

MAY/JUNE 2017

FLIGHT LINES

CANADIAN WARPLANE HERITAGE MUSEUM



STEARMAN

The Forgotten BCATP Biplane

RUHR EXPRESS

Canada's first built Lancaster

A vintage four-engine bomber aircraft, likely a B-24 Liberator, is shown in flight from a low angle. The aircraft is olive drab with a black nose and tail. It features a large circular insignia on the side with the letters 'VR' and a red, white, and blue roundel. The tail fin is black with a red and white stripe. The aircraft is flying over a patchwork of green and brown fields under a clear blue sky. The text 'COME FLY WITH US AT' is in white, and 'FLYFEST' is in large, bold, white letters with a blue gradient.

COME FLY WITH US AT
FLYFEST

FATHER'S DAY WEEKEND

JUNE 17 & 18, 2017

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FLIGHTLINES

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Readers are encouraged to submit articles and photos. All contributions published with the author's name is the opinion of the author and does not necessarily reflect the opinions and policies of the Canadian Warplane Heritage Museum. Responsibility for accuracy rests solely with the author.

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Cover: Leon Evans and passenger in the Museum's Stearman. **DEREK MICKELLOFF**



AIR FORCE DAY
PAST, PRESENT & FUTURE

JULY 8th

CANADA 150
HAMILTON 2017

Reflect
Celebrate
Imagine



Moving Toward Summer

As we move forward into the spring and toward the summer of 2017 the activity level within the museum begins to intensify. Our aircraft are being prepared for the 2017 flying season, and preparations are moving forward with the many planned summer activities and events around the hangar. Coming in June is the traditional Flyfest on Father's Day weekend and a visit with the Sentimental Journey B-17. During July, the Museum will host a visit from the Vimy Flight biplanes as part of their cross Canada tour in honour of the 100th Anniversary of the Battle of Vimy Ridge, as well as Air Force Day with displays of military aircraft of the past and today, and at the end the month CWH will present the Vintage Wheels and Wings display. Other events are planned for the rest of the summer and into the fall. Summer of 2017 is being filled with many events and activities, and we encourage all members to take part and assist with these events.

This issue of *Flightlines* features the history of the Ruhr Express; the first Canadian built Lancaster. Our Lancaster is currently being remarked on the port side in the temporary markings of the Ruhr Express, Lancaster KB700 and will be flown throughout the summer in these markings as part of Canada's 150 celebrations. This issue also features the story of the Stearman, the forgotten biplane of the BCATP, as well as news features, aircraft updates and other regular columns.

A number of stories and ideas have been submitted from the readers for possible publication in future issues of *Flightlines*. Although we cannot publish everything that is received, all submissions are considered to determine their suitability for publication in *Flightlines* at later dates. We plan each issue many months in advance of their publication dates and look forward to receive new and fresh stories from the readership.

Bill Cumming, Volunteer Editor
museum@warplane.com

Vimy Flight Visit to Canadian Warplane Heritage Museum

April 9, 2017 marked the one hundredth anniversary of the Battle of Vimy Ridge, a pivotal moment in Canadian military history. To honour this occasion several replica First World War biplanes were scheduled to be flown over the Vimy Memorial in France in a salute to recognize the aerial element of the Battle. In 1917, the Canadian military did not have its own air force; however, 23,000 Canadians joined the British Royal Flying Corps and the Royal Naval Air Service during the Great War. Many of these men became aerial observers, cameramen who flew over enemy territory taking photos of German defences, guns and troop movements. After the ceremonies in France at the Vimy Memorial, the biplanes will be returned to Canada. They will commence a coast to coast flight across the country and will be visiting Canadian Warplane Heritage Museum from July 7th until July 9th.



Canadian Military Aircraft Serial Numbers Website



R. W. "Bill" Walker set out many years ago on a personal attempt to identify every serial number assigned to Canadian military aircraft and to track the history of each aircraft in as much detail as possible. Bill's lifelong passion project was his "Canadian Military Aircraft Serial Numbers" website and this website has become an invaluable tool to researchers and history buffs of Canadian military aviation. R. W. "Bill" Walker passed away several months ago.

The Canadian Warplane Heritage Museum is pleased to announce it will continue his legacy by hosting this website to ensure that Bill's efforts continue to have a long life on the web. At some point in the near future, we will also begin updating and expanding on Bill's work.

Visit the website at warplane.com/aircraft/serial-numbers-database.aspx

Air Force Day – Past, Present & Future – July 8



Meet current members of the Royal Canadian Air Force, see their aircraft up close on the ground and learn the many roles performed by Canada's air force today. From helicopters, trainers and transports to the CF-18 Hornet plus the collection of vintage military aircraft from the Canadian Warplane Heritage Museum, visitors will have a chance to view over 60 aircraft. Six World War I replica aircraft from the Vimy Flight are also scheduled to be in attendance.



RCAF

MAY/JUNE 2017

FLIGHTLINES



AL MICKELLOFF



Congrats to the AGM Award Winners

Pam Rickards presented the Alan Ness Memorial Award to Larry Doyle -

"Presented in recognition of an individual/group for service above and beyond what can normally be expected of a volunteer member."

Additional presentations included:

The Douglas MacRitchie Memorial Award to Rowen Baker -

"Presented for outstanding skill and contribution to maintaining and preserving aviation heritage through restoration, maintenance and care."

The Allan Shelley Award to Red LeBlanc -

"Presented to an outstanding Tour Guide/Duty Day volunteer who has represented the museum and its mission through their exemplary service, professionalism and commitment."

The Peter Gutowski Memorial Award to Rick Rickards -

"Presented to an outstanding volunteer pilot who through exemplary skill, talent, service, commitment and camaraderie, professionally demonstrated the ability and performance required to safely showcase the vintage aircraft."

The Albert (Al) Rowcliffe Memorial Award to Cathy Dowd -

"Presented to the employee of the year in recognition of outstanding performance, superior dedication and a can-do attitude on the job throughout the past year."

Air Combat Zone Opens at the Canadian Warplane Heritage Museum

Air Combat Zone, owned and operated by Steve Bigg, has formed a partnership with and has relocated to the Canadian Warplane Heritage Museum. Now visitors can experience live head-to-head dogfighting action flying missions in F-18 Hornet flight simulators!



According to the real world fighter pilots that have flown at Air Combat Zone, the experience is as close as you can get to the real thing without joining the Air Force! When you climb aboard an Air Combat Zone simulator, and settle into the ejection seat, you'll be amazed at the realism of the F-18 Hornet simulators cockpit. The live instrumentation, working heads up display, replica HOTAS throttle and stick and giant view of the world outside the cockpit combine to convince you you're flying a Hornet for real!



Member Profile



Trevor Stuart Meldrum

Born in 1926 in Toronto, Trevor Meldrum grew up in the Hamilton area, graduating from the Hamilton Technical Institute. Shortly after the formation of the Air Cadet program in Canada in 1941, Trevor joined No. 81 (Air Cadet) Squadron at the age of fifteen.

When the squadron was participating in a recreational day at Port Maitland in 1943, a number of cadets were caught in a severe undertow while swimming. Trevor, who was 16 at the time, repeatedly dove into the choppy cold waters to rescue four fellow Cadets and brought them to safety. Although the Canadian Forces Cadet Medal of Bravery was only created in 1948, sixty years later at the age of 81, the Cadet Medal of Bravery was awarded to Trevor for his actions that day in 1943. His is the first act of bravery to be recognized before the creation of the medal and Trevor is the seventh Air Cadet to receive this medal.

Trevor left the Air Cadets late in 1943 to join the RCAF, training as a Wireless Air Gunner (WAG) at No. 3 Wireless School in Tuxedo, Manitoba and No. 9 Bombing & Gunnery School on Fairey Battles in Mount Joli, Quebec. Early in 1945 he graduated with the rank of Sergeant. Although he volunteered for the Pacific Theatre, due to an excess of aircrew, he left the full time RCAF and returned to the Air Cadets as a Flying Officer, instructing radio and Morse code. He served for 2 years with No. 81 Squadron and the Cadet Air Wing, stationed at RCAF Station Hamilton in Mount Hope. Recently, Trevor served for many years as a member on the 735 (Firebird) Air Cadet Squadron Sponsoring Committee in Dundas, Ontario.

Following his release from the RCAF Trevor entered the printing industry as an apprentice printer in 1946, retiring from this business in the sales department in 1991.

Trevor's love for swimming and water polo led him to join the Hamilton Aquatic Club where he was on the Water Polo team. He was a member of the team that won the 1947 & 1948 Senior Canadian Water Polo Championship. Trevor volunteered and taught swimming, racquet ball and scuba diving at the YMCA, is a life member of the Hamilton/Burlington YMCA and instructed Scuba Diving for two years at McMaster University.

Trevor joined the Canadian Warplane Heritage Museum in June 1988, volunteering in the Museum gift shop, library and archives in the early days of the Museum. Today, Trevor is a life member of CWH and volunteers with the Lancaster Support Club. He is also an active member with Royal Canadian Air Force Association 447 Wing, Mount Hope and with Royal Canadian Legion Branch 36 Dundas, Ontario. Trevor was awarded the Queen's Diamond Jubilee Medal in 2012 in recognition for his volunteering services.





STEARMAN

The Forgotten BCATP Biplane by Bill Cumming

COOL SHOTS

In the opening days of World War Two, the Royal Air Force requested permission to transfer several of its Elementary Flying Training Schools (EFTS) to the relatively safe airspace of Canada to operate as part of the British Commonwealth Air Training Plan (BCATP), and away from the crowded British skies. The RCAF was willing to provide Tiger Moths to enable the schools to start training immediately, but the RAF was to supply the schools' permanent aircraft complement.

As both Canadian and British elementary trainer production were fully committed, the most obvious solution was to use a US built trainer acquired under lend-lease. The choice was the well-tried and reliable Boeing Stearman PT-17 and in October 1941, the RAF was able to obtain 300 Stearman without any difficulty.

The RAF's choice of trainer was understandable. This aircraft, first flown in 1934, was designed and manufactured by the Stearman Aircraft Company of Wichita, Kansas, and was to be the most widely used elementary trainer of the Second World War. Between 1934 and 1945 no less than 10,346 Stearman aircraft were manufactured - 8,584 complete airframes and 1,762 in equivalent spare parts.

On 17 October 1941 RAF personnel inspected a standard USAAF PT-17 and five days later prepared a report, requesting a number of alterations to meet "RAF Training

and Canadian Requirements". These modifications were mainly to enable the aircraft to be used for night-flying training and to fit it for Canadian winter conditions. They included an enclosed cockpit, a blind flying hood, cockpit heating, an oil tank hopper, an artificial horizon, a reversed mixture control, and the installation of landing lights. The modified aircraft was given the USAAF designation PT-27.

**IN OCTOBER 1941, THE RAF WAS ABLE TO OBTAIN
300 STEARMAN WITHOUT ANY DIFFICULTY.**

The RAF had notified the RCAF of the changes it was requesting, and on 5 November the RCAF informed the British Air Commission in Washington that they

approved, but added that a blind flying panel (consisting essentially of a bank-and-turn indicator and a rate-of-climb indicator) should be supplied as well. They also stated that carburetor heating was an absolute necessity and that the engine manufacturer's advice should be sought as to whether cylinder head temperatures could be maintained on the uncowled Continental R670-5 engines that would power the aircraft at temperatures as low as minus 40 degrees Fahrenheit. Little additional RCAF interest was shown in the new aircraft for several months except for negotiations to borrow an American example for familiarization.

Shortly after the contract for the 300 PT-27s had been placed, the Wichita Division of the Boeing Airplane Company (as the Stearman concern was known after its acquisition by





Top Left: Stearman FJ824.
COMMONWEALTH AIR TRAINING
PLAN MUSEUM

Bottom Left: Line up of Stearmans just
prior to their return to the United States.
CANADIAN WARPLANE HERITAGE
MUSEUM

Below Right: Stearman CF-AIU in the
'blueberry' blue finish when donated to the
Canadian Warplane Heritage Museum.
TREVOR DAVIES

Boeing) requested that, in order to expedite delivery and avoid clogging the production lines, the RCAF accept PT-27s that were identical to the USAAF PT-17s. The components for the modifications could then be shipped to Canada for retroactive installation.

The efficient Wichita production line started to churn out the PT-27s. The earliest examples flew in February 1942, with the first reaching the RCAF on 2 March 1942 and the 299th on 10 July of that year. Some of the initial deliveries were made to Winnipeg, but most were delivered to Calgary. As agreed, with the exception of colour and markings, the aircraft were identical to USAAF PT-17 aircraft. The 300 PT-27s were allotted USAAF serials 42-15570 through 42-15869 and carried RAF serials FD968 through FD999, FJ741 through FJ999, and FK100 through FK108. All of these numbers and serials were allotted in strict numerical sequence. In addition to these aircraft a PT-17 was on RCAF strength from March to June 1942 to enable the RCAF to prepare pilots' notes and become familiar with the type. The 'loaned' PT-17 retained its USAAF serial 41-25453.

In the spring and summer of 1942 the PT-27s were issued to three RAF Elementary Flying Training Schools (EFTS) in Alberta: #31 EFTS at de Winton, #32 EFTS at Bowden, and #36 EFTS at Pearce. A few PT-27s were also on the strength of No. 3 Flying Instructor School at Arnprior, Ontario.



Even before the first PT-27 arrived in Canada, the RCAF began to have feelings of apprehension which rapidly grew into alarm. A letter to Boeing Aircraft on 19 February asked why no reply had been received to the 26 January 1942 stipulation that it was essential 20% of the blind flying hoods and instruments, and the landing and navigation lights be supplied with the aircraft. Then, in early March, a senior representative from Continental, the engine manufacturer, visited Ottawa. When asked about the installation on the PT-17s he stated that he had grave doubts as to its ability to withstand Canadian winters, and, as far as he knew, no consultation had taken place on the subject. Later in March the RCAF was perturbed by tests at Rockcliffe which indicated that the fears concerning the cold air characteristics of the Continental R670-5 were only too well founded.

On 14 April an internal RCAF memo urged that Boeing select a name for the PT-27 trainer. This had apparently been the subject of previous correspondence, "and it is about time they decided what it is to be called. The RCAF suggested that "Sophomore", "Scholar", or "Starling" might be appropriate, but warning that "Starling" might easily be confused with "Stirling". The USAAF adapted the name Kaydet to the PT-17 Stearman, but the Kaydet name was never officially recognized by the RCAF. Since no reply appears to have been made to the request by the RCAF for a Canadian name, for the duration of their brief Canadian service the PT-27s seem to have been known simply as Stearmans.





Stearmans with female ground crew members at RCAF Station Bowden, #32 EFTS, spring 1942. BOMBER COMMAND MUSEUM OF CANADA

In the meantime the Stearmans at the three RAF schools in Alberta were causing few problems. Their good flying characteristics and ease of maintenance were the subjects of particularly favourable reports. However, upward visibility from the front cockpit was considered poor and there was some controversy as to which seats the student and instructor should occupy.

The RAF Instructors were also not comfortable with the American style seat harness: *"The Stearman was a powerful thing for doing aerobatics. You could do lovely rolls with it, but it didn't have a shoulder harness, just a lap strap. It went across your knees, and if you didn't have it tight and went on your back, you'd feel yourself drop! It just had a big strap three or four inches wide almost across your crotch, and if you were doing aerobatics, you made damn sure that it was tight. I remember not having it tight and getting the fear of my life because I dropped an inch or two."*

In their first months in Canada the Stearmans suffered an unusual number of ground loops. Various undercarriage modifications were suggested to remedy this, but the final consensus was that the accidents were due to many of the RAF instructors being unfamiliar with aircraft fitted with a tail wheel and brakes. Certainly the incidence of ground loops diminished as time went on.

The three RAF elementary flying schools did have one serious problem. Due to the non-delivery of night-flying equipment for the Stearmans they were obliged to maintain Tiger Moths for night training as 20% of their aircraft establishment. In addition to the obvious disadvantages from the point of view of spares and maintenance, the two aircraft had completely different flying traits. The Tiger Moth was far more sensitive and had to be "flown" every second, unlike the more forgiving Stearman.

Having a student do his night-flying training in a different type of aircraft, and one more difficult to fly, than the one to which he was accustomed was not good training practice.

By this time all the PT-27s had been delivered except the final example, FK108, which was being retained at the factory, with RCAF consent, to act as prototype for the various modifications. On receipt of FK108, the RCAF tested it thoroughly; particularly its spinning characteristics, which, it had been feared, would be made worse by the canopy installation. It proved an excellent aircraft, but it was only a prototype, and the RCAF had still received no information about whether and when sufficient modification components would be delivered to outfit the remaining PT-27s.

THE TWO AIRCRAFT HAD COMPLETELY DIFFERENT FLYING TRAITS

On 14 October 1942, two days after FK108 left Wichita, flying training at the PT-27 equipped EFTS had finally come to a halt, due to the effect of the cold weather on engines, students, and instructors. The end of the flying training was not reached without a fight and considerable ingenuity was used to continue at least some flying. But all the best efforts of ground crews and medical officers plus the use of special clothing and lanolin impregnated face masks were to no avail. By cutting down the intake of students and increasing the number of Tiger Moths some training continued, but the PT-27s saw no further service in Canada.

On 28 November 1942, the decision was made to return the surviving 287 PT-27s to the USAAF in exchange for the equivalent number of Fairchild Cornells for the RAF. The RCAF



felt this scheme had many advantages - the USAAF could put the Stearmans to immediate use, thus helping the war effort, the RCAF would not have to provide storage for the aircraft for the next four or five months, and, as the RCAF and RAF were standardizing on the Cornell as an elementary trainer, the exchange was a step in the right direction. This was scarcely sooner said than done. All parties agreed and with a speed that would have been praiseworthy if applied to the early part of the program, the PT-27s began to head south. Starting on 5 December 1942, the first aircraft were flown to Winnipeg and Calgary and thence to Great Falls, Montana by bone-chilled RCAF and USAAF ferry pilots. More than 250 PT-27s were back in the United States by the middle of January 1943. A few examples under repair lingered on in Canada, the last not being returned until 24 April 1943. FK108 itself was only on RCAF strength for six weeks, being transported to Wright Field on 5 December 1942.

IT QUIETLY DISAPPEARED FROM OPERATIONAL SERVICE, AND HISTORY WILL RECORD IT AS A FOOTNOTE IN THE ANNALS OF THE BCATP

Canadian Warplane Heritage was fortunate to receive a donation on 5 April 1987 of a PT-17 Stearman from Mr. Bob Hill. The Stearman was purchased from Mr. John Patterson, a former Spitfire pilot, who used the Stearman to keep up his flying practice. When purchased by Bob Hill, it was painted in an overall 'blueberry' dark blue colour scheme with white highlight stripes on the fuselage, and registered CF-AIU. The Stearman was refinished by CWH into the colours and markings of RAF Stearman FK107, the last PT-17 delivered to the RCAF. C-FAIU is well known in the CWH aircraft fleet and flown regularly with the aircraft ride program.

However, the PT-27 Stearman was never to become one of Canada's elementary training standbys as did the Tiger Moth, Finch and Cornell. After serving with the RCAF for a very brief period, it quietly disappeared from operational service, and history will record it as a footnote in the annals of the BCATP.

The Other Stearman

by Bill Cumming

In 2008, a second Stearman joined the fleet of aircraft at the Canadian Warplane Heritage Museum. Stearman C-GPTD was donated by Bill Coyle, a member of the Board of Directors at the Museum. This Stearman was manufactured in 1942 as a model PT-13B Kaydet (construction number 75-5315) for the United States Army Air Forces. Its military serial number was 75-5315. The aircraft was finished in the markings of the United States Army Air Corps, with the light blue fuselage and yellow wings and tail. It remained in this colour scheme during the time the Stearman belonged to CWH.



Stearman C-GPTD. GEORGE TRUSSELL

Stearman C-GPTD was sold to a customer in England and, in January 2015, the aircraft was dismantled for shipment to its new owner. Money raised from the sale of the Stearman was put toward the continuing repairs of the Lancaster engines. The Stearman is now operational in Britain with the registration G-CIPE.



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Avro Lancaster B.I(F.E.)/B.III

Airfix 1/72 scale model kit



\$49⁹⁹
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Of all the RAF bombers involved in operations over Germany during the Second World War, the Avro Lancaster must rank as the most famous of them all. As the strategic bombing offensive gathered momentum, it was the Lancaster that came to the fore after entering service with the RAF in 1942, overshadowing its other four engine contemporaries, such as the Handley Page Halifax and the Short Stirling.

The Lancaster flew 156,000 sorties and dropped 608,612 long tons (618,378 tonnes) of bombs between 1942 and 1945. Just 35 completed more than 100 successful operations and 3,249 were lost in action. It was the Lancaster that spearheaded the battles for Berlin and Hamburg, as well as playing a vital role in the devastating raid upon Dresden. The Lancaster has become the symbol of the Bomber Command and as such, a symbol of the British air power during the Second World War.

Spitfire by Barrie A.F. Clark

Eurographics
1000 piece puzzle



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Artist Barrie A.F. Clark's Spitfire image is the best selling aviation art print in history. It is such a classic image, it does not matter how many times one looks at it, one never tires of it. Now available as a 13" x 39" puzzle. Strong high quality puzzle pieces made from recycled board and printed with vegetable based ink. This superior quality puzzle will delight and educate all at the same time.

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Men's golf shirt with the Canadian Warplane Heritage Museum logo embroidered in grey. 100% micro polyester double pique with in house wicking. 145 g/m2 (7 oz/linear yd).

Colour: Black
Available sizes: M, L, XL, 2XL



\$49⁹⁹
EACH



CANADIAN WARPLANE HERITAGE MUSEUM

Aircraft Updates

Talking Turkey by Don Coit

AL MICKELLOFF



Restoration progress continues on the Tracker. The new left hand side fuselage panel has now been installed with the CWH staff completing the installation of the panel in early March using the last special fasteners. In addition, the vertical stabilizer was reattached to the airframe. The vertical stabilizer was removed some time ago, paint stripped and inspected. Mounting points passed Non-Destructive Testing (NDT) and where needed, new mounting hardware has been procured and installed.

CWH technicians are working to complete a repair in the forward wheel well area. Some time ago, we discovered a small part of one of the stringers adjacent to the nose wheel right hand side door hinge mount, was corroded. The affected material has been cut out and a repair is being engineered and installed. In the same wheel well, bearing retainers for part of the pilot/co-pilot controls are being removed to replace the bearings. Both of these activities are close to "keyhole surgery". Once these repairs are completed, we shall be able to finish painting inside the wheel well area, reinstall items of the controls and emergency hydraulic system, the nose wheel, strut and the doors.

We have started to reassemble the port side wing. Most parts removed were in great shape and we anticipate a quick reassembly. Then the critical work of machining and fitting the replacement wing lock fittings (for both wings) will take on a new urgency. In the meantime, the wing lock pins in the wing centre section are being removed for inspection, repainting and the installation of new seals. Bleeding and leak testing the completed wing lock system will be a challenging task in the near future.

Tracker Tidbits by Bob Freeman

All of the instruments have been installed in the instrument panel with all mechanical and electrical connections completed. We have determined the labels required in the cockpit from reviewing pictures we could find of the Avenger instrument panels and from the Pilot's Handbook, and now permanent labels are being made up and installed.

All the electrical circuits have been tested and all mechanical and electrical connections have been made for the engine. The engine will be ready for its initial run ups after all spark plugs have been properly installed to the proper torque and inspection of all the systems has been completed.

The propeller is ready for installation but has not been installed. It was sent out, overhauled and certified and will be assembled by May. However as soon as the propeller is mounted on the aircraft, time on the engine starts counting to the next required overhaul interval even if the engine never runs. Therefore, it will not be installed until Engineering is satisfied that everything is ready for the run up.

We are completing the aileron assemblies and once they are installed and connected then all the major parts are installed on the aircraft.

The completed instrument panel in the pilot's cockpit.
DON COIT





RUHR EXPRESS

Canada's first built Lancaster

by David Clark

1942 was a critical year in the war against the Axis powers. With the United States' entry into the Second World War in December of 1941 and the victories at Midway, El Alamein and Stalingrad during 1942 the tide of the war looked to be turning against the Axis and victory for the Allied powers seemed to finally be possible. The Allied bombing offensive against Germany and occupied Europe was also at a critical phase in this year. With America's decision to pursue a daylight precision bombing strategy, it was left to Britain and her Commonwealth nations, led by the new commander of Bomber Command Arthur Harris, to continue its ever-expanding large-scale night bombing campaign. This would require a massive commitment of men and resources and aircraft equal to the task.

In February 1942, the same month Harris assumed the leadership of Bomber Command, Avro (A.V. Roe and Company) introduced their newest heavy bomber, the Lancaster, into operational service. It was soon decided that this new bomber would be the backbone of the RAF (Royal Air Force)'s heavy bomber force, so measures were immediately put into place to maximize the construction of this aircraft. As with the Merlin engine, Avro subcontracted production of the Lancaster and its components to British companies; but this was still not enough, so solutions outside Britain were considered. Due to its relatively safe location and proximity to the production of the Packard Merlin engines, it was decided that a shadow factory for production of Lancaster bombers would be set up in Canada.

Victory Aircraft

National Steel Car Corporation Limited was founded in 1912 with its head office in Montreal and a factory in Hamilton. The company's main product was rolling stock for the railroads, but when faced with financial problems during the Depression

the company diversified its production and began to build products such as motor trucks, bus bodies, and outboard motor boats in order to maintain the company. Then, with the spectre of another great war looming in Europe in the mid 1930s, the company decided to set up an aviation division to continue to diversify production. After receiving a contract to build Westland Lysanders for the RCAF (Royal Canadian Air Force), National Steel Car chose Malton, Ontario for the site of its new factory, which was completed in June 1938. After the war began, the aviation division joined with five other Canadian companies to form the Canadian Associated Aircraft Limited and the factory in Malton was expanded for the first time. Between 1939 and 1941 it would be involved in the production of aircraft and aircraft parts (Avro Ansons, Handley Page Hamptons (wings), Hawker Hurricanes (wings) along with aircraft assembly and modification (North American Yales and Harvards). On 18 December 1941 another contract was received to build the new Lancaster bomber, and work began in earnest on the monumental task of upgrading the relatively small factory to start large scale production of one of the most advanced aircraft of its time.

Retooling and expansion of the factory and the hiring of a much larger workforce began in January 1942 with blueprints and negatives arriving from Britain along with a technical expert from Avro (Alf Stewart) and Rolls Royce (Fred Morral), and in August 1942 Lancaster Mk. I R5727 was ferried to Canada to be used as a reference template. Unfortunately, National Steel Car's aviation division encountered a number of personnel and production problems that caused concern within the Canadian government. Many of them were associated with the incredible stresses and complications that can occur when a small company expands at the speed it did while taking on ever more complex and demanding projects. As the retooling of the factory and the training of the vastly



expanded workforce continued through 1942, the concerns did not abate in the eyes of the federal government. The fear of production problems and delays became even more acute when the RCAF formed 6 Group on 25 October 1942, its own all Canadian formation within Bomber Command. The government and military were pushing to have large independent Canadian formations within the British military system, so the success of the new group was vital. Six Group would need a steady supply of aircraft to function effectively and the government also wanted to have as many of the aircraft flowing to the group to be Canadian built Lancasters. Finally with delays and personnel issues still plaguing the company, Minister of Munitions C.D. Howe decided to expropriate the company on 4 November, 1942, making it a Crown corporation and renaming the company Victory Aircraft Limited.



Pilot Officer Harold Floren sitting at the controls of KB700 Ruhr Express around the time of her first operation, November 1943. CANADIAN WARPLANE HERITAGE MUSEUM

Even with all of the problems and changes the now-Victory Aircraft had experienced, by the beginning of August 1943 the first Lancaster was about to roll out of the factory. It had been only sixteen months since the blueprints had arrived in Malton, which was an incredible achievement. The Canadian built aircraft were given the designation Lancaster Mk. X, the equivalent of the British Lancaster Mk. III, the designation given to British built Lancasters equipped with Packard Merlin engines. Lancaster Mk. Xs also differed from their British counterparts in a number of other areas, mainly involving the electrical system and US/Canadian built instruments which were the cause of many maintenance problems with ground crews who had trained on British versions of the aircraft. As the first Lancaster KB700 neared completion, ceremonies and celebrations were being prepared. She was even given some simple nose art, a falling red bomb over which was painted a yellow arrow and the aircraft's new name: Ruhr Express. A christening ceremony was planned soon after the initial test flight, and a series of publicity and press events were planned before and after her arrival in Britain.

Ruhr Express

Ruhr Express now needed a crew. Due to the importance of the aircraft and the various events that would accompany her as she went to war, an experienced crew with a decorated captain was selected. KB700's skipper would be S/L (Squadron Leader) R.J. Reg Lane DSO, DFC a veteran of two complete 25 operational tours in Bomber Command which included attacks on the battlecruisers Scharnhorst and Gneisenau and the battleship Tirpitz. After completing his second tour Lane had been transferred from 35 Pathfinder Squadron to the Pathfinder Navigation Training Unit before returning to Canada to ferry Ruhr Express across the Atlantic. His crew were also all Bomber Command veterans and included P/O (Pilot Officer) Johnny Carrere (navigator), Sgt (Sergeant) Ross Webb (wireless operator), F/Sgt (Flight Sergeant) Reg Burger (mid upper gunner), P/O Steve Boxcar (second pilot), F/Sgt R. Wright (bomb aimer) and Sgt Mike Kaczynski (flight engineer). They arrived in Canada in July and would be involved in all of the ceremonies and publicity events before and after they ferried KB700 to Britain.

Finally on 1 August, 1943, KB700 rolled out of the Victory Aircraft factory and departed on her first test flight. The christening ceremony was slated for five days later and the aircraft was to depart for Britain on the same day, so there was little time for comprehensive testing. The flight test was completed without incident and Ruhr Express was deemed ready. On 6 August, 1943, in a ceremony attended by almost the entire Victory Aircraft workforce and broadcast on radio Canada wide with commentary by Lorne Greene, KB700 was officially christened Ruhr Express.

Once the speeches and spectacle ended, the arduous task of ferrying the aircraft to Britain began. Lane, his crew, a Rolls-Royce representative, and the crew's mascot (a white poodle puppy named "Bambi") departed Malton for Dorval, Quebec, the first leg of their journey. Unfortunately, the ferry flight was marred with technical problems and delays. All of the aircraft's instrumentation failed. Once the aircraft arrived in Dorval, Victory Aircraft was ordered to complete performance tests before she departed on the next leg of the journey. During these tests one of the engines failed and required a replacement to be sent from Malton. It would be August 31 before Ruhr Express was able to depart on the next leg of her flight, by which point press releases already had her in England preparing for deployment. Technical problems like this were not uncommon in new aircraft, especially in the first aircraft off the production line of a new factory that had gone from blueprints to production with such speed, but such problems would continue to plague KB700 throughout her service life. By September 9 she was in Gander, Newfoundland ready for the flight to Britain but weather delayed her again. Finally after a thankfully uneventful Atlantic



Squadron Leader R.J. Reg Lane DSO, DFC and the crew that ferried KB700 Ruhr Express to England.
CANADIAN WARPLANE HERITAGE MUSEUM

crossing, Ruhr Express was welcomed to Britain by High Commissioner Vincent Massey. Another series of ceremonies, celebrations, press conferences and publicity flights to other RCAF squadrons followed. A.V. Roe representatives also inspected KB700 and certified her fit for service. Ruhr Express, Reg Lane and the ferry crew then parted company for reassignment. Ruhr Express joined 405 Squadron, arriving on 5 October, 1943. Her baptism of fire was soon to follow and it would be to one of Bomber Command's most dangerous and deadly targets: Berlin.

405 Squadron had formed on 23 April, 1941 and was the first RCAF squadron to participate in a bombing raid ten weeks later. When Ruhr Express arrived at 405 Squadron in October 1943, Bomber Command was about to begin a bombing campaign that was soon dubbed the Battle of Berlin.

Upon her arrival at 405 Squadron, KB700 was given the unit designation LQ-Q for Queenie. Once pre-operational testing and training was completed Ruhr Express was deemed ready for service. 22 November, 1943 would be her first operation and a crew captained by FSgt Harold Floren was assigned to the aircraft along with a reporter and photographer to document Ruhr Express' mission to Berlin. But once again the weather and mechanical problems conspired against KB700. Weather over most of Western Europe was atrocious, causing over half of the Pathfinder force to abort. Floren tried to continue onto the target but engine problems that had begun as the aircraft crossed into enemy territory continued to worsen and finally forced him to return to base. Even though Ruhr Express had failed to reach Berlin a fake briefing of the mission was held for the press for publicity's sake. KB700 was quickly readied for another mission to Berlin and on November 26 Floren, who had just been promoted to the rank of Pilot Officer, piloted Ruhr Express on her second trip to Berlin.

Fortunately her second mission was free of weather and mechanical problems and she returned from her first successful mission unscathed. The mission was not without technical issues; the cameraman found that his camera had frozen up during the flight so no photos had been taken during the mission. But this first successful mission would end up being her last for 405 Squadron. The unit was equipped with Lancaster Mk. Is and the differences in the engines, electrical system and instruments between them and the Mk. Xs would make maintenance and logistics problematic. KB700 would need to be transferred to a squadron that would be equipped with Canadian built Lancasters. 419 Squadron would soon be one of those units as they were about to begin the transition from Handley Page Halifax heavy bombers to the new Mk. X Lancasters that were now regularly emerging from the Victory Aircraft factory.

419 Squadron was formed on 15 December, 1941, beginning combat operations in January 1942. It was the third RCAF bomber squadron to become operational in Britain during the war. The unit joined 6 Group when it formed on 25 October, 1942 and was just beginning to transition from Halifaxes to Lancasters when KB700 was taken on strength on 26 December, 1943. Ruhr Express was given the squadron designation VR-Z for Zebra and would spend the next six months as a training aircraft helping 419 pilots and crews transition to the new Lancaster Mk. Xs. She would be fitted with dual pilot controls, the H2S radar navigation system, the 'Boozer' fighter warning system and a Glenn Martin .5 upper gun turret, which was electrically instead of hydraulically powered. These conversions, along with differences in the Packard Merlin engines and the Canadian electrical systems and instrumentation, caused maintenance nightmares for the ground crews, many of who had trained on the British aircraft and systems. This, along with the continued mechanical failures Ruhr Express had become known for, added to her reputation as a difficult and unpopular aircraft and would earn her the unflattering moniker of "The Ruhr Whore" by crews who drew the assignment of flying her on combat operations.

419 Squadron flew its first operation in which the majority of their aircraft were Lancasters on 27 April 1944 and had completed the transition to the new aircraft in early May. In the months leading up to D-Day, Bomber Command had been re-tasked from its attacks on German cities to targets in France in preparation for the invasion of Europe. 419 Squadron had been involved in many of these attacks. Finally, with all of the squadron's crews fully trained on the Lancaster, Ruhr Express returned to combat service on the day of days, 6 June 1944, with her first operation against the coastal defence batteries at Merville-Franceville in the early hours of the invasion. From June to late August the majority of 419's operations would



be against targets in France in support of the Normandy campaign and against V1 flying bomb launch sites as part of Operation Crossbow; however, it would be on one of the few operations that the squadron flew against Germany during this period that Ruhr Express would first face attack from the enemy directly. On Ruhr Express' seventh operation in mid June against a synthetic oil plant in Sterkrade, she was attacked by a German night fighter that her skipper F/O W.F. Dix managed to evade after performing a corkscrew maneuver and escaping into cloud cover.

By the later half of August Bomber Command was released from supporting the Normandy Campaign and returned to the mass bombing attacks on Germany. Ruhr Express would fly 20 of its final 22 missions against Germany. She would once again face attack from a German night fighter on her 28th operation in the latter half of August against the city of Stettin, with her pilot W/O (Warrant Officer) L.H. MacDonald having to perform three separate corkscrew maneuvers before he finally managed to evade an attacking Messerschmitt Me 110 fighter. KB700 would also be hit by flak on her 30th operation at the end of August, also against Stettin, which would tear an 18 inch long hole in her fuselage port side below the mid upper turret. But it was on her 27th operation against Brunswick that she came closest to disaster. This was not due to enemy action, but as a result of the mechanical problems that had always plagued her. During the mission she was forced to abort after suffering a major electrical failure that caused all four of her engines to fail at different points during the flight.

By this point KB700 had become an aged and worn out aircraft. The combat operation and all of the time she had spent on training flights and publicity appearances had taken their toll and that, combined with the continued mechanical issues she had suffered from since she had left the factory, had made her a slow and difficult aircraft to fly. Flying "The Ruhr Whore" had become a badge of achievement for older crews and a rite of passage for newer ones within the squadron. A total of 18 pilots flew her during her time with 419 Squadron. By 2 January 1945 the now venerable Ruhr Express was still flying and prepared for her 49th operation against Nuremburg with F/Lt A.G.R. Warner at the controls. Rumour had it that once KB700 had completed her 50th mission she was to be returned to Canada for a new series of ceremonies and celebrations and perhaps a well deserved retirement as a memorial or museum display. After completing the operation and reaching Britain without a hitch, she was on approach to 419's airfield at Middleton when the undercarriage indicators showed that one of her landing gear had not locked into place even though a visual check confirmed that all the gear was down and locked. Problems continued and it is believed that a failure in the flaps caused KB700 to hit the

runway hard. Warner managed to stop the aircraft about fifty feet past the end of the runway but now needed to move KB700 out of the way as quickly as possible in case any of the other aircraft that were landing overshot the runway as well. As Ruhr Express turned her starboard outer prop struck a trench digging machine that had been left at the end of the runway by civilian workers. The collision ruptured her fuel tank and within seconds the aircraft was ablaze. The crew all managed to escape but the fire spread to the ammunition stores and KB700 quickly became a blazing pyre. Little of Ruhr Express remained by the time the fire was extinguished. The mechanical problems that had plagued her throughout her life had finally been her undoing – a sad end for the veteran warplane that had been so close to returning home in triumph.

Legacy

Victory Aircraft Limited built a total of 430 Lancaster Mk. Xs during the war, KB700-999 and FM100-229, of which about 100 were lost in combat and due to accidents. But as with most of the war industries production at Victory Aircraft was quickly wound down as the war ended and personnel at the factory was cut to a skeleton staff of less than 400. On 5 December, 1945 Victory Aircraft was sold and soon renamed A.V. Roe Canada Limited.

Victory Aircraft was an important part of Canada's war effort that not only supplied the RCAF with a steady supply of vitally needed front line bombers during the war, but also left a legacy of aerospace development along with resilient aircraft that have stood the test of time. As for Ruhr Express, she will always hold a place in Canada's aviation history as the first of many Lancasters that rolled off Victory Aircraft's production line. But just as important is the fact that even though she was always plagued with the reputation as a temperamental and difficult aircraft to maintain and fly, she always brought her crews home alive. That, if nothing else, is a fitting epitaph for the first Canadian built Lancaster.

**To read the full version of this article visit
warplane.com/ruhr-express.aspx**



What remained of KB700 Ruhr Express after the landing accident that occurred following her 49th mission on January 2-3, 1945.
BOMBER COMMAND MUSEUM OF CANADA

2017 Calendar

June 17 to 18 Come fly with us at FLYFEST

June 26 to July 2 SENTIMENTAL JOURNEY - B-17 Visit

July 1 CANADA DAY - 150th Celebrations & Flypasts

July 2 A PLACE TO BELONG - Sponsored by the Hamilton Community Foundation

July 7 to 9 VIMY FLIGHT - Tour visit of World War I replicas

July 8 AIR FORCE DAY - Past, Present & Future

July 30 VINTAGE WHEELS & WINGS

August 12 BCATP FLY-IN

August 30 COMMUNITY CHARITY AIRSHOW - At the Brantford Airport

September 9 to 10 CLASSICS OF THE GOLDEN AGE - Indoor Car Show

September 23 SKY'S THE LIMIT - Charity Auction

October 28 BIRCHALL LEADERSHIP AWARD DINNER 2017 - Recipient Chris Hadfield

November 11 REMEMBRANCE DAY - Large indoor service

November 18 SWING OUT TO VICTORY - Dinner & Dance

*Please visit warplane.com for additional updates. Dates subject to change.

Museum Opportunity

As the Museum team strives to maximize alternative revenue sources, we find that rental opportunities for our facility are a great way to help fund the museum activities. As such, we need to remain competitive with other meeting venues that rent their space. Moreover, for us to manage even our own operations effectively, we need to stay current and state-of-the-art with our business tools.

To this end, the museum is in need of a large television (approx. 70") for our main office boardroom. This room is constantly in use for both museum and rental purposes and our current portable projector is not ideal as the lighting coming from the hangar does not allow for a clear and bright projection on the wall. An LED television would be perfect for this purpose; not only would it be much more visible, but we would no longer be required to turn off the lights during meetings.

This is a fairly large expense - approximately \$2,000, so we are turning to you, friends of the museum, in hopes that someone knows of a business or person who may be willing to donate all or a portion of this purchase. We would be more than happy to mount a plaque in honour of that donor right below the TV. Please contact Sally Melnyk at 905-679-4183 ext. 238 or sally@warplane.com if you have any ideas or think you may be able to help. Thank you in advance for your consideration!

From the Archives Department

by Erin Napier

A recent donation were two original photographs of actor James Cagney taken while filming the 1942 Warner Bros. movie Captains of the Clouds. The first photo shows Cagney on set, first relaxing in the Director's chair with actors in RCAF uniforms looking on. The second captures a scene being filmed with Harvard and Finch aircraft in the background. This was James Cagney's first colour movie and boasts some spectacular aerial sequences. The story follows a group of Canadian bush pilots who decide to join the Royal Canadian Air Force when WWII breaks out. Cagney plays a strong willed flyer who must learn to turn himself into a team player. The photos were taken by Sgt. Reginald Vidler of the RCAF photo section.



How Can I Help?

SKY'S THE LIMIT Charity Auction – Saturday September 23, 2017

Back by popular demand, we are seeking new and unique auction items to help make this fundraiser a great success. If you can help please contact Pamela Rickards at 905-679-4183 ext. 230 or pam@warplane.com.



CANADIAN WARPLANE HERITAGE MUSEUM

View from the Top



Over the last seventeen years that I have been associated with the organization, one of the main concerns of the museum and continuing topics of discussion, by necessity I might add, has been finances. Looking to the future I have no reason to believe that this will change and our collective attention to the "bottom line" will continue to be a fundamental element of our future welfare.

Given this necessity to survive and also grow as an organization, we will need to continue to be creative, innovative, forward thinking, open to developing key relationships and at times bold in our approach to carrying out our mandate and mission. This will mean that we undertake certain activities, and enter into select partnerships on some events that might not have been done in the past.

The various weekend facility rentals over the slower museum winter period, the LAV III monument to the Afghanistan Veterans, the Royal Military Colleges Birchall Leadership Dinner, close coordination with Hamilton Tourism and City staff, the introduction of the Air Combat Zone CF-18 simulators at the CWH, development of virtual reality exhibits, hosting of the RCAF National Search and Rescue Exercise

and competition (SAREX), working with the Hamilton Philharmonic Orchestra for the next Remembrance Day Concert, taking over the newly named "Community Charity Airshow" from the Rotary Club of Brantford which will be held on Wednesday August 30, 2017 at Brantford Airport and help charitable children's organizations in that community, as well as providing administrative support to the "Veterans Golf Tournament" put on by KPM Industries, are but a few examples of some of these initiatives.

As we continue to advance further into the 21st century we will need as an organization, by necessity, to remain nimble and flexible in our approach, so that we can still honour the past while being able to reach young and new generations of Canadians in a meaningful way while respecting the "bottom line".

Per Ardua Ad Astra

A handwritten signature in dark ink, appearing to read "D. Rohrer".

David G. Rohrer, CD
President & Chief Executive Officer
Canadian Warplane Heritage Museum



warplane.com



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