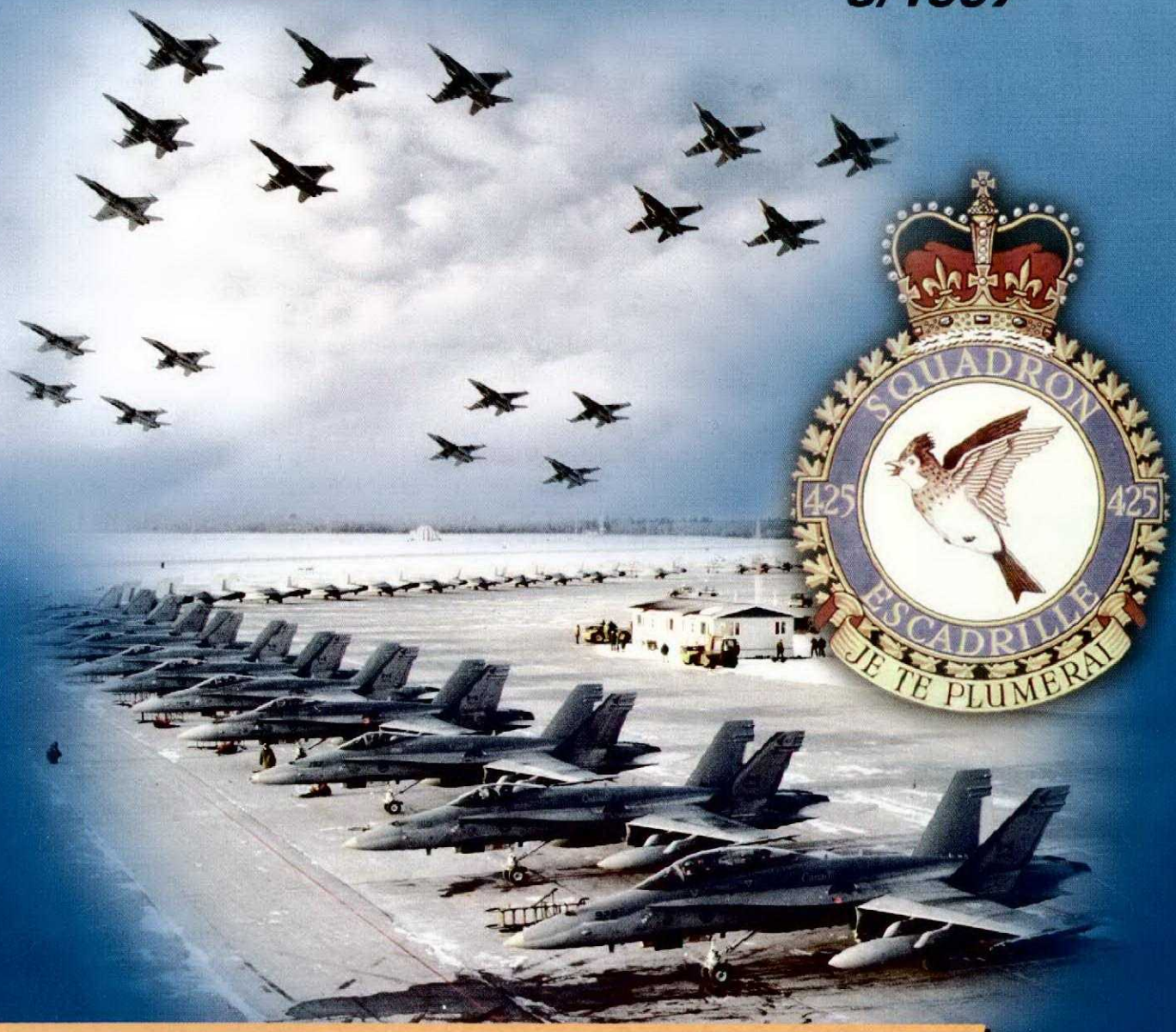
National Defence / Défense nationale

FLIGHT COMMENT

3/1997



425 Squadron CF188 aircraft of 3 Wing Bagotville preparing to launch for a 18 plane flypast.

Canada

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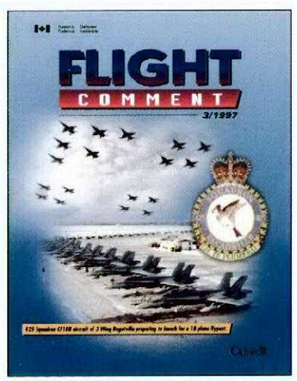

On the Cover:

This unique event with all of 425 Squadron's aircraft serviceable and airborne took place on the 17 December 1993. A tribute to the men and women of the maintenance and support world who keep our aircraft operational and safe.

Editor's note

The article *"TIMBERRRRRR" or "If you conduct operations below 2000 feet: Read this!"* in issue 3/1996 was submitted by **Captain Tim Cooper**, formerly a CC115 Buffalo pilot with 442 Squadron Comox, now employed at the Canadian Forces Recruiting Centre in Vancouver.

FLIGHT COMMENT

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The Life You Save May Be Your Own

The unfortunate, and almost tragic loss of a CH146 Griffon helicopter off the Labrador coast last fall has once again reminded us of the uniqueness of Search And Rescue(SAR) operations. Unlike most of our flying in the Canadian Forces, SAR missions have an added dimension; a NO-GO decision may cause the loss of life. Like all Air Force personnel involved in flight operations, primary SAR crews have extensive regulations and training that assist good risk management decision making. They also have considerable training and exposure in dealing with real life and death operations. In the assessment of accepting or rejecting a SAR mission they consistently have to weigh the lives of their own crews against those they are attempting to save.

All Canadian Forces aircraft are considered secondary SAR assets and may be tasked for SAR missions, yet the crews selected for these missions may have little if any exposure to the unique pressures this places on them. The following is an excerpt from an 1990 article in the Coast Guard magazine "Current" written by Maj Rick Hardy(now LCol) who was the Commanding Officer of the Rescue Coordination Centre (RCC) Trenton. As you read this article keep in mind the situation faced by the crew of the Griffon as they waited out the weather on a small cape at the very tip of Labrador. They were involved in a mission to medevac a critically ill sailor from Resolution Island. Fuel was only 17 miles away and, 55 miles further, a fisherman's life hung in the balance. Moreover, they knew that two SAR Techs were parachuting into the Arctic Ocean in order to reach the fishing vessel...

What would you have done?

There is nothing more challenging, demanding and motivating than employing skill, ability and courage to overcome the odds and save a life. That is what makes the SAR world so exciting and rewarding. Unfortunately, the risk and the cost is sometimes too great. Repeatedly, the RCCs have to deal with a fatalistic side of the Good Samaritan Complex; the tendency to go beyond safe limits when trying to save others. This instinct to render assistance and ease suffering can and sometimes does result in even greater misfortune.

The training, care and feeding of dedicated SAR crews is extensive and the ultimate test is not only knowing what they **CAN** do, but what they **CAN'T**. Saying no to a life-and-death mission and very possibly ending the only chance of survival for someone, and having to live with that verdict, is probably a SAR pilot's most courageous decision.

All Canadian Forces aircraft are considered secondary SAR resources and may be called upon to help during virtually any emergency. However there is no expectation by the Search and Rescue Region Commander nor the RCC that crews will deviate from established regulations, procedures and safety practices. The circumstances which caused the distress in the first place often continue to exist when the SAR system is activated and responds. There is no place for a Damn the Torpedoes – Let's Go Get Em' attitude that may cause even more suffering.

Sooner or later most Canadian Forces aircrews will be involved in a life saving mission. The key to success of the mission is conducting the flight in accordance with our growing Risk Management philosophy and our Core Values of Professionalism, Excellence and Teamwork.

Remember the Life You Save May Be Your Own!

by LGen A.M. DeQuetteville Commander Air Command

Alcohol and Flying

EXCESSIVE consumption of alcohol is another sure way of doing a real good job of dehydrating the body. Now, before you shut this magazine and toss it in the corner of your office or in the "out" tray, just read on a few lines more – it might just save your life one day.

Stop and think about the times you've flown the day after a heavy night bending the elbow. Never? What about flying after a dining-in night; or Boggies' Bash; or probably more likely, you're on your first trip away for awhile; overseas perhaps; or just far enough away to get out of the local training environment.

How many times have you gone for the traditional first night overspeed, still having to be at the aircraft at 0700 hrs for an 0800 hrs departure? I would think that most aircrew (90 per cent?) would have either been in this situation or flown with someone who was.

The other 10 per cent of aircrew are probably kidding themselves.

The effects of booze

Of course everyone knows the effects of a wild night at the bar. Alcohol depresses brain activity, making concentration hard and can induce short term memory loss. It slows the thinking process and clouds judgment. Whilst flying, it may affect your decision making capabilities (to overshoot or not to overshoot?) and make remembering ATC clearances all the more difficult.

Yes, booze affects the central nervous system, suppressing normal responses. Alcohol also exaggerates self confidence, making you feel you are flying accurately when in fact you're not.

Alcohol also makes you hypoxic! Absorbed alcohol blocks the passage of oxygen across membranes surrounding tissue cells, resulting in a lack of oxygen at tissue level. It is toxic hypoxia and no amount of 100 per cent oxygen will help.

You can't hide a hangover

That's okay you say, the rest of the crew will cover for you. But, what if the rest of the crew were with you the night before? Worse still, you're an instructor with a low-hours student, or your aircraft only has one seat! So, the onus is up to you to make sure your blood alcohol level is zero.

Let's not forget about the other side of the coin – the effects of being hungover are just as bad. Your head's throbbing, your tongue's dry, and your stomach is trying to decide whether or not to reject the breakfast you've just eaten. You are fatigued and there is no way you are going to perform at your best.

Avoiding the hangover

So, how do you get over the effects of alcohol? Black coffee? Running? A sauna? Drinking a litre of water while standing on your head? Fraid not, sunshine. TIME is the cold hard reality and there is no way around it.

Well, how can you avoid an embarrassing situation popping up through flying with a hangover or otherwise suffering from the effects of alcohol? Well it's easy really – just observe the following guidelines:

- Think about the next day's tasking
- Have you got a 10 hour day ahead of you?
- Don't feel obliged or be pressured to drink.
- Don't drink on an empty stomach.
- Drink, don't gulp (ie, avoid "boat races")
- Limit yourself to a definite time or number of drinks.
- If you're not feeling 100 per cent fit, have enough pride to admit it and cancel or delay the sortie. ◆

OOPS!

Air Launch Missile... Ground Launched?

No task supervisor, no checklists, no self-or team discipline, and not enough experience and proficiency—all combined — spell m-i-s-h-a-p.

A three-person weapons load team was tasked to perform a weapons download on an F-16. But before they could begin the download, their weapons team chief was called away to another location (he also happened to be performing, weapons line expeditor duties). Before the team chief left, he instructed the two remaining team members (both 3-levels) to stay put and wait for his return.

However, the two industrious, young airmen decided to get a jump on things and start the weapons offload preparations without their team chief. So with no task supervision, not checklist qualified, no tech data available, and charged with a healthy dose of *"can do attitude"* off they both went.

They started by removing the fins on some AGM-88s, yet failed to install the tracking pins or install the caskets underneath the missiles as directed by tech data. When the two young, inexperienced "mach three-no heading" weapons loaders moved an AGM-88 missile forward, the tail-end of the missile came off its rail and dropped to the ground below. Over $70,000 worth of damages!

Of course, the two weapons team members shouldn't have ever started without their team chief. But, interestingly, why would they ever begin the task without tech data, i.e., when they both weren't proficient or experienced enough to perform the task safely? Their motivation and "leaning forward" attitude are understandable — not their lack of self- or team discipline.

As for the mishap unit's recommendations to preclude recurrences? Sadly, they decertified the two young, hapless, inexperienced, and certainly unproficient weapons loaders. But how can you decertify somebody who wasn't fully qualified to perform the task(s) in the first place? Could they have been following the past bad examples of their team chief and/or trainer?

Maybe the real cause of this mishap lies beyond the two airmen's performance. ◆

reprinted from Flying Safety United States Air Force Volume 53 Number 3 March 1997

ElectroMagnetic Interference (EMI) is alive and well!

A Boeing 737 was at cruising altitude when the aircraft commenced a gentle roll to the left and then to the right. The crew, suspecting EMI from the cabin, investigated and discovered two passengers using lap-top computers.

The passengers were requested to switch off the computers and the oscillations ceased.

excerpt from Flying Feedback/Royal Australian Air Force/June 1996

Words of Wisdom

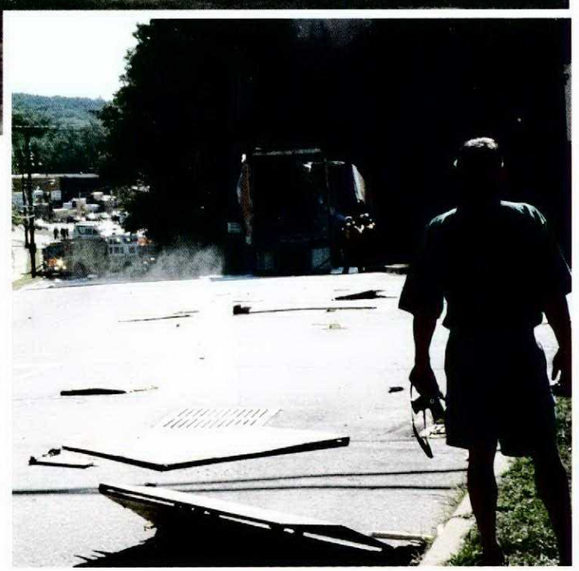
Caution isn't cowardice... nor is carelessness, courage.

"It is better to be careful a hundred times than to be killed once."

— Mark Twain

"And No One Thought It Could Happen"

Damage to truck trailer in downtown Kentville.



Debris from explosion.

The Incident

The 14 Wing logistics and maintenance activity in support of the engine change was treated as routine – nothing new or out of the ordinary here.

On 5 April 96, a T56-A-14LFE Aurora engine, serial #110777, had reached the end of its overhaul life and was removed from the aircraft by the CP140 first line personnel. The engine was routed to Engine Bay where the shop teardown process was carried out over a period of several days. Eventually, the engine was installed in a transportable shipping container in preparation for shipment to the third line maintenance facility. The "can" was pressurized to approximately five psi and stored on the hangar floor awaiting shipping instructions. As per historical shop practice, the engine was not purged of fuel nor was any inhibiting oil installed prior to placement in the shipping container – why should it be? – the engine would be at the contractor facility within days. No reason to go to all the bother of draining the fuel and adding the 1010 inhibiting oil.

Early in July, permission to ship the power plant to the third line repair facility in Winnipeg was received by 14 Wing from NDHQ. The Supply Major Equipment Section completed the prerequisite paperwork and the engine was transported to the Central Material Traffic Terminal (CMTT) by Wing Transportation personnel. The supply/traffic techs inspected the container and identified the cargo as "Non Dangerous" Goods on the Consignment Authorization and Receipt Form, DND 690 (CARF) – the way they had for all other such shipments in the past. Nothing unusual here.

On 11 July 96, the engine was placed on a civilian truck destined for Winnipeg, Manitoba. The container was positioned on the very rear of the trailer and wedged forward against a previously loaded pallet of cargo. The driver and the packers agreed that the load was secure. After all, this was just a big heavy piece of metal in a can (2700 lbs) – no way it was going to move, and besides, this was the way they had always loaded engines packed in the shipping container. And, of course, the engine was only going a short distance (Halifax) before it would be transferred to another truck for the remainder of the journey to Winnipeg. Common sense seemed to dictate that there was no need to place any additional restraints on the shipping container.

The civilian driver departed Greenwood at approximately 1400 hrs and made four stops before being paged to pick up an unscheduled shipment of tires in Kentville, NS. At approximately 1650 hrs, while proceeding through a major intersection within the town of Kentville, the truck crossed a large bump in the road surface. The resultant jarring caused a mechanical spark, surmised by QETE investigators to have been generated by contact between a spare parts container lid and the engine support cradle, which ignited fuel vapours within the container. An explosion followed, significantly damaging the trailer, aircraft engine, and other cargo.

Fortunately, not a single person was waiting at the intersection crosswalk and no pedestrians were on the sidewalk at the time of the explosion. The route taken by the civilian driver took him through one of the busiest sections of the town. Clearly, anyone walking or standing along the street at the time would likely have suffered severe injury as a result of this occurrence. The only additional damage incurred was minor scratches to a vehicle following immediately behind the ill-fated carrier.

Lessons Learned

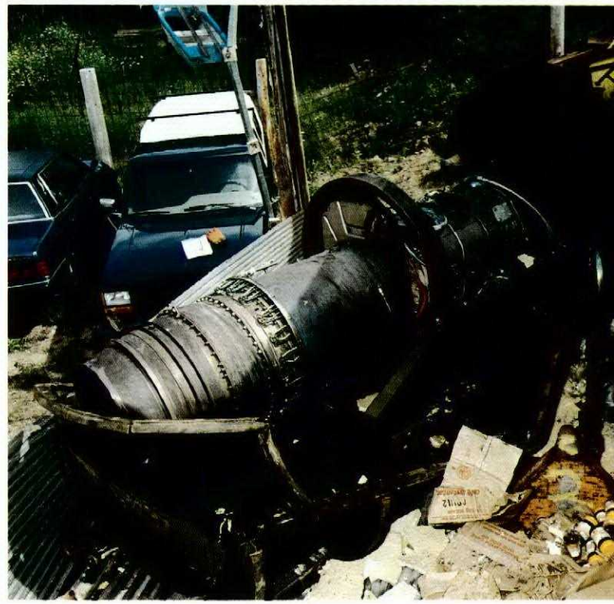
So, what went so terribly wrong and caused this incident? After all, this was just a normal shipment repeated routinely by 14 Wing personnel, right? Why have we lost valuable aircraft components out of our operational resources? And remember, what is truly fortunate here is the fact that not a single injury was experienced by anyone when, clearly, the potential was there in spades.

Let's play the detective for awhile and review the events leading up to the explosion. Let's see if we can determine the underlying factors causal to this incident.

I guess the first question everyone asks (I was no exception) is how could there possibly have been enough fuel inside the engine container to cause an explosion of this magnitude. Due to the warm ambient temperature the day of the occurrence (30C), and the fact the can was pressurized, most people immediately suspected thermal expansion. Not so. The QETE investigating team quickly concluded that there was a sufficient mixture of JP4 and air within the shipping container to cause an explosion (surprisingly, it takes very little) – the only element missing was an ignition source and this was provided by the metal to metal contact between the spare parts lid and the engine cradle.

Well, I know what your thinking. why then was the engine not purged/inhibited?

Discussions with all units responsible for T56 engine second line maintenance revealed that inhibiting procedures prior to shipping have not been carried out in recent memory, if ever. The third line contractor confirmed this; all T56 variants have been arriving uninhibited at their



Damage to the engine and container on the back of the trailer.

facility. Turns out that the CFTOs governing fuel system inhibiting were misleading and implied that purging was only necessary if the engine was going to be placed in the can for periods in excess of 120 days. Boy! As a former aero engine tech, and given that the orders suggested that inhibiting was not necessary, I don't think I would have gone to all that work either, particularly if I knew it was headed straight to the contractor for overhaul.

What is disconcerting here is the fact that many supervisors/technicians had previous experience on other engine types and found themselves initially questioning why the engines were not being inhibited but quickly dismissed

...contined on page 7

I Learned about Gliding from THAT

The following story relates to one of the most integral aspects of glider operations. While you can regulate the circuit procedures, standardize, or train Mother Nature and her many mood swings.

Our day began as a beautifully sunny Saturday morning, with the cool autumn air just crisp enough to invigorate the senses. It was one the those rare mornings that postcards and dreams are made of – with blue skies up above, and just enough clouds on the distant horizon to capture the morning rays in all their splendour. The wind was blowing a good 15kts, but miraculously straight down the runway. Flight Service had provided us with a forecast that validated the smile on our faces – we were to see more of the same sunny skies until at least early afternoon, at which time some cloud development was to occur. After the morning briefing we got off to an early start, eager to take advantage of the great conditions.

The two gliders were pushed out from the hangar along the taxiway, holding short of the midpoint for runway 32. It was SOP to launch them from the hardtop, and have them land on the grass strip just to the West of the field. The launch point was then set up along the grass strip, far enough away from the paved active runway to allow for a towplane landing strip, and two glider landing strips. On this picturesque morning, I was the Launch Control Officer (LCO), and it was my job to stay on top of the operation, and approve each launch when there were no conflicts. Everything went according to SOP, and by the time the second glider had taken off, the first was turning final for the grass strip. With both aircraft out of the nest, the bulk of the team (including myself as LCO) climbed into the vans and drove over to the launch point on the grass strip, where the first glider had landed. By the time our vans had reached the launch point, the towplane was on short final, and the glider had completed its checks. As LCO, I rushed out of the van, and over to the glider to observe the hookup and approve the launch. The instructor onboard the glider advised me that the clouds that had been on the horizon to the north were now blowing towards us. Not to worry, I thought, as they were still quite a ways off, and Flight Service had said that the cloud was not to arrive until early afternoon. Certainly a few good hours of flying remained. By now the glider was hooked up and ready to go, and as there was no traffic in the area, I approved the launch without any hesitation.

As the second glider turned onto final approach, I recognized for the first time that the winds aloft appeared to be considerably stronger than the 15kts we were experiencing on the ground. This was the first circuit I was able to closely monitor, having just arrived at the launch point a few short minutes ago. Realizing that winds aloft were a significant force, I turned to watch the movement of the distant layer of cloud – which was no longer very distant, and in fact was inbound at considerable speed. By the time the glider had released, the first few patches of cloud were coming over top of us, with a thicker blanket to follow, the ceiling of which was perhaps 500ft AGL. The instructor aboard the aircraft recognized the situation, applied full spoiler, and entered a downwind leg at 2000ft immediately after release to get back before the cloud layer smothered the airport. By late downwind, visual contact with the glider had been lost, with cloud now completely blanketing the sky. The glider then reappeared on base leg, landing safely on the grass strip without incident.

The entire staff was surprised by the speed at which the cloud layer came upon us, especially the instructor pilot who had been monitoring it. AS LCO, I had not been watching the dynamics of the weather, and had approved the last launch based only on the quick spot check of the weather I had just prior to the launch. What I had not observed was the movement of the layer. Besides, only the weathermen on TV are ever wrong – how could a Flight Service Station give me a bum steer on the conditions? It seems Mother Nature still has a few aces up her sleeves yet. Well, I sure learned about flying from that! ◆

anonymous

"And No One Thought It Could Happen"

contined from page 5

their thoughts as they were lulled into the accepted shop procedures of not inhibiting T56 engines. As well, nowhere in any of their formal previous technical training had they been made aware of the dangers of shipping uninhibited components. Inhibiting had always been viewed as a means of preserving components and not as a safety measure. Additionally, while the third line contractor routinely inhibited all engines leaving their plant, no eyebrows were raised when engines were received at their facility containing fuel.

What is clear now is that each engine shipped unpurged to the contractor was an accident, just waiting for the right conditions to happen.

Now, let's go back to the day of the incident and take a peek at the shipping procedures. Just another piece of cargo, right? Well...

Two obvious questions come to mind when we look closely at the way this engine was processed for shipment. Why was the CARF which reflected "Non Dangerous" cargo completed by the supply technicians when in fact it was the Engine Bay technicians who actually packed the engine in the container. And, why was the engine not secured more adequately inside the civilian carrier's truck?

Once again, we run into two situations where longstanding shop practices were followed because they had always worked in the past. The Supply Major Equipment Section had always completed the CARF and had always indicated "Non Dangerous" cargo on the form – assuming of course that the maintenance folks had properly purged the engine of residual fuel. The CFP 181 Supply manual is ambiguous when guiding the completion of this form but it does suggest that the "packer", in this case the engine techs, should fill it out. Makes sense, right? Well, at 14 Wing most of the engine techs had never even heard of a CARF. Besides, you need a dangerous goods handling course before you can be qualified to complete this document. Not a single technician in Engine Bay had this qualification.

When it came time to ship the engine, CMTT personnel arranged for pickup by a local civilian transport company. No special arrangements were necessary as the CARF indicated "Non Dangerous" cargo – any truck would do. The load had to only be transferred in Halifax anyway.

Once again, we run into two situations where longstanding shop practices were followed because they had always worked in the past.

The container was positioned directly over the single axle at the rear of the tractor trailer, and was therefore subjected to the maximum effect of any bumps in the road that the truck travelled over. The floor was ribbed aluminum so there was no means of additional tiedowns – nor were they considered necessary to secure such a heavy piece of freight. This was the way all engines were shipped over the past years. Well..., that indeed was true; however, a quick glance at the CF Transportation Manual reveals three suggested and detailed methods of securing aircraft components for transport by road or rail (particularly engines) because "by their nature these items are considered fragile; therefore, the utmost care must be taken during all phases of transportation". Sounds like this engine should have been secured more adequately, right? Well..., once again, not quite. The Transportation Manual goes on to state that the Transportation Agency shall use "common sense" when shipping aircraft components, in the interest of economy. this engine had been received by the CMTT techs in what was assumed a purged, safe condition and the cost of shipping by air ride trailer or contracting a vehicle with tiedown points was excessive. Considering the direction stated in the Transportation Manual, I cannot say I blame them.

Well, let's summarize where we went wrong. Ambiguous orders, inadequate training, complacency, poor judgement, expectancy, lack of supervision, environment, (don't forget the bump in the road). Yes we pretty well ran the gamut on this one, folks, and it all added up to present ideal conditions for an accident. We were extremely fortunate that the explosion only caused material damage and no loss of life or serious injury was incurred.

But...remember... "No one thought it could happen". "This is the way we've always done it". Well... ◆

Engine Explosion In Transit by Lt Curt Sorrey 14 Wing Greenwood

Epilogue

Aircraft Accident Summary

17 Mar 97

On 15 June 1995, the crew of CH136213 was on a night vision goggle (NVG) training mission at Cook's Bay, Lake Simcoe, Ontario. The purpose of the trip was to conduct NVG float landings, a non-standard previously unattempted manoeuvre. Following the co-pilot's first approach and landing, the aircraft captain (AC) took control and elected to fly a circuit with a reciprocal final heading to avoid the lights of a built up area. On short final the tail fin contacted the water with the aircraft drifting right. The right float dug in and the helicopter rolled over coming to rest inverted in 5 feet of water. The crew egressed with minor difficulty and one minor injury. The investigation into the accident is now complete.

The AC of the aircraft was changed at the last moment due to scheduling conflicts and was unable to properly prepare and brief the mission prior to departure. Both pilots were relatively inexperienced on night vision devices, one had no over-water NVG experience and the other was not current on floats. The Copilot felt uneasy with the final approach path but was reluctant to criticize the AC's flying technique. The night flying supervisor had expressed concerns about aspects of the night flying schedule, but did not assimilate the information about the accident flight which should have prompted him to intervene. All the ingredients for disaster were in place.

This accident occurred because the two pilots elected to attempt a non-standard manoeuvre without training or proper pre-flight consideration. Once the pilots had made the conscious decision to conduct the flight, there was inadequate communication between them as to the limitations imposed by NVGs, specific details on the flight profile and water conditions, experience of the first landing, and intentions for the second approach.

Wreckage as it was found.

Aircraft recovery.

This accident highlights the serious consequences of pilots conducting unspecified, non-standard flight manoeuvres for which they are neither prepared nor qualified to perform. This is the first accident in the CF involving NVG use, and hopefully will serve as a learning experience for commands and other units for the inherent limitations and the risk of complacency with NVG operations. Direction as to the proper techniques, and more importantly approval, should have been sought from HQ 10 TAG prior to the flight. New flight manoeuvres require testing and validation by qualified personnel before they are performed by line pilots at home units.

As a result of this accident the DComd AIRCOM directed all Group Commanders to undertake a careful examination of internal NVG programs, conduct a risk assessment and outline what specific guidance they have issued to this point, noting any particular restrictions or mandatory requirements imposed. Additionally, HQ 10 TAG has taken measures to ensure CRM training is available to all their units. ◆

Aircraft Accident Summary

11 Feb 97

CH12407 departed Shearwater at 2050 hrs local on 14 Aug 96. The purpose of the flight was to conduct night overwater flight instructor training and aircrew proficiency. Following completion of the instructor training syllabus the crew returned to base to carry out practise night autorotation to overshoot. The first autorotation was flown without incident. The second was normal up until the flare, but as power was applied for cushioning, the aircraft continued to descend. The pilots attempted to arrest the rate of descent with full collective but were unable to prevent the aircraft from impacting the runway. The force of the impact collapsed the right main landing gear sponson which necessitated a recovery using the emergency cradles. All four crew members escaped without injury. The aircraft sustained "B" category damage. The investigation into the accident is now complete.

The aircraft was serviceable prior to impact, therefore the investigation focused on the technique used to execute the manoeuvre. The Sea King Standard Manoeuvre Guide (SMG) describes a profile entry height of 1000 ft, the flare is initiated from 200 ft and the sequence should terminate at 30 feet AGL with at least 15 kts of simulated run-on. In this case the pilot entered the manoeuvre and initiated the flare as per the SMG. The autorotative flare was held longer than normal allowing for near zero forward airspeed with a higher than normal sink rate. This coupled with light winds, warm temperatures, and higher density altitude set up the ideal conditions for Vortex Ring State (VRS). At approximately 100 ft the pilot levelled the aircraft and applied collective cushioning. Little deceleration was felt as the aircraft fell through its own disturbed air. At 50 ft full collective was applied to arrest the descent but this only served to aggravate the condition. Even if the pilots had recognised the VRS condition they did not have sufficient altitude to prevent the impact.

Discussions with several pilots indicated that the practice of attempting to attain zero aircraft speed during the autorotative flare had become common place throughout the Sea King community. This is perhaps explained by the tragic outcome of the Sea King accident at Saint John, NB where the front end crew did not survive an autorotation into trees. The amount of forward speed on touchdown was not a factor in the survivability of the pilots in that accident, but the perception that it was, certainly played on the minds of the other aircrew. Pilots across the community began to zero speed their autos and the supervisors failed to correct this change to published procedure.

Following the accident MAG ordered a general review of all flight procedures to identify other areas which had potential for VRS conditions. Aircrew were briefed on the results of deviating from established procedure and cautionary notes were added to the SMG regarding the conduct of practice autorotations. In addition, AETE is researching wind and density altitude limits for Sea King practice autorotations. ◆

Wires, Drugs, Hills and Helicopters

A LONG TIME AGO IN A far off land, I was flying an Iroquois helicopter in support of police drug operations.

Due to growers camouflaging their crops our visual searches would invariably be a low level "contour" search. Wires and high terrain were always uppermost in our mind so we developed a local SOP to:

- recce the area (fuel permitting);
- fly down valleys rather than up into higher terrain; and
- divide the crew duties so that the aircrew kept a thorough lookout for terrain and obstructions, while the police concentrated on finding the drugs.

This system worked well enough and seemed a good compromise between getting the job done and safety. The flying rate was high, 8-10 hrs per day – most of it low level or at the hover hoisting.

A few days into the task all the crew were starting to feel fatigued but we all felt we could handle the pace.

The incident occurred on the fourth day. We were operating in a particularly isolated area and the police wanted to raid a farmhouse that could not be approached over land. For this task we added four more police to the load to search the buildings while we conducted an aerial search of the area. Fuel was critical: even with the auxiliary fuel tank fitted it could only be half filled due to maximum AUW considerations.

Just before engine start, the police indicated that they wanted to do a quick search up a valley on the way out. I didn't particularly like this idea but in the end agreed. We thus departed and tracked out to search the valley. Due to fuel/time constraints no recce could be done and due to the orientation of the valley it would save time if we flew up the valley towards the high terrain rather than down it.

The incident chain of events had well and truly started.

Now the Iroquois is not a great performer at its maximum AUW, particularly when on the back end of the drag curve. Unfortunately we had to remain slow and low to conduct the visual search. The valley was steep sided, winding and rising towards a substantial high feature. Just as we rounded a bend, a police observer said he thought he saw a dope plot out the left side of the aircraft. For some unknown reason I decided to look over my left shoulder and out the open left cargo door to see the plot. (I later discovered all the other crew-members did the same thing at the same time!)

"A few days into the task all the crew were starting to feel fatigued but we all felt we could handle the pace."

The next thing I remember was the calm and casual voice of one of the other policemen asking me if I could see the wires in front of us! All of the aircrew snapped their heads to the front. It took a split second to acquire the wires and it was hard to judge the distance immediately. All of us realised at about the same time that they were very close, I remember the crewman calling '50 metres and closing!' The wires were slightly higher than my seating position, about main rotor height. The three-wire hazard spanned right across the valley with little sag, hanging about 200 ft above the valley floor. Both sets of support poles were buried amongst thick forest along the top of the ridge lines. Given our weight, speed and the distance to the wires I had no choice but to fly under them!

We cleared the wires above us and bottomed out at about 100 feet AGL. The feeling of relief was welcome but short lived, as we now realised that we were still far from safe. The ground was rising steeply towards the high feature at the head of the valley, there was no place to land, and we now could not turn around due to the wires and our large turn radius in the narrow valley.

I remember the copilot "helping" me pull in the collective (I think he started pulling it first) and selecting 50 psi (maximum torque). I then flew IAS for the best climb angle. We were prepared to overtorque the transmission, greater than 50 psi, if necessary. Luckily, we cleared the terrain by about 100 ft without having to resort to this. After a short crew conference we continued on the task.

That evening, after many beers and a lot of soul searching, we tried to figure out how I managed to nearly kill 11 people and destroy a perfectly serviceable helicopter. We came up with some sobering points:

- We were trying to do too much in one trip – we should have made that valley search a separate task at a later time;
- having made a poor decision, I then compounded it by disregarding my own rules (ie. wire recce and terrain flying);
- in a high workload situation we all were distracted, breaking down the crew work cycle at a critical moment; and
- we had been saved by a policeman who was very lucky to see the wires in the first place and thought twice about bringing it to our attention.

This still didn't tell why we did it. Fatigue, "can do" attitude, complacency all played a part but the fact was that I, one of the most experienced aviators in the squadron, had let a situation develop from which we nearly didn't survive. ◆

by Capt Dave Penton 5Avn Regt, Townsville, Queensland, Australia

"Having made a poor decision, I then compounded it by disregarding my own rules."

From the Investigator

Aircraft Occurrence Summary DFS 96/13

TYPE: Air Cadet Glider C-GCLJ

DATE: 14 Oct 96

LOCATION: North Battleford, Saskatchewan

Circumstances

The glider was participating in the Air Cadet Glider Familiarisation and Training program. The flight was the last of the day as well as the last for the gliding season. It was planned that the glider would land near the hangar where it would be stored after completion of the day's flying. The aircraft was launched by winch and achieved an altitude of approximately 1300-1400 ft AGL. After a brief session of upper air work the rear seat pilot (Aircraft Commander) took control and immediately established the glider on a straight-in approach to the area beside the hangar. As he was well above the normal glide path, he deployed full spoilers, set a steep nose down attitude and allowed the aircraft to accelerate in order to lose height quickly. This "penetration type" approach was maintained until the aircraft was flared at about 20 to 30 ft AGL. It then became apparent that he would be unable to stop in the distance available and so he initiatted a shallow left turn to avoid the perimeter fence which was in his path. After touchdown the glider collided with an old concrete foundation that was hidden by tall grass. The aircraft sustained "C" Cat damage.

Investigation

The investigation revealed that the glider was serviceable and the pilot current, qualified and experienced. His plan to land the aircraft near the hangar was neither well thought out nor deliberately planned. He did not fly a regular circuit which would have allowed him to monitor the progress of his descent relative to a normal approach profile. He ignored the comment from the more junior pilot in the front seat that the approach was unusual. The higher than normal speed and steep angle of descent would have made it difficult for the pilot to assess his touchdown point during the approach. Once he levelled off it was apparent that the glider could not be stopped in the remaining distance available. His options at this point were limited and reducing rapidly due to the low altitude and approaching obstacles. Finally, he could not see the concrete foundation that the glider eventually struck.

DFS Comments

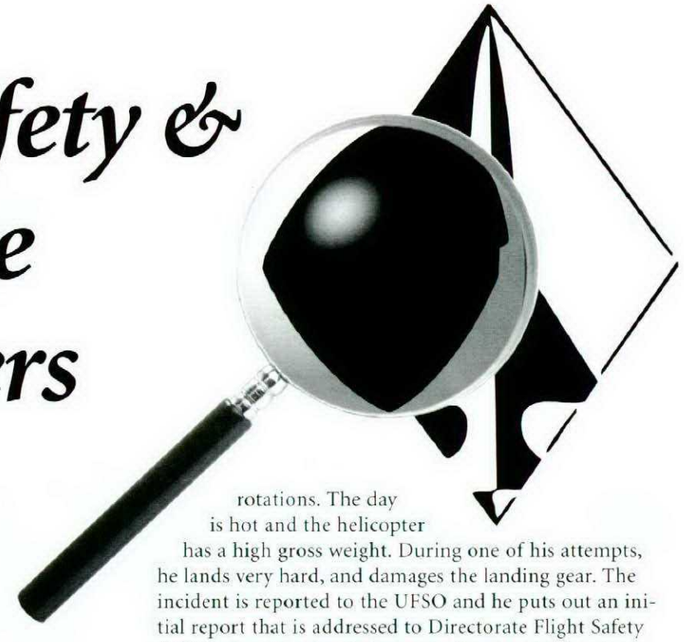
Flying outside the normal approach parameters is difficult and dangerous even for experienced pilots. In a glider an overshoot from a bad approach is not an option, so it has to be correct the first time. The continual education and careful supervision required in the Air Cadet Glider Program are a challenge for Regional Cadet Air Operations Officers considering that their units are spread over a large geographical area. ◆

Approach view/area towards Hanger #4.

Glider position on concrete pad.

Damage to nose area.

Flight Safety & Aerospace Controllers



The DND Flight Safety Program is designed as an information system. This system is effective only when information gets out to the users without delay. This quick passage of information is aimed at stopping new people from repeating old mistakes.

The flight safety program and all information gathered in the name of Flight Safety is separate from any punitive actions – period. This is a must if the program is to function properly. People will not come forward with information if it is going to be used against them. This is not to say a person can deliberately break the rules and use flight safety as a shield. If the Flight Safety Officer feels there is grounds for a collateral investigation it is his/her responsibility to recommend that to the Commanding Officer(CO). No information gained from a flight safety investigation can be used for a collateral investigation, however the other board can interview the same witnesses and review the same tapes and arrive at their own conclusions.

To AECs however, Flight Safety has always been wrongly associated with punitive actions. Flight Safety is on all the evaluation(eval) guides as an automatic bust. This misuse of the name has given controllers the impression that flight safety is not a program to prevent accidents but a guide line for a pass or fail. Walk into the Ops room and tell people you are doing a flight safety investigation, you will see an immediate change. People from past experience will immediately get defensive. Flight Safety investigation means to them, heads are going to roll, spot evals are coming, it is C.Y.A. time. If a flight safety program is going to function properly in the AEC world we are going to have to change this perception from top to bottom.

To better explain my point I will give two hypothetical situations. One situation involves a pilot one involves a controller. Let's say a helicopter pilot is practising auto rotations. The day is hot and the helicopter has a high gross weight. During one of his attempts, he lands very hard, and damages the landing gear. The incident is reported to the UFSO and he puts out an initial report that is addressed to Directorate Flight Safety (DFS), plus all units that operate the same helicopter (like units). The flight safety investigation is done and the findings are released in a supplementary report to DFS and all like units. Cause – Personnel – Air crew – judgement, in that the pilot misjudged his rate of decent under the weight and weather conditions. Corrective actions, "Pilot to research topic and brief Squadron on proper procedures for autorotation in all types of weather and weight conditions." Timely dissemination of information to all people that should know and appropriate corrective action are the results. All units that operate the same helicopter will have this information and will take more care with in autorotations under those conditions.

The next situation involves a controller in an automated system. This controller is used to working in CYA airspace and has not had to avoid many strangers(unknown aircraft) lately. This day however he is working in an area of heavy stranger traffic under Scramble, Intercept, Recovery (SIR). The Weapons Assignment Officer (WAO) points out a conflicting stranger and the controller turns his aircraft to avoid the ten mile bubble. In spite of his actions, he realises too late that it is going to be very close to ten miles. He then terminates the pass and voices a hard turn. The end result is that the fighters came between 9-11 miles from the stranger.

Under the present mind set, how do you think this would be handled? My bet would be that the WAO would chastise the controller, give him/her a strong debrief and that would be that. No dissemination of information would take place because both the WAO and the Weapons Director(WD) are under the impression that should this information get out heads would roll and spot evals would be on the way. I must confess that I personally know people, who, when they read this will say, "hang em", "give them a spot eval", "any body that can't avoid a stranger shouldn't be sitting on scope". It is this very attitude that stands like a brick wall in front of a proper Flight safety program for the AWC world.

How should this situation be handled under a proper flight safety program? The WAO would report the incident to the UFSO. The UFSO would draft an initial report to be sent out through the WFSO, informing DFS and all like units of the incident, this would probably include ATC, AWACs, and any one else who controls in an automated system. The UFSO would do a flight safety investigation, then release cause factors in a supplementary report. Cause factors; Personnel-support personnel other, WD judgement, in that the WD misjudged the closure with the stranger. Cause factor; personnel-support personnel other-training, WD did not work with live stranger traffic in the last X# of missions. Corrective actions- "WD to brief Sqn on stranger avoidance. All Sqn WAOs to ensure all WD get exposure to live stranger traffic on a frequent basis."

If the above situation was to actually take place the advantages are obvious. First, all like units would get the information. Second, people would see the real purpose of a good flight safety program. To get our flight safety program on the right track we will have to change peoples attitudes. The first step is to change the wording of lesson plans and eval guides at all levels from AWC&CS right down to the floor. "Flight Safety" should be removed and replaced with "SIR" or "Separation Criteria" or words to that effect. This is a subtle but critical point. Flights must be briefed on the way things should work, with hypothetical situations. If aircrew are involved by not responding to a turn etc., the WFSO should contact the Flying Sqn UFO and discuss the problem so that any action is not seen by the pilots and more importantly by AECs as punitive.

Once personnel are briefed on how things should work, people will start to report incidents. The way the first couple of incidents reported are dealt with will be critical to the success or failure of the program. If an incident is reported, people must see the non punitive nature of a good flight safety program in action. If the personnel are penalized for reporting an incident, like the one mentioned earlier, our program is doomed. When people hear "flight safety" they will run for cover. Don't blame them, they have history on their side. I believe we can make this program work. It will take effort and courage. The first few events will be critical, people with axes to grind need not apply. Flight safety is here to help not hang. ◆

When people hear "flight safety" they will run for cover. Don't blame them, they have history on their side. I believe we can make this program work. It will take effort and courage. The first few events will be critical, people with axes to grind need not apply. Flight safety is here to help not hang.

Submitted by: Capt Mike Benoit, Western Air Defence Sector, McChord AFB

FLIGHT COMMENT

Flight Comment would like to hear from you !!!

We know there are some great experiences out there waiting to be told, so how about writing them down. How are you accomplishing your job or mission safely? Do you have a "Lessons Learned War Story" that others may benefit from? Any new technological advances or new equipment that makes your job or workplace safer? Anything else you can think of that will help "get the word out"! Pictures and/or slides with your submission are appreciated. Do any Wings/ Bases/ Units/ Squadrons/ Sections/ etc. to want be featured on the cover?

We can be reached by fax, mail or telephone as listed on the inside front cover. *Let's hear from you !!!*

artist/artiste : Ronald G. Lowry

Canadian Vickers Vedette II C-GYGZ

Canadian Vickers Vedette II C-GYGZ of No. 3 (Operations) Squadron RCAF, Rockcliffe, Ontario 1926.

The most successful of the RCAF's inter-war flying boats, the Vedette proved to be an excellent platform for charting and forestry patrol missions. Later models of the Vedette remained in service until 1941; quite remarkable for an aircraft designed in 1924.

The sole remaining Vedette is presently being restored by the Western Canda Aviation Museum of Winnipeg. ◆

research by Capt Jay Medves, 4 Wing Cold Lake

Vedette II C-GYGZ, Canadian Vickers Ltd. — 3e Escadron des opération de l'ARC, Rockcliffe (Ontario), 1926

Parmi les hydravions à coque utilisés par l'ARC durant l'entre-deux-guerres, la Vedette tient son succès inégalé comme plate-forme des mieux adaptées aux missions de cartographie et de surveillance forestière. Des modèles subséquents de la Vedette étaient en service jusqu'en 1941, ce qui en dit beaucoup d'un aéronef conçu en 1921.

L'unique Vedette survivante est actuellement en réfection au *Western Canada Aviation Museum* à Winnipeg. ◆

recherches faites par le capt Jay Medves, 4e Escadre Cold Lake