

Baddeck No 1, Canadian Aeroplane Company, trials at Petawawa, Ont., Aug 1909.

The Skies over Vimy

CAHS Toronto Chapter Meeting Feb. 11, 2021

Presentation by Major Bill March (Retd)

Report by Gord McNulty

Another excellent turnout of about 45 members and guests of the Toronto Chapter and National CAHS organization tuned in to enjoy a Zoom presentation by our speaker, Major Bill March. Attendees represented seven provinces and included participants from Washington State, West Virginia and Mexico. Our meeting host, Chapter 1st VP, John Bertram, showed the trailer of the 2018 documentary “*They Shall Not Grow Old*,” using original First World War footage, most previously unseen. John enjoyed seeing the film in the theatre. He highly recommended both the film and a short narrative about the making of the documentary by director Peter Jackson.

John introduced our well-known presenter, ‘go-to’ aviation historian Bill March. As both a navigator on maritime patrol aircraft, and a staff officer in Canada, Europe and Afghanistan, Bill served nearly 42 years in the RCAF, 10 of them as Air Force Historian. A graduate of the Royal Military College and the University of Victoria, he has taught undergraduate courses in history for RMC and wrote or edited numerous articles and publications on military aerospace power history. He is on the editorial board for the *CAHS Journal* and is a contributing editor for *Airforce* magazine. While working as a freelance historian and writer, he is pursuing his PHD in history at Queen’s University in Kingston, Ontario.

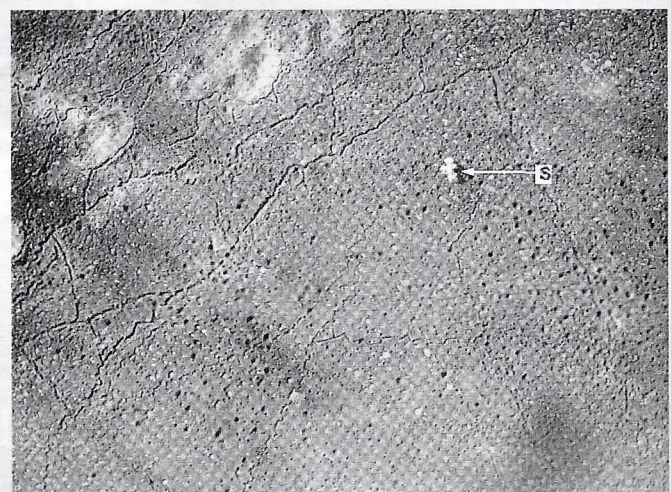
Bill focused on the ‘grunt’ work of the Royal Flying Corps during the Battle of Arras and Vimy in particular. If you were in the Canadian militia, the Baddeck No. 1 biplane

was probably the closest you would get to air power prior to the First World War. Baddeck No. 1 was demonstrated at Petawawa in 1909. Unfortunately, it didn’t perform as well as advertised and the Canadian militia decided there wasn’t a future for aircraft.

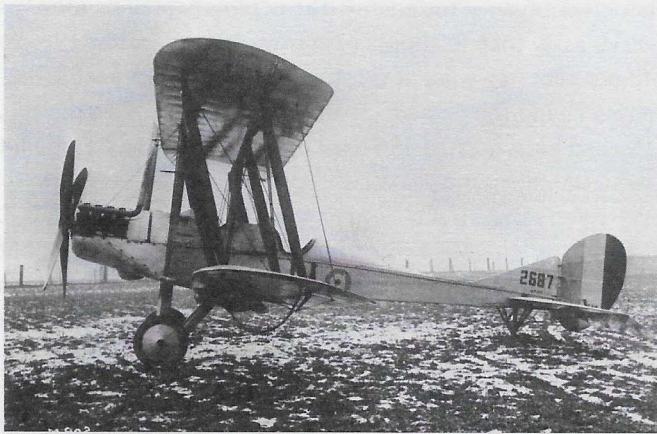
When the Canadian Expeditionary Force sailed overseas, they had virtually no contact with aviation. So, the relationship between aviation and land forces boiled down to a matter of trust. Although aircraft were brand new to warfare, the co-operative process was evolutionary in nature rather than revolutionary. Massive changes took place in technology and organization both for the RFC and the ground forces. Extensive training was needed for success in battle. The Battle of the Somme, 1 July - 18 November 1916, was the proving ground for air-land co-operation, setting the stage for the Battle of Arras, 9 April - 16 May, 1917, and Vimy Ridge 9-12 April, 1917.

Bill discussed reconnaissance; ‘shoots’ working with the artillery; contact patrols; and balloons --- a forgotten aspect of aviation.

A photo of Vimy Ridge from 3,000 feet, taken on 8 April, showed a small puff of smoke from an artillery shell. A Corps squadron needed that kind of map accuracy to



Print No. 272, 8 Apr 1917, Height 3000 ft. Scale 14400. There are mine craters in the top left of the picture, together with a shell-burst (S).



Royal Aircraft Factory B.E.2.



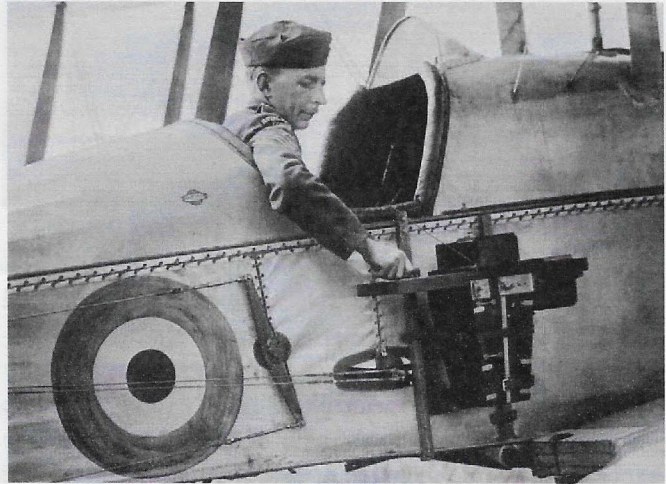
F.E.2.

provide to the 'grunts' on the ground. A squadron was normally divided into three flights, each of which was given a section of the front line manned by the Corps they supported. From left to right, it would be about 4,500 metres. One flight concentrated on the front line, both friendly and enemy trenches in no-man's land, and the other two flights took a section. Over time, they came to know that area of the front line extremely well. They would pass on the right information about any new trenches or changes in the placement of guns, etc.

Aircraft at Vimy were basically variants of the Royal Aircraft Factory B.E.2 or the F.E.2. Both were introduced in 1915 and were woefully obsolete by 1917. However, they were all the British had. They were flown even though they were outmatched and outgunned by the latest German scout aircraft. It must have been a nightmare to be an observer in an F.E. 2. Imagine standing in the nose of the pusher aircraft firing a machine gun. Likewise, if you were a pilot in a B.E. 2, with an observer firing a machine gun back over your head, "you had to be crazy too."

16 Squadron, primarily equipped with the B.E.2, supported the CEF during Vimy Ridge. By 1917, pilots didn't have a good impression of the aircraft. It was designed, Bill suggested, by "an aeronautical engineer who never planned to take one flying, because it was not designed for the job it was going to do." The best that could be said about the

B.E.2 was that it was very friendly to fly. Cameras, along with wireless equipment, evolved through the war. They were primarily always hand-operated, whether attached to the side of the aircraft, or held by the observer or the pilot in the front. The pilot often took the picture. Bill said he couldn't imagine what it would be like trying to take a picture if the weather was bad, you were airsick or if someone was trying to kill you.



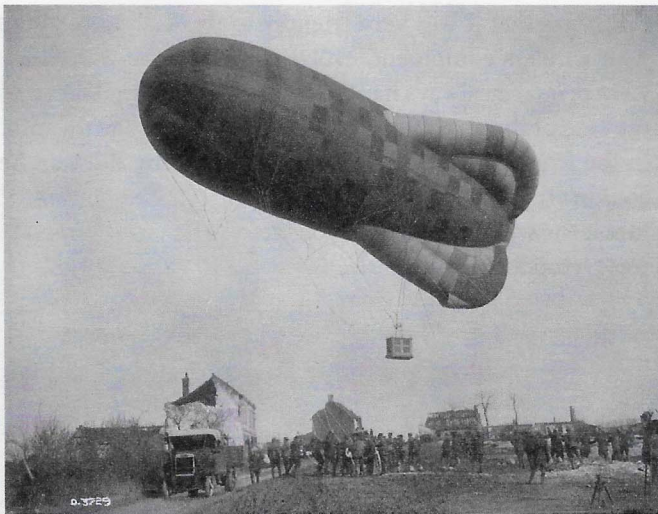
RFC aircraft with aerial reconnaissance camera.

However, the aircrew gathered invaluable information both in leading up to the battle and the actual combat. By 1917, they had designed a sophisticated process that permitted real time imagery, as low as a company level, very quickly. The RFC revolutionized this by introducing mobile photo developing units manned by trained photo interpreters. During Vimy and subsequent battles, it could take as little as 20 minutes for the aircraft to take pictures and deliver them to corps headquarters. "You would be hard pressed to do that today with computers," Bill said.

He showed imagery, taken from 4,000 feet, of soldiers going "over the top" from the trenches at Vimy on 6 April. The details really assisted the Canadian Corps before the assault began. The imagery was put together to make a giant mosaic of the battlefield, allowing planners to determine exactly what the troops had to do. Many photos were taken 1-8 April, after the Germans decided in February or March to withdraw about 25 kilometres from their forward lines, back to the Hindenburg Line. Photos weren't taken after 8 April when the fighting erupted.

As for army co-operation when it came to artillery, it wasn't until 1915 that CEF artillery units actually practiced with aircraft. Then, over the next two years, the entire British Army including the Canadian Corps realized they needed trained photo interpreters and trained intelligence officers serving with squadrons. By April 1916, the Canadians started to complain if they didn't get enough photos and sought as much imagery as possible.

The emphasis was on liaison, so artillery officers served with squadrons and squadron members with artil-



Kite Balloon ascended behind Canadian lines, Vimy, Dec 1917.

lery units. Maps became very accurate and were produced more rapidly. Arthur Currie stressed the importance of aircraft and continuously training with the aircraft. Andrew McNaughton, leading the artillery, quickly understood the revolutionary importance of aircraft and consolidated the expertise into a counter-battery staff. They organized the information so that each German artillery battery would be assigned a number and systematically engaged, destroyed or rendered as depleted as possible.

Bill highly recommended the book *Sagittarius Rising*, by RFC pilot Cecil Lewis describing his First World War experiences. A 'shoot' was a targeted exercise. The tie between the observing aircraft and the artillery battery was key in identifying an enemy battery. The pilot or observer would transmit "shoot, shoot, shoot" as they came down the line. The artillery would fire and the aircrew would observe the fall of the shell. Once they observed the fall of the shell, they returned to the transmitting position, as the transmitter and the aerial worked better that way. Then they'd go back and repeat the whole process. The trouble was, it made the aircraft a sitting duck as it flew the same pattern over and over. But it was very effective during the Battle of Arras and the attack at Vimy Ridge. Still, all kinds of problems could negate the effectiveness of the shoot. When the Canadians went over the top at Vimy on 9 April, they encountered some of the worst flying weather that spring.

A zone call was different. It fundamentally used the grid map system for a newly discovered artillery battery or target of opportunity. The aircraft spotted the battery, plotted the battery on a map, sent the co-ordinates back to the artillery, and the artillery fired a set number of shells that obliterated that section of the front or they continued to the next one. While the shoots were deliberate, zone calls were targets of opportunity. Zone calls proved very handy during the last 100 days, when the CEF primarily experienced mobile warfare.

Aerial balloons dramatically changed the way artillery

batteries engaged the enemy. The deployment of balloons as aerial assistance to shoots rose from 19 per cent in 1916 to 46 per cent in a year. It is estimated that of 212 hostile batteries facing the Canadians before they went over the top, 180 had been located and fired upon. That was a significant reduction of enemy capability.

Rarely did an attack over the top unfold as it should. Troops were hampered by their inability to see the combat in battlefields like the Somme and Passchendaele. It was difficult to identify friend and foe with everyone covered in the same sticky mud, amid explosions and smoke, etc. Aircrew flying contact patrols had to get lower and lower to differentiate the opposing sides. As Cecil Lewis noted, aircrew extensively practiced training with the troops. Aircraft flew over with Klaxon horns, sending out calls that prompted troops to signal their location. Troops were understandably reluctant about announcing a location. So they tried flares, or using Klaxon horns on the ground, with mixed results. One inventive British officer wanted his battalion to carry umbrellas. When the troops heard an aircraft signal, they opened their umbrellas. Bill said he doubted if that commanding officer survived the next engagement.



28th Battalion. Using tarp to signal aircraft, Apr 1917.

Aircraft dropped a message pouch to signal the troops on the ground, a battery or a headquarters. The observer wrote what he had seen and sign it. If a problem arose, there was instant recognition of who made the false report. Overall, Vimy battle reports indicated the system worked pretty well in an exceptionally hostile environment. Each aircraft had special markings, or carried streamers, to make sure a friendly contact aircraft wasn't accidentally shot down. Bill, however, found it difficult to appreciate how a soldier might react to any aircraft flying over the front lines.

It was anything but easy for aircrew. In fact, RFC squadrons suffered immense casualties. If an aircraft crashed near the front lines, soldiers took anything they needed to make life simpler. They quickly removed aircraft from the trenches as they were targets of opportunity.

Balloons were a useful asset, providing much more stable and responsive reconnaissance platforms than aircraft.



Damaged Airco DH2 near Pozieres, France, Nov 1916.

They were always tethered at a point in the line important to both the Allies and the Germans. Balloons were normally manned by volunteers, usually one RFC recruit and an artillery observer. Strapped with their parachutes, they went up with cameras. If undisturbed by enemy fire, they took what Bill described as images of “fantastic” quality. Bill showed an image of the trench system at Arras, just after Vimy, taken from 6,000 feet, to prove his point.

In addition to enemy fire, adverse weather took a toll on balloons. The RFC suffered heavy casualties in the days leading to the Battle of Arras. April was given the nickname “Bloody April.” Hugh Trenchard, RFC commander, deployed every aircraft, regardless of its obsolescence, to counter the Germans. Only about a third of RFC aircraft could match the latest German scouts. Manfred von Richthofen destroyed 40-odd balloons.

Observers, first carried as another set of eyes for the troops, very quickly concentrated on watching for enemy scouts. Artillery posed a threat to contact patrol aircraft in particular. The level of training was problematic too. Immense casualties forced the RFC to pump out aircrew with minimal training. The simplest thing became difficult. Casualties increased as the reconnaissance flights went higher and higher in open cockpit, unpressurized aircraft. Aircrew suffered the effects of hypoxia, exposure to extreme cold and extreme stress.

The most casualties were suffered by the contact patrol and photo reconnaissance crews, the easiest prey to enemy scouts and artillery. They suffered more than 50 per cent of all RFC casualties in the leadup to Arras and Vimy. During a three-month period, 16 Squadron lost two-thirds of their 24 aircraft. These casualties --- wounded, killed, or taken prisoner - didn’t account for the psychological or stress casualties.

Of about 80 Canadians serving in the RFC, 15 pilots and 14 observers were lost, along with four more in the Royal Naval Air Service. Twenty-one of these casualties were transfers from the CEF, mostly artillery officers working as observers. 16 Squadron lost another six aircrew

during this time and nine Canadians died in flying training mishaps in the U.K. Bill noted more than half of Canadian air casualties during the First World War involved training accidents as opposed to combat. “It was pretty horrendous.” In some cases where a pilot was killed, at a higher altitude for example, an observer chose to jump rather than go down all the way.

The stability of the four divisions in the Canadian Corps was the biggest help to the CEF at Vimy. They weren’t transferred as much as similar units in the British Army, so their experience and proficiency with aviation was continuously built upon.

Bill answered numerous questions. Although the Germans had better aircraft, the RFC far outnumbered them and the Germans couldn’t maintain air superiority for long. A front for the Canadian Corps would have been about three kilometres wide. Squadrons were located within five to 10 kilometres of the front line. Bill mentioned he’d like to do a presentation on some of the great aviation war movies. He cited the 1938 movie, Dawn Patrol, starring Errol Flynn, Basil Rathbone, David Niven and others, as an example. It has good First World War scenes about green recruits being sent aloft with little training and cracking under the strain of command. Bill also recommended a search of the website, archives.org, (enter ‘aviation First World War’), to find several first-person narratives written by aviators.

While Bill greatly enjoyed his time as Air Force Historian, he maintained the RCAF could do a better job of compiling our history and providing more time for historians to research an assignment. He noted the USAF has a large staff which he estimated at “about a battalion’s worth of people,” (about 1,000 people) on the job. When the USAF deploys overseas, they send a complete historical team. They regard history as important not only for the institution itself, but also for selling the air force to the general public.

John thanked our presenter on behalf of the Chapter for a fascinating and well researched presentation.

1916					1 st CANADIAN HEAVY BATTERY					1917				
Month	Aerial	Grnd	B'loon	Total	Month	Aerial	Grnd	B'loon	Total	Month	Aerial	Grnd	B'loon	Total
Jan	1	6	0	7	Jan	9	4	0	7	Jan	9	4	0	7
Feb	1	5	0	6	Feb	10	1	0	6	Feb	10	1	0	6
Mar	1	3	0	4	Mar	5	3	0	4	Mar	5	3	0	4
Apr	2	0	0	2	Apr	22	7	3	2	Apr	22	7	3	2
May	0	1	0	1	May	46	27	23	1	May	46	27	23	1
Jun	0	2	0	2	Jun	29	57	35	2	Jun	29	57	35	2
Jul	0	0	0	0	Jul	31	40	0	0	Jul	31	40	0	0
Aug	0	0	0	0	Aug	83	79	1	0	Aug	83	79	1	0
Sep	0	0	1	1	Sep	11	20	0	1	Sep	11	20	0	1
Oct	0	1	0	1	Oct	8	7	1	1	Oct	8	7	1	1
Nov	0	3	0	3	Nov	5	1	0	3	Nov	5	1	0	3
Dec	0	0	0	0	Dec	1	2	0	0	Dec	1	2	0	0
Total	5	21	1	27	Total	260	248	63	571	Total	260	248	63	571
%	18.6	77.8	3.6	100	%	45.5	43.4	11.1	100	%	45.5	43.4	11.1	100

Artillery batteries relied heavily on aircraft and balloon target spotting at Vimy in 1917.