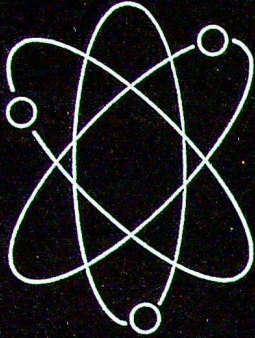


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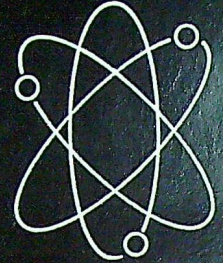
MAY 1965 VOL. 17, No. 4



C. ROUSSEAU



# AEROSPACE SYSTEMS COURSE



By SQUADRON LEADER R. E. DAVIES, RAF

LAST month 21 RCAF officers flew from Winnipeg to Europe for a tour of aerospace research and development establishments in England, Scotland, France and Holland. The group consisted of the staff and students of the RCAF's current Aerospace Systems Course (ASC).

The RCAF, recognizing the need for space age training for its personnel, established the ASC, which had its origins in the old Specialist Navigation (Spec. N) Course, in February 1963. In essence, the object of this course is to provide "selected officers with an advanced operational and technical education in the concepts and characteristics of current and future systems and techniques related to aeronautics and astronautics; and to develop the ability of these officers to express themselves logically and concisely, both orally and in writing, on operational and technical matters so that they will be qualified to give responsible information on the development, operation and employment of

current and future aerospace systems".

Candidates selected for the old Spec. N courses were aircrew officers, usually from the radio navigator branch but with up to two pilots among the eight RCAF students for each course. When the 48-week-long ASC course began the strength was increased to 12 students, including four pilots. Officers from the technical list were added to the present course which is comprised of four pilots, three navigators (long range), one navigator (airborne interception), one radio officer, two technical telecommunications officers, and one technical aeronautical engineering officer. It is of minor consideration, in many of the advanced job situations, whether an ASC graduate is basically a pilot, radio navigator, or technical officer. The selection criteria for the ASC is, therefore, based primarily on individual potential rather than on list/branch affiliation. In addition to the RCAF officers on the course,

the USAF selects one officer for each alternate course and the RCN may send an officer to future courses.

It is not proposed to bore the reader with details of syllabus hours given in the basic subjects such as mathematics, physics, electronics, mechanics of flight, navigation and map projections, and ballistic missile and space mechanics, or the hours devoted to the more applied subjects such as avionics, guidance and control, and aerospace systems. It is considered important, however, to try to indicate just what is meant by this latter subject which is indeed the name of the course – the Aerospace Systems Course. To do this I would like to quote the words of the president of the Canadian Aeronautics and Space Institute, Mr. R. D. Hiscocks. In an article titled "A Career in Aerospace Sciences and Technology" in the May 1964 edition of the Canadian Aeronautics and Space Journal he states:

"In aerospace engineering the

term 'system' may be used to describe something more extensive than a series of components in an airframe. An analysis of the requirements of a large military organization, such as NATO, or an examination of the problem of selecting the best equipment for an airline may be described as a systems study. These systems are often so vast and complex that a serious error is too costly to contemplate, and vast sums of money, man hours and computer time are expended in examining every variable in order to arrive at an optimum solution. In work of this nature the talents of the aerospace engineer may be quite secondary to those of the operational analyst, the mathematician, statistician, economist, industrial engineer and many others. The demand for qualified people who will 'pool' their expert knowledge in these fields has resulted in the formation of firms and organizations with highly developed capabilities and specialized talents."

This definition contains some very important concepts, including the fundamental ones that a variety of backgrounds and talents are required by those involved in systems study and that often a serious error can be extremely costly. However, the last quoted sentence of Mr. Hiscocks' statement, whilst perfectly true, has some slightly ominous undertones for a military organization such as the RCAF.

To fill the gap between the military man's service background and the civilian's specialist knowledge is the main aim of the ASC. The officers selected for the course should all have obtained considerable service experience upon which the course develops a broad but sufficiently detailed knowledge of current and future technology. As ASC graduates they can subsequently act as effective "interpreters" of military requirements to the project engineers and specialist organizations,



An American instructor explains to two Canadian students, the capabilities of the X-15 rocket aircraft (l. to r.): Capt. P. A. Goubert, F/Ls B. L. Giffin and R. I. Enman.

and be capable of assimilating and building upon, sound detailed technical recommendations. By the proper employment of ASC graduates in these types of positions "the serious errors too costly to contemplate" are more likely to be avoided.

The course is conducted at the Central Navigation School at RCAF Stn. Winnipeg and with the exception of the civilian meteorologist, all instruction to the course is given by officers who are themselves ASC graduates. In addition, some 14 invited expert lecturers come to Winnipeg during the year to give the course the benefit of their specialist knowledge of some field of aeronautics or astronautics. The willingness of these visiting lecturers, many of them very distinguished persons, to come to Winnipeg to address the course and subject themselves to a searching question and discussion period and then to return the following year for a new course, speaks well of the interest shown by the students and of the calibre of the

questions which are raised during the visiting lecturer sessions.

The course is phased so that some ten weeks are spent away from Winnipeg visiting approximately 50 research, experimental, manufacturing, and service establishments in Canada, the United States, and Europe. Initially, the CNS staff decides which establishments should be visited by the course to expose students to the desired broad range of military capability, research, and technology. Also, which visits need to be made to enable the students to complete their assigned tasks and projects. For each establishment a detailed program is drawn up indicating specific briefings required and this is submitted through official service channels. All members of the course have a Top Secret security clearance but in many areas of research etc., the "need to know" principle applies. Apart from extremely sensitive areas of information, this principle is applied as far as is pr


cable.

The visits generally consist of the detailed briefings requested in the program plus occasional demonstrations of research equipment or hardware. The information obtained from each visit becomes the subject of a detailed summary, which for each complete one-day visit is written up by one ASC student. In order to collect the information students work together in teams taking notes, copying diagrams, etc., so that the writer of the finished article has all the material presented. This so called "visit report", besides being a source of information, is also an excellent training vehicle. All ASC students are required to complete at least four during the course. Each report is subjected to a detailed validity check by an ASC graduate who was present and compiled his own notes during the visit and in addition, each is subjected to an assessment of the presentation, form and English of the report.

To give wide circulation to the information obtained from each tour, the evaluation and reports section of CNS publishes a summary of the information from each visit in the form of a CNS tour report. These are combined under separate covers for information obtained in Canada, in the United States and in Europe. Approximately 50 copies of each of these documents are distributed throughout the DND within Canada, to No. 1 Air Division and to the Canadian Joint Staffs in Washington and London, thereby providing a "bonus" benefit of the ASC visits over and above their great educational and training value to the students on the course.

There is also another "bonus" which accrues from the final task of each ASC just before graduation. This is the two-day symposium which is held at Station Winnipeg. During the symposium the ASC students present course solutions to set tasks and projects, together with

presentations on particular areas of aerospace interest which have been the subject of study during the course. To this symposium are invited a broad cross-section of headquarters and command staff officers together with previous ASC graduates and the students selected for the next course to be held. Useful and interesting discussions are started at the symposium, some of which may have some bearing on a future policy or equipment for use by the RCAF in this modern aerospace age.

To quote again from Mr. Hiscocks, "In this country, opportunities to make important contributions to science and technology will not be lacking, for the winds of change are blowing with an invigorating intensity in the realm of aerospace sciences". It is the opinion of this writer that by means of the Aerospace Systems Course, the RCAF has taken a definite step to ensure that its personnel have been given an opportunity to keep abreast of the rapidly advancing technology of the world around us. 



*Aerospace System Course No. 17 make the annual ASC tour. Here the course members, plus two members of the staff, pose by an F-111A aircraft at the General Dynamics Factory in Fort Worth, Texas.*

*Members of the ASC course make good use of the reference library at Stn. Winnipeg. Here (l. to r.) are: F/Ls H. L. King, A. G. Heal and J. R. Toye.*



# IS IT FACT OR FICTION?

As modern man probes deeper into the outer reaches of space, his curiosity about this new, exciting frontier continues to grow. And, though our knowledge of space has increased a thousand-fold during the past 10 years, many misconceptions and half-truths still remain to puzzle the public.

But, although puzzling, space exploration seriously concerns the public because of the increasing role it plays in our lives every day. Right this minute, Mariner IV is streaking towards a photographic rendezvous with Mars this summer. And, the U.S. plans to put a man on the moon in this decade.

These are only a handful of reasons why we should come out of the dark about space. What do you really know about the space above? Here's a space quiz, compiled by researchers for the Thiokol Chemical Company. See where you stand.

## Are the following, fact or fiction?

1. The Greeks knew of the modern rocket principle.
2. During summers on Mars the temperature reaches 50°F.
3. The heavier a body, the faster it falls to earth.
4. Space is empty.
5. In space, the chance of a space craft being struck by a meteoroid is virtually zero.
6. It is five times easier to escape the moon's gravity than it is to escape the earth's.
7. An astronaut can not endure speeds in space past 30,000 mph.
8. Moving objects in space actually contract.
9. A space craft uses flaps to slow its orbital speed in order to return to earth.

10. A space craft travels at phenomenal speeds before it leaves its launch pad.

11. Space is free of gravity.

12. It might be easier for man to reach the moon than to close the door of his space craft once there.

13. Man will be able to explore more of space from the moon than from the earth.

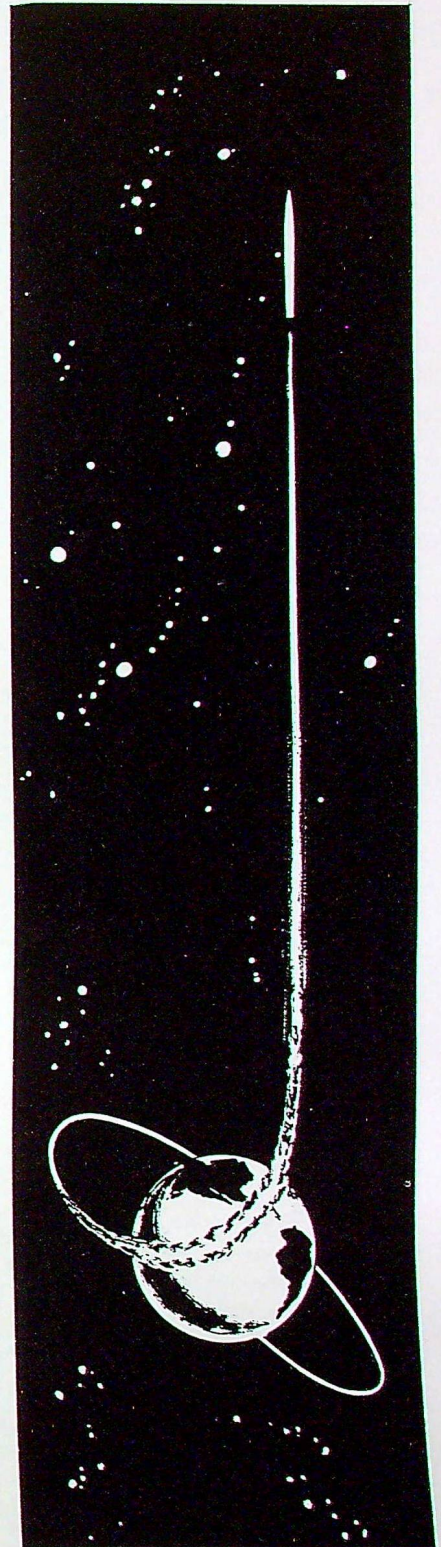
14. The Soviet Union has the most powerful rocket boosters.

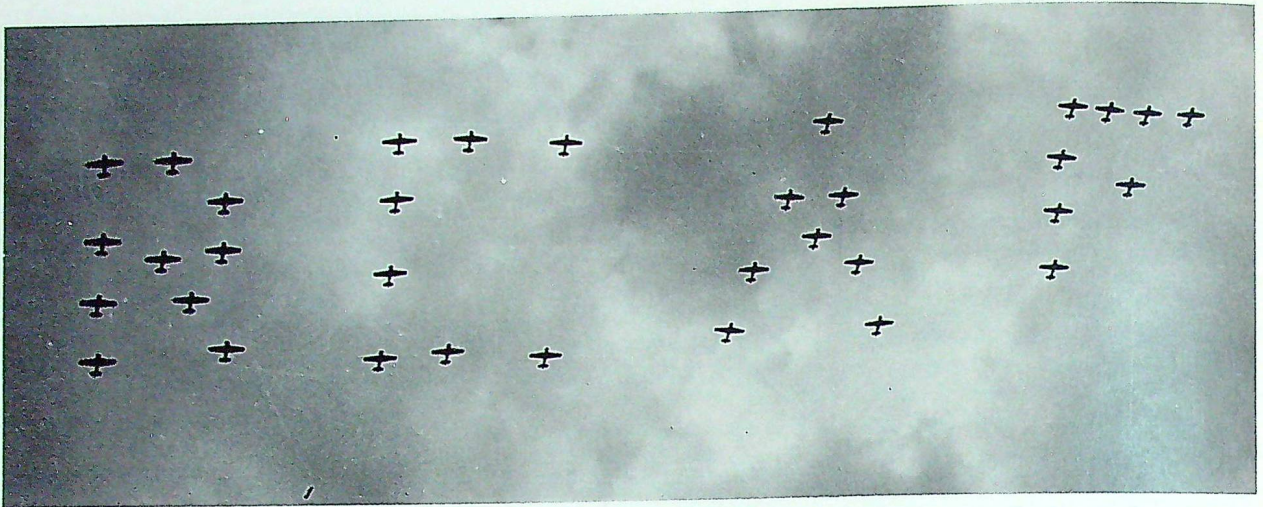
15. Rocket power is not needed to keep a space craft at required velocity once in orbit.

## Answers to Space Quiz on Page 24

It was a tense moment in the colonel's life. In the midst of a heavy battle the regiment's field radio was silenced. Nervously, the colonel and his staff paced up and down on a small hill near the command post. Finally, a small scout plane zoomed over the post and released a carrier pigeon.

The colonel's powerful field glasses followed every flap of the pigeon's wings as it circled down to a nearby coop. The colonel raced over to get the message. With trembling hands he opened it and read: "I have been sent down for being naughty in my cage."





# THE SAGA OF A THOROUGHbred

By FLIGHT LIEUTENANT J. A. WHITELAW

RCAF Station Penhold

THE *Harvard* has been appropriately described as the aircraft which has defied the rules of obsolescence and ignored its own obituaries. But now, after almost 26 years of RCAF service, its days are drawing to a close. There are many serving and ex-RCAF members who will pause and reflect wistfully on past experiences and associations with this time-honoured trainer. Certainly no other aircraft in the history of the RCAF engenders the same nostalgic memories from so many thousands of fliers, from a wide variety of countries who, flew the "yellow peril" during their embryo pilot days.

Prior to the outbreak of World War II the RCAF had ordered 15 *Harvard* Mk I aircraft from the North American Aviation Company. These trainers were to play a vital role in the planned buildup of the RCAF. They were, in fact, the forerunner of the vast numbers of train-

ing aircraft which were later to support the British Commonwealth Air Training Plan (BCATP). Delivery of the first Mk I *Harvard* was made to Western Air Command on 19 July '39. (This original aircraft flew, with minor mishaps, throughout the war but was eventually written off in an accident at No. 1 TTS Aylmer on 9 May '46.) Ninety additional *Harvards* were ordered from the USA during 1940. An interesting sidelight occurred during the delivery of these aircraft to Canada. To preserve the neutrality of the U.S. after Canada entered the war all *Harvards* purchased from the U.S. were flown to the international boundary at Coutts, Alberta and other points, and pushed or towed across the border into Canada. In November 1939, an officer of No. 111 Coast Artillery Co-operation Sqn., located at RCAF Stn. Vancouver, proceeded to Coutts to complete arrange-

ments for the acceptance of these aircraft, which were then flown to their Canadian destinations.

With the beginning of the war and the commencement of the BCATP a massive buildup of training facilities took place across Canada. The *Harvard* was selected to be the prime advanced single-engine trainer and service flying training schools were established across Canada at such places as Camp Borden, Ottawa, Dunnville, Moncton, Summerside, St. Hubert, Kingston, Moose Jaw and Swift Current, to handle the vast influx of trainee pilots answering the call to the colours. In addition to the training of Canadian pilots, the *Harvard* was utilized to provide air instruction in Canada for pilots from almost every country allied against Germany during the war. RCAF Stn. Trenton, with one of the largest inventories of *Harvards*, became the home of

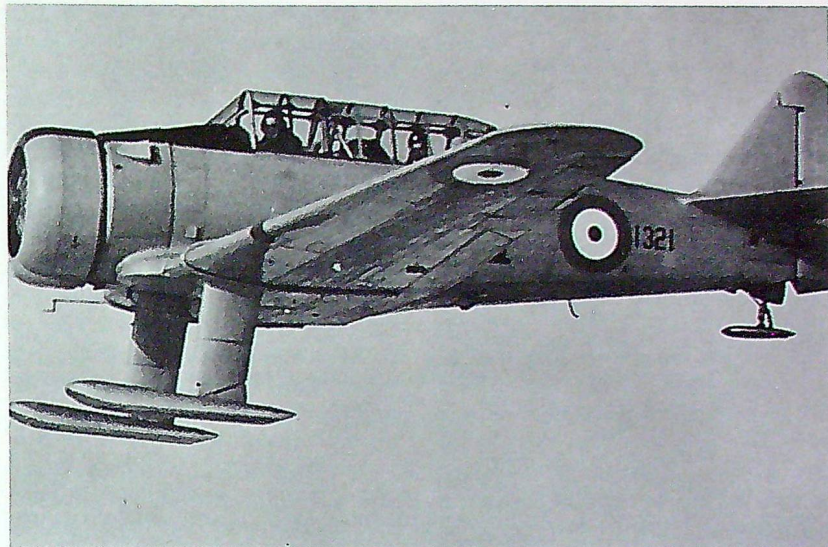
Central Flying School and later No. 1 Flying Instructors' School where potential instructors received their training then went on to instruct other *Harvard* pilots.

In January 1940, 100 Mk II *Harvards* were ordered from the Noorduyn Company of Canada which was licensed to produce the aircraft in this country. This original Canadian order was increased to 210 aircraft in July of the same year and subsequently increased again, until by the end of the war almost 2,000 *Harvards* had been supplied by the Noorduyn Company to the RCAF.

The main difference between the Mk I and II aircraft was the change to an all-metal fuselage and squared wing tips. The power plant was the same in each and with the exception of a few minor modifications, the Pratt and Whitney Wasp, rated at 550 Brake Horsepower, is still in use in *Harvards* today. This engine has established itself as a symbol of continuing reliability, a fact which would be readily confirmed by those who flew the *Harvard* during their training days and in later years.

As the BCATP gained momentum the familiar throaty roar of the *Harvard* was heard the length and breadth of the populated areas of this country. Some 11,000 Canadians plus another 8,000 from allied countries received pilot training on the *Harvard* aircraft in Canada during the war years.

From the training point of view the *Harvard* was considered to be an excellent investment. With a fairly high wing loading (21.5 lbs per sq. ft.) and consequently a relatively high landing speed, the *Harvard* required from the pupil something of the same skill he would later require in handling operational aircraft. It was fully aerobatic, not too easily controlled and sufficiently rugged to endure the heavy loadings and rough landings frequently imposed upon it by student pilots.

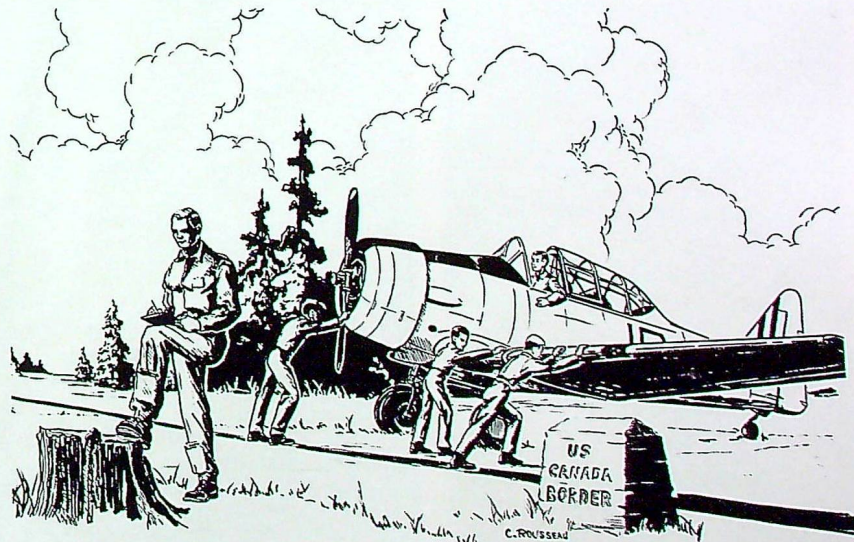


*The first Harvard to be delivered to Canada was No. 1321 equipped with skis. After almost seven years of service this trainer was destroyed in an accident.*

Serviceability was uniformly high and at no time was there a serious shortage of airframe or engine spares. The record shows that *Harvard* equipped training schools had much less difficulty in fulfilling their training requirements than was experienced by schools equipped with other aircraft. The chief hazard in

flying the *Harvard* was its undeniable tendency to ground-loop caused apparently by the design of the tail wheel and a high centre of gravity. Modifications to produce a partially steerable tail wheel have since been incorporated but the *Harvard* still tends to ground-loop unless carefully handled. A stern taskmaster, but

*The artist's drawing illustrates how Harvards were landed in the U.S. and pushed across the international border into Canada. This procedure was designed to protect American neutrality before the U.S. entered World War II.*



a reliable and efficient trainer, the *Harvard*, because of this ground looping tendency, required the pilot to be constantly alert, particularly during the landing phase.

During 1943 as the BCATP reached its peak output the *Harvard* kept pace and some were eventually modified as armament trainers capable of carrying machine guns, rockets and practice bombs. Student pilots of that era were thus indoctrinated in the art of offensive warfare prior to their taking operational training on more advanced aircraft.

In the late 1944 as the tide of war turned in favour of the allies, the BCATP was gradually phased-out until it ceased operation completely in 1945. The *Harvard*, rated as the finest aircraft of its class in the world had trained thousands of pilots, had flown almost four million hours and had played an inestimable part in the winning of the ultimate victory. At this time the future of the *Harvard* was uncertain. Many stations retained small numbers for practice flying and communications flights but the majority of *Harvards*

on strength at the end of hostilities were placed in long term storage on abandoned airfields across the country. A period of readjustment began.

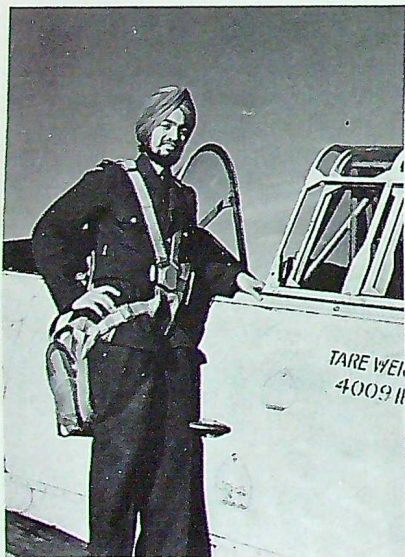
RCAF post-war pilot training was commenced on a small scale in 1947. Again the *Harvard* aircraft was called upon to be the prime basic trainer and in fact an experiment in one stage training was begun to eliminate initial training on an elementary type aircraft. A *Harvard* training school was established at RCAF Stn. Centralia and the first post-war course of pilot trainees graduated in 1948.

In August 1949 Canada joined with 11 other nations in the formation of the North Atlantic Treaty Organization and was committed to provide training facilities for pilots and navigators from NATO countries. The wartime airfields of this country once again reverberated to the distinctive roar of the *Harvard* aircraft as the RCAF commenced a rapid build up to meet this new requirement. Training schools were established at RCAF Stns. Moose Jaw, Claresholm, Calgary and even-

tually Penhold, to instruct trainee pilots from Norway, Denmark, Italy, France, West Germany, Portugal, Turkey, Belgium, Holland, and Great Britain. Many former instructors and wartime pilots were recalled to the service to man the re-activated Stations. Once again the sound and sight of the faithful *Harvard* became a part of the Western Canadian scene.

The Mk IV *Harvard* was introduced in early 1951. This latest version was of the same basic design as the Mk II but embodied more sophisticated instrumentation and a greater fuel capacity for longer range. A 10 channel VHF set and radio compass installation in the new models was a far cry from the original Gosport Tube, and later electrical intercoms, incorporated in the Mk I and II. Production of the Mk IV was carried out at the Fort William plant of the Canadian Car and Foundry Company where approximately 270 of these aircraft were manufactured. During this same period civilian contracts were let for the overhaul and modifica-

*This Sikh flier was one of approximately 19,000 pilots who took Harvard training in Canada during World War II.*



*A line-up of Harvards has been a familiar sight at RCAF airports for almost 25 years.*



tion of Mk II *Harvards* coming out of storage or from time-expired active service. As a note of interest, the Canadian Car and Foundry Company under a license agreement with North American Aviation, manufactured and supplied *Harvard* spare parts for Canada, Great Britain, Norway, Sweden, Denmark, Holland, Belgium, France, Switzerland, Spain, Portugal, Belgium Congo, Pakistan, Egypt, China and New Zealand. Most of the *Harvards* held by these countries were manufactured by the Noorduyn Company during the war years and it has been estimated that there are roughly 2000 *Harvards* still providing useful service around the world.

The concept of using the *Harvard* as a combination elementary and intermediate trainer was discontinued in early 1953 and a return to the wartime method of having a lighter type aircraft as an elementary trainer was instituted. Student pilots of this period were given approximate-

ly 25 hours on the *Chipmunk* prior to proceeding to the flying training schools for *Harvard* training, where they received 162 hours of flying before going on to advanced training on the T-33.

By 1954 serious consideration was being given to providing the RCAF with a replacement for the aging *Harvard*. In line with this, a new intermediate trainer designated the *Mentor* or T-34, designed and manufactured by the Beech Aircraft Corporation, made its appearance upon the scene. An experimental course of student pilots was processed through normal training at No. 4 FTS Penhold on this aircraft but, for various reasons, the *Mentor* was not considered acceptable and its use in the RCAF was terminated. The *Harvard* meanwhile renewed its lease on life and continued turning out pilots as it had been doing for some 16 years at that point.

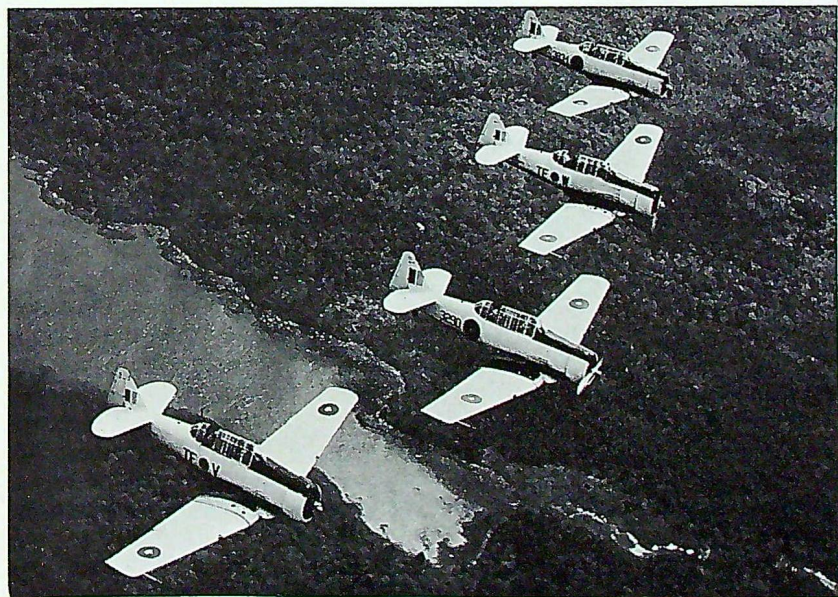
The requirement for the training of NATO aircrew diminished some-

what after 1955 and by 1960 Stns. Moose Jaw and Penhold were the only remaining *Harvard* flying schools in the RCAF. By this time several hundred surplus *Harvards* had been turned over to Crown Assets for disposal, many of which found a ready market among the civilian operators of the country and particularly ex-RCAF pilots. The sound of the *Harvard* has not been quieted but rather it continues, in civilian markings, to shatter the stillness of many small airfields, from British Columbia to Newfoundland. It has often been asked why a great number of *Harvards* in the air make no more noise than one *Harvard* in the air by itself. The answer, presumably, is that there is no more noise in the world than that made by one *Harvard*, and that it is physically and mathematically impossible to multiply infinity. Therefore, when you have heard one *Harvard* you have heard them all.

During the period 1955-60 work was continuing on the project of obtaining a suitable replacement for the *Harvard* with a view to instituting all-jet training in the RCAF. In 1959 a new primary jet-trainer, the CL-41, designed and built by Canadair, was ready in prototype. This was the aircraft destined to displace the *Harvard*; however, it was to be another five years before the CL-41 would be available in sufficient quantity to staff the training schools.

In the spring of 1962 a group of instructors at RCAF Stn. Moose Jaw formed a *Harvard* aerobatic team to perform during Air Force Day at that unit. As a result of this noisy, fast moving display the popularity of the tireless *Harvard* became immediately evident when Stn. Moose Jaw was flooded with requests to have the "Goldilocks" perform at other Air Force Days and air shows across the country. Before the team was disbanded in 1964 they had demonstrated their prowess, and the versatility of the

*Harvards were also used by the RCN. Here a four-plane formation from No. 1 Training Air Group fly over Manitoba.*

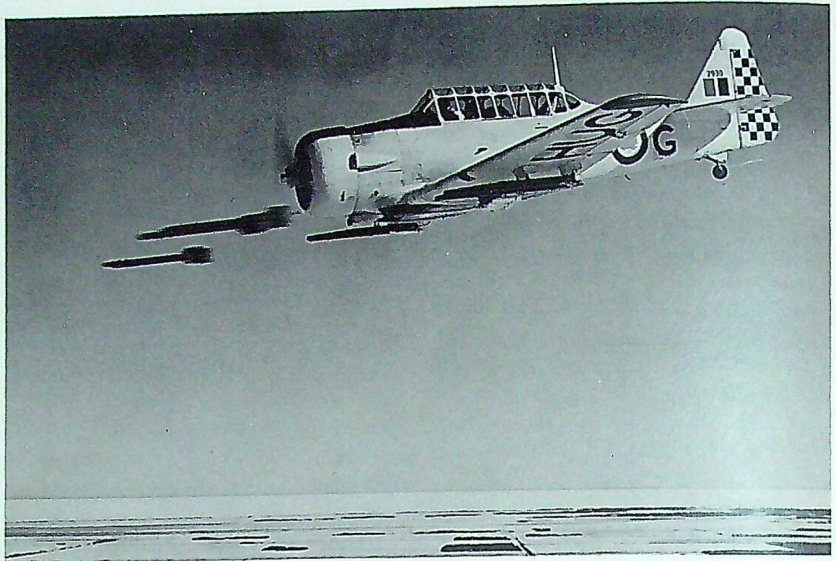


*Harvard*, at dozens of air shows including the Canadian International Air Show in Toronto. The “crazy formation” displayed by this group was a sight to be long remembered by spectators and proved to be one of the highlights of the show.

The post-war record of the *Harvards*' achievements is impressive. More than 6000 Canadian and NATO student pilots have received training on this aircraft and in addition a number of trainees from the Nigerian Air Force were trained on *Harvards* at No. 4 FTS Penhold and at FIS Moose Jaw in 1964. Most student pilots undergoing training today were not yet born when the *Harvard* was making its invaluable contribution to the Allied cause during World War II.

There are very few pilots of this present day who have not logged *Harvard* flying hours at some time during their careers. For those who have not and for those to come who may never have the opportunity to fly this aircraft, one can only say that for them a very real part of the aviation story has been missed.

At RCAF Stn. Penhold the final *Harvard* course is nearing completion. On 21 May '65, the last group of Canadian student pilots to fly the *Harvard* as an RCAF trainer will graduate and the “Yellow Peril” will have completed another job “well done”. This aircraft, which has established itself as one of the most successful and renowned trainers in the history of flying and has probably trained more pilots than any other aircraft, will leave behind a record unparalleled in the annals of aviation. There are many who will



*The versatile Harvard was also used as a weapons trainer. Carrying rockets, bombs and machine guns, the Harvard indoctrinated students in the art of offensive warfare.*

*Canadians by the thousands were entertained and amused by the “crazy formation” flown by the Goldilocks in their Harvard aircraft.*



mourn its retirement from Canadian training and there are some who will forever stoutly maintain that the *Harvard* will never be replaced. It will always hold the place of honour

it has forged for itself through long and faithful service. When the *Harvard* is finally retired it will bring to a close a memorable and splendid era in the history of the RCAF. ☉



## Labrador and Voyageur

"A rose by any other name would smell as sweet", goes a familiar saying and, apparently the personnel at CFHQ whose task it is to name aircraft, feel that the same principle holds true when applied to aircraft.

The Vertol 107 helicopter, operated by both the RCAF and the Canadian Army, has been given two names to differentiate the RCAF's version from that of the Army. Labrador is the name of the RCAF helicopter while the Army's machine will be known as the Voyageur. The differences are in refinements of the basic model for the specialized jobs they perform.

The Labrador (CH-113) operates from RCAF search and rescue units across Canada and is an all-weather helicopter fitted with additional fuel tanks for increased range needed in search and rescue operations. Specialized radio and navigational equipment plus rescue gear have also been added to give more flexibility in northern and "at sea" operations.

The Voyageur (CH-113A) operated by the Army is mainly a troop and small vehicle and equipment carrier. It can transport up to 25

troops fully-equipped or 15 litter patients. It has a range of 200 miles at speeds of 150 mph. Both the La-

brador and the Voyageur can be used as troop carriers and both have a cargo capacity of 2,000 pounds.

## FIRE PREVENTION AWARD



In order to encourage service personnel to be conscious of the danger of fire, an annual tri-service fire prevention contest is held. The winner for 1964 of the Military Division Shield from the National Fire Protection Association is HMC Dockyard, Esquimalt, B.C.

This naval unit won the highly-coveted shield as a result of their year round inspection and educational program. Pictured here are the Honourable Paul Hellyer, Minister of National Defence, presenting the award to A/M C. L. Annis, Chief of Logistics and Engineering Development, who accepted it on behalf of the Flag Officer, Pacific Coast.

# WAR ON THE FRONT DOORSTEP

By FLIGHT LIEUTENANT H. A. HALLIDAY

Directorate of Historical Services

## Third of Three Parts

THE battles of May 1943 marked the end of one campaign and the next series of actions, four months later, were of a very different nature. To understand the changed conditions one must go back to the Atlantic Convoy Conference, held in Washington in March 1943. It was attended by representatives of the RAF, USAAF, RCAF, RN, USN, and RCN. The purpose of the conference was to review all anti-submarine operations in the Atlantic with the aim of improving the organizational system and defining responsibilities. At the same time operational and technical matters were considered.

The result was that Canadian responsibilities were increased. The operational control of air commands was extended to the limits of endurance of their aircraft. All anti-submarine aviation in Newfoundland, including American units, came under the control of No. 1 Group HQ, St. John's. This made the AOC of EAC, A/V/M (A/M retired) G. O. Johnson, MC, the overall commander, a situation recognized by his being given the new title of Air Officer Commanding in Chief. However, American units ceased operations in August and were sent to other theatres. To increase inter-service co-operation the USAAF Anti-Submarine Command staff moved into No. 1 Group HQ, while in July a joint RCAF/RCN HQ was established in Halifax.

Above all loomed the need for very long range (VLR) aircraft for EAC. The finest type available was the Consolidated B-24 *Liberator* which was in great demand. It was pointed out that the RCAF had some 200 aircrew trained in VLR operations but had no suitable aircraft. The outcome was that 15 *Liberators* were earmarked for the RCAF.

The logical unit to receive these aircraft was No. 10 Sqn., which had been flying *Digbys* for three years. On 2 April the first aircrew and maintenance personnel were posted to Dorval to take delivery of the

"Libs." and to start operational training under the eye of W/C (now A/M C. L. Annis, OBE). The aircrew first made a few flights on *Mitchells* to acquaint themselves with a tricycle undercarriage. A "hack" *Liberator* from Nassau was used for training until the new aircraft could be delivered from Fort Worth. By the end of April six *Liberators* were at Gander, although training was still in progress. In May and June the remaining aircraft arrived. The first *Liberator* sweeps were flown on 10 May by F/Ls (later S/Ls) J. F. Green and A. L. Imrie. From that date forward the Atlantic Gap was

*This dramatic picture shows U-341 going to a watery grave. The captain of the attacking aircraft was F/L R. F. Fisher.*





*Liberators with their very long range closed the Atlantic Gap. With the Canadians flying from Newfoundland, the Americans from Iceland and the British from Scotland, convoys could be given complete air cover during their Atlantic crossings.*

no more.

The presence of the *Liberators* remained a closely guarded secret until 3 July when P/O (later F/O) R. R. Stevenson attacked a U-boat that was shadowing a convoy. Stevenson detected and tracked the sub by radar, then broke through the clouds three miles from the enemy and made three attacks in two minutes. Only after the aircraft had dropped its last depth charge did the U-boat submerge in a swirl of debris. U-420, the object of this attack, was heavily damaged and forced to return to France. Curiously, the Germans reported that they had been attacked by a *Halifax*.

During the summer one or two U-boats continued to haunt the Western Atlantic, but there were few sightings and fewer attacks. Doenitz was waiting for a relaxation of the vigil in the North Atlantic. His U-boats were being equipped with heavier AA batteries and with "Zaunkönig" homing torpedoes. Later in August he despatched nine U-boats and a supply sub to the North Atlantic, followed by 19 more early in September. All the

submarine commanders knew the importance of this operation, for on their departure Doenitz had signalled to them, "The Führer is watching every phase of your struggle. Attack, follow up, sink!"

The Führer may have been watching, but so was the British Admiralty. The presence of so many U-boats could not be hidden, though their exact dispositions was unknown. Even as the Germans were forming their patrol line, the Admiralty reinforced the escort for convoy ONS.18, which had sailed from Milford Haven on 12 September. Three days later a fast convoy, ON.202, left Liverpool. The characters were in motion and another Atlantic battle was about to begin.

On 15 September No. 10 Sqn. sent three *Liberators* to Goose Bay. Next day these aircraft proceeded to Iceland, escorting HMS *Renown* enroute. *Renown* was taking Mr. Winston Churchill home following the Quebec Conference among allied leaders. Once in Iceland the aircraft were held to escort ONS.18. On 19 September F/Ls C. M. Harper and R. F. Fisher took off to

screen the convoy and return home.

Fisher was cruising at 3,000 feet, just under cloud base, when his copilot, F/O (later F/L) J. Dale, spotted a U-boat two miles away. Fisher dived to attack. On his first pass he was too high and he swept over the sub while the German gunners blazed away. The enemy was choosing to fight it out on the surface – a fatal mistake. In a second attack six depth charges straddled the sub and blew the bow out of the water. The gunners vanished and the sub began to submerge. As soon as the conning tower slipped under the waves Fisher attacked again. Four depth charges exploded in the swirl. Oil and bubbles appeared and spread out. After checking for damage (one wingtip had been hit by flak) and waiting for 25 minutes, Fisher set course for Gander. He had sunk U-341, and two of his crewmen, F/O Dale and F/O (later F/L) B. A. Murray, the navigator, were awarded the DFC. Fisher was killed in a flying accident before any award for him could be approved, and he was accorded a posthumous mention in despatches.



W/C (now A/M) C. L. Annis, OBE, supervised the training of RCAF personnel on Liberators.



A flare from a Very pistol signified the start of another night of anti-submarine patrol work.

Fisher's attack indicated that the U-boats were deployed further north than had been anticipated, and so convoys ONS.18 and ON.202 were run together to combine their escort forces. By day the ships were covered by *Liberators* from Iceland which sank U-338, but by night a number of escorts were sunk or damaged. On the morning of 22 September the ships came under cover of *Liberators* from Gander, and for two days No. 10 Sqn. waged a spectacular battle with the German subs.

Warrant Officer (later F/O) J. Billings was patrolling near the convoy on the 22nd when he sighted a U-boat on the surface and attacked in the face of intense and accurate AA fire. One engine was knocked out and his co-pilot was wounded, but the depth charges ruptured the hull of U-270 which was forced to break off the action and return to port. Billings called for assistance, but the escorts were running down "fixes" on subs, and another *Liberator*, piloted by F/L J. R. Martin, radioed, "Have a sub of my own."

Martin had detected a U-boat by radar at almost the same time as Billings made his visual contact. He

also attacked in the face of heavy AA fire and dropped four depth charges, one of which exploded near the bow. When the U-boat began to submerge Martin attacked with two new Mk. 24 acoustic torpedoes, but these weapons were inefficient and did not score a hit. U-377 had been damaged but remained in the fight. Shortly afterwards the *Lib* engaged U-402, but having expended all its depth charges it could do nothing more than try to drive the sub under with gunfire.

Flying Officer (later F/L) A. Cirko arrived over the convoy after dark and homed onto a radar contact. He could not attack in the dark, and the surface escort refused him permission to drop flares. Had his aircraft been fitted with a Leigh Light, such as was used by many RCAF aircraft, he would have been able to follow up his contact. Next day S/L J. F. Green attacked U-422, but his depth charges fell short. For half an hour he traded bullets with the sub until it finally dived. On board the *Lib* was the Deputy Inspector General, A/V/M

A. E. Godfrey, MC, AFC. During the action Godfrey acted as a gunner, and by so doing became the most senior RCAF officer to fire on the enemy during the war.

Four hours later F/L (W/C retired) R. R. Ingrams surprised a U-boat, but his attack was spoiled when the depth charges failed to explode. Ingrams then dropped two Mk. 24 torpedoes which had no visible effect. He marked the area with flame floats and turned for home. It had been a very frustrating sortie.

At that point the U-boats broke off the action and were sent to other areas where they fared no better than before. Late in October they attempted to engage convoy ON. 207. On the 26th F/L (now A/C) R. M. Aldwinkle of No. 10 Sqn. was patrolling 750 miles northeast of Torbay when he located a sub. Using the sun and clouds to hide him he attacked, dropping six depth charges. They undershot and five failed to explode. The U-boat remained on the surface, throwing up intense AA fire. After an hour of this the German began to dive. Ald-

winkle came in, dropped two Mk. 24 torpedoes, then added four depth charges for good measure. A black, oily eruption boiled up. It marked the end of U-420, commanded by Oberleutnant Jürgen Reese, which had been damaged by P/O Stevenson on 3 July. Aldwinkle then flew on to join the convoy and forced another U-boat to dive before he turned for home. He and two of his crew were subsequently awarded the DFC, and the remaining crewmen were mentioned in despatches.

Doenitz had suffered appalling losses, so he split up his wolf packs into smaller hunting groups. These were more difficult to track but were less formidable. The *Cansos* of No. 5 Sqn. had several encounters with U-boats in November, making three attacks. Thereafter the U-boats disappeared from the northwest Atlantic, a tacit admission of defeat.

As the U-boat menace subsided it was decided to reduce the RCAF's Home War Establishment. Number 162 Sqn. was brought up to full

strength and sent to Iceland where it began operations in January 1944. At the same time six fighter squadrons, including three from EAC, were sent to the U.K. During the spring and summer of 1944 two bomber reconnaissance squadrons, Nos. 113 and 119, were disbanded. To offset these reductions, No. 11 Sqn. was re-equipped with *Liberator* VI aircraft.

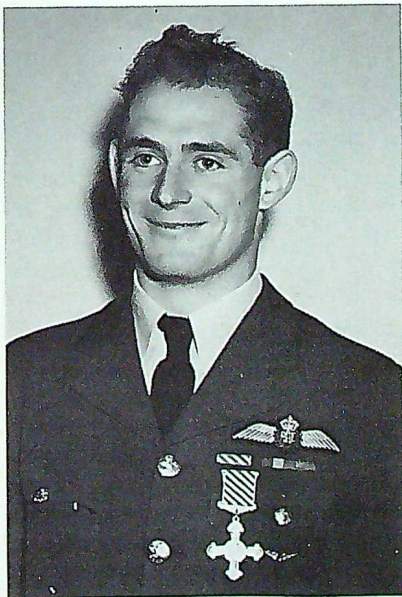
On 14 Feb. '44 F/O (later F/L) A. P. Cheater of No. 10 Sqn. was patrolling far out in the Atlantic when the wireless operator detected radio jamming. In the dusk Cheater saw a wake and then a U-boat which became alive with gun flashes. The nose gunner opened fire as the *Liberator* closed in, but a fault developed in the ventilation system and the nose became filled with smoke. This hindered the bomb aimer, F/O (later F/L) P. C. E. Lafond. The first salvo of depth charges fell short. A second attack was more promising. U-845 dived, leaving an oil slick. She had not been

heavily damaged, but withdrew from the area temporarily. She was sunk on her way home by ships of the RN and RCN.

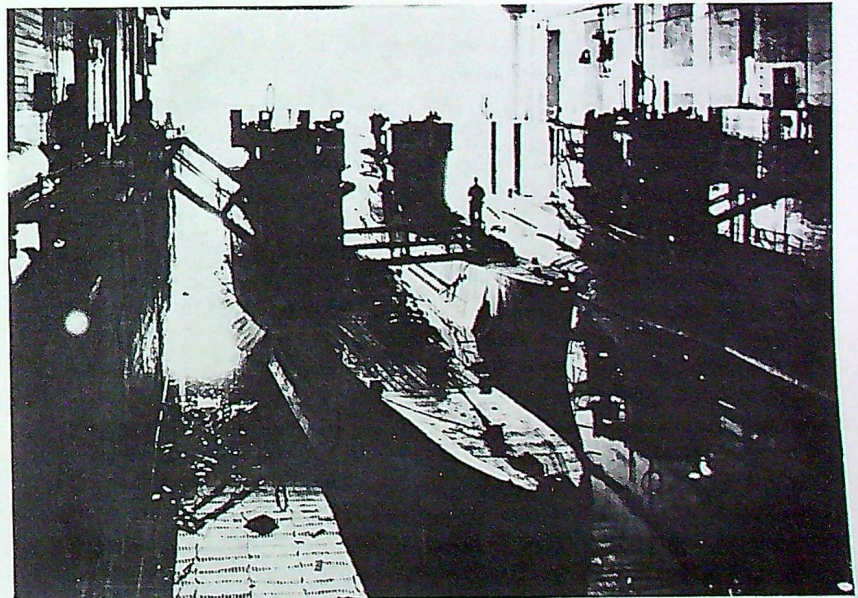
Throughout most of 1944 the Germans were preoccupied with the threat of invasion and they kept many submarines back to deal with it. At the same time the U-boats were fitted with Schnorkel breathing devices. Those U-boats which did enter Canadian waters were able to sink a few ships and slip away without being spotted. On 14 October HMCS *Magog* was torpedoed 50 miles from Sept Isles and her stern was blown off. F/O (later F/L) W. M. Peters of No. 161 Sqn. landed his *Canso* on the water and picked up the most seriously wounded sailors, then flew them to hospital. The weather was very bad at the time, and his action won praise from the RCN.

Once the invasion of Europe had been accomplished by the Allies, Doenitz switched his boats back to the Atlantic. The closing months of

*S/L (now A/C) R. M. Aldwinkle, DFC, sunk one sub and forced another one to crash dive during one busy day.*

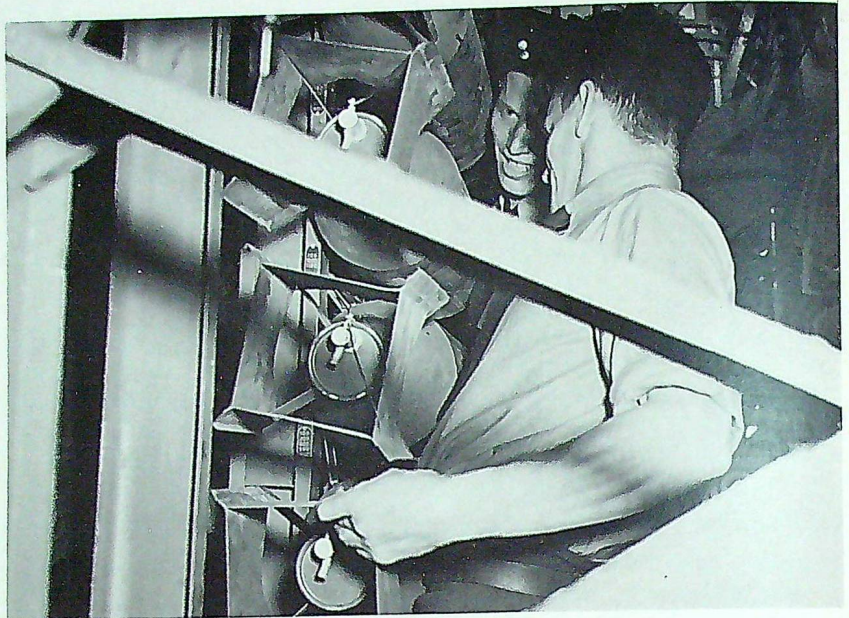


*The Germans built these bomb-proof submarine shelters at Trondheim, Norway.*





P/O R. R. Stevenson, at the wheel of the "mule", made the first attack on a submarine from an RCAF Liberator.



Airmen load armament into a Liberator of No. 10 (BR) Squadron.

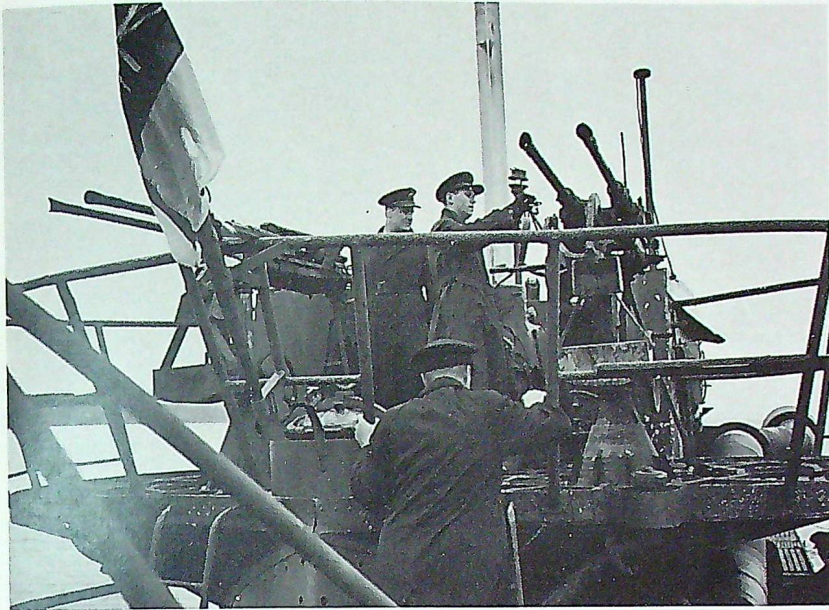
the war were as bitter as the days of 1942, for the U-boats torpedoed several freighters and escort vessels around Nova Scotia. EAC crews were confronted with the difficult task of trying to spot Schnorkel tubes in the wastes of the Atlantic. If the U-boat were to retract the Schnorkel there was no way to track the enemy except by sonobuooy. Bombing sonobuoys was one means of frightening the enemy, but as they gave no indication of the depth at which the submarine was lurking there was little chance of achieving results.

In April 1945 the Germans, who had been relatively quiet the previous month, suddenly launched a pointless last-minute campaign in Canadian waters. On 16 April U-190 torpedoed HMCS Esquimalt as she approached Halifax harbour. The ship sank before an SOS could be sent. Several hours passed before she was missed. An air search was then started which soon located life rafts and survivors. Two brief Schnorkel sightings were made by

EAC aircraft, but no opportunity for an attack presented itself. On 3 May a *Canso* of No. 5 Sqn. spotted a possible Schnorkel in the Gulf of Maine and attacked with depth charges. This was the last occasion when an aircraft of EAC dropped its ordnance in anger, and the incident was so inconclusive that the object of the attack might have been a piece of driftwood.

On 8 May Germany surrendered and the German Naval Headquarters began broadcasting orders to the U-boats to surrender. Seven appeared near the Canadian coast, of which five gave themselves up to American forces. U-190 sailed into Bay Bulls, Nfld. Eastern Air Command aircraft continued to fly patrols in case any U-boat should turn rogue and attempt to continue operations. On 10 May F/L G. F. Clement of No. 10 Sqn. was on a convoy patrol when he saw a U-boat on the surface, heading west. Clement turned in to attack, then saw that the sub was flying the black flag of surrender. He signalled in German

and then in international code for the sub to halt, but the only reply was a waving of arms by Germans in the conning tower. The *Liberator* homed HMCS Dunvegan and Rockcliffe to the scene, and they escorted U-889 to Shelburne, N.S. F/L Clement had previously done much flying with the squadron, and in December 1945 he was awarded the DFC. On 3 June F/O W. W. Adshhead of No. 10 Sqn. escorted U-190 from Bay Bulls to St. John's. This time the sub was flying the white ensign of the RCN. Thus closed the Battle of the Atlantic. VE-Day brought the rapid disbandment of the squadrons in EAC. No. 10 Sqn. disbanded at Torbay on 15 August. Number 11 Sqn. took its *Liberators* to Patricia Bay, B.C., where it disbanded on 15 September, the last of the old bomber reconnaissance squadrons to do so. Eastern Air Command had fought long and well. Almost invariably it had received less publicity and lower priorities than other commands overseas, yet it had performed its arduous duties



RCAF officers have a close look at the German submarine, U-889, after it surrendered to a Liberator of No. 10 Squadron.

with skill and determination, despite shortages, weather, boredom, and the enemy himself. The Germans had never thrust into the northwest Atlantic with the same forces that were concentrated in the North Atlantic and along the American seaboard. Had they done so, or if EAC had been able to employ *Liberators* a year earlier, it is quite possible that the command would have been able to play a more prominent part in the Battle of the Atlantic, and to run its score of sinkings higher than the six which were credited to its crews. An indication of what might have been is provided by the case of No. 162 Sqn. which sank five U-boats, shared in the sinking of one, and heavily damaged one more in less than four months while stationed in Iceland and Scotland, astride the enemy's northern transit routes.

Statistics concerning hours flown and convoys escorted during the Battle of the Atlantic would fail to illustrate how great was the effort put forward by EAC. Perhaps one

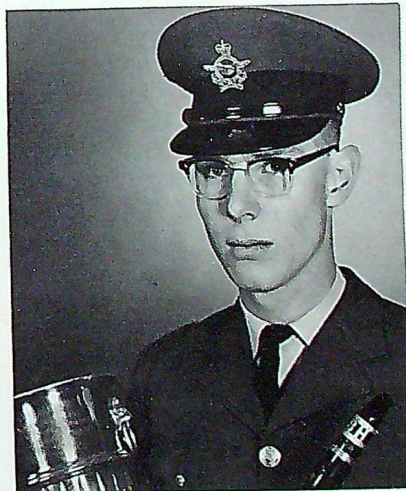
set of statistics will help to convey some idea of the job undertaken by all personnel. For services during the war, EAC personnel were awarded 75 DFCs, 14 AFCs, nine DFMs, two AFMs, three OBEs, eight BEMs, three MBEs, two



The commander of U-889 comes ashore at Shelbourne, N.S. The RCN had boarded the sub at sea; note the white ensign flying.

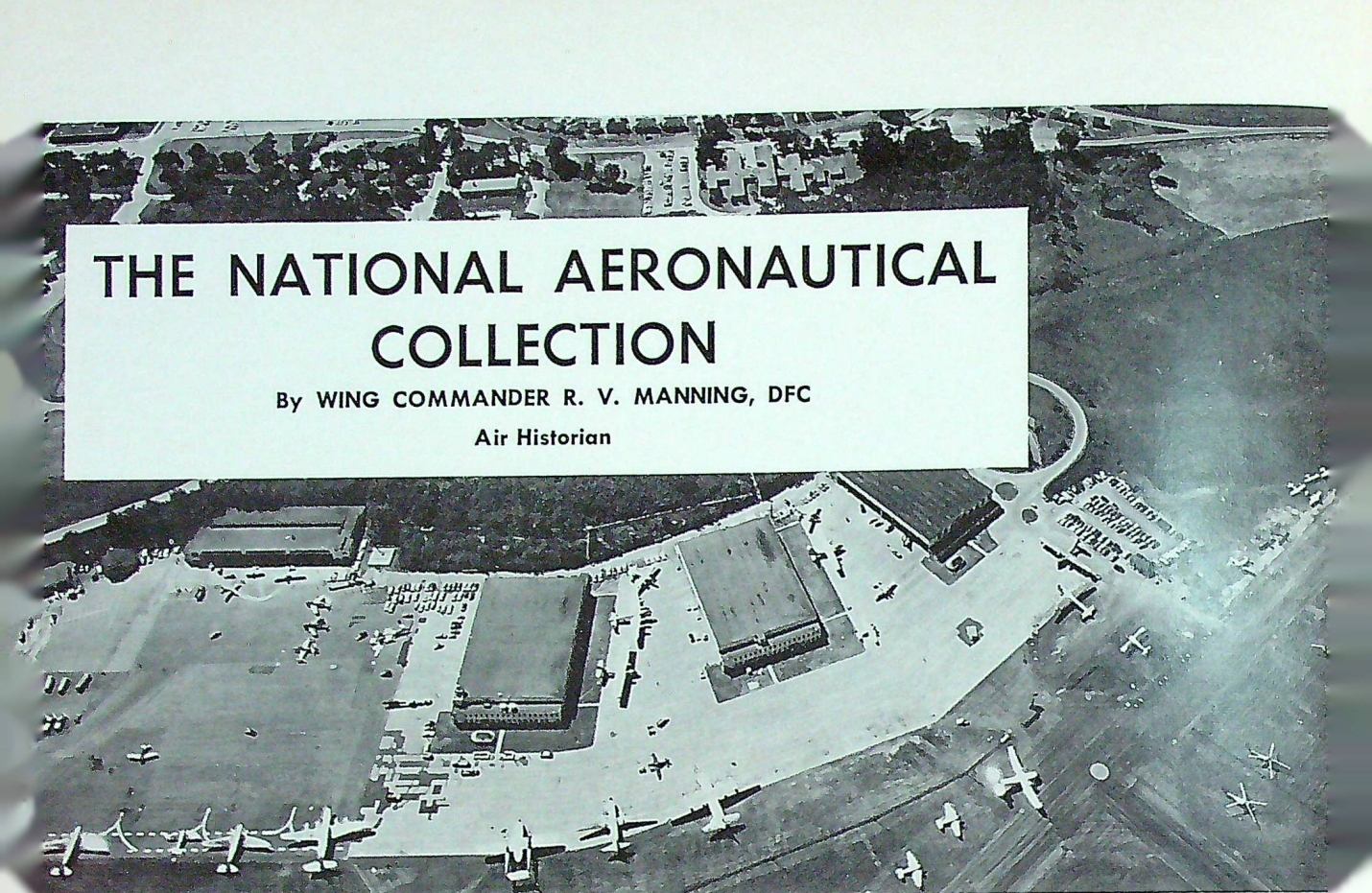
CBEs, one GM, and 127 mentions in despatches. These figures give some indication of the gallantry and devotion to duty which characterized those who fought on Canada's front doorsteps. ©

## THE MUSIC MAN



Leading Aircraftman R. C. Watts poses proudly with the Boosey and Hawkes Trophy which he won as the most outstanding student in the latest RCN Tri-Service School of Music graduating class.

This course, which is given to bandsmen apprentices, is of 22 months duration. On the latest course there were 23 student musicians and of the top 10 in the graduating class RCAF personnel placed first, second, fourth and fifth. LAC Watts, who specializes in the clarinet, is now contributing his sound of music to the RCAF Central Band at Station Rockcliffe.



# THE NATIONAL AERONAUTICAL COLLECTION

By WING COMMANDER R. V. MANNING, DFC

Air Historian

“BEING greatly exhausted, he dived out of the fight to regain our lines, but was met by another formation, which attacked and endeavoured to cut him off, but after a hard fight he succeeded in breaking up this formation and reached our lines where he crashed on landing.” The vivid words of the Victoria Cross citation help to recall a moment of great bravery in our aviation past, but there is a need for something more substantial to remind succeeding generations of Canadians of some of the things their air-minded forbears accomplished. Often the need is not remembered until it is too late, but, in the case of the Sopwith *Snipe* that carried Major Barker, VC, to safety on that memorable day in October, 1918, thoughtful persons, whose names are now forgotten, arranged for the recovery of the aircraft’s fuselage

from the Western Front and for its ultimate return to Canada where it rests in Ottawa to-day as part of the National Aeronautical Collection.

This new collection came into being last spring when the Department of National Defence and the National Museum of Canada, the latter (through two of its components, the Canadian War and National Aviation Museums), pooled their three small collections of aviation material of historic interest to make one large collection, one of the finest in the world. Only a brief reference can be made here to some of the 48 different types of full-scale historic aircraft that are a part of the collection.

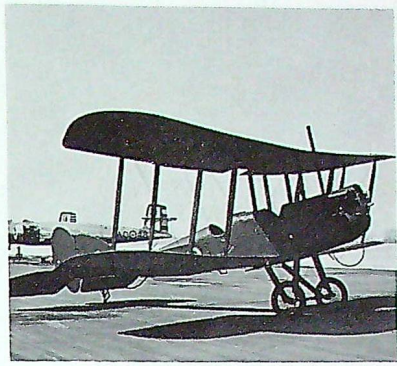
The oldest aircraft by type are the two *Silver Darts* (a flying model and a “true” replica) that were built at Trenton in 1958 to help celebrate the memorable flight that occurred

nearly 50 years earlier when Mr. J. A. D. McCurdy made history at Baddeck, N.S., by becoming the first British subject to fly in the British Empire. The absence of any other “pioneer” aircraft in the collection is a recognized weakness. A *Bleriot* of the kind used at Toronto and Montreal in 1910 by Count Jacques de Lesseps would be a fitting aircraft of this period to preserve, but the acquisition of an aircraft of this kind could only occur as the result of extreme good fortune. The gap is filled to some extent by a fine group of models of Canadian pioneer aircraft that was made by Mr. Frank Ellis, author of *Canada’s Flying Heritage*.

The World War I period has strong representation in the collection. Among the aircraft held is the BE2C in which Lieutenant Sowry shot down Zeppelin L32 in 1916.



The Junkers W-34 was among the first of the bush aircraft. This fine example is a gift of Mrs. J. A. Richardson of Winnipeg.



Lt. Sowrey destroyed Zeppelin L-32 in this BE2C.



The Sopwith Snipe being flown on National Air Force Day, 1964, by W/C P. Hartman.

This aircraft was without its original propeller until two years ago, when the Sowry family made a gift of it to Canada through the Royal Air Force. A Sopwith *Camel* is a reminder of the large number of Canadians who became aces on this the most successful of all First World War fighters. A two-seater *Nieuport 12*, quite a rare bird today, sits beside a trim *Nieuport 17* replica that was made by Karl Swanson of Sycamore, Illinois, and which is in flying condition. Without a doubt, though, the prize among the war-planes of this period is the Sopwith *Snipe*. It was brought to Hollywood in the early 1920 by Mr. Reginald Denny, the movie actor, where it likely had a role in the day-fight-

ing sequences of the war films of the period. In more recent years it was restored to mint condition by Mr. Jack Canary and at the time that he offered it for sale, it was widely believed to be the finest restored World War I aircraft in North America and was at Wright-Patterson Air Force Base on loan to the USAF Museum. To purchase it Mr. Murray of the Canadian War Museum spread its cost over two budgets and traded an antique cannon of some value but he brought to Canada an outstanding aviation relic. Its acquisition resolved an old argument — should the Barker *Snipe* fuselage be restored to a complete aircraft or should it be left untouched bearing its honourable scars of

the early use of heavier-than-air machines in aerial warfare.

Two interesting aircraft of this period have not been displayed to the public within memory. They are a German AEG twin-engine bomber and a nearly all-metal, heavily armour-plated JI trench-strafting aircraft. The JI is the only one of its kind in the world and the AEG is probably the only twin or multi-engined German bomber of the period in existence. Restoration of both aircraft to display standard is planned but to bring these contraptions of steel, leather, and cloth back to something of their former glory will be a complex task.

Training in the 1914-18 period has not been overlooked and a "Jen-

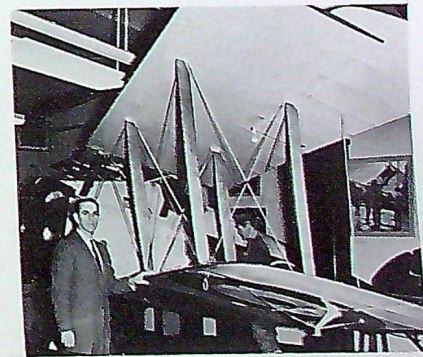
Mr. K. Molson, of the National Aviation Museum, receives a Spitfire IX from Mr. J. Paterson its donor.

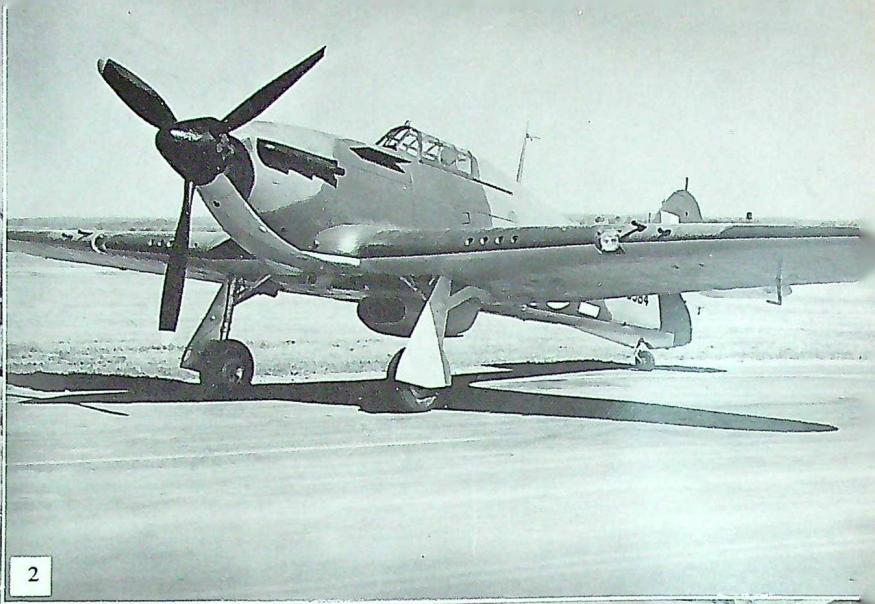
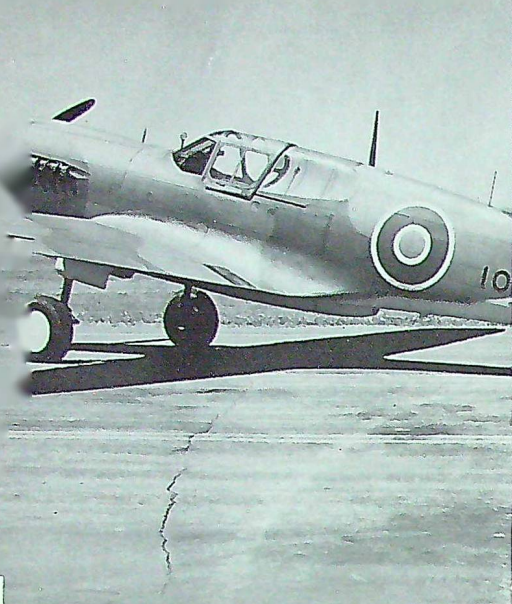


A/C G. G. Diamond accepts a Bolingbroke, a gift from Mr. G. A. Maude.



Mr. L. Murray, curator of Canadian War Museum, stands beside the beautifully restored Snipe that he brought back to Canada for the collection.



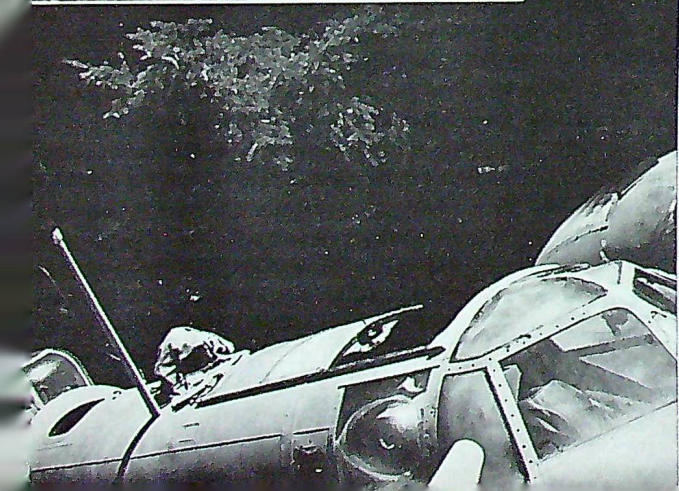


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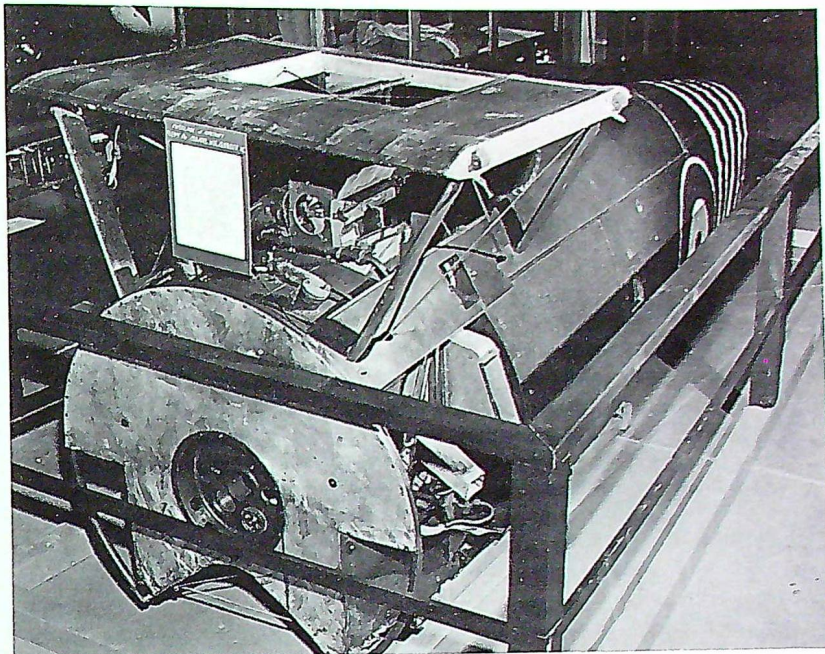
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ny" of nostalgic memory to many old fliers occupies a prominent place in the collection. Although nearly 2000 of these aircraft were manufactured in Canada, the museum aircraft had to be recovered from a barn in Honoway Falls, N.Y. I can remember the day when Mr. Ken Molson first took me to the warehouse to see his find. "Isn't it just beautiful" he said as he unveiled a rather tired mass of junk. And so it was in his mind's eye and so it is to-day as it stands on display after a pain-taking restoration by his museum staff. Author's note: Mr. Molson, after reading a draft of this article, insists that it is close to sacrilegious to refer to this fine specimen as ever having looked like junk.

When peace came the aeroplane, developed to a high state of utility in war, was adapted for the first time on a large scale to the needs of peace. A *Junkers W34* (a gift of Mrs. J. A. Richardson of Winnipeg)



Many lovers of Canada's past in aviation believe the fuselage of the aircraft flown by Major W. G. Barker VC in his epic battle to be the most valuable historical relic in Canada.

1. A *Kittyhawk* in mint condition forms part of the National Aeronautical Collection display.

2. A *Hurricane* was one of the aircraft with which the immortal "Few" won the *Battle of Britain*.

3. The *Bellanca Pacemaker* played an important role in opening the Canadian north.

4. An aircraft well known to thousands of Canadian aircrew is the *Lancaster bomber*.

5. The *Junkers J-1*, which is waiting restoration, is the only one of its kind in the world.

6. Getting this *Bolingbroke* from Salt Spring Island, B.C. to Ottawa was a problem.

7. This replica of the *Nieuport 17*, in which Captain Billy Bishop scored 30 victories while on No. 60 Squadron, is in flying condition.

is a forerunner of that golden age of Canadian aviation when over half the world's air freight was to be carried in Canadian aircraft. Two representative aircraft of this important pioneering period in the early 20s that are being sought for the collection are a flying boat such as an *HS2L* or a *Vedette* and a military training aircraft. The latter could only be the *Avro 504K*, whose name was synonymous with Camp Borden and the CAF and the early days of the RCAF. This fine aircraft has almost disappeared from the face of the earth.

Among representative aircraft of the important 30s are a *Bellanca Pacemaker* and a *Fairchild FC2W2*, famous for the part that they played in opening up Canadian gold fields. A *Cirrus Moth*, beloved of the flying clubs, was a gift of Mr. Carl Burke of Charlottetown P.E.I. During the same period the RCAF was introducing the *Tiger Moth* and the *Fleet*

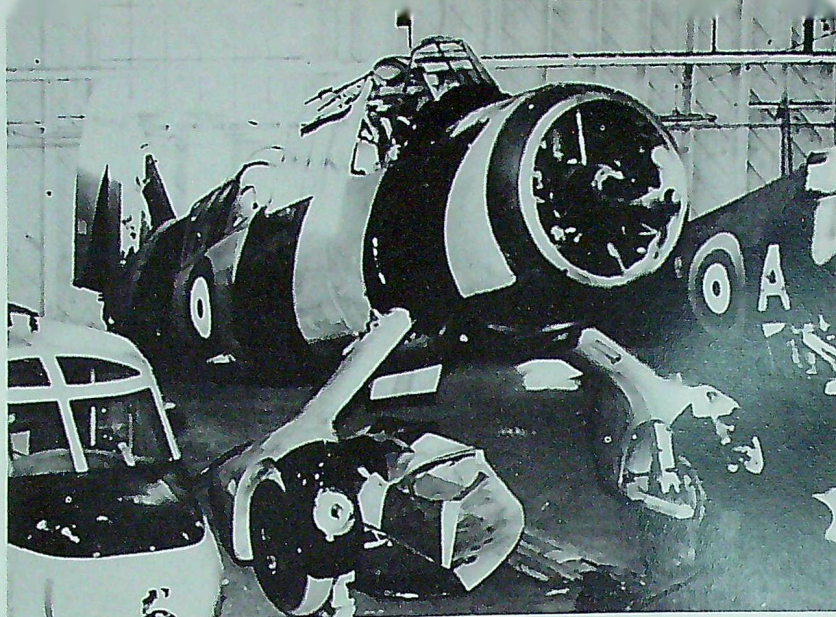
*Finch*. A fine example of the latter was recently donated to the RCAF by Dr. Alex McLean of Downsview, Ont. The Department of Transport donated a *Lockheed 12a*, the first aircraft to make dawn-to-dusk flights across Canada while trail-blazing to-day's main cross-country airways route.

The year 1939 brought a tremendous expansion in Canadian aviation to meet the needs of war. The names of aircraft of this period that have been preserved will be familiar to most Canadians and will bring back memories to the tens of thousands of Canadians who flew them in combat: the *Hurricane*, *Kitty Hawk*, *Mosquito*, *Lancaster*, and others. Two of the aircraft of this period are gifts by private persons: a Mark IX *Spitfire* that was given to the National Aviation Museum by Mr. John Paterson of Fort William and a *Bristol Bolingbroke* that was given to the RCAF by Mr. G. A. Maude

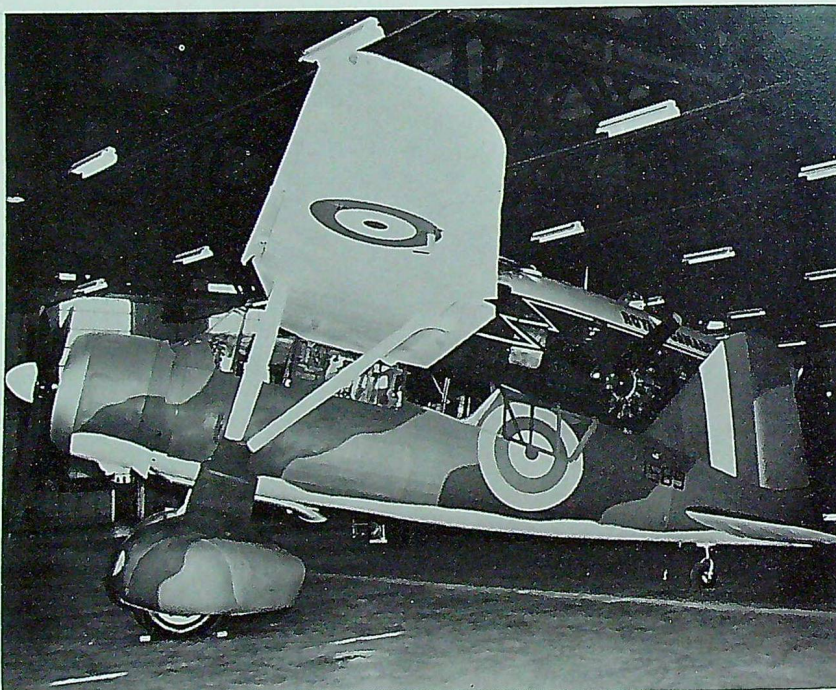
of Sidney, B.C. At the time that Mr. Maude made his generous offer and its acceptance was being considered, some doubt was expressed on the feasibility of getting an aircraft of the size of the *Bolingbroke* from Salt Spring Island, where it lay, to the mainland. It was finally concluded that if Mr. Maude, when an airman at the end of the war, could get the aircraft to the island with only his own resources, surely the Department of National Defence could remove it. Mr. Maude had succeeded in moving the aircraft by towing it over on a raft of logs behind a fishing boat to his mother's summer home on Salt Spring. It had to be dismantled by a work-party and brought across on the ferry.

Since aircraft are of consuming interest to most persons and are such large objects, they inevitably dominate the collection. No less interesting, however, are some of the other relics held. Some of them are: the logbooks of Billy Bishop VC and another Victoria Cross winner, Alan McLeod; a propeller of the aircraft flown by the first French-Canadian pilot; nearly 100 aircraft engines of all eras; the wind-tunnel model (weight several hundred pounds) of the Avro *Flying Saucer*; and one of the largest objects in the collection, a 4/5th scale model of the British Commonwealth Air Training Plan gates at Trenton. Typical of the support that the collection receives from private persons is a gift of uniforms, flying clothing, aircraft instruments, armament, logbooks, and photographs that was sent to Canada within the last few weeks by Mr. W. S. Lockhart of Parsippany, New Jersey, a Canadian who flew with the RFC/RAF in 1917 and '18.

Until the spring of 1964 storage of the National Aeronautical Collection had been scattered across Canada and in different locations in Ottawa. With the cessation of air-force flying at RCAF Station Rock-



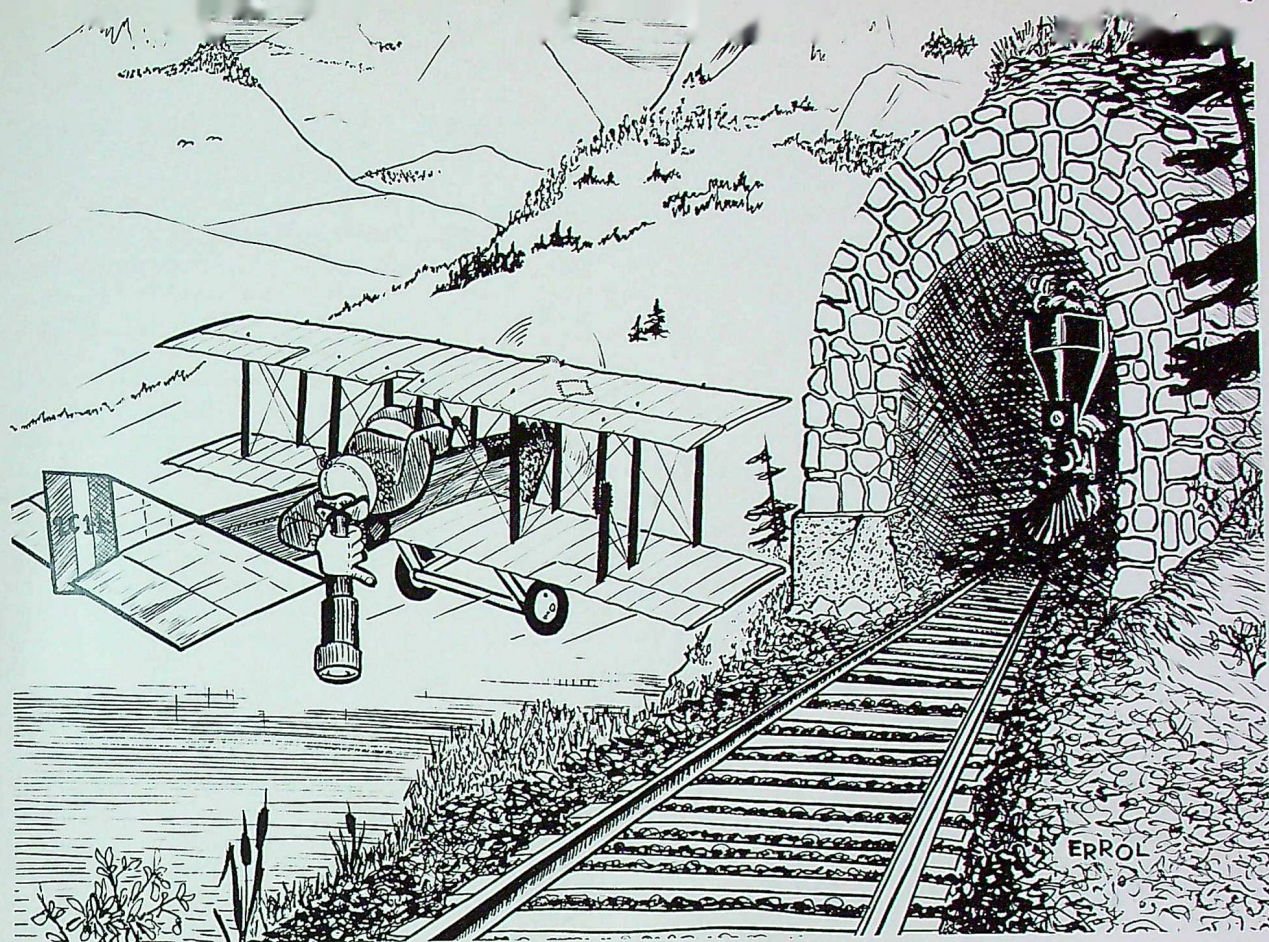
*Before and After. The Lysander was restored in 1963 in the markings of No. 110 Squadron, the first RCAF squadron, to go overseas in World War II. As can be seen by these two photographs, much work is necessary before old aircraft are suitable for public display.*



cliffe, however, three World War II hangars were assigned for the centralized storage of the collection and for its display to the public during the late spring and summer months. On any day of the week from 1 June until Labour day anyone may visit

one of the oldest and best beloved airfields in Canada and see displayed in appropriate surroundings, relics and mementos that help to recall Canada's accomplishments in the air.





## IRON COMPASS DONATED TO HISTORICAL COLLECTION

"So the Air Historian is looking for various items of aeronautical equipment to round out our museum\* at Rockcliffe," writes retired W/C Harry Bryant from his Vancouver Island 'Shangri-La'. "In the light of this appeal, I entrust to your care, for onward conveyance to my old friend W/C Manning, this model of a navigational instrument used extensively by early RCAF and civilian pilots."

\*National Aeronautical Collection, pointed out W/C R. V. Manning after we had inadvertently used the word "museum" in the appeal for donations in the Jan.-Feb. '65 issue. - Editor.

Enclosed in the letter was a section of track from a miniature railway set. This item, with the following supporting data from W/C Bryant, has been delivered by **ROUNDEL** as instructed.

"Known popularly as the Iron Compass, this instrument came in two Marks, CNR and CPR, although there were minor variations or branches used by those who, if you'll pardon the phrase, got off the beaten track. It was a simple instrument to use and absolutely reliable, if the pilot took care to exercise one or two precautions.


"For instance, under conditions of poor visibility or at night one had

to be careful not to follow what is known in railroad parlance as an "open switch". Otherwise, one could end up in a "roundhouse" or some equally awkward destination. When flying under similar conditions in mountainous country, a less-than-careful pilot might find himself following the instrument into a thing called a "tunnel", which normally is not built wide enough to accommodate aeroplanes.

"Some hardy pioneers sallied forth at right angles to the Iron Compass and then had to fall back on another navigational instrument known as a Water Compass. In Canada this came in many Marks,

such as Athabasca, Nelson, McKenzie, etc. Unfortunately, for obvious reasons, I cannot forward a section of this instrument for posterity.

"I trust that this donation, and the

descriptive notes, will make a worthwhile addition to the Rockcliffe collection. The gift is made without thought of reward, financial or otherwise." 

ly know if lubrication will be a serious problem in space. Space craft require special lubricants, as well as hydraulic and cooling fluids. 13. True. A dream of scientists is to establish a lunar observatory equipped with a large telescope. Unhampered by atmospheric haze, like that which surrounds earth, astronomers for the first time would have a crystal-clear view of the stars and planets, and previously closed doors of scientific knowledge would be opened.

14. False. Rocket boosters estimated at more than twice as powerful as those fired by the Soviet Union were successfully tested recently by Thiokol. They produce 3,000,000 pounds of thrust.

15. True. In space there is nothing to slow down the space craft, so it obeys Newton's law which says that an object in motion will continue in motion in a straight line until acted upon by an outside force. The space craft tries to obey Newton's law and follow a straight line (actually a tangent to earth's horizon). But gravity pulls the space craft toward the earth at the same rate at which it rises to follow the tangent - hence it goes into orbit, with no need for rocket power.

How well did you do? Now, consider the vastness of space, and realize that you are now an authority on one infinitesimal speck of it. However, that speck is important, because it will grow.

## Answers to Quiz on Page 5

1. True. In the third century, Greek scientist Hero demonstrated the jet engine principle.

2. True. But the temperature of Mars is generally lower than earth's. The range is from  $-70^{\circ}\text{F}$  to  $50^{\circ}\text{F}$ .

3. False. Galileo disproved Aristotle's 20-century old theory that heavy bodies fall faster with this experiment: at the same instant he dropped a heavy object and a light object from the Tower of Pisa, and both landed simultaneously.

4. False. Space is not empty. It is filled with gases, mostly hydrogen, and millions of particles of matter.

5. True. Even though there are millions of meteoroids  $1/10$  of an inch or larger zooming around up there, space is so vast, and a space craft so relatively minute, that the chances of it being struck are remote.

6. True. The gravitational pull of earth is approximately five times greater.

7. False. There is no speed beyond human endurance provided a space craft accelerates gradually enough, and fortunately so, for it will take phenomenal speeds to get man to his destinations without his dying of old age en route.

8. True. According to Einstein's Theory of Relativity strange things happen in our curved universe. When objects move at very high speeds over long distances, they actually contract in the direction of their motion. So if you could see a space craft soaring through space, it would appear as if it were squeezed "bumper-to-bumper".

9. False. Retro rockets powered by solid fuel are used to brake the space craft's speed enabling it to come out of orbit and return to earth. These unique Thiokol solid fuel rockets were used with 100% reliability in all of the Mercury capsules, they are being used in the Gemini Project and will be used for "safe soft landings" on the Moon.

10. True. Before a space craft ever leaves its launch pad, it's already travelling in one direction at about 1,000 mph (due to earth's rotation) and about 40,000 mph in another direction (due to the earth's revolving around the sun).

11. False. There is no place free of gravity. As a space craft moves away from earth, the force of the earth's attraction rapidly diminishes, but never disappears. The space craft is also subject to the gravitational pull of the sun and other planets, and if permitted to move aimlessly, it will eventually be attracted to one of them and either go into orbit around it or plunge into it.

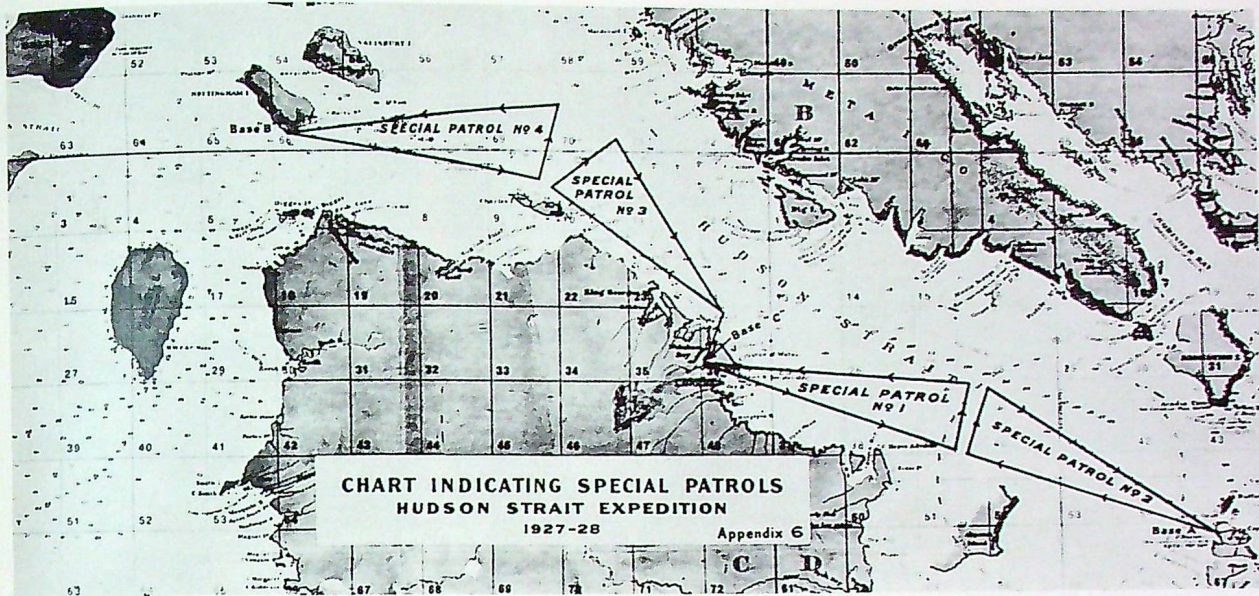
12. True. Scientists still do not real-

\* \* \*

A breeder of hunting dogs shipped more than 400 dogs by air express within a 30-day period at Mount Vernon, Illinois. During that time more dogs than people used the airport as only 375 passengers emplaned within the same number of days.

\* \* \*

Airline passengers arriving at La Paz, Bolivia airport are offered oxygen respirators when they leave the plane. The airport is 13,425 feet above sea level.



# THE AERIAL SURVEY OF HUDSON STRAIT 1927 - 1928

By MR. FRANK H. ELLIS

LIKE many great feats of adventure and exploration, the little-known air survey of Hudson Strait nearly four decades ago has slipped into the limbo of forgotten history. Yet the work accomplished was the culmination to hundreds of years of search and discovery in that area of northeastern Canada.

During the period that white men have penetrated the near-Arctic regions, the bitter winter climate of that desolate land has claimed countless lives and the adjacent waters have engulfed hundreds of fine ships. In an effort to make navigation safer and to alleviate such losses, the Hudson Strait air survey was conducted over a continuous period of 12 months in 1927 and 1928. Fol-

lowing the Canadian government's decision in Jan. '27 to complete the construction of the Hudson Bay Railway the need for authentic knowledge relating to weather and ice conditions on Hudson Strait became a prime necessity.

Planning and organization was headed by a three-man advisory board which consisted of Maj. N. B. McLean, of the Department of Marine; E. B. Jost, Department of Railways and Canals, and G/C J. Stanley Scott, MC, RCAF (the latter replaced in June by W/C J. Lindsay Gordon, DFC).

Equipment and stores were shipped to Halifax. Building contracts were let for the construction of hangars and living quarters to be erect-

ed at three bases in the north. All buildings were prefabricated, before being shipped to Halifax. Six new *Fokker* Super-Universal aircraft were commissioned for use together with a huge store of materials, which included three Fordson tractors, three 30-foot motor launches and three complete radio stations, with motor driven generators, and 150-foot steel masts.

To each of the three advance bases were allotted 326 drums of gasoline, 45 gallons to the drum; 38 similar capacity drums of oil; 1,000 gallons of Ethyl airplane fuel, and 160 tons of hard coal, packed in sacks. Sand and cement for building foundations was also consigned in sacks. The inventory included



Base 'B' on barren Nottingham Island was still solidly icebound on 19 June '28.

beds and bedding, stoves, dishes, two dories, a skiff, guns, ammunition, clothing, medical supplies, and meteorological instruments. Topping all this, were provisions to last the personnel a period of 16 months. It was a most impressive responsibility which the advisory board undertook to accomplish. After the bases had been fully established in the north, it seems almost unbelievable to learn that no essential item had been overlooked, or underestimated.\*

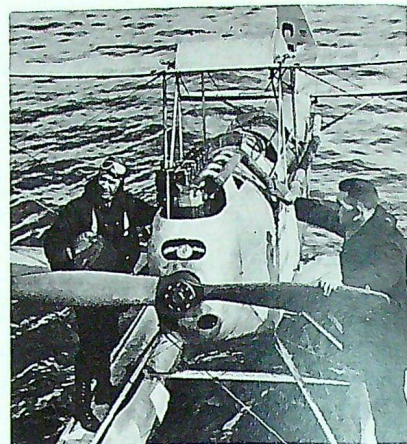
Two ships, commissioned to transport men and materials north from Halifax, sailed out of port together on 17 July '27. The 44 members comprising the expedition personnel were aboard the Canadian government ice-breaker, Stanley. The freighter SS Larch carried the 57 men of the construction crew, together with some 2,585 tons of general cargo and 2,700 tons of coal. After bucking heavy weather and

\*Author's note: Much of the stupendous task was borne by the late Mr. J. R. O'Malley, secretary of the expedition, and I am grateful to him for the valued assistance he extended to me in connection with this written account.

many miles of ice floes, both craft reached Port Burwell at the southern side of Hudson Strait, on 27 July.

A small, two-seater de Havilland *Moth* seaplane, blessed with the magnificent name of "The Spirit of the Valley of the Moon", and registered G-CAHK, had been taken north specially for primary aerial observations. It was put overside from the ship, and S/L T. A. Lawrence and F/L A. A. Leitch made a brief reconnaissance flight, hoping to find a suitable-looking site for Base 'A'. Next day the two ships carried on westward, leaving a four-man party behind to check over several nearby sites seen from the air. After an aerial inspection of Nottingham Island from the *Moth* on 3 August a spot on the southwest shore was selected for the establishment of Base 'B' and unloading of equipment began the next day. Three weeks later it was decided to locate Base 'C' at the west end of Wakeham Bay.

Great care had been exercised in choosing sites, as a year-round operation was to be conducted and the use of aerial recce. proved invaluable. The flights of the *Moth* were



The first Canadian airmen to fly in the vicinity of the arctic regions, prepare to take off (l. to r.): S/L T. A. Lawrence and F/L A. A. Leitch.

the first ever made in those near-Arctic regions by a Canadian registered airplane and the little plane blazed the air trails of a new era. It had accomplished yeoman service up to then, but on the night of 27 August it came to a bad end. Moor-ed well off-shore when the wind suddenly freshened to gale proportions, the *Moth* was pounded by heavy seas and by the next morning, although still afloat, was a battered wreck and total loss.

As every item of equipment had to be transhipped by launch and scow from ship to shore in establishing each base, it was a tiresome business, but by 8 September everything to be used at Wakeham Bay had been landed and buildings were fast nearing completion. Both ships then returned to Port Burwell, to let off supplies where the group, left there on 28 July, had selected a spot nearby, named Fox Harbour. Time was pressing and as an old Moravian Mission building presented a good solution to their housing problem, it was rented from the Hudson's Bay Company and much valuable construction time was saved. Base 'A' was completed by 28 October.

In spite of bad weather, all bases were in complete readiness for patrol action by 7 November. When all construction had been completed, the workmen were taken aboard the ships from the respective bases and returned to Halifax.\* By that time installations at all three radio stations were in operation and able to contact Ottawa, each other, or all planes in the air as the demand required.

The first ice of the 1927-28 winter was observed from a Base 'B' *Fokker*, flying south from Nottingham Island on 16 November and great masses of large floes were seen miles to the south in Hudson Bay. Fog, strange Arctic vapours, or queer black murk prevented air patrols on many days, as did wind and snow, but at every opportunity machines were in the air, although very

often under hazardous flying conditions.

The experiences which overtook two airmen on a routine patrol is an example of the ever-present dangers, especially during the bitter winter months. Shortly before noon on 17 Feb. '28, F/O 'Jaggs' Lewis, accompanied by FS Terry and an Eskimo named Bobby Anakatok, took off from Base 'A' on what was to have been an ordinary routine trip. Following a northerly course across the entrance of Hudson Strait, aircraft G-CAHG headed for a promontory on Resolution Island off the tip of Baffin Island. On reaching this objective, visibility having lowered to almost nil, F/O Lewis set compass course for Burwell. Then the engine began to act up, vibrating badly and losing revs. After flying for some time, Lewis glimpsed what he thought were the Button Islands, off through the haze to port. As they are situated well to the north of Burwell, he carried on for some 15 minutes when, through the blackness, the topographical outline of an unfamiliar coastline loomed up. Believing he was far off course to the

west, and near Akpatok Island in the centre of Ungava Bay, the pilot turned on an easterly bearing, believing it would carry him direct to Burwell.

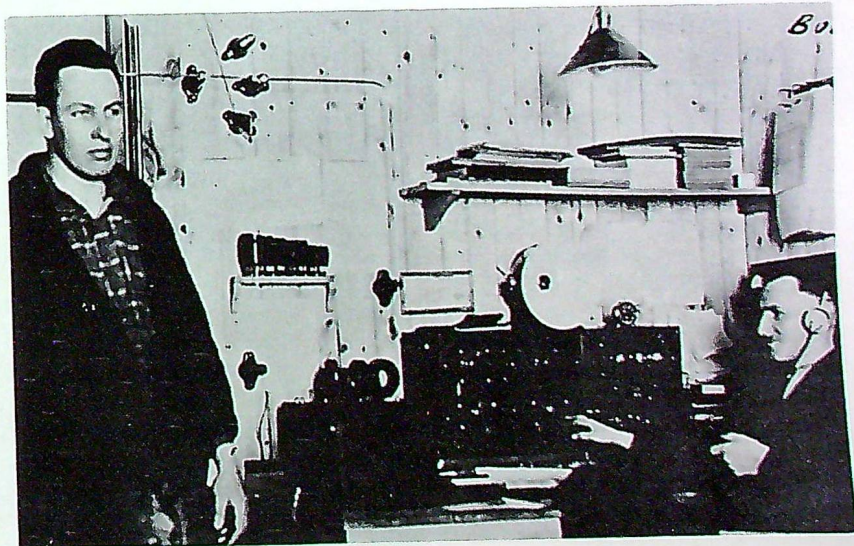
They flew thus until 3:00 p.m., with the engine becoming rougher and rougher. At last, with fuel almost gone and no land in sight, it became necessary to put the machine down on the ice. Everywhere was a mass of huge hummocks varying to heights of 22 ft., with deep cracks and crevasses. It spoke volumes for Lewis' flying ability that a serious crack-up was avoided. When the *Fokker* came to a stop, with its nose jammed into a big drift, the only damage caused was to the propeller and skis.

The men stayed with the machine all night. On the morning of the 18th, a heavy snowstorm prevented them from making a check of their position. Estimating they were down on Ungava Bay, they struck out in an easterly direction, where they believed land to be. They dragged their life raft, in which they had placed their emergency kit and compass. All that day they trudged,

\*Illness had overtaken Maj. McLean at Wakeham Bay, and as it became imperative for him to return south, he was, therefore, a passenger aboard the *Stanley*, command of the expedition being turned over to S/L Lawrence.

*Photographic operations were carried out using oblique, hand-held cameras.*

*The vital link with the outside world from Nottingham Island Base, was the tiny, but well equipped radio shack. (L. to r.): G. F. Hudson (radio engineer) and R. L. Bunt (wireless operator).*





*Inspection of survival kits prior to every flight was a vital necessity, never overlooked.*

making slow progress over the piled-up ice. They spent the night in a snow hut, expertly fashioned by the deft hand of Bobby Anakatok.

The 19th broke clear and from a high hummock, dark clouds and what appeared to be open water, could be seen far to the east. To the west, in the direction from which they had come, were high-banked clouds and a seemingly contoured skyline. It was then they decided to back-track and on the afternoon of the 20th, the irregular, cloud-banked horizon to the west was definitely seen to be land. They then knew that they had come down far east of Ungava Bay somewhere on the Atlantic Ocean.

From that day until the 24th weather again became their foe and they were obliged to depend on compass readings. Then the coastline was seen again and rather than risk the possibility of losing it, they travelled all day and on through

the night, finally reaching land on the afternoon of the 25th. The temperature stood at 25° below and they had been nine days on the Atlantic ice, although at that moment they were completely in the dark as to their whereabouts.

During the early part of their trek, open leads had been crossed by means of their rubber life raft, but it was later abandoned, together with items of clothing and even some of their precious rations, as

their strength began to give out. For one stretch of 24 hours, they were entirely without food, until Bobby managed to shoot a walrus, parts of which they ate raw. After they left the raft behind, ice pans were utilized as a means of ferrying themselves across numerous open leads, the Eskimo being skilled in such a method. Once on land, they set off in a northerly direction and until the afternoon of the 28th, they sighted no living thing.

Fortune favoured them at last, for they met an Eskimo hunter and his wife, with a Komatik (sleigh) and dog team. With Bobby acting as interpreter, they learned their approximate position for the first time since the 17th.

They were on the mainland south of Burwell, and arrangements were made with the hunter to lead them back to their base. They arrived 'home' at midnight on 1 March, frostbitten, hungry, and weary, but



*This photograph illustrates the difficulty of distinguishing between land and water when both are covered by ice and snow.*

in surprisingly good physical condition considering the gruelling experience they had come through.

When 'HG' and its crew failed to return to Base 'A', steps were taken at once to organize a search. One machine, flown by F/L Leitch, was ordered to fly from Nottingham Island to Burwell and another, piloted by S/L Lawrence was requisitioned from Wakeham Bay. Those two flights, the former totalling 590 air miles, the latter 340, made in mid-winter Arctic conditions, deserve great credit indeed. It was not the pilots' fault that the weather precluded their further participation. By the time the three missing men turned up, natives had already been despatched to various points on Ungava Bay, and gasoline caches were being established for the air searchers.

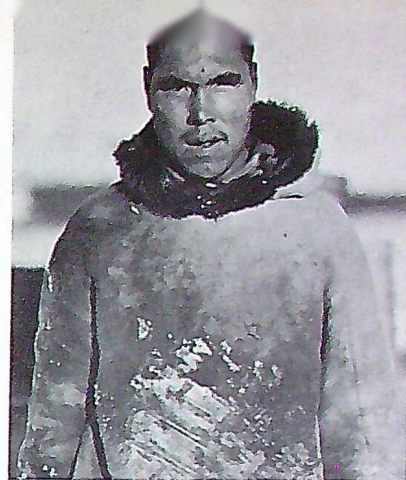
All aircraft when on a lengthy patrol carried as a passenger one of the local Eskimos, a precautionary measure which certainly saved the lives of Lewis and Terry. It was fully admitted that without the aid of Bobby Anakatok, the plight of the two RCAF men would have been dire indeed. In all probability they would have perished. The abandoned *Fokker* was never seen again.

During the expedition's stay in the north, over 200 routine patrols were made, together with a number of special patrols and non-patrol flights. The airplanes used were of

the cabin type, but the pilot's cockpit was the open variety, which meant cold slugging for the airmen during winter flying. A distinctly national touch was added to the expedition by having the name of a Canadian province allotted to each machine.

An RCMP member and a doctor were stationed at each base and the latter was entrusted with the daily job of recording temperatures and other meteorological data. Although the temperatures never dropped below  $-35^{\circ}$ , penetrating winds howled across the barren land much of the time, averaging 20 to 30 miles an hour and sometimes reached gusts of 70 mph. Through the ice season, tests were taken at the different bases, to learn sea ice thickness. The greatest registered was at Nottingham Island, where a maximum of 54 inches was recorded on 10 May and again on 4 June '28.

A major outcome of the expedition's work was the later establishment of directional finding (DF) stations along the shores of Hudson Strait, to enable shipping to navigate with greater safety than ever before. Existing maps and even soundings shown on Admiralty charts, were time and again proved to be quite inaccurate. One DF station was erected at Cape Hope's Advance, at the northwest tip of Ungava Bay being completed and calibrated by 9 Oct. '28. The radio



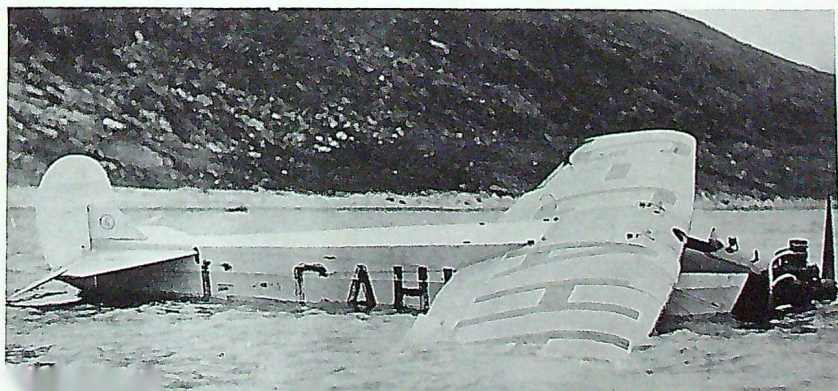
*The Eskimo, Bobby Anakatok, without whose aid, and knowledge of the north, the two RCAF members from base 'A' would almost certainly have succumbed.*

station on Nottingham Island was converted into another. When the expedition concluded its year's work, most of the surplus supplies were sold to the Hudson's Bay Company.

Plans were formed to have the five aircraft flown south, to Ottawa via Churchill, The Pas and Winnipeg, but, during an attempted formation-takeoff, one aircraft failed to get airborne and another broke a pontoon. The three remaining aircraft returned to Erik Cove and landed. Two of these aircraft were found unfit to undertake the journey south. All five craft were, therefore, dismantled and returned by ship to Halifax. Some of the personnel travelled south aboard the government ship *Voyageur*, others made the trip in the Hudson's Bay ship, *Nascopie* and the rest went aboard the *Montcalm*. The latter, with the main party, reached Quebec City on 14 Nov. '28, to be given a tumultuous welcome from the whistles of all shipping in the river and at the docks.

Millions of bushels of grain have since been shipped to Great Britain and European ports, through the now well-established Port of Churchill, which has become a thriving little metropolis as a result, although it is situated far up the coast of Hudson Bay in Canada's northland.

*It was the end of the road for this Junkers aircraft when it broke a pontoon while taking-off from Erik Cove.*





# RCAF ASSOCIATION

*This section of ROUNDEL is prepared by Association Headquarters, 424 Metcalfe St., Ottawa, Ontario.*

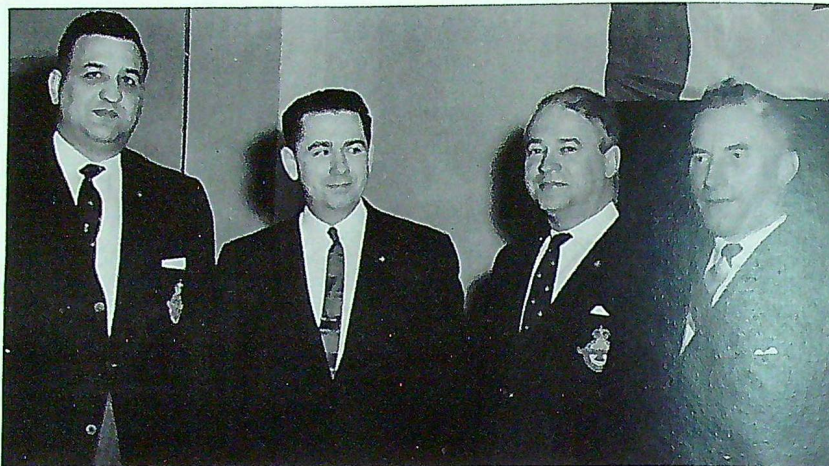
## NATIONAL PRESIDENT'S MARITIME VISIT

Early in March Mr. George Penfold, the National President, having already toured the Association Wings in the west, turned his attention eastwards and embarked on a comprehensive tour of the Maritime Wings.

His first stop was at No. 252 (Lord Beaverbrook) Wing, in Fredericton, N.B., where he was treated to his first taste of the sort of overwhelming hospitality he was to encounter at every stop. From Fredericton he went on to No. 103 (Cabot) Wing in Sydney, N.S. There he received the signal honour of being inducted into the Royal Cape Breton Air Force. He assures us that he does not treat the distinction lightly!

Mr. Penfold went next to No. 101 (Atlantic) Wing in Halifax where, once more, he was received most warmly. Then came No. 107 Valley (Morfee) Wing in Greenwood, N.S., which takes its name from a Past President of the Association, A/V/M Morfee (Ret.). From Greenwood Mr. Penfold travelled to No. 102 (Colchester) Wing, Truro, N.S., where he met with the utmost cordiality and where he enjoyed himself thoroughly.

By this time Mr. Penfold was beginning to feel the strain of the festivities but he pressed on bravely to No. 110 (Northumberland) Wing, Stellarton, where he had a particularly pleasant duty to perform, for it was the Air Cadet Squadron sponsored by No. 110 Wing that this year won the RCAF Association Award for being the most proficient Air Cadet Squadron in Canada, and



*Mr. G. E. Penfold, National President, enjoys a social evening during his maritime tour (l. to r.): Mr. A. T. Goodwin (Atlantic Group President), His Worship L. C. Jones (Mayor of Moncton), Mr. Penfold and G/C G. E. Smith.*

Mr. Penfold took the opportunity to present it to them.

From Stellarton Mr. Penfold moved to Western Nova Scotia, to Amherst, where he found a thriving Wing with a good spirit. He reports that No. 105 (Cumberland) Wing obviously aims high and displays a commendably progressive spirit.

The last Wing on the President's itinerary was Saint John, N.B. He was most impressed by the way No. 250 (Saint John) Wing was organized and by the fine facilities its members have provided for themselves. He enjoyed his evening there immensely.

Mr. Penfold, having completed his tour of the Wings, made his way to Moncton, N.B., to be present at a meeting of the Atlantic Group Executive which was chaired by its president Mr. Al Goodwin. At the meeting he took part in all the discussions which covered the whole range of Association activities. The same evening he was the guest of honour at a well-attended and most

enjoyable dance held at 5 S.D. Moncton.

During his term of office, Mr. Penfold has completed two worthwhile and extremely full tours, in the west and the east. Apart from these he has travelled extensively in Ontario. There is no doubt that by visiting as many Wings as possible, he is keeping the purpose of the Association well to the fore.

## LIAISON OFFICER VISIT

At the same time as the National President was making his visit in the east, the RCAF Liaison Officer at National Office, F/L Malcolm Robey, was in New Brunswick visiting the Edmundston, Cambellton, Bathurst and Chatham Wings. F/L Robey reports that he was made most welcome and found a good spirit, particularly with regard to their respective Air Cadet Squadrons in which all of these Wings take pride.

F/L Robey finished his tour by attending the Atlantic Group Exe-

cutive Meeting in Moncton where he was made to feel most welcome. He particularly enjoyed the opportunity to observe at firsthand the fine spirit of comradeship that exists among Maritime Wings as it was revealed during the well patronized curling bonspiel held on Sunday in Moncton.

## **CAMPAIGN FOR MEMBERS-AT-LARGE**

The Association is well aware that there are many prospects who, for personal reasons, prefer to maintain their connection with the RCAF without the social ties entailed by joining a Wing. Campaigns for members-at-large have been conducted in the past and have proven very rewarding. It has been decided to conduct a membership campaign within the confines of the members-at-large themselves.

At the time of writing, there is being mailed to each MAL in the Association a special envelope explaining the terms of the campaign and giving other pertinent information. There are four membership applications included in the envelope and it is hoped that each member will secure four new members.

There are very valuable prizes given for securing new members and these are all indicated in the literature. The envelope is self-addressed and postpaid for return. The canvasser must be sure to include the new member's dues (\$4.00 per year). We need a minimum of 500 members-at-large and this can be easily obtained even if every member only secures one new member.

There is just a slight indication that Wing members have the feeling that members-at-large get off lightly. This is your opportunity to prove, as you have in the past, that when given a task you can do it and do it well. When you receive your envelope, don't throw it aside. Take steps to get at least one new member at once.



## **REGINA CONVENTION CENTRE**

The City of Regina, with a population of 130,000 is a gateway to the growing province of Saskatchewan. This year Regina is celebrating its Diamond Jubilee.

Once primarily an agricultural centre this modern metropolis is now enticing industry which will solidify its economy. Saskatchewan, which produces about two-thirds of all the Canadian wheat requirements, enjoys the largest wheat marketing cooperative, with headquarters in Regina. The newly-developed potash mining industry is also having

a favourable effect on the city.

Regina has a number of fine public buildings, including the Saskatchewan Museum of National History, the Saskatchewan Power Corporation Building and the Royal Canadian Mounted Police Museum. Regina is, of course, the home of the Mounties. Although Regina is a sharp reflection of the 20th Century, it remains a city with an elegant and graceful past, for it played a vital role in Canada's history in the making.

All members of the Association are urged to plan to attend our Convention this year in Regina.

## **ROUNDEL EDITOR RETIRES**

The members of the RCAF Association recently learned with regret of the retirement of S/L A. T. Paton, editor of ROUNDEL for the past seven years.

Throughout his time as the man responsible for this fine service magazine, S/L Paton was a particu-

lar friend of the RCAF Association. In bidding him good-bye we also take the opportunity to wish him well in his new post as Editor of the Ontario Civil Service Publications.

We would like also to welcome as Editor of ROUNDEL, F/L Tom Coughlin, who is certainly no stranger to us, and with whom we hope to maintain the same cordial relationship.

## Letters to the Editor

### EAC ERRORS

Dear Sir:

I enjoy reading *ROUNDEL* very much but may I point out a couple of errors in your article entitled "War on the Front Doorstep" by F/L H. A. Halliday.

Number 3 (B) Sqn. was ordered mobilized and prepared for overseas service the latter part of August '39. The CO was F/L J. Lewis and F/O C. L. Annis was adjutant. Pilots and one observer each flew the biplane *Wapitis* (not *Atlas*) to the Halifax Civic Airport while the remainder of the sqn. went by train. Subsequently F/O Bissell joined the sqn. as adjutant.

Not until the early part of 1940, when the sqn. was split to form No. 10 (BR) Sqn. with W/C Lewis as CO, were new aircraft received. Both these squadrons were subsequently stationed at RCAF Stn. Dartmouth.

After No. 10 (BR) Sqn. moved over to Dartmouth the *Wapitis* were cannibalized and shipped back to a training station for instructional purposes. This was in early 1940. Until then they were the operational aircraft employed for sub-patrol and harbor defence.

When the *Digby* aircraft were received by No. 10 (BR) Sqn., a detachment of some 30 officers and men were sent to Gander (not St. John's) Newfoundland to establish a base to serve for advanced sub-patrol. At Gander the airdrome at that time was under civilian control and operation, and the gasoline caches were guarded by men from the Toronto Black Watch - who were undergoing their final advanced training there. Food supplies were brought in once a week on Fridays via the narrow-gauge railway from St. John's and was affectionately dubbed "The Toonerville Express."

It was here in Gander, that the famous song teasing the original OC and all the men originated and was sung in every mess throughout the RCAF viz "The North Atlantic Squadron".

Frank Weinstein,  
406 Tegler Building,  
Edmonton, Alta.

Dear Sir:

Your most welcome article "War on the Front Doorstep" will certainly stir up some nostalgic memories among the many who "served on the stoop". The dreary hours of plodding over the seas often seemed unnecessary with the bigger

war overseas needing men but the rewards were manifold when successes were measured in the end.

As the last still-serving member of S/L "Molly" Small's crew on the attack of U-754, I find it indeed interesting to see, for the first time, a full account of his outstanding achievements in EAC. "Molly" was not given to talking about his exploits and few in No. 113 (BR) Sqn. knew much of his earlier attacks. To say that he was redoubtable is to leave him unsung. He was a shrewd and dedicated man who played hunches and won. To "Molly" a serviceable aircraft sitting on the ground was unthinkable and I well recall the unscheduled patrols we made, including the one that caught U-754. His unfortunate demise on a *Canso* take-off from Gander airfield was a hard blow for No. 113 Sqn. In closing I would like to correct one small error in your final paragraph. P/O R. S. Kettley should read "Keatley". Greetings to all ex-113'ers wherever you are.

S/L R. A. Coulter,  
Air Navigation School,  
RCAF Stn. Winnipeg.

Dear Sir:

I thoroughly enjoyed the first part of "War on the Front Doorstep" and will look forward to parts two and three.

However, as it will likely be pointed out by many others, No. 2 (AC) Sqn. was equipped with *Atlases*, not *Wapitis*. No. 3 (Bomber) Sqn. was equipped with *Wapitis* and, after arriving in Halifax late in 1939, set up shop at the old Chebucto Road Airport.

I thought the author might have mentioned that No. 1 Fighter Sqn. arrived at Dartmouth in late October 1939, equipped with far-from-obsolete Hawker *Hurricanes*.

As I recall it, both *Walrus* and *Swordfish* aircraft were also flying from Dartmouth, the latter, I believe, attached to H.M. Carrier Furious, which was in Halifax at that time.

Mr. G. J. Lanigan (S/L ret.),  
4436 King Street,  
Pierrefonds, Que.

### NOSTALGIA FROM FRANCE

Dear Sir:

As an honorary member of the RCAFA I have the great privilege of receiving *ROUNDEL* thus keeping up, in spirit, with all my Canadian friends.

The poem on the closing of Gros Tenquin (Nov. '64) has brought vividly back to my heart many fond memories of delightful or sad moments I spent there, during seven years.

A newly appointed French liaison officer, I landed at G.T. on a dreary September morning in 1952. The station was composed at that time of one hangar erected, one being erected, concrete soles for the buildings and a small hut, where I found the CO and his cohorts, the Adj., the CAdO, CTechO and COpsO, standing (there was one table, a telephone and two seats) and taking turns at turning the crank of a portable heater. Man, was it humid.

I was received like a long lost brother, and during my seven years of tenure, this attitude never wavered, though, at some times, I must certainly have sorely tried the patience of many.

Well, all this is gone now, but the spirit that saw the Canadians make a go of G.T. will long live, I am sure.

My very best regards to all of you my friends, some of them who rest forever at Chology, and God bless you all.

Roland P. de Malglaive, Maj. FAF ret.  
Chevresis-Monceau,  
Aisne, France.

### AIRCRAFT ALBUM FAN

Dear Sir:

Your prompt compliance with Mr. J. B. Wilson's desire to view again a Bristol *Beaufort* (Mar. '65) was undoubtedly highly appreciated by him, struck a nostalgic chord with this reader, and no doubt a number of other, erstwhile "drivers" of old "whispering death".

Your caption omitted mention of the Mk. 2 version which during latter 1941 incorporated the 1210 H.P. Wasp. However, *Beauforts* 1 and 1A continued in service with the sleeve valve Taurus with their well known take-off revs of 3,300 rpm. Although the Wasps enhanced the aircraft's performance, the *Beaufort* still loyally refused to fly on one engine, and its rear Brownings could contrive to jam when you needed them most.

Until the advent of certain USA medium bombers late in 1942, the *Beaufort* had a wing loading equalled by or slightly exceeded only by the German JU. 88. Offsetting this, however, it featured one of the strongest fuselages ever built, an asset to which many of us attribute our continued ability to run up bills.

However, for more complete technical data, I would refer you to your esteemed colleague at Victoria Island, W/C Ralph Manning DFC, who in addition to his present role as Air Historian, had an equally distinguished record riding herd on *Beauforts* in the European Theatre, the Middle East and down Ceylon way.

Mr. A. M. Feast,  
20 Gray Nun,  
Montreal 3, Que.



## AIRCRAFT ALBUM:

### *Fleet Fort*

The *Fort* was originally designed as an advanced flying trainer, and in 1940 orders were placed for 200 to be built for the British Commonwealth Air Training Plan. Production was delayed, however, as the first RCAF model was not flying until 18 April '41. The availability of the Fairchild *Cornell*, and a change in what constituted an "advanced" trainer, led to the contract being sharply cut, and only 101 *Forts* were delivered to the RCAF between June 1941 and June 1942. These were used at No. 2 Wireless School, Calgary, and No. 3 Wireless School, Winnipeg. They remained in service until 1944.

Two models were built, one having a 250 h.p. Jacobs engine and the other having a 330 h.p. Jacobs. The top speed was 193 mph and the cruising speed 163 mph. It climbed at 1,650 feet per minute and had a range of 610 miles. Loaded weight was 2,900 pounds, wing span 36 feet, and length 26 feet 2 inches.

*Roger Duhamel*

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