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Flight Comment



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Canada 

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Flight Comment

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But... There Was No Loud Bang!!

I was flying a T-Bird as #2 of a two-ship 1-V-1 (one versus one) training mission for North Bay. I had another pilot flying in my back seat; it was a refresher trip for him, although he was more experienced. Shortly into the trip, I thought I noticed a funny smell in the cockpit. When I queried the other pilot with me, he said he didn't notice anything. I still thought there was a funny smell, so I took off my oxygen mask to investigate further. I then smelled my gloves, and it seemed to me that I must have gotten some JP-4 fuel or something on them during my walk-around. Satisfied with this, I didn't suspect anything further with the airplane and I put my mask back on.

When we were returning to base after the mission, I was in close formation on lead as we had to descend through about 2000 feet of cloud on the way home. In descent and prior to entering cloud, I was wiping what I thought was condensation from the inside of the canopy to see my lead. I was then surprised to hear the other pilot say "hey, the cockpit is filling up with smoke!" I was sure it wasn't, so I said "no, it's not — I've got none up here!"

The back-seater took control so I could assess the situation for myself. Sure enough, we

had smoke in the cockpit. In fact, I couldn't even see my feet because it was so thick. Before entering cloud, we informed lead of our problem, and he fell back to a route position on us so we could sort the problem out. Between the other pilot and myself, we dealt with the smoke and were able to land the airplane without any further difficulties. On the ground, we quickly pulled off the runway, shut down, and egressed.

The problem was discovered to be that the engine mounted hydraulic reservoir had come apart in the engine bay. This allowed almost all of the hydraulic fluid to drain into the engine compressor where it burned, and into the air conditioning system, hence the smoke.

I learned that an insidious problem, such as this, is

hard to accept or believe. With only subtle indications of a problem initially, I was unwilling to believe that something was wrong. Without a loud "bang" beforehand, nothing convinced me that anything was wrong.

Despite the fact that I knew the red page procedures almost as second nature, I didn't immediately resort to them, preferring to troubleshoot to resolve the problem. Now, I do red page procedures first, and troubleshoot later. Due to the fact that I had a more experienced pilot in the back seat, I was reluctant to make a decision and take control of the situation, despite the fact that I was the aircraft captain.

Ultimately — fly the plane, carry out the checklist responses, and make a decision! If the decision is wrong, you'll find out much quicker than by not acting at all!

Fudge ♦



A Day When Air Drops

Were Not So Routine

We were on the third lift of the day, performing personnel airdrops for the 82nd Airborne Division. Quick turns were the order of the day. After leading our three-ship formation into parking and down-speeding the engines, the aircraft commander and navigator headed to the back of the plane to brief with the loadmasters and jumpmasters about the airdrop, signals, and safety information. The 82nd Airborne jumpers were combat-loaded with rucksacks and weapons strapped to their legs. The troopers waddled aboard the aircraft as we briefed emergency procedures. As the troops were entering the aircraft through the ramp, the hung trooper standard was briefed: if the extraction line hangs up the trooper, the procedure is to retrieve the trooper and stop airdrop operations. I've heard the procedure briefed a hundred times....little did I know how important that brief would be for the next lift.

We led the three-ship formation through a thirty minute route and on to Holland Drop Zone with little problem — done it dozens of times already. I called the “green light” after all prior warnings and began timing for the long sixty-two seconds of usable drop-zone time. About twenty seconds into the green light timing, the loadmaster jumped onto the interphone with the words “Malfunction! Hung trooper!” We were all stunned for half a second, and then I called “red light” to stop the drop. As the loadmasters assessed the situation in back, we did

everything we could up front to keep the aircraft and hung jumper safe. We broke out of formation with a gentle turn away from the trooper and passed the lead to number two. We maintained drop altitude and airspeed, avoiding overhead and upwind of water and built up areas. As the loadmasters retrieved the static lines, they noticed that the line was not the thing keeping the trooper from leaving the aircraft — his M-60 weapon, strapped to his leg and up his waist, was jammed in the jump platform of the door! The loadmasters had made a split-second lifesaving decision by immediately stopping retrieving action. If they had continued the retrieving action, the extraction line would have done its job by pulling the chute free, and chute inflation would have caused severe damage to the body of the trapped jumper!

It took the loadmasters and jumpmasters fifteen heart-wrenching minutes to pull the trooper back into the aircraft. Our mission then became a race to get the injured trooper on the ground for medical attention. As the pilots prepared for landing with airspace controllers, I was busy on the radios contacting

operations to have emergency vehicles standing by. Seven minutes after full retrieval of the jumper, we were on the ground and parked in special parking for the ambulance to have the quickest access to the aircraft and follow-on hospital. After reporting our happenings to flight safety, the crew gathered together to debrief the airdrop emergency. We reflected on the fact that crew coordination was critical to the mission. With everyone working in tandem, we were able to save an Army paratrooper's life. We also noted another important learning point. While emergency procedures are critical to safe mission accomplishment in an emergency situation, consideration of the results of actions must also be taken into account. It was the superb attentiveness of the loadmasters to stop retrieval action, called for in the hung trooper emergency procedures, after realizing that such retrieval would have actually been harmful to the situation. ♦

*Captain Froeschner
USAF Exchange Navigator*



Pilot Experience Levels and Flight Safety

So, are pilot experience levels and flight safety inter-related? Of course they are. Why are they? Well, there are a few reasons. The obvious ones include the facts that less experienced pilots naturally make more errors and cannot rely on past experiences to deal with new and difficult situations. This is through no fault of their own and the primary way to improve it is with...well, experience. The not-so-obvious reasons originate from the root causes of the general lack of experience levels we currently encounter with CF pilots.

So, let's go there first. Why are our experience levels so low? That one's easy. Our older, more experienced pilots are leaving earlier in their careers than ever before due to amazing growth in the civilian aviation industry. Our yearly flying rate (YFR) has been cut dramatically and our allocated training hours have been slashed. CF-18 pilots, for example, are down to 178 flying hours per year. In our new computerized Air Force, we spend more of our time doing our own

claims, checking e-mail, typing and formatting our own memo's, planning our own TD, etc, etc. That means we're spending less time on the important stuff...getting to know the aircraft and its associated roles and tactics. It's a common theme for all communities.

Now, how can I say that flight safety has suffered with lower experience levels when our accident rate has never been lower? Firstly, our pilots have never been more professional and serious about their jobs. The days of inverted flight over dad's farm are long gone...I think. Secondly, I really think we have been just plain lucky. Check this out...in 1996, the F-18 community logged five near misses. Last year, they logged eighteen. And that's with a 4200-hour decrease in YFR. You could argue that reporting has improved and that 1996 was an anomaly. Whatever. Either way, it's not getting better! Pilot's have their heads in the cockpit more trying to analyze the radar, steer the Maverick, program the Flight

Management System (FMS), do checks, you name it. More experienced pilots can afford to spend more time with their heads up out of the cockpit. Near misses are good examples of being "lucky" but they are just one of many examples which reflect inexperience.

Pilot retention is the only way we are going to improve experience levels. And we all know how *that* is going. Just wait until 2003! The only way we can combat poor experience levels right now is to stay alert and vigilant, keep our heads up, and stay professional. Know when to say no. Flight safety depends on it.

Think of this...the good news is that we haven't had a CF18 "A" category accident for five years. The bad news is that we haven't had a CF18 "A" category accident for five years. ♦

Major Hayter



Come To Mama!

It was one of those nights where the sky was overcast and pitch black. We conducted a “ZIPLIP” (silent) launch from the ship and headed out approximately 50 nautical miles (NM) from “Mother” (our ship). The Shipborne Air Controller (SAC) briefed us that “Mother” was in the middle of a Surface Encounter Exercise. The Emission Control Plan warranted keeping the ship’s Tacan and radar at standby, and also keeping the aircraft warning lights off. We were also prohibited from turning on the aircraft radar until we were a minimum of 15 NM from “Mother.”

In addition, all

communications were to be kept to a minimum except for reporting suspect enemy vessels back to “Mother” for targeting.

After successful completion of the mission (which we referred to as a “BOREX”), we headed back to “Mother”, or, rather, where we thought “Mother” should be. Of course, in typical Navy fashion, “Mother” had altered course about a zillion times during our 2.5-hour mission and didn’t inform us because of the restrictions on communications. After thirty minutes or so of transiting and looking for “Mother” our fuel state started to become a concern.

The aircraft Crew Commander piped up and said “enough is enough, turn the radar to radiate and find that #\$\$%&! ship.”

We did and, lo and behold, there was “Mother” about 10 NM to the south of us. We finally got back to the ship and landed with less than 600 pounds of fuel remaining. I guess the moral of this story is that it may be necessary to keep navigational aids silent during a real wartime scenario, but is it really that necessary during a peacetime exercise when aircraft safety becomes an issue?? ♦



Birds Nest Turns Into Bird Strike

My day started as per normal. I awoke to the sounds of rock and roll blasting out of my radio/alarm clock, scratched myself, and then made my way into the shower. After a healthy breakfast of peanut butter toast and a cup of tea, I was off to work. Don't worry; I took the time to get dressed!

It was a beautiful spring day in CFB Trenton, nestled snugly in the midst of the Quinte Region. The sun was searing, but the faint breezes that blew in from the tranquil waters of the Bay of Quinte, were always welcome. Working with 424 Search and Rescue (SAR) Squadron was never boring. The one constant around there was change. After doing a few before-flight ("B") checks, and towing aircraft around the line, we then checked and towed out the AMSE equipment anticipated for the day's activities. Soon, we would hear that the "wish list," otherwise known as the flying schedule, had changed. I don't want to give you the impression that we were constantly overworked, but we sometimes had our moments.

Anyway, on this particular day, just as we had finished recovering our only "training mission" aircraft, the balloon went up for a SAR launch to look for some missing fishermen in Northern Quebec. As the aircrew prepared to sign the logbook, it was noticed that the "birds nest" check had expired. I, being the keen one, decided that I would jump in the "cherry picker" and get it done right away. Things were going along really well as I ascended along the vertical stabilizer of the CC115-Buffalo, stopping to look into the likely areas for birds nests, until I was just below the horizontal stabilizer. I then jockeyed the "cherry picker" for position, to better be able to observe the area where the elevator and the horizontal stabilizer are hinged. Now, I don't want to suggest that being *vertically challenged*, as I am, is any excuse for what happened next. However, as I inched the machine upwards, what I had failed to recognize was that the joy stick, used to direct the driving feature of the machine, was sticking up approximately six to eight inches above the top bar of the bucket.

The next thing I knew, "POP," I've just punctured the skin of the horizontal stabilizer with the joystick.

Well, let me tell you, a thousand thoughts go through your mind when you realize that you have just damaged an aircraft. Thoughts like, "how could that have happened?" or "is there any way that I can fix this so that no one notices?" In the end, you come to your senses and realize, that by admitting you had made an honest mistake, you can now get on with the task of repairing the damaged aircraft and returning a valuable resource to a serviceable state.

Many people that day had to put in extra hours as we reconfigured another CC115-Buffalo to make the SAR launch, and, to those colleague's of mine, I do apologize. But, most importantly, I apologize to the missing fishermen in Quebec who had to wait the extra hours before they were recovered. ♦

Master Corporal Saucier



I Don't Want To Hit A Mountain Tonight!

During my first tour, I was a CH146 Griffon pilot with #444 (Combat Support) Squadron. This story happened to me with a few hundred hours logged on the aircraft. It was winter and the mission started out as any other "routine" night med-evac. We had to fly from Goose Bay to a small camp about 100 miles to the west, and then on to the destination of Havre St. Pierre, where a doctor was waiting for our 14 year-old patient.

The forecast called for marginal VFR during the transit to the camp and then VFR to Havre St. Pierre. We immediately assessed two obstacles: weather and fuel. Knowing that it is common for conditions in Labrador to be worse than forecast, we discussed our alternatives. We came to the conclusion that if we could make it to the camp, then the mission should be no problem.

All the other crewmembers were multi-tour, and the Aircraft Commander (AC) was both a good friend and a skilled pilot, so everyone was comfortable with the crew composition. Feeling that we had a reasonable chance to reach the patient, we departed on the mission. Although the weather enroute was not ideal, it was better than anticipated so we were feeling pretty good about the mission up to this point. "Hey, this weather isn't so bad," we joked. "If this is the worst of it, then we should have no problem making it to our destination."

We managed to find the camp with little difficulty and, with the patient now aboard, we proceeded towards our destination some 100+ miles away. Shortly after lifting off from

the camp, it began to snow. The area that we were flying through consisted of numerous mountains, so we used the valleys to stay beneath the thick clouds that were near the hilltops. As we reached the 50 mile-to-go mark, the snow started to get heavier. "No problem, these night vision goggles (NVG's) see right through most of this snow..." and we kept pushing ahead. With the visibility dropping some more, we began to think that the improving trend must be nearby. A few miles further along the route we started to casually divert around areas of very low visibility in snow. "Alright, let's try down this valley..." and off we went to find ourselves faced with a similar dilemma. As you can probably imagine, we were all concentrating extremely hard on maintaining visual references since entering cloud was not a viable option due to the icing hazard.

With the visibility now rapidly approaching our SAR limits (300' ceiling and 1/2 mile visibility), you could almost hear a pin drop inside the helicopter. I was beginning to get a little nervous with the situation and began noting possible landing spots, still confident that we would make it through this "localized snow shower." A few minutes later the conditions did not improve, and may have even taken a turn for the worse. I was definitely feeling uneasy, and started to think to myself, "I can't be the only person who is getting worried here." It was at this point that I just blurted out, "I don't want to hit a mountain tonight!"

Within the next five seconds, the entire crew had quickly indicated their similar feelings and now the med-evac mission had become secondary, as our priority was now focused on landing. We managed to make our way back to the area that I had marked earlier and we shut down.

After spending a couple of hours on the ground, the storm did eventually blow over us. The remaining transit was uneventful and we were extremely happy to be on the ground for some well-deserved rest. During the mission debrief in our hotel room, we all came to the same conclusion...sometimes the hardest decision is to say "STOP!"

We all strive to get the job done and nobody wants to feel like the "weak" link on a crew. I spoke up that night because we had an atmosphere that promoted open communications. This is very important, especially in a high workload environment when judgement can be easily impaired. Although it is easy to get caught up in the heat of the moment, just remember that if you are feeling really uncomfortable, somebody else is probably feeling the same way. This may be one of the hardest tests you will have to face so make sure you pass! By the way, don't forget to watch out for those "mountains," whatever they may be. ♦

Capt. Collins



"21-4 Heavy or 21-4 Too Heavy"

During disaster relief efforts, my crew was tasked to transport 25 police officers to the area cut off by flooding. We had been flying all morning and had enough fuel on board to carry out this tasking and perhaps one more before we would refuel and turn the Labrador over to a new crew, so we wanted to move the police and then get our next task.

The day had started quite cool and we had no troubles with any of the other transport missions in which we had operated near our max all up weight. When the flight engineer calculated our new weight with the police on board and stated "21-4, heavy", my Aircraft Commander (AC) and I did a quick calculation

and agreed with his statement, assuming an average of 200 pounds per police officer.

I was in the right seat and carried out the take off to the hover. Hover torque was around 68%, which was as expected, so I saw no problems with taking off and going to the landing zone as loaded. However, when I rotated, the torque required for level flight increased to about 80% and we were having trouble even getting through translational lift. A barrier approximately 200 feet away was adding to my concern so I said, "I don't like this."

The engineer called that there was a gravel parking lot to our right and the AC said, "Go for it."

Unfortunately, I thought he meant continue the take off, so I continued a bit farther before I said "I think we should break this off." The AC said "Yeah, go for the parking lot." We arrested our take off and carried out an uneventful landing in the parking lot where we off loaded half the police and did the tasking in two lifts instead of one.

Lessons learned from this experience for me were that if you are unsure of what the other crewmembers mean, clarify it. I also learned that special care must be exercised when operating at or near max all up weight. Finally, I learned that police officers probably don't weigh an average of 200 pounds. ♦



I Learned About “The North” From That

I was a Technical Crewman flying on the Twin Otter during Ops Hurricane in the 1980's. We were based out of Eureka on Ellesmere Island, about 150 miles southwest of Alert. The flying was fantastic, with very beautiful scenery and challenging gravel runways. We had been flying on Ops for about eight days without much leisure time to ourselves. We had arranged a familiarity flight with some of the army engineers and support staff from Eureka to a strip called Borak Camp, near Hazen Lake. From there, we would transfer onto a Twin Huey for a further flight to one of our Ops sites. We loaded up with ten passengers and took off down the runway and headed out for the 1.6-hour flight to Borak Camp. It was an uneventful trip, with some excellent opportunities for pictures for our passengers until some very strong winds started to push our aircraft around. I asked all of the passengers to buckle up or tighten their lap belts.

The gravel strip was in sight and, as per standard operating procedures (SOP's) for runways we had not landed on before, we proceeded with a low approach next to the runway at a reduced speed in

order to check out the surface condition and look for any obstacles. The aircraft commander (AC) looked out his side of the cockpit and noticed a large stream running from left to right across and about 200 feet past the beginning of the runway. I was on the left side and agreed with his observation. The flight engineer (FE) sitting on the right side could see very little of the stream. Then the AC called out to have a look on the left side again at a fuel cache towards the end of the runway. It looked to be very close to the edge of the runway, but, as far as I could tell, not on the runway. Oh...remember the strong winds? We estimated about a 30-knot crosswind.

With all of this information, the AC elected to land. I gave him the weight for his landing speed and we commenced our approach. As we compensated for the crosswind, I'm sure we were all glued to the stream on the runway. Well, we cleared it; then I felt the aircraft go up and bank left and then land again. At the same time, the AC

called out “the barrels.” Then we skidded to the right. By then, reverse pitch was in and brakes were applied. The aircraft came to a stop. We taxied to a gravel ramp area and shut the aircraft down. No damage was found on the aircraft due to the landing.

What went wrong? The crosswind wasn't a huge concern, but that stream seemed to really have the crew's attention. We momentarily forgot about the second problem, the fuel cache on the left side of the runway. Maybe we should have flown over the runway again to have another look at the fuel cache. Then, we probably would not have landed and flown back to Eureka instead. Obviously, the big picture was lost for a time due to one of these inputs. However, we enjoyed the rest of the day and departed with the same crosswind on takeoff. We did, however, return to Eureka with a huge respect for northern airfields. ♦

Master Corporal Elder



MAINTAINER'S CORNER

Do you have any ideas for future articles? Do not hesitate to send them to DFS for submission, care of Sgt Anne Gale, DFS 2-5-4, via e-mail (Intranet or Internet at ad064@debbs.ndhq.dnd.ca) or regular mail.

Cause Factor	Sub Cause Factor	Sub Sub Cause Factor
PERSONNEL	MAINTENANCE/CANADIAN FORCE	

INTERRUPTION

Picture a typical day at a Squadron. You are working on an aircraft, trying to fix a snag before its next scheduled flight. Your supervisor comes along and asks you to stop what you are doing so you can help Cpl Bloggins on another plane. He is qualified but the job he's working on requires two people, and you are the only other technician on the shift that knows the job. So, off you go, mumbling to yourself that you won't be able to finish your job on time and later, when the boss complains about not having enough serviceable aircraft for the afternoon launch, you'll tell him that it was his fault, not yours, that you couldn't finish on time. You help Cpl Bloggins, and you feel a little better because he said that he appreciated your help and company. When all the paper work is completed, it's time to get back to your

own task. You resume where you left off, finish the job, and sign the required forms. On the way to the locker room, you think: "Wow! What a day, I'm glad it's over."

Unfortunately, the day didn't end with the end of your shift. Here is the rest of the story. The aircraft had gone on the scheduled flight after all. (You had managed to finish the repairs in time; you had done the job so often, you could do it with your eyes closed.) But, when it landed, it was with a two-bell crash alarm. The investigation revealed that a component had come apart during the flight. The torque value wasn't applied as per the technical orders. "What does it have to do with me?" You asked the next day. That component was the one you worked on yesterday, was the answer. How could this happen to you, an experienced, conscientious and knowledgeable technician?

Distraction is a common cause factor in flight safety incidents. Technicians are interrupted for various reasons, and when they go back to the job they pick up where they **think** they left off. But often they pick up a few steps ahead of where they actually were. So, how do we ensure we don't miss any steps? Because, let's face it, we will all get interrupted at one time or another. One trick someone told me was to go back three steps. So wherever you think you are in the process, go back at least three steps and ensure, referring to the CFTO, that these steps have been carried out. It may mean having to re-torque some bolts or re-adjust some fittings but it only takes a few extra minutes. Then you know for sure that you didn't miss anything, and that the components you worked on won't come apart in flight (to the delight of flight crews, I'm sure). Another option would be to remind whoever interrupts you (remember to do it politely!) that it would be a lot safer if you could finish the job first before you move to the next one. You never know, he/she might see it your way. ♦



A Flight Safety Investigation

It had been a troublesome **I**BOXTOP at best so far, plagued by bad weather, bad snags, and bad luck with every chock. We were struggling trying to keep three to four Hercules flying at any given time. I got the call from the crew chief very early that morning, well before my alarm clock was supposed to nudge me, long before I had considered starting that day. “You’d better come in to see this one right away,” he said.

It was a strange feeling looking at the ramp area of Hercules 333 that morning. All the snags up until then had been annoying, however, somewhat routine; obvious and commonplace, complex yet unmysterious. Today’s snag was nothing of the sort. We all just stood and shrugged as we looked upon the bright yellow vertical support strut just aft of the rear cargo door. It was cleanly sheared off and dangling from the upper fuselage bulkhead. My mind raced as they outlaid all

that had been gleaned so far from the previous events.

Apparently, the CC130 had completed the standard round trip from Thule to Alert and back uneventfully. Upon return and taxi to the re-fuelling area, the loadmaster aboard noticed the broken strut and dutifully reported it to the swarm of servicing technicians anxious to complete the turn-around in record time. Not so this time, I’m afraid. All anyone knew at this point was that we had a severe structural failure on our hands with not many clues to go on.

As the crew had been released to rest prior to my arrival, immediate fact-finding was delayed until the following day. The many questions brewing in our heads needed information that was not coming easily so we set to work attempting to solve the mystery second hand, with the only evidence we had — a busted aircraft.

“A hard landing perhaps?” But there were no evident signs, no obvious gear deviations, no skin deformations, no tail misalignment or deflections. “A tail strike then?” But no marks on the brush plate, again no tail deflections or skin ripples. And surely, in either case the crew would have been aware of such an event. Still, there were too many questions.

Further inspection that day revealed further damage. The bulkhead aft of the strut, concealed by fire blankets, was also sheared completely through. Surely this type of damage could only have occurred following a catastrophic failure. Preparations were made and eventually a Conditional Inspection for a hard landing was called as the conservative approach and to address the risk of other damage to the aircraft structure. Hercules 333 wasn’t going anywhere in a hurry anyway. The damage was documented and forwarded to the airworthiness authorities for

Dear Editor,

Capt Newman;

I read with interest the Flight Comment (Spring 2001) magazine and found it to be both interesting and valuable. I am however perplexed at the article “What Would You Have Done?” on page 18. After reading the article I am lead to believe that the incident occurred from a Sea King helicopter as an AESOP was involved. The picture

above the article is clearly the Mighty Labrador. Any comments?

*CWO Charlie Fleming
SAR Tech*

CWO Fleming,

My only comment is that you know more about the operations than I do. The article was submitted anonymously and the only hoisting

that I know about is from a Labrador. Sorry and thank-you for pointing out my mistake. I’m glad you enjoy the magazine. One final note...to all of you who do submit an article — please ensure that the aircraft type is clearly specified as we do try to include one photo for each article.

*Capt. Tammy Newman
Editor, Flight Comment*

from Start to Finish

disposition and assessment of a temporary repair. But the question remained, "What was the *cause* of the damage."

Finally an aircrew de-brief ensued to no avail. Their recollection recounts two greased-in landings, one in Alert and the other here in Thule. The only abnormality was a snapping sound observed enroute, attributed to the ramp locks seating while transitioning through cabin pressurization, a situation that is also recalled by two other crews on this aircraft earlier in the operation. Now we're getting somewhere! The inspection continued with little hope of finding any more

damage. To our delight, no more damage was discovered.

Hercules 333 was eventually repaired and limped back to Trenton two weeks after BOXTOP was complete, only to be cradled for close to four more weeks pending final repairs. The Flight Safety initial report was filed in Thule on the day of the discovery with the full investigation now being processed by Trenton. It has still been an interesting mystery, one I cannot help but follow to completion. The final hope will be the report by QETE metallurgical engineering staff tasked with analyzing the broken strut and rib.

As it turns out, the breaks were fatigue induced. Striations in the metal were revealed in the QETE report as having been developing over many previous flights. Most probably, the underlying rib fatigued to failure first, soon followed by the vertical strut. I can now rest assured that the rest of the aircraft is not suffering the effects of an unusual flight manoeuvre.

A successful Flight Safety investigation was finally brought to a definitive conclusion giving credit to the system we endeavor to assure ourselves that the aircraft we fly and maintain are in an enviable state of airworthiness. ♦



Call Home

Being a first tour Aircraft Commander (AC), I have learned through my own limited experience that there is a growing lack of corporate knowledge in the pilot community. Much of “how” and “why” we do things involves unwritten rules or traditional attitudes, which are carried by the multi-tour pilots on our squadrons.

I have learned through a couple of Flight Safety incidents of my own that perhaps my training alone isn’t always enough. I have learned to appreciate the “call home” option whenever I’m in doubt about a decision to be made. Flight and Detachment Commanders in many groups are pilots with much less experience than in previous years. I’ve found more than a couple of

times that “excessive professional courtesy” and the “halo effect” have gotten me into hot water.

It’s for these reasons that I’ve developed my own mental aircraft commanders’ checklist, which I use during those times when a course of action seems unclear. I ask myself the following questions and rate them from 1 to 4 as follows. Is it necessary? Is it safe? Is it authorized? A “no” is worth one; a “not sure” is worth two; a “fairly sure” is worth three; and a “yes” is worth four.

Although not an absolute, generally a score less than nine constitutes a call home. A second hard rule is that if you’re not comfortable calling home to ask, the answer is probably “no” anyway and you’ve answered your own question.

As the collective experience level decreases with more pilot attrition, I think it’s more important than ever to be cautious of assuming that the more experienced guy really knows all the rules.

Unfortunately, I have had to learn through my own mistakes that there was an invaluable resource of other hard “lessons learned” within my squadron. For us junior guys, this library of corporate knowledge is at our disposal if we just call home before proceeding with a questionable course of action.

As the ops temp picks up with shrinking resources, we owe it to ourselves to take those time-outs over a coffee and give junior aircrew a chance to draw out this corporate knowledge that has been built on the mistakes of others. ♦

Captain O’Reilly

1) IS IT NECESSARY?

2) IS IT SAFE?

3) IS IT AUTHORIZED?

	NO	NOT SURE	FAIRLY SURE	YES
1) IS IT NECESSARY?	I			
2) IS IT SAFE?			III	
3) IS IT AUTHORIZED?		II		



I LEARNED ABOUT CONTROLLING FROM THAT!

About five years ago, I was working as a newly qualified Air Traffic Control (ATC) Terminal Controller on my first tour. I had completed my ATC course less than one year earlier. As any new controller can confess, this is when one's confidence is most vulnerable and, by the same token, can be built very rapidly. It was a typical week-day with military flying, which in most cases included some local instrument flight training. In this case, there were three or four aircraft flying, two of which, an Aurora and a Hercules, were working with terminal conducting multiple Instrument Flight Rules (IFR) approaches. The Aurora had been conducting TACAN approaches for the past forty-five minutes and was intending to continue for another half hour or so. Because of the other aircraft in the IFR pattern, the standard overshoot instruction to bring the Aurora back to the approach included an altitude one thousand feet above the aircraft conducting the next approach. This also incorporated a restriction to reach that altitude prior to turning back toward the other aircraft.

This was working very well and the Aurora flew the same pattern through every overshoot. On approximately the fifth overshoot, the Aurora was just off the end of the runway and in a climbing left-hand turn. The other aircraft was approximately five miles IFR final for a low approach with an IFR vectored right-hand overshoot. Now, the pattern the Aurora had been flying so many times previously was an almost textbook racetrack pattern with a downwind leg that paralleled the on-course at five miles. So, given that the other aircraft was established on final, and taking into account the pattern history of the Aurora, why not cancel the Aurora's restriction and let him level off at the approach altitude? It seemed reasonable to me and would certainly benefit the aircrew! So, I did.

My attention was then diverted to relaying landing information and getting the intentions of an inbound aircraft still twenty-five miles away. When I brought my attention back to the two local aircraft, the Aurora was no longer flying the "perfect" racetrack pattern.

He was in descent back to the approach altitude and heading directly overhead the field toward the other aircraft who was now in his IFR overshoot and climbing. I immediately turned and climbed the Aurora and rolled the other aircraft out on a shallower heading to keep the IFR separation rules from being breached. Luckily for all concerned, the goal was accomplished and separation was maintained.

Needless to say, this was a great awakening for me. Just about everyone has heard the clichés about making assumptions in life, yet we all seem to try to cut corners and save time when working our way through daily situations by doing exactly that. This event spoke volumes about the possible gravity of making assumptions in such routine yet critical circumstances. It was a lesson I will never forget and one that I have passed on many times to people who were wearing the new shoes I once wore. ♦

Captain Mornan

A Small Task

I was a brand-new, fully qualified navigator on the Aurora. I was eager to do my job and start flying operationally after more than two years in the training system. I decided that any opportunity to get flying hours to familiarize myself with the aircraft was a step in the

right direction. I quickly got checked out as a 4th crewman, which allowed me to fly with the pilot, copilot, and flight engineer on routine pilot trainers. The job required any trained crewmember to perform basic preflight duties and be able to assist the flight deck with

any airborne situation where help would be needed in the tactical compartment of the aircraft.

After flying a few local pilot trainers, I quickly volunteered for a flight where a crew was taking an aircraft to the United States for some



high-density traffic training. The morning of the flight, I was told that the training flight would also consist of dropping some passengers at a Naval Air Station in the United States. The passengers were going to attend a conference for a few days. Our task was mainly to bring them to their destination while doing our ICAO training. This seemed to be no big deal at the time. The extra passengers would require me to give a passenger briefing to all of them and to make sure that everybody was strapped in for take-off and landing.

Most of the passengers did not know where their own emergency oxygen was located. Some of them grabbed the first one in hand and tried to operate the container without much success.

These passengers were not Aurora aircrew but had flown on the aircraft before. My first mistake was to assume during my passenger briefing that everybody was familiar with the safety equipment. My briefing quickly described the safety gear for all the passengers but without detailing accurately the location for every individual and the detailed use of this equipment. After all, they had flown on an Aurora before and were

giving me the look of people who had received this mandatory briefing way too many times.

We took off on time and started our transit to our destination. The aircraft was flying at high altitude and all of my checks were done in the back. After receiving the OK from the flight deck, I instructed the passengers that they were cleared to unstrap and walk around during the transit. Most of them gathered in the galley while I got back on headset and monitored the communications between the flight deck and Air Traffic Control.

The incident happened a few minutes later. The aircraft experienced a sudden loss of pressurization. I quickly realized that the flight deck was too busy taking immediate action and getting the aircraft lower to inform me on any course of action for the passengers. Realizing that a situation was happening, I started instructing the unaware passengers of the problem. Knowing that time was critical, I told all of them to take their assigned ditching position and start using their emergency oxygen.

What resulted was a scramble that is very hard to imagine. People did not believe what was happening even after I repeated the situation in a very decisive tone many times. Most of the passengers did not know where their own emergency oxygen was located. Some of them grabbed the first one in hand and tried to

operate the container without much success. Meanwhile, the aircraft was in a rapid descent to establish us below 10,000 feet. I instructed the pilot that the passengers were in the process of putting their emergency oxygen on. It seemed, in my mind, that the process would take forever and I was doing my best to instruct some of them on how to use the equipment. After only a minute (and what felt like an eternity), the pilot informed me that we were now established at a secured altitude and that no further actions were required. The emergency was then stood down.

Looking around, I realized that not a single one of the passengers was successfully able to operate the emergency equipment. Because of our low altitude on transit and the quickness of the flight crew to take us lower, no one suffered any symptoms associated with a lack of oxygen. This made me realize the importance of carefully detailing a security briefing to any passengers not qualified to fly on an aircraft. Their life and my life could have depended on it. It is a small task that can carry a lot of weight. ♦

S. Chouinard

Ashes To Ashes

“Ashes to Ashes.” Good old Joe had just been buried and the words kept running through my mind as I listened to the discussion on how great a guy Joe was. “Remember the time we sent Joe on that mobile repair party (MRP) to Houston. He left on Wednesday and, because of transportation screw-ups, did not arrive until Saturday morning. Well...you know Joe...he just walked off the plane and changed the main fuel control (MFC). The ground crew ran the jet and the pilot was airborne within two hours, start to finish. I wish we had more guys like Joe. That job usually takes three technicians between three and four hours to complete at home.”

“...And how about that time we were night-flying and the Commanding Officer’s F-18 Hornet had a burnt-out landing light. Normally, we would shut down the jet and change the light, but not Joe. He knew how important the mission was; he just yelled “keep him running,” and grabbed a screwdriver and taxi light, marshaled the jet into the chocks, and within five minutes the light was changed and the boss was taxiing out.”

“Hell, even the pilots liked Joe. He was the only guy willing to lean over and clean the canopy in the hot pits; I was always scared that with that right engine running, I would fall or drop the rag into the intake.”

“Yes, Joe was one of the good ones. That’s why it was so hard to believe the way he went. With three of the twelve technicians out with the flu, things were sure hectic that day; I even told Joe “once you put the ladder up, run over and marshal the other jet forward. Then, shut them both down together. Joe should have waited for the engine to run down before he approached with the ladder. He knew better than that.”

I too had my stories to praise Joe, but, as I listened to my fellow sergeants it dawned on me...yes, Joe was always there for us, but where were we for him? Why did I only notice now all of the short-cuts we allowed him to take. By ignoring the signs, we condoned his actions.

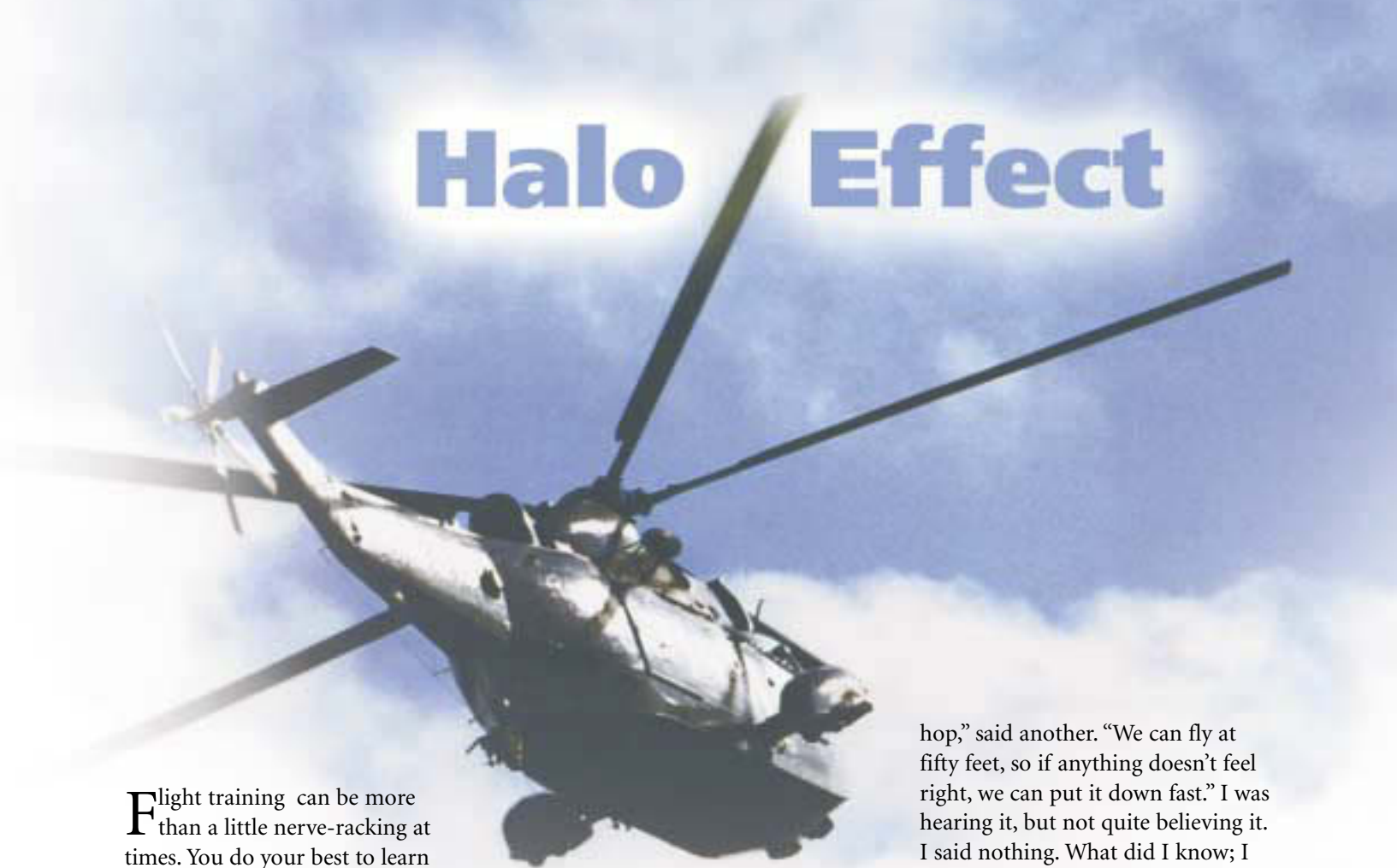
Why was that? Was it because he always got the job done before expected or was it because he made us look good by being able to meet the changing priorities? I guess I will never figure that one out.

You all know Joe. Just look around at your own people. Do you know their capabilities and limitations? These are our “can do” technicians. Each mission, each squadron goal is part of their dedication and professional pride; each missed sortie is a personal affront. We continually preach safety to them, but do we enforce and practice what we preach? If we won’t, who will? How many stories will you be able to tell at their funerals? What’s that...you don’t have time to overlook everything? Well, neither did Joe. Every incident is true, however, Joe did not die. If we can all learn a lesson from this story, maybe Joe will be able to tell his own stories someday. ♦

Sergeant Elliott



Halo Effect



Flight training can be more than a little nerve-racking at times. You do your best to learn and improve with every trip, always under the watchful eye of the instructor. After all, these are the people who teach the craft; they can do no wrong!

I was a brand new flight engineer (FE) with all of four hours experience when I learned an important lesson. It was sometime in February, not the best day for weather with a possibility of freezing rain, low ceilings, and cold weather. Immediately after the weather briefing, the instructors got together to make a decision. We all agreed that it couldn't hurt to give it a try.

About thirty minutes into the trip, I'd just finished doing one of the sequences and we were transiting to a new location for the next sequence. It was a little cold and we heard over the radio that one of the other aircraft was returning to base because they had spotted rain showers and decided that it was safer to call it off. No sooner

had we heard this, than we flew into rain ourselves and started picking up a lot of ice quickly. My instructor called for the windshield wipers and, sure enough, it smeared the windshield with ice. At the same time, ice started building up on the wire strike protection system and the door handles. Exactly what were we supposed to do??

We were safe and sound on the ground, five miles from the helo-pad. We called servicing to let them know where we were and they said to bung up the helicopter and they would send a truck to pick us up. My instructor and I got out to have a look and there was plenty of ice build-up on all the surfaces. We got back in to inform the pilots, and that's when things took a strange turn.

"It's only a little ice, not too bad at all," one person said. "We're five miles from home, it's just a short

hop," said another. "We can fly at fifty feet, so if anything doesn't feel right, we can put it down fast." I was hearing it, but not quite believing it. I said nothing. What did I know; I was just the student. Sitting beside me was a high-time FE instructor and the aircraft captain (AC) was the flight safety officer. All the while, in the back of my mind, I was seeing the line from the aircraft operating instructions (AOI) that stated, "certified for non-icing conditions only." I said nothing.

We picked up, flew it home and landed safely. We got out and two thirds of the blades, from the tips inwards, had a quarter inch of ice extending from the leading edge back about three inches. My crew said nothing, it was a non-issue. Who was at fault...the instructor, the co-pilot, the AC or me? We all were. Looking back, I realize that I had a case of "halo effect." Even if you are inexperienced, if you have doubts, speak up. It may be the words needed to jog someone else's thought process and avert an incident or accident. ♦

Captain Hulan

Doing Things Properly

“We should be able to wrap this up in a couple of hours,” I was thinking, as I unlocked the hangar. I was the senior NCO in charge of a weekend duty crew, and what a beautiful spring day it had been. “It should be warm enough to cook on the bar-b-que tonight.”

The five other technicians were starting to arrive and I turned my attention to preparing the paperwork. We were to start three

If I had my head turned in the other direction, the yell would not have been in time to prevent a much more serious injury.

jets to go to North Dakota for dissimilar aircraft training and there was also one jet due back from Winnipeg that had to be parked. Bob and Jim were the first two done their checks, so we decided to start towing the jets outside. I would drive, Jim would ride the brakes, and Bob would be the i/c. The books called for a six-man tow crew, but we were all experienced

and two of the jets were at the front of the hangar.

The first jet was hooked up; I watched one wing and Bob watched the other wing and the tail. We parked it on the eastern end of the line without incident. Bob threw a chock under the nose wheel and then unhooked the tow bar from the wheel. I briefly wondered why he did not disconnect the tow bar from the mule first, but this way would save time. “Pull ahead easy,” Bob yelled to me. I eased the mule ahead and we were clear of the nose wheel. As I waited for him to finish pinning the jet, it crossed my mind that maybe Bob took short cuts like this all the time.

The second jet was towed out just as smoothly as the first; if the jet from Winnipeg arrived on time we would be out of here in no time. Pulling into the hangar for the last jet, I had to drive in a big U-turn and then back the tow-bar in close to the jet. Bob was standing on the running board and Jim was sitting on the back of the mule. Perry and Sally had the last jet all prepped and ready to tow. Just as I stepped on

the brake to begin backing into position, Bob stepped off the mule. He immediately disappeared from sight and I jammed harder on the brake pedal. Someone yelled and Perry came running up to the side of the mule. Perry helped Bob to his feet and was checking him over. Bob had stepped in a small pool of oil just as the mule was almost stopped. He had fallen to the floor, badly jamming his elbow and landed less than one foot from the rear wheel. If I had my head turned in the other direction, the yell would not have been in time to prevent a much more serious injury. I shuddered to think how close I had come to running over Bob.

The third jet was towed out; all three jets departed and we were just finishing up putting the last jet inside. I could not shake the feelings of how lucky my duty crew had been. We had used all kinds of short cuts and broken many rules but we still managed to get the job done. Bob’s sore elbow and stiff shoulder were the only reminders...I wonder if I was the only one who felt like doing things properly? ♦



Are the Numbers Correct?

It was a nice day on the tarmac of Moose Jaw and we were nearing the end of a long day. We were getting ready for the end of the shift when a new snag on aircraft #056 appeared on the unserviceability board. The trim buttons on the left-hand stick-grips were weak. With thirty minutes to go until shift change, I figured it would be easy to change and then I could have the night shift do the independent check.

The job was something I did quite often in maintenance and in snags. The procedure would only take about five minutes to remove the stick grip and then install and lock wire a new one. Then all I would have to do was the paper work and wait for the independent check to be carried out by a junior supervisor. I proceeded to get the stick-grip from the spare parts lock-up, and then I got the lock wire and tools and proceeded to where the aircraft was located. It was warm and sunny and a great day to be outside instead of in the hangar. I took my time to get to the aircraft on spot 65

and took my time changing the stick-grip. When I finished the job, I went back to the hangar and put away my tools and did up the paperwork. While I did the paperwork, the shift was changing. I talked to the night supervisor and informed him of the stick-grip change still requiring an independent check. He told me that I should have left the change for them to do, but I reminded him that it was only a five-minute job and we had nothing else to do.

The next day as I reported for duty, the junior supervisor called me out to the hangar floor and asked me what aircraft I had changed the stick-grip on. I told him it was aircraft #056 on 65 spot. He asked me again to tell him which aircraft I did the change on, and, again I told him. He told me to read the hand-over report from the night crew. When the independent check was carried out, the serial numbers on the stick grips did not match. The night crew spent an hour looking

for the right aircraft and stick grips to carry out their independent check. When they checked the aircraft location sheet, they discovered that aircraft #056 had been on 65 spot (like I said) and also that aircraft #065 was on spot 56. They found out that I had changed the stick-grip on the wrong aircraft and on the wrong spot. They spent one hour changing the stick grips and doing the independent checks and paper work.

After the embarrassment and the safety lecture on making sure the job was done right and on the right aircraft, the junior supervisor insisted that we no longer take on any taskings in the last half hour of the shift. That time was to be reserved for doing clean-up and getting ready to pass the information to the on-coming crew. With Moose Jaw being such a large flight line, it may have been necessary to write the numbers down on paper. ♦

Sergeant Rodgers

"CAN-DO"

It was just a few days before Christmas in Trenton and the temperature was -25°C with a very fine snow falling. The powder was just enough to cover the ground and it was our last night of midnight shifts. Midnight shift was from 2300 to 0630 and it consisted of minimum people, especially during Christmas season. The first six shifts in our cycle were nightmares; everything was broken, including support equipment. The aircraft were coming back late at night and leaving early in the morning, which meant that the midnight shift had to do it all. We did the "A" (after-flight) checks, the "B" (before-flight) checks, PI's (periodic inspections), refuelling, and, of course, snags. We were swamped and, of course, everything was done outside.

I clearly remember the expression on the face of the mule driver and the aircraft brakeman, and I probably had the same one on my face.

When I came in for the last night of shift, it was quiet like a ghost town. There were no aircraft scheduled to come back and no aircraft could be worked on due to lack of spare parts. There was one departure scheduled for Flight 85/86 to Alert, which meant one "B" check. What a drastic change; usually we were quiet all week and busy on the last night. The conversation on the crew

was all about Christmas, leave plans, buying gifts, and going to parties. Despite the fact that it was a couple days before Christmas and a midnight shift, the morale of the crew was high. At that time, our crew had the reputation of being the best one; we got the job done and we never fooled around with safety!

Shortly after 2330, I recommended to the crew chief bringing the scheduled Hercules inside to do the "B" check. The Flight Engineer (FE) could do his pre-flight check inside and Mobile Air Maintenance Service (MAMS) could finish securing their load. The reasoning behind this was, if we found something wrong with the aircraft, it would already be inside, where it was warmer. It would also minimize the required de-icing job before flight.



ATTITUDE CAN DO IT FOR YOU

The aircraft was parked on spot #17 on the west ramp and that spot is almost in a perfect line with #6 bay of 10 Hangar. There was barely 700 feet between the spot and the bay. Perfect! On the way out the door, I told my tow crew “OK, boys and girls, so far we have a perfect record (meaning no accidents) and I want to keep it that way.” We all jumped on the mule and drove to #17 spot where the crew were readying the aircraft for a tow. I reminded my tow driver that we had all the time in the world.

Meanwhile, I had two technicians waiting to open the hangar doors and the tow bar was hooked up. We got the OK from MDC (maintenance dispatch centre) and I told the driver to go ahead. As we started to move, the technicians opened the hangar doors.

The driver was going slower than normal but as we got closer to the hangar, the driver applied more

power to get over the tracks of the doors. Once the mule was inside and clear of the tacks, he applied the power again to get the aircraft over those tracks. I found out later that the mules were parked outside all day and the hangar doors were never opened that day, so the inside temperature was probably somewhere between 15 and 18 degrees Celsius. The ice-cold tires of the mule and the nice, warm hangar floor, and the little bit of snow combined to give a very slippery condition. As the aircraft came over the tracks, the driver applied brake pressure to anticipate the push effect from the aircraft and now the aircraft was pushing the mule.

We were moving very slow, at less than walking speed. I clearly remember the expression on the face of the mule driver and the aircraft brakeman, and I probably had the same one on my face. By the time I realized what was

happening, the mule, tow bar, and aircraft were in a “jack-knife” situation and the nose wheel of the aircraft was five feet off the centre-line and still sliding sideways. I could hear the driver of the mule screaming because he was pulling so hard on the steering wheel, trying to apply more pressure to the brake pedal. He was under the impression that the mule’s brakes had failed, which was not the case. I looked at the brakeman in the cockpit and screamed for him to apply the aircraft brakes. After a few seconds of delay, the brakes were applied and the weight of the aircraft did stop the mule. We repositioned the aircraft, and closed the hangar doors.

That day I realized that even when you have a good excuse for cutting corners (i.e. to stay warm) it may, indeed, spoil a perfect safety record. ♦

Sgt. Dagenais



Epilogue

TYPE: CH11305 Labrador
DATE: 02 October 98
LOCATION: 3 NM South of Marsoui QC.



CH11305 was transiting from Sept-Iles, QC to Greenwood, NS with a crew of six in the vicinity of Marsoui, QC on 2 Oct 98 when the aircraft crashed into heavily wooded terrain just south of the village. All six crew members suffered fatal injuries.

Through witness interviews and corroborative evidence on the scene it was determined that the aircraft was traveling south when it began discharging smoke. The aircraft turned, then erupted into a fireball or explosion and fell into the forest in pieces. After 16 days of on-site investigation, the aircraft debris was gathered up and transported to Ottawa where a series of frameworks were manufactured to mount the pieces in their approximate pre-inflight breakup locations.

Wreckage examination showed a fuel leak in the #2 engine compartment of CH11305 resulted in an in-flight fire. In the process of responding to the fire, the crew shut down the engine, activated the fire extinguishing system using the T-handle and commenced fuel dump procedures. The right hand dump tube did not extend

during the fuel dump sequence; this increased the possibility of fuel to fuselage contact. The #2 fire T-handle was reset prior to the in-flight break-up; re-introducing fuel and oil into the engine compartment after the fire extinguishing system had been activated, likely re-igniting the fire or causing a small explosion in the # 2 engine compartment. During these actions the dumped fuel was ignited and this set off a catastrophic series of events causing rear rotor blade to fuselage contact and the break-up of the aircraft. Forces precipitated by the aircraft break-up and subsequent ground impact caused fatal injuries to all six crew members.

Preventive measures implemented as a result of this investigation included Aircraft Operating Instruction (AOI) changes with respect to the fire T-handle being left in the twisted position after its use and ensuring that adequate guidance for aircraft flight parameters for CH113 fuel dump procedures.

Furthermore, the CH113 fleet is not equipped with a CVR/FDR system. This required that the investigation team revert to fundamental principles of investigation which are work intensive, time consuming and not always precise. This deficiency was in part responsible for the FDR/CVR directive being initiated in Jan 2001 which outlines policies and regulations with respect to fitment of this important equipment to all fleets of CF aircraft.

Several CH113 fleet Special Inspections (SIs), maintenance procedural changes and other preventive measures to reduce the likelihood of recurrence were instituted during the investigation process, which took nearly two and a half years to complete. Preventive measures pending action are based on lessons learned from this accident that are being applied to other fleets of CF aircraft.

For the first time, DFS placed the full Flight Safety Investigation Report (FSIR) on the Canadian Forces DFS Web Site (www.airforce.dnd.ca/dfs/eng/reports/fsir_e.htm) after making the report available to the crew's next of kin (NOK). ♦

Epilogue

TYPE: CT11172/006
DATE: 04 Sep 2000
LOCATION: 5NM South of Toronto International Airport, Toronto, On.

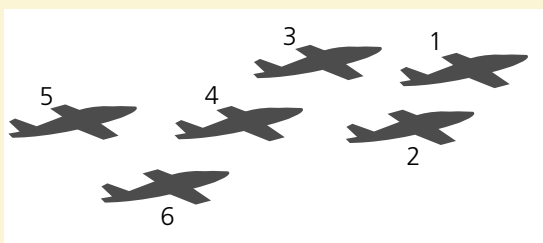


Snowbird #4



CT114006 Snowbird Lead #1

The accident occurred after the 9 plane formation of 431 Air Demonstration (AD) Squadron had departed Pearson International Airport (PIA) to fly a display for the Canadian National Air Show in Toronto. The aircraft directly involved were Snowbird Lead (114006) and the number four aircraft (114172) of the formation. The departure from PIA was conducted as three separate elements of three aircraft, each in “Vic” formation. The number four aircraft was lead aircraft of the second element. The briefed rejoin was to be completed shortly after take-off with the first two elements rejoining as depicted below:



As the second element was positioning for the rejoin, Snowbird Lead called a speed reduction and “easing right” into a turn. The number four aircraft overshoot the Lead aircraft by passing below and past by approximately 50 feet.

The pilot of number 4 then attempted to regain the ideal position by moving backwards. During this manoeuvre, number four’s left elevator and tail contacted Lead’s left wing leading edge and left belly smoke tank. The number four aircraft departed the formation and recovered at PIA. Snowbird Lead co-ordinated the recovery of the remaining aircraft and all recovered at PIA without further incident. The number four aircraft sustained damage to the fibreglass cover at the top of the ‘T’ tail with contact marks and torn metal found on the left elevator and tail section. The Lead aircraft had contact marks and dents on the left belly tank and a torn left wing leading edge. The investigation found that, although aware of the proper overshoot procedure, the pilot of aircraft #4 elected to attempt to salvage this overshoot with a non-standard manoeuvre. Also, during Snowbird training/work-ups, straight-ahead rejoins and overshoots were briefed but were not practised as discrete manoeuvres and 431 Squadron SOP’s did not clearly define overshoot procedures. 431 Squadron has initiated the following safety measures: Squadron SOP’s have been modified such that: the various procedures for overshoots are described; radio procedures are specified for rejoins and overshoots; there are detailed instructions specifying the rejoin sequence of aircraft; rejoin spacing will be increased from a position the Snowbirds refer to as “route” to “wider than route” to reduce the probability of collision until the formation is stabilised; formations with elements of three aircraft joining on three aircraft will not occur over populated areas; and rejoins in “Vic” formation in high-density international environments will be to a “trail” position of 500 to 1000 feet until the lead pilot calls the formation into tight formation. 431 Squadron training programs have been modified to include a straight-ahead overshoot/rejoin for aircraft rejoining from a line astern position. Also, greater detail on speeds, flight patterns and radio procedures are being provided in formation briefings with respect to take-offs, re-joins and overshoots in high-density airspace. The investigation also recommended that 15 Wing review it’s Flight Surgeon support to 431 Squadron in the event of a Flight Safety mishap while deployed and 431 Squadron should then develop an applicable SOP. Also, 1 CAD must investigate the establishment of a method for all CF deployed flying units to have access to Flight Surgeon support/advise if required. ♦

More...Are the Numbers Correct?

It was my first aerobatic solo to the area and I was quite excited. I was off to take a Tutor, and put it through its paces, with no one beside me to take away from the sheer enjoyment of that kind of flying. I headed down to operations, grabbed my helmet and parachute, and proceeded to the desk to get my jet. I checked out the book, signed out on the computer, wrote the required information on my piece of paper, and headed out to the line. When I walked up to my jet, I noticed that the start crew wasn't quite there, but they saw me doing my walk-around of the jet, and they headed over to fire it up. I jumped in, went around the horn and the beast fired up — what a great sound. I tax-

ied out of the line and out onto the runway, received my clearance for take-off, and I was off.

Everything was going fine and, as I was heading off to the area, I was going through all the maneuvers and sequences in my head. As I was preparing to do a stall practice, Operations came over the radio, calling out my call sign. I noticed it was my flight commander, which seemed odd. After I responded to the call, an even more odd question came back..."which aircraft are you in?" I glanced down at the placard — #059, then down to my kneeboard to confirm. I saw #59 so, I responded by telling them that I was in aircraft #059.

Just as I answered, I looked back down to the piece of paper, and my stomach turned. The #59 wasn't the aircraft number like I thought, but the spot number. Knowing that not every jet on the line is actually serviceable, I quickly became concerned. In my case, it happened that it was a serviceable jet, and I was able to complete the trip as scheduled. In the end, it turned out that I had taken aircraft #059 in spot #61, not aircraft #113 in spot #59. My inattention could have resulted in a very quick flight if, indeed, the aircraft was not serviceable! ♦

Captain Morris



After the Scare!

How many of you have found yourselves in sudden, terrifying danger? How did you react? And, to the point of this article, how did that situation and your reaction to it affect your attitude and decision-making immediately after the event? The two following flight incidents might be instructive!

The first potentially catastrophic situation involved a CC-130 Hercules and four crew-members. It was the early 1990's during the first half hour of a three-hour training session in the local circuit pattern. During a practice "maximum effort take-off," at the very limit of the flight envelope, a safe three-engine airspeed barely achieved, and the aircraft attitude very nose-high, the #1 engine was very abruptly brought back to the idle position to simulate an engine failure. Immediately, the aircraft rolled sharply left and pitched down towards the water, despite corrective actions taken by both pilots. Since the aircraft did not seem to be responding to their inputs, the crew all thought that it had incurred structural damage. They expected to die, an opinion shared by eyewitnesses on the ground. But a few feet above the water, they regained control, and flew away to their relief...but continued with the three hour training session, despite almost kissing their lives goodbye.

Ten years later another training mission involved Dissimilar Aircraft Combat Tactics (DACT) between CF-18's and American F-16's.

During the first engagement, after a succession of errors and miscues, lead and #2 almost collided. The nightmare was avoided by an aggressive evasive maneuver from #2, initiated at the very last second before impact. The miss distance between the two aircraft was estimated, from the tapes, at only a few feet. The two pilots both knew how close they came to dying, and several hours after the flight, they were still in a daze; the emotional results of the near catastrophe was plainly evident on their faces.... but after the near disastrous first engagement, they kept pushing the training session and repositioned for the following engagements.

Two different situations, but the same decision to carry on with the training, despite the mind-numbing adrenaline flow that had just been experienced. There are physical, cognitive, and emotional changes that can come into play immediately after critical incidents such as these: fatigue, nausea, dizziness, difficulty breathing, visual difficulties, confusion, poor attention, poor orientation, poor decision making, poor concentration, poor problem-solving, anxiety, denial, fear, uncertainty, apprehension, and agitation (to name a few!). Would someone plan a mission and go flying in these circumstances? So why continue flying once they manifest?

The answer is that a defense mechanism is at work, one the human brain uses to relieve the

anxiety and stress in order to "cope" and keep going. It is known as "affective isolation," or the separation of an experience from the affect or emotion that accompanied it. In other words, the brain "forgets", isolating the feelings just experienced (the more critical, life threatening, and frightening the event, the more effective the process), leaving them to be retrieved, if need be, later on, but in the meantime to keep pushing. And it is done unconsciously! The problem is that while the brain does this little trick, the physical, cognitive, and emotional impairment is still affecting performance. The decision to press on after the scare, especially in a training mission, could precipitate the same results so recently averted!

*Captain Clavet
Flight Surgeon*

DFS Responds

Thank you Dr Clavet for bringing this excellent point to our attention. Impairment, whatever its source, is not something we need during flying operations, and understanding the effect you have described is an important step in preventing it from affecting us in the future. Is there pressure to get the trip done? Flight safety principles suggest that sometimes the best way to achieve combat capability is to take it home and live to learn again. As an aside, we also need safe learning experiences and a disciplined culture that will help us to avoid the situations that cause the effect in the first place! ♦

Greetings to all of you who transit the United States during the course of military operations. You may have noticed a recent change on your latest trips south — the significant expansion of technology. You no longer have to stand in line at a traditional weather station counter to receive your weather briefing.

Each Air Force base or Army post has a transient aircrew work area located near the weather station, usually in the base operations area or flight planning room. Each area has a computer terminal capable of electronically filing a flight weather-briefing request with the appropriate Operational Weather Squadron (OWS). The latest in web technology, Program Generation Scheduler/Server (PGS/S), facilitates the transaction. The information is transmitted directly to the briefing cell at the OWS. The completed briefing is returned either via the computer, or a designated fax machine.

In the Continental U.S. there are four OWSs who are staffed and organized to provide 24-hour transient aircrew briefing services. The map shows the geographic

responsibility of each respective OWS and lists the appropriate contact information. Overseas OWSs are located in Germany, Japan, Alaska and Hawaii. The local weather flight or a stateside OWS can help you contact the appropriate overseas OWS for your destination. In addition, OWS contact information can be located in U.S. Flight Information Handbooks.

OWS's usually need two hours notification to schedule and prepare a weather briefing, but if an aircrew has an emergency or a high priority request the OWS can process the briefing ahead of others. Requests should be submitted as soon as possible to speed services for everyone. Ideally, file your request the evening prior to the next morning's take off and your briefing will be ready when you start your day. Some OWSs are already logging nearly 3,000 weather briefs per month, with most requests filled during peak flying hours.

While waiting on your briefing request to process, you should access other products posted on the OWS web page. You'll find the current radar composites, satellite imagery, severe weather information,

flight hazard graphics, etc.

One unique feature all OWS web sites have is the ability to link to other OWSs directly. If your flight will be crossing OWS boundaries, you can access the region-specific products with just a few simple clicks of the mouse.

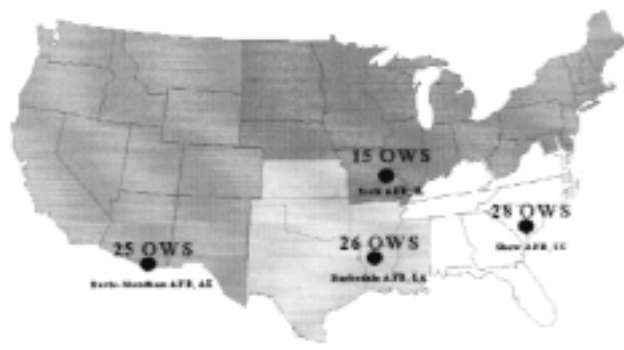
Technology has not replaced the weather forecaster, however. You can still hear a human voice, and always should. OWS forecasters can answer any questions you have, clarify information, elaborate on expected weather conditions, and provide the official "brief time" and "initials" for your flight planning documentation.

The process is as simple as can be, although a definite change from what you're used to seeing at U.S. Air Force and Army locations. Providing you the best weather support possible during your visit is of the highest priority to us — our new technology ensures it. Happy flying! ♦

SMSgt Larabee
Directorate of Weather
DCS/Air and Space Operations

(Questions can be e-mailed to HQ USAF/XOWP at AFXOWP@pentagon.af.mil)

Weather Support Areas of Responsibility - CONUS



15 OWS
Davis-Monthan AFB, AZ
DSN: 228-8598/6399
COMM: 328-228-6398/5599

15 OWS
Scott AFB, IL
DSN: 576-9755
COMM: 618-254-9755

28 OWS
Shaw AFB, SC
DSN: 965-0588, ext. 222/223/224/225
COMM: 803-895-0588, ext. 222/223/224/225

26 OWS
Barksdale AFB, LA
DSN: 781-3024
COMM: 318-454-3024

A Link In the Chain

It was a typical morning at the gliding site. The crew arrived early to prepare for the days flying. Before long, we were into the briefing. It was a standard briefing detailing the specific information for the day. The weather, which was included in the briefing, was VFR for the morning but was going to become IFR toward the noon hour.

The cadet pilots flew all the cadets from the local squadrons that had shown up to fly. After all the cadets were flown, the Site Supervisor decided to fly the squadron staff and call it a day before the weather got bad. An instructor from the site flew the first staff member. The instructor, knowing that everyone was watching, soared through the air swiftly and precisely. The Site Supervisor flew the second member. The supervisor had to outdo the instructor. After all, we're only human. Our competitive behaviour

does get the best of us. The flight was prompt and speedy with clear-cut turns.

It was time for the last flight of the day. The last flight is normally a hangar flight. The purpose of the hangar flight is to land close to the tie-down area so the crew does not have to push the glider as far. I have done numerous hangar flights in the past without incident. During the previous week, when I completed the hangar flight and landed near the tie-down area, the crew moved the glider and tied it down. Once the debrief was complete and the cadets had left, my peers proceeded to give me a rousing. They claimed that I did not land close enough and that they could do better.

It was time for the hangar flight and it was my turn to fly. I strapped in and launched off of Runway 01 without incident. The flight went

well and I was happy with my performance. After all, I had to outdo the boys! I set myself up for an approach to a parallel taxiway. With landing close in the back of my mind, I touched down and taxied into the grass adjacent the taxiway. The grass area was not walked and I taxied the glider directly over a hidden crate. The skid plate on the skid of the glider was ripped off. The skid plate is mounted with screws and the skid plate was simply replaced with new screws.

Why did the incident happen? The first thing was the weather. With the weather steadily getting worse as the day went on, the pressure to push hard and finish before the IFR conditions arrived was present. The chain had started. Secondly, the urge to fly well was overwhelming. The chain was growing. Lastly, realizing that I would be roused if I didn't land close, I proceeded to break the chain and caused a "D" category incident.

In summary, the thing to remember is to prevent the chain from growing. I may have had good intentions at the time to reduce the pushing by the crew, but we are reminded that we should not cut corners to make the job easier. We have to fight the human pattern of shortcuts. ♦

Mike MacAulay



From the Investigator

TYPE: CT114006/081 Tutor
DATE: 21 June 2001
LOCATION: London, Ontario



Aircraft #5 leading edge



Salvage of #1 aircraft

4³¹ (AD) Squadron "Snowbirds" were conducting a media flight two days prior to performing an air display at the London Airshow. Each of the nine formation aircraft had on board both the pilot and a passenger. Aircraft #1 and aircraft #5 had broken away from the remaining seven aircraft in a "Concorde" formation to obtain some photographic opportunities of the Lead aircraft and had begun their rejoin to the main formation. As the rejoin proceeded, pilot #5 broke his aircraft away from aircraft #1 to rejoin to his normal position in the main formation. Pilot #1 simultaneously manoeuvred to position to re-take the lead of the main formation. The two aircraft

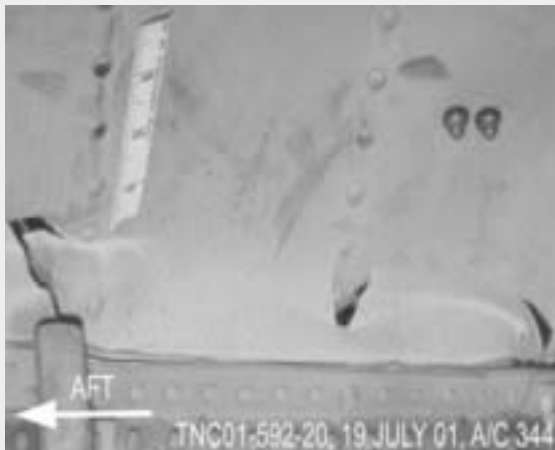
collided when approximately 100 metres behind the main formation. Control of aircraft #1 was lost and pilot #1 commanded an ejection. Both the pilot and the passenger ejected and landed in the water in Lake Erie approximately 2.5 km from the shoreline. Control of aircraft #5 was maintained and pilot #5 was able to land the aircraft at London airport without further incident. Aircraft #1 sustained "A" category damage. The aircraft sustained an undetermined amount of damage due to the mid-air collision and due to a post ejection fire (all to be further analysed). The aircraft was subsequently destroyed on water impact. Aircraft #5 sustained "C" category damage. A portion of the right wing leading edge was missing and numerous scratches and dents were found on the upper surface of the wing. The right hand aileron was bent and scratched at the outboard attaching point. Wiring was broken and pitot and static lines were damaged in the right wing leading edge. Wing spar damage is to be determined. Both pilot #1 and the passenger were recovered from the water at approximately 1550 local (approximately 1 hour after the ejection occurred). They were recovered by a Labrador helicopter stationed at 424 Sqn Trenton, Ontario operating in the vicinity of Cobourg at the time of the accident. The two individuals were then transported to the St. Thomas Municipal Airport where they were met by an air ambulance (helicopter) and a land vehicle ambulance. The air ambulance transported the passenger to the London Health Sciences Centre. Pilot #1 was transported by land ambulance to the St. Thomas-Elgin General Hospital. The main wreckage of aircraft #1 and the right wing and canopy of aircraft #5 have been sent to the Quality Engineering Test Establishment (QETE) for further analysis. The Operational Load Monitoring container was taken by the National Research Council to the manufacturer for data retrieval. All aircrew life support articles will be analysed by the Aerospace Engineering Test Establishment (AETE), Defence Civil Institute of Environmental Medicine (DCIEM) and QETE. The investigation is ongoing. ♦

From the Investigator

TYPE: CC130H-30 Tail Strike

DATE : 12 July 2001

LOCATION: 8 Wing, Trenton



The aircraft was flying in support of the CC130 Basic Course 0102. The operating crew consisted of an Instructor Pilot (IP) in the right seat, a Student Pilot (P1) in the left seat and a Student

Flight Engineer (FE) in the FE seat. A second Student Pilot (P2) was sitting on the lower bunk and an Instructor Flight Engineer (IFE) was standing behind P1. The first manoeuvre was a flap 100 (100% flap) touch-and-go to runway 24, which was without incident. The second circuit was planned as a flap 50 (50% flap) touch-and-go to runway 24, with a simulated emergency on the Downwind portion of the circuit. Once on Final, the aircraft was slightly high. The student reduced power and shortly after the aircraft began to descend below the glide path. At a distance of $\frac{1}{2}$ NM to $\frac{3}{4}$ NM from the threshold, with 4 red lights on the PAPI (precision approach path indicator), the student reduced power again and raised the nose of the aircraft, crossing the threshold slightly below glide path and slightly faster (5-10 Kts) than the briefed threshold crossing speed. The student was correcting for a right crosswind, with right wing down and left rudder input when he reduced power to flight idle prior to the flare. Approximately 1-2 seconds later the IP pulled back on the control column. The student matched the IP's pull and kept the same control input until the landing. On touchdown the aircraft had a pitch attitude of 8° and an indicated airspeed of 114 kts. The crew initiated the "go" portion of the touch-and-go and became airborne shortly after. The crew was then notified by the control tower that it appeared that they had struck the aircraft's tail on the runway. The IP took control and carried out a right-seat landing, after which the aircraft was taxied off the runway and onto the taxiway for an external visual inspection by the crew. The IP decided to taxi to the ramp and shut down the aircraft after some scratches were detected on the skid plate. The initial damage was assessed as "D" category however further examination of the aircraft's structure resulted in the damage being upgraded to "C" category. ♦

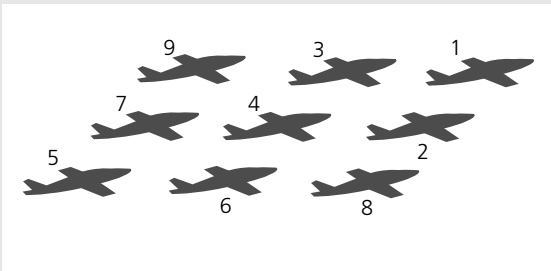
From the Investigator

TYPE: CT114142 Tutor
DATE: 10 April 2001
LOCATION: 19 Wing Comox
Runway 29



The aircraft was number five of a 9-plane formation landing after an on-field air show practice at 19 Wing Comox. During touchdown on runway 29, the aircraft experienced a firm landing and the right-hand main gear and nose-gear collapsed.

The positions in the formation are depicted as follows:



As the formation touched down, number five experienced a firm landing. The aircraft then bounced and became airborne. The aircraft then quickly descended towards the ground and all three landing gears contacted the runway surface heavily. The right-hand main gear was forced upwards through the top surface of the right wing and collapsed. The nose-gear also partially collapsed.

The aircraft became airborne again and then settled back down on the runway surface, slid along the runway on the right-hand smoke tank, left-hand main gear and partially collapsed nose-gear, and came to a stop. The pilot shut down the engine, turned off electrical equipment and egressed from the aircraft. The on-scene-command-emergency-response (OSCER) vehicle and fire fighting vehicles arrived on scene within approximately 2 minutes and sprayed foam on the underside of the aircraft. An ambulance arrived at the accident site after approximately 8 minutes from the time of the accident and took the pilot to the 19 Wing hospital.

The 15 Wing Commander initiated a formal risk assessment to assess the risk versus benefit for “9” or “7 and 2” plane landings for 431 squadron. This manoeuvre will not be performed until the results of this risk assessment are complete.

The investigation is continuing by examining the procedures for 9 plane landings, including escape lanes in the event of a go-around. The investigation is being conducted by DFS with support from QETE and DCIEM. ♦

TYPE: SZ 2-33A Glider Accident
DATE: 10 June 2001
LOCATION: Nanaimo, BC



The glider was being flown in support of the Pacific Region Spring Familiarisation Flying Program at the Nanaimo Airport near Nanaimo, BC. The pilot, a Civilian Instructor, was a Familiarisation Pilot and the passenger was an Air Cadet. After a normal tow to 2600

feet above sea level (ASL) (airfield elevation is 97 ft ASL) followed by some upper air work, the pilot joined a right Downwind at 1300 feet ASL (1200 feet AGL) in 10 Kt winds. After turning final, she noted that she was low and well short of her intended landing area. At approximately 1715Z (1015 Local), the glider made a hard landing on the grass between the runway and taxiway, approximately 1900' short of the intended landing area. The pilot unstrapped and egressed unhurt. The passenger complained of a sore back. After a local ambulance arrived on scene the passenger was placed on a backboard and transported to hospital. She was released later that day. The glider suffered extensive damage to its wings and internal structures. The investigation has so far eliminated a “mechanical” cause factor. ♦

Good Show

MAJOR PIERRE BARMA



On 20 September 2000, Major Pierre Barma and his crew took off from Saint-Hubert on an NVG training mission for a pilot on the CH-146 Griffon basic course. Weather conditions were favourable, but the lack of natural and artificial light made the operation more difficult. The student, who was flying the aircraft, was exiting

a restricted area, and the helicopter was 50 feet above ground level when Major Barma heard a dull noise from the rear followed by a rapid increase in engine rpm. Initial indications were that no. 2 engine torque was zero and the no. 1 engine was producing all the power required to maintain the aircraft in flight, thereby exceeding its allowable limit. Major Barma thought the student had forgotten to push the throttle forward, but he quickly realized that the problem was a failed engine fuel regulator on the high-pressure side. He immediately took control of the aircraft and continued the climb while following the emergency procedures checklist. He pulled the throttle back to idle, but to no avail. He then decided to select the fuel regulator to manual, which allowed him to regain control of the no. 1 engine. The aircraft was returned to Saint-Hubert without further incident.

By analyzing the problem quickly and accurately under difficult conditions, Major Pierre Barma displayed exemplary professionalism in minimizing the risk of an accident and the casualties and damage that would have resulted. ♦

CORPORAL MARTIN ROBERT

Corporal Robert is an Aviation Technician employed at 14 Air Maintenance Squadron Greenwood in the Aircraft Repair Organization. While assisting his peers in the completion of the survey phase of the periodic inspection on Aurora aircraft CP140117, he observed that a flake of paint had peeled away from the port main landing-gear actuator support bracket. Although a seemingly minor detail, Corporal Roberts recognized this as a clue that something much more significant may be taking place. Acting upon his perceptive assessment, he arranged for a more in-depth NDT (non-destructive testing) inspection of the area. NDT revealed a critical crack in the radius of the main landing-gear actuator support bracket. Having found a crack on the port side, he requested to have the starboard bracket inspected. NDT showed that the starboard bracket was also cracked.

The findings were reported to DAEP(M) NDHQ who immediately responded with a fleet-wide special inspection. The result of this special investigation showed that five additional Aurora's were unserviceable for similar defects.



Corporal Robert's outstanding professionalism, acute powers of observation and diligence to thoroughly investigate a perceived problem were key factors to identifying and averting a potentially serious flight safety incident. ♦

CORPORAL CLAUDE LEVESQUE



While working as an Aviation Systems Technician with the Bosnia-Herzegovina Rotary Wing Aviation Unit at Velika Kladusa, Corporal Levesque was conducting an engine compressor wash on Griffon helicopter #457. During this work, the pilot noticed uncommanded cyclic

inputs from the cyclic control stick during autopilot #1 pre-test. This condition had been previously noticed, but the aircraft was never declared unserviceable by previous aircrew.

Corporal Levesque immediately put the aircraft unserviceable despite mission capability concerns. He then proceeded to troubleshoot the anomaly, installing external hydraulics and removing the centre floor panel to gain access to the linear SCAS actuators. Upon further investigation and the

questioning of his immediate supervisor, it was deduced that the aft end of the SCAS longitudinal actuator was in the left-hand position and the forward end of the control tube was in the right-hand position on the idler.

In this configuration, the aft SCAS longitudinal actuator moved extremely close to a nearby wire bundle at station 74.3. This condition had been previously addressed in a technical bulletin (TB 412CF-00-33). This service bulletin noted the affected helicopters (model 412CF Helicopters, S/N 46400 thru 46466). It was concluded that aircraft #457 did not have this technical bulletin embodied. A further check of all aircraft on station was carried out, producing an additional aircraft that was improperly rigged.

Although the uncommanded cyclic inputs were eventually traced down to an unserviceable longitudinal SCAS actuator, it was through Corporal Levesque's professionalism that two aircraft had their potential flight control faults eliminated. At the same time, several publication discrepancies were also identified. Though faced with mounting aircraft unserviceability, he remained focused to produce the most airworthy aircraft possible. ♦

SERGEANT WILLIAM RICKARD

While doing a pre-flight check on a CH146 Griffon helicopter with the Bosnia-Herzegovina Rotary Wing Aviation Unit at Velika Kladusa, Sergeant Rickard noticed the canon plugs of the combining gearbox



incorrectly secured. At the same time, there was an investigation being conducted on a similar matter by the NCM Flight Safety Officer.

Sergeant Rickard took it on his own initiative to investigate all of the remaining helicopters. He found that three others, which constituted 50% of the fleet, shared the same problem. Because of his initiative, Sergeant Rickard set in motion a series of events that resulted in remedying a hazardous situation. Once the investigation was complete, a Technician Awareness Program on the proper procedures to guide technicians in theatre was developed.

Sergeant Rickard's professionalism and exceptional attention to detail prevented the possible loss of an aircraft and crew. ♦

CORPORAL NEIL PRITCHETT

Corporal Pritchett, an avionics technician, had just finished marshalling a Sea King helicopter out of its start position. Following initial taxi checks, his responsibilities as marshaller were complete. Though not required to do so, he completed an additional general survey of the aircraft, which revealed that the movement of the tail wheel assembly had become erratic. He recognized that, despite the tail wheel being unlocked, such movement was uncharacteristic.

After quickly assessing the situation, Corporal Pritchett stopped the aircraft and informed the pilot that further investigation was required. He consulted with a qualified aviation technician to assess the serviceability of the tail wheel assembly. With the aircraft stopped, a close inspection of the assembly revealed that the lock mechanism bushing had become jammed between the shim plates of the tail wheel. The aircraft was declared unserviceable and immediately shut down.



Corporal Pritchett's exceptional actions precluded an aircraft, with a previously undetected unserviceability, from going airborne. Had he not reacted as quickly, this aircraft would have continued to taxi and would have almost certainly blown the tail wheel and quite possibly broken the tail wheel strut. Corporal Pritchett's astute observation of a system outside his trade is commendable. The superior professional attitude that led him to follow through, once having completed his marshalling duties, resulted in the avoidance of a potentially serious incident. ♦

PRIVATE CLIFFORD SAMMS



Private Samms was tasked to carry out an avionics "B-check" (before-flight check) on a CP140 Aurora aircraft on 27 September 2000 during the midnight shift. The aircraft was parked outside and, during inspection, he noticed that the radio beacon airfoil was not sitting flush with the aircraft's vertical

stabilizer. Investigating further, he found that the airfoil was not properly latched and the retaining nut was not properly torqued.

Private Samms carried out a complete inspection of the area, installed the airfoil correctly and returned the aircraft to a serviceable status without delay. Had this gone unnoticed, the airfoil would have likely separated from the aircraft in-flight, causing serious damage to the beacon tray and/or the vertical stabilizer.

Private Samms' professionalism and initiative allowed him to discover and rectify a significant flight safety hazard. His attention to detail and perseverance, in an area not required to be inspected during the B-check, eliminated a critical flight safety hazard. ♦

For Professionalism

On the morning of 24 October 2000, Corporal Sullivan was conducting sweeping duties on runway 11/29 at 19 Wing Comox. He discovered a metal ring that he could not identify and, as a result, took it to his supervisor Master Corporal Welsh. Concerned that this ring could be an important aircraft part, they brought it to the WFSO office for analysis.

Master Warrant Officer Jefford did not recognize the part and immediately started an investigation. After visiting the servicing sections of both 414 (T-33) and 407 (Aurora) Squadrons without any results, he talked to numerous technicians on 442 (Buffalo) Squadron. Finally, an individual, Corporal Underwood stated that the part looked vaguely familiar. After significant research of CFTO's, Corporal Underwood identified the part as the retaining ring from the Buffalo's nose landing gear steering arm upper assembly. Master Warrant Officer Jefford and Corporal Underwood then inspected all Squadron aircraft to find out its source. The five aircraft on the ground were found complete. The only aircraft (CC115462) that could not be inspected was airborne in the local area at the time. Master Warrant Officer Jefford suggested recalling the aircraft, and the aircraft Captain was advised of the situation and asked to return to the airport for a precautionary landing.

After landing, it was discovered that the wayward ring was indeed from aircraft #462. The retaining ring is very hard to see when properly installed as it is housed completely inside the nose landing gear oleo. The locking ring is the only device that secures the nose gear steering to the nose gear oleo. Without this ring, the steering

**MASTER WARRANT OFFICER
CAL JEFFORD**

MASTER CORPORAL HAROLD WELSH

CORPORAL DANNY SULLIVAN

CORPORAL MARTY UNDERWOOD



mechanism could have come undone and, at the wrong time, presented the aircrew with a very difficult and dangerous situation.

The professionalism of all four men involved in this incident was outstanding. They worked as a team and clearly demonstrated that Flight Safety is everyone's business. There is no doubt that they went that extra mile and that their quick and effective actions prevented what could have been a very serious accident. ♦



CORPORAL JMGJ PETIT

During a periodic inspection of a CF-18, Corporal Petit discovered what looked like a paint scratch in the top bulkhead

behind door 10R. Even though the area was partially obscured by the #2 circuit breaker panel and various cable assemblies, Corporal Petit removed the numerous components for a better look.

Further scrutiny revealed a hole going through the bulkhead and cockpit floor underneath the right-hand console. The supervisor was quickly informed, a flight safety report initiated, and a Defect Report and Engineering Disposition (DRED) was raised to rectify the unserviceability. This damage could have easily been overlooked due to the confined space and partially hidden location.

Clearly, Corporal Petit's dedication and professional concern eliminated this hazard that could have led to further damage to the aircraft. ♦

PRIVATE KEVIN DAVID DICKIE



Private Dickie was tasked to do a routine FOD (foreign object damage) check on Aurora aircraft #CP140119. While performing his check, Private Dickie noticed something peculiar about the run of cables that controlled both the rudder and the ele-

vator primary and secondary flight control systems. Further investigation revealed the rudder booster assembly auto-pilot disconnect cable was so slack that it had been worn through well beyond acceptable limits by the aircraft structure.

Notifying his supervisor of his findings, he immediately began researching removal and installation instructions for the damaged cable only to find that there were no procedures in existence. He immediately drafted and submitted a UCR (unsatisfactory condition report) detailing the necessary procedures and precautions in order to safely perform the removal / installation / functional checks of the rudder booster assembly auto-pilot disconnect cable.

Private Dickie has displayed professionalism and dedication far in excess of any reasonable expectations for an apprentice technician, and his perseverance certainly identified and eliminated a serious flight safety concern. ♦

On 31 October 2000, while conducting fuel leak checks on Sea King #12412, Corporal Ed Clarke noticed a newly installed right-hand landing gear retraction cylinder did not have proper clearance between the actuator and the oleo. This was not part of the normal inspection process, and was very difficult to see, as this component is located inside the sponson wheel well.

Upon further investigation, he determined that the repair facility had converted the actuator from a left-hand retraction cylinder to a right-hand cylinder, but had not converted the respective end cap. Therefore, the grease fitting was on the wrong side and caused the fitting to contact the oleo. Corporal Clarke then took further action and drew all other actuators from supply, finding two other cylinders configured incorrectly. He combined all this information and generated a detailed Pre Install Failure Message (PIF).

Corporal Clarke is commended for his outstanding initiative and impressive technical skills. Corporal Clarke's

CORPORAL ED CLARKE



high standard in maintenance practises and praiseworthy professionalism in following up this error ensured corrective action was taken preventing a potentially serious situation from developing. ♦

Flight Safety Word Search

By: Captain JJP Commodore

HINT 9 LETTERS "KNOWING YOUR SURROUNDINGS"

Y	M	I	L	E	S	T	O	N	E	A	C	N	L	W	I
P	R	D	E	T	N	A	W	A	T	E	O	P	E	D	M
U	C	A	P	T	U	R	E	S	C	I	I	U	K	E	P
B	L	M	S	E	R	V	A	N	T	R	N	K	C	D	O
L	I	A	D	R	O	C	A	N	A	L	C	C	I	I	R
I	T	G	R	Y	E	L	E	V	A	T	I	O	N	C	T
C	T	E	A	R	I	V	N	C	E	V	D	M	T	A	A
A	L	G	O	M	N	P	I	E	I	O	E	M	E	T	N
T	E	F	B	I	R	N	Z	N	U	L	L	I	N	I	C
I	E	S	U	O	Y	I	A	E	N	T	A	T	T	O	E
O	R	E	U	T	N	T	G	V	A	A	E	M	I	N	E
N	U	D	S	G	U	U	A	E	I	G	L	E	O	P	L
Y	S	A	O	R	L	R	M	R	V	E	K	N	N	A	F
X	N	C	E	L	A	R	E	V	E	S	R	T	N	D	F
S	E	C	O	M	M	U	N	I	T	Y	A	D	S	R	A
R	H	I	G	H	L	I	G	H	T	E	D	G	Y	E	B

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2002

JANUARY																															JANVIER																														
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