



The NStar Chronicle

Project North Star Association of Canada

Volume 9 | Issue 5 | December 2013

Editor's Notes

Bruce Grant

This issue of the Chronicle carries the last of four chapters in Richard Lodge's story of his time at Rolls-Royce. Taken together, they make an interesting ethnology of an extinct industrial culture. The whole series is accessible through our website, <http://www.projectnorthstar.ca> (note that the location of the newsletter archive will change when the new website goes live) starting with the April 2013 issue of the Chronicle.

We also have another hair-raising flying story from Tim Timmins. A series of previous Timmins stories can be found through the same website, starting with the December 2010 issue.

Motorheads among our readers should look into Ted Devey's extensive writings on the Rolls-Royce Merlin, starting in the December 2006 issue.

All together, the archived issues are a valuable web resource for readers with an interest in aviation history or the history of Project North Star.

PNSAC

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Notes from the President

Richard Lodge

As we come to the end of 2013, I think of it as an interesting year with some disappointments and important successes. I believe we end the year in a very positive way and I look forward to 2014 with enthusiasm and renewed optimism.

First let me get the disappointments out of the way. 2013 was our 10th anniversary year. We had hoped to make the event an opportunity to show off our achievements during the first 10 years and create additional interest around the plane. Unfortunately, due to events beyond our control, it was not possible to stage a significant event marking the anniversary. We therefore did our usual opening of the plane to the public on Canada Day and marked the anniversary with our PNSAC photographer taking photographs of members as they visited the restored cockpit.

The second disappointment is more serious. During 2013 we did not take on any new volunteers to work on the plane. We had several good applicants but were unable to fit any of them into the working schedule of volunteers at the Canada Aviation & Space Museum (CASM). This has two downsides; the first being that we are now becoming short of active volunteers and the second being that we are not training any new and sometimes younger volunteers to work on pre-jet age aircraft. It is important to pass on the skills of the older volunteers to younger members of our Association.

Funding the restoration of the aircraft is always a challenge and is becoming more so as the Federal government cuts back on the funds it appropriates to the CASM and other similar institutions..

You may well ask why I feel optimistic about 2014 after referring to disappointments and problems. In

the last two months the Directors of PNSAC met with the Director General of CASM, Stephen Quick, and subsequently a small group of directors met again with him together with CASM conservation staff. The outcome of these meetings has been an excellent exchange of views, a very firm commitment by the CASM to continue to actively support the North Star restoration and a better understanding by both sides of the challenges we face and possible ways forward.

As many of you already know, volunteer work on the North Star will be suspended for approximately the first three months of 2014. This is to enable CASM to undertake a major reorganization of the Museum exhibits in preparation for the centenary of the start of the First World War. During this time the CASM professional staff will be occupied with the reorganization and will not be able to provide the necessary supervision of restoration work. During this time, though, we plan to update the work plan and overall budget for completing the North Star restoration, work on fundraising initiatives and finally update our Memorandum of Understanding with CASM.

In addition to our hands-on restoration work, the Association has a strong social side. Bill Tate, our Vice President, and his Special Events team have organized some memorable bus trips, the last of which was to Montreal in October. Bill has now turned his considerable organizational skills to further developing our quarterly Members' Meetings. In early December we had a great morning at CASM when Capt. Bob Pearson of the Gimli Glider fame made a presentation to 150 of our members and members of other aviation organizations we invited to attend. Although our Vice President has retired as an airline captain, he certainly has not retired from anything else. Watch your emails, Facebook and Twitter for news of events Bill and his team are planning for 2014.

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Project Manager's Progress Report

December 2013

Bruce Gemmill

Nr 3 Engine

Engine 3 is nearing completion. The supercharger and intercooler preheat assemblies have been in-

stalled, along with the propeller reduction gearbox. While this work was being carried out by the engine crew, the remainder of the volunteer work force busied themselves completing the numerous cowl panels, pipes and hoses and other pieces needed to complete the engine. Two items that seemed to take forever were the large steel exhaust shrouds. A lot of hammering was needed to pound out years of dents, then numerous rivets and all the Dzus fasteners and

springs needed to be replaced. The complex shape of the exhaust shroud made this challenging work. Further delaying completion was the search for suitable clear coat to protect the steel from corrosion. The old clearcoat we used successfully on engines 1 and 2 is no longer available. Mike Irvin finally located a suitable replacement, and the shrouds were clear coated and serial numbers were stencilled on.



Garry installing the intercooler on engine 3.

The auxiliary gearbox was disassembled, and significant corrosion was found on the bearings inside. Bearings had to be ordered from England. Meanwhile, the gearbox was cleaned and painted. At the same time, the large DC generator was dismantled, repainted and reassembled, as well as the air pump and the tachometer generator and propeller synchronizer. Once the new bearings were installed, the gearbox was completed and the generator and air pump were attached. Finally, the gearbox was installed on the firewall, which is now finished, awaiting the installation of engine #3.

Crew Lounge, Galley, and Forward Washroom

Work has slowed on the forward section of the aircraft. The repair needed under the floor of the crew lounge is on hold until a suitable piece of extruded aluminum can be found. Until this is complete, the new cushion flooring cannot be installed. This has also delayed the installation of all of the crew lounge accessories, such as the table, seats and secure storage bin, all of which are complete but waiting in storage.

Fuselage and Empennage

The forward and rear belly compartments are now complete. All the frame pieces and hardware needed for the troop seats have been made, and work is progressing on the seats and backs. One section has undergone a trial fit, and all pieces seem to fit perfectly.

Planned Restoration Work 2013/14

The museum has advised all North Star volunteers that our work must be put on hold for several months while a major exhibit for the 100th anniversary of the beginning of the First World War is prepared. Our work space in the restoration hangar is needed to assemble and prepare several aircraft that will be added to the display space in March. Until then our work on the aircraft is suspended, but we don't expect this delay to have a serious impact on the overall project. We look forward to resuming work in the Spring.

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My Days at the Home of the Merlin Engine

Part 4

Richard Lodge

One of the most mysterious departments at Rolls-Royce was the Technical Publications Department. Word processing was unheard of in the 1960s and every time an engine modification was made, it resulted in much work documenting even a small change and distributing the updated documentation to all engine users around the world. I never spent

any time working with the people in this department even though there was a complete building devoted to the work. Compared with the resources allocated to engine development, the technical publication side of the business was very small and it always remained a mystery to me.

Since retiring from my career as an accountant in Canada, I have become active on the actual restoration work of the North Star. Understandably, I have a special interest in working on the Merlin engines. Nobody now working on the restoration has ever

worked on a Merlin when it was in service. It is therefore necessary at all times to refer to the various publications and manuals we have managed to accumulate for the North Star.

It is only now, actually working on the engine and referring frequently to the exploded diagrams that I realize how complicated the work of the Technical Publications Department must have been. The men and women who worked there were largely unsung heroes in that it was very tedious and unglamorous work which was of great importance for the safe and trouble free running of engines in service. I can remember that I would hear from time to time of the difficulties of ensuring that publication updates were actually delivered to many remote places in the world and the considerable logistical complications of ensuring that the packages arrived safely and furthermore that the updates were actually inserted in the relevant manuals, particularly as many of the engine users did not speak English. I cannot remember now if any of the documentation was translated into other languages although I have a recollection that we employed people who could translate into French and Spanish.

After a couple of years I was given a new job in the Long Range Planning Department. I was one of three accountants working in this office under a very senior accountant. Here we looked at the costings of the development work, the projected sales and production costs on new engine designs. This was the time when the Spey was going into service and the company had signed a fixed price contract for the RB211 engines for the new Lockheed 1011. This was a major project, championed by David Huddie the

Chief Engineer. Computer spreadsheets did not exist at that time - pencil and columnar paper were the order of the day, together with efficient erasers. Long range forecasts of 25 years required many yearly columns and each time we produced figures that the engineers did not like, we were told to rework the numbers until we produced an acceptable answer. We were not limited in the number of erasers we could use. The usual way of cutting costs was to reduce the forecast development and testing time. Of course this did not work in real life.

We were often dealing with the directors of R-R who lived on the top floor of the Nightingale Road offices. Many of them were engineers and they had little time for young bean counters. It was still a time of optimism for the company. The huge contract for the Lockheed engines had been signed and the company was still enjoying its reputation as the company whose Merlin engines had helped to save Britain in the Second World War. This was in 1965/6 and it was several years before our projections of doom resulted in the bankruptcy of the company. Fortunately I left the company in 1966 and was not involved in what must have been a horrible process as a symbol of British engineering excellence slowly went to the wall.

After the chaos caused by the demise of Rolls-Royce Limited, the British government formed a new nationalized company to take over the remains of the old one. This has been very much a success story and the privatized Rolls-Royce is now a highly profitable and innovative company. I look back on my days at R-R with nostalgia but I now realize that much of the time we were all living in a fool's paradise.

PNSAC

RCAF Overseas Ferry Operations

AJS (Tim) Timmins, RAD/NAV/AI

Over a three year period starting in 1952, with Operation Leap Frog, the deployment of 12 Sabre squadrons from Canada to Air Division in Europe, No 1 Overseas Ferry Unit (IOFU), based at St Hubert, Quebec, delivered over 800 aircraft. 426 Squadron North Stars flew support missions, carrying servicing personnel and providing enroute navigation assistance, airborne radio beacons known as duck butts. Besides the Sabre squadrons, four CF100 Squadrons were delivered to Air Division and 53 CF100 aircraft to the Belgium Air Force. Silver Stars and Expeditors were flown to Europe for delivery to

NATO members under the Mutual Aid agreement. My personal experience with ferry operations was with Beechflight, the delivery of 25 C45s (Expeditors) to France and Portugal.

Beachflight was a Training Command operation, under the command of Wing Commander Harry Forbell. Twenty six expeditors were assembled at Trenton where they were fitted with a 100 gallon fuel tank in the main cabin, plus safety and navigation gear required for the planned route. A pilot and navigator were assigned to each aircraft. I flew with Squadron Leader Brian, Marfleet, the designated Deputy Operation Commander. The aircraft were to fly in formation, four sections of five and one of six, within block airspace.

On 20 May 1959 Operation Beachflight was

launched. Sections departed Trenton for Goose Bay at designated intervals in order to maintain separation along the route. Big trouble, the weather within the assigned block airspace deteriorated to the point where aircraft could not maintain contact with each other and abandoned their formations. Now it was everybody for himself. The 26 Expeditors were up, down, right, left, within the block airspace and no doubt outside it. My section dispersed and we did not see any of them until we arrived at Goose Bay. Not a great start to the operation, but everyone arrived safely at Goose Bay, so a success in that sense. Our flight time was 6:45.

The flight from Goose Bay to Frobisher (Iqualuit) the next day was uneventful. Our Flight time was 6:05.

As I recall, we had a weather delay in Frobisher and did not depart until 24 May. The plan was for each section to proceed to Sondrestrom AFB (Kangerlussuag-big Fjord) located on the West coast of Greenland, refuel and carry on over the icecap to Keflavik. The Deputy Commander would lead the 5th and last section. Our aircraft was unserviceable so we had to take the spare, the 26th aircraft. The unserviceable aircraft was repaired and returned to Trenton. We were late into Sondrestrom, to find that

section four was still on the ground because the three earlier sections had experienced heavy icing over the ice cap. It was not known if the crews and aircraft were safe, a great concern as the Expeditor was a notoriously poor performer in icing conditions. We assembled in the bar to await word on the fate of our mates. All the aircraft made it over the ice cap and arrived safely in Keflavik, which was ample reason for us to celebrate another success. Our flight time to Sondrestrom was 3:50.

We departed Sondrestrom on 27 May after a two day delay waiting for improved weather over the ice cap. The flight to Keflavik was uneventful. Our flight time was 5:10.

The first three sections waited for us in Keflavik. Every crew had a story to tell about their experience over the ice cap. Fifteen aircraft were loaded with ice and unable to maintain altitude. Their only salvation was to make it past the ice cap and out over the water where they could descend to warmer air and shed the ice. Thankfully, all of them did.

The east coast of Greenland is very rugged with numerous high peaks. Several crews in their descent out of the icing conditions broke cloud between these peaks. These stories were oft repeated and all called for another round of drinks.



Photo, taken by Tim, of two RCAF C45 Expeditors (military variant of the Beech 18) during the ferry flight he describes in this article. These aircraft were purchased in large numbers during and after WW II for pilot training, navigator training, and as utility transports.

The next day, 28 May, all the sections proceeded to Prestwick. The weather was perfect and I got a lot of stick time because my pilot was very tired after the debriefings in Keflavik. Our flight time was 5:10.

We remained overnight in Prestwick and flew to 1 Wing, Marville, arriving mid afternoon on 29 May. The aircraft were prepared for delivery to the French and Portuguese air forces. The cabin fuel tanks were

removed as well as all the safety and navigation gear.

On 3 June we delivered 19 Expeditors to the French Air Force at Chateaudun, located not far from Chartres. The flight crews were picked up by C47 Dakotas and returned to Marville. Nineteen crews boarded a 426 Squadron North Star for return to Trenton. Of course the Commander and his Deputy remained behind to deliver six expeditors to the Por-

tugese Air Force in Lisbon.

We departed Marville on 4 June for Bordeaux where we planned to refuel and then proceed along an air route over the Pyrenees Mountains to Lisbon. The weather along the planned route was very bad with intensive thunder storms over the mountains. Ever resourceful, our Commander decided to file a flight plan west over the Bay of Biscay, clear of Spain, then south to Lisbon. This would be a long overwater flight and we had no extra fuel, safety equipment or nav gear. We took off and were in the process of forming up in two sections of three, when several light military aircraft flew through our formation. No one saw them coming, it happened so fast there was no reaction. Not a very good start to the day.

Our Commander led us west over the Bay of Biscay, maintaining VFR under a cloud layer. The

cloud base got lower and lower, we were down with the shipping and it was decided to climb above the cloud, VFR on top. This worked for a while but the cloud tops kept creeping up over 10,000 feet and we had no oxygen. The Commander decided to descend and try for better conditions. The Deputy Commander, my pilot, decided to stay high; our six plane formation was split three high and three low. I was now doing the navigation for the high section. With nothing but a chart to work with, I managed to make use of the marine beacons along the coast to guide us west then south to Lisbon. We arrived at Lisbon before the low section and the Deputy Commander wisely elected to hold until the Commander arrived and landed. Our flight time was 5:45.

The next day we participated in a small handing over ceremony. Mission accomplished!

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Troop Seats and Extras

Nelson Smith

Troop Seats

Seat back assemblies are completed for the troop seats. Thirty eight units were produced. The assembling of the backs to the platforms to produce triple and quad seats will be the next step. This will be done over the winter.



New troop seats.

The prototype is progressing well. As previously stated, measurements are a rarity with these projects and sometimes it takes longer to figure out a plan than to do the job. A guesstimate for completion: early December.

Other Projects

Protective covers for the probes which protrude under the belly of the North Star were made and installed. The foam pads previously installed had done their time.

The First Officer's protective seat covers have been manufactured and installed. This addition was required to shield the seat covers from UV rays, dust and stains. Similar covers will be made for the Captain's chair during the winter months.

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Quarterly Meeting Report

Drew Hodge

On Saturday 7th December 2013, Project North Star Association of Canada (PNSAC) held a quarterly meeting in the auditorium of the Canadian Aviation and Space Museum (CASM) in Ottawa. It was a memorable meeting with over 200 people in attendance. Those in the audience that day were able to hear the story of the Gimli Glider told in person by Captain (retd.) Robert (Bob) Pearson, the pilot of Air Canada Boeing 767-200, fin number 604, when it made an unscheduled stop at Gimli Manitoba, thirty years ago.

The meeting started with an introduction by Bill Tate, Project North Star's Vice President. Bill began by welcoming the audience, which, as well as PNSAC volunteers, included members of Vintage Wings of Canada, Ottawa Airport Watch, the Canadian Aviation Historical Society, the College of Professional Pilots of Canada, CASM volunteers and staff, Air Canada and WestJet pilots, and visitors from the general public, one of whom had travelled to Ottawa from Vancouver for the meeting. After describing the goals of Project North Star and asking PNSAC volunteers to stand and be recognized, Bill invited the audience to visit the world class exhibits in the Museum after the meeting.

Bill's acquaintance with Bob Pearson goes back thirty-five years, when Bill was Captain Pearson's Second Officer on Boeing 727s based in Montreal. His duties in the cockpit back then gave Bill ample opportunities to watch Captain Pearson at work. Bill described Captain Pearson as a "highly professional pilot" who, "wearing his command lightly", demonstrated "highly polished interpersonal skills and a delightful sense of humour". He then invited Captain Pearson to tell the story of flying unscheduled into Gimli.

Captain Pearson spoke for a little over an hour with no notes and with reference to a few appropriate slides. He described eloquently how, because of errors in the conversion of metric measurements, his Boeing 767-200 ran out of fuel and lost both engines over Manitoba on the way from Ottawa to Edmonton. The full story is well documented in the book "Freefall: From 41,000 feet to zero - a true story, William and Marilyn Hoffer, Simon & Schuster, 1989", but to hear it told in person by the pilot in command that Saturday, 23rd July, 1983, was a rare privilege.



Captain (retd.) Robert Pearson.

The port engine stopped first at 41,000 feet prompting the decision to divert to Winnipeg. At 28,000 feet the starboard engine ran down too, and Maurice Quintal, Captain Pearson's First Officer, made calculations that showed they couldn't reach Winnipeg. Quintal advised Captain Pearson to try for the nearest runway on the former RCAF aerodrome at Gimli, twelve miles away. Some eight or ten minutes after losing the first engine, Captain Pearson side-slipped the big Boeing down to an old runway that was being used as a racing track by members of the Winnipeg Sports Car Club. The nose wheel collapsed on landing, but the aircraft came to a stop and no one was seriously injured. The racers helped to put out a minor fire in the nose.

Captain Pearson talked about the inquiry that followed the incident and its eventual exoneration of both pilots. The aircraft was flown to Winnipeg just two days after the Gimli landing and saw service with Air Canada for another twenty-five years. When the Boeing was retired to the Mohave desert in 2008, Captain Pearson was at the controls to make that last landing in Arizona.

Following his talk, Captain Pearson answered questions from the audience. Richard Lodge, PNSAC President, thanked Captain Pearson and presented him with a PNSAC golf shirt, a baseball cap, a coffee mug, and finally a certificate conferring upon him an Honorary Life Membership of the Project North Star Association. Captain Pearson then graciously agreed to make presentations of volunteer-hours certificates and 10th Anniversary photos to PNSAC volunteers. The following volunteers received certificates for the hours shown:

- Bruce Gemmill (7000 hrs)
- Ted Devey (4000 hrs)

- Bill Tate (3000 hrs)
- Richard Lodge (1000 hrs)
- Bruce Grant (1000 hrs)
- Robert Désjardins (1000 hrs)
- Peter Trowbridge (1000 hrs)
- Charles Baril (1000 hrs)



Richard Lodge presenting Captain Pearson with a certificate for Honorary Life Membership in PNSAC.

To conclude the meeting, Captain Pearson presented signed copies of the book "Freefall: From 41,000 feet to zero - a true story" to three audience members whose ticket numbers he had drawn at random.

The Association's sincere thanks go to Bill Tate for organizing this quarterly meeting and the talk by Captain Pearson – it was largely Bill's efforts that made the meeting the great success that it was.

PNSAC

Calendar of Events

March 20, 2014 Board of Directors' Meeting (to be confirmed)
 April 12, 2014 Members' Quarterly Meeting – Vintage Wings of Canada

Note: The next Quarterly meeting will be held in the boardroom of [Vintage Wings of Canada](#) at 10:00 AM on April 12, 2014. A hangar tour will follow the meeting.

Board Members' Contact Information

PNSAC Executive

Richard Lodge
 Director, President; Fund Raising
 613-612-4920
rs lodgeca@gmail.com

Bill Tate
 Director, Vice President; Special Events, Quarterly Meetings
 613-523-8817
billtate@bell.net

Bruce Gemmill
 Director, Project Manager; Membership
 613-841-7248
dbgemmill@rogers.com

Garry Dupont
 Director, Deputy Project Manager
gkdupont@magma.ca

Bruce Grant
 Director, NStar Chronicle Editor
editor@projectnorthstar.ca

Drew Hodge
 Director, newsletter typesetting, website, social media
ldhodge@gmail.com

Phil Chrysler
 Merchandise
chrysler937@rogers.com

Roger Button, BA. MA. LLB.
 Corporate Secretary
rgrbtt@gmail.com

Paul Labranche
 Treasurer
treasurer@projectnorthstar.ca

Newsletter¹

Editor: Bruce Grant
editor@projectnorthstar.ca

PNSAC
 P.O.Box 44005
 514 Montreal Road
 Ottawa, ON
 K1K 4P8

Web site: <http://www.projectnorthstar.ca>



¹This newsletter is typeset using L^AT_EX. The style package used for the newsletter (PNSAC.sty) is a modification of GRASSnews.sty belonging to the Geographic Analysis Resources Support System (GRASS). The modification was made possible by kind permission of the Editor-in-Chief of GRASS-News.