



TEST PILOT ROBERT ERDOS
GOES BACK TO BASICS,
RETURNING TO RCAF FLIGHT
TRAINING AT 3 CFFTS IN
PORTAGE LA PRAIRIE.

BY ROBERT ERDOS

LEARNING TO FLY THE AIR FORCE WAY





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Utilizing a fleet of 39 fixed-wing and rotary aircraft, 3 CFFTS welcomes 256 new wing grad candidates for pilot training each year.
Sgt Alain Martineau Photo

The CH-139 JetRanger has been the stalwart Royal Canadian Air Force helicopter trainer for decades.
Cpl Vicky Lefrancois Photo



Briefing to fly the Bell 412 with Capt Matt Fullerton.
Capt Susan Magill Photo



Checking out the Grob G120A procedures trainer.
Capt Susan Magill Photo



Portage la Prairie is particularly charming in February.
Capt Susan Magill Photo



Rob Erdos prepares for a navigation mission with his instructor, Flight Lieutenant "Baz" Stokes.
Capt Susan Magill Photo

The snow crunched like Styrofoam under our boots. It does that at -38C. My instructor, Geoff Boese, and I were crossing the frozen Portage la Prairie airfield ramp towards a military Grob G120A training airplane. I was about to undergo dual flying training in slow flight, stalls and basic aerobatics. For one week in February, I was a student pilot, and my mission was to experience first-hand how the military turns bright-eyed novices into qualified Air Force pilots.

Once upon a time, I was an Air Force pilot. It is now 30 years since I started my flying career as a trainee at Portage la Prairie, Man., so it is safe to assume that a few things have changed. I was keen to see what remained the same. The RCAF flying training establishment at Portage la Prairie, called 3 Canadian Forces Flying Training School (3CFFTS), is the custodian of a long tradition of military flight training. Since its inception under the British Commonwealth Air Training Plan, there has been flying training ongoing at Portage since the school opened with Tiger Moth trainers in 1941. 3 CFFTS now operates a fleet of 12 Grob G120A single-engine trainers, 13 Bell CH-139 JetRanger helicopters, nine Bell 412 multi-engine helicopters, and seven Beechcraft King Air C-90B multi-engine trainers.

The biggest change to have occurred in military flight training in recent years is the advent of the Contracted Flying Training and Support (CFTS) program. Under this arrangement the contractor, Allied Wings, is responsible for the infrastructure

and support, freeing the military to focus on its core mission of flight training. Military instructors provide the advanced flight instruction, while civilian instructors provide training on the Grob. Nevertheless, the basic structure of military flight training, with school performance monitored by a Standards section under the direction of the military's Central Flying School, is essentially unchanged since WWII.

INITIAL TRAINING

That's how I found myself in the Grob G120A with Geoff Boese, as he demonstrated the appropriate technique for slow flight. His instructional credentials are impeccable. He has been instructing military students at Portage for more than 20 years, and has over 10,000 flight hours, most of it instructing. In the military world of acronyms, he was applying the "EDIC" principle: explain, demonstrate, imitate, and critique. He had explained the technique in the briefing, and now he would demonstrate it. His execution was, I need hardly say, textbook perfect. Did I have any questions? No? He asked me a few. My answers seemed to satisfy him. Then it was my turn.

Slow flight in the Grob at 75 knots was straightforward. Stalls were a bit more technique intensive; the Grob's slight wing drop is a challenge for the student and consequently an asset for a trainer. As always, the military had an acronym



Watch the video at skiesmag.com/digital



The Grob G120A is a very capable trainer, taking some students from first flight through the advanced syllabus. Cpl Vicky Lefrancois Photo

for the recovery procedure—pressure, power, rudder, level, climb—and I rediscovered that it's not enough to do the right thing; you have to do it while articulating the right procedure. My performance provided Boese an opportunity for critique. Slow flight and stalls were examples of training objectives from the Phase I training syllabus, the primary flying training phase. Allied Wings also provides limited training in the Grob for the advanced Phase II training syllabus, from which he selected basic aerobatics for practice. Boese demonstrated a half-roll and pull-through manoeuvre and then a barrel roll. Monkey see, monkey do. I found the ailerons on the Grob G120A surprisingly heavy, but was otherwise able to do a satisfactory job. Instructors rate every student maneuver on a five-point performance scale. Mine would have rated a Level 3 performance. Perhaps Boese was too polite to say so.

My decades-old experience of primary flying training was a pressure cooker course with a roughly 50 per cent wash-out rate. We understood that the 27 hours being offered us on the Musketeer trainer were mainly about selection, and that the survivors would actually learn to fly in the Canadair Tutor when—rather, if—they reached Moose Jaw. Today's reality is that such high failure rates are financially prohibitive. The current failure rate in Phase I training is closer to 15 to 20 per cent, and the course is more about training and less about selection. The ultimate goal is a zero per cent failure rate.



The King Air C-90B multi-engine trainer, configured for landing. Cpl Vicky Lefrancois Photo

“ IN MILITARY FLIGHT TRAINING, “CLOSE ENOUGH” IS NEVER GOOD ENOUGH. THE STUDENT IS EXPECTED TO ALWAYS STRIVE TO DETECT AND CORRECT ERRORS, WITH THE OBJECTIVE OF IDEAL PERFORMANCE.”

Confined area landings in the Bell 412 are challenging enough, but the Air Force expects the procedures and techniques to be executed precisely.
Cpl Vicky Lefrancois Photo



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LCol Peter Fedak, 3 CFFTS's chief flying instructor, told me that the military is currently doing trials on a computer-based pilot selection process which they hope will further reduce failures through more sophisticated screening of applicants.

NAVIGATING FLIGHT TRAINING

Students who are selected for helicopter training will first seek to master, or perhaps tame, the CH-139 JetRanger. In the course of 52.9 scheduled hours of training, they will progress from their first humbling exposure to the art of hovering toward proficiency at circuits, visual manoeuvres, basic instrument flying and navigation. My initial helicopter sortie was with Flight Lieutenant Richard “Baz” Stokes. Stokes is a Royal Air Force pilot who formerly served as a tactics instructor and operational Puma helicopter pilot. He volunteered for an RCAF exchange tour to help cover a shortage of experienced instructors. I asked Stokes how he felt about leaving the UK for the rural charms of Manitoba. “Love it!” he offered brightly. “Cold,” he added. My sortie was to be a student syllabus exercise in low-level navigation. In the one nod toward my transient student status, Stokes

brought along a navigation map prepared in the approved Air Force manner. Of course, students would normally spend hours doing this task. By this phase of training, students are expected to show up prepared and to brief the entire sortie. Stokes noted that students are encouraged “to take ownership of the trip,” observing that, “if you spoon feed them, they wind up looking for the spoon.”

We reviewed the map in detail; a process that the military calls a “map recce,” searching to identify terrain features that would be recognizable from our cruising height of 250 feet. Stokes seemed to conveniently forget that we were in Manitoba, and that there weren't any terrain features! I'm pretty sure that the highest obstacle between Winnipeg and Lethbridge is a cow. Military air navigation, I was reminded, is far more than just tracing your finger along the map as you fly. Stokes asked if I recalled the formula for wind drift corrections. I was reminded to correct my speed by 10 per cent for every six seconds that I was late or early passing a checkpoint. I arched my eyebrows. Six seconds?! I half-jokingly asked Stokes if he would help me if I got lost. His answer was thoughtful and serious. Rendering assistance to the student, he explained, would depend upon the stage of



Allied Wings instructor Trevor Bachiu mans the King Air simulator operator's console.
Capt Susan Magill Photo



Captain Vadim "Vim" Hrusci helps the author tame the King Air multi-engine trainer. **DND Photo**



Walking the Portage la Prairie flight line brought back memories for author Rob Erdos.
Capt Susan Magill Photo



These days, military pilot training is more about training and less about selection. The ultimate goal is a zero per cent failure rate.
Cpl Vicky Lefrancois Photo



Allied Wings ground crew prepare the Grob G120A for flight.
Capt Susan Magill Photo



The King Air cockpit is modern, conventional and comprehensive.
DND Photo



Simulation is an integral part of modern military flight training.
Capt Susan Magill Photo



Students who are selected for helicopter training will first seek to master, or perhaps tame, the CH-139 JetRanger, before moving on to the Bell 412.
Cpl Vicky Lefrancois Photo

training. As the syllabus progressed, the student is expected to achieve higher performance levels, increasingly independent of the instructor, and would be downgraded if assistance was required. As I listened with interest, I couldn't help but notice how enthusiastic Stokes was about the subject of flight instruction. This was a common theme with everyone I met at Portage.

I wondered why the Air Force still puts such emphasis upon basic navigational skills when GPS is now so ubiquitous and accurate. The answer was evident once we fired up the JetRanger and departed Portage la Prairie for our initial checkpoint. As briefed, I passed control to Stokes so that I could concentrate on map reading. My role was to anticipate our progress along the mapped timeline, find checkpoints I could identify, and then confirm our position. The military calls this technique "watch, map, ground" navigation. As it turned out, low-level navigation across Manitoba in winter is akin to a gnat's view as it crosses a marble tabletop. The further challenge was that Stokes was flying, and at low altitude it's wise to keep one's eyes outside, so it was my job to describe where I wanted him to fly; a task made more difficult by the fact that I wasn't really sure. The result was a challenging crew coordination exercise, where we flew along using my eyes and his hands. Somehow I found the destination. I tried not to look surprised.

During the debriefing, Stokes showed me where at one point

I had been about one-quarter mile off track. I heaved a silent sigh of relief, figuring "so what?" about a one-quarter mile error. To Stokes this was a sign that I wasn't certain of my position (admittedly correct), and an indication that I should strive to do better. The lesson was that in military flight training "close enough" is never good enough. The student is expected to always strive to detect and correct errors, with the objective of ideal performance.

ADVANCED ROTOR TRAINING

My next helicopter mission would be in the Bell 412 to conduct mission "Clearhood 17" from the Phase III helicopter syllabus: confined area landings. As I reviewed the *Manual of Flying Training*, struggling to memorize the numerous techniques and procedures, it suddenly dawned on me that I was already qualified on the Bell 412! I fly one in my "day job." If I knew how to do this stuff, why did I have the feeling that it was all unfamiliar? The training manual was so specific and prescriptive that, as far as the Air Force was concerned, unless I knew how to fly *their* way, I didn't know how to fly at all. If my experience gave me a head start, it was a small one. I suspected that basic aircraft control wouldn't be a problem, but the procedures, the checks and the protocols would indeed strain my brain.

Later, briefing complete, we circled over a patch of snow-



Simulation has come a long way in the Air Force since the author's days in Portage la Prairie. Cpl Vicky Lefrancois Photo

DID YOU KNOW?

3 CFFTS WAS FORMED AT CANADIAN FORCES BASE PORTAGE LA PRAIRIE ON JULY 1, 1970. IT AMALGAMATED PERSONNEL AND EQUIPMENT FROM CFB BORDEN, ONT., CFB RIVERS, MAN., AND CFB PORTAGE LA PRAIRIE, MAN.

covered scrub surrounded by trees. As confined areas go, it wasn't particularly challenging, and I could see from our 500-foot orbit that the Bell 412 would fit easily. My instinct was to dump the collective, drop into the area, flare and land. It would have certainly earned me a "red corner"—a failing grade—from my instructor, Capt Matt Fullerton. I prepared for the high recce as instructed using the acronym "PEFT": power, elevation, forced landing areas, traffic; briefing the appropriate considerations. Then, I circled the area in the prescribed 60 to 80 knot, 500 foot, one-quarter mile radius orbit. One's next thoughts are captured by the ironic acronym "AWOL": area, wind, obstacles, and look-out. It was gusty, and simultaneously flying, thinking and talking were keeping me busy. The wind was turning my circular

orbit into a football. Fullerton's usual students would have only 20 to 25 hours on the Bell 412 at this stage of training and would no doubt find this challenging. I struggled to remember the "7-S" check for confined areas: size, shape, slope, sun, surface, spot, and shoots. The acronyms serve as memory aids to ensure that the student fully considers his options, but the student must think through the scenario for himself. I looked at Fullerton for confirmation, but he was impassive. I was on my own.

When satisfied that I had a workable plan, and following the requisite low-recce pass, it was time to commit to a landing. By this point I could almost hear Fullerton's voice in my head as I turned onto final approach: start at 300 feet and 60 knots, maintain a slow walking pace, wait "two potatoes"

The Bell 412 teaches Air Force students to handle a complex multi-engine helicopter, similar to the types that they will fly operationally.

Jean Francois Dupont Photo



“INTERESTINGLY, SINCE THE (KING AIR) SIMULATOR IS CONSIDERED SO EFFECTIVE AT TEACHING EMERGENCY PROCEDURES, SIMULATED ENGINE FAILURES ARE NO LONGER CONDUCTED IN THE AIRCRAFT.”

past the obstacle, stabilize, descend...The Eagle has landed. Notwithstanding a few wobbles caused by recirculating snow, I thought it was a fair performance.

Fullerton took control of the helicopter to let me rest, and offered his feedback. He reinforced success and highlighted shortcomings. He asked questions. What was my plan if an engine were to fail on approach? Did I notice that I was a little slow turning onto final? He was probing to see how I would respond to the unexpected, if I could adapt to different situations; in short, he was looking to see if I was developing airmanship. Point made: military flight training emphasizes both accurate aircraft control and the development of critical thinking and judgment.

APPLIED TECHNOLOGY

Military pilots of a “certain age” will remember training on the Beechcraft Musketeer at 3 CFFTS. In those days, our “simulator” consisted of retired Musketeers, with the wings and tails cut off, in which we could sit and act out proce-

dures. Simulation “fidelity” consisted of asking course mates to make engine noises.

Things have changed. Allied Wings has invested heavily in simulation technology on behalf of the military. The value of this training technology was made clear during my multi-engine flight training exercise. It started in the King Air cockpit procedures trainer (CPT); a device which consists of a computer-generated touch screen emulation of the King Air cockpit, in which students learn to interact with the aircraft’s systems. In lieu of the chalk-and-talk classroom experience that typifies most groundschools, the majority of the King Air groundschool—and indeed all 3 CFFTS ground instruction—consists of individualized, interactive computer-based training. Instructors serve to answer questions and challenge the students’ comprehension, but the students are responsible for their own learning.

After tackling the CPT, students move into the flight simulator. Simulation is being used for an increasing portion of the multi-engine curriculum. Whereas in the past it required a

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Learning aerobatics during Phase I training teaches coordination and precision to aspiring Air Force pilots.
Cpl Vicky Lefrancois Photo



real airplane to learn basic tasks, today's simulators are often the most effective place to learn, with the aircraft being used to subsequently demonstrate and refine skills acquired in "the box." Consequently, fewer aircraft hours are required. The King Air syllabus has recently been reduced from over 65 to 51.7 flying hours.

My simulator instructor was Allied Wings employee Trevor Bachiu. Under his instruction, I was to learn how to handle such nasty scenarios as an engine failure during takeoff, an airborne engine failure, and a single-engine overshoot. The simulator lived up to its billing. During the one-hour session, we aborted takeoffs, shut down engines, performed single-engine overshoots and sweated through numerous other emergencies that I hope never to actually encounter in flight. Interestingly, since the simulator is considered so effective at teaching emergency procedures, simulated engine failures are no longer conducted in the aircraft.

That afternoon, I flew the King Air with Captain Vadim "Vim" Hrusci, a former CC-150 Polaris pilot. Our mission would cover the material from Lesson Plan 9, the students' first flight in the King Air, practicing steep turns and slow flight, then returning for an instrument approach and some circuits. Combining aircraft handling, instrument procedures and circuits into one sortie is intended to make the students more adaptable, and was certainly challenging. As promised, the progression via the CPT and the simulator to the cockpit made the transition easier, although I never quite mastered landing the King Air in the approved manner.

MAINTAINING STANDARDS

In the three decades since I was a student at 3 CFFTS, military flight training has certainly changed with the times. Technology is in evidence at every phase of training, and it is being used to good effect. The military-contractor partnership with Allied Wings facilitates an investment in new and impressive infrastructure unlike anything we imagined when I was a student. What has not changed is the fundamental concept of standards in military flight instruction. The instructors, both military and civilian, taught strictly by the book, with a thoroughness and consistency that I recall as being very military indeed. Students at Portage face high expectations, but benefit from tremendous resources to help them succeed. As I discovered during my week at Portage, military flight training is an intense and rewarding challenge. Even 30 years after I passed through Portage for the first time, if I had to go back and choose my pathway to an aviation career once again, I would still join the Air Force. 

A graduate of the U.S. Naval Test Pilot School, Rob Erdos is an experimental test pilot licenced for fixed- and rotary-wing aircraft. In addition to being an engineering graduate from the Royal Military College, and holding a masters degree in aviation systems research, Rob is a former Canadian Air Force SAR pilot. An avid airplane builder, and a passionate flyer of historical aircraft for Vintage Wings of Canada, Rob flies such iconic planes as the Spitfire and Hurricane.

