

# The NStar Chronicle

## Merlin Musings

Seventh in a series

*Ted Devey*

### Merline Engine Applications (continued)

#### Transport Aircraft

A few Halifax and all Lancaster Bombers of WWII were fitted with four Merlin engines. After the War, Canadair of Montreal built DC-4 aircraft under licence from Douglas. Modifications to the DC-4 comprised the use of some components from the DC-6 and a major change in the engines fitted. In the place of four radial engines, four Merlins built by Rolls Royce were fitted, as studies deemed them to be more efficient than other engines available, which was of interest to operators in the 'transport' service carrying passenger and freight payloads. These aircraft were given the name NORTH STAR and designated DC-4M (M for Merlin).

Rolls Royce of Derby, England was contracted to provide Merlin engines for North Stars. Merlins saw service in military aircraft, fighter planes which were high-performance 'hot rods' operating over short periods of time, about an hour or two at most, in dog fights with enemy aircraft. Then they were fitted to bombers such as the Mosquito and Lancaster which transported heavy bomb loads over long distances to

targets and returning to base empty. Merlin performance was increased over time to handle increasing demands of aircraft both new and those of increased performance. For example, the North American built P51 Mustang was the best performing fighter plane of WWII when equipped with advanced Merlins by Packard Motor Company of Detroit. Mustangs had long distance capability enabling them to accompany bombers well into Germany providing defense for the bombers all the way to targets, well within Germany and return to base. So by the end of the War, the Merlin engine was developed for higher performance over longer periods of time.

Trans Canada Airlines was contemplating overseas service in the post-war period. They negotiated with Canadair of Montreal to build long range aircraft and studies indicated that the Merlin engine was the best choice. Airline service demanded very high reliability at high power levels over long distances; power plants had to meet these stringent requirements. The result was the production by Rolls Royce of the 620 Series Merlin engines, specifically the Merlin 622 for the North Star.

To produce the 622, Rolls Royce beefed the engine up in a number of high stress areas such as larger stiffening webs in the crankcase, stiffer connecting rods, toughened up cylinder head-to skirt fastenings, improved coolant circulation and cooling. The introduction of fuel injection to the Merlin in the 622 was remarkable in that the German fighter plane Messerschmidt 109 was equipped with fuel injected Daimler Benz 600 series engines before WWII started.

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Since there were only 70 Merlin Equipped North Stars with four engines each, the number produced including spare engines was fairly low. In light of a limited spare parts supply for an engine series that was being produced, Rolls Royce developed Engine Repair Schemes (ERS) for refurbishment of used and worn parts for further service by bringing them back to original standard specifications. Where such a repair was applied, the appropriate ERS number was stamped on the part to indicate that the part had been refurbished. This permitted service lives of these engines to be well extended. Military aircraft were not long in service after the War, they being replaced by jet-powered planes many of which were powered by Rolls Royce jet engines and gas turbines.

Three airlines flew North Stars after the War: Trans Canada Airlines, Canadian Pacific Airlines, British Overseas Airways Corporation (the British chose to call them Argonauts) all being pressurized for high altitude flight in the passenger service. The Royal Canadian Air Force North Stars were unpres-

surized carrying freight and some passengers in a rather unconventional arrangement. Some of these aircraft were in regular service for as long as 17 years and many saw service with other airlines in other parts of the world for some years later. North Star 17515 late of the RCAF is now undergoing restoration at the Canada Aviation Museum in Ottawa, the port outer engine (#1) is currently being restored to static condition at CAVM.

The Rolls Royce Merlin 622 engine is the engine of choice for P51 Mustangs in the racing circuits today. The 622 continues to be heard though in somewhat modified form to get all out performance from a heavily beefed up power plant.

The book "The Canadair NORTH STAR" by Larry Milberry is a highly detailed and fascinating read about this aircraft. I highly recommend this book to all readers of Merlin Musings, for it includes much well researched information about this unique aircraft and it portrays what PROJECT NORTH STAR is all about!

PNSAC

## The Case of The Transient Turkey

*Zita T. Timmins*

For dependants of an Air Force gentleman, life was a moving experience. Change, the only constant. Who could forget the teary farewells on transfer, accompanied by prized possessions labeled, "Scratched And Dented?"

What mother/spouse has not single-handedly shouldered the Herculean task of broken bones, mumps and measles? Is it possible, our little ones' immune systems cruised into a state of flux simultaneously with the dads' E.T.D.?

Our Air Force Kids were living monuments to the term, "flexible." As the ubiquitous "Change of Address" flew along its perennial path, friendships were being formed. On out-of-country assignments, history books came alive before the eyes of our children, and, we were given an opportunity to make "a home away from home." An odyssey of challenge broadening one's horizon, exploring the universe and living among strangers instilled in us a greater understanding and respect for other cultures, a goal for which we continue to strive within our own country.

"Outstanding" would best describe the support system within The Family Of The Light Blue, to wit: The Case of The Transient Turkey.

Friends on Leave had promised to visit "some-

time soon." Eager to uphold the image of The Air Force Wife, Mrs. T. concluded that a turkey would place her in readiness for the visitors. But, alas, the cupboard was bare. Not to worry ... a P.M.Q. neighbour proffered a loan. Hastening to take delivery, it became evident, the gallinaceous gobbler had been placed in temporary housing, i.e., the freezer of yet, another neighbour. Finally retrieving the elusive offering, Mrs. T. roasted it to a state of golden splendour.

Pausing to savour the moment, she heard a sudden, insistent knocking on the kitchen window and an hysterical Mrs. B. mumbling that a phone call had announced the impending arrival of a former Boss. As the little hand was at five, the big hand at six and, Hot Dogs were la table d'hote, panic button was being pushed, one more time. Pointing repeatedly to the thing of beauty cooling on the counter, frantic one demanded: "Give Me The Turkey!" Unquestioningly, Mrs. T. slid confused bird through open window into the hands of friend-in-need.

Meanwhile, Mrs. T.'s four-year-old had been playing in the yard, an alert witness to the emergency measures through her kitchen window. As her game ceased to challenge, Miss T. decided to walk Mrs. B's dog. Taking herself to the home of Mrs. B., she waited for the Chihuahua. Strolling into the room where The Bs. and guest were dining in state, the little girl inquired: "How come you have our turkey?"

Memories are forever. Secure in a corner of the heart, they sustain us in difficult times. Within a squadron there is solidarity, an unspoken caring and cohesion of spirit, uniting those who have suc-

cumbed to the lure of flying—that exciting intangible which reduces strong men to willing captives in a lifelong love affair far beyond earthly pleasure.

God bless those Men and their Memories.

## Miscellany

### Email

My wife and I just came home from a trip to Vancouver Island in our motor home. While there we visited the Comox Air Museum and discovered a model of the North Star among the displays. I told the volunteer staff of your Project North Star and gave them your web site so they could follow your progress. I include a photo of the North Star model. She is the centre of attraction.



Figure 1: At the Comox Museum 29th April 2008.

Bob Fraser

### Sixty years ago

Sixty years ago, on the 19th of March, North Star 17515 was delivered to 426 Transport Squadron located at Dorval Airport.

Seventeen years later, on 9th December, 1965, it was retired from service and flown to the 6 Repair Depot at Mountain View for disposal. The total flying time logged was 20091 hours, averaging just over 98 hours per month.

### PNSAC membership

Memberships in the Project North Star Association of Canada are for the calendar year. Renewals, therefore, are due at the beginning of the year. This is the normal arrangement for most associations. The exception to the rule is a new member joining September first or later; this individual enjoys a 15 month membership before a renewal is due. 2008 memberships fees are now past due. If you have not already done so, please submit your dues for 2008 at your earliest convenience.

Instructions on payment of dues may be found at the PNSAC web site. Or, simply mail a cheque for \$25.00, payable to the Project North Star Association of Canada, marked membership 2008, to the following address:

Project North Star Association of Canada P.O. Box 44054 Ottawa, ON. K1K 4P8

### Photographs

*Photos in figures 2 to 8 by Chris Payne.*



Figure 2: Phil Chrysler, new man on the Project.



Figure 3: Charles Baril, returns to the Project during his school break.



Figure 6: Ted Slack joins the team. Works on Number 2 spinner.



Figure 4: Murray Beaulieu prepares to restore the lower front intake cowling: replace zeus fasteners, remove dents, repair corroded sections, polish...



Figure 7: It takes many hands to put a Merlin back together: Pete, Ed, Ted and Mike.

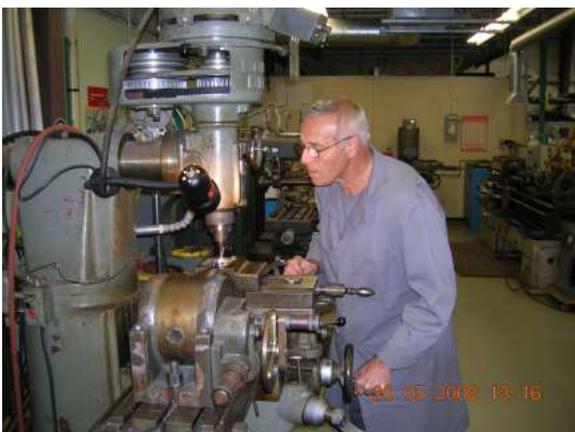


Figure 5: Replacement parts on demand, Rolf Geiger.



Figure 8: Number2 prop removal, Ted Devey holds light, Bruce Gemmill applies the liquid wrench.

## Newsletter distribution

The NStar Chronicle is delivered to members by e-mail or by regular post to members not having e-mail addresses.

## Annual General Meeting

The Project North Star Association of Canada will be holding its Annual General Meeting in the Bush Theatre of the Canada Aviation Museum on Saturday, June 14, 2008, starting at 10:30. Members who are unable to attend may vote by proxy by submitting the proxy form with your instructions by June 10, 2008.

## Canada Day

The North Star will be part of the display at the Canada Aviation Museum on Canada Day. Volunteers are needed to man the display. Please register with Johic Nicolas, Volunteer Coordinator at [jnicolas@technomuses.ca](mailto:jnicolas@technomuses.ca) or 613-991-2197.

## Classic Air Ralleye

The Classic Air Ralleye will be held again this year at the Canada Aviation Museum on 23 and 24 August 2008. The public will have access to the North Star for both days. The Association needs volunteers to man the display.

## 426 Squadron Association

The 426 Thunderbird Squadron Association is holding its 17th Biennial Reunion in Ottawa 28-31 August, 2008. They will be visiting Vintage Wings and the Canada Aviation Museum on Saturday 30th August. Most members of the Association flew, serviced or maintained the North Star so they are among the Project's staunchest supporters. Volunteers will be needed to receive these visitors at the North Star.

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