



The NStar Chronicle

Project North Star Association of Canada

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Notes from the President

Richard Lodge

Canada Day is now behind us. We had an excellent day with a good number of our volunteers showing off the North Star to the general public. Judging by the activity around the plane all the day, we have now developed a display format which is interesting to visitors. Canada Day was the only day this year when the plane was on display to the general public.



Showing off the North Star on Canada Day – an impressed visitor examines the cockpit.

On June 27, in co-operation with the Museum,

who hosted the event, we showed off the plane to a group of donors attending the Donor Appreciation Evening. This was a successful evening which is likely to be repeated.

In my last Notes from the President, I referred to plans for celebrating the 10th anniversary of the founding of the Project North Star Association. This should have taken place around June 24. Unfortunately, the event passed without us being able to mark the day. This was mainly due to situations beyond our control.

Our 2013 AGM was held on June 8, and all the existing directors were re-elected. This will enable the directors, who have now become experienced, to concentrate on long-term matters.

The actual work on the restoration of the plane is going very well, as reported elsewhere in this newsletter. The major issue facing the Board in the next year will be to consider how to secure the future of PNSAC, both in terms of volunteers and the funding of restoration work.

We have now reached a point where it is necessary to update our Memorandum of Understanding (MOU) with the Museum and our work plan for completing the restoration of the plane. Our volunteers have already worked over 60,000 hours on the project and we expect to work a similar number of hours before the restoration is completed.

There have been several informal meetings to

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discuss our future operations and the opportunities available for new volunteers. Within the next few weeks we are expecting to meet with the Director General of the Aviation Museum and members of his staff to work on the MOU update.

Later this month we are meeting with senior management of the Museum Foundation, the body charged with corporate fundraising for the Canada

Science and Technology Museums Corporation, to discuss how PNSAC can work with the Foundation to raise funds for the North Star restoration and the museums in general.

With the initiatives above, we are hoping in the next few months to consolidate our position as an important organization working with the Aviation Museum.

PNSAC

Project Manager's Progress Report

July 2013

Bruce Gemmill

Looking back on the last ten years of restoration work, we have achieved a great deal, but much work still needs to be done. Our volunteer workforce has slimmed down somewhat, but those who continue to work on the North Star have much to be proud of.

Nr 2 Engine

We reported last year that Engine Nr 2 was finished and installed on the aircraft in April. The spinner was repainted after it was discovered that the paint did not stand up to the harsh outdoor environment. The propeller and spinner were installed on the aircraft before it was moved outside early this year.

Nr 3 Engine

The third engine was disassembled and most of the major assemblies were cleaned, restored and re-installed over the past year. This included the engine block, pistons, cylinder heads, valve train and crankcase. The work has gone very quickly, thanks in part to a well organized and experienced engine shop crew, led by Garry Dupont. A lot of detail work has gone into some small and intricate assemblies that no one will see once the engine is completely assembled, but that does not mean we don't take the time to get the job done right. The built up engine was recently installed on the engine frame.



Garry Dupont inspecting engine nr 3's reduction gearbox.

Items still requiring restoration are the supercharger and intercooler, and the auxiliary drive gearbox. As always, there are numerous pipes and hoses and fittings that also need attention. The engine should be completed by the end of this year.

Engine Frame

The engine frame was completely disassembled, stripped of paint and oil, and then repainted and the main components reassembled on the QEC stand. The three radiators (water, oil, and intercooler) were thoroughly cleaned and then repainted and installed. The cowl support frame is currently being worked on, but some parts have been added to the engine frame, along with the fire detectors and fire suppression system pipes. The large chin cowl and some of the lower cowls have been restored. The top and side cowls still require extensive restoration. This work is somewhat hampered by the small number of volunteers available to work on these items.



John Thibert with the propeller cowling for engine nr 3.

Crew Lounge, Galley, and Forward Washroom

Last spring we removed the equipment from the crew lounge, galley and forward washroom. While the aircraft was outside these areas were cleaned, stripped of paint, then repainted. The flooring was removed so the underfloor could be cleaned and primed. There is some corrosion damage that must be repaired before new flooring can be installed. Most items removed from these areas were restored over the winter. This included the washroom door, toilet and washroom fittings, vanity sink and mirror, and the power inverter installed opposite the forward washroom. The old galley was removed and inspected. Due to heavy corrosion it was decided to build a completely new galley, using the old one as a template. Only the original doors were retained. The new galley is complete and will be stored until it can be installed in the crew lounge.

The heaters had been removed from the ceiling in 2006 and fully restored, but the air ducts, fuel lines and intake and exhaust scoops required extensive restoration. The air scoop was removed from the aircraft, repaired and re-installed. The ducts were cleaned, repaired and new protective heat covers sewn over the old covering. The water tank and fittings were removed, cleaned and a new cover sewn over the tank before installation. New insulation was installed in the ceiling, then most heating ducts, cables and pipes were installed. Several fuel lines had been cut to allow removal of the Janitrol heaters, and these need to be replaced before the heaters can be installed. The doors on the main electrical panel were restored and installed. New legends were pro-

duced to indicate the circuit breaker and junction box connections. These will be laminated and installed shortly.

Fuselage and Empennage

The rear baggage compartment was cleaned and repainted. Several floor panels had stretched and cracked, so new panels were fabricated. All panels were stencilled with their respective part numbers before being installed. The belly compartment hatch was removed, repaired, painted and installed. Recently, the two battery elevators were removed, the compartment painted, and the elevators will be repainted and installed shortly. Batteries were removed when the aircraft arrived at the museum. There has been some discussion about obtaining new (non-functional) batteries to complete this item or work.

Most of the main fuselage was polished while inside the storage hangar. The underside and wings still require a lot of work.

Work is progressing on fabricating a complete set of troop seats to fit up the interior of the main cabin, once this is restored.

Planned Restoration Work–2013

Over the next year, we hope to have engine Nr 3 completed and engine Nr 4 removed. We will complete the reassembly of the crew lounge and galley. We then plan to work on the main cargo compartment, including refurbishing the main heater duct and other fittings, and removing floors to begin cleaning and repairs under the cargo floor. We may yet get to work on the four engine nacelles.

Membership Report 2012–2013

In 2012 we recorded 100 paid members and provided lifetime memberships to two long serving volunteers and PNSAC Directors, Tim Timmins and Jim Ridoch.

So far in 2013, we have a total of 66 new or renewed memberships. This is slightly lower than the same time last year. Normally, we would expect to receive a large number of new memberships during outside displays in the summer, but because of programming changes at the Museum, our ability to attract new members will be greatly reduced.

PNSAC

My Days at the Home of the Merlin Engine

Part 2

Richard Lodge

As a new employee, part of my Rolls-Royce induction process was to get to know some of the production and other R-R facilities around Derby. After a few weeks of working in the Overheads Department, it was suggested that it was time for me to go visiting. I was happy to do this because any opportunity to leave the main accounting office for a time was to be jumped at.

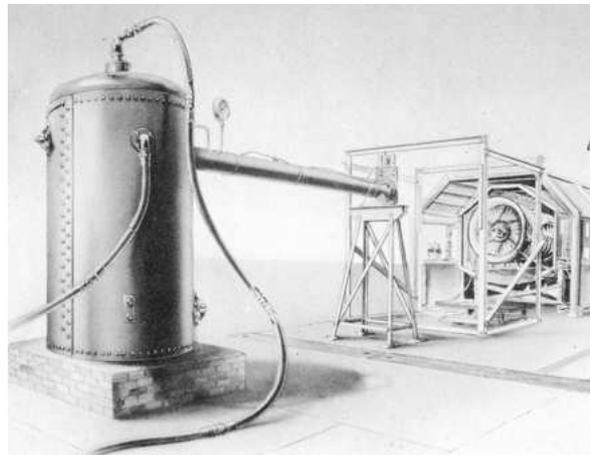
Rolls-Royce had an internal bus service to take employees between sites. To catch the bus, an employee went down to the door of the building and waited for a bus to turn up – no booking or written schedule. I remember my first trip on a company bus. It took me about half an hour of asking people around how to get to the site I wanted. I was beginning to realize that much of the operations of R-R were not written and were passed around by word of mouth and the long time employees passing on information to the newcomers. Years later, when working in Northern Canada in native communities I once again came across this way of handing down unwritten information from the Elders to the younger people. Before starting my job at R-R I had believed that the company would be highly organized and disciplined.

I finally managed to find my way to the building I was due to visit. It was the Foundry. I was introduced to the men who worked in this evil smelling place. Each of the major engine parts was individually cast – there was no automation and a good foundry man could put together the sand and other parts needed for the casting, mostly from memory. During WW2 the foundry had concentrated entirely on the production of military engines, mostly Merlins. By the time I was shown round the place there was a bewildering conglomeration of parts being made for piston, turbo prop and jet engines.

As a young accountant I was expected to understand how the paperwork and accounting for all this worked. It was a daunting thought and I left the Foundry feeling overwhelmed. Throughout my time at R-R I never became comfortable dealing with the Foundry – everything seemed to be so imprecise and up to the skill on the foundry man. Each time I went there I tried to find out how the men knew how to produce the same casting every time and the answer was always the same: "Oh, we just know what to do".

Many of these comments were probably made to try to make a young guy in a suit from the office look foolish but they were also largely true!

Sitting in the Overheads Department I saw many of the invoices for purchases. I could hardly believe it when I saw invoices going through for payment for dozens of chickens. The delivery was never to the works canteen but always to the R-R site at Hucknall, a short distance outside Derby. My supervisor told me that the chickens were fired at engines on test. I did not believe him until I managed to find a pretext to visit Hucknall. After another challenge finding the works bus to get me there, I arrived at the site and was shown round and all was revealed. Dead chickens ending their time on earth being used to test the strength of compressor blades in an engine on full power seemed to me to be a very imprecise way of testing a jet engine. Another lesson learned – not everybody was trying to make me look foolish all the time.



A 1960s chicken gun as used at Hucknall .

The visits to the various R-R sites around Derby took several months to complete. I had to have a good reason to leave my office and go visiting, particularly as I was now working in a departmental position. Eventually another bus trip to the large new complex at Sinfin was required or I somehow managed to talk my way into finding it necessary to go there. Sinfin, among many other things, housed the main engine test beds and I was curious to find out what happened there. Unlike the evil smelling Foundry, Sinfin was clean, new and had plenty of windows.

The men in the test shop told me about the en-

gine testing process. I was still new to R-R and had a lot to learn. After a while I was asked if I would like to see an engine on test. Of course I said yes; it seemed interesting. With little experience I did not realize that an aero engine on test is nothing much to see. One of the men said he would take me to a Conway engine on test. He said he would open the test bed door to let me see the engine and that I would find it somewhat noisy. He stood behind the door, opened it and let me look inside at the engine on full power. I now wear hearing aids. Health and safety were two words not used in those days when many of the men were used to serving in the war. This was 1960s Britain.

I have always enjoyed travelling and would jump at any opportunity to travel to a new place. After a few months it was suggested to me that I should visit the Scottish factory at Hillington near Glasgow. I asked how I should get there. "Oh. You might as well fly. There is a flight every day that leaves in the morning and comes back in the afternoon." I had never flown before.

The UK being a small country, everybody went around by train. As usual, I was given very little information and told to get myself to East Midlands airport early on the appointed morning, where a ticket would be waiting for me. On this occasion I had the good sense to take my own car to the airport and did not get lost. I expected to find a plane

waiting, painted in some sort of Rolls-Royce colours. Instead, after some questioning, I found out that I would be travelling on a small airline, called British Midland, which ran a service, mainly for R-R personnel, between the Derby East Midlands Airport, near Derby and Glasgow factories Airport. Far from being in some interesting plane connected with R-R, I found that our plane was an old DC3 which had seen better days. I duly got on the plane and was somewhat nervous flying on my first flight.

An hour later we arrived in Scotland, also my first trip over the Border, and I spent the day being shown around the factories and offices. I remember very little about the day but vividly remember the flight back to Derby. It must have been in the winter because it was getting dark as I boarded the plane around 5.00 pm. Seating was first come first served and all the old sweats travelling knew what to do. I ended up on the back row near the cargo area. The main thing I remember was the crew having a fierce argument about the load on the plane which was full. The discussion centred around the amount of cargo which could be taken on the flight. I was quite relieved to get back to Derby in one piece.

In the next article I will describe how I worked hard to climb the hierarchy at R-R and learnt in an uncomfortable way some lessons on people management.

PNSAC

Project North Star Trip to 426 Squadron

Bill Tate

Friday June 14th dawned bright and clear for our visit to 426 Squadron at 8 Wing Royal Canadian Air Force Station Trenton.



National Air Force Museum – Hercules.

Once again scheduling allowed us to have Jean Pierre as our driver which meant JP had as much fun as we did. We departed right on time at 07:00 with Richard Lodge giving everyone on board a welcome and a brief explanation of the day's events.

With the kind assistance of Garry and Jim, all on board were offered our normal complimentary coffee and donuts to help kick start the early day. Following a brief stop in Mallorytown on the 401 we proceeded for what we thought would be an on-time arrival at 426 Squadron but a freight train had other plans for us. After skillful driving by JP we arrived only 20 minutes late at the Sedley S. Blanchard Air Mobility Training Center which is the home of 426 Squadron.

Our group was warmly greeted by Lieutenant Colonel Perrault the Commanding Officer of 426 Squadron who gave us a briefing on what responsibilities 426 Squadron has in its training role.

After our welcome we were split into groups to start our planned tours of this very modern high tech facility. One of the many highlights of the tour was the Fuselage Trainer, a full size fuselage from an old

airframe which is used for training load masters. The Fuselage Trainer can be integrated with the Tactical Flight Training Device, a simulator that has full motion with a wrap around visual system. In a training scenario the Fuselage Trainer can be integrated with the simulator to offer real time integrated training for both crews. I was impressed with the new capabilities of the wrap around visual system which is superior to the older systems that I trained on. While we all had a chance to hand fly the simulator I was impressed with how advanced the simulator visual display is, in which you can pick out the difference of a deciduous tree to a coniferous tree. Another upgrade is the Heads Up Display or the HUD in which you look through a screen in front of the cockpit window which has all the flight instruments projected onto a small screen. This will allow a pilot the enhanced situational awareness of looking outside the aircraft and still have the flight instruments for guidance.

Another training aid was the Integrated Procedures Trainer which allows maintenance and flight crews to work through issues with system failures.

The other part of this was another full scale fuselage with partial wing where maintenance can be done on a full scale engine with propeller as well as part of the wing and fuselage.

The other training module was the Night Vision Integrated Simulator where observers train in tandem with pilots on detection of missiles, anti aircraft artillery aka "Triple A" using the latest in restricted military use only night vision goggles which cost the price of a mid sized car.

The tour was highly organized and we were all impressed with high degree of enthusiastic professionalism displayed by all members of 426 Squadron.

After the visit to 426 Squadron we went to the Yukon Galley for a light lunch before proceeding to the National Air Force Museum for a tour of the restoration shops, their displays indoors and outdoors.

The day concluded with dinner at Tomasso's Italian Grill before we drove back to Ottawa to end the day.



After Tomasso's – ready for the drive home.

Special Events

Third Annual Golf Day at Loch March – Wednesday August 14, 2013



A two week break of the restoration of the aircraft will occur in August, as Mike Irvin takes a well-deserved holiday.

On Wednesday, August 14th, PNSAC will have its third annual golf day at the beautiful Loch March golf course starting at 10:00 A.M. with a nine minute separation between flights. The format for the 18 holes will be a best ball game.

The club house at Loch March has an excellent breakfast menu so to make your day more enjoyable it is recommended we meet for breakfast before the game at 9:00 A.M.

Danielle Nadon, the Club Professional at Loch March has graciously given us two 18 hole passes for the winner of longest drive and closest to the pin.

You are encouraged to wear your distinctive PNSAC golf shirt and ball cap. As before, guests are welcome.

Please email Danielle at danielle@lochmarch.com for booking, advising her that you are part of the Project North Star Day. Please remember to send a copy of your e-mail to: pnsac.specialevents@gmail.com.

Please review the web site <http://www.lochmarch.com/about> to familiarize yourself with directions and dress code restrictions to make your day a "Great Day at Loch March".

- Seniors mid week rate is \$48:00 and under 60 is \$58:00 plus H.S.T

- Power cart rental is \$15:49 per person for 18 holes plus H.S.T.
- Pull cart rental \$5:31 plus H.S.T.

Montreal Area Control Centre and the Bombardier Aerospace – Friday October 4, 2013

Our Third planned Special Event, on Friday October 4th, is a trip to the Montreal Area Control Centre and the Bombardier Aerospace factory in Dorval.

The Montreal Area Control Centre is a secure facility responsible for Radar Air Traffic Control in the Quebec region including northern Labrador up to Baffin Island. This tour will have us divided into smaller groups due to the requirement for quiet so as not to disturb the Air Traffic Controllers. For operational considerations this tour could be cancelled on short notice if there is a declared emergency or an emergency in progress.

After a lunch break we will travel to the Bombardier factory in Dorval where the CRJ series jet aircraft are built.

For dinner we will proceed to the Willow Inn in Hudson before proceeding back to Ottawa.

As this tour is now sold out we can accept bookings on a cancellation basis only.

To make a cancellation booking please email pnsac.specialevents@gmail.com to confirm you are willing to standby for this trip, and mail a non-refundable cheque payable to PNSAC for \$60:00 payable to PNSAC and in the cheque memo please put in Montreal trip. Please note this cheque will only be cashed if space becomes available and if no space becomes available the cheque will be destroyed.

Please mail the completed booking sheet and cheques to:

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

PNSAC

Calendar of Events

| | |
|--------------------|---|
| September 12, 2013 | Board of Directors' Meeting (to be confirmed) |
| September 21, 2013 | Members' Quarterly Meeting (to be confirmed) |
| November 28, 2013 | Board of Directors' Meeting (to be confirmed) |
| December 7, 2013 | Members' Quarterly Meeting (to be confirmed) |
| March 20, 2014 | Board of Directors' Meeting (to be confirmed) |
| March 29, 2014 | Members' Quarterly Meeting (to be confirmed) |

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