



# PNSAC Newsletter

Project North Star Association of Canada

December 2006

## Jim Riddoch

Fifth in a series of volunteer bios

Born in Paisley, Scotland home of the Coates thread mills. With parents abroad in Central Africa so I was sent to boarding school in Dumfries, Scotland at age 8 years old. I enjoyed brief parental company during their leave in the UK. My interest in aviation was wholly inspired by an uncle who was in the RAF during the war. He was a Master Corporal and engine fitter.

### Boarding school

My stay at boarding school stretched from '46 to '56, and during that time we did exercises at the the local RAF Station. The RAF had a war-time air transport depot near Dumfries where many surplus Wellingtons, Halifaxes, Hudsons, and Ansons were parked. On one occasion we were asked to prep the aircraft for disposal and they were put to the torch, one by one.

### Apprenticeship

After school I became a Technician Apprentice with English Electric Aviation, a company which became the British Aircraft Corporation, now BAE. I worked on Canberras and English Electric Lightnings as part of my apprenticeship from 1956 to 1961. When I started off as an apprentice I was paid four Guineas and four shillings per week. My board and lodging was £3/10s, and my bus fare 10 shillings/week. That left 4 shillings a week for lunch. My father used to send me a Pound Sterling a week for other essentials. I joined the local rugby club – the Preston Grasshoppers – and I was delighted to learn that they supplied free beer after the games, as well as the practices! I believe it was the Manchester Police rugby team – the hooker bit my ear, so my two props decided to take their revenge by pushing him down in the scrum and kneeling him in the nose.

During this timeframe I was briefly attached to the Flight Test Instrument group and on an occasion flew as an observer in the chase Canberra during a Lightning performance flight test, most notably tests were to determine (i) spin/stall characteristics and (ii) landing profiles (i.e. stall thresholds). I had to monitor and record the instrument data for these

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tests, and work with the flight performance engineer. During the Lightning spin/stall tests, the aircraft would roll over and go into a spiral spin. The pilot initially became disoriented, and wouldn't know which way to go to break out of the vertical rotation until the spin parachute deployed and vertical attitude was restored. Watching this from a chase Canberra was exciting and also analyzing the camera film later.



Figure 1: Jim Riddoch

Later I became an emergency egress test subject on a modified Canberra which was configured as a medium range bomber. While lying prone in the nose of the Canberra – on a trolley mounted on rails – my rapid exit from the bomb-aimer's position in the nose via a hatch just forward of the engine intake was carefully timed. You had to get on the trolley and slide back to the exit hatch. The exit routine involved actuating the hydraulically-operated (air) brake door before opening the emergency egress hatch. This prevented emergency egress ingestion of the evacuee into the engine intake. Glad to report I did not get ingested as this demo was on the ground. Subsequently the bomb-aimer/navigators had their own ejection seat behind the pilot. We later put a fiberglass hatch over the navigator's seat. I was standing on the cushion of the navigator's recently installed ejection seat when the safety officer came along and stated: "I don't think that seat is safetied!" I remained motionless until he inserted the safety pin.

## Canberras for the Venezuela Air Force

'Round about 1958 five Canberra PR7's were being readied for delivery to Venezuela. They were parked on the tarmac facing the hangar, but with the nose wheels positioned in a drain channel. This was an

ingenious method of avoiding the necessity of chocking the nose wheels. When the pilots started their engines, they simply opened the throttle, or 'blipped' the throttle to lift the nose wheel out of the channel. Four of the pilots got away and had taxied to the runway, the last guy was in a hurry to catch up to his buddies and applied too much throttle – that bloomin' nose wheel lifted out of there and the plane launched itself towards the open hangar – where I was perched on top of a Canberra inside the hangar. I had no time to escape, but with much screeching of brakes the pilot did stop the VAF Canberra just inches from the open hangar door.

## Wind Tunnel

English Electric's high-speed wind tunnel was located on the edge of the Warton Aerodrome in Lancashire, England. At that time we were doing a Mach 2 profile test on a stainless steel model of a Lightning. This one-piece model was pylon-mounted and bolted to a steel table inside the wind tunnel. The compressor was cranked up and the windspeed was approaching Mach 2. There was a very loud bang, followed by a series of bangs and crashes as the model took flight and tore through the baffles and exited the wind tunnel. Subsequently, the search of the local farmers' fields found some very distressed cows. Half a dozen people with metal detectors spent many hours searching the fields, but the steel model, even with a two foot wingspan, had truly taken flight. And why the mounting bolts failed, I don't know.

## De Havilland

After I emigrated to Canada in '66 I joined deHavilland Spar Division Engineering under John McNaughton. I was in the Future Developments Project section – e.g. stabilizers were being designed for earth-orbiting satellites. One particular design was called STEM (Stored Tubular Element Module). On one proposal I wrote to John Hopkins University for NASA, this proposal described a device which would be able to stabilize an astronaut in the event of an accidental untethering of the astronaut from a space vehicle. It was a small backpack-like device with four STEM booms which would be projected outwards to stabilize the astronaut for recovery by the space vehicle. Once stabilized, the astronaut would be able to participate in his own rescue. We made models of the damn thing and actually had some poor technician suspended to demonstrate it. Wonderful place to work in (like the Skunk Works at Lockheed California) but not for me.

## Jarry Hydraulics

I soon went to Jarry Hydraulics in Montreal in 1967. They did a lot of landing gear repair and overhaul contracts for the U.S. Air Force – also designed and manufactured the wing-sweep actuator for the F-111 and the landing gear for deHavilland Dash 6 and Dash 7 aircraft. My job here was Research and Development Engineer. I worked on the 'no back' recirculating ball actuators. These are the actuators for flight control surfaces (e.g. flaps). Another project involved the development of new and better-performing materials for the wing-sweep actuators (of the F-111). During that time we won an engineering contract for the proposed Boeing SST aircraft wing sweep system.

## Air Canada

In 1968 I left Jarry and went to Air Canada and joined the engineering department to work on landing gear for Vanguards, Viscounts, DC9s, DC8s, 747s and L1011s. I stayed in the engineering department until 1978 when I was promoted to program manager of APU and Accessories for two years. In the years 1968 through 1980 I worked in systems engineering, airframe engineering, and powerplant management.

I was promoted to Superintendent of Air Canada's DC9 fleet. Thirty-eight DC9s were in service and four were held back as spares. Over the next five years I was in charge of all "heavy maintenance," including the program maintenance such as the "C-checks" and "D-checks," but not the line maintenance. The "heavy maintenance" included all aircraft fleet modifications including re-painting and repairs. During this timeframe the DC9 Cincinnati in-flight fire occurred and I was deeply involved in the accident investigation, being flown down to Cincinnati Airport the same night to show the NTSB where the Flight Recorder was located on this aircraft. I subsequently had to appear at the public hearings to explain the purpose and scope of modifications made to the aircraft, not an easy or comfortable position to be exposed to.

## First Air

In December of 1990 I took an early retirement from Air Canada – at 52 I had accumulated 22 years with AC – since Air Canada most generously gave me five years towards retirement. I left AC on December 1st., a Friday, and started work on the following Monday as Senior Director of Maintenance with First Air. This position covered every aspect of a/c maintenance, and for the three years I was called upon day and

night to fulfill my duties. My hiring coincided with the purchase of First Air by Makavik, the Inuit Management Company. During this timeframe I reorganised all the maintenance programs for the purpose of cost-cutting and introduced third party maintenance work, and as a result the airline turned a profit for the first time in 1993.

## Audit of First Air by Transport Canada

During a routine audit visit from Transport Canada we were interrupted during an interview at our Carp offices with the senior inspector from Transport Canada, and told that a Boeing B727 was sitting outside on its tail outside our hangar. It was 'a little embarrassing'. The maintenance crew had emptied the main centre tank in the fuselage without compensating for the centre of gravity (c.o.g.). Under close scrutiny from TC Inspectors and my embarrassment an aircraft jack on a tow tractor was parked underneath the nose gear, then they let the tail come up freely as fuel was transferred from the wing tanks to the centre tank. Needless to say we did not get a very good audit that year.

## Canadian Aviation Maintenance Council (CAMC)

In '94 I was invited to help start up the Canadian Aviation Maintenance Council (CAMC). Within three years we had established national basic technical training programs for thirteen aviation-related trades. As Registrar I was responsible for recruiting and registering qualified Aircraft Technicians as some technicians were recognized by Transport Canada as fully qualified and some were not. I was also the Accreditation Manager responsible for accrediting technical training programs at technical colleges and aviation maintenance organizations.



Figure 2: Jim reclining on the job

In 1998 I retired full time from CAMC but con-

tinued in a support role for the next three years as a part time project manager on such programs as Human Factors training, Exam Question Bank and Prior Learning Assessment and Recognition (PLAR).

By 2002 I became fully retired and joined Project North Star as a volunteer only to be canvassed on to the Board of Directors and appointed Chief Engineer for the Project.

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## Merlin Musings

### First in a Series

*Ted Devey*

A series on Rolls-Royce's Merlin Engine, four of which powered the Canadair-built North Star, will be a regular feature of our quarterly newsletter.

What was to become the North Star airplane started off as a Douglas DC-4 built under licence by Canadair in Montreal. The designation for the North Star is DC-4M (M for Merlin). Originally DC-4s were powered by radial engines. Seventy one North Stars were built, 21 for Trans-Canada Airlines, 22 for BOAC (British Overseas Airways Corporation (called them 'Argonauts')), and four for Canadian Pacific Airways, all pressurized and equipped as passenger planes. The RCAF operated a total of 24, the last of which was a pressurized VIP version, the C5, equipped with the much quieter Pratt & Whitney R-2800 engine. Only one North Star remains, and that is RCAF's #17515 now undergoing restoration at the Canada Aviation Museum.

Because of the dawning of the jet era, the -622 series was to be the last of the Merlins. These 12 cylinder, 60 degree V-12 engines were built for extended piston-pounding service on long overseas flights, with heavy loads at high altitudes for many hours at a high percentage of rated power. Heavily stressed components such as pistons, connecting rods, crankshaft and bearings were 'beefed up' to withstand such service. To produce the required power at high altitudes, the 2-speed 2-stage super-

charger was enlarged in size and output, consequently enormous heat was developed in the charge to the engine intake manifold which necessitated that an intercooler be interposed so as to maintain high volumetric efficiency. In recent times the 622s became the engine of choice on airplane and boat racing circuits.



Figure 1: Full Crew: Ted, Jim, Tex, Ed

### Engine removal

When an engine is removed from the aircraft it is mounted on a stand for transport to the shop. For disassembly and work on the engine itself, it is then moved to a rotary work stand resembling a rotisserie

in function. In June, 2006, the entire nacelle assembly comprising the engine, cooling systems and various other components was disconnected and removed from the firewall bulkhead and placed on a specially built transport stand. The core engine will soon be transferred to the rotary work stand.

The engine transport stand was built over the winter of 2005-2006 by Ted Devey. Steel framework components were purchased cut to specified dimensions from Loucon Metal and delivered to the RCMP Hangar at Uplands where it was assembled and welded together. Gary Dupont, the RCMP shop supervisor did the burn with help from Jim Riddoch, Peter Houston, and Steve MacKenzie.

The stand was completed at the CAVM. The whole nacelle assembly was then removed from the airplane and fastened to the transport stand ready for display by the North Star in the new Storage Hangar on Canada Day. The stand with nacelle was then moved to Building 193 where various components were removed for future treatment. Cowlings were detached and taken separately to the shop for cleaning and refurbishing.



Figure 2: Ted and assistant

## Dismantling nacelle assembly

The three radiators were disconnected and removed: main, intercooler and lubricating oil cooler. (Temperature control on the Merlin is achieved by control-

ling the air flow through the nacelle by moveable air flaps). Various piping, electrical wiring, and associated components mounted on the supporting frame were disconnected and removed.



Figure 3: Intake manifold inlet

Before transfer of the engine to the work stand the intercooler and supercharger were removed so that the rotating frame of the work stand could be reduced in length to that needed to accommodate the engine conveniently. Supercharger removal was tricky and tedious but was achieved with the use of an overhead hoist. Earlier Merlins fitted in warplanes had 2-speed 2-stage superchargers, the 622 was fitted with a larger supercharger providing the increase in boost at high altitudes. This resulted in excessively high charge temperatures which had to be reduced by the intercooler in the interest of maintaining high volumetric efficiency. In the 622, fuel injection replaced the carburetor used in earlier Merlins. The above work was carried out by Jim Riddoch, Ed Hogan, and Peter Houston under the able supervision, advice, physical assist and persuasion of Mike Irvin, the Museum's North Star Project Manager

The supercharger has been separated and removed from the engine which is ready for transfer to the rotary work stand. The next action is to remove sub-assemblies from the engine when the stand is ready.

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## Interview – Dean Broadfoot

Dean Broadfoot from Tisdale, Saskatchewan, joined the Royal Canadian Air Force (RCAF) in 1947 as a direct en-

try aircrew candidate. By alphabetical coincidence he was the first post World War II aircrew trainee. On completion of pilot training he was assigned to 426 Squadron based at Dorval Airport, just as the Squadron was taking delivery

*of North Star aircraft. Dean flew the Star on domestic and international operations, including the Korean Airlift, for several years before being selected for conversion to the Comet. He also flew the Yukon and Boeing 707 before transferring to Transport Canada. Now retired, Dean lives in Kanata.*

*What were the motivating factors behind your decision to join the RCAF?*

I grew up during the war and there was a shortage of manpower for civilian businesses. I started to work when I was fairly young in my dad's shop, by the time I finished High School I was an electrician, machinist, welder, and refrigeration mechanic. I learned most of the business from my Dad but I did attend a General Motors Frigidaire school in Saskatoon when I was 15. I also joined the Army Cadet Corp. I have always said that my experience with the army motivated me to join the Air Force. I graduated from High School in 1947 just at the time the RCAF was recruiting new air crew and when I saw the poster I had had enough experience to know what I didn't want to do. So, the offer to learn to fly was very attractive. After I had been accepted, it occurred to me that I had never been in an airplane. So I drove my '28 Packard to Melfort where I had heard that a fellow who was an ex-RCAF instructor had started a flying school. I paid him five dollars and he took me for an airplane ride which I enjoyed very much. Years later at our son's graduation from the Aviation Flight Tech Course at Seneca College, this same pilot said I have something to show you. He had three generations of my family in his log book. He had given me my first airplane ride, taught my father and brother to fly and he had instructed my son at Seneca College.

*You completed your pilot training at Centralia. What were the main features of the pilot course? Graduates usually have a preference for operational assignments, what was yours?*

We trained on the Harvard and the twin engine Expeditor. We did our initial flying on the Harvard and completed the instrument flying course on the Expeditor. The plan was to issue us with instrument ratings upon completion of this course but it was discovered that we didn't have the cloud time necessary to qualify for an instrument rating. The main feature of the pilot training was how quickly it was completed. In nine months they had taught us everything that was known about flying at that time. By way of comparison, 30 years later, it took my son three years to accomplish the same thing. After wings presentation we were posted to the Gunnery School at Trenton. I was told that I got the highest

score. At the end of the gunnery school we were commissioned as Pilot Officers with a simultaneous promotion to Flying Officer. Like all pilots graduating at that time I wanted to be a fighter pilot; in fact, when I learned that I had been transferred to a transport squadron I seriously considered resigning. Since I had no prospects of another job I decided to stick it out for the next 25 years.

*As a new pilot arriving at 426 Squadron, what were your first impressions of the North Star?*

When Bob Edwards and I reported to 426 Squadron on January 07, 1949 we first met with the Flight Commander, S/L Howie Morrison and his deputy F/L Don Dickson. When these two gentlemen reviewed our log books they were not impressed with our total flying time of 253 hours and 55 minutes. In fact, they laughed and laughed and told us a horrible mistake had been made. They promised to get us the best postings possible but, in the mean time we could put ourselves on any trip on the North Star as third pilots. When I first saw the North Star I was mightily impressed with its size. It was the biggest aircraft in the RCAF and hopefully, we were going to get to fly it. It was February 10th when the Squadron was finely convinced that we were there to stay.

*All training on the North Star was completed at 426 Squadron. This included the initial conversion to type, continuation training by exposure to operations, and tutoring leading to Captain status. Could you comment on your own experience as you progressed through these training and selection processes?*

Bob Edwards and I were given three hours of dual circuits. This was the initial conversion to type. During this period we met F/O Joe Giles who had the only North Star Flight Manual in the RCAF. If we wanted to know anything about the airplane we had to go see Joe, who kept the book under lock and key in his desk. There was never any formal training, we learned everything on operations. When Bob and I first went solo on the North Star much to the despair of the flight engineer, CPL Pierre Leblanc, we were even more impressed on how easy it was to fly. We spent five hours doing circuits on a Sunday afternoon, which led to several noise complaints from the local citizenry. On Sep 18th, now that we had enough "cloud time" we were sent back to Centralia to take the instrument course on the Expeditor over again. We finished on Nov 4th and then went back to 426 Squadron. Bob and I stood 1st and 2nd on course much to the chagrin of Dave Adamson whose ambition it was to be first. In March 1950 we joined the Americans to take part in the Northern Re- supply

Operation out of Resolute Bay. I was crewed with F/L Don Dickson. This Operation took us to Mould Bay and Isachsen with their supplies designed to last the half dozen men for two years. Then we moved from Resolute Bay to Thule, the main base for re-supply of Eureka and the establishment of Alert. At the end of April 1950 we went back to Dorval and then I was upgraded to Captain. My first trip as a Captain was to Goose Bay. Rolly Lloyd was my first officer. "Spooof" Logan was the navigator and Tim Timmins was the radio officer.

*426 Squadron operations could be very challenging in many respects. What were some of the operations or events that stand out in your memory?*

My first trans-Atlantic flight was on May 17, 1949 when we flew from Montreal to Hatfield U.K. and returned 2 days later with Vampire spare parts. We didn't know anything about flying over water or using the auxiliary fuel tanks (we never used these on domestic flights) and as we left the coast, that looked like a lot of water.

On June 20th 1949 we set off on the South Atlantic, Africa and United Kingdom long range training flight. This was my first crossing of the equator and the first operation into Africa, Gibraltar, etc. I was now six months on the North Star and it looks like it was going to be a piece of cake.

On July 6th 1949 I flew with F/L Don Dickson to Resolute Bay and this was the first post war flight into that Arctic base. We had no maps and the airport was just a rumor. When we arrived there we found several barrels of aviation fuel and some hand pumps. While our passengers, (a survey crew) went about their work we filled our tanks using the wobble pumps which enabled us to make the return flight direct to Rockcliffe (home of the survey crew).

F/L Don Dickson was the Deputy Flight Commander and it was my good fortune to be able to do a good bit of flying with him. One of the adventures was taking Defence Minister Brook Claxton to Paris where they were holding the preliminary meetings for the establishment of NATO. While Mr. Claxton was doing his thing we were able to do a side trip to Amsterdam.

On July 1, 1950 we departed Montreal for a long range training flight, the first part of which was to participate in the Farnborough Airshow in the UK. We flew from July 4th to 8th in the airshow every day. Then we departed for Paris, Nice, Rome, Tripoli, Cairo, Malta, Gibraltar, Dakar, Natal, Port of Spain, Bermuda, Rockcliffe and home to Montreal. Among the notables of the crew was F/O Tim Timmins. While we were in Port of Spain we learned that 426 Squadron had been assigned to join the USAF on

the Korean Airlift. We arrived back at Dorval on July 23rd and on the 25th six North Stars and nine crews took off for McCord Air Force base. This was the beginning of the Korean Air Lift. I flew 25 trips, each one an adventure, and a lot of the time with the same crew. On one of the trips we carried Pierre Berton, a young reporter from MacLeans magazine and he did a story called "The Milk Run to Korea".

*During your air force career you witnessed a significant advance in technology as applied to transport aircraft. What aspects impressed you the most as you progressed from the North Star to the Comet, Yukon and Boeing 707?*

The big difference between the North Star and modern jet transport is the crew composition. The North Star had five flight deck crew and two cabin crew, the modern jet transports have two flight deck crew and up to 15 plus cabin crew. These changes were all due to aircraft size and improvement in technology. The first crew member to disappear from the flight deck was the radio officer, which happened with the development of the single side band radio. The next to go was the navigator, which followed the development of the inertial navigation system and GPS. The last to go was the flight engineer, which occurred with the automation of a lot of systems and the moving of the fuel and system controls to the cockpit.

*You were with Transport Canada for several years. What are some of the highlights of your time there?*

The difference between the RCAF and Transport Canada was in the RCAF we were running a flying operation and in Transport we were regulating the flying operation of others and providing them with facilities and services. One of the highlights of my work in Transport was my Division's involvement in the rewrite of the Air Regulations and Air Navigation Orders. These had not been completely reviewed in over 25 years and it took us almost 15 years to complete the rewrite. The new regulations were promulgated in the month that I retired. I enjoyed my time in Transport very much. I ended up being responsible for all aspects of airspace including air traffic services and the rules of the air, airports, the aviation weather program and facilities and services, such as navigation aids and control towers.

*Finally, in view of your extensive experience with transport aircraft, what, in your opinion, were the merits of the North Star when it was introduced into service?*

At the time it was introduced it was the largest and fastest (and noisiest) aircraft in operation in Canada. Trans Canada Air Lines operated five of the

North Stars on loan from the RCAF. It was such a versatile aircraft that it flew well into the jet age and it served on many, many early UN operations. Aside

from the noise ( we are all deaf) we were all proud to fly the North Star.

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## Crew Chief Reports

*Keith Pennie*

### Janitrol Heaters

It takes a lot of elbow grease to restore a Janitrol aircraft heater that has not only not been fired up for 40 years but also whose every orifice has served as accommodation to one or more species of bird. The North Star is fitted with four Janitrol avgas fired heaters and to date three have been carefully removed and restored. The front most heater is a model S40 with an output of 40,000BTU/Hr.



Figure 1: Janitrol heater parts – before

This unit, which served the crew area, is mounted high in the nose wheel compartment, has yet to be removed, and , from the exterior appearance is in the worst shape of the four, likely because of its exposure to the elements. The two main and larger S100 heaters are installed above the ceiling in the galley area, each have a capacity of 100,000BTU/Hr and feed into a duct that runs from the galley to the rear most bulkhead. The rear heater, also an S100 model, appears to have been installed as an aircraft modification as it is not included on the original aircraft manual heater diagram. It is mounted on the rear bulkhead and does not feed into a duct system but rather appears to augment the main heating system

in the rear cargo area. I can only assume that it had something to do with frequent operations in colder latitudes.



Figure 2: Janitrol heater parts – during

The first task involved suiting up with gloves and masks to remove bird residue and then to work in confined spaces to free the heaters from a multitude of rigid lines, well worn ducts and fasteners. To our surprise, with a little help from WD40, most of the fittings released after numerous attempts. It took a lot of patience, but Don Craig appears to have an endless supply. Don will also testify that there are still little creatures living in the ductwork. After multiple pictures the units were taken back to the shop to be dismantled and restored. To our surprise seals and gaskets were still available for the heaters and fiberglass substitutes were either procured or fabricated to replace the original asbestos products. Regrettably the combustion chambers on the galley-mounted heaters were both cracked, whereas the rear heater combustion chamber was in much better shape. After copious amounts of silicone wax remover, metal polish, preservative and plenty of elbow grease the three heaters were reassembled ready to be reinstalled once the aircraft interior is restored. Jim Riddoch remarked that they are the best looking aircraft heaters that will never fly again and probably look better than they did when the aircraft was in operation.

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# Director of Engineering – thank you

*Jim Riddoch*

Work is progressing actively on parts removed from the North Star for restoration in Bldg 193. Items completed or in work include crew seats, instrument panels, janitrol heaters, curtains and cabin liners, wheels and tires, navigator table, number one engine, cowlings and propeller. In addition engine stands, spanners, spinner removal tool, and

miscellaneous other pieces of equipment have been built. Our crew members continue to make invaluable contributions to the project. The following rate a special mention and thank you: Jacques Menard and Chris Payne (documentation and photography), Tom Miller (parts search), Drew Hodge (newsletter), Marie and Chris Garbutt ( sorting and repairing), Tom Mulvihill (computer support) and Pierre Drapeau, the Air Canada guy from Montreal who is providing the Merlin engine data.

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## Miscellany

### Avro Arrow

The Toronto Aerospace Museum rolled out a full scale replica of the Avro Arrow on 8 October before 2000 spectators. The project was completed over an eight year period by 140 volunteers. Alcan provided the material and Bombardier painted the aircraft in its original colors.

### Restoration activity continues



Figure 2: Wib and Tim



Figure 1: C-spanner drafting by J. Corby



Figure 3: Robet with restored black box

## Fly safe

Basic Flying Rules: "Try to stay in the middle of the air. Do not go near the edges of it. The edges of the air can be recognized by the appearance of ground, buildings, sea, trees and interstellar space. It is much more difficult to fly there."

## Member's meeting

The next members get together will be held at the Canada Aviation Museum on 9th December.

## Meeting at Vintage Wings of Canada

Mr. Potter's Chief Mechanic, Andrej Janik, would like to invite you to participate in the restoration of the MK XII Hawker Hurricane. Show up on 2nd December, and find out more! Starts at 10:00 AM.

## Christmas break

Wednesday, December 20th is last day of work before Christmas. We start again on Tuesday, January 2nd 2007

## A name for the Newsletter

Member's suggestions are invited on a name for our PNSAC Newsletter. Submit your proposal to the Editor at the e-mail address listed below.

## Reader's comments

Future issues of our Newsletter will include a reader's comments section. The Editor will select items for publication. Submit your comments to the Editor at e-mail address listed below.

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