



# The NStar Chronicle

Project North Star Association of Canada

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## Editor's Notes

*Bruce Grant*

While our project has been on hold, your editor still had to find some content for the Chronicle.

Jim Riddoch came to the rescue with a story about a successful/disastrous flight test. We like these kinds of stories—too small and personal to turn up in the history books, but they do pull you into real human experiences. There will be more of these.

Your editor became a writer too, and the writer submitted a tragic story about a French aviatrice. The story was accepted by the editor in a blatant conflict of interest.

And we bring you a poem by David Lambeth, an ode to the North Star that was first published in the Chronicle of November 2005. Volunteer Tim Timmins had found it in a hidey-hole in the aeroplane in the early days of our restoration project. Enjoy!

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# Notes from the President

*Richard Lodge*

Since my last Notes from the President in December 2013, restoration work on the North Star has mostly been suspended. The Museum has needed extra working space so that exhibits could be made ready for the commemoration this year of the centenary of the start of the First World War and the 70th anniversary on June 6 of D-Day in the Second World War. These preparations have resulted in our normal working areas being unavailable for North Star restoration work.



*Richard at the Quarterly Meeting in April.*

During the shut down period some limited work has been continuing. Two volunteers have been working in the cockpit of the plane and two other volunteers have been doing some work on #3 engine reassembly.

While the restoration work has been on hold, we have arranged three monthly Volunteer Lunches at the Museum to enable the people who normally work on the plane to meet and socialize. Although

we would all like to be working on the plane, we understand why the Museum has had to ask us to temporarily suspend our activities. The Volunteer Lunches are a way of keeping the team together and up-to-date on what is happening.

At the last meeting of the PNSAC Board of Directors we agreed to reschedule the Annual General Meeting from June each year to September. It has always been difficult to find a good weekend in June to hold the AGM and it is felt that a middle of September date would be much better. Our corporate secretary, Roger Button, is aware of this proposed change and has confirmed that the existing Board of Directors can extend its term until the new AGM date.

Although there has been little restoration work done since December, we are working with the Museum to get the project back on track again in early June. We are also working to enable us to recruit new volunteers to replace the several people who for various reasons have had to give up active work.

One of the recent discussion areas has been in connection with long-term funding of the restoration project. Everybody is aware that funding from the Federal Government has been substantially reduced. We have accepted that major expenditures will have to be met from funds raised by donations from friends of the Museum and members of our Association. This is a significant challenge since everybody receives many appeals throughout the year for donations from many different deserving organizations.

During the next few months we hope to develop a revised restoration work plan which will enable us to estimate the funds needed to complete the project. We will then be able to target appeals for funds to carry out specific parts of the restoration in the same way as we did for our successful appeal for funds to make troop seats for the interior of the plane.

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# Project Manager's Progress Report

April 2014

Bruce Gemmill

Due to museum preparations for a display to mark the beginning of the First World War and other events in 2014, the restoration space used by Project North Star was taken over by other museum projects, and most work on the North Star was suspended. However, some limited work did continue.

## Nr 3 Engine

Work on Engine 3 was halted for several weeks in early 2014, but has now resumed on a reduced work schedule. Most accessories are now installed, and soon the cowl panels will be fitted. It is expected that Engine 3 will be installed late this spring or early summer, so that work can begin on removing and restoring Engine 4.

This downtime also offered the opportunity for the engine crew to clean and re-organize the engine shop.

## Cockpit

While restoration work in the shop could not be continued, we used the opportunity to install the crew seats and other restored items to the cockpit. The pilot seat was installed (first officer seat was installed last year) then the railings and safety board were installed behind the seats.



Forward cockpit – complete.

Next we installed the radio officer and navigator tables, and the seats for these positions. The radio of-

ficer seat proved to be a particular challenge, as the floor in this area is no longer flat, and some modifications to the seat rails were necessary to allow the seat to slide. Finally the flight engineer's jump seat was attached to the railing. With five crew seats installed, the cockpit is very cramped.



Radio Officer's position showing the morse code key.

The cockpit installations were finished off by installing the curtains, crew oxygen hoses, and a Morse code key at the radio position.



*Finishing touches – the cockpit curtain.*

## Crew Lounge, Galley, and Forward Washroom

The floor under this section was repaired by removing a section of badly corroded I-beam and fabricating a new one from several pieces of aluminum which were riveted in place to support the floor. Once this repair was completed, new cushion flooring was cut and glued to the crew lounge and the washroom floor, then various pieces of floor trim were installed. To install the crew seat, it was necessary to remove the lower support section, since the fully assembled seat could not easily fit through the narrow doorway. Once the seat was installed, we added the crew table and bunk bed, along with the secure storage box. We also installed the curtain rod and new curtains to close off the bunk bed. The in-

stallation was finished off by re-installing the door between the lounge and the main cabin, so that this fully restored area can be protected from dust and debris while the main cabin undergoes restoration over the next two years.



*New galley and floor.*

The completion of the forward area of the aircraft marks a significant milestone in the restoration of the North Star.

## Planned Restoration Work 2014

Some limited work is being done to remove fittings and wall panels from the main cabin, in preparation for some major restoration work this summer. Fabric work on the troop seats is nearing completion, although the seats will not be installed until all work on the main cabin is complete. We hope to resume a full work schedule by June, with the aircraft outside once more.

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# RAF Lightning with Over-Wing Tanks

*Jim Riddoch*

During the early 60's Britain's Defence Department decided that the new fleet of Lightning aircraft should have the capability to extend its current sortie of 22 minutes to permit ferry to the Middle East. In-flight refuelling had not worked successfully due to the offset probe positioned under one wing. Accordingly BAC (British Aircraft Corporation, Warton Division) was awarded a contract to develop extended wing tanks that could be jettisoned if necessary.



*Jim Riddoch.*

Unfortunately the Lightning with its high speed wings had limited capacity for wing tip tanks and already with armament pylons under wing could not accommodate under-wing tanks, so the decision was made to develop over-wing tanks secured with pylons through the wing structure. These tanks would each carry 250 imperial gallons to provide initial fuel transfer after take off and be jettisoned once empty.

I was designated to be the Development Engineer to carry out the development and testing of this design about 1963/64. The design concept of these tanks had to include a balanced transfer system to maintain aircraft C of G during take off and climb out, this meant 5 small interior sealed compartments pressurized with air to permit sequential transfer. Also an emergency fuel jettison system prior to tank wing ejection. As you can readily appreciate this was a very challenging design and even more demanding for testing and certification.

Once the initial test tanks were built they were dispatched to Mechanical Test Department at Warton Lancashire, where I worked. Needless to say the RAF were keen to witness the development and testing of these over-wing tanks. A Wing Commander

headed a team of three Senior Techs to keep track of our progress. Fortunately the Techs were very helpful and hands-on in working with us. You can imagine the challenges we faced checking the transfer sequences at varying attitudes. Many a Saturday morning was spent testing and verifying these change in attitudes and minimizing fuel transfer loss, the end result being approximately 225 gallons of fuel transferred from each wing tank depending on aircraft attitude and roll.

The next major design requirement was the emergency fuel jettison; this was to be accomplished by air pressure from centre compartment to rear of the tank where a jettisonable fairing was fastened by explosive bolts and attached by a cord to a bung on the end of the fuel ejection pipe. Talk about Heath Robinson device, this takes the biscuit! Suffice to report that on the ground test of this ill-conceived system with Chief Designer and my Chief Engineer and many observers with cameras, the rear fairing departed into oblivion and the cord broke, due to a miserable sub standard cord substituted instead of a parachute cord as specified. The bung remained firmly attached to the jettison pipe. It was about this time I first thought of emigrating to Canada, in fact anywhere outside Britain!

Needless to say the cord was replaced, the ejection system proved satisfactory and the tanks were certified for flight test. This was to be done with one tank attached to the top of one wing and painted with black and white checkered squares for easy recognition when ejected. I always remember the Test Pilot, Peter Knight inquiring about the likely occurrence of the tank separating from the wing and hitting the tail of the aircraft. I assured him that ground testing of a model in the wind tunnel had worked, in fact the small tank had disappeared through the end of the tunnel and took some time to recover in the neighbouring field.

To replicate the fuel system jettison some bright spark proposed filling the tank with coloured water for better visibility. The aircraft took off, circled Warton Aerodrome and made a low pass to jettison the coloured water over the attentive crowd including chiefs and dignitaries. Fortunately, the jettison of the tail fairing and bung release worked perfectly and the water emerged in a colourful shower.

The weather gods not being with us, the wind blew all the water over the spectators covering their expensive clothing with a colourful dye! Finally, the tank was ejected safely over Morecombe Bay and eventually recovered and returned to BAC Warton amidst embarrassed and colourful faces. As one might expect, this completely successful test left the

Wing Commander disgusted with the entire experiment. He cancelled the project.

Any thoughts I had of joining the RAF completely

disintegrated. Once again, immigration to Canada looked much more inviting.

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## Elise Déroche, Aviatrice

*Bruce Grant, Flâneur*

Wandering about in Paris recently I came upon a plaque, bolted to a wall at 61 Rue de la Verrerie in the 4th. Wandering about is my favourite activity in Paris. Let others wait in the long lines at the tourist sites (I've done all that) or plunder the shops in Faubourg Saint Honoré (I'll never do that); I wander about.

So, who was this Elise Déroche a.k.a. Baronne Elisa Raymonde de Laroche, Aviatrice? I took the picture and resolved to look her up at home.



Here's a brief outline of the story I encourage readers to look for her online. Many sites relate her

story though with some contradictions among the various accounts.

Born into the working class family of a plumber, Elise Déroche became an artist and actress, took the stage name of Baronne Elisa Raymonde de Laroche. She also became the "amie intime" of the artist and aviator Léon Delagrange who introduced her to his friend Charles Voisin, a builder of airplanes.

There is an interesting chronology that indicates a life full of tragedy, a life that she lived with intensity and audacity: Léon Delagrange died, January 1910 when the wing came off his Blériot airplane. Elise recovered quickly from her grief and appealed to her new ami intime Charles Voisin to teach her to fly. She won her pilot's licence in March 1910. A crash in July 1910 put her in hospital with 18 fractures. She recovered and returned to flying.

In a car crash in September 1912, Charles Voisin was killed but Elise survived. She married the pilot Jacques Vial in February of 1915, her first marriage. During the war, she was not allowed to fly but served in the military as a driver. In 1918 her only child André (with Léon Delagrange) died aged 15 of the Spanish Flu. July 1919, she was killed in a plane crash while training to become a test pilot. Audace? Mais oui!

La Baronne Elisa Raymonde de Laroche is buried in Cimetière Père Lachaise in Paris.

My candle burns at both ends;  
It will not last the night;  
But ah, my foes, and oh, my friends –  
It gives a lovely light!

Edna St. Vincent Millay

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# The Whispering Giant

*Dave Lambeth*

Twinkle, twinkle, old North Star,  
 With wrinkled skin and creaky spar,  
 For years you've always been on sked,  
 As many of our force you've sped  
 to distant lands beyond the skies,  
 you've never failed to see the rise  
 of distant suns or moonrise glare.  
 You've carried us with tender care  
 – back you came to take us home,  
 from old Japan or France or Rome  
 from England, Goose, and Kef.  
 We cannot hear you.  
 ('cause we're deaf)



*A Whispering Giant (North Star 17515) at Resolute Bay NWT in about 1963, taken by Radio Operator Jim Jung.*

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## Calendar of Events

June 5, 2014

**June 14, 2014**

September 18, 2014 (proposed)

September 27, 2014 (proposed)

September 27, 2014 (proposed)

November 27, 2014 (proposed)

December 6, 2014 (proposed)

March 19, 2015 (proposed)

March 28, 2015 (proposed)

Board of Directors' Meeting

**Members' Quarterly Meeting**

Board of Directors' Meeting

Annual General Meeting

Board of Directors' Meeting (post AGM)

Board of Directors' Meeting – new Board

Members' Quarterly Meeting

Board of Directors' Meeting

Members' Quarterly Meeting

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