The NStar Chronicle

Project **N**orth **S**tar **A**ssociation of **C**anada Volume 9 | Issue 4 | October 2013

Notes from the President

Richard Lodge

During the past three months we have moved steadily forward with the restoration of the North Star. Our progress has been somewhat held up by lack of available volunteers.

Our Association has two distinct and very important sides. First and foremost we are a group whose interest is in the North Star and the restoration and preservation of the plane at the Museum. Secondly, over the years, we have developed a strong social side to the Association where volunteers and other members can join in interesting events centered around aviation. Elsewhere in this issue of the Chronicle you will find a description by Bill Tate our Vice President, of the very successful trip on October 4 to the Navcan Air Control Centre and to the Bombardier factory in Montréal.

After 10 years of restoration work on the North Star we recognize that we must review our progress and develop a plan for the rest of the work on the plane. There will be three aspects to this review. Our first task will be to identify the major sections of the project and develop ways of actually carrying out the restoration. The undercarriage of the plane is a particularly complicated challenge. We then need to prepare a plan with projected timelines for completing each part of the work. Our third task will be to estimate costs and to develop ideas for financing it. During this process we must also ensure that we will have sufficient qualified volunteers to get it done.

Before the end of November we are hoping to have meetings with the senior management of the Museum to update planning of all the tasks above. The end result of this should be a documented project plan and a new Memorandum of Understanding between the Canada Aviation and Space Museum and the Project North Star Association of Canada.

At times our progress on the restoration of the North Star may appear to Association members to be somewhat slow. Unlike other organizations in Canada such as Vintage Wings in Gatineau or the Canada Warplane Heritage Museum in Hamilton, PNSAC cannot make decisions about the future of the North Star on its own. As an Association working with a Federal Government institution we are often affected by decisions not related to the work we do. This can at times provide interesting challenges.

In conclusion, I would say that the Directors are working hard with the Museum management to move our project forward even though at times it may appear to be very difficult. I hope that I will be able to report significant progress in the next issue of the Chronicle. In the meantime we have some interesting events in the planning stages on the social side of the Association. Stay tuned.

PNSAC

Contents of this issue:

Project Manager's Progress Report

October 2013

Bruce Gemmill

Nr 3 Engine

Engine 3 is almost completely reassembled, with only the supercharger and intercooler preheat assemblies left to install on the engine, which was moved to the QEC engine frame in early summer. The work has slowed somewhat, due to summer down time for staff and volunteers, but we continue to make steady progress.

The auxiliary gearbox was recently removed from the engine firewall, and is now being disassembled. This is the last major assembly that must be overhauled before the engine can be installed on the aircraft.

Engine Frame

Now that the engine and frame are joined, the major work still required is rebuilding the many cowl panels and the radiator flaps that surround the engine. There is a lot of corrosion on the pieces, and each must be disassembled, cleaned, then repaired before painting and reassembly. This work must be done carefully to ensure the cowl panels fit properly when installed on the QEC.

This work has gone slowly due to the small number of volunteers who are able to do this type of repair.

Crew Lounge, Galley, and Forward Washroom

The new galley has now been installed in the crew lounge, and work overhead in the ceiling is also complete. This involved installing new insulation and the Janitrol heaters, along with refurbished heating ducts, and some new fuel lines. The ceiling panels were also installed.

The doors on the main electrical panel were restored and installed. New circuit legend cards were produced to indicate the circuit breaker and junction box connections. These were laminated and installed inside the electrical panels. Some additional investigation is needed to complete the electrical circuit connection diagrams that were badly faded.

New galley – interior view.

One section of floor was patched after removing a corroded area. One additional repair needs to be done under the floor of the crew lounge. 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. The two battery elevators that were removed have been restored and installed behind the nose wheel. The battery compartment covers were repaired but need painting and stencilling.

The firewall on nacelle 3 is being cleaned in preparation for the installation of the engine sometime this winter.

Further progress has been made on the set of troop seats being fabricated for the main cabin.

Planned Restoration Work 2013/14

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.

PNSAC

My Days at the Home of the Merlin Engine

Part 3

Richard Lodge

"Lodge, the expenses on the charity wagon go to Miss Prod". What was a charity wagon and who was Miss Prod? I was working in the Overheads Department of the Rolls-Royce Aero Engine Division in Derby. As a young, ambitious accountant, I did not want to admit to the people in the department that I did not know what they were talking about. I was conscious that I had spent several weeks of initiation under the guidance of the old timer, Les Hart, and should now know something about the company. I was sitting in front of a huge leather bound ledger where accounting information was recorded. Eventually, by listening to other people talking around me, I established that a charity wagon was a much prized company car and that Miss Prod was not a person but referred to "miscellaneous production" work at R-R. Put in plain English, the sentence meant that the cost of repairing this individual's car was to be charged to a special account in the miscellaneous production section of the overheads. There was so much to learn! I was completely bewildered. Each day was a challenge and the thought that aero engines were produced in the surrounding factories seemed very far away.

On being placed in the Overheads Department, I was given an internal mail address. The company was so large that a worldwide internal mail system had been established and I rapidly found out that I was at the bottom of the heap. My address was JD/JS/LOD which meant that JS was my immediate supervisor and JD was his boss. If you were important in the company, your mail would come to you with just your initials such as JD. Everybody with any ambition wanted to get a single initials mailing address. If you were really close to God, such as a director of the company, your mailing address would be Psn for the CEO, Sir Denning Pearson, or DPH for David Huddie, the Director of Engineering.

There were continuous battles between the engine development engineers and the accountants. When the engineers spent money, they tried wherever possible to avoid having it charged against their budget. Their favourite game was to charge the cost into the overheads where it would be lost in a mass of other expenditure such as emery paper and toilet rolls. Our task was to catch them at their game and reallocate the expense back to them. The development engineers were very skilled at this part of their work and became so good at it that they were able to hide major cost overruns, sometimes indefinitely. Little did I realize that I was helping to perpetuate the culture that was one of the causes of R-R going bust a few years later.

In the 1960s R-R was a paternalistic organization, steeped in tradition, still operating with many cost-plus government contracts, vast amounts of paper and virtually no computers. The Ministry of Aviation would regularly send auditors into the company to check how public money was being spent. These gentlemen had a permanent office allocated to them and would regularly attack the expenses recorded by the Overheads Department. When this happened, we and the development engineers became great buddies for a short time. Our unspoken job was to confuse the government auditors as much as possible so that they would not report back to their masters that things were not as they should be. We became quite good at our confusion duties. It was not a difficult job because we were frequently confused by all the paper and numbers as well.

R-R continued to deliver new aero engines to customers and I gradually started to understand what I was doing. After a few months, my supervisor was promoted and I was appointed supervisor of the Overheads Department, much to the disgust of many of the people in the department. Although my pleasure was to be short-lived, I was delighted to get this promotion. By the time of my promotion, I had been around many of the facilities of R-R both in the Derby area and in Scotland. I felt that I knew my way around the company.

Almost everyone working in the Overheads Department, including the three section leaders under me, were older and more experienced than I. They did not like this young upstart accountant becoming their boss. Underground warfare started between us. Several of the men had fought through WW2 and were well practiced at the gentle art of "dumb insolence". The three section leaders came to me one day and told me they really disliked me being their boss. This was not good for my ego. I suggested to them that the four of us should go out after work and have a beer and that on this occasion I would just be one of them and not their boss. I bought the first round of beer and they really tore into me. After several more rounds of beer, we agreed to a truce and decided on a new strategy. I would stop trying to micromanage them and they would stop their dumb insolence. Of

course, they never admitted that they were practicing dumb insolence. Life became much better after our beers. Miss Prods, charity wagons, drop-offs and all the other R-R jargon became normal for me with the active co-operation of my three section leaders.

Apart from the pay rise upon my promotion I had now moved up in the company mailing system and my address had become JD/LOD. This probably helped my head to swell until the three section leaders brought me rapidly back to earth.

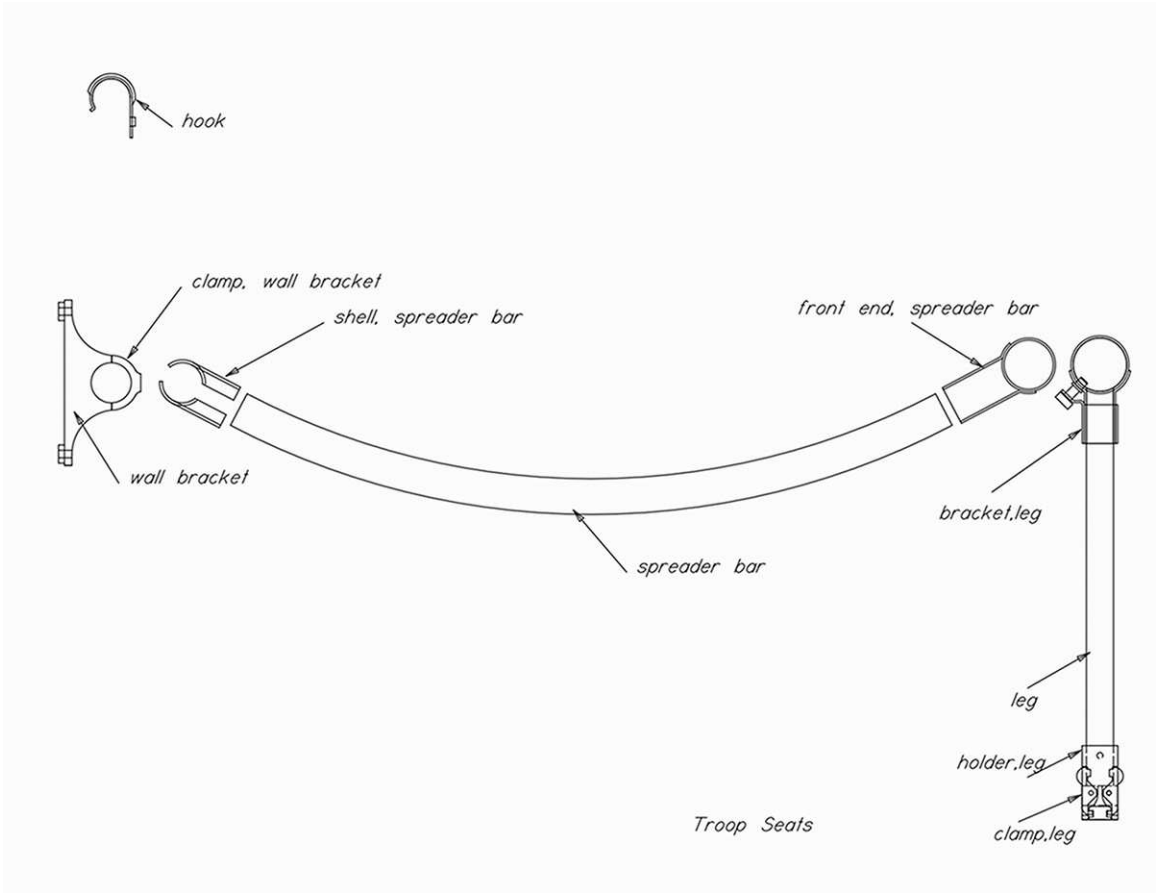
I must have learnt a few of life's lessons about people management because when I was again promoted, my three section leaders tried to encourage me to refuse the promotion. No chance. I was once again moving up the mailing system and would in future have my mail addressed to LOD, without a more senior person's initials appearing before mine. I was going in the right direction.

PNSAC

Building troop seats for North Star 17515

Rolf Geiger

There are no original parts or drawings for the seats. Fortunately, the tubing and brackets that connect the seats to the aircraft wall were still in place in the aircraft. Also, two lower tubing support brackets were found hiding behind the galley, allowing us to produce exact copies of the original. Everything else concerning the seats is missing and needs to be replaced.



Troop seat construction detail.

To find the size and the number of seats to be produced we measured the space between the anchoring studs in the aircraft floor, which the legs snap onto. This gave us the width of the seats. Thus, we will produce (5) three-seaters plus (6) four-seaters, providing seating for 39 troops. No litters are planned.

Mike Irvin (our Museum coordinator) decided to use seats from a helicopter in the Museum collection as an example for our seats. We are more or less copying the parts of these seats, considering that we have to adapt our methods to the equipment available to us.

To start the project, drawings of the parts were made. The list of materials of these parts calls mainly for aluminum bar stock, aluminum tubing, steel tubing, aluminum sheet and steel sheet.

Rolf Geiger at work on the troop seats.

Thus, we need to produce (15) different metal parts, including: lower tubing plus support brackets and clamps, spreader bars with two shell clamps each to clamp onto the lower support tubing plus the front brackets holding the spreader bars to the frontal support tubes, leg brackets connecting the legs to the frontal support tubes plus secondary brackets (slipping over the leg brackets) holding a spring loaded pin with which the seat fabric will be tautened, legs, including the lower clamping mechanism fastening the legs to the floor. Most parts need (22) of each, except the shell clamps for the spreader bars (44), hooks (117), leg grippers (44).

The procedure in the production of these parts is as with any project: Take the finished product and then work backwards to determine the production stages.

In the case of a formed sheet metal part a drawing of a flattened âĂIJblankâĂİ is produced by calculating bend radii and adding that to the straight surfaces (in effect un-bending or stretching the finished part).

Experimental operations may be needed to find the shape and dimensions of the "blanks". Tooling may be needed to produce the formed sheet metal parts. The "blanks" are made by shearing and sawing, according to the parts drawing.

In the case of a machined part, it is usually produced from bar stock: Parts are cut to length and subsequently machined as per drawing. Partial in-between drawings may be necessary to produce the parts in progressive stages.

To avoid the higher costs associated with surface plating the metal parts, (as per original parts) we chose painting them instead, which will be acceptable given the limited use of the finished product.

PNSAC

Recent Special Events

Bill Tate

Loch March Golf Day

The PNSAC 2013 Annual Golf Day at Loch March started with breakfast in the Club House, 14 members and friends in attendance.

Prior to breakfast, start times were arranged in such a way that there was a mixing of participants, so that those who were not aware of what PNSAC does had the opportunity to talk to members involved in the project.

The first group started out in light rain showers and thirty minutes later the skies cleared for a bright sunny day. With the extra rainfall this year the course was found to be in a very lush condition, and as usual for Loch March the greens were very fast.

Danielle Nadon the Club Professional graciously gave PNSAC two 18 hole certificates as prizes, one

for the closest to the pin and the other for the longest drive, which were both won by Gary Hall. He also came in with low gross for the day at 79. Our own Ron Lemieux was paired with Gary and in Ron's own words "I had nothing to do with the score; I was riding on Gary's coat tails".

Loch March is a very wonderful facility for golf and has an excellent club house as well. The course can be challenging, but there is something for everyone who plays golf. Even if you do not golf, it is well worth the drive to enjoy the patio. For details please visit the web site: http://www.lochmarch.com

This year we had another prize which was given to us by New York New York Hair Salon, - a gift certificate of $100:00 for hair services. So a new category of winner had to be chosen, which was for the best dressed in our distinctive PNSAC clothing. To ensure fairness in the award I had Alfredo Porco (who has been my barber for 30 years) make the award. It went to our "special seamstress" Karen Lochhead. I should mention there are now three generations of Porcos at New York New York, - Alfredo, his son Vince and Vince's daughter Marina.

For information on New York New York please visit their web site: http://www.nynyhairsalon.com

Looking forward to our fourth golf day next year, we will work on more prizes for our members and guests in 2014.

Trip to the Montreal Area Control Centre and Bombardier Aerospace

On Friday October 4th, 33 members and guests departed the Canada Aviation Space Museum (CASM) for another planned special event. First off, special thanks to Bryon Mask (retired Air Canada Captain), one of our members who assisted me with contact information at Nav Canada which was required to have our visit approved. Bryon is a highly respected individual in Flight Safety and Accident Investigation in Canada.

We were met and welcomed by Richard Snider, Duty Manager at the Montreal ACC. We visited the Training Centre where training is provided to new Air Traffic Controllers and required recurrent training is offered. We were also shown the tower simulator which has a day/night 360 degree display where various airport scenarios can be brought up to assist in training. My personal favourite was the display showing a landing as seen from the cockpit, which even showed it as a 360 degree display (first time I have experienced the rear view mirror look for a landing).

In the 360 degree tower simulator.

Our next stop was the Technical Operations Centre where staff monitor all radar and computers. ACC has dual systems with one system picking up automatically in case the other system fails. Communications has a dual back-up digital and analogue system. Communications to aircraft are by conventional VHF with some interesting back ups such as Controller Pilot Data Link Communications (CPDLC). The easiest way of explaining this is Text Messaging Sat Com in which either the aircraft can call the phone number of the ACC or the ACC can call the dedicated number for the aircraft ($6:00 a minute cost) and as a back up by HF radio through a Flight Service Station.

Air traffic controllers at work.

In the Operations Room, we could hear some controllers talking very quietly. Radar displays offer a great deal of information to the Controller, which also helps keep talking to a minimum. A sense of humour prevailed at the work station for Northern Quebec up to Iqaluit, where a Motel 6 logo was mounted over the work station.

In total we were on site for close to 2 1/2 hours which I found to be a fantastic experience, seeing the ATC environment from the other side.

The Operations Room.

With kind assistance in the form of a recommendation from Mae, my YUL expert, we broke off for lunch at Le Déjeuner Cosmopolitain which handled our group in a very friendly efficient manner. I should note, this is the spot where Air Canada retirees meet for their monthly luncheon dates.

After lunch we proceeded to the Bombardier Production plant where we were met by three very knowledgeable tour guides. They were Alex Ritchie, Fernand Richer, and Cristian Racine who together gave a very informed hour and half tour of the production line. The tour was divided into two areas, assembly and finishing. At the beginning of the assembly we saw where the fuselage and wings are mated and proceeded on to where systems are tested such as hydraulic systems, then to the finishing area where interiors are installed. It was something to see how clean and bright this plant is and how the many sub assemblies come together. The tail assembly built in China comes to the production line and meets with part of the fuselage built in Mexico, just in time for the assembly.

We ended our visit in the delivery room where customers pick up their aircraft all ready to go, all yours for approximately $30 million dollars.

We enjoyed an excellent dinner at the Auberge Willow Inn prior to our return to the CASM at the end of a very enjoyable 14 1/2 hour day together.

PNSAC

PNSAC Merchandise

PNSAC winter apparel

The first frost warnings on the Weather Channel are reminders that fall and winter are just around the corner. Keep warm on those frosty fall days with a PNSAC toque and sweatshirt. We can also take individual orders for the micro fleece vests shown in the photo on the left, and if you're looking for early Christmas presents, how about a coffee mug or a t-shirt?

Have a look at our Facebook page, PNSAC Merchandise, to see what we're offering, and place your orders by sending an email message to the following address pnsac.merchandise@gmail.com.

For members in the Ottawa-Gatineau region, you can arrange to pick up your merchandise at the Canada Aviation and Space museum any Monday or Tuesday, between 10:00 AM and 3:00 PM. We can also ship your purchases to you for an extra fee. Please specify museum pickup or shipping with your order.

Merchandise is also available during our Quarterly Meetings at CAVM.

Look forward to hearing from you.

"The Merchandise Committee"

PNSAC

Calendar of Events

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)

Board Members' Contact Information

PNSAC Executive

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

Paul Labranche
Treasurer
treasurer@projectnorthstar.ca

Newsletter[1]

Editor: Bruce Grant
editor@projectnorthstar.ca

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

Web site: www.projectnorthstar.ca

[1]This newsletter is typeset using LaTeX. 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.