an aircraft incident or worse. ♦

FOR PROFESSIONALISM

PRIVATE JEAN MARC LEVESQUE



On 21 November 01, Private Levesque, an aviation technician, was tasked to assist with the replacement of the right-hand, main landing gear actuator on Sea King 124413. After completion of a general condition/acceptance inspection by a more senior technician, Private Levesque

electd to carry out a thorough inspection of the replacement assembly. During his inspection, he discovered four hairline cracks on one of the actuators' hydraulic fittings. The cracks were very difficult to see with the naked eye, but his close scrutiny of the part ultimately led to their detection.

The fitting in question is designed to deliver up to 3000 psi of air to the retracting cylinder, forcing emergency extension of the main landing gear in the event of an electrical or hydraulic system failure. Had these fine cracks gone unnoticed, failure of the fitting may have injured personnel or damaged the aircraft during a functional system check. Its failure also had the potential to render the main landing gear blow-down system completely inoperable, possibly leading to a serious incident or accident.

Private Levesque's initiative and superior attention to detail, while carrying out his inspection, was over and above the norm for someone of such limited experience. Private Levesque is to be highly commended for his timely actions in eliminating this potential flight safety hazard. ♦

MR. GARY "GIZ" LECOURTOIS



Mr. LeCourtois is a former military technician who was hired by Bombardier Aerospace Defence Services (BA DS) two years ago as an aviation technician journeyman. He formed part of the original technical cadre for the Hawk jets at the NATO Flying Training Centre (NFTC) in Moose Jaw.

While driving the Hawk crew van on the ramp on January 8, 2002, Mr. LeCourtois noticed a three by ten foot pool of fluid located on the tarmac in an empty spot where the Hawk aircraft are routinely parked. Knowing that Hawk 155218 started engines only ten or so minutes earlier,

he immediately called the air traffic control (ATC) ground controller and requested that the suspect aircraft be contacted and returned to the ramp so that the maintenance section could confirm its serviceability. He then appraised Hawk servicing of the situation. The results of his efforts saw the aircraft recalled, only moments prior to it leading a two-plane formation departure and being airborne with a significantly depleted hydraulic system.

Further investigation revealed that the #1 primary hydraulic reservoir had only ten to fifteen cubic fluid inches of hydraulics remaining, out of a total of 286 cubic inches. Mr. LeCourtois' quick thinking and positive actions prevented an in-flight loss of the #1 hydraulic system and its associated required manual lowering of gear and flaps. His attention to details also averted a potential, more hazardous, in-flight emergency associated with a leaking flammable fluid while airborne. At the very least, his outstanding professionalism saved many man-hours of work that would have been required following the manual lowering. ♦

CORPORAL LINDA WARD



Corporal Ward is an Aviation technician at 14 Air Maintenance Squadron Engine Bay and, in June 2001, she was conducting a build-up and inspection of an Aurora

propeller dome received from a third-line contractor. During her inspection, she identified a defective retaining ring that failed to securely lock the dome cap. Without hesitation or direction, she carried out a thorough inspection of the dome and discovered that the suspect ring was also utilized to retain the low pitch stop, a major

component of the dome assembly. Upon further investigation it was also determined that the same retaining ring was used on the Hercules aircraft and a second defective ring was identified in Trenton.

Corporal Ward's vast experience in the propeller shop, coupled with her in-depth knowledge of propeller systems, allowed her to immediately identify the faulty ring. Her findings led to the initiation of a fleet-wide special inspection on both aircraft. She is commended for her professionalism, observance to details, and perseverance in preventing a potentially serious flight safety incident for both the Aurora and Hercules fleets. ♦

CORPORAL LILY HELPARD CORPORAL DEBBIE BENFIELD



On completion of refueling and disconnecting the hose from Aurora 105 on 18 January 2002, fuel began spilling out from the inboard valve assembly. Eventually, a piece of gasket was found stuck in the refueling valve. The foreign object (FOD) was removed and the fuel spill cleaned up. Initially, it was unknown where the FOD gasket came from and the refueling tender was considered the likely source. Since the FOD could not immediately be identified, all 19 Wing aircraft were grounded and the fuel trucks quarantined, pending the outcome of an investigation. While prudent, this action eliminated the Wing Search and Rescue (SAR) and Maritime Patrol capability at 19 Wing.

It was quickly discovered that the FOD could not have come from the refueling tender because of an "in hose wire mesh screen" situated adjacent to the nozzle in the hose. Keenly aware of the importance of determining where this gasket originated, Corporal Helpard and Corporal Benfield immediately began an in-depth analysis of the affected fuel system. They scrutinized all fuel parts and found that the gasket matched the wiggins coupling found on the refueling manifold piping. They noticed the shape of the gasket matched exactly the split washers used on the system and that it even bore an imprint from the split washer gap. This finding irrefutably proved that the refueling tenders were not the problem and enabled 19 Wing to release all aircraft and fuel tenders.

Corporal Helpard and Corporal Benfield demonstrated remarkable dedication and professionalism in identifying this FOD. Their task was made more difficult by the fact that this type of gasket is not found in the technical publications and there was no record of maintenance or fuel leak in this area. Their outstanding initiative and perseverance made it possible for 19 Wing to regain its SAR and Maritime Patrol capability. ♦

FOR PROFESSIONALISM

MASTER CORPORAL DEAN MORTENSEN
CORPORAL PERRY NIEMINEN



On 24 January 2002, Master Corporal Mortensen and Corporal Nieminen were performing a “before flight” inspection on aircraft number CF188907. While inspecting the routing and clamping of Aerospace Engineering Test Establishment’s (AETE) specific project wiring located on the left hand side of the rear cockpit instrumentation cluster glare shield, they noticed damage to a clamp securing this wire bundle. Not content to simply replace the clamp, they endeavoured to determine the cause and discovered that the shielded mild detonation

cord (SMDC) line routed on the left hand side of the canopy was contacting the clamp. This evidence was presented to senior maintenance personnel and all maintenance actions were ceased and a flight safety investigation was initiated.

The SMDC line was inspected for integrity and was found damaged significantly enough to compromise its operation and required replacement. For safe and controlled ejection from the CF188 aircraft, this SMDC line is an essential component. It is directly related to the safe removal of the canopy during the ejection sequence and the possibility of an incorrect or non-existent ejection of the canopy was a reality due to its damage.

Master Corporal Mortensen and Corporal Nieminen’s dedication, professionalism, and astute attention to detail identified and averted a potentially serious flight safety situation. They are to be commended for their persistence in pursuing a problem that could have led to catastrophic results with a high probability of injury to the aircrew should an ejection have been necessary. ♦

CORPORAL ANDREW BILLARD



In September 2001, Corporal Billard was assisting in the replacement of the engine annunciation panel light assembly on Aurora #140104.

Being new to the Aurora world, he decided to take the opportunity to look around the aircraft while the other technician went to retrieve some parts. During his spontaneous inspection, he noticed that the nut on the bolt retaining the #3 engine emergency shutdown cable pulley was not tightened into the safety area of the nut.

A history check of the aircraft maintenance database could not reveal the fact that any work had been carried out on the pulley assembly since records were first initiated. This area is also not a part of any scheduled periodic maintenance inspections performed at the unit level. This mechanism was in an area that is not readily accessible and it is obvious that Corporal Billard went out of his way to discover the fault. The loss of this nut may have resulted in the pulley falling off of the bolt and the failure of the engine to shut down in an emergency situation.

Corporal Billard’s diligence and attention to detail, despite his unfamiliarity with the Aurora, resulted in the discovery of a deficiency that had the potential to develop into a serious situation. Corporal Billard’s impromptu inspection is an excellent example of professionalism in the workplace, particularly given the location where the shortcoming was found on the aircraft. ♦

FOR PROFESSIONALISM

CORPORAL RICK RYAN
CORPORAL ANDREW BILLARD



In December 2001, Corporal Billard was refuelling Aurora aircraft #140120, when he noticed that the #5 tank fuel overpressure gauge line was rubbing on the aileron control rod. He immediately repositioned the fuel line, such that it no longer made contact with the control rod.

Without any prompting, Corporal Billard and Corporal Ryan carried out a local survey of all available Aurora aircraft throughout the weekend. Of the thirteen aircraft that they checked, ten were found to have the same problem. All ten planes were promptly repaired and Corporal's Billard and Ryan informed their crew supervisors with the results. In order to ensure that this issue was formally addressed, Corporal Billard and Corporal Ryan also filed a Flight Safety incident report.

Upon discovering the fault, the actions taken by Corporal Billard and Corporal Ryan were both thorough and effective, ensuring a fleet-wide problem was addressed in a timely manner. Their initiative and attention to detail both identified and corrected a condition that had the potential for disaster. Without their professionalism and dedication to airworthiness, the consequences of this problem not getting repaired could have had a tragic cost. ♦

OFFICER-CADET BRODIE CONRAD



Officer-Cadet Conrad is a student on the Basic Helicopter Course. On 10 August 2001, while conducting a pre-flight inspection on a Jet Ranger helicopter, he discovered a small combination wrench under the hydraulic oil filter. He immediately reported the object (FOD) and the aircraft was declared unserviceable until a FOD check was carried out.

The wrench was located behind the lip of an access panel, making it impossible for all but the tallest of individuals to spot from that point of view. However, part of the wrench could be seen in the shadows when looking down from the top of the transmission, which is how Officer-Cadet Conrad discovered the tool. In addition, the tool had remained undiscovered through at least one FOD check, one daily inspection, and four pre-flight inspections prior to Officer-Cadet Conrad's discovery.

The thorough inspection carried out by Officer-Cadet Conrad may have prevented what could have been a more significant problem, involving the flight control system. He is diligent and motivated, and his attention to detail surely prevented a serious incident. ♦

MASTER CORPORAL MICHAEL BERNLEITHNER



Master Corporal Bernleithner is a flight engineer (FE) employed in first line maintenance (servicing) at 439 Rescue Squadron. Master Corporal Bernleithner was carrying out his pre-flight inspection on the alert helicopter — Griffon #146418 and, armed with the knowl-

edge that this aircraft had just completed a 50-hour and a 100 engine-hour maintenance inspection, he took the initiative to conduct an in-depth inspection, even though his pre-flight checklist did not require such verification.

As Master Corporal Bernleithner was checking the number two engine, he reached behind the engine to verify the seal in the pneumatic conduit, which is designed to ensure that it is airtight between

the combining gearbox and the number two engine. His preventive action allowed him to find that the conduit was never reconnected following the aircraft wash. This was also missed on the run-up that was carried out after the wash. His discovery led to a flight safety investigation, which determined that this omission would have allowed the engine oil to migrate toward the combining gearbox.

Without Master Corporal Bernleithner's initiative, the number two engine could have had a serious oil leak. As the Griffon was scheduled to carry out a training mission to check winching procedures, this could have led to a catastrophic engine failure and caused a serious emergency. The professionalism and attention to small detail displayed by Master Corporal Bernleithner certainly contributed to eliminating a serious threat to the safety of this helicopter. ♦

SERGEANT GLENN PRIDDLE



On 9 March 2002, Sergeant Glenn Priddle was deployed for Operation Apollo as a Flight Engineer on the Aurora aircraft. As part of Crew #1, Sergeant Priddle was conducting a pre-flight inspection prior to a night launch. During the course of his examination, Sergeant Priddle found

chafing between the number one engine power-lever cable and the number two engine emergency-shutdown-handle cable.

The cables are in a relatively inaccessible part of the left-hand, main landing-gear wheel well and the chafing was observed only on the top portion

of the power-lever cable. As the cables are two feet above head height, the top of the cable cannot be seen. In order to complete his thorough inspection, Sergeant Priddle had to use his sense of touch, in the darkness, to detect the flaw. Further examination revealed 15/1000'ths of an inch of chafing. Had this problem gone undetected, the possibility existed of a loss of power lever control to the number one engine, or emergency shutdown problems with the number two engine, or both.

The professionalism and thoroughness displayed by Sergeant Priddle eliminated this flight safety threat. Without the diligence and dedication of Sergeant Priddle, the consequences of the chafing going uncorrected could have led to a critical in-flight incident. ♦

SERGEANT PIERRE PICARD



While undergoing on-the-job training on the Cormorant aircraft daily inspection (DI) process, Sergeant Picard noticed something unusual when verifying the correct pressure for the left-hand forward flotation bottle. He quickly notified the Crew Chief and, due to the confined area,

removed the flotation bottle access panel to aid in further investigation. Inspection revealed that the electrical connector to the left-hand, forward, flotation bottle electrical-initiated explosive device (EIED) was not connected. The aircraft was quarantined and a work order was raised. Research of the aircraft records concluded that no maintenance

actions had been carried out since delivery from the manufacturer. All other aircraft were checked and found serviceable.

Sergeant Picard's keen eye and inquisitive nature while inspecting a component not called for in the DI led to his timely discovery of a disconnected cannon plug and, surely, prevented what could have been a serious incident in the event the crew was forced to ditch. In the event of ditching, the Cormorant's flotation devices would have only partially deployed and, likely, the aircraft would have capsized. It is because of the member's attention to detail and quick action that a valuable SAR resource was not lost if, indeed, the flotation system had been activated in an emergency. ♦

CAPTAIN GUY RIDLER CAPTAIN NEIL MCMAHON MASTER CORPORAL MARC PILON



On 25 Sep 01, a Buffalo crew was conducting training at Powell River Airport, near Comox. The weather was visual flight rules (VFR) in Comox and Powell River, however, conditions deteriorated to the north. During takeoff, the crew heard a "mayday" call on 121.5 MHz. They immediately discontinued their training and climbed to 5000 feet, putting them in a better position to hear the distress call. The "mayday" call came from a Cessna 172, with two people on board. The plane was trapped underneath a 400-foot cloud ceiling near Chatham Point, north of Campbell River. The Buffalo crew informed the Rescue Coordination Centre (RCC) and the standby aircraft, a Labrador helicopter, was launched.

Meanwhile, the Buffalo crew were able to home in on the transmissions and determined that the actual position of the distressed aircraft differed by five to eight miles from the original position given by the pilot. The Buffalo was circling on-scene, between two overcast layers with occasional visual terrain references. The crew visually located the aircraft, and led the Cessna pilot and his passenger to safety, via an opening in the clouds. The Cessna pilot wanted to proceed to Vancouver but it was now below VFR weather limits, as was Campbell River. The Buffalo crew suggested Courtenay Airpark, near Comox, which is where the aircraft landed without incident.

The crew were not fully SAR capable, nor under any RCC tasking; they proceeded on their own initiative to help the distressed aircraft. This event is indicative of the high standard of professionalism and dedication expected of the Search and Rescue (SAR) crews at 442 Squadron. The proactive involvement of this Buffalo crew unquestionably ensured this potentially dangerous situation did not deteriorate into a serious accident. The timely and skilful intervention of the Buffalo crew potentially saved this aircraft. ♦