Wing Mate

Newsletter 408-437 Wing

Royal Canadian Air Force Association of Canada

December 2021

AIR FORCE ASSOCIATION of CANADA MISSION STATEMENT

The Air Force Association of Canada is a national aerospace and community service organization whose aim is to commemorate the noble achievements of the men and women who have served as members of Canada's Air Force since its inception, advocate for a proficient and well equipped Air Force and, support the Royal Canadian Air Cadets.

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Air Cadets

818 Squadron.....Jackie Johnston
110 Squadron..... Cécile Thompson

BBC NEWS

Man shot 200 times with upholstery gun.

Surgeons revealed . . .

he is now fully recovered

Laughter is the best medicine.

Or wine.

It might be wine

So . . . You've been eating hot dogs and McNuggets all your life, but don't want the vaccine because, "you don't know what's in it?"

Sick and Visiting

Be sure to advise Barbara Newman, Fellowship Chair, if you are aware of a Wing member who is ill or in distressed circumstances.

Barbara can be reached at 416-223-7840.

President's Report

Dear Members,

On behalf of your Executive I wish all our members a **Happy Hanukkah** and a **Merry Christmas**. Unfortunately, we can't celebrate together (yet). It's hard to believe that it has been two years since we've last met. It is like turning forty and thinking where 'did the time go.' I know, I know most of us have a hard time even vaguely remembering that.

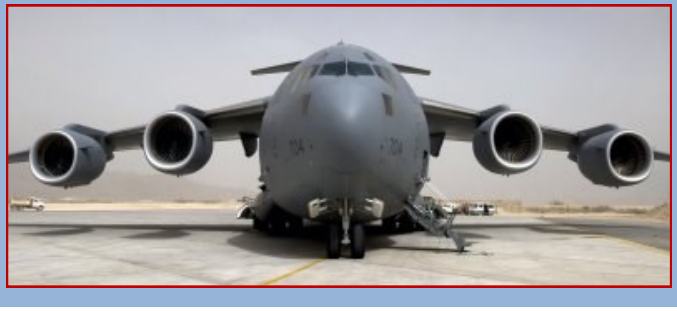
I visited the Legion today (27 Dec) with the hope that I can get a firm answer as to if or when we can resume our functions. The answer is a firm no and not yet. No outside functions are permitted. "*Maybe, probably*" sometime in January. But please persevere, this too shall end, at the latest, the last week of March because Rob Ford said so, he is a man of his words. Just an idle thought isn't there an election in about 60 days after, at the end of May, first week in June? We'll if that is what it takes, I'm in, I've got my pencil ready.

A word about the Cadets, If the unit is parading at a school, no luck, they are shut out. If you are at an armoury 'they' are kind of letting you in now, in cohorts. It works for small units but not large ones. For large ones some are in person some are still on Zoom rotating weekly. Teaching on Zoom if you will pardon the expression 'It sucks' most claim their cameras are broken or don't have one. I respect the cadets that 'have' a camera and participating weekly.

I extend a welcome two new members to our Clan. **Richard Bochenek** and **AnnMarie**. While I'm in a generous mood, a recognition of **Thank You** goes out to **Ric Rengel-Bron** for selling them on the idea. Thank you, Ric. The tax- receipt is in the mail.

On the brighter side if there is one in dealing with any level of government. My Mom passed away on 30 April at the enviable age of almost 96. The proper level of government was informed and her pension Fed and Prov stopped immediately. But she still receives some other federal benefit cheques. So, in May, June, July, August received the payment and waited for the request to return it, which I did promptly with an explanation and copy of the Certificate. Up until last month she was still receiving a benefit cheque. The kicker was that the cheque and the letter asking to return it came at the same time. Both addressed to the Estate of. No misunderstanding there. So, I took the cheque and wrote on it. *"Here is a clue, I'm dead, stop sending money, don't need it anymore."* I think the bulb went on somewhere no cheque this month.

Nick



818 Toronto Falcon Squadron
Royal Canadian Air Cadets

With Jackie Johnston

November has been the month of action for our Squadron. It brings me so much energy and happiness to know that over the last 5 weeks we have successfully completed Step 1 of our In-Person transition plan. Over the last 5 weeks our group of 15 dedicated NCOs have come together in preparation for the November 29th mass return for all Cadets to the Squadron. These NCOs, before the pandemic took over in early 2019, were LACs, Cpls and FCpls who had no leadership or instructional technique training. Then over the 20 months of exclusively virtual training these same cadets received no practical skills training to know or even understand what leading looked like or what their roles in the Squadron would be upon return. That is why I am so impressed with this entire group of Senior NCOs! With no peer leaders to show them, with no experience to guide them and a lot of rust to brush off on the Parade Square these cadets learned quickly and built confidence in themselves and their team to prepare themselves for the tough task of being seen as leaders. They are ready to serve and advance. I cannot wait to see their unlocked potential in action.

Daryl Abbott Captain CO

818 RCACS

<NO BADGE>	AIR CADET
	LEADING AIR CADET
	CORPORAL
	FLIGHT CORPORAL
	SERGEANT
	FLIGHT SERGEANT
	WARRANT OFFICER 2nd CLASS
	WARRANT OFFICER 1st CLASS

Flying Funnies

408-437 WING RCAFA

An Airbus 380 is on its way across the Atlantic. It flies consistently at 800 km/h at 30,000 feet, when suddenly a Eurofighter with Tempo Mach 2 appears. The pilot of the fighter jet slows down, flies alongside the Airbus and greets the pilot of the passenger plane by radio:

"Airbus, boring flight isn't it? Now have a look here!"

He rolls his jet on its back, accelerates, breaks through the sound barrier, rises rapidly to a dizzying height, then swoops down almost to sea level in a breathtaking dive. He loops back next to the Airbus and asks,

"Well, how was that?"

The Airbus pilot answers:

"Very impressive, but now you look!"

The jet pilot watches the Airbus, but nothing happens. It continues to fly stubbornly straight, with the same speed. After 15 minutes, the Airbus pilot radios,

"Well, how was that?"

Confused, the jet pilot asks,

"What did you do?"

The AirBus pilot laughs and says,

"I got up, stretched my legs, walked to the back of the aircraft to use the washroom, then got a cup of coffee and a chocolate fudge pastry.

The moral of the story...

When you are young, speed and adrenaline seems to be great. But as you get older and wiser, you learn that comfort and peace are more important.

This is called **S.O.S.: Slower, Older, but Smarter.**

Friends, it's time to slow down and enjoy the rest of the trip.

Lockheed P-38 Lightning

An A/C with Design Challenges

The P-38 was an American single-seated, twin piston-engined fighter aircraft that was used during World War II. Developed for the US Army Air Corps, the P-38 had distinctive twin booms and a central nacelle containing the cockpit and armament. Allied propaganda claimed it had been nicknamed the “fork-tailed devil” by the Luftwaffe and "two planes, one pilot" by the Japanese. Along with its use as a general fighter, the P-38 was used in various aerial combat roles, including fighter-bomber, night fighter, and long-range escort fighter when equipped with drop tanks. The P-38 was also used as a bomber-pathfinder, guiding streams of medium and heavy bombers; or even other P-38s, equipped with bombs, to their targets. Used in the aerial reconnaissance role, it accounted for 90% of the aerial film captured over Europe.

The P-38 was used most successfully in the Pacific and Burma-China Theaters as the aircraft of America's top aces, Richard Bong (40 victories), Thomas McGuire (38), and Charles H. MacDonald (27). In the S.W. Pacific Theater, the P-38 was the primary long-range fighter of the USAAF until the introduction of large numbers of P-51D Mustangs toward the end of the war. Unusual for a fighter engine, power was boosted by turbosuperchargers giving the P-38 good high-altitude performance, making it one of the earliest Allied fighters capable of performing well at high altitudes. It was extremely forgiving and could be mishandled in many ways, but the rate of roll in the early versions was too low for it to excel as a dogfighter.

Richard Bong

Thomas McGuire

Charles MacDonald

XP-38 Prototype

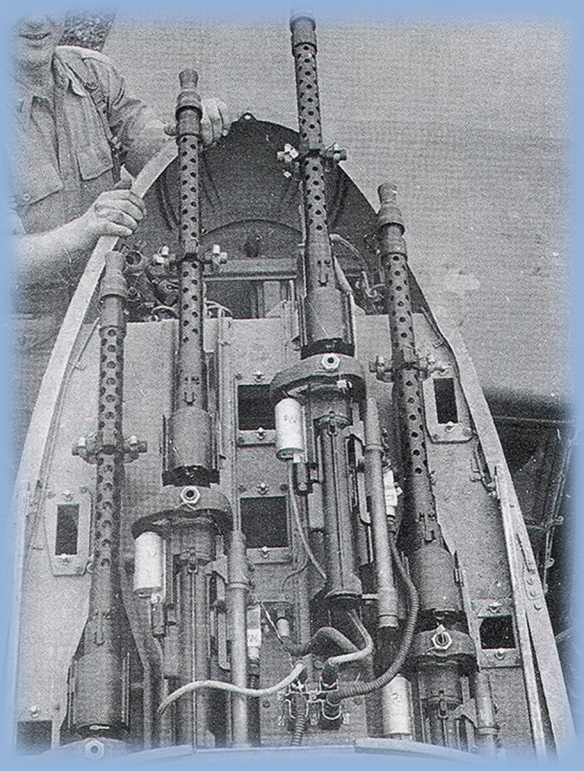
The P-38 was the only American fighter aircraft in large-scale production throughout American involvement in the war, from the Attack on Pearl Harbor to Victory over Japan Day.

Lockheed designed the P-38 in response to a 1937 specification from the USAAC that called for a twin-engine, high-altitude interceptor having "the tactical mission of interception and attack of hostile aircraft at high altitude." The word "interceptor" was used as a way to bypass the inflexible Army Air Corps requirement for pursuit aircraft to carry no more than 500 pounds of armament including ammunition, and to bypass the USAAC restriction of single-seat aircraft to one engine.

Vultee XP1015

Specifications called for a maximum airspeed of at least 360 mph at altitude, and a climb to 20,000 feet within six minutes, the toughest set of specifications USAAC had ever presented. The unbuilt Vultee XP1015 was designed to the same requirement, but was not advanced enough to merit further investigation. A similar proposal for a single-engined fighter was issued at the same time, Circular Proposal X-609, in response to which the Bell P-39 Airacobra was designed. Both proposals required liquid-cooled Allison V-1710 engines with turbosuperchargers and gave extra points for tricycle landing gear.

In 1941 the P-38E combat configuration had four M2 Browning machine guns, and one Hispano 20 mm autocannon with 150 rounds clustered in the nose. It was unusual in U.S. aircraft, which typically used wing-mounted guns with trajectories set up to crisscross at one or more points in a convergence zone. Nose-mounted guns did not suffer from having their useful ranges limited by pattern convergence, meaning that good pilots could shoot much farther. A Lightning could reliably hit targets at any range up to 1,000 yards, whereas the wing guns of other fighters were optimized for a specific range. The rate of fire was about 650 rounds per minute for the 20×110 mm cannon round, and for the .50-caliber machine guns, about 850 rpm.



The sudden required expansion of Lockheed's facility in Burbank took it from a specialized civilian firm dealing with small orders to a large government defense contractor making Venturas, Harpoons, Lodestars, and Hudsons, and designing the Constellation for TWA.

The P-38s were substantially redesigned and differed greatly in detail from the hand-built XP-38. They were lighter and included changes in engine fit. The propeller rotation was reversed, with the blades spinning outward (away from the cockpit) at the top of their arc, rather than inward as before. This improved the aircraft's stability as a gunnery platform.

Test flights revealed problems initially believed to be tail flutter, especially during dives. The aircraft's tail would begin to shake violently and the nose would tuck under, steepening the dive. Once caught in this dive, the fighter would enter a

RAF P-38

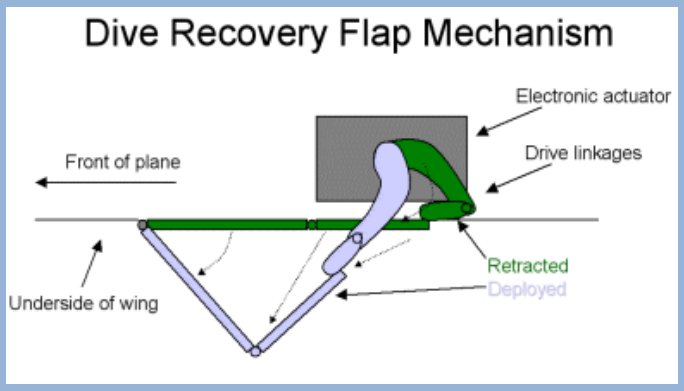
high-speed compressibility stall and the controls would lock up, leaving the pilot no option but to bail out (if possible) or remain with the aircraft until it got down to denser air, where he might have a chance to pull out. Lockheed engineers were very concerned by this limitation, but first had to concentrate on filling the current order of aircraft.

In late June 1941, the Army Air Corps was renamed the U.S. Army Air Forces (USAAF), and 65 Lightnings were finished for service by September, with more on the way for the USAAF, the Royal Air Force, and the Free French Air Force operating from England.

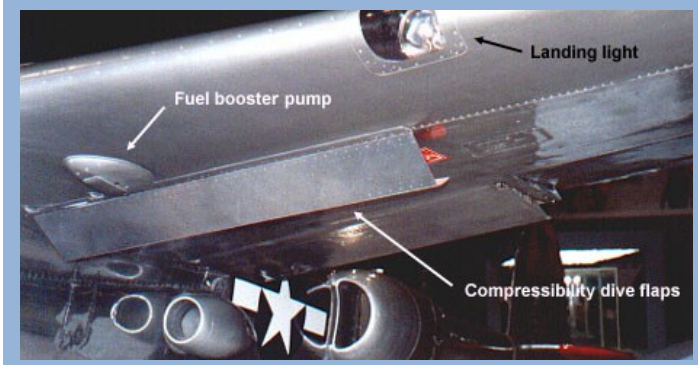
Lockheed still had to solve the problem of loss of control in a dive. Servo tabs were *not* the solution and they cost the life of a test pilot. The Army Air Forces personnel were sure it was flutter and ordered Lockheed to look more closely at the tail.

With further testing, the P-38's dive problem was revealed to be the center of pressure moving back toward the tail when in high-speed airflow. The solution: change the geometry of the wing's lower surface when diving to keep lift within bounds of the top of the wing. In 1943, quick-acting dive flaps were tried and proven by Lockheed test pilots. The dive flaps were installed outboard of the engine nacelles, and in action they extended downward 35° in 1.5 seconds. The flaps did *not* act as a speed brake; they affected the pressure distribution in a way that retained the wing's lift. In short, the Fowler Flaps used on the P-38 did not, nor was it intended to serve the same function of the dive flaps. The Fowler Flaps, in layman's terms, extend the wing area by extending on rails or slots.

The dive flaps were intended to serve an entirely different purpose, and that was to aid the P-38 in recovering in a high speed dive. It essentially changed the flow under the leading edge of the wing to prevent air turbulence over the elevators that caused "nose tuck" and make it easier for the pilot to recover from the high speed dive. Basically, it helped resolve the compressibility issue with the P-38.



Late in 1943, a few hundred dive flap field modification kits were assembled to give North African, European, and Pacific P-38s a chance to withstand compressibility and expand their combat tactics. Unfortunately, these crucial flaps did not always reach their destination. In March 1944,



200 dive flap kits intended for European Theater P-38Js were destroyed in a mistaken identification incident in which an RAF fighter shot down the C-47 taking the shipment to England.

Buffeting, another early aerodynamic problem, was distinguished from compressibility as "tail shake". Buffeting occurred from airflow disturbances ahead of the tail; that shook the airplane at high speed. Leading-edge wing slots were tried, as were combinations of filleting between the wing, cockpit, and engine nacelles. Air-tunnel test number 15 solved the buffeting completely and its fillet solution was fitted to every subsequent P-38 airframe. Fillet kits were sent out to every squadron flying Lightnings. The problem was traced to a 40% increase in air speed at the wing-fuselage junction where the thickness ratio was highest. An airspeed of 500 mph at 25,000 feet could push airflow at the wing-fuselage junction close to the speed of sound.

Finally, another problem occurred when one engine was lost. Losing one of two engines in any twin-engine aircraft on take-off creates sudden drag, yawing the nose toward the dead engine and rolling the wingtip down on the side of the dead engine. Normal training in flying twin-engined aircraft when losing an engine on takeoff is to push the remaining engine to full throttle to maintain airspeed. In a P-38 if a pilot did that regardless of which engine had failed, the resulting engine torque produced a sudden, uncontrollable roll, causing the a/c to flip over and hit the ground. Eventually, procedures were taught to allow a pilot to deal with the situation by reducing power on the running engine, feathering the prop on the failed engine, and then increasing power gradually until the aircraft was in stable flight. Single-engined take-offs were possible, though not with a full fuel and ammunition load.

Eventually the P-38Ds had armored glass, cockpit armor, fluorescent instrument lighting, self-sealing fuel tanks and enhanced armor protection.

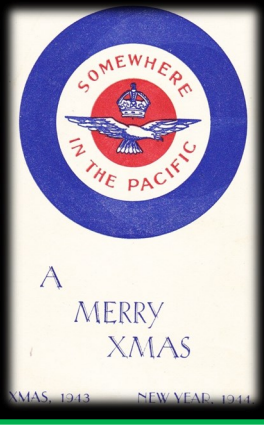
Many of the British Lightning IIs were fitted with stronger F-10 Allison engines as they became available, and all were given wing pylons for fuel tanks or bombs. These upgraded a/c were deployed to the Pacific as reconnaissance or P-38G fighter models. The British name, Lightning, was retained over Lockheed's original name 'Atalanta', the swift-running Greek goddess, following the company tradition of using mythological and celestial figures.

In March 1942, General Hap Arnold made an offhand comment that the U.S. could avoid the German U-boat menace by flying fighters to the U.K. rather than packing them onto ships. President Roosevelt pressed the point, emphasizing his interest in the solution. Arnold was likely aware of the flying radius extension work being done on the P-38, which by this time had seen success with small drop tanks, the difference in capacity being the result of subcontractor production variation. Arnold ordered further tests with larger drop tanks. This provided the P-38 with a 2,500-mile ferrying range. Because of available supply, the smaller drop tanks were used to fly Lightnings to the U.K. under the plan called *Operation Bolero*.

Led by two B-17s, the first seven P-38s, each carrying two small drop tanks, left Presque Isle Army Air Field in June, 1942 for RAF Heathfield in Scotland. Their first refueling stop was made at Goose Bay, Labrador. The second stop was a rough airstrip in Greenland called Bluie West One, and the third refueling stop was in Iceland at Keflavik. Other P-38s followed this route with some lost in mishaps, usually due to poor weather, low visibility, radio difficulties, and navigational errors.

Nearly 200 of the P-38s were successfully flown across the Atlantic in July – August 1942, making the P-38 the first USAAF fighter to reach Britain and the first fighter ever to be delivered across the Atlantic under its own power.

Merry Christmas & Happy Hanukkah



Canadian Airmen Airwomen

Vernon Crompton Woodward

22 December 1916 –28 May 2000

"Woody" Vernon Crompton Woodward DFC and Bar RAF was a Canadian fighter pilot and flying ace with the Royal Air Force during World War II. With 18 and 4 shared destroyed, 2 unconfirmed destroyed, 3 probables, and 11 damaged, Woodward tied Henry Wallace McLeod as Canada's second highest scoring pilot of the war.

Born in Victoria B.C., Woodward was unable to join the RCAF as he did not have a degree. He sailed for the UK in 1938 and resided in Gloucestershire farming. After attending the Civil Flying School in Perth, Scotland, he was accepted in the RAF as an Acting Pilot Officer. Following FTS, Woodward was posted to No. 33 Squadron RAF in Egypt in May 1939, becoming a Flying Officer in September. Following Italy's entry into the war in June 1940, he was to gain early successes over Libya during June–July 1940.

The squadron re-equipped with Hawker Hurricanes and in February 1941 moved to Greece. On 9 May he was decorated with the DFC. Woodward was ordered to Egypt to bring back a reinforcement Hurricane and rejoined the Squadron in Crete as a flight commander. The unit personnel retreated on foot across the island after the German invasion, and were evacuated on a Royal Navy destroyer later in the month.

The squadron reformed in June and was back in action, supporting Operation *Battleaxe*, with a flight of experienced pilots from 33 Squadron led by Woodward attached to No. 274 Squadron. In September his tour expired and he was sent to Rhodesia to become instructor at 20 SFTS. In 1942 Woodward was promoted to Squadron Leader, returning to Egypt to command No. 213 Squadron until August 1943. He earned a Bar to his DFC.

After he went to AHQ, Levant, before attending the Middle East Staff College, Haifa in September. In December 1944 he was posted to HQ, Middle East on staff duties, and promoted to Wing Commander in June 1944.

In February 1945 he took command of the Mediterranean Middle East Communications Squadron, flying various transport aircraft.

In December 1946 he returned to the UK, and became: Chief Ground Instructor; then commander of No.19 Squadron; then HQ, Fighter Command. He was moved to command No. 69 (PR) Squadron on Canberras in 1958-59 and finally to the Ministry of Aviation, Controller of Aircraft.

He retired to British Columbia in 1967 as a member of the Corps of Commissionaires.