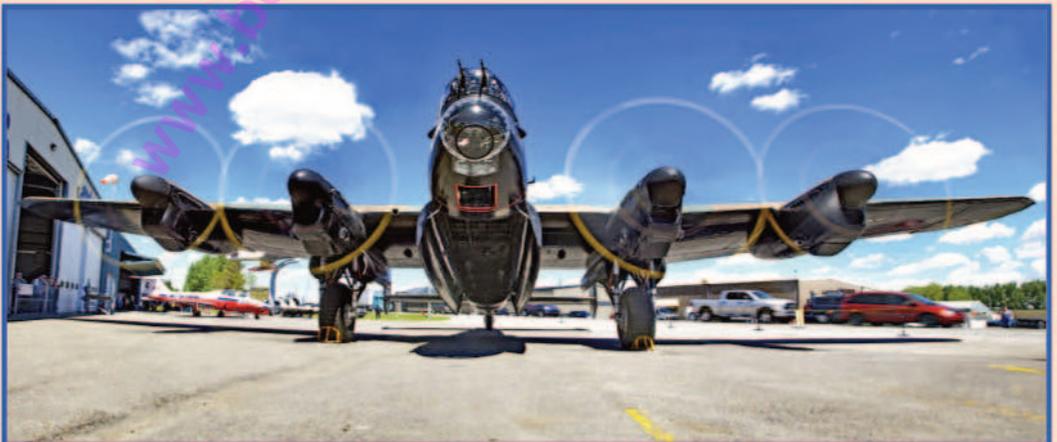




***One of 7377 Avro Lancasters built to wage war against the Nazis, FM159 is now one of only four taxi-able Lancasters in the world.***

***It has flown widely over the Pacific, twice across the Atlantic, and to the northern-most point in Canada; survived frightening incidents with the RCAF; has twice almost been scrapped; was towed by a truck across grainfields and through a river; suffered the ravages of thieves and vandals; and stood outdoors only metres from a major highway for 31 years.***

***Today, as the Ian Bazalgette Memorial Lancaster, FM159 honours a Canadian Victoria Cross recipient and is the centre-piece of the Bomber Command Museum of Canada.***



# FM159

## *The Lucky Lancaster*

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Bomber Command Museum of Canada  
Nanton, Alberta, Canada



**FM159**

***The  
Lucky  
Lancaster***

---

*Dave Birrell*

**For  
George White, Howie Armstrong, and Fred Garrett**

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First Edition (2002)  
Second Edition (2003)  
Third Edition (2006)  
Fourth Edition (2015)  
Fifth Edition (2022)

Published by  
The Nanton Lancaster Society  
Box 1051  
Nanton, Alberta, Canada; T0L 1R0  
[www.bombercommandmuseum.ca](http://www.bombercommandmuseum.ca)

The Nanton Lancaster Society is a non-profit, volunteer-driven society which is registered with Revenue Canada as a charitable organization. Formed in 1986, the Society has the goals of honouring all those associated with Bomber Command and the British Commonwealth Air Training Plan. The Society established and operates the Bomber Command Museum of Canada in Nanton, Alberta which is located 75 kilometres south of Calgary.

ISBN 978-0-9880839-3-6

Front cover: Canada's Bomber Command Memorial with Lancaster FM159 beyond

Back cover: Lancaster FM159 Engine Run

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# INTRODUCTION

## *The Lucky Lancaster*

Nanton is a small town in southwestern Alberta of just over two thousand people and there is no airfield in the vicinity. So when visitors enter the Bomber Command Museum of Canada's main hangar and see a Lancaster Bomber they generally ask, "How did it get here?" and "Why is it here?"

Even when visitors who are familiar with aviation museums and vintage aircraft visit they wonder, "How could it be that one of only four taxiable Lancaster Bombers in the world is located in Nanton?"

The answers to these questions clearly involves good luck -much of that good luck in Lancaster FM159 having capable, visionary people appear at the right time and in the right place.

Another factor in the aircraft's good luck has been good timing -running out of fuel just after landing in Alert, Nunavut rather than just before landing as only one example.

'FM159 -The Lucky Lancaster' tells the story of this amazing aircraft, from its beginning as one of 7377 Lancasters built to vanquish the Nazi threat to its presence today as the centrepiece of the Bomber Command Museum of Canada.



[Artist: John Rutherford]



**The British Columbia Coast from Lancaster FM159**  
[Courtesy Duke Dawe]

# LANCASTER BOMBERS

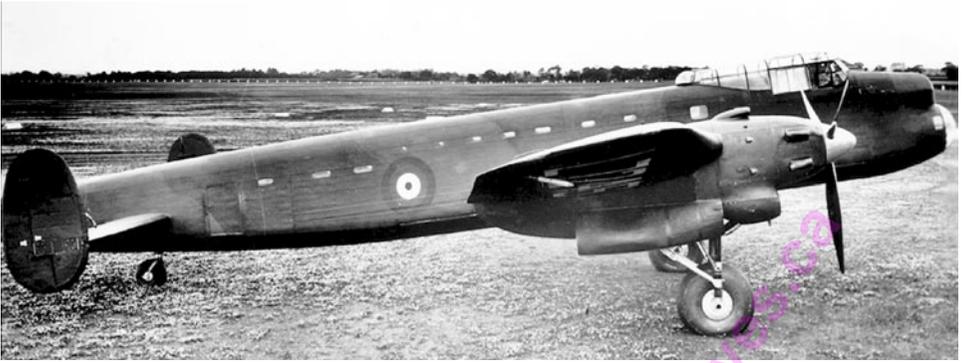
## *Made in Canada*

Following the Battle of Britain in September 1940, British Prime Minister Winston Churchill said, "The navy can lose us the war, but only the air force can win it. The fighters are our salvation, but the bombers alone provide the means of victory." The building of a bomber force was clearly an important part of Churchill's strategy and during the early years of the Second World War, the British and their Allies were making plans to build as many aircraft as possible and bombers were a top priority.

The twin-engined Avro Manchester was one of several bombers in the planning stages as the war began. The prototype flew in 1939 but was plagued by instability and problems with its complex, twenty-four cylinder Rolls Royce Vulture engines. Of the 202 Manchesters built, more were lost to engine failure than to enemy action.

But even before the Manchester became operational, the aircraft's designer, Roy Chadwick, realized that it had serious shortcomings and made plans for its modification. He added twelve feet to the wingspan and replaced the two troublesome Vulture engines with four of the proven Rolls-Royce Merlin V-12's. Thus was born the Avro Lancaster which made its maiden flight in January 1941. A colleague later wrote that Chadwick, "showed himself to be a most resourceful and courageous designer, ultimately snatching success from failure in the most ingenious way with a superlatively successful operational aircraft."





**Avro Manchester**

If the manufacturing of Lancasters and other aircraft could be done beyond the range of Nazi bombers, the construction process would become simpler and much more reliable. The United States was not involved in the war. Britain turned to Canada which had declared war on Germany just one week after the UK. In a surprisingly short time thousands of aircraft of several types were being produced in Canada, both for operational use in Europe and as training aircraft in support of the British Commonwealth Air Training Plan that would train over 130,000 aircrew in Canada during the war.

On September 18 1941, a decision was made to build Lancasters in Canada and the first drawings arrived in January 1942. For a country still largely agrarian and just recovering from a decade of depression, the challenge was immense. 500,000 manufacturing operations were involved in building a Lancaster which was made up of some 55,000 separate parts even when engines and gun turrets were only considered as one and small items such as rivets, nuts, and bolts were not included.

A Crown Corporation named Victory Aircraft was formed to do the work in Malton, Ontario and in August 1942, a British-built





**R5727, the 'pattern Lancaster', at Gander, Newfoundland en route to Malton -August 23, 1942**

Lancaster (R5727) was flown across the Atlantic to be utilized as a pattern. The pilot was Clyde Pangborn.

There were to be some differences between the British Lancasters (Mk I, II, and III's) and the Canadian-built version (known as the Mk X). The engines were to be of the same Rolls-Royce Merlin design but would be manufactured by the Packard Motor Company in the United States. As well, all instruments and radio equipment were to be of Canadian or American manufacture.



**Building Lancasters at Victory Aircraft Limited -Malton, Ontario**

However it was deemed essential that all major sub-assemblies of the Canadian-built Lancasters be interchangeable with the British versions so that in the event of damage, spare parts would not have to be sent across the Atlantic.

On August 1 1943, almost exactly a year after the pattern aircraft was flown to Canada, the Canadian Mk X prototype (Serial number KB700) rolled off the Victory Aircraft assembly line and was christened, the 'Ruhr Express'. This was an astonishing accomplishment given that the drawings had only been in Canada for just over eighteen months. Eventually, production at Victory Aircraft Ltd. reached the level of one aircraft per day and the production of Lancaster Bombers employed as many as ten thousand people.

The Canadian men and women who had built KB700 were justifiably proud of their work, especially Victory Aircraft employee George Sines who wrote a poem about their efforts.

Much publicity was made of the christening, first flight, and departure of the 'Ruhr Express' to England. Indeed it was an occasion for which the country could be proud. With much fanfare the aircraft was flown to England by S/L Reg Lane DSO DFC who had completed two tours of operations and was one of the war's most decorated Canadians at the time. Although not part of the



**KB700 Roll-Out**

## THE RUHR EXPRESS

May the Gods above you ever bless,  
And keep you safe, the Ruhr Express,  
May you do your job and do it well,  
And blow the Axis clean to hell.

We saw you born you wondrous thing,  
We watched you grow and then take wing,  
May you fly long though war-torn days,  
And give us cause to sing your praise.

The job is hard you have to do,  
But, we have faith you'll see it through,  
May we have ever cause to bless,  
Our new ship born, the 'Ruhr Express.'

We have waited long to see the day,  
When you would take wings and fly away,  
At last you roar a thunderous tune,  
And Hitler too will hear it soon.

So here's to you the 'Ruhr Express,'  
Speed on your way, may Heaven bless,  
Your every effort this war to cease,  
So once again we live in peace.

Here's to the men your gallant crew,  
The RCAF who will see you through,  
God Save The King, may Heaven bless,  
Your crew and you, the 'Ruhr Express.'

-George Sines 6 August, 1943

'fanfare', the Minister of National Defence at the time, Charles Power, insisted that the experienced Ferry Command pilot Clyde Pangborn be aboard the aircraft as well. KB700 was equipped with dual controls, so the two pilots sat side-by-side.

The Ruhr Express flew two operations with No. 405 Squadron before completing its service with No. 419 'Moose'



The Ruhr Express



S/L Reg Lane (left) and crew after ferrying KB700 across the Atlantic

Squadron. On January 2 1945, KB700 experienced hydraulic problems while attempting to land following a raid to Nuremberg, its 49th operation. The flaps would not deploy properly and, after overshooting the runway, the aircraft ended up in a farmer's field where it collided with a trench digger.

Amidst exploding ammunition the crew escaped but fire destroyed the aircraft. The loss was particularly sad because plans had been made to fly the 'Ruhr Express' back to Canada following its fiftieth operation for a triumphant return and to become a memorial to the Canadians who built and flew Lancasters. So ended the first plans for a Lancaster to be placed on display in a Canadian museum.

Most of the Canadian bomber squadrons that formed No. 6 Group, the Royal Canadian Air Force component of Bomber Command, flew the Handley-Page Halifax but as the Canadian-built bombers were received in England, they converted to the Mk X Lancasters to complete their squadron's 'All-Canadian' contribution to the war effort.

Some significant changes were made beginning with the 186th Lancaster built by Victory and Lancaster FM159 was one of these. The most obvious was that the American-built, electrically powered Martin mid-upper gun turret with its twin .50 calibre machine guns replaced the British Fraser-Nash mid-upper. To accommodate the much heavier Martin, the location of the turret



**The Ruhr Express after crash landing and burning**

was moved forward, necessitating changes to the rear centre section structure. As well, the capacity of the electrical system had to be increased, the ammunition supply system had to be changed, and the former mid-upper turret hydraulic system eliminated.

The Canadian-built Lancasters participated fully in operations against the enemy. Approximately seventy-five were lost in action and another thirty crashed upon their return to England or during training exercises. KB732, designated as 'VR-X' and marked as 'X-Terminator', flew the most operations of the Canadian-built Lancasters, completing 84 during its tour of duty with No. 419 squadron.

Although the exact date that Lancaster FM159 rolled off the Victory Assembly line is not certain, it was likely during early May of 1945, just as the war in Europe was coming to an end -but the war in the Pacific was still raging. FM159 was the 360th of the 430 Lancasters built at Victory Aviation. Twenty-two more were completed, the last one, FM229, rolled off the assembly line during September 1945.

None of the 430 aircraft were lost while under testing at Malton. Only one Lancaster was lost in transit to Britain. KB828 was damaged beyond repair when it 'swung on landing' at Gander, Newfoundland.



**FM159 was the 360th Canadian Lancaster to be built. This photo shows a section of its floor (above the bomb-bay) under construction.**

# TOO LATE FOR THE WAR

## *Across the Atlantic and back and then Five Long Years of storage in Alberta*

Strangely, as the Canadian-built Lancasters that had operated during the war with No. 6 Group of the RCAF were returning to Canada, newly built Lancasters such as FM159 were still being flown to England, even though the war in Europe had ended. In fact, Canadian-built Lancasters continued to fly to Britain for another two and a half months, the last one (FM207) was delivered on August 21 1945.

After the Lancasters were completed at Malton, they were then handed over to 45 Group -RAF Ferry Command, and flown to Dorval (Montreal). As crews became available, they were dispatched to the UK via a stop at Gander and then on to Prestwick, on the west coast of Scotland. The flight across the Atlantic generally took nine to ten hours, with favourable wind conditions.

On May 29 1945, it was Lancaster FM159's turn to be ferried across the Atlantic. It very nearly didn't make it. The aircraft was



**Clyde Pangborn**



**Fred Hotson**

piloted by Clyde Pangborn, the pilot who had flown the 'pattern Lancaster to Canada and, together with Reg Lane, KB700 to the UK. Fred Hotson was the first officer.

Clyde Pangborn was a celebrated American long-distance flyer. He was known as 'Upside-Down Pangborn' during his time as a barnstormer during the 1920's. In 1931, he became the first to fly across the Pacific Ocean non-stop. After joining the Royal Air Force in 1939, Pangborn assisted in organizing RAF Ferry Command and the three Eagle Squadrons -RAF squadrons that were formed with volunteer American pilots prior the United States entering the war. As a senior captain, Clyde Pangborn made approximately 170 trans-oceanic flights. He obviously had a bad day at the controls of Lancaster FM159 on May 29 1945.

Fred Hotson, FM159's first officer, tells the story of what happened during the flight from Montreal to Gander.

"We were somewhere between Seven Islands and Goose Bay, on solid instruments, when the artificial horizon toppled, useless. After caging the gyro, he (Pangborn) remarked, 'We'll have to go needle-and-ball,' so I kept a close watch. A short time later the props were a little out of sync. I was about to do the small adjustment needed, but 'Pang' leaned over to do the job himself running them through and smoothing them out. When he went back to the instruments he found we had built up considerable speed.

"Obeying his instincts, he began tugging on the controls -but the harder he pulled, the higher the speed. The G forces began to build excessively, indicating a classic example of a 'death spiral'. Without dual controls and with high G forces, all I could do was to shout, 'take off bank -needle and ball!' I tried to point to the turn-and-bank instrument, which by now was at opposite extremes on the dial but I couldn't get out of the seat. Even raising my arms to point was a major effort.

"The craziest part of this incident occurred when we broke into a short period of ragged cloud and saw a Dakota go across our nose -in what looked like a vertical dive. While it was bad enough going through the Dakota's altitude, so close that we could read its numbers, Pang's next statement was a classic, 'Look he's crashing!' It was our windshield that created the illusion. We were in a vertical bank and going down fast. We were the ones about to crash if he didn't do something soon! Fortunately, there was a ragged ceiling about a thousand feet over the dark St. Lawrence

where my ex-hero was able to level the wings and recover from the considerable dive.

“His landing at Gander left much to be desired and, although the artificial horizon was replaced, it was with some misgivings that I took my seat for the flight over the Atlantic that night. The only word I spoke to

Unit or City/Cause	Station or Contractor	Date	Authority
25.5.45	Prvd 45 Gp	27.15	F155
29.5.45	Dgr 45 Gp	} 31.15	F159
30.5.45	Prvd 45		
2.6.45	20 MU	576	78
19.7.45	32 MU	207	88
8.8.45	Melton Mowbray	148	24
20.8.45	Dep. Canada	20.8.45	T.22
1.9.45	Can. Command	2.9.45	T.37

‘Pang’ in Prestwick was ‘Goodbye.’ There was no need to review his failure to go to the needle-and-ball instrument as I had so recently been taught. Pangborn, unfortunately, was one of those captains who had to do everything himself -I might as well have stayed in Montreal.”

As for FM159, it was clearly fortunate to have survived its flights with Ferry Command.

After FM159’s arrival at Prestwick, Scotland on May 31, it was placed with No. 20 Maintenance Unit at Aston Down, thirty kilometres northeast of Bristol. It was here that most of the Canadian-built Lancasters were prepared for operations. Amongst other things, this included the installation of gun turrets and navigational/radar devices such as GEE and H2S.

On July 19, the aircraft was transferred to No. 32 Maintenance Unit at St. Athan in southern Wales and placed in storage. Most of the FM series of Canadian-built Lancasters that were flown to the UK were eventually scrapped there. Of the twenty-two aircraft with serial numbers from FM150 to FM171, FM159 was the only one lucky enough not to be scrapped and to return to Canada.

Six weeks later, FM159 was made ready to return to Canada. F/Lt. Norman Turner DFC DFM flight tested the aircraft for No. 12 Ferry Unit at Melton Mowbray airfield and found it to be ready. FM159 took off for Canada on August 30 1945, arriving safely at RCAF Station Scoudouc, New Brunswick on September 1.

Many of the crews that had flown in Europe and had returned with their aircraft to Canada had volunteered for ‘Tiger Force’. Also known as the ‘Very Long Range Bomber Force’, this unit was to be the British Commonwealth’s long-range heavy bomber force to be formed from squadrons serving with Bomber

1945		LANCASTER		PILOT, OR 1ST PILOT	2ND PILOT, PUPIL OR PASSENGER	DUTY (INCLUDING RESULTS AND REMARKS)
MONTH	DATE	Type	No.			
						TOTALS BROUGHT FORWARD
JUNE	7	TRANS ATLANTIC FLIGHT.				SQUADRON MOVED TO
JUNE	7	LANCASTER XA	WL-0	SELF.	Flt. SAVAGE (NAVIGATOR)	CROFT TO ST MAUGANS
JUNE	12	LANCASTER XA	WL-0	SELF.	Flt. HINES (BOMBARDIER)	CORNWALL AWAITING WEATHER.
JUNE	15	LANCASTER XA	WL-0	SELF.	P/O McLEAN (WIRELESS)	ST MAUGANS TO SANTA MARIA
JUNE	16	LANCASTER XA	WL-0	SELF.	P/O FOSS (ENGINEER)	AZORES. BROKEN HYDRAULIC SYSTEM. 3 ENGINES. TOUGH TRIP
JUNE	17	LANCASTER XB	WL-0	SELF.	P/O ST GERMAIN (GUNNER)	SANTA MARIA TO LAGENS
					W/O BAIRD (GUNNER)	TIECERRA AZORES (RAF BASE)
					SGT. WARD	LAGENS TO GANDER BAY
					LAC DESTARDINE (PASSENGER)	NEWFOUNDLAND. 3 ENGINES
						GANDER TO DARTMOUTH, N.S. CANADA!!! AND 37 DAYS LEAVE. 3 ENGINES AGAIN.
<p>FLYING THE ATLANTIC ALONE — BECAUSE IN SPITE OF OTHERS — YOU FEEL ALONE, WITH THE SUN OVER YOU AND NOTHING BETWEEN YOU AND THE SEA BUT THIS MAN MADE MACHINE, A LANCASTER THAT ONCE SEEMED SO HUGE BUT DWARFED NOW BY THE IMMENSITY OF SPACE; YET IS WINGING ITS WAY CONFIDENTLY TOWARDS SOME KNOWN PLACE ON THE OTHER SIDE OF THE WORLD, THE AZORES NEWFOUNDLAND AND FINALLY GOOD OLD CANADA.</p>						
GRAND TOTAL (Cols. (1) to (10))						TOTALS CARRIED FORWARD
- 698 Hrs. - 40 - Mins.						

One of the Canadian Lancasters was lost on the long flight home. KB764 was ditched in the Atlantic on the approach to the Azores after multiple engine failures. As well, an air-gunner was killed in a taxiing accident on the island.

The flights were challenging and thought-provoking.

Calgary pilot Ron Jenkins flew his 434 Squadron aircraft back to Canada during June 1945. The above logbook entries show that they landed on three engines after three of the five legs. Regarding the text on the lower section of the page, Ron wrote, "This effort was written by my mid-upper gunner on the way across, Rudy St. Germain, Timmins, Ontario. I thought it was a good thought."



The first RCAF Lancaster arriving at Scoudouc, New Brunswick



Lancasters at Scoudouc, New Brunswick -FM159 may be one of these.



A remarkable display of aircraft at Scoudouc on September 5, 1945. Note several Lancaster (beyond at left), one of which may be FM159. [Courtesy: Mark Peapell]

Command for use against targets in Japan. The RCAF was to be very involved.

The unit was scheduled to be deployed to Okinawa in the lead-up to the Allies' invasion of Japan that was in the planning stage. However, following Japan's surrender after the Americans bombed Hiroshima and Nagasaki it was no longer necessary.

Cliff Black, the wartime c/o of No. 428 Squadron, was involved in the organization of Tiger Force. He recalled that, following its disbandment there was concern that the damp, salty climate would begin to cause corrosion on the Lancasters that were being stored in New Brunswick and Nova Scotia. No decision had been made as to what was to become of FM159 and the others so



**Lancasters at Pearce, Alberta -FM159 may be one of these.**

it was decided to fly them to a drier climate. Most of the British Commonwealth Air Training Plan bases in Alberta had, by this time, been closed but a few were to be used as storage sites for the bombers.

Cliff led one of dozens of groups of Lancasters that were flown west during the late summer and fall of 1945. He left Yarmouth on September 8 with a group of six aircraft. His abbreviated crew was made up of a flight engineer and a navigator.

Many residents of western Canada must have been shocked to hear the roar of the huge warplanes as they travelled across the prairies. The aircrew aboard knew the horror of war, but they had beaten the odds and survived and were understandably elated. As they crossed the prairies and before landing their aircraft, many buzzed towns and farms at extremely low level, frightening both residents and livestock.

Cliff recalled that the former No. 2 Flying Instructors School at Pearce, Alberta, fifteen kilometres northeast of Fort Macleod, wasn't designed to handle aircraft such as the Lancaster. He was shocked to see the short runways but fortunately there was a headwind as his group landed. Cliff touched down at the very end of the runway and managed to stop in time but a couple of his group did not and ran off the end of the runway. Cliff and his crews then boarded a Dakota for Calgary and returned by train to Nova Scotia.

On 22 September, F/O Maxwell took off from Scoudouc on the first leg of FM159's transfer to Pearce. His navigator was F/O Lachlin Locke. Following a two hour and thirty-five minute flight the aircraft landed at St. Hubert, Quebec where it remained until the third of October when F/O Maxwell continued on to Winnipeg. The next day FM159 flew to Pearce.

13-7-45	1140	DC <sup>3</sup> #571	170 I.C. SQUN	PASSENGER	PEARCE	TO		
13-7-45	1390	DC <sup>3</sup> #465	F/L BURTON	PASSENGER	CALGARY?	TO GREENWOOD		:30
18-7-45	1640	DC <sup>3</sup> #165	F/L BURTON	PASSENGER	GREENWOOD	TO SCUDOC		:35
22-9-45	1012	LANC FM 159	F/O MAXWELL	NAVIGATOR	SCUDOC	TO ST HUBERT		2:35
3-10-45	1100	LANC FM 159	F/O MAXWELL	NAVIGATOR	ST HUBERT	TO WINNIPEG		6:15
4-10-45	1135	LANC FM 159	F/O MAXWELL	NAVIGATOR	WINNIPEG	TO PEARCE		3:35
4-10-45	1625	DC <sup>3</sup> #464	I/L SIMMS	PASSENGER	PEARCE	TO LETHBRIDGE		15
4-10-45	1140							25

**A portion of F/O Locke's logbook showing entries for FM159's delivery from Scoudoc, New Brunswick to Pearce, Alberta. F/O Locke had served on Halifaxes and Lancasters with 434 Sqn.**

Numerous Lancasters had been delivered to Pearce during the fall of 1945. Seventeen of this armada were squeezed into the hangars and placed into long-term storage. The remainder were neatly arranged in long rows on the tarmac. They had their engines run-up each morning until many were flown to other storage hangars in Alberta over a six month period. This operation was carried out by Ray Wise and three other RCAF mechanics.

On March 18 1946, FM159 was airborne again for a short hop to the former BCATP base at Fort Macleod where it was placed into long term storage in one of the former No. 7 Service Flying Training School hangars, likely chosen because it was a lower-time aircraft than many of the others.

The Lancasters that remained at Pearce began to deteriorate. Many were disposed of by selling them to farmers. A Lancaster could be purchased for a few hundred dollars and its parts put to many uses on the farm.

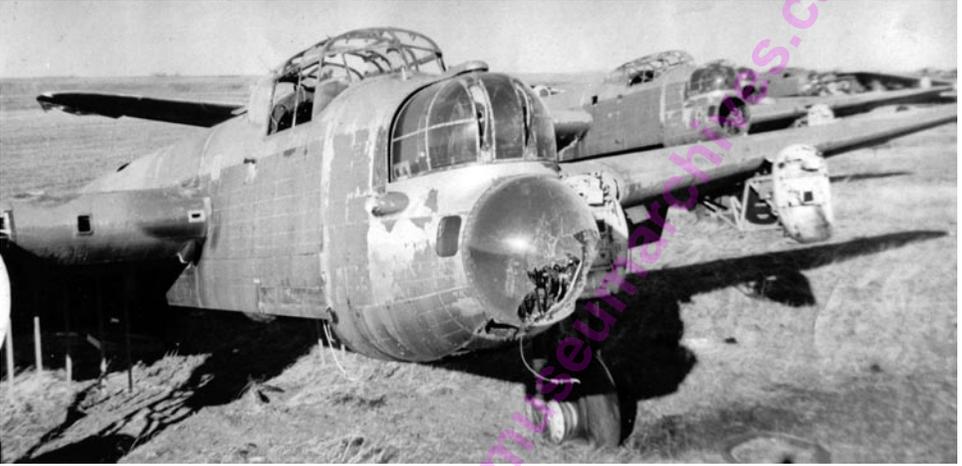
To begin with there was lots of engine and hydraulic oil and hydraulic cylinders that could be adapted to various uses around the farm. The aircraft also provided a seemingly endless supply of wire, metal tubes, and sheet aluminum. Some of the more novel ideas were placing Lancaster tail wheels on threshing machines, using crew door ladders for checking the level in grain bins, placing



**FM159 was with some illustrious company at Pearce including KB732 that flew 84 operations, the most of all the Canadian-built Lancasters.**

bomb-bay doors as borders of flower gardens, using propeller spinners as plant pots, and incorporating escape hatches (with windows) into the construction of outhouses in order to brighten their interiors.

Luckily, FM159 was safe and dry in a hangar at Fort Macleod.



**Deteriorating Lancasters at Pearce**



**Victor Leonhardt tows No. 420 Squadron Lancaster KB941 home to the farm. The bomber was purchased for \$350.**



**Lancaster 'Dauntless Donald' on a family farm**

# RCAF SERVICE AT GREENWOOD

## *No. 103 Rescue Unit*

Of the 288 Lancasters that flew back to Canada following the war, approximately one hundred were re-mustered for post-war service. Fortunate to be one of these, FM159 was awakened from its five years of inactivity at Fort Macleod and was airborne once more on May 21 1951 when F/Lt Sherwood and his flight engineer, Walter Morse, flew the aircraft to the RCAF station at Calgary. Other Lancasters continued to be stored at Fort Macleod for another few years.



**Lancasters at Fort Macleod in the late 1940's**





**'Rabbit's Stew' (KB903) is shown upon arrival at one of Avro's hangars at Malton, Ontario where it was converted to a Maritime Patrol configuration. It went on to serve with No. 404 Squadron.**



**A shiny, recently re-configured Lancaster outside Hangar #5 at Avro's facility at Malton, Ontario**

Beginning in 1946, many of the 'low-time' Lancaster Mk X's were modified for service in Canada with the RCAF. There were a total of nine variants of post-war Lancasters, some of which involved dozens of aircraft and others only a single one such as the Lancaster that was used as a flying test-bed for the Orenda jet engine. Fourteen were modified for aerial photo reconnaissance, eventually mapping much of northern Canada.

FM159's career was influenced by the changing international situation in the early 1950's. Following the increase in tension between East and West culminating in the Berlin Airlift of 1948 and what Winston Churchill christened as, 'The Iron Curtain'. Canada reacted in several ways, one of which was the modification of seventy Lancasters to become maritime reconnaissance (MR) aircraft, primarily in an anti-submarine role.

This involved the installation of radar and sonobuoy operators' positions (including observation windows) in the rear of the aircraft and the removal of the mid-upper gun turret. Initially both the front and rear gun turrets remained operational.

**CERTIFICATE OF MANUFACTURER'S MODIFICATIONS**

Page No. ....

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\*AIRFRAME

~~XXXXXXXXXX~~ **Lancaster** ~~XXXX~~ or **10 MR** SERIAL No. R.C.A.F. **PM 159**

Mark MAKERS .....

\*~~XXXXXXXXXX~~ **overhauled**  
~~XXXXXXXXXX~~ BY **Dellavilland A/C Co. Canada** DATE **Nov. 13/53**

Certified that the following manufacturer's modifications have been embodied during  
~~XXXXXXXXXX~~ **overhaul and conversion.**

Previously embodied: 171 178 189 224 227 250 253 264 273 279 282  
 285 290 297 457 464 616 624 643 649 650 692 659 660 720 AM.1294

Mods embodied at Dellavilland: 275 302 316 331 404 405 413 415 426 435 456  
 462 469 470 471 473 480 491 492 503 506 518 520 521 523 524 525 528 529 533  
 535 537 538 541 542 545 546 548 549 550 551 553 555 556 557 558 564 566 567  
 569 577 601 604 610 611 612 614 626 627 628 634 638 640 641 642 645 648 651  
 653 654 655 656 657 658 661 662 663 664 665 666 669 670 671 672 673 675 676  
 677 678 680 685 686 688 689 690 693 695 705 706 707 708 709 710 711 713 714  
 715 726 727 728 730 731 735 736 737 738 739 743 744 746 795

Modifications deleted from B & R aircraft: 445 458 483 531 534 554 579 605  
 519 522 532 560

Mods deleted from A.S. & R. aircraft: 322 428 450 452 505 513 453

\*Strike out where inapplicable.

NOTE: 1. R.C.A.F. UNITS. The Modifications listed on this certificate are of no consequence unless referred to by A.F.T.E.O., Special Inspection, or other notification from A.F.H.Q.

2. This certificate is equivalent to A.M. Form 1125.

*A. Downey*  
 Inspector in Charge or Chief Inspection Officer  
 THE DE HAVILLAND  
 AIRCRAFT OF CANADA  
 LTD. TORONTO, ONT.  
*J. J. ...*  
 Reg. Air Member for Aeronautical Engineering

The wartime H2S system continued to be the 'downward looking' radar. An additional 400 gallon fuel tank was placed in the bomb-bay to increase patrol range. As well, provisions were made for a co-pilot and a cooking stove was installed in the centre section. With their complete conversion, including upgraded electronics, radar, and instrumentation, and a new paint scheme, the aircraft were now referred to as Lancaster 10MR's.

Although both Avro and De Havilland Canada were involved in the conversions, De Havilland was the contractor that undertook the conversion of FM159 from its wartime configuration to that of a Lancaster 10MR. The cost of the modifications was \$163,000 and on November 13 1953, no longer carrying the black and camouflage paint scheme of a wartime night bomber, a shiny, silver FM159 emerged as a modern maritime reconnaissance aircraft ready to finally play a significant role with the Royal Canadian Air Force.

### **POSTED TO GREENWOOD**

FM159 began its postwar operational service with Maritime Command of the RCAF on October 29 1953. Based at Greenwood, Nova Scotia, it was one of five Lancasters specifically attached to No. 103 Search and Rescue Unit. At this time, the unit also operated two Dakotas, two Cansos, a Norseman and a single helicopter.

Greenwood had become the hub of Lancaster operations in Canada. As well as No. 103 Search and Rescue Unit and the Operational Training Unit, two maritime reconnaissance squadrons, No. 404 and No. 405, operated Lancasters out of Greenwood. It appears that the aircraft were shared amongst the units as required. One pilot recalled that it wasn't that uncommon for the squadrons to swap aircraft on an as needed basis. However a friendly rivalry amongst the three groups did develop as did a sense of ownership for the individual aircraft. No. 404



painted the spinners of its Lancasters blue, No. 405's were yellow, and No. 103's were painted red.

It is not clear what markings FM159 carried during its time at Greenwood. In early 1953 it is known that No. 103 aircraft carried the letter code 'CH'. No. 404 Squadron Lancasters were originally marked 'AF' with a letter code for the particular aircraft and No. 405 Squadron aircraft were marked 'AG'. Sometime towards the end of 1953 it appears that the RCAF replaced the individual aircraft letters with the last three digits of the aircraft's serial number. The two letter squadron code for No. 404 Squadron Lancasters was changed to 'SP' and the code for No. 405 Squadron Lancs was changed to 'VN'. It seems likely that FM159 carried the markings 'SP159' during its days at Greenwood.

A photograph taken in Florida during 1953 and captioned '404 Squadron' shows the nose of FM159 with the markings 'M59'. The rest of the fuselage is hidden behind Lancaster FM172 whose fuselage is marked with 'SP172'.

The records for FM159's service at Greenwood are sketchy but it is known that it was flown by a pilot named Desaulnier to participate in a bombing and gunnery exercise on July 6 1954 and by a pilot named Lewis for torpedo trials on August 3. Earl Marlin, the navigator on both of these flights, recalled that although, ". . . the aircraft was carried on No. 103 Squadron inventory, the nature of the two exercises suggests that the it was configured for maritime reconnaissance rather than Search and Rescue."

Earl recalled the dangers presented by the east coast climate, "Back in the early 50's, very few squadron pilots had the requisite hours and experience to qualify for a 'green ticket' instrument rating. A 'green ticket' allowed the pilot to fly in instrument flight conditions within controlled airspace. Most of the maritime reconnaissance missions were flown at 1000 feet or less over the ocean. It was only on return that things got a bit dicey as the pilot attempted to maintain visual contact with the ground when the ceiling was often 4-500 feet or less. I recall at least one aircraft (KB966) lost under those circumstances when it flew into North Mountain near Greenwood on returning to base."

FM 159 served with No. 103 Rescue Unit during one of the unit's busiest weeks of operations of May 1954. A Navy Avenger returning from a deployment to Bermuda was thought to have gone down about 160 kilometres south of Yarmouth, Nova Scotia. A



**FM159 (centre) and two other Greenwood-based Lancasters at the United States Naval Air Station in Jacksonville, Florida in 1953.**

[Courtesy Atlantic Canada Aviation Museum]

number of No. 103 aircraft, likely including FM159, scoured the area for the following six days. One of the unit's Lancasters spotted and photographed an oil slick. After six days, the search was called off and it was sadly assumed that the crew had ditched where the slick was detected and went down with their aircraft.

While based at Greenwood, FM159 made at least one flight to Florida where it was photographed by the U.S. Navy at the Naval Air Station in Jacksonville. Other than the photo of its floor section under construction, this is the earliest photo of the aircraft that the museum has obtained.

It appears that the aircraft's flying time was limited, a November 15 1954 log entry in its, 'Flying Time Record' indicating only 126 hours since 'New Overhaul' which presumably was the modification to maritime reconnaissance prior to its arrival at Greenwood.

The date upon which FM159 completed its service at Greenwood is not known although it arrived at Fairey Aircraft at Eastern Passage, Nova Scotia (Dartmouth) for further modifications on January 31 1955, its flying time log showing 364 hours. The modifications made by Fairey Aircraft appear to have been primarily involved with electrical systems and included the installation of a new downward looking radar system.

During its time at Greenwood, FM159 continued to use the wartime H2S system with its large, streamlined perspex cover. This

was removed and replaced with the APS 33 high definition system that enabled a snorkelling submarine to be detected, day or night, at a distance of up to twenty nautical miles if the seas were calm. This radar had a smaller, though more obtrusive looking, cover below the rear fuselage.

The modifications were completed on May 18 1955 and FM159 was parked, waiting two weeks for airmen from the distant west coast to arrive so that its could begin service with 'The Demons' of No. 407 Squadron.

RCAF L14-6B 10M 3-54		SERIAL NO. 1			
MANUFACTURERS AND OVERHAUL MODIFICATIONS					
AERO-ENGINE Type: LANCASTER		Mk: 10MR	Ser. No. FM 159		
[Delete as applicable]					
A.F.E.O. Ref. No.	Mfrs. Ref. No.	Class	Embodied By (Mfrs. or Contractors establishment or RCAF Formation)	Date Embodied	Certified this Mod. embodied. (Sig of auth Inspector)

R.C.A.F. 216A  
10M-8-52 (7400)

## CERTIFICATE OF MANUFACTURER'S MODIFICATIONS

Page No. ....

~~XXXXXXXXXX~~ Series R.C.A.F. FM 159

~~XXXXXXXXXX~~ TYPE Lancaster or 10 MR SERIAL No. MAKERS .....

~~XXXXXXXXXX~~ Modifications by Fairley Aviation Co. of Can. Ltd. DATE May 18, 1955

~~XXXXXXXXXX~~ MANUFACTURED BY Fairley Aviation Co. of Can. Ltd. DATE May 18, 1955

Certified that the following manufacturer's modifications have been embodied ~~XXXXXX~~

~~XXXXXXXXXX~~

F.A.C. Modifications: FL. 78. 85. 87. 88. 90. 92. 93. 94.

A.V. Roe Can Mods: 741. 742. 817.

A.V. Roe Mods: 657A. 657B. (found embodied)  
741.

~~XXXXXXXXXX~~  
F1-76 - FAC - 23 YES+

~~XXXXXXXXXX~~

\*Strike out where inapplicable.

Norm: 1. R.C.A.F. UNITS. The Modifications listed on this certificate are of no consequence unless referred to by A.F.T.E.O. Special Inspection, or other notification from A.F.H.Q.

2. This certificate is equivalent to A.M. Form 1125.

*[Signature]*  
Inspector in Charge or Chief Inspection Officer  
at Fairley Aviation Co. of Can. Ltd.  
for Air Members for Aeronautical Engineering

# RCAF SERVICE AT COMOX

## *No. 407 Squadron*

In the immediate post-war period coastal defence was the responsibility of the Royal Canadian Navy. By the end of the decade however, there was a growing threat posed by Soviet submarines in Canada's Pacific waters. No. 407 Squadron, which operated with distinction as a Coastal Command squadron with the Royal Air Force from 1941 until 1945, was reformed on July 1 1952 at RCAF Station Comox on Vancouver Island. The squadron was designated as a maritime



**A No. 407 Squadron Lancaster taking off from Comox**

reconnaissance (MR) unit and became the first operational squadron on the west coast since the end of the war.

As well as maritime reconnaissance, the squadron was tasked with long-range search and rescue, radio counter-measures, and convoy escorts. The main anti-submarine equipment on board the Lancasters was the APS 33 radar and the CRT-1 sonobuoy system.

The Lancaster MR's at Comox were manned by a crew of eight that included two pilots, a flight engineer, two navigators (one located at the table in the cockpit and another in the nose), three radio officers (including a radar operator above the bomb bay and two more in the rear fuselage (one to operate the sonobuoy receiver and another to drop smoke markers or sonobuoys down the flare chute).

Regarding the gun turrets and machine guns, former 407 Squadron navigator Terry Munday recalled, "The front turret was operational but the guns were only installed for bombing and gunnery exercises when the aircraft would carry depth charges, practice bombs, and about one thousand rounds of ammunition for the twin .303 Browning machine guns. The lower bomb aimer position was operated by the second navigator and the guns were operated



**No. 407 Lancasters over the BC coast as photographed from FM159.  
Note that RX996 still has the wartime H2S radar dome  
whereas RX857 has had the APS-33 modification.**

[Courtesy Duke Dawe]

by one of the radio operators. The rear turret was equipped with a rear-facing camera used to photograph the results of the bombing runs and the accuracy of the bomb aimer.”

No. 407’s first Lancaster, KB958, arrived in Comox on July 9 1952. Carried on the fuselage was the RX code that was to be the squadron’s identifier.

## **FM159’s SERVICE WITH No. 407 SQUADRON –1955**

On June 1 1955, F/O Bob Magee, with a crew that included Fred Burton, climbed into FM159 which had been returned to Greenwood following its modifications at Dartmouth. They flew a one hour air test, concluded that the aircraft was functioning properly, and took possession on behalf of No. 407 Squadron. An 8.5 hour flight the following day took them to Winnipeg and, after seven more hours in the air the following day, FM159 touched down at its new base in Comox, on the eastern coast of Vancouver Island.

Almost immediately, FM159 was off on what was one of its most exciting adventures. There were some preliminary flights and preparation at Comox and then on June 27, F/O Harry Addison and crew climbed aboard and headed for the high Arctic.



**FM159 at Yellowknife en route to Resolute Bay -June 28 1955**  
[Courtesy Norm Sharratt]



**FM159 over Resolute Bay prior for departure to Isachsen on July 12 1955. Note Lancasters FM224 and KB957 below.**

[Courtesy Duke Dawe]

### **ARCTIC ICE PATROLS**

As part of an annual operation referred to as 'Nanook', various Lancaster units took part in ice reconnaissance patrols in support of northern base supply operations in the area bounded by Thule, Greenland and RCAF Stations Alert, Eureka, and Resolute Bay. The aircraft provided an important service and there were valuable training opportunities but conditions were less than ideal. Landing strips were gravel and there was little in the way of landing aids, servicing facilities, meteorological services, or accommodation for the crews.

Lancaster FM159 was tasked to fly designated routes with an ice observer to chart the colours, cracks, leads, and movement of the sea ice so that the re-supply of the Dew Line (Distant Early Warning) radar sites could be completed at the earliest possible date. The flights were lengthy, some as long as ten hours.

After leaving Comox, FM159 landed at Yellowknife after a flight of five hours and ten minutes. According to the captain, Harry Addison, the landing was a memorable one. Difficulties were encountered by the co-pilot who was in control and FM159 hit the runway so hard that Harry, "checked to see if the undercarriage had been driven up through the wings." The following day, a flight of five



**Lancaster FM159 and crew; Resolute Bay, 1955**  
**(l-r) Sgt Lloyd Wiseman, f/e; F/O Ross McKendry, 1st Pilot; F/O Harry Addison, Capt; F/O Don Woodcock, Radio Operator; F/O Tom Swindells, 2nd Navigator; F/O Bill Murdock, 1st Navigator; F/O Norm Sharratt, Radio Officer**  
[Courtesy Harry Addison]

hours and forty-five minutes took FM159 to Resolute Bay on the southern coast of Cornwallis Island (latitude 75 degrees).

Initially, four uneventful 'ice reces' were flown out of Resolute Bay. Then on July 12, with F/O Jack Bailey at the controls, FM159 flew a weather reconnaissance to Isachsen on the northern part of Ellef Rignes Island (latitude: 79 degrees).

Following another ice reconnaissance flight, FM159 flew what is likely its most memorable flight, a twelve hour and twenty-five minute 'ice recce' followed by a diversion to Canadian Armed Forces Station Alert on Ellesmere Island.

### **THE ALERT DIVERSION -by Harry Addison and Norm Sharratt**

This is the tale of a Royal Canadian Air Force Lancaster that made an unscheduled visit to the northernmost point in Canada, Alert, on the northern tip of Ellesmere Island (latitude: 82.5 degrees north), just 490 miles from the North Pole.

We were doing what was called the west leg from Resolute, about a seven hour patrol. Roughly three hours from Resolute, we received word that they were experiencing a 'white out' due to ice crystal fog and visibility was below limits. We were advised to fly to our alternate, which was Thule, Greenland.

About half an hour out of Thule, we were advised that they had an indefinite ceiling with zero visibility in 'ordinary fog'. Several USAF aircraft had attempted to land on ground control approaches but none had succeeded and were diverted. We then checked the weather at Sonderstrom and Bloue West One. While they had been as high as a 700 foot ceiling and half mile visibility they were now settling into similar conditions as Thule.

Now what? When we asked for another alternate, we were advised that although they had not heard from Alert lately, the weather there was forecasted to be improving. But they only came on the radio every four hours so they didn't know for sure. So, trusting in the wiles and magic of the met forecaster we headed north to CFS Alert on the northernmost point of Ellesmere Island.

We knew it was a fair piece up the road (500 miles) and we had no map . . . and besides, the channel between Ellesmere Island and Greenland was solid ice at this time of year. Lloyd Wiseman, our flight engineer, was frantically doing all sorts of engine configurations to increase our flying time as we were getting critically low on fuel. A former aero-engine technician, he had adjusted our constant speed units to 1600 rpm on arrival at Resolute Bay, so we flew at 10,000 feet, throttles well back and a slow steady descent for Alert. All things being equal, if we ran out of fuel, at least there was a solid, slippery ice surface for a forced landing. Box lunches, usually ignored unless you liked spam and mustard, chicken noodle or tomato soup, and juice were seen to disappear in rapid order.

As we descended we became visual at about 6000 feet and, true to form, nothing but ice and snow. About forty miles out of Alert they came on with their regularly scheduled weather broadcast and we were



**CFS Alert in 1971. Note the runway on the peninsula beyond the station.**

[Courtesy S. MacDonald]

relieved to hear that Alert was practically clear. Twenty miles out we made contact on the VHF voice radio and descended to 1000 feet for landing. Fuel gauges were hitting the stops, so we kept all turns to a minimum down to final over the sea ice, landing uphill. Never having landed a Lancaster with so little fuel on board, we must have floated two-thirds of the runway before touching down. After a few 'Hail Mary's' the pale faces returned to colour and, as we turned off the runway, number four engine died. We shut down number one and taxied into the ramp on the two inners. We landed after a flying time of 12 hours 25 minutes. Isachsen was the only other airstrip available and that was 45 minutes away. Needless to say we were all relieved to be on the ground.

On landing we were met by the Alert 'Inmates', seventeen or eighteen in total. This was the first Lancaster to land at Alert since July 1950 when Wing Commander D.T. French of No. 405 Squadron based at Greenwood had crashed while dropping badly needed bulldozer parts from an altitude of 1000'. The parachute had caught on the horizontal



**Those who died aboard  
W/C French's aircraft were  
buried at CFS Alert.**

[Courtesy David R. Gray]

stabilizer and fouled the controls. The nine people on board, including two civilian observers, were all killed when the Lancaster (KB965) crashed and exploded as CFS Alert personnel watched.

The Alert cook baked lemon meringue pies and made a huge cauldron of popcorn to celebrate our arrival. Before heading off to bed the crew loaded 1200 Imperial gallons of fuel from barrels, by hand wobble pumps. Aircraft fuel caches in the Arctic are always suspect with additives, water, and rust being a concern.

Needless to say on takeoff the next day we climbed to 10,000 feet in the vicinity of Alert before heading south. The flight was a mere three hours and forty-five minutes, weather was good, and Lanc159 chugged along smoothly southward and landed safely at Resolute Bay.

The following day F/O Addison headed FM159 south again, arriving at Comox on July 21.

## **ESCORTING HMCS ONTARIO**

Two weeks after its return from the Arctic, FM159 was heading even farther south. HMCS Ontario, a Royal Canadian Navy Cruiser, had just passed through the Panama Canal enroute to Victoria and No. 407 Squadron deployed three of its aircraft to engage in escort duties and to complete practice attacks so that the cruiser's crew could hone their anti-aircraft gunnery skills.

After taking off from Comox, FM159 landed at the U.S. Navy's base at Los Alamitos near Long Beach, California. As HMCS Ontario moved north, the crew made use of the navy's Alameda base near Oakland and finally its home base at Comox as it escorted the Ontario to British Columbia.



**HMCS Ontario as seen from FM159's cockpit**  
[Courtesy Duke Dawe]

## FM159's SERVICE WITH No. 407 SQUADRON -1956

As was the case during all of FM159's Comox years, most of FM159's flying during 1956 was a series of exercises and patrols based out Comox. However there were several out of the ordinary flights and assignments.

### FROM THE LOG OF LANCASTER FM159 -by Bert Clark

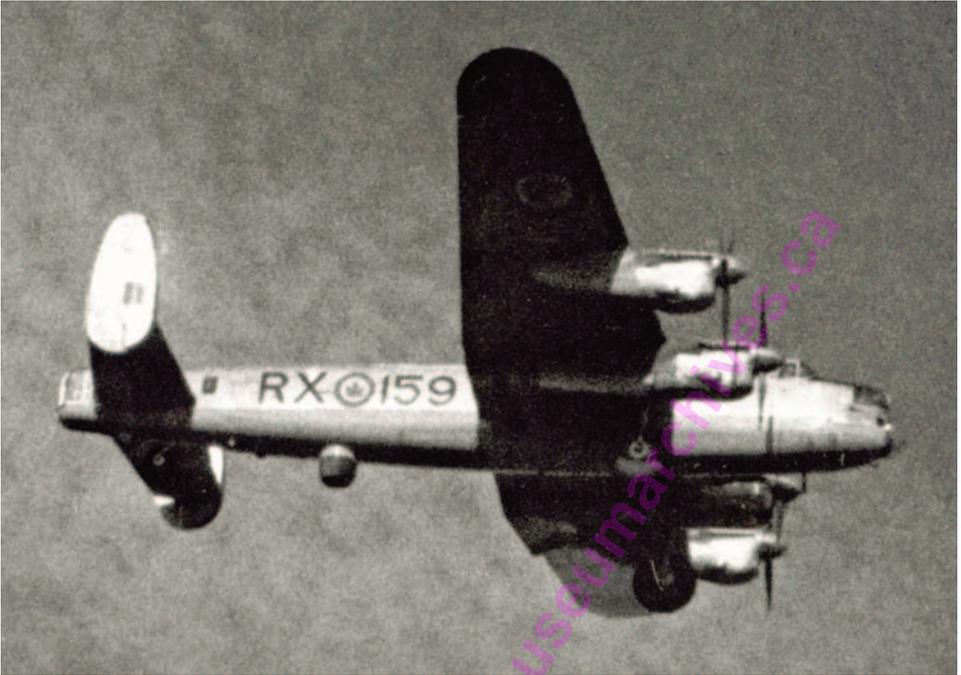
Just after midnight on the morning of February 19 1956, my crew and I took off from RCAF Comox for a night navigation trip. Our destination was Ocean Station Papa, a Met ship stationed 300 miles off the west coast of Vancouver Island. Whenever we went out to the ship we dropped off a waterproof bag containing the latest Playboy and newspapers.

After climbing over the mountains I let down to 1500 feet and set heading. Not only was it dark but we were also in solid cloud (situation normal). About 200 miles out No. 4 engine (starboard outer) suddenly exploded and burned with a great shower of flames and sparks. Co-pilot F/O Erickson feathered the propeller and activated the fire extinguisher which in short order put out the fire. The Radio Officer informed Operations of what had happened and in order to return to base by the normal route I began our climb to 10,000 ft. to get over the mountains into Comox. There was absolutely no problem. I'm sure we could have done it on two engines. The Lanc is a superb aircraft.

While climbing to altitude, the Radio Officer received a message from Operations suggesting that we return by descending and flying around the south end of the island instead of returning over 'the top'. I instructed him to inform Ops that all was well and we would maintain course.

At this point the flight became one of the more memorable in my 22 years as an RCAF pilot. Everything was quite normal. It was a dirty, black, rainy, foggy night and communications were difficult. I received another message from Ops which directed me to return via the low level circuit around the island.

So I let down to 1,000 ft. and headed south. Moments later we lost all communications, Loran and ADF! As far as navigation went, we were blind. It's a strange feeling to be moving along at 180 knots into a black void not knowing where you are. The Navigator gave me a course to clear the island and F/O Erickson



**FM159 flying with No. 407. This is the only known photo of the museum's Lancaster in flight.**

kept up a continuous 'Mayday' on R.T. Response came from Neah Bay (US Search & Rescue) who suggested they send out an aircraft with all lights flashing to guide us. They were airborne in 15 minutes and we then had someone to talk to. They stayed at 1,000 ft. and we went to 300 ft. as we passed through the Straits of Juan de Fuca without being able to see the lights of Vancouver. In a few moments the ADF came back on and communications suddenly were re-established with Comox. With a ceiling still only 400 ft. I did a GCA approach.

In retrospect, maybe the incident was not really all that important. Perhaps the real story is the incredible Lancaster. In this story it was 159. She performed superbly!

After 5:20 hours of flight I parked on the tarmac and cut the engines. We all sat for several minutes and said nothing. I'm sure we were all thanking the old girl for bringing us safely home.

## **SEARCHING FOR STUBBS AND MILLER**

In late March 1956, FM159 flew a series of four flights searching for an RCAF T-33 jet that had gone down. The aircraft, like FM159, was based at Comox and had disappeared during a short training flight on March 22. The pilot was F/O Gerald Stubbs and F/O James Miller was in the back seat. While returning to Comox across the Strait of Georgia, they ran into bad weather about twenty-five kilometres from base and disappeared from radar.

FM159 made four flights totaling over fifteen hours looking for the lost airmen. The search was abandoned after a total of seven hundred hours. Forty-one years later the aircraft was finally located in very rugged terrain near the resort community of Whistler, north of Vancouver.

## **RED ROUTE -by Fred Burton**

On April 10 1956, FM159 participated in 'Red Route', a NORAD penetration exercise designed to test the ground radar and interception readiness and capability of both Canadian and American interceptor squadrons. After leaving Comox, Lanc 159 went north into the interior of BC and dropped down into the valleys of the Rockies to avoid detection by radar. The Canadians did catch us and shortly after we were jumped by CF-100's.

We continued on our southerly track and crossed into Washington state with no further interception. We then climbed to about 20,000 feet and began our simulated bomb run over the city of Spokane. We made three passes before a USAF F86 came up to see who we were! After having successfully wiped Spokane off the map, we landed at Comox following the 8 hour and 40 minute flight and painted another bomb on the side of the aircraft for a successful mission.

## **OPERATION NEW BROOM VI**

On August 24, Cy Dunbar and crew took off in FM159 for a twenty-three day trip that included a visit to the Azores and participating in 'Operation New Broom VI' based at Torbay, Newfoundland.

After stopping in Winnipeg and Ottawa, FM159 spent a few days in Torbay, just north of St. Johns. Then, on September 5, the crew set out on a seven hour flight to the Azores, a group of Islands 3000 kilometres to the southeast and 1800 kilometres from the



**Lancaster FM159 and crew; Torbay, Newfoundland, 1956  
(l-r) F/O Al Boulton, Radio Officer; F/O Terry Munday, Navigator;  
F/O Don Elliot, Navigator; F/O Roy Jobling, Pilot; F/O Cy Dunbar,  
Captain; LAC Jack Mort, Flight Engineer; F/O Norm Sharratt,  
Radio Officer; F/O Jack Britney, Radio Officer; F/O Bob Mazey,  
Navigator; Cpl Dayman  
[Courtesy Terry Munday]**

coast of Portugal. Two days later, an eight hour flight found FM159 safely back at Torbay.

'New Broom VI' was an anti-submarine exercise and involved a series of three long flights in as many days, the lengthiest being just under ten hours. Cy Dunbar recalls that, "During anti-submarine exercises we would be working in concert with military ships and aircraft to try to detect, localize, and carry out simulated attacks on submarines engaged in the same exercises. Military aircraft, ships, and submarines from Great Britain, the U.S.A., and other NATO countries would take part."

Following three days of rest, FM159 flew home to Comox, including a ten hour, non-stop leg from Ottawa to Calgary.

On November 22, the front (Fraser Nash FN-5) gun turret's drive was removed. According to Fred Burton, "When I first went to the squadron, we had two .303 Brownings in the nose for gunnery practice."

## **SEARCHING FOR A TRANS-CANADA AIRLINES NORTH STAR**

Late in 1956, FM159 found itself again searching for a lost aircraft. On December 9 1956, a Trans-Canada Airlines North Star left Vancouver for a flight to Montreal with several stops along the way. An all-star football game had just been played in Vancouver and the fifty-nine passengers aboard included many of the football players. Like the Lancaster, the North Star was powered by four Rolls-Royce Merlin engines.

When the aircraft was over the mountains east of Hope, British Columbia, the pilot reported a possible fire in the No. 2 engine and that he was turning back towards Vancouver. It is thought that the aircraft encountered icing and perhaps had an additional engine problem at a lower altitude after passing over Hope. It was not heard from again.

A long and fruitless search began by military and civilian aircraft. Lancaster FM159 was ordered to fly four different search flights, the last one taking place on December 31. The North Star was found the following spring by a party of mountaineers. It had struck Mount Slesse near Chilliwack at an altitude of 7600 feet.

After a year and a half of operations with No. 407, the hours were starting to accumulate on FM159. As of December 21 1956, 1230 hours had been flown since its overhaul by De Havilland in 1953.



**A Trans-Canada Airlines North Star**

## FM159's SERVICE WITH No. 407 SQUADRON – 1957

### NORTH TO ALASKA

FM159 continued to fly its regular exercises, patrols, and anti-submarine flights throughout 1957.

One highlight was a winter trip to Kodiak Island off the south coast of the Gulf of Alaska, near the Aleutians. F/L Smith and crew set out on February 27 but after flying north for three and a half hours, deteriorating weather forced them to return to Comox. Fin Sinclair was the flight engineer aboard FM159. He recalled that landing at Kodiak was not something to be attempted in questionable weather. Kodiak has a long runway but faces into a high mountain. The American met men also warned us of a sudden wind squall caused by cold air flowing down the side of this mountain onto the runway, a phenomenon known locally as a 'Willywall.'"

The following day the aircraft reached the island after a seven hour flight. FM159 flew three antisubmarine exercises in cooperation with the U.S. Navy over the next four days. Each flight was about eight hours in duration. Fin's memories include long flights along the Aleutian Chain of islands and on a clear day being able to see a smoldering volcano. On March 10 the aircraft returned to Comox.



**FM159 taxiing for take-off to Alaska. Other No. 407 Lancasters including KB875, FM224, and KB894 line the tarmac.**

On May 1, FM159 took off from Comox and flew escort exercises with three Royal Canadian Navy ships. Two days later the aircraft escorted HMCS Skeena during an eight and one half hour flight before landing at Arcata in northern California.

### **TO BALLY KELLY FOR 'BULL RING'**

A highlight for FM159 during 1957 was another trip across the Atlantic with two other No. 407 Squadron Lancs (FM136 and KB925) to participate in an anti-submarine course at Londonderry, Northern Ireland. The course was made up of Royal Air Force, Royal Navy, U.S. Navy, and RCAF personnel and was designed to introduce No. 407 Squadron personnel to newly developed anti-sub techniques. Then FM159 was to fly over the Irish Sea to 'hunt' Royal Navy submarines. This part of the exercise was known as 'Bull Ring'. F/L Hetherington and crew left Comox on June 15.

Following stops in Winnipeg and Summerside, FM159 landed in Goose Bay, Labrador. During the nine hour flight from Goose Bay to Keflavik, Iceland, the aircraft encountered heavy airframe icing and could not maintain its altitude at eleven thousand feet. F/L Hetherington requested a lower altitude but the request was refused by 'Oceanic Control'. So FM159 drifted down through the clouds to 1500 feet where they were able to shed the heavy load of ice. Proceeding on to Keflavik, the crew spent the night in U.S. Navy barracks. The next day a four hour hop found FM159 in Prestwick Scotland.

Two days later F/L Hetherington flew the aircraft to RAF Station Bally Kelly on the northern coast of Northern Ireland. Duke Dawe, the flight engineer, recalled that Bally Kelly had an, "interesting runway . . . an old railway track went right across the runway and we had to wait for the train to pass before landing."



**FM159 on the ramp at Prestwick, Scotland en route to Bally Kelly  
[Courtesy Haydn Hurst]**



**No. 407 Lancasters FM159 and FM136 at  
Langar, Nottinghamshire in 1957**  
[Courtesy Chas Waterfall]

The Lancasters were parked and the crews spent the next four weeks engaged in a series of lectures and exercises that culminated with operation 'Bull Ring' where they worked with 'live' submarines, ships, and other aircraft.

Following 'Bull Ring', FM159 took off from Ireland on July 19 with F/L Finkbiner at the controls and flew to RCAF Langar in the Sherwood Forest district of England. This was the supply base for Canada's NATO squadrons that were operating in Europe at the time. Three days later FM159 took off for the Azores. The initial part of the flight was through the London Control Zone and this called for numerous frequency changes as they flew along.

The Lancaster had only a twelve channel VHF radio. In order to change to a different frequency the radio operator had to locate and install a fixed crystal. F/E Duke Dawe recalled the problem they had. "The crystals were kept in a nice metal box with the frequencies labeled next to them. All went well on the first crystal change, but then the radio operator opened the box upside down, and all the crystals fell to the floor. What a mess! Needless to say we flew right through London control without talking to anyone. They must have had to divert all the traffic away from us."

After landing at the Azores, FM159 spent two days there with compass problems. This would have been FM159's third visit to the Azores, as all the Canadian-built Lancasters paused on the island during their flights to Canada in 1945. The crew completed an eleven hour flight to Summerside, P.E.I. before carrying on to Winnipeg and reaching Comox on July 26.

By December 5 1957, FM159's flight log had accumulated a total of 1679 hours.

## FM159's SERVICE WITH No. 407 SQUADRON – 1958

### A FAREWELL FOR G/C WESTON

A highlight for the Squadron occurred on February 22. The commanding officer of RCAF Station Comox, G/C Ralph Weston, was being posted to Air Force Headquarters. To say farewell to the popular commander, all base personnel and their families gathered on the flight line to witness a mass launch and flypast of all twelve of No. 407's Lancasters. This was the first and only time all of the squadron's aircraft were in the air at one time. A former squadron member recalled, "At that time it was considered to be quite a feat to have every aircraft in the squadron airworthy -no 'hangar queens' at 407!" The ground crew took great pride in their work and the 85% rate of serviceability that it was able to maintain.

Duke Dawe, a flight engineer, flew with S/L Dave Avent as 'co-pilot/f/e'. The squadron was short of pilots so some navigators performed co-pilot duties that day as well.

Unfortunately, the weather didn't cooperate. Although the 'Stream Take-off' of the twelve Lancasters was exciting, unfortunately the Fly-Past never did come to pass. Duke recalls that there was a, "very low cloud ceiling of about 300 feet that topped out about three to four thousand feet. The original plan was to formate after the stream take off. I was in the number four position but we were in cloud just as the gear was retracted. Upon bursting out of the top of the clouds there were Lancasters going in all directions. We never did get in formation, just flew around in gaggles waiting our turn to do a GCA approach to Runway 11."



**All twelve of No. 407 Squadron's Lancasters about to take off for a flypast to honour G/C Weston. FM159 is the third in line.**

[Courtesy Don Jarman]

## THE NEPTUNES ARRIVE

The Lancaster era at Comox and with No. 407 Squadron was drawing to a close. In 1955 the RCAF had started to replace the Lancasters operating on the east coast with the P2V-7 Neptune. As the Soviet threat was seen as less of a concern on the west coast, No. 407 was not destined to receive its Neptunes until after the east coast units had been re-equipped with Argus aircraft.

With twin 3,500 horsepower Wright turbo engines and J34 jets the Neptune had a maximum speed of 405 mph and a range of 4350 miles. As well as these improvements, it carried much more advanced radar, acoustic, and sonobuoy systems than the Lancasters.

The first Lancaster to leave the squadron departed on May 26 1958. KB857 was flown to Fort Macleod and put into storage where FM159 had spent its time prior to becoming operational again.

But FM159 was still serving and in June, made its final trip to California, participating in exercises based at Arcata from June 19



**Lancaster KB948 and a P2V-7 Neptune**  
[Don Vance Collection]

until July 2. During September the aircraft made its last flight across Canada, travelling as far east as Summerside, P.E.I.

FM159's last operational flight with No. 407 Squadron for which we have a record occurred on October 20 when F/O Clark took her up for a final Exercise 1A.

It must have been with some nostalgia that F/L Brooks and flight engineer Duke Dawe left Comox at 8:50 on December 5 1958, flew across the mountains, and parked FM159 at RCAF Station Calgary (McCall Field). The aircraft had acquired a total of 2068 hours since its overhaul by De Havilland in 1953.

With little or no ceremony, the proud markings 'RX-159' that the aircraft had carried during its service with No. 407 Squadron were painted over.

Duke recalls that leaving Lanc 159 was a, "rather moving experience." He had flown in the aircraft 62 times, accumulating a total of 224.5 hours in the Lancaster and recalls that he, "always had a very great feeling for her."

The last of No. 407's Lancasters departed for Calgary on May 13 1959 and, in a tribute to wartime aircrew, was entirely manned by World War II Lancaster veterans. FM219's crew included F/L Ken Petch, F/L Jack Bray, and Sgt. Howard Witwer as flight engineer.

Although not designed as a maritime reconnaissance aircraft, the Lancasters had served well in that role. Clearly not the most comfortable aircraft to fly in, its crews had great faith in the aircraft and FM159 in particular is said to have been held in high regard.

Cy Dunbar, who flew numerous Lancasters including FM159, recalled, "Through it all I don't recall having a doubt about the ability of the Lanc to get us back safely. The superb design and the flying characteristics were such that average flying skills and proper use of aids at your disposal ensured a safe operation. I can't think of one bad handling fault that can be attributed to the Lanc."



Lancaster FM159 over RCAF Comox



# **A LANCASTER FOR NANTON**

## ***FM159's Odyssey - Across the Fields, Into the Valley, Through the River, Over the Railway, and Down the Highway***

During the spring of 1960, a number of ex-RCAF B-25 Mitchell bombers were flown into what was formerly No. 15 Service Flying Training School just west of Claresholm, Alberta to be stored pending disposal. After hearing from a friend who worked at Crown Assets of the possible availability of one of these aircraft, George White, a farmer who lived west of Nanton, wrote a letter to Crown Assets Disposal Corporation dated June 30 1960, inquiring as to the possibility of acquiring a B-25 as a tourist attraction and memorial for the Town of Nanton.

Crown Assets replied that indeed a B-25 was available and, in fact, was, "all tuned up and ready to go." However the price of \$2500 was more than George had planned on. Crown Assets advised that as an alternative, George might consider one of a number of Lancasters that were due to be put up for tender in the near future at the RCAF base twenty-eight kilometres east of Nanton. It was referred to as the Vulcan aerodrome.

During World War II the base had been the home of No. 2 Flying Instructor School and later No. 19 Service Flying Training School. When the school closed in April 1945, it became a storage facility from which a great many aircraft were sold as surplus and others, including Lancasters, were scrapped. Still in use in 1959, Vulcan had received four, recently retired No. 407 Squadron Lancasters. FM159 was one of these and on February 12 1959 a civilian crew had flown the aircraft from Calgary and FM159 touched down for the last time at the former BCATP station. The other Lancasters that were to be disposed of were KB894, KB949,



**Hangar #1 in 2010**

and FM136. By March 16 the engines and propellers had been removed and placed in storage and the aircraft were stored in hangars, awaiting uncertain futures.

Keith Jones was one of three brothers whose family farmed land adjacent to the aerodrome. In 1956 the family had moved into the old guardhouse on the base and utilized the cells as bedrooms. The boys regularly snuck into Hangar #1 and, "We acted as pilots, gunners, bomb-aimers, radio operators, mechanics, and the like. I was the best tail gunner and became accomplished as a fantasy pilot in those boyhood years. The sad part came when Dad told us the planes were to be destroyed and sold for aluminum by the pound."

But luck was with FM159 again. A delegation from Nanton, which now included Howie Armstrong and Fred Garratt as well as George White, made an offer of \$513 for the aircraft. It was accepted on August 11 with the aircraft to be made available on September 1. Later a group in Calgary purchased FM136 but no

ITEM NO.			R.S. ITEM NO.			QUANTITY			DESCRIPTION			UNIT			UNIT PRICE			TOTAL PRICE		
1	1		1			Lancaster 10MP Airframe Ser. (RCAF) #FM159						1			\$513.00					

<b>CROWN ASSETS DISPOSAL CORPORATION</b> TRADE & COMMERCE BUILDING, CORNER WELLINGTON AND LYON STREETS OTTAWA, ONTARIO <b>ACCEPTANCE OF OFFER</b>												PURCHASER'S COPY SALES ORDER NO. <b>144119</b>					
NAME AND ADDRESS OF PURCHASER Mr. George W. White, Box 32, Nanton, Alberta.						CUSTODIAN DND/Air, Ottawa, Ontario.						SHEET NO. <b>1</b>		NO. OF SHEETS <b>1</b>		DATE <b>Aug 4/60</b>	
LOCATION RCAF Station, Vulcan, Alberta.						DECLARER'S FILE REFERENCE <b>ME2278 1038EA-2</b> <b>(A/C/C3-1)</b>						SALESMAN <b>W.H. Gardner</b>					
						C.A.D.C. SERIAL FILE NO. <b>253-122891</b>						TERMS OF PAYMENT <b>Cash</b>					
TERMS OF DELIVERY To be picked up when advised by Custodian, all cost of delivery to be paid by Purchaser.																	

interest was shown in KB894 and KB949. They were eventually broken up on the ramp in Vulcan and scrapped.

Keith remembers clearly the destruction of some of the toys he and his brothers had enjoyed playing in. "They came in with their torches and large melting ovens. I felt as if our large toys were being destroyed without asking us first. I asked Dad if they were going to remove everything from the inside of the planes first. He asked the company if we could salvage parts that weren't going to be cut up and melted down. They said Dad could take the hydraulic rams as salvage after the cutting stage.

"One of the saddest moments for me was watching the large chains being attached to the undercarriage main wheels of a Lancaster. Two tractors pulled in opposite directions. She fell hard on her belly and there she lay, broken. They said we could salvage some parts from the inside of the Lancasters. They only gave us a short time to salvage these parts so I removed a compass and two air tanks along with the air hoses and regulators."

The Bomber Command Museum of Canada is the legacy of George White, Howard Armstrong, and Fred Garratt, three prominent Nanton citizens of their day. They were visionaries. While others saw an old aircraft as scrap aluminum -a source of pots and pans, George, Howie, and



**George White**



**Howie Armstrong**



**Fred Garratt**

Fred saw it instead as a tourism attraction, a memorial, and perhaps some day, even more.

George had the idea. He was a soft-spoken farmer and rancher who lived west of town near the foothills on land his family had homesteaded. He always had a weakness for airplanes. This interest may have been kindled during the war when pilots training at the nearby No. 5 Elementary Flying Training School at High River landed Tiger Moths on the family farm in order to visit his sister. The pilots, of course, were supposed to be practicing flying not visiting girls, so in order to burn off the necessary fuel they would chock the wheels and leave the engine running while they chatted with George's sister. Eventually George obtained his private pilot's license but was generally too busy with the farm work to do much flying.

When George mentioned his scheme to Howie Armstrong, the response was an instant, "Count me in." Howie owned Armstrong's Department and Variety Store in Nanton. It was his idea to declare that the spring water that was piped to town from the nearby foothills was, "Canada's Finest Drinking Water." The title



The 'Tap' with Nanton's train station at left

was never disputed and Howie's declaration led to Nanton acquiring the nickname 'Tap-Town' after he and friends made the water available to passing motorists. This led, in 1979, to the formation of Nanton Water Ltd. as one of the first companies in Canada to bottle and sell drinking water. Howie was a tireless promoter of the town and his efforts directed towards 'The Tap' and the acquisition of Lancaster FM159 were only two of many initiatives he took to champion the town he loved.

Fred Garratt operated McKeague and Garratt Hardware in Nanton with George McKeague. Like Howie, Fred needed little encouragement to get involved.

Although George, Howie, and Fred paid for the Lancaster, the project was carried out as one of a number of initiatives of the Nanton Economic and Industrial Committee to promote development in the town.

George knew that the Lancaster's main wheels were too far apart to permit travelling along the roads and telephone poles might pose a problem as well. The first thing that had to be done was to plan a cross-country route through the fields and secure the permission of some twenty farmers whose land would have be crossed.

George, with the help of a few others, completed the route planning that involved about twenty different landowners. This allowed the transfer of FM159 to Nanton to take place once all the crops were harvested. Finally on September 26, a crew of Nanton volunteers arrived at the Vulcan aerodrome to take possession of the aircraft and escort it to its new home.

Archie Clark of Nanton had considerable experience moving large vehicles and was hired to do the towing. The tail wheel was firmly secured on the back of one of his trucks and the bomber was towed backwards on its main wheels with two logging chains fastening the landing gear to the rear of the truck for additional safety. Two fencing crews were organized, one to take down the barbed wire fences ahead of the aircraft and a second to put them back up again after FM159 had passed. Forbes Henry and Almer Kjinserdahl bulldozed some of the crossings over the deeper roadside ditches where it was necessary. Sheldon Wilson, Gerald Loree, and others left their farm work at a busy time to lend a hand. One of Gerald's jobs was to ride on top of the aircraft to help ease it under telephone lines.

One of the more interesting challenges along the route was when the Little Bow River had to be crossed. FM159 had to be eased down into the valley, across the river at a ford, and up the other side. The aircraft spent the first night across the road from Henry Stoller's farm, just two kilometres east of Nanton.

The following day, FM159 passed between the south end of Connemara (Silver) Lake and Mosquito Creek and reached the CPR tracks where the strange procession stopped for the night. The permit from the railway to cross the tracks had been issued for the next morning and arrangements had been made with the



**Volunteers prepare FM159 for its journey to Nanton. Note that the RCAF markings had been painted over.**



**Leaving the former 19 SFTS. Note the wing tip and other parts of a scrapped Lancaster (either KB894 or KB949) below FM159's starboard wing-tip.**

Highways Department as well. Fred Garratt and others kept guard over the Lancaster through the night.

Early the following morning, FM159 was pulled across the tracks and up onto Highway No. 2. It was smooth sailing from there and, triumphantly, Lancaster FM159 entered the Town of Nanton and was parked by the side of the highway.



**Crossing a ditch as Gerald Loree holds up a telephone wire**



**Crossing the prairie**



**Descending into the Valley of the Little Bow River**



**Approaching the Little Bow River**



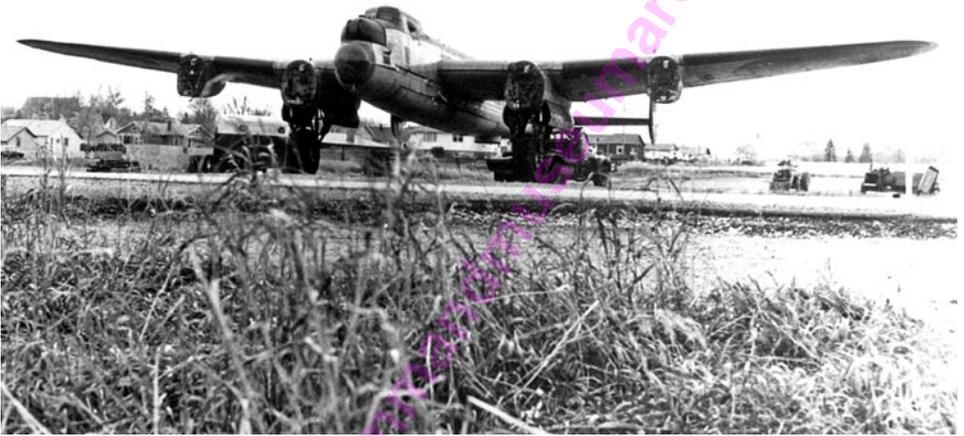
**Fording the river**



**Preparing to cross the railway tracks**



**Approaching the railway. Note the elevators at Connemara in the distance**



**FM159 arrives in Nanton on September 28 1960**

# THE NANTON LANCASTER

## *The First Twenty-Five Years*

During October 1960, the Nanton Economic and Industrial Committee had made arrangements for the purchase of four Rolls-Royce Packard Merlin engines for FM159. These were available for \$45 each through Crown Assets and were located at the former No. 7 Service Flying Training School base at Fort Macleod. Four propellers and spinners were part of the deal. It appears that an unexpected bonus for the committee was the fact that the engines were stored in metal canisters.

Another unexpected bit of good luck came in the form of an offer from Trans-Florida Aviation Inc. in Sarasota, Florida to purchase the canisters. The company's letterhead refers to their business as the 'Creators of the Executive Mustang'.

In a letter to Trans-Florida dated November 3, Howie wrote, "Each motor is encased in these steel canisters, which are more or less like two big bath tubs bolted together. It was found that each half of the canister makes an excellent stock watering trough and four ranchers have already offered \$40-50 for each half. If we found sales for four more half-canisters, we could realize from \$320 to \$400 judging from the discussion.

"However I was instructed to tell you that we would elect to save ourselves the trouble and offer them to you for \$75 each for the four complete canisters."

So the Nanton group had purchased four Merlin engines and cannisters for \$180 and sold the canisters for \$300.

George White drove to Fort Macleod in his grain truck and picked up the engines, propellers, and spinners. Archie Clark unloaded them. Then on March 13 1961, the canisters left Nanton for Florida on a CPR freight train.

M. *Nanton Industrial Committee*  
*Nanton*No. *A253*

## A. CLARK &amp; SON

WINCH AND OILFIELD TRUCKING  
LOCAL AND LONG DISTANCE

DATE	PARTICULARS	TIME	RATE	PRICE
<i>Apr 1 1961</i>	<i>Moving Lancaster airplane from Vulcan Airport to Nanton</i>			<i>200.00</i>
	<i>C.P. Telegraph - Permit</i>		<i>1.30</i>	<i>1.30</i>
	<i>C.P. flagging</i>	<i>5.964</i>	<i>1.38</i>	<i>7.34</i>
	<i>Telephone - Permit</i>	<i>.75 +</i>	<i>1.05</i>	<i>1.80</i>
				<i>210.44</i>
	<i>2 trips unloading motors &amp; loading motors</i>		<i>N.O.</i>	
	<i>1 day - 3 men 2 trucks</i>			
	<i>1 " 2 men 2 trucks</i>			
	<i>1 " 2 men 2 trucks</i>			

Archie Clark's invoice for moving FM159 to Nanton mentioned that he donated his equipment and personnel to unload and load the four engines.

At this point, the Nanton group seemed interested in going beyond just having a Lancaster displayed on the side of the road. During December, a Link Trainer (simulator) was purchased from Crown Assets for \$50. It was delivered but as of September 1967 was still in its unopened crate. It is not known what became of the Link Trainer.

A request to the Government of Canada for financial assistance was submitted. Walter Dinsdale, the Minister of Northern Affairs and Natural Resources, advised that there was, "no way federal funds could be made available" but was, after consulting with the curator of the National Aviation Museum, able to offer the advice that, "Ideally, of course, the aircraft should be inside a building."

The Nanton group realized that they needed engine mounts in order to place their newly acquired Merlins onto FM159. They were struggling to obtain some, unable to understand how



**As a roadside attraction during 1961 or 1962,  
FM159 (without engines) attracted a vintage car club**

Lancasters were being scrapped in some locations yet no engine mounts could be made available for FM159.

In a letter dated April 9 1962, Howie wrote, "For the past year, obsolete aircraft have been melted down at Vulcan, Fort Macleod and Claresholm. We wrote to C.A.D.C. Ottawa recently to see if they would release the above-mentioned items (engine mounts) to us so we could complete our display before all such items were put to the torch. They replied that they do not have any more."

An even more frustrated sounding Howie Armstrong wrote to Crown Assets Corporation in Ottawa on October 4, 1962, "Two years ago, our Committee purchased a surplus Lancaster aircraft from your corporation for about \$500. Our idea was to set it up alongside the new Alberta Highway #2 which runs right through Nanton as a war memorial and museum piece.

"We spent another \$200 to have it moved to Nanton from Vulcan, and later purchased four motors from you for about \$200. Unfortunately, the motors did not have what is called skeleton power plants (motor mounts and cowlings) and, try as we might, we haven't been able to complete our project. We are at the end of our financial resources and, without assistance, will have to scrap our plans and destroy the aircraft.

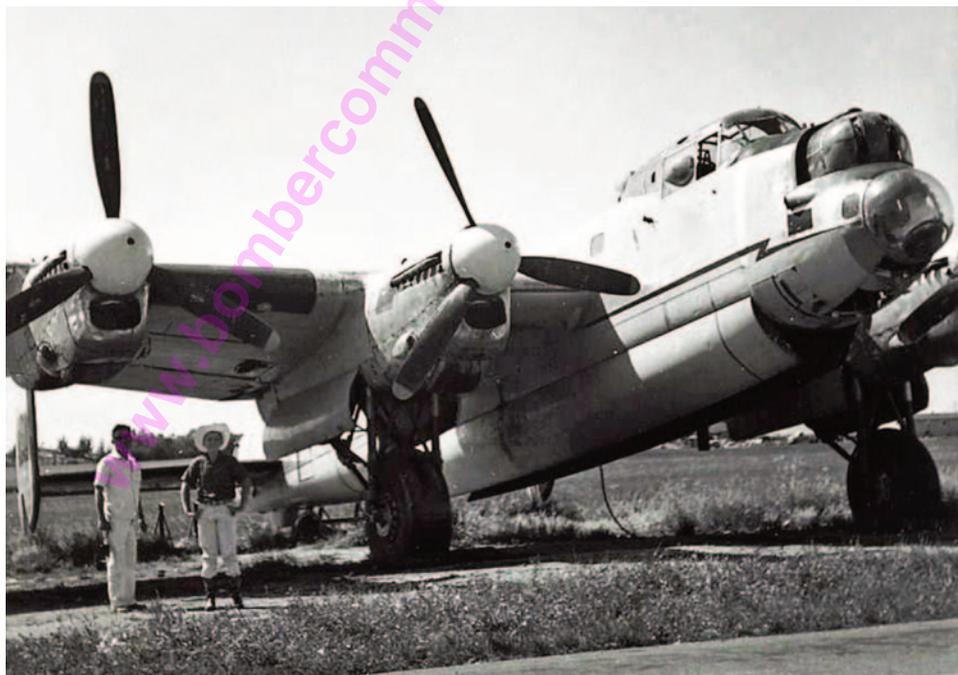
"Our purpose in writing to you is that we understand that four Merlin skeleton power plants could be obtained in Calgary, having been recently transferred to your corporation from the RCAF under RCAF declaration #ME2497, Unit serial Nos. 107-1, 11-1, 237-0, 67-0.

“We would really appreciate it, if such is the case, that these units be transferred to us at a nominal fee. As explained before, we cannot afford further investment and without your kind assistance, we just can't finish the job.”

Again, FM159's luck seemed to be running out.

However, this time Howie's letter yielded a prompt response as just one week later Crown Assets made the skeleton power plants described in his letter available for \$10 each. As well, Howie now had supporters in Calgary, namely G/C N.C. Brown at RCAF Station Calgary (Lincoln Park) and R.C. Gordon, manager of Canadian Pacific Air Lines (Repairs) Limited who wrote to Howie, “Once you are able to acquire the units I think we will be able to proceed and be of some assistance to you.” What G/C Brown was intimating was that volunteers from the RCAF and Canadian Pacific Airlines were prepared to make themselves and equipment available to mount the engines onto FM159.

So in mid-December 1962, six volunteers, five RCAF personnel from the Lincoln Park Station in Calgary and a Canadian Pacific Airlines maintenance supervisor, brought their tools to Nanton and installed the engines and props. According to the Nanton News they, “worked like beavers for two days, their only



**FM159 with motors, propellers, and cowlings in early 1963**

remuneration being their meals.”

By June 1963, stands had been received (presumably from the RCAF or CP Airlines) upon which to mount the aircraft and an offer to donate enough chain link fencing to surround the Lancaster had been received. Unfortunately the fence was not erected and it would be a few more years and, sadly, FM159 would suffer grievously before the Lancaster was properly protected.

Fortunately George, Howie, and Fred ensured that the mounting system for the aircraft was such that the bulk of the aircraft's weight rested on its landing gear. Irreparable harm has been done to other aircraft when mounting them on pedestals. In some cases the main wing spar was cut and steel beams and even concrete placed within the fuselage.



**This photo shows how FM159's mainwheels were mounted and how birds were finding nesting locations.**



**FM159, properly mounted with engines and props and on display**



**This photo taken in July 1966 shows the aircraft still un-fenced. Note that the bomb-aimer's blister has been smashed although much of the cockpit canopy is still intact.**



**A much-vandalized and sorry-looking FM159 in the fall of 1966**

When FM159 arrived in Nanton on September 28 1960, it was complete and could have flown had the engines and propellers not been removed. Six years later, it was a gutted shell. Virtually all of the instruments and interior equipment had been stolen. Vehicles would regularly stop on the highway next to the aircraft, their occupants would unload a ladder and tools, and then, quite openly, climb aboard, remove whatever caught their eye, and take it away.

There was vandalism as well. These visitors simply smashing the perspex covering the cockpit, turrets, and bomb-aimer's perspex, and tearing the fabric that covered the control surfaces to shreds. The aircraft was on the edge of town at the time and it seems that nothing could be done to prevent the theft and vandalism -the Lancaster had lost all of its interior equipment and its exterior appearance was clearly deteriorating. Rather than the memorial and tourist attraction envisioned by George, Howie, and Fred, FM159 was rapidly becoming an eyesore. It badly needed help.



**Ray McMahon**

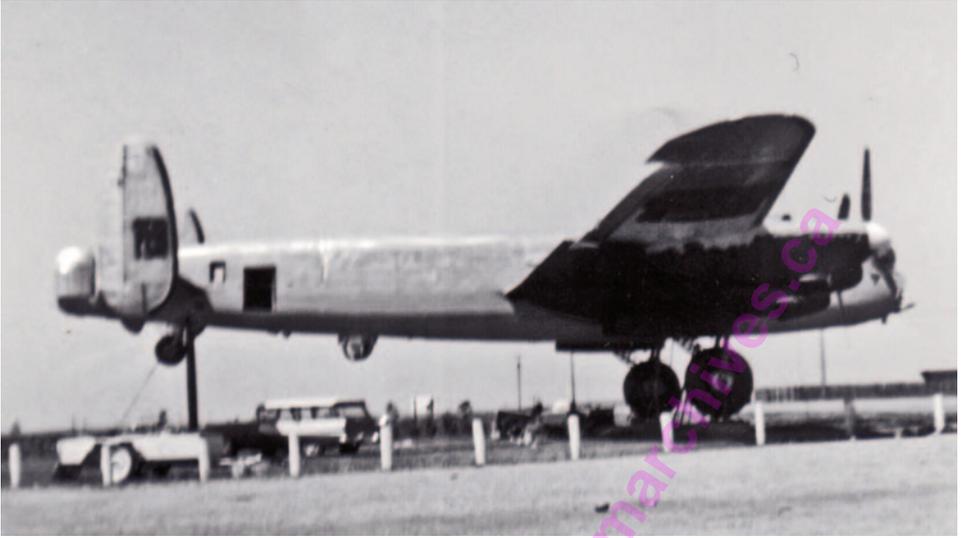
Again, in its hour of need, good fortune smiled upon FM159, this time with the appearance of Ray McMahon.

Ray had served with the Royal Canadian Air Force during World War II, training as a Wireless Operator at No. 2 Wireless School in Calgary. Although he saw no combat service, he acquired a love for the Lancaster and great respect for the men who flew in them.

In 1965, Ray was diagnosed with multiple sclerosis and was forced to retire from the farm machinery business. He moved to Nanton with his wife Ruth, where the state of FM159 and the ongoing vandalism immediately began to disturb and upset him.

Ray decided to do something about the situation. He approached the Nanton Economic and Industrial Committee, a group of Nanton businessmen which included George White, Howie Armstrong, and Fred Garrett and requested permission to personally take over the care and refurbishment of the bomber.

The group immediately accepted Ray's proposal, preparing a letter dated July 16 1966 that gave, "Ray McMahon full authority to make any changes that he thinks proper toward improving and upgrading the Avro Lancaster Bomber." Over the next three summers, Ray led a small group of supporters that included family members and young boys in the community. Some funding was arranged by the Economic and Industrial Committee to support Ray's volunteer efforts.



**The McMahon's station wagon and trailer below FM159. Note that the former markings had been removed and that a portion of the wing and engine cowling have been painted black.**

As Ray was making his contribution, Lancaster FM159's ownership was transferred from George, Howie, and Fred to the Town of Nanton in June of 1967. The trio wanted to ensure that their intentions that the bomber be a permanent memorial and tourism attraction in Nanton be maintained, so their donation was with the condition that FM159 must remain on permanent display in Nanton or the Lancaster would become the property of their families.

Ray made the decision that FM159 should be given a wartime paint scheme and markings. During the summer of 1964, the Nanton group had been considering this possibility. S/L Sheard of the RCAF had been consulted and replied with photographs and drawings of



**Lloyd Spring with the MacPherson boys who helped out with the painting of FM159**

the paint scheme and the suggestion that FM159 carry the markings 'NA-N', the 'NA' indicating a No. 428 Squadron RCAF aircraft and the 'N' being for Nanton.

Although Ray's efforts stretched over three years, most of the work was completed during the spring and summer of 1967. The aircraft remained unfenced during this time so Ray was unable to leave any tools, equipment, or supplies on site and had to take everything home each day using a trailer and his family's station-wagon.



**Ray McMahon and daughter Pat working on FM159**

During September of 1968, Ray completed his work. The Lancaster had been painted to a wartime scheme as per the drawings provided by S/L Sheard but, rather than wartime markings, FM159's fuselage again carried the 'RX-159' that it had during its No. 407 Squadron years together with a current Royal Canadian Air Force roundel.

Harry Dwelle had made a huge contribution, removing the broken plexiglass from the canopy, turrets, and bomb-aimer's position. He then fabricated aluminum coverings at his farm shop and placed them over the remaining frameworks. This was a major undertaking, done with great care to follow the shape of the former plexiglass. As well, it was vital that it be done in such a way that birds would be unable to get inside the Lancaster. Bird droppings are known to cause rapid corrosion of an aluminum airplane. Harry also fabricated metal coverings for the formerly fabric-covered ailerons and elevators.

Lloyd Spring painted the aircraft with the help of the MacPherson boys and others who cleaned the aircraft and gave it a 'vinegar wash' prior to the painting.

Lloyd Loree placed an RCAF squadron crest below the cockpit on the port side and painted a 'Bull Moose' nose art and bomb tally record on the starboard side. It indicated that Lancaster FM159 had flown fifty operations, shot down three enemy fighters,

and sunk two ships. Then broomsticks were painted black and placed in the gun turrets. The Lancaster was named 'B for Bull Moose' and to properly finish off the project, George Shaw created signage that told of the Lancaster's role in defeating the Nazis.

And all along, helping out in a variety of ways, Ray's daughters, Pat and Susan, and their friends spent their summer holidays working on the Bomber.

Finally, and most importantly, a proper chain link fence topped with barbed wire was erected around the aircraft to prevent access. Eight years after it was towed into Nanton behind Archie Clark's truck, FM159 was finally a presentable memorial and tourist attraction. It would remain untouched for the next eighteen years as millions of vehicles drove by on Highway #2, within a few metres of its nose.



**Ray McMahon posing for a photo that appeared in the September 28th 1968 edition of the Nanton News following the completion of his project.**

Ray McMahon and others worked to keep the Lancaster in as good a condition as was possible. Service clubs assisted as well to keep FM159 looking its best as millions of people drove by on Highway No. 2 and the 'Nanton Bomber' became a symbol for the Town.

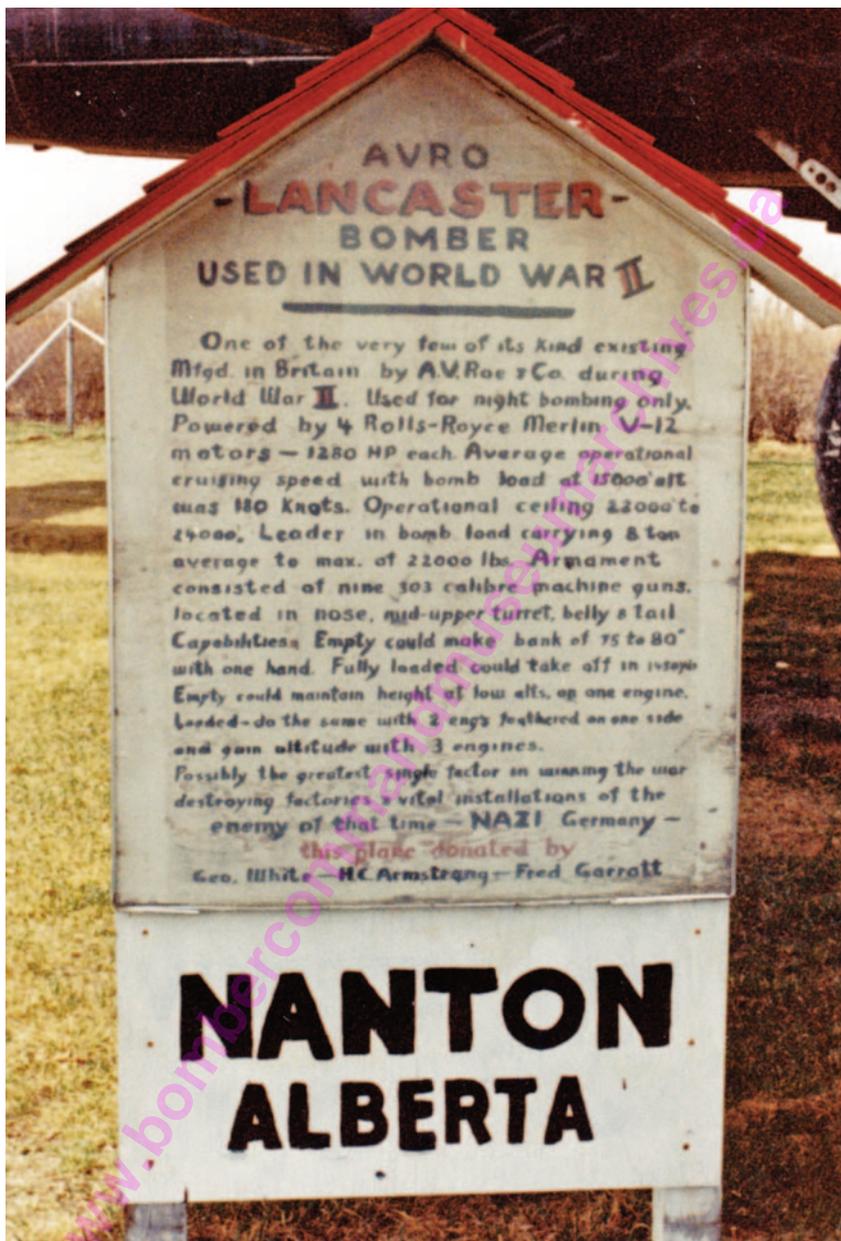
Ray continued to contribute by mowing the lawn below the aircraft for the following three summers until his medical condition forced him to be confined to a wheelchair.

During the early 1980's, the Nanton Kinsmen Club organized fund raising evenings to support FM159's maintenance including a 'Bomber Blitz' and 'Spotlight on the Bomber'.

But although the aircraft was now protected from vandalism, nothing more was being done to tell its story, honour those who built, maintained, and flew the Lancaster, or take advantage of what was becoming an increasingly valuable historic artifact. However, others were beginning to take notice.



**This photo of 'Bull Moose' shows Harry Dwelle's remarkable tin work. Lloyd Loree's colourful nose art and bomb tally was not based on any particular wartime Lancaster.**



George Shaw created this signage to explain the significance of the Lancaster Bomber during World War II.



FM159 in July 1970



[www.bombercommand.com/march](http://www.bombercommand.com/march)

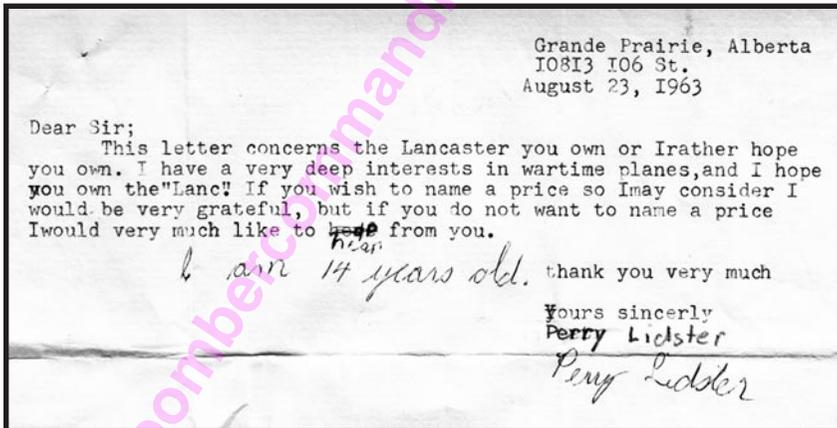


**One of hundreds of thousands who stopped for a photo-op next to Bull Moose' -The Nanton Lancaster**

# OFFERS TO PURCHASE or Trade For or Otherwise Acquire

Just three years following FM159's arrival in Nanton, the Town was approached by an individual interested in acquiring the aircraft.

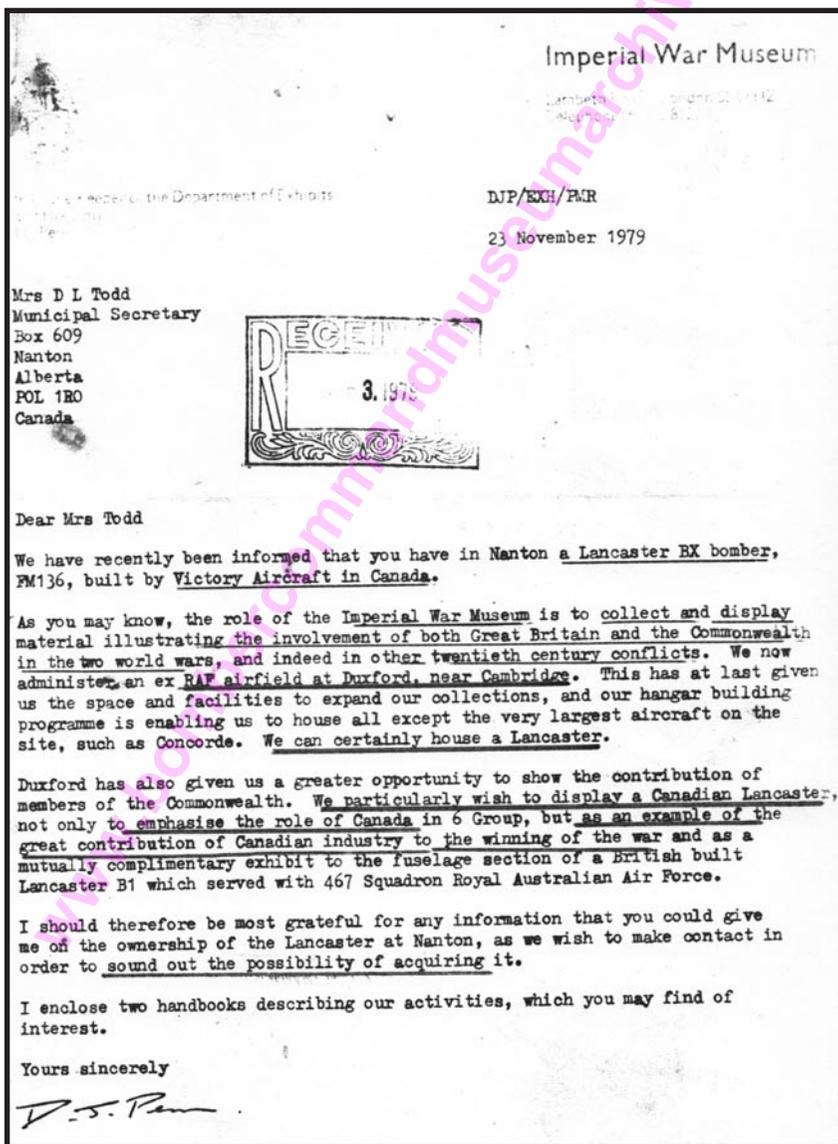
Howie Armstrong appears to have still been a little frustrated by the difficulties the committee was having acquiring Lancaster parts when he received the following letter written by a young Lancaster enthusiast in 1963.



In his reply, Howie wrote, "No, it is not for sale -at least not at the moment." It sounded as if the Nanton group's enthusiasm was running out.

As the 1980's began, a number of proposals were received by individuals and organizations, both in Canada and the United Kingdom, to acquire the Nanton Lancaster. In fact, Howard Armstrong recalled that they were being contacted, "Every month or two."

Although unsuccessful in acquiring FM159, the prestigious Imperial War Museum in the UK subsequently acquired Canadian-built Lancaster KB889. It was restored and has been on display at the Duxford Museum since 1994.



The Canadian Aero Foundation had plans to restore FM159 to airworthy condition. They offered to name it 'Nanton' and fly and display it annually at Nanton's Stampede.



## Canadian Aero Foundation

4500 West Saanich Road - Victoria, B.C. - V8Z 3G2

Telephone (604) 479-1342

August 10, 1982

Dear *Mr. White,*

The Canadian Aero Foundation is a non profit organization dedicated to the preservation and restoration of RCAF aircraft so that they may be exhibited with pride to the people of western Canada. Where possible every aircraft acquired will be restored to flying condition. We of the CAF hope that your Lancaster RX 159 at Nanton may become one of those.

Recently our President, Mr Eric Hoel, and his family visited your town, took some pictures of RX 159 and talked to Mrs Todd at the Municiple Offices. We got the impression that Nanton would consider another arrangement for the aircraft and Mrs Todd made it very clear that should the town no longer house the aircraft it would return to your exclusive control as rightful owner. Consequently this letter to you; the same letter is being sent to Mr Armstrong and Mrs Garrett

We cannot offer you a large sum of money for the Lancaster, rather we offer what we have, ourselves and our dedication to retore it to flying status. We will cooperate in every and any manner with you in this effort. We are aware that you all have a deep attachment, perhaps affection, for the aircraft and we do not make light of this fact. As an ex RCAF Lancaster pilot I know how you feel. It is an exhilarating aircraft to fly and holds many memories for me too. Also I feel it most important to point out that you have done Canada an immense service by standing by the old bird for so many years and by so doing have retained a bit of heritage that others have so wantonly squandered. For this we are grateful.

Now to the practical matter of returning the aircraft to flying status. I'm sure you have seen it deteriorating a little each year. It is our concern that it may go downhill fast if restoration is not started soon. We are willing to make your Lancaster our major and only project and to begin this fall if you will consider letting us have it. As I said we will cooperate with you in any manner you see fit, because we do not wish nor intend to separate you from association with the aircraft. We would certainly show the history and your patronage on a plaque on the aircraft, rename it the NANTON if you wished, fly it and display it at your stampede annually and certainly show it to the people of Canada. Perhaps too some alternative display arrangements can be made with the town so that they would not loose entirely their monument to aviation. These are my initial suggestions pending further discussion with you. Please write or telephone at your convenience.

Objectively the main thing is we will retore your Lancaster to its former stature if you will give us the opportunity.

Yours sincerely,

*Jack Kaiser*

John W Kaiser DFC CD  
Wing Commander (retired)  
Vice President CAF

Jon Spinks attended the University of Lethbridge studying history. He had developed an interest in the World War II aircraft that had been scrapped in southern Alberta, parts of which could still be easily found in farmyards. FM159 had clearly caught his eye when he wrote this letter to the Town of Nanton on November 30 1982. Although Jon was not successful in acquiring the aircraft, a few years later he would become closely associated with it as a volunteer with the fledgling Nanton Lancaster Society and play a leading role its development.

Dear Sirs;

I have written once before, and received no reply. I am writing again, and hope you will reply this time.

As you are well aware, your Lancaster Bomber is not in the best of condition. At present you are having it repainted and patched up. Dr. Melbourne was kind enough to show my friend and I around last spring, and we discovered something of importance. You don't seem to be aware of this problem, and I doubt it will really interest you. FM159 needs alot more than just paint. The Lancaster was not meant to be parrallel to the ground unless it was being pulled by the engines in flight. This leads to problem a: the port-outer engine nacelle is bending. This means within about five years, the engine's weight will cause the engine mount to collapse! The other problem is the undercarrige: these also are not positioned as they were designed. This will soon lead to one (possibly the port) collapsing, twisting the wing and fuselage before the other one collapses, bringing the whole aircraft down on its belly! A scrap dealer would probably give you \$1500 for this mess, because bent and twisted alluminum doesn't bring in much these days.

I'm sure you've had a-millien-and-one offers for FM159 already, and I don't really want to add to the list. I know the Lancaster is preasantly being only used as a tourist attraction, and Nanton really needs one (no offence intended) I am also pretty sure that its condition doesn't really bother you; but it does concern some people.

At present, there is some corrosion, and cracks, but as of 1962, they weren't to bad. It is in effect, restorable. By this, I mean it COULD fly. We could do this, fer we have support from Mr. Doug Arnold (he has one Lanc and eleven Spitfires among other things), Merlin engines, intercomm, instruments, and a huge assortment of other items. What would you get out of this? The aircraft would be christened "Town Of Nanton", yearly visits (once airworthy), and a Bristol Belingbroke IV in good condition, painted well, and with internal equipment. I've enclosed a picture of a Belingbroke similar to the one I mentioned above.

I sincerely hope you see the sense of this, for it will save FM159,

Yours Sincerely,

*Jon Spinks*

Immediately prior to the formation of the Nanton Lancaster Society, a letter was received from the Canadian Forces base at Comox, British Columbia inquiring as to whether it might be possible to re-acquire FM159 to add to their collection of aircraft that had flown from their base.

If so, they went on to say, a CF104 Starfighter or CF101 Voodoo might be made available in return.

AIR FORCE INDOCTRINATION SCHOOL		<b>RECEIVED</b> SEP 18 1985	ECOLE D' INITIATION AERIENNE
CFB COMOX	LAZO, B.C. V0R 2K0	(604) 339-2211	
10 September, 1985.			
City Clerk, Nanton, Alberta			
Dear Sir or Madam:			
Recently, I telephoned to ask whether or not there was any chance of Canadian Forces Base Comox taking possession of your Lancaster Bomber monument. CFB Comox has begun a collection of airplanes which flew from this base and, to date, we have an Argus, a CF100 Canuck and a CF101 Voodoo. We are having some difficulty obtaining the several other types which operated here since 1943.			
In any event, if you decide that you no longer wish the expense of maintaining your Lancaster, you can be assured that it would have a good home here at Comox and we would certainly identify Nanton as having donated the aircraft. Additionally, we would make arrangements to remove it from Nanton to Comox. If you are interested, I could seek a replacement aircraft for the Lancaster: something smaller, such as a CF101 Voodoo or a CF104 Starfighter. Of course, I cannot guarantee results.			
Thank you for your consideration.			
Yours truly,			
			
L. A. Dodd Major Commandant			

As the Nanton Lancaster Society was being formed in early 1986, three other offers were made.

Dick Richardson, acting as an agent for Charles Church, a well-to-do collector of vintage aircraft in the United Kingdom, made it known that he was prepared to pay up to £1,000,000 to acquire FM159. Dick eventually made arrangements to acquire the stripped fuselage of KB994 that was located in Edmonton. It was subsequently transported it to the UK.

A vintage aircraft enthusiast from Manitoba called the town office, expressing his desire to purchase the bomber.

Then, a group based in Okotoks, Alberta came forward with a proposal to dismantle FM159 and take it to Okotoks where it would be restored to flying condition.

However all these advances were rejected as the Town again looked to George White for leadership, and asked him to see what he could do to form an organization to, "Take care of the Bomber."

## **BOMBER NEEDS COMMUNITY SUPPORT**

by Herb Johnson [Nanton News -September 26, 1985]

*Back in the days of World War II, Canadians listened faithfully each week to a CBC radio program called, "L for Lanky" that followed the adventures of a squadron of Lancaster Bombers that made regular forays deep into enemy territory.*

*Each week the fate of one particular Lancaster hung in the balance as it limped home across the English Channel, guided safely back to base by a crew that never gave up and supported by some unseen spirit that simply would not let that Lancaster plunge into the sea.*

*While the parallel may not be precise, Nanton's Lancaster Bomber now faces a similar situation. Battered by the elements and suffering the effects of vandalism, the old girl won't last too much longer without some help.*

*Help is on the way, but it may not be the kind of assistance local citizens are looking for. The bomber is now very rare and a lot of people would like to give her a good home . . . somewhere else.*

*The town office received a letter, read at Monday's council meeting, from CFB Comox which would like to buy the bomber, suggesting that if a deal could be arranged a Voodoo jet or Starfighter might be found as a replacement.*

*At the same council meeting, municipal administrator Lila Todd reported she'd received a phone call that same day from a gentleman in Manitoba who would like to buy the plane.*

*Just how the situation is handled will depend to a great extent on local involvement in finding a way to restore the bomber to flying condition and maintain it in a suitable building.*

*George White, who along with Howard Armstrong and the late Fred Garratt bought the plane and brought it to Nanton twenty-five years ago has been asked to see if he could form a local society that would take on the job.*

*Right now Mr. White is assessing the extent of local support and investigating ways of getting the funds and expertise that would be needed.*

*Anyone that wants to contribute time and support should get in touch with Mr. White . . .*

# THE NANTON LANCASTER SOCIETY

## *A New Generation of Volunteers*

During September 1985, George White, one of the trio that purchased Lancaster FM159 a quarter of a century earlier, approached Herb Johnson, the editor of the Nanton News, for assistance. Herb wrote an article for the local paper, reviewing FM159's situation and suggesting that anyone willing to get involved in forming a society to "take care of the bomber," now commonly referred to as the 'Nanton Bomber', should contact George. The response, George recalled, was overwhelming.

At this time no one had been in the aircraft since Ray McMahon locked the crew door eighteen years previous and, aside from former wartime pilot Joe English, nobody in Nanton knew very much about Lancasters in general, and nobody at all knew anything about FM159 in particular.

Without concern of this lack of knowledge, a core group was formed and an inaugural meeting of the Nanton Lancaster Society was held in March 1986. Various committees were formed and by May, some Lancaster related artifacts were on display and Lancaster T-shirts and caps were for sale in the Tourist Information Booth next to the aircraft.

During that spring a number of the new 'Lancaster Enthusiasts' became curious and decided to see what it was like inside the aircraft. They borrowed a ladder but George wasn't sure where the key for the padlock on the crew door was. He couldn't remember the last time anyone had been in the airplane. It had to be a fairly long ladder because the crew door in the rear fuselage of the airplane was fifteen feet above the fenced off rectangle of lawn below.

George eventually found the key. As the fuselage was explored by flashlight, it was found to be somewhat dusty but otherwise quite clean. Most importantly, it appeared that not even a single bird had been able to manoeuvre its way through Harry Dwelle's tin work that had covered the broken perspex since 1967.

Of course the post-war modifications were still in place with seating for two at the rear of the fuselage, a removeable hatch over the mid-upper turret's former location, and dual controls in the cockpit. There were also numerous post-war bundles of wires, some of which extended the full length of the fuselage.

The cockpit panel and flying controls were most disappointing. Only one instrument was in place and it had been smashed. The pilot's control yoke was missing and the throttle and mixture levers had been bent over, broken off, and taken away. There were no signs of any equipment in the bomb-aimers, navigators, flight engineers, or radio operators position. The



**Dale Slade at the bomb-bay during the Nanton Lancaster Society's "first look" at the state of FM159's interior**



**FM159's cockpit panel -Spring 1986**

navigator's/wireless operator's table had been damaged and much of it made rotten by rainwater that had leaked in.

Although it was very clear that the group would be 'starting from scratch' with any restoration efforts, the founding members of the Nanton Lancaster Society made the decision that the best way to, "take care of the bomber" was to have FM159 restored to its wartime configuration as the centrepiece of an aviation museum –a rather ambitious undertaking for a community of fewer than 2000 people.

### **BUILDING A MUSEUM AND THE QUEST FOR A BUILDING**

By the spring of 1987, the fledgling group had clearly made some impressive progress. Over six hundred memberships had been sold and a small 'Lancaster Museum' had been set up in the town's Tourist Information Building. It featured a number of displays including a Lancaster Merlin engine that had been loaned by the Aerospace Museum in Calgary, Lancaster caps and T-Shirts were being sold, and a Lancaster video was playing. As well, \$28,000 had been raised towards the construction of a building. The beginnings of a library and archives was underway as supporters donated related photographs, documents, and books.

In order to build on this momentum and to offer something more to the Society's supporters and the general public, preparations were made for an 'Open Bomber Days' weekend. To permit a bit of natural light into the aircraft, two small sections of tin were removed from the cockpit covering and replaced by a



**The beginnings of the Bomber Command Museum of Canada**

piece of perspex. A wooden stairway was constructed so that the crew door could be accessed. Then a ladder was placed into the forward escape hatch and FM159 was ready for its first visitors.

'Open Bomber Days' was a huge success. Some seven hundred people of all ages stood in long lines to climb up the ladder to reach the cockpit of the Lancaster and then make their way through the fuselage to the crew door and down the stairway. A few Society members were stationed in the fuselage to chat with the visitors. During this weekend it became clear that there was a powerful connection between many of the visitors and the aircraft.

Some of the visitors were former Lancaster aircrew. One gentleman said that he'd, "flown them a bit." It was later found out that he had completed fifty-four operations over enemy territory -an indication of the self-effacing modesty that characterized most of those who survived.

A former navigator told how he manned the fuel selector levers and the flight engineer's instrument panel while the engineer assisted the pilot with the take off. He wanted it understood that teamwork was necessary between the members of a bomber crew.

Stories were told of terror in the skies over Europe, wartime losses, and the pain still felt by families forty years later, of sons and daughters longing to learn more of what their father had endured, and of the pride felt by those who had worked at Victory Aircraft Limited. Other visitors asked how they could help with the project. It was clear to the Society members that these were stories that must be told.

The momentum continued to build. Additional 'windows' were installed in the cockpit's tin covering and a second 'Open Bomber Days' weekend was held the following year.



**A small, single window allowed some natural light into the cockpit during the first 'Open Bomber Days' weekend in 1987.**



**Jon Spinks, in full flying gear, welcomed visitors and assisted them up the step-ladder into the aircraft.**



**Preparing for the second 'Open Bomber Days' in 1988**

The displays in the small museum the Society had in Nanton's Tourist Information Building continued to grow and visitors were regularly toured through the Lancaster as the Society began to focus more and more on the planning for a museum building for FM159.

Following a blizzard in February 1989, Society members found that the port elevator had been blown off of the aircraft and was hanging from its support at one end with the other end reaching down to the ground. This became a 'blessing in disguise' as the Society made the most of the opportunity to demonstrate to its growing membership, the Town of Nanton, and the public in general that a building was required if FM159 was to be preserved and properly restored.

With this in mind an expanded display was opened in May of 1989 and in the fall a decision made to begin fund raising for a



**FM159's port elevator after the windstorm. The elevators had been covered with tin after the fabric was destroyed.**

museum building. With the cooperation of the Town of Nanton, the Province of Alberta, various Royal Canadian Legion Branches, numerous corporations, and thousands of individual donors, construction began on the museum building in the spring of 1991.

FM159's tires had suffered the effects of thirty years of sunlight so before the aircraft could be taken down from its supports to be moved, the mainwheels and tires were replaced. The wheels and tires of the Lancaster that had been restored by the Canadian Warplane Heritage's Museum had been serviced and



**George White, Kay Garratt, and Howie Armstrong turn the sod for the new building on November 2 1990.**

reconditioned for flight. However their plans changed and these wheels and tires became available for FM159. A trade was finalized that saw some of the Nanton museum's spare ailerons and flaps sent to Hamilton.

Finally, on a bright Saturday morning, FM159 was rolling again, this time towed by a farm tractor into her new home.

Although it was definitely a good thing that the Lancaster had its building, it was sad to see walls being built on all sides of her. It would be twelve years before the tarmac was paved and doors were installed so that FM159 could be out in the sunlight again.



**As well as FM159's main wheels and tires, the tail wheel had to be replaced prior to moving the aircraft.**



**FM159, on her gear again for the first time since 1963, on the evening before she was rolled into the new museum building**



**Wartime Lancaster pilot Joe English was in the cockpit as FM159 moved to her new home.**



The moving crew with FM159 -safely inside.

## **THE RESTORATION OF FM159 BEGINS**

With the development of a museum progressing, the restoration of the Lancaster was beginning as well.

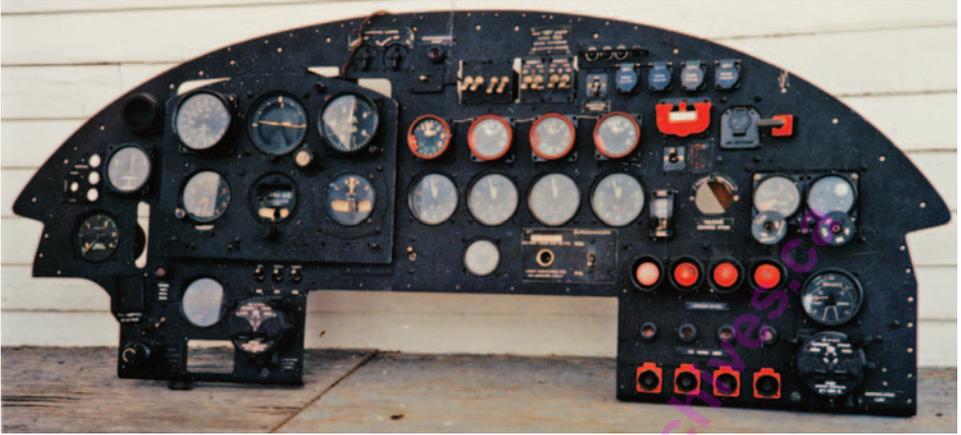
With the guidance of Jon Spinks, upwards of twelve field trips were undertaken to farms at which it was known Lancasters had been taken, made use of by the farmers, and then scrapped. The scrapping process involved the melting down of all the aluminum and, in most cases, leaving whatever remained on the farm.

The fledgling museum acquired a significant collection of parts including several complete sets of undercarriage, flaps, ailerons, fuel tanks, gun turret parts, instrument panels, wheels and tires, tail wheels, engine frames, a crew door ladder, and much more. The farmers were always quite happy to support the museum's efforts.

September 1986, only a few months after members of the Nanton Lancaster Society first explored the dark, dusty interior of FM159 and removed the pilot's instrument panel, saw the completion of the Society's first restoration project when the completely restored instrument panel was placed on display. Jon Spinks had travelled to the UK, picked up most of the instruments and other parts required, and then completed the job at his home in



**Two Lancaster fuel tanks and a set of flaps in the back of John Green's pick-up. The flaps required some cleaning as they had been used as part of a cattle corral.**



### **FM159's restored pilot's instrument panel -The first step**

Lethbridge. The pilot's seat was removed for restoration, contacts were made with other museums, and technical manuals acquired.

Regarding the extent of the planned restoration, ambitious goals were set. The Society's first newsletter in the spring of 1987 referred to, "the dynamic, taxiable exhibit stage and beyond" and a building proposal document that was published later that year included the goal of restoring Lancaster FM159 to, "its wartime configuration and to a 'taxiable' status."

During 1987, the parts-gathering field trips around southern Alberta continued and a control yoke and throttle quadrant was acquired. As well, a bomb-sight arrived from the UK and Tim Mols, one of the lead AME's restoring Lancaster FM213 at the Canadian Warplane Heritage Museum in Hamilton, inspected FM159. He reported that not only was restoration to taxiable status possible but that the aircraft could eventually be restored to flyable status.

With this in mind, particular attention was paid to FM159's Merlin engines. They had been purchased at Fort Macleod and mounted on the aircraft in 1962 but were simply engines, with none of the ancillary equipment or necessary connections, etc. The Society's Fall 1988 newsletter reported that,

"Engine crew boss Lennard Hoffarth had mated an auto oil pump to an electric drill. This set-up was plumbed into each engine in turn, to force inhibiting oil through all parts of the Merlins including the propeller hubs. The volunteer crew also removed the valve covers in order to visually monitor the oil reaching this area."

As well as ensuring that FM159's engines were not deteriorating, there was a particular focus on engine parts as



A first look at the Merlins

Society members visited farms where Lancasters had been scrapped. There was no question as to what the parts would be used for some day.

The beginning of the museum's shop program occurred in 1988 when a loaned building on the outskirts of Nanton was made available and the restoration of a major Lancaster component began. Enough Martin mid-upper gun turret parts had been acquired to begin a restoration project. It was completed in late 1989, complete with two .50 calibre machine guns, and placed on display. This was the type of turret that FM159 had been fitted with in 1945.

	TIME IN	TIME OUT	HOURS (less Lunch)	MILAGE (Km)	EXPENSES		REFERENCE
					DESCRIPTION	AMOUNT	
CREW BOSS: MITT MAAGE	12:45	5:00	5 1/2				
HELPERS: 1. BOB EDWARDS	1:00 PM	2:30 PM	1	4	MANUFACT SHOP		9am/1/88
2. Doug Stewart	1:00 PM	4:00 PM	3	4	HAULED ENGINE PARTS		
3. Doug Macdonald	1:00 PM	4:00 PM	3		clean up & move		Jan 17/88
4. Steve White	1:30 PM	4:20 PM	2 1/2				
5.							
TOTALS →							

SIGNATURE: *M. Maage*  
(CREW BOSS)

WORK LOG  
NANTON JAN

Work-log for the first day of work in the museum's restoration shop

This borrowed shop facility saw the completion of other projects as well but by early 1993, the completion of the restoration shop area in the new building provided a permanent home for those who were working to restore FM159.



**Milt Magee at the beginning stages of the Martin Turret restoration**



**Lennard Hoffarth working on the Martin Turret**

# THE DEDICATION OF FM159

## *New Markings for Nanton's Lancaster*

As the Nanton Lancaster Society's efforts to construct a museum building and the restoration of the aircraft were gaining momentum, FM159 was dedicated to the memory of Squadron Leader Ian Willoughby Bazalgette VC DFC, a Lancaster pilot who was awarded the Commonwealth's highest award for valour for his actions during a raid in 1944. He was the only Albertan to be so recognized during WW II.

Ian Bazalgette was born in Calgary but received most of his education in Britain. He joined the Royal Air Force in 1941. After completing a tour of operations with No. 115

Squadron, 'Baz', as he was known in the RAF, volunteered for additional combat service with the Pathfinder Force.

S/L Bazalgette's No. 635 Squadron Lancaster was hit by flak while approaching the V-1 Flying Bomb site that was his target. Both starboard engines were knocked out and the wing was set on fire. As the Master Bomber and Deputy Master Bomber had both been put out of action, it was up to Baz to mark the target for the remainder of the force. This he did but then the aircraft went into a violent dive.



**S/L Ian Bazalgette VC DFC**



### **Baz over Senantes**

[Artist: Len Krenzler

S/L Bazalgette regained control but soon after, a third engine stopped running. He then ordered four of his crew to abandon the aircraft but chose to remain on board in an attempt to save the two others who were injured and could not jump. After taking care to avoid the small French village of Senantes, Baz managed to land the aircraft. Sadly, it then exploded and all aboard were killed. The surviving crew members evaded enemy soldiers and made their way to the allied forces. The story was told and the Victoria Cross awarded the following year. The citation stated that, "His courage and devotion to duty were beyond praise."

A Dedication Ceremony was held on July 27 1990. Mrs. Ethel Broderick, Ian's sister, unveiled a plaque and the markings of the Bazalgette aircraft (F2-T) were unveiled by Chuck Godfrey DFC, Baz's wireless operator on the VC flight, and George Turner, his flight engineer.

Flight/Sergeant Larry Melling DFC attended the ceremony as well. He had joined No. 635 Squadron about a month after Ian. He clearly recalled being impressed by Baz on his first day at the squadron when he walked into the Flight Office, "He had a tremendous sparkle in his eye is the best way to describe it. He

stood out amongst the people who were there. He was an inviting sort of a person, a person that you wouldn't hesitate to approach. He was always the first to volunteer for a job, no matter what sort of job it might be.”

FM159's friends from No. 407 Squadron were represented in Nanton on this special day. The squadron's c/o, Lt. Col. Terry Chester, spoke at the ceremonies and a squadron Aurora performed a flypast.

Since the 'Dedication', the Town of Nanton has been 'twinned' with the Village of Senantes and the museum maintains a close relationship with the village.



**Chuck Godfrey (left) and George Turner unveil the markings of their aircraft (F2-T) on FM159's fuselage.**



**Special Guests at FM159's Dedication  
(l-r) George Turner, Ethel Broderick, Marion Hildebrand (Ethel's  
niece), Larry Melling DFC, and Chuck Godfrey DFC**

# THE RESTORATION CONTINUES

*Onward towards Taxiable*



**Museum curator Bob Evans in the bomb-aimer's compartment.  
Once FM159 was safely in the building, the tin that had  
covered the broken perspex was removed.**

Once inside its new home, the tin that Harry Dwelle had installed to cover FM159's broken perspex was removed from the cockpit canopy, the turrets, and the bomb-aimer's compartment. The tin had worked remarkably well to protect the aircraft from the corrosion and other damage that birds would have caused over the three decades that FM159 was on outdoor display. It had also improved the aircraft's appearance but, with its removal, the extent of the vandalism became very apparent.

Throughout the 1990's, the museum developed quickly, acquiring additional aircraft, artifacts and displays but with FM159 continuing to be the centrepiece. The restoration shop in the new museum building was being used for numerous projects related to the development of the museum and for the restoration of the Lancaster and other aircraft.

During a visit in 1991, the museum received both encouragement and advice from Norm Etheridge, the Aircraft Maintenance Engineer who had recently overseen the restoration of Lancaster FM213 to flyable status at the Canadian Warplane Heritage Museum in Hamilton, Ontario.

FM159's gun turrets continued to be a focus. A Fraser-Nash mid-upper turret had been acquired and arrangements were made whereby it was restored to operational use by a company that was producing a movie in Montreal. Then, while attending an 'aero-jumble' during one of his regular visits to the UK, Jon Spinks overheard an attendee, Brian Perry, mention that he had a number of Lancaster mid-upper turret domes within which he was growing



**The museum's restoration shop prior to the 2007 expansion. In the distance, FM159's elevators are being covered by fabric.**



**Larry Wright with the mid-upper turret domes**

tomatoes. Jon immediately introduced himself, finding out that Mr. Perry had acquired them twelve years earlier from a farmer near Bristol who was using them as 'poultry houses'. Arrangements were made and as construction of the museum building was being completed, three mid-upper turret domes arrived courtesy of the Royal Air Force.

A derelict rear turret had also been acquired and during early 1992, a group led by Larry Wright undertook to restore it to operational status. This was completed and FM159's rear turret was officially placed on display during the summer of the following year.

The summer of 1992 saw the arrival of Harold Branton from Trail, British Columbia and the Whitfields from Sarnia, Ontario. All would play major roles in the restoration of FM159. Harold had served as ground crew with No. 429 Squadron during the war. He spent a week removing broken plexiglass and installing a temporary plexiglass bomb-aimer's dome that had been fabricated for the film company that had restored the mid-upper turret.

A father and son team, Paul and Peter Whitfield travelled from Sarnia, Ontario to spend a week of their holidays removing the sheet metal that had covered the fabric-covered ailerons and



**The rear-turret restoration team  
(l-r) Bill Howe, Andrew Dale, Richard Ambler, and Larry Wright**



**By the summer of 1993, FM159 was looking good enough to be the venue for the wedding of Lorne Herriman and Wanda Evans, museum curator Bob Evans' daughter.**



**Peter Whitfield (left) and friend**

elevators and cleaned up the last of the broken plexiglass in the cockpit area.

During 1995, work began on the fabrication of the wooden ribs for FM159's elevators. Most of the ribs had been destroyed during the early 1960's when the aircraft was on outside display. The process of covering the elevators with fabric was begun.

The Whitfields were back again that summer as well. Peter spent most of his time working on one of the Lancaster's Merlin engines, installing missing components and completing connections. He was taking the first steps to restore one of FM159's engines to runnable but it would be another decade before the roar of a Merlin would be heard at the museum. Of course at this point it was not even possible for FM159 to be rolled outside as there was only a single, twenty-two foot door in place and the tarmac area remained gravel covered. But Peter saw the potential and persevered.

During the Whitfield family's fifth summer at the museum in 1997, Peter was focussed on FM159's starboard-inner Merlin, continuing to make firewall connections and adding accessories

that he had located in the museum's parts storage area. Paul and Peter installed the plexiglass astrodome as well as doing other work throughout the aircraft. Louise, Paul's wife, spent her time contributing to the museum in other ways and helping Paul and Peter whenever they needed assistance.

While the museum developed in a variety of ways and other aircraft were acquired and worked on, Peter and Paul took the lead in FM159's restoration. The Whitfield's efforts during this period were most significant

During 1998, significant amounts of postwar wiring and equipment were removed. Larry Wright and Peter installed wartime radios, bomb aimer's equipment including the bombsight and other instruments, and added wartime antenna fixtures and wire.

The wooden rear canopy framework had deteriorated. It was braced and then removed so that a new one could be made. The last bits of broken glass were removed from the forward portion of the canopy and the tubular framework prepared for new plexiglass. This beginning of a focus on FM159's plexiglass also saw the installation of the plexiglass on the restored rear gun turret.

Over the winter, Blair Towill rebuilt and assembled the laminated wood framework for the rear canopy.

The following year the Whitfields and museum director Larry Wright spent nearly three weeks at the museum. They were joined for one of the weeks by British AME Ian Hickling who was the engineer in charge of the restoration, maintenance, and operation of Lancaster NX611, the taxiable Lancaster at the Lincolnshire Aviation Heritage Centre in the UK.

Ian spent most of his week checking FM159's Merlins to determine their status. He gave the engines a clean bill of health for future running.

Paul and Peter undertook the major project of fabricating and installing the cockpit plexiglass. The rear section of the canopy was completed the following year.

FM159's navigator's table had been severely damaged by



**Blair Towill built a new rear canopy framework at his home.**



**Paul, outside, and Peter working on FM159's canopy**

rainwater leaking into the cockpit during the three decades that the aircraft was on outdoor display. Andy Lockhart volunteered to build a new one. It was installed during the spring of 1999. The table extended into the wireless operator's position and its presence led to the restoration of both the navigator's and wireless operator's positions with the placement of the wartime radios, navigator's instrument panel, and other equipment.

The summer of 2000 saw the first visible sign of FM159 coming to life again when Merrill Honeyman and Fred Hollowell completed the necessary work on the port-outer engine so that they could hook up a battery and spin the propeller.

This very visible event seemed to add momentum to the efforts to 'Run the Merlins' and the museum's Spring 2001 newsletter reported that John Phillips had, "taken on the job of coordinating the restoration of the Lancaster to a state where the engines are runnable and the aircraft is taxi-able." As a retired aircraft maintenance engineer and licensed helicopter and fixed-wing aircraft pilot, John was eminently qualified to take on the challenge. Like all those who have worked on the restoration of FM159, John was a volunteer.



**Andy Lockhart delivering the navigator's Table**



**Early in 2001, Don Ellis installed the nose blister in the bomb-aimer's position. A temporary blister had been in place for several years. Later that year, Peter and Paul installed the plexiglass in the front turret. It was the Whitfields' ninth summer at the museum.**



**(l-r) Merrill Honeyman, John Phillips, Fred Hollowell, and the first Merlin. Merrill and Fred had been museum shop volunteers for fifteen years when they joined John's Merlin Restoration Team.**

Another vital piece of the puzzle fell into place early in 2002 when four additional overhead doors were installed. These would eventually permit FM159 to again be outside, but now in a much-improved state as compared to when it entered the building eleven years earlier. When the tarmac was finally paved in the fall of 2003, FM159 was finally rolled out into the sunlight again after a dozen years of being inside.

The task undertaken by John Phillips and his engine restoration team was daunting,



**Merrill and Fred working on the first Merlin**

requiring perseverance, creativity, patience, and a long-term view. For one thing, all the work was to be done by volunteers, most of whom had full-time employment, and the group only got together on Tuesday evenings. As well, specialized tools and parts had to be acquired or made and a small corner of the museum's original shop was all the workspace available.

Wiring, fuel lines, and other connections had to be run from the cockpit, old instruments made functional, and many engine and ancillary parts acquired and made functional. The propellers required professional attention and arrangements had to be made for this to be done at minimal expense.

The goal of having the starboard-inner running for the summer of 2005 was set and met, coinciding with the Dedication of Canada's Bomber Command Memorial on the front lawn of the museum.

Over the eight year period between the running of the first engine and the fourth some developments had improved the conditions for the engine restoration team. In 2009 a dedicated 'engine shop' was completed and proper engine mounting frames



**During 2005, the Starboard-Inner was the first to run.**



**(l-r) Francis Gardner, Brian Taylor, Merrill Honeyman, and Shane Chipchase in the new engine shop**



**Brian Taylor (left) and John Phillips**



**Brian, John, Fred, and Merrill prepare to mount the Port-Inner**

had been constructed to make working on the engines easier. As well, with the completion of each engine, the crew was gaining valuable experience.

While the Lancaster's engines were restored, other systems were also addressed. The hydraulic system was rejuvenated and the bomb doors and flaps became operational. The pneumatic system was restored and FM159's brakes were made serviceable again.

Then, on August 17 2013, eighteen years and thousands of volunteer hours after Peter Whitfield first began the restoration of the engines, the roar of four Merlins was heard on the tarmac of the Bomber Command Museum of Canada.



**Francis Gardner (left) and John Phillips look on as Greg Morrison works on the fourth Merlin.**



**John Phillips, as all four of FM159's Merlins run for the first time in fifty-four years.**

Finally, on April 22 2014, FM159's four Merlins were started as, by now, they had been several times before. But this time there were no chocks or brakes holding her back and FM159 taxied for the first time since she was parked on the tarmac at the old Vulcan Aerodrome in 1959.



**FM159's first taxi**



Greg Morrison in the pilot's seat during FM159's first taxi



**Lancaster FM159 Night Run**

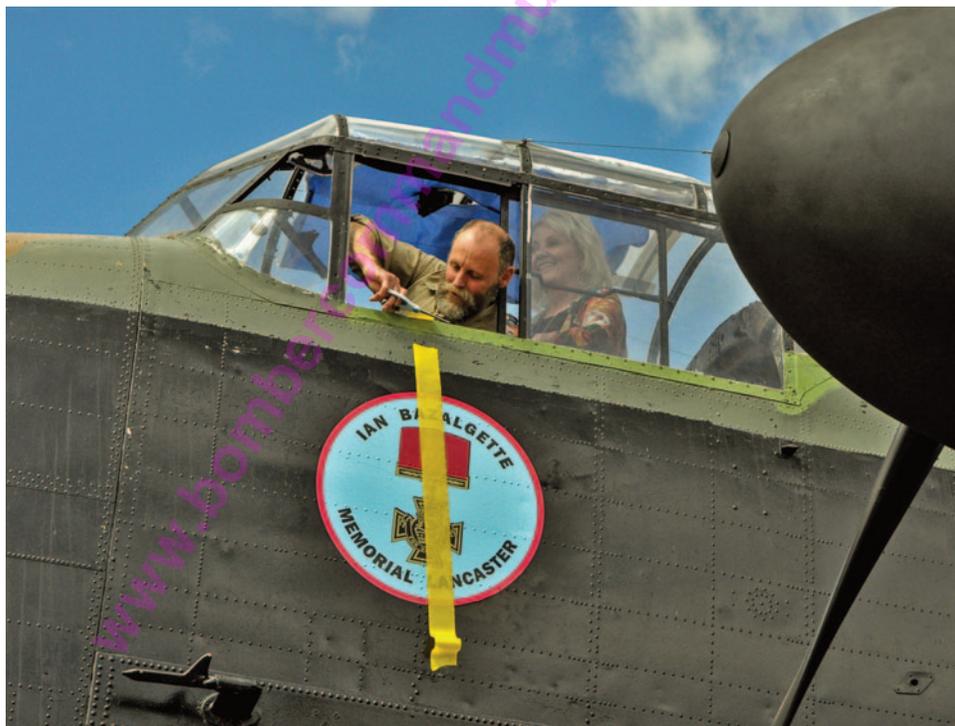


**Lancaster FM159 Day Run**

# LANCASTER FM159 TODAY

## *A Living Memorial*

As one of only four taxiable Lancasters in the world, FM159 plays a hugely valuable role as the centrepiece of the Bomber Command Museum of Canada that has developed around her. Hundreds of thousands of people have visited FM159 and all have left knowing more of the sacrifices made by those who served with Bomber Command.



**Charles Bazalgette, Ian Bazalgette's nephew, cuts a ribbon across the crest identifying FM159 as the 'Ian Bazalgette Memorial Lancaster'.**



**FM159 with Tallboy Replica during the commemoration of the Seventieth Anniversary of the Sinking of the Battleship Tirpitz**



**Family members of the Canadian Dambusters and author Ted Barris at the Seventy-fifth Anniversary commemoration of the Dams Raid. FM159 carried the markings of a No. 617 Squadron Lancaster for this event.**

# APPENDIX

## Some of those who have flown aboard Lancaster FM159

Addison, Harry	Feleski, Ray	Mort, Jack
Aitkin, John	Finan, ?	Munday, Terry
Ando, Eddy	Finkbiner, Jack	Murdoch, Bill
Andrews, Freddy	Foster, Buzz W.D.	Murphy, ?
Arnold, ?	Freisen, Gary	Nelles, Forbes
Avent, Dave	Gabriel, Dick	Nelson, Ken
Bailey, Jack	Gordon, Don	O'Malley, Bob
Barton, George	Hazelton, Bernard	Owen, ?
Batson, Nigel	Heiliger, ?	Packwood, Darcy G.
Bellchamber, Chris	Hepburn, Don H.	Panghorn, Clyde
Boult, Al	Hetherington, Lloyd	Peirce, Larry
Bray, ?	Hillier, Dave	Pelletier, John
Britney, Jack	Hincke, Al	Petch, ?
Britt, Ray	Hotson, Fred	Pierpoint, Joe
Brooks, Bill	Huisman, Tim	Pineau, Freddy
Brough, Dunc	Jobling, Roy	Plumstead, Marty
Burnham, Pearce	Johnson, Bill	Prentice, ?
Burrows, Les	Jones, ?	Rhumkee, Carl
Burton, Fred	Keil, Gerald	Richardson, Jack
Caldecott, Denny	Keir, Ken G.	Robinson, Robbie
Chapman, Ray F.	Kimball, Reg B.	Rocheleau, Rudy
Chisholm, ?	Lachlin, Locke	Rowden, ?
Chown, Clint DFC	Lang, Harvey	Selfe, Tony DFM
Clark, Bert	Lavin, ?	Sharratt, Norm
Copping, Norm	Lawrence, ?	Shergold, Harry
Cox, Kelly	Limberton, Len	Sherwood, ?
Critch, ?	Locke, Lachlin	Sinclair, Fin
Cutsy, Paul	Magee, Bob	Skaife, Doug
Dawe, Duke	Marlin, Earl	Smith, Earl
Dayman, ?	Masson, ?	Sopczak, Richard
Deasty, Stan	Maxwell, ?	Speiron, ?
Defries, Lee	Mazey, Bob	Stevens, Ernie
Desaulnier, ?	McAra, Bill E.H.	Stokes, ?
Dodd, Ed	McKaskill, J.R.	Stranlund, Hank
Dumont, ?	McKendry, Ross	Swindells, Tom
Dunbar, Cy J.	McKlennan, Smoky	Turner, Norman DFC
Dwyer, Frank	McMillan, ?	Veale, Bob
Eakin, Cliff	McPhail, Bob	Walkey, Don
Elliot, Don	Mellott, Jack	Wallis, ?
Erickson, John	Mick, Paul	Walmsley, Jack
Evans, Don	Mitchell, ?	Witwer, Howard
Farrell, Frank	Morse, Walter	Woodcock, Don
Faucett, ?		

# ACKNOWLEDGMENTS

The assistance of George White, Cliff Black, Bert Clark, Norm Sharratt, Harry Addison, Don Walkey, Fred Burton, Cy Dunbar, Earl Marlin, Duke Dawe, Fin Sinclair, and others who contributed their recollections and stories is gratefully acknowledged.

Most of the photos are from the Bomber Command Museum of Canada's Collection, many taken by the museum's volunteers. Others were generously provided by Clarence Simonsen, the Don Vance Collection, Norm Sharratt, Harry Addison, S. MacDonald, Duke Dawe, David R. Gray, Cy Dunbar, Don Jarman, Chas Waterfall, John Nelson, Gordon Feir, Len Krenzler, Mark Peapell, and Ruth McMahon.

The assistance of George White, Ken Brown, Norm Sharratt, Cy Dunbar, Harry Addison, Fin Sinclair, Duke Dawe, Terry Munday, Noel Rodrigue, Terry Munday, and Bob Evans in proofreading the manuscript is most appreciated.

## THE AUTHOR

A geophysicist, teacher, and interpretive guide in the Canadian Rockies, Dave was a founding director of the Nanton Lancaster Society. One of hundreds of the museum's volunteers, he has been primarily involved with the museum's library/archives, the development of display material for the museum, and with the research and organization associated with its special events.

Dave is also the author of: *Baz -The Biography of Ian Bazalgette VC*, *Johnny -The Biography of John Fauquier*, *People and Planes -Stories from the Bomber Command Museum of Canada*, *Nose Art -The Clarence Simonsen Collection*, *Big Joe McCarthy -The RCAF's American Dambuster*, *The Canadian Air Force at High River*, *Leading the Stearmans*, and *The Canadian Bomber Command Squadrons*. Dave is also the author of several books about the Canadian Rockies.