

# THE NORSEMAN NEWS

Summer 2022



THE OFFICIAL NEWSLETTER OF THE  
BRITISH COLUMBIA AVIATION MUSEUM

## My 5th NATO Tiger Meet *by Jack Funk*

As you may know by now, I am an aircraft “spotter”/enthusiast. This year in May I was fortunate enough to go to the NATO Tiger Meet at Araxos, Greece! The Tiger Meet is an annual two week training exercise for European squadrons having a big cat name. When Canada had combat forces based in Germany 439 “Sabre Tooth Tiger” squadron participated. A CF-104 Starfighter would be painted up in bright yellow and black Tiger stripes. Later, a CF-18 was painted in grey tiger motif. Since the end of the Cold War, 439 has been based at Bagotville, Quebec with CH-146 Griffon helicopters, and so are no longer eligible.

In my earlier years I wished I could get to one of these events. Thanks to air travel and aviation tour companies such as Ian Allan and 4Aviation, I've been able to be at 5 Tiger Meets so far. My first such event was at Cambrai, France in 2011. Next was at Orland, Norway 2012. Konya Turkey was 2015. Zaragoza, Spain was 2016! I was hoping to attend the Meet in Portugal last year, however the dreaded Virus was still holding things up.

When you go with these groups you get opportunities you would not otherwise get. The usual format is that on Thursday we do spotting (photography) outside the fence. This is pre-arranged with the authorities. Most bases don't allow such activity. It may compromise security! On Friday we are usually allowed on the base where we can smell the jet fuel up close and personal. Quite often there is a public airshow on Saturday.

Attending these events is an awesome way to enrich your knowledge of aviation history. Often as time allows other scenic/historic sites can be visited as a sideline.



F16C Aegean Tiger (Jack Funk)

This year the Hellenic Air Force hosted the event at Araxos air base, home of 335 squadron the “Aegean Tigers” and their F-16Cs. I was able to arrange time off work; it was a bit nerve wracking, as full permission from Greek authorities was late in coming! Friday morning we arrived at Araxos, way out in Greek agricultural country. By the time we walked out to our designated compound, the action was under way. From 10 am until 5 pm, the air was being rent with the sound of NATO jets from various countries taking off and landing nearby. A great photo opp! This years attendees included F-16 Belgium 31 squadron, 3 different Rafale squadrons from France, Italian Eurofighters, F-18As from Spain, F-18Cs from Switzerland, and F-16Cs from Greece. The Czech Republic sent M-24 Hind helicopters. A couple of F-4E Phantoms from nearby Andravida flew in as well as other NATO jets. It's a great way to see some of the world as well as staying up to date with current NATO activity!



French Rafale at Araxos (Jack Funk)

# President's Message

## Summer 2022

As yet another issue of the Norseman News is distributed, I find myself looking forward, with not much of a recap of the last few months, but rather a peek at the exciting months ahead. I'm looking forward to the re-launch of our volunteer newsletter, Hangar Talk, with all of the board news and volunteer opportunities bound to appear and chances for us to gather together once again.

We are looking forward to once again hosting our volunteer lunches, with some minor changes, but still giving our members and volunteers a chance to catch up with each other and perhaps even discover an area of the museum new to you!

Hopefully these gatherings will give you an opportunity to meet our newest board members elected at our AGM in April; they are Cindy Ingram (secretary), Richard Mosdell and John McManus. All are eager to jump right in and help maintain our unique and wonderful collection into the future.

The summer months will bring many events to the museum but the one we are all busy planning for is our August 20, Open House! Yes, we're back, and planning plenty of fun, family activities for the day.

Enjoy your summer – see you at the museum!

Laura Lavin, President, BC Aviation Museum



French Mirage 2000 at Cambrai, 2011



Greek F-104 in Tiger Regalia

**More Tiger Meet photos by Jack Funk**



Italian Eurofighter Typhoon



## Important Upcoming Dates

July - September 2022

July 16 Saturday Norseman Engine Run Up at 12:00 noon

August 20 Saturday **OPEN HOUSE** and Norseman Engine Run Up at 12:00 noon

September 17 Saturday Norseman Engine Run Up at 12:00 noon

Speaker nights and volunteer lunches are cancelled or postponed until further notice - however, since the Norseman News is published only four times a year, and pandemic-related events can change almost by the week, please continue to check happenings at the Museum's website or current Slipstream magazine for dates and events.

The Museum is now open summer hours: open six days a week, Thursdays through Tuesdays, from 10am til 4pm. The museum is closed Wednesdays.

## Think about volunteering!

The Museum is always looking for volunteers to take on various roles, from working the till and welcoming visitors, to guiding tourists, to working on the collection, to helping out on special events.



Contact Peter Garnham if you'd like to help. Peter's contact details are on the last page of the newsletter.

## Wanted: Editor for the Norseman News

It's time for your current editor to move on, and so the Norseman News is looking for a new editor. I'd mention the exorbitant salary, but - of course! - we're all volunteers here.

The NN is published 4 times a year, on the 1st of January, April, July and October. The job can be done remotely, but you would require some proficiency in Microsoft Publisher (not a very high bar, to be honest). I have digital back copies going back ten years and will provide those on CD, and I will meet with you and show you the ropes. Truthfully, it's a lot easier to manage now, since we have gone to all digital production and email distribution.

Please contact Volunteer Coordinator Peter Garnham (see back page) if you're interested.

*Dave Byrnes*

## **Presidents Report: 2023-04-23 Annual General Meeting** by *Laura Lavin*

Many thanks to everyone for another successful Annual General Meeting, held on Saturday, April 23, with 64 members in attendance.

Everyone enjoyed a delicious barbecue luncheon prior to the meeting which was held in the Henderson Hangar.

As Board President, I began the meeting with an introduction of Administrative Assistant Julia Cairns and Human Resources Coordinator Gary West who are both doing an admirable job of connecting volunteers with a variety of functions and enhancing the performance of the museum on a daily basis.

I was very grateful to have the opportunity to briefly outline the positive momentum that our volunteers have established and will continue to create for the BC Aviation Museum's future. Thank you all for your continuing hard work.

I also acknowledged the work of our volunteers responsible for the many achievements that have been made in the past few months, including the completion of the new artifacts room on the mezzanine, the completion of the library with new stacks and expanded space; the completion of the Administration office and IT room. We've also seen improvements and updates to many of our displays and kids' area, as well as the installation of the wonderful mural in the Norseman Room.

Our Treasurer, Bob Saunders, gave an outline of the museum's financial year which included \$310,781 of in-kind donations; \$127,173 in donations; \$39,889 in gift shop revenue, and \$27,416 in eBay sales. The total expenditures were \$183,691, which included \$47,267 in repairs and maintenance. The total excess of revenues over expenditures was \$398,410. We are fortunate to continue to be on a very solid financial footing thanks to all of the volunteers who help promote and diversify the income streams that support our collection.

Volunteer archivist, Michelle Harris, gave a wonderful overview of progress in the artifacts section which now includes 8,293 artifacts and counting! Michelle explained that some 6,223 items are in storage and 1,847 are on display. The work of organizing and cataloging will continue over the next several months.

Representing the Operational Planning Committee, Andrew Macauley presented a framework for the development of the museum which will see four areas of activity which include Human Resources, Finance and Administration, Operations, and User Experience, that will each be led by a volunteer coordinator. This new structure will allow daily operations to run more efficiently and will also allow volunteers to have a direct point of contact to discuss ideas and offer recommendations that will enhance both our operations and our visitors' experience.

I would like to thank Doug Kobayashi, Bob Saunders, and Mac Duffield for their work on the BCAM board. As they retire from these positions it is reassuring to know they will continue to volunteer in leadership roles within the museum and help us ensure long-term sustainability.

We ended our meeting with the election of four new board members including Cindy Ingram, John McManus, Richard Mosdell; and Pat Phillips who was re-elected to the board – congratulations, everyone.

The new Board Executive is; President - Laura Lavin, Vice-President - Peter Garnham, Secretary - Cindy Ingram, and Treasurer - Mike Ingram. I'm very grateful for the support of the board and membership to continue as your President; I look forward to a productive year ahead.

*Laura Lavin*

## Avro Lincoln - the "Super Lanc" by Ted Syme



RAAF Lincoln cockpit (Wikipedia)

As early as 1943, it was foreseen to improve the existing bomber force aircraft with respect to operational performance. The British Air Ministry issued Specification B.14/43, which sought an improved heavy bomber to replace the current four-engine bombers, such as the Handley Page Halifax, and the Avro Lancaster.

Known initially as the Lancaster IV and Lancaster V, the Lincoln featured numerous improvements, such as the adoption of stronger, larger wing span (increase of 18 ft from the Lancaster III and X), along with

Rolls-Royce Merlin 85 or 300, Packard Merlin 66 or 68 engines with two-stage superchargers (1750 hp) coupled to a 4-bladed propeller. The new bomber also possessed an enlarged fuselage that accommodated increased fuel and bomb loads and allowing for the carriage of up to 14,000 lbs of bombs. The Lincoln had better performance than all versions of the Lancaster, higher operational ceiling (30,500 ft vs. 21,400ft), greater speed (cruise 215 mph vs. 200 mph), and longer range.

It is interesting to note that a pre-cursor "testbed" version of the Lincoln, the Mk VI Lancaster, served to test out the more powerful versions of the Merlin engine, under combat conditions.

In 1944, nine Lancasters were converted from B.III's, fitted with Merlin 85/87's which had two-stage superchargers, (all other Merlins on the Lancaster were single stage) giving much improved high altitude performance. The Merlin 85/87 series engines were fitted with round cowlings (similar to the Lincoln) and three bladed paddle-type propellers. These aircraft were used by only Pathfinder units; by Nos. 7, 83 and 635 Squadrons RAF, and No. 405 Squadron RCAF.

Often used as a "Master Bomber" the VI's were allocated to RAF Bomber Command apart from two that were retained by Rolls-Royce for engine installation and flight testing. However, the more powerful engines proved troublesome in service and were disliked by ground maintenance staff for their rough running and propensity



Post war Lancaster Mk VI ND 784 used as a testbed for RR Avon turboprop.

Note round engine cowlings for the Merlin 85'ss. c. 1950.

to 'surge and hunt', making propeller synchronization difficult. This was caused by variations in the fuel/air mixture and over time would damage the engine. The Mark VI was withdrawn from operational service in November 1944 and surviving aircraft were used by Rolls-Royce, the Royal Aircraft Establishment and the Bomb Ballistics Unit (BBU) for various testing and experimental duties.

With respect to Merlin 85, two-stage refers to the use of two impellers on a common driveshaft in effect constituting two superchargers in series; a Bendix-Stromberg pressure carburetor injected fuel at 5 psi through a nozzle direct into the supercharger where the first-stage impellor compressed the air/fuel mixture. This was then fed to the smaller second-stage impellor which further compressed the mixture. The impellers were driven by a hydraulically operated two-speed gearbox. At low to medium altitudes, the supercharger was in low setting (this referred to the speed at which the impellers were operating). Once the aircraft reached and climbed through the set critical altitude (around 20,000 ft ) the power would start to drop as the atmospheric pressure dropped. As the critical altitude was passed a pressure-operated aneroid capsule operated the gearbox which changed up to high setting, driving the impellers faster, compressing a greater volume of the air-fuel mixture. This second stage setting required approximately 200 hp to drive it.



The only Lincoln produced in Canada at Victory Aircraft (probably early 1945).  
Note new Mk X Lancasters in the background.

The Lincoln entered service with the RAF in August 1945, too late to see combat. A total of 361 Lincolns were built in the U.K, and saw service with the RAF in the late 1940s, and were phased out in the mid 1950s. The Royal Australian Air Force, and the Argentine Air Force also used the Lincoln.

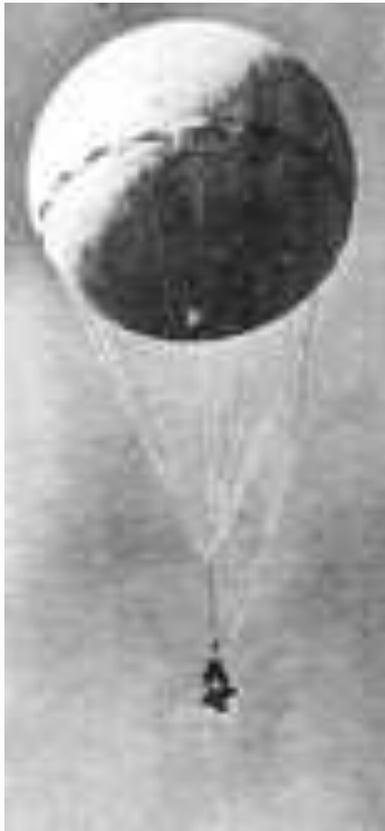


Rudder (right) on the UK's BBMF Lancaster is from a Lincoln. Arrow indicates the shape difference from a Lancaster (on left)

Victory Aircraft produced one production prototype Lincoln, but Canada never saw the need for a newer post-WW II bomber force, and opted for coastal patrol, mapping, and Search and Rescue for our Lancasters, and subsequent aircraft.

The Lincoln was essentially obsolete by the end of WW II, as the U.S. Boeing B-29 was a far superior bomber, and new jet powered bombers were on both U.S., and British drawing boards.

## The Third Balloon *by Doug Rollins*



By the summer of 1945 the military brass at Western Air Command were convinced that the latest threat from Japan was all but over. Out in the Pacific the Americans were tightening their stranglehold on the Japanese mainland with a series of 'island-hopping' amphibious assaults, and the major Japanese cities and industrial areas were being burned out by massive bombing raids undertaken by the superlative Boeing B-29 Superfortress. Even the last, unexpected Japanese terror campaign, the Fu-Go [Windship Weapon] balloon campaign initiated in late 1944, seemed to have petered out. This consisted of low-cost hydrogen balloons released by the thousands from the shores of Japan to drift over the Pacific Ocean in the Jet Stream, and rain down incendiary and anti-personnel bombs at random points over North America. The idea was to create massive forest fires and spread panic among the population.

Although some 9,300 Fu-Gos were released in all, the campaign could hardly be called a success – less than 10% even reached North America. The balloon-bombs landed all along the West Coast of Canada, the US and Mexico – one even made it as far as the outskirts of Detroit. Even so they only managed to kill a Sunday-school party of six in Oregon and the massive fires never happened - the winter of 1944 / 45 was one of

the wettest on record. In all, there were 56 documented cases of Fu-Go landings in British Columbia; the last one was found near Lumby in 2014 and no doubt there are still more remains out there yet to be discovered. During the war the existence of bombing balloons was kept secret to avoid panic; the real fear was that they might start carrying biological weapons such as anthrax or plague.

The balloons, code-named Paper since that was the material that the gas envelope was made of, proved to be very difficult targets to intercept. They could appear anytime, travelled at 30 – 38,000 feet and could reach a speed of 70 knots or higher. RCAF Station Pat Bay was a key player in the anti-Fu-Go battle; it had a secret radar installation and maintained fighter aircraft on high alert status around the clock. The only two Fu-Gos shot down over Canada were both bagged by P-40 Kittyhawks from Pat Bay. Remarkably, a third Fu-Go was downed by, of all things, a lumbering PBY Canso. Returning from a patrol, the crew spotted a Fu-Go almost on the water over Coal Harbour, near Port Hardy on the northern end of Vancouver Island. By making repeated close passes the PBY was able to force the Fu-Go into the water. However, for almost two months in the spring of 1945 there had been no sightings of the troublesome balloons, and it appeared that the threat was now extinguished.

In point of fact, an aircraft from RCAF Station Patricia Bay did shoot down a third balloon, but oddly, nobody wanted to talk about that. The incident was hushed up, and never mentioned in any official history of military aviation. This is the story of that shoot-down.

It happened on a rainy and partly cloudy day on 11 June 1945, when the Pat Bay radar station spotted what could only be a balloon drifting over the Juan de Fuca Strait, just south of Victoria, BC. At 3:15 pm 133 Squadron from Pat Bay scrambled its newest weapon in the cause; the formidable de Havilland Mosquito. Deployed specifically to combat the Fu-Go threat, the Mosquito had a pair of powerful Merlin engines, a crew of two and packed a fearsome punch with nose-mounted cannon and machine guns. Lagging behind the chase was an outclassed and tired P-40 Kittyhawk. And yet, it was the Kittyhawk that found the balloon among the scattered clouds, and shot it down with a burst of machine gun fire! The elation at the base was only shattered a couple of hours later when Western Air Command HQ called to find out who had shot down an American balloon!!



It turned out that earlier in the day the Americans had released a balloon equipped with a radar-reflector in order to calibrate their chain of top secret radar stations that ran along the southern side of the Juan de Fuca Strait, from Cape Flattery to Seattle. The drill was going nicely despite the balloon tracking a little further north than planned, when a foreign aircraft suddenly appeared and the balloon

vanished. As a result, the entire defense exercise had ground to a halt. And so the Canadian Military, in their polite Canadian style, would have no doubt said “Sorry about that” and then lowered the Cone of Silence to avoid any further mention of this rather embarrassing episode of international balloon busting. Japan’s abrupt surrender just two month later brought an end to the Fu-Go Campaign and any further concern about Japan’s Paper Tiger. Even to this day the RCAF only admits to the shoot-down of two balloons in World War II, but now we know about that in truth, there was a third one!

**Who Am I?** I am a figure involved in aviation (and other things). Can you guess who I am from the clues below? Submit your answer to [norsemannews@bcam.net](mailto:norsemannews@bcam.net) to gain recognition (verbal only, alas) in the next newsletter!

1. I was born in BC in 1912, and lived a well-to-do life in Burnaby.
2. At 19, I graduated from the Vancouver School of Decorative and Applied Arts. My parents encouraged my love of art, but did not encourage my second passion: flying.
3. At the beginning of 1935, I secretly took flying lessons, learning in a Gypsy Moth. I soloed in April, and had my pilot's licence by October.
4. In the late 1930s, I was a founding member of a female pilots' group, the Flying Seven. At the outbreak of war, our group tried enlisting in the RCAF, but were rejected because we were women.
5. After the war, I worked for Associated Air Taxi and the Aero Club of BC. There is a memorial "plane watcher's" bench with my name on it at Pitt Meadows Airport.

The correct answer to last issue's Who Am I, Phillip Clarke Garratt, was submitted by Mike Valenti **Congrats!**

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