



# The NStar Chronicle

Project North Star Association of Canada

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## North Star Restoration Report

*Bruce Gemmill*

Our team of volunteers continues to make steady progress on our North Star restoration. We have had several additional volunteers join our group. This has allowed us to expand our scope of work to include some preparation work on the fuselage in addition to ongoing work on engine Nr 2 and in the cockpit area.

### Engines and Propellers

Engine Nr 1 was installed on the North Star in February 2010, but this engine has continued to serve as a model for what Engine Nr 2 should look like when completed. Volunteers have made numerous trips to the storage hangar to compare Engine Nr 1 to the items currently being restored. This has allowed us to solve several re-assembly problems quickly. The engine block is complete and the crankshaft, cylinder heads and pistons have been installed. Many engine accessories and sub-assemblies have also been treated and are ready to be reattached. The auxiliary gearbox, which is a complex piece of machinery, is being reassembled, but the reduction gear that con-

nects the propeller shaft to the engine is giving us some difficulties due to excessive corrosion.

### Engine Frame and Cowl Panels

The engine frame was disassembled, cleaned, painted and reassembled some time ago. The radiator was also treated and reattached to the frame. Recently our work has focussed on the many accessories, pipes and hoses, electrical cables and various attachments for the engine frame. Many are complete, but we need to wait for the engine assembly to be installed in the frame before these can be attached. This was an important lesson learned from work on engine Nr 1, as we had to remove several previously installed pipes in order to install the engine and supercharger.

A number of the cowl panels have now been rebuilt and several more are being worked on. Severe corrosion had affected many of the steel stiffeners riveted to the edges of the panels. These had to be removed and restored. Several were so badly damaged that new ones were fabricated and installed. Once riveted in place, the stiffeners are painted and the outside of the panels polished to a high shine. These will be stored until the engine assembly is complete, and then will be installed once engine Nr 2 is back

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on the aircraft. Engine Nr 2 should be completed sometime in mid-2012. All four propellers have been restored, along with the four spinners. Three are installed back on the aircraft, while the fourth is in storage.

## Cockpit



Control pedestal

Since our last report, most of the equipment and many cables have been removed from the large navigation equipment rack behind the cockpit. This large equipment rack needs a thorough cleaning and other preparatory work prior to painting this summer. The small galley was removed in order to improve access to this rack. During removal we discovered a secondary hydraulic fluid reservoir—still full—that was not well documented. We drained the fluid and removed this tank as well. Over the winter a lot of work was done repairing the headliner panels removed from the cockpit. Luckily, the panels from behind the radio rack were in good condition, with only minor tears. After repairs were made these panels were painted to match the original colour, and were installed behind the radio rack before the rest of the equipment was re-installed. The rudder pedals and control column have been installed, and new padded bumpers were fastened to the leading edge

of the sunshield, replacing the old leather pads that had disintegrated from age and exposure to sunlight. We have now received a shipment of new headliner material, so the panels that were badly torn can be completely remade. The curtain rail was also installed and the new curtains tested for fit. The crew bed from the rest area was also refurbished.

## Fuselage and Empennage



Horizontal stabilizer removal

This is a new section of the report. Little has been done on the fuselage itself, due to lack of manpower and other priorities. Recently, the bolts holding the horizontal stabilizers and the flaps were removed and greased to ensure these can be quickly and easily removed when it is time to take off the horizontal stabilizers and flaps for overhaul. These items are very large and the museum does not have the facilities to handle such large assemblies, so they will be shipped to another location for overhaul. Likewise, the brake packs were removed from the main landing gear so the brakes can be overhauled. Work has now started on restoration of the forward baggage compartment. This will be followed by cleaning and restoration of the belly equipment hold and the engine nacelles. Each of these areas must be stripped of cables, conduits, access panels and various pumps and accessories before they can be painted and re-assembled. As an added challenge, these areas are small with limited access, so working in these areas will be difficult. We have also managed to get a large portion of the forward fuselage polished. This will be an ongoing project, but the effort put into polishing the external aluminum skin will be very visible and will show the progress we are making on the aircraft.

## Planned Restoration Work—2011-2012

Each summer the aircraft is moved outside so that painting and other work which cannot be done in the storage hangar can be undertaken. This summer will see the completion of work on the navigator rack, which will allow us to re-install most of the cockpit equipment and fixtures that were removed over the past five years. This will be a significant step in the restoration and will also demonstrate very positive progress.

Work will continue on engine Nr 2, with a possible completion date of mid-2012. We will begin work on cleaning and restoring each belly compartment and engine nacelle.

If an agreement is reached between CASM and Air Canada for restoration of empennage and landing gear, we will consider removing either the flaps or the horizontal stabilizers while the aircraft is outside.

We also plan to make new headliners for the cockpit and cargo hold to replace panels that cannot be repaired.

PNSAC

# Recollections of Operation Hawk

## The Korean Airlift

*Tim Timmins*

### The North Pacific Route, NORPAC

The initial tasking for 426 Squadron called for a daily departure from McChord AFB to Haneda AFB (Tokyo) over the NORPAC route through Anchorage and Shemya. This pace of operations was sustained for several months with six North Stars and 12 crews. The aircraft would complete a round trip in about 50 flying-hours and crews would be away from Base for about six days (see table next page).

Most of our early flights carried troops. I remember them as being very young. I was young, but they were younger. We offered a very low standard of passenger service: An unpressurized aircraft, troop seats, ear plugs (cotton batten) to block out some of the noise and about six identical box lunches enroute to Tokyo. By the end of the flight, up to 30 hours flying time, they would be partially deaf and numb from the vibration and dead tired. They were pleased to see the end of us.

As operations progressed, reports of incidents, mostly minor and, no doubt, some exaggerated, were widely discussed among the crews. The first serious major incident occurred in August 1950, when an aircraft flown by our CO, Wing Commander Mussells, had multiple engine failures. He had a fully loaded aircraft enroute to Anchorage when an engine overheated, due to coolant loss, and had to be shut down. Shortly after, a second engine, on the same side, had to be shut down as well for the same reason. He landed the aircraft safely at Sandspit Airport in the Queen Charlotte Islands. The load was quickly recovered and on its way to Tokyo. After minor repairs, the aircraft was flown to McChord AFB

on three engines.

The first route segment, McChord AFB to Elmendorf AFB (Anchorage), offered some spectacular scenery on good weather days. The snow covered mountain peaks glistening in the morning sun provided the perfect background for a photo of the starboard engines with their distinctive bright red spinners. The navigation aids enroute from Sandspit across the Gulf of Alaska were more than adequate in good weather. However, in unfavourable conditions, these aids were unreliable and crews had to be concerned that low level jet streams could blow the unwary off course and into the mountains along the coast.

There was a crew change at Anchorage. The new crew would take the aircraft to Tokyo, a very long crew day. Later the slip crews were moved to Shemya, which was a much better arrangement.

The new crew would depart for Shemya and Tokyo in the late afternoon or early evening. The route was along an airway to King Salmon (Naknek) on the mainland coast, then direct to Shemya. Weather along the Aleutian Island Chain is notoriously bad much of the time, due to the interaction of a warm and moist air mass from the Pacific region with a dry and cold air mass from Siberia. One of my worst experiences with weather occurred on a flight from Shemya to Anchorage when we experienced icing and heavy turbulence for about four hours. We had no passengers on board so the Captain elected to try and top the cloud. No luck, we could not get clear. The only fix I was able to get was an indication on the radar altimeter that we passed over a small island midway between Shemya and King Salmon. As we approached the mainland, we could hear the Air Defence radar responding to requests for assistance. There was a lot of confusion and radar fixes were being offered cafeteria style. I accepted one that agreed

DAY	DEPART*	FROM_TO	ARRIVE*	FLIGHT TIME	REMARKS
1	08:30	McChord to Elmendorf	13:30	7:00	Crew rest
2	18:30	Elmendorf to Shemya	23:55	7:40	
3	01:25	Shemya to Haneda	09:25	11:00	Crew rest
4		Tokyo			Crew rest
5	14:30	Haneda to Shemya	02:00	8:30	
5	03:45	Shemya to Elmendorf	13:15	7:30	
6	15:00	Elmendorf to McChord	00:00	7:00	
		*local time		Total:48:00	

with my estimated position and used it to make good on the time and track requirement at the Air Defence Identification Zone (ADIZ). We cleared the weather as we joined the airway at King Salmon.

Shemya is one of the most desolate places I have ever seen. It has been described as the end of the world, or, at least, you can see it from there. The weather is legend: You can have fog, rain, ice and 100 MPH winds, all at the same time. However, its location was key to flight operations on the NORPAC. The airport boasted a huge runway, 10,000 feet long and 150 feet wide with an additional paved surface outside the runway lights. The standard military approach aid was Ground Controlled Approach (GCA) and the controllers were excellent, rumoured to have honed their skills on the Berlin Airlift. The vast majority of approaches at Shemya were under IFR conditions, many at or below published limits. Aircraft landed and could not be located by the "FOLLOW ME" jeep. One of our crews had to remain on their aircraft for three hours because the winds were too strong for the crew bus. Surprisingly the Aviation Safety Network lists only one aircraft crash during the Korean Airlift. It was North Star 17505 which was blown off the runway after landing on December 27, 1953 (listed as a Canadair C-54GM Argonaut).

Upon arrival at Shemya, the passengers were met by military police and escorted into the terminal. They were escorted everywhere they went during the stopover. No one missed his flight to Tokyo.

Sometimes flights out of Shemya would have to be delayed or cancelled for weather. Crews and passengers would be billeted in the limited accommodation available. I had a rather unique experience on

one of these occasions. There had been a very heavy snowfall and I was awakened by a snow blower clearing the roadway past my room. Suddenly the window exploded inward and a torrent of snow followed, nearly filling the room. Luckily, I had my winter survival gear with me so I was able to camp out for the rest of the night. (To be continued.)



Shemya is located at the west end of the Aleutian Islands archipelago. Note the short runways to the west of the main runway. This was the crash site of North Star 17505. Photo by Google

PNSAC

# Overhauling a Merlin 622 Engine

Third in a series

*Ted Devey*

## The 622 Merlin: A Special Engine

The 622 was specially beefed up for the arduous service of transporting people and goods over the long distances of overseas flights. The North Star aircraft was built by Canadair of Montreal in two versions: Pressurized for the passenger trade for Trans Canada Airlines, Canadian Pacific Airlines and the British Overseas Airlines Corporation (who chose to call the airplanes "Argonauts") and non-pressurized for the Royal Canadian Air Force for hauling freight. RCAF North Stars also carried passengers but not in the luxury of passenger planes. This was a new application for the Merlin which was bred for all-size-fits-all military applications in fighter, reconnaissance and bomber airplanes. So the 622 version was called the Transport Engine.

In WWII, bombers were a form of transport in that they carried bomb loads over distances of hundreds of miles to a target and returned empty to their bases. The Lancaster carried the heaviest bomb loads and was fitted with four Merlin engines. I can recall an interview on television (Daily Planet) with the manager of a Lancaster restoration project at the Toronto Aerospace Museum in Downsview which was removed from the Toronto waterfront. One of the Merlins was dismantled and a major crack was found in one of the main bearing webs of the upper crankcase. I don't doubt that this happened to a number of Lancaster engines, which led to major strengthening of the Merlin destined to become the 622 for North Star service as well as some British airframes intended for similar uses.

The parts of the engine subject to high stresses were given special attention. In the upper crankcase, which is the foundation of the engine, the internal webs were enlarged as much as possible, the crankshaft was increased in strength as were the connecting rods. In examining the crankcase with the crankshaft mounted, the clearance between the two was about 1/16th of an inch. Not much more could have been added in terms of metal to the casting. The cylinder heads are fastened to the cylinder banks and to the crankcase with 28 long heavy studs (14 per bank) to form a rigid assembly with huge beam strength. Additionally, the heads are bolted to the banks with studs anchored in the heads and nuts on the banks. In previous Merlins, the studs protruded sufficiently to accommodate ordinary nuts. Because of the high sustained temperatures over long periods

and the high thermal expansion of aluminum in the heads and banks, the cylinder to bank studs were increased in length by about two inches and the nuts also increased so as to form axial springs to stretch with heat so as to prevent pulling the studs out of the heads. In the heads we found that some studs had been pulled by thread stripping and repairs were made to replace the studs. There were two types of such repair. One involved drilling out the stud base and inserting a helicoil to provide threads for installing a new standard size stud, and the other involved drilling a larger hole in the head and tapping a new thread and installing a new stud with an oversized base. These repairs were given Engine Repair Scheme (ERS) numbers clearly stamped nearby on the head casting. Rolls Royce developed a number of procedures for extending the life of engine components and these were given ERS numbers. These procedures could be accomplished for the most part in repair shops, but in certain cases the part was shipped to Rolls Royce in Derby for treatment. Additionally, for each bank, two studs were added at each end which were not present on earlier Merlins. When corroded, they presented great difficulty in removal, especially the front ones just behind the propeller reduction gear casing.

For the first time in operational Merlins, 622s were equipped with fuel injection instead of carburetors. Fuel was sprayed into the eye of the supercharger at first stage.

It is interesting to compare the cooling systems between the North Star and the Lancaster. North Stars were fitted with a very large main coolant radiator along with intercooler and oil cooler radiators. A tremendous amount of heat was removed from the internal parts of the engine by the lubricating system. Temperature control was done by having movable flaps at the bottom of the nacelle allowing full coolant flow through the cooling systems and varying air flow, similar in principle to the variable vanes in Rolls-Royce automobiles.

A further testament to the heave-ho and stamina of the Merlin 622, the aero racers at Reno have replaced the Packard Merlins in their P-51 Mustangs with highly souped-up 622s obtained from the surplus market. Google "Reno for Gearheads" and you will come up with Graham White's article on the racers at Reno. It is an interesting read about all-out air racing!

## Engine Overhaul Progress

The supercharger drive clutch assembly has been restored and is awaiting completion of the wheelcase which has been completely dismantled cleaned and is being re-assembled with its various gears and shafts. The upper vertical shaft drives the camshafts and magnetos, the important timing elements of the engine. The lower vertical shaft drives the main coolant pump. The wheelcase takes the output from the rear of the crankshaft and sends drive to the supercharger drive clutch assembly (2-speed) and accepts input from the starter motor. The wheelcase

is a sort of "jack of all drives" When completed, the wheelcase will be mounted to the rear of the engine and the camshafts can be mounted and timed with the crankshaft. At this point, with piping mounted and fastened in place, the engine will be transferred from the rotary stand to the main transport stand. Only the intercooler and supercharger remain to be treated. Optimistically, we are hopeful of remounting the completed engine onto the aircraft in the fall of this year. The overhaul time of engine Nr 2 could be as short as 1 1/2 years, compared with nearly four years for Nr.1 engine.

PNSAC

## Rebranding Project North Star

*Bill Tate*

Late last fall, PNSAC President Richard Lodge and I began discussions on how to improve the profile of our association. Among other things, we discovered in conversations with visitors and interested members of the general public that our logo led people to think we were an association of astronomers!

### Logo

Major changes in one's brand or identity, such as a logo, can bring a certain level of resistance among those who may have been present at the creation, so to speak, or even those who simply like the look of the original. The working group was sensitive to this fact, but nevertheless sought to design a new logo that would make it clear what we were about. The temptation to describe - in words - what we do in the first draft designs was great, but we resisted it and, as a result, have come up with what we think is a crisp and distinct logo. We hope you agree.

Phil Chrysler led us through many incarnations of the new logo, and eventually we agreed to use the Air Force Roundel and the Maple Leaf as a background for a North Star in a turn.

Perhaps we will no longer be associated with astronomers, as flattering as it might be.

### Brochure

At about the same time that we started discussions on the brand, we ran out of the brochures we had been using to describe the project and to solicit memberships and donations. One of our more computer-

savvy volunteers, Giuseppe Zanetti, took the opportunity to redesign the brochure, giving it a more up-to-date look. The board decided it might be a good time to update the contents as well, and, again, we resisted the temptation to tell our whole story, not only to keep costs down, but to make it possible to publish a bilingual version of the brochure. There were more email exchanges on this project among Giuseppe, board members and myself than I care to remember. Over time words were massaged and missed items inserted—or re-inserted. In the end, Robert Desjardins and Karen Lohead made sure it all resulted in a readable text.

I'd like to take this opportunity to thank the Canada Aviation and Space Museum for their invaluable assistance in helping us update the brochure, in particular with the translation.

### Merchandise

The final piece of the puzzle was how to use our new logo to enhance our visibility—and to raise funds for the project.

The possibility of applying the new logo to a hot air balloon was quickly discarded, but it was decided to replace the logo on our ball caps while maintaining the same style and colour. (We will replace the logos on our surplus caps.)



Merchandise

For our members, we've created a distinctive golf shirt with a stitched-on North Star logo. Committee

members unanimously agreed that it would be nothing but the best for our members: 100% cotton, as opposed to a synthetic fabric since cotton will breathe and wear much better as well. These will be sold exclusively to members (and to special friends of the association) at just above cost.

In addition to the ball caps, there will also be T-Shirts (available in children's sizes), decals and badges for sale to the public. The tees will have the logo silk screened on and will be available in two colours, blue and white. Members will naturally get a discount on their purchases.

These items will be on sale at our quarterly meetings at the CASM and at all special events in which PNSAC is involved, but members may make arrangements to buy and collect their purchases at the museum during normal volunteer work hours.

I would like to thank Jim Riddoch and Phil Chrysler for all their help on this project. Phil has agreed to help us in our continuing efforts to "be out there".

PNSAC

## Notes from the President

*Richard Lodge*

Our 8th Annual General Meeting was held on June 11 with all the Directors and Officers being re-elected. The last year was one of increasing activity and elsewhere in this Newsletter you can read a summary of progress on the aircraft restoration in the PNSAC Board's Report to Members. We can now look ahead to the next 12 months.

The lifeblood of an organisation such as ours is the active volunteer force working on the aircraft restoration. We must continue to recruit new volunteers to replace those who for various reasons stop working with us or retire from active restoration work. We need to encourage new people to join the association, even if they are not immediately available to work on the aircraft. Some of our best new restoration volunteers have been association members for several years and recently retired from regular career jobs and are now able to work regularly on the North Star.

One of the best things about an association such as ours is the comradeship of working with a group

of like minded people on a worthwhile and interesting project. Volunteers are very special people—they have no obligation to continue working and can leave at any time. We must always remember that volunteers must not be taken advantage of, just because they are working for free.

Our quarterly meetings are a time when members can meet and chat about the North Star and aircraft generally. We want to encourage all our members to come to the meetings, whether they are able to work on the aircraft or not. We are also working on ways to give our members more benefits of membership so that they feel that their annual subscriptions enable them to be part of an interesting organisation, even if they cannot immediately work actively on the aircraft restoration. We are a charitable organisation and some of our members have recently made very generous donations which are helping us to carry out the restoration work and build the association more rapidly and effectively.

If this year is as successful as last year we will see a noticeable difference in the progress of the restoration and in the capacity of the association to take on bigger and more complex restoration work.

PNSAC

# PNSAC Board's Report to Members

## Introduction

We have now completed 8 years as a volunteer organization and have in the last year consolidated our position with the Canadian Aviation and Space Museum as a reliable and productive restoration group.

The activities of the Association have increased both in carrying out the actual restoration work on the North Star and in setting up the infrastructure to enable the Association to undertake a more visible role within the Museum, while at the same time maintaining our independence.

The Board of Directors met five times during the last year. The major functions of the Association have now been delegated to individual directors who are responsible for particular segments of the Association's activities. This ensures that work is done in a timely manner and that volunteers who are not able to actually work on the aircraft restoration can play a significant role in the overall progress and activities of the Association.

During the year it was decided to adopt a new logo for the Association which more readily identifies us with the North Star and aircraft activities. The new logo appears to be well received by members along with the decision to acquire more merchandise for sale to Association members and the public. We now have ball caps, T-shirts and decals for sale to members and to the public. In addition we have golf shirts for sale to members.

During the next year we will be establishing one or more committees to concentrate on fundraising and the sale of merchandise.

As can be seen from the Project Manager's report, there has been considerable progress on the aircraft restoration. In order to ensure that the Association can provide adequate management and direction of the restoration work, the Association has appointed a Deputy Project Manager who will assist the Project Manager and deputize for him when he is not at the Museum.

The Treasurer's Report below shows that the finances of the Association remain satisfactory.

## Project Manager's Report

Once again there has been significant progress on several major components of the North Star aircraft. Nr 2 Engine

Last year we reported that engine Nr 2 was removed from the aircraft and transferred to the

restoration shop. In the past year this engine has been completely disassembled, cleaned and is now in the final stages of re-assembly. This is significantly faster than the same work on engine Nr 1, a result of our engine team gaining experience. The crankshaft has been installed in the engine block, and the cylinder heads with pistons attached to the block. Many of the engine accessories, such as fuel and oil pumps have been refurbished and are waiting to be attached. It is expected the engine will be installed in the engine frame by the end of the summer.

## Engine Frame

The engine frame has been stripped and repainted, and many clamps and hoses restored, ready to be installed once the engine block is in place. The radiator was cleaned, painted and inhibited to prevent internal corrosion, and installed on the engine frame. The electrical harnesses and several coolant pipes have also been restored. A great deal of work has been spent restoring the many cowl panels that protect the engine. Several of the reinforcing strips were badly corroded and needed to be replaced, so new ones have been fabricated and riveted into place, followed by many hours of polishing the outside of these panels to restore their original shine.

## Cockpit

Last summer, while the North Star was outside, the radio rack was completely stripped and repainted. After that, all cables were repositioned and many of the electronic assemblies were reinstalled. Last year we discovered the restored cockpit windshields were leaking in several places. This required removal of the windows and resealing with more caulking. We are confident we have solved the leak.

The rudder pedals were restored and have been installed, and we are now working on the installation of the central control console and the many cables that connect to these controls. We also replaced the leather bumpers along the edge of the sunshield, and we have test fitted the new cockpit curtains. We recently received a cable swaging tool that allows us to fabricate new cables on site. We are sharing the cost of this tool with the Aviation Museum, which is a major investment for us.

One major accomplishment was finally obtaining new headliner material. While we waited for the material to arrive, we repaired a number of the headliner pieces, and then painted these to restore the

original colour. Several pieces have been installed in the cockpit, mainly behind the radio rack.

Over the winter the crew door was disassembled, repaired and painted. We will use the new headliner material to make a new door liner, and then this item will be complete. The door will not be installed until all cockpit painting has been completed.

This spring we began removing equipment and cables from the navigator equipment rack behind the cockpit. We also removed the small galley and other equipment to provide more room while working on the navigator rack. We are now removing the old paint and masking items that cannot be removed, in preparation for painting this summer while the aircraft is outside.

## Fuselage and Empennage

We are still planning to remove major pieces of the aircraft, such as the horizontal stabilizers and the flaps, so they can be sent out for overhaul. We do not have the equipment to work on such large items. In preparation, each securing bolt was removed from each stabilizer, greased and replaced. This will make the eventual removal go quickly. The same preparation was done for each of the flaps. The four large brake packs have also been removed from the main landing gear. These will also go for overhaul to a specialized facility. Work has now begun cleaning the forward baggage compartment, in preparation for painting. There are several belly compartments, as well as the four nacelles behind the engines that all need cleaning and restoration work. The forward part of the fuselage was also polished during the winter.

## Planned Restoration Work–2011-2012

Over the next year, we hope to have most of the work on engine Nr 2 completed. This involves restoring major components such as the supercharger and intercooler, the reduction gear, wheel case and auxiliary drive. The navigator rack will be painted and equipment and cables put back in place. There are a large number of panels, fittings and electronic equipment that can then be installed in the cockpit.

Work will continue on engine Nr 2, with a possible completion date of end 2011. We also hope to begin work on cleaning and restoring each engine nacelle. Now that we have the new headliner material we can make replacement headliners for the cockpit and main cabin. If possible, some work will be done on the cabin floors. There's lots more polishing to do outside as well.

## Membership

The Association finished 2010 with a total of 80 paid members. This was up substantially from 2009, reversing the trend of the past several years. Early in 2011 all current members were contacted by mail or e-mail with a request to renew their membership and to continue to support our restoration effort. So far this year over 50 members have renewed, plus several new members have joined PNSAC. This was mainly through personal association with our volunteers. This year, the museum provided each new or renewing member with a family pass for the museum. These passes were mailed out with new membership cards.

All members received copies of our newsletters and notification of all meetings.

We currently have over 30 registered and trained volunteers, of whom 26 are active in some capacity. There is continued interest from new members who would like to volunteer, and this helps bring new skills and interests to the project. Several other potential volunteers are waiting for approval and safety training.

Members are again encouraged to tell friends and associates about the project and encourage them to support our restoration work by joining our association or making a donation.

## Communications

Our communications effort over the past year included four issues of the NStar Chronicle, and production of a new brochure which will be used at public events, such as Canada Day, and will be displayed at the North Star kiosk in the museum. New photos have been added to our web site and we are looking into partnering with the Aviation and Space Museum on fundraising.

Members able to attend meetings at the Museum were briefed on Association matters and progress on Project North Star. These meetings included Q&A sessions and concluded with a social exchange.

## Treasurer's Report

The Association's finances remain satisfactory. Revenue has increased as have our expenses. The year ended with an increase in cash again in the bank compared to last year - \$24,166 (2010 \$21,057) Revenue from memberships has increased nearly \$1600 to a total of \$2800. This is significant since it represents our first increase in Memberships in three years.

Donations also have increased due to very generous lump sum donations as well as monthly contributions. Overall, the success of the Classic Air Rallye, the Canada Day activities and the retention and growth of membership has had a significant positive effect on the Association.

There were no donations in kind during the last year.

Regular monthly donations continue to be received but have not increased during the last year. Monthly donations are an excellent way to contribute to the cause by providing regular income to the Association outside of our big events. The added benefit of a tax deductible receipt is also another excellent reason to consider.

On the expenditure side, there has been a significant increase in expenses this year. The Board decided to go in a different direction for the Classic Air Rallye by "marketing" the organization a little differently. Promotional materials were purchased and the end result was a significant increase in donations and memberships. This also resulted in being able to

make larger purchases of two work carts using our new influx of money rather than past contributions.

This new fiscal year represents an excellent opportunity to further increase the Association's memberships and donations. This year, with the hard work of the Merchandise Committee, should be very successful and continue the growth of Project North Star.

## Conclusion

We have completed an excellent year in which the Association has moved forward in many ways. Our progress would not have been possible without the dedicated efforts of our volunteers. Some volunteers have done an extraordinary amount of work and the Board of Directors is very conscious of this. The Board is also very aware that many volunteers have limited amounts of time available and can only spend a small number of hours working for the Association. To all volunteers, a big thank you.

PNSAC

# Volunteers' Corner

## Robert Desjardins

The four-minute commute from home in Manor Park to Hangar 193 at the Canada Aviation and Space Museum suits me perfectly. After living and commuting in some of the world's most crowded and polluted cities, such as Beijing and Bangkok, a clean and short ride is welcome.



Michel Côté and Robert Desjardins

Newly retired from the public service, I wanted to stay active, close to home. With time now on my side, I can indulge in pursuits aviation related, on the ground and in the air. On the ground, I could

not think of a better endeavour than assisting in the restoration of the North Star, proudly held by the museum, but for so long neglected. Indeed, I find it to be a source of great pride to be associated with the restoration and preservation of one of the jewels in the Canadian aeronautical crown. And in the air, I am pursuing open-ended training as the holder of a private pilot licence, earned last year in the Philippines, now converted to a Canadian licence. I am currently training for a night rating and I will continue to pursue proficiency in all aspects of flight.

However keen I was to join the museum as a volunteer, red tape stood somewhat in my enthusiastic way and delayed my application. Notwithstanding the fact that I was holder of a security clearance from the Government of Canada, I could not produce, nor could the museum obtain, a certificate of good behaviour from the local police. Not having resided here during the past three years ruled out the availability of this otherwise essential document. After proving my bona fides and good character, I was finally admitted and got a badge!

Volunteers' hours of 10:00 to 3:00 suit me perfectly. The shop floor/plane side camaraderie is remarkable. What impresses me the most however is the competence, dedication and patience of those senior members of the team. As unskilled labour, I can use all the help and coaching coming my way, and it

comes in droves, generously.

I keep a log of my work and marvel at the complexity and diversity of tasks we perform. Moments of frustration become learning and character building opportunities, such as when finding out about the differences between metric, SAE, BA and Whitworth sizes and standards. Polishing metal with Met-Al, preparing aluminium with Alumiprep, finishing brass with Brasso, you gain a sense that the marketing people in the metal industry wanted their product to be associated as closely as possible with the task their product is designed for. From the obscure to the mundane, working on the North Star is an experience of discovery, renewed every day on the shop floor.

## Michel Côté

I graduated in 1970 from Laval University as a Mechanical Engineer and went to work at a paper mill.

Although I started my career on the engineering side, a few years later I was transferred to the maintenance department for which I became responsible until I was transferred to operations as paper machine superintendent. Eventually I became responsible for the mill production and retired as quality manager.



Michel Côté

As most paper mills are located in remote areas, the outdoors becomes your "hobby" and with it its toys: snowmobiles, ATVs, outboard motors, generators, etc. I can say that I have spent most of my life around one type of machine or another, either fixing them, or somehow getting them back in operation.

I have always been interested and fascinated by the aviation world. Last year I went to the Classic Air Rallye, and the North Star was the first airplane to greet you as you entered the grounds. The cowlings were off two of the engines and some of the restored parts were on display. I went to have a look and as I talked to some of the members of PNSAC, I learned the restoration was being done by volunteers. I thought it could be a fun and interesting project, so I joined up. I wasn't wrong: The work is interesting, even challenging at times, and you are always learning something new.

And the people I work with are just great.

## Milestones

Pierre Drapeau – 1000 Volunteer Hours

PNSAC

# Classic Wings and Wheels Photo Feature

*Photos in this section by Guy Poirier, Phil Chrysler, and Bruce Gemmill.*





PNSAC

# Calendar of Events

- |                    |                                  |
|--------------------|----------------------------------|
| July 1, 2011       | North Star on display Canada Day |
| September 15, 2011 | Board of Directors' Meeting      |
| September 24, 2011 | Quarterly Meeting                |
| November 24, 2011  | Board of Directors' Meeting      |
| December 3, 2011   | Quarterly Meeting                |
| March 22, 2012     | Board of Directors' Meeting      |
| March 31, 2012     | Quarterly Meeting                |
| May 31, 2012       | Board of Directors' Meeting      |
| June 9, 2012       | Annual General Meeting           |
|                    | Board of Directors' Meeting      |

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Your comments on the contents of this issue are also appreciated.

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