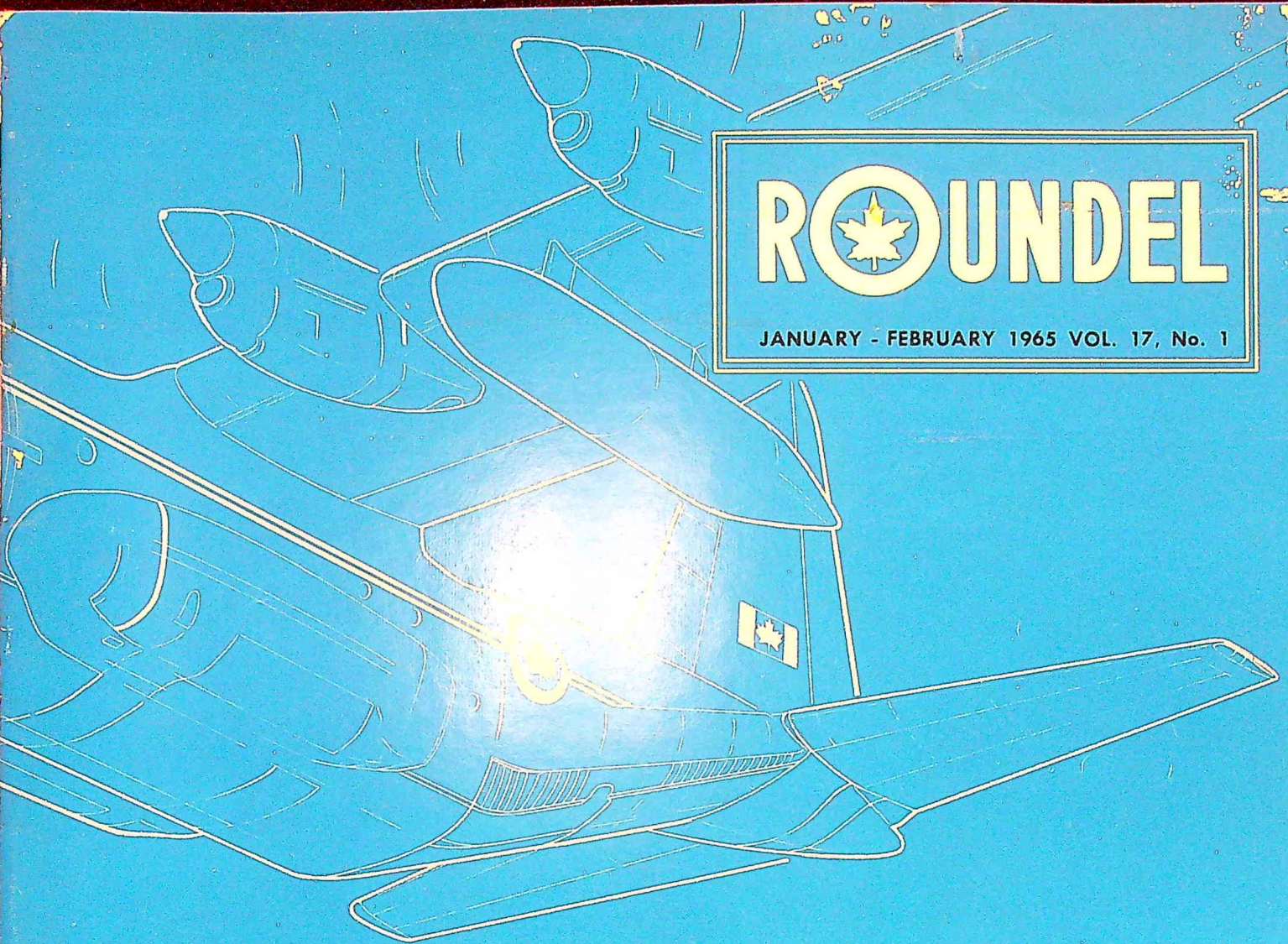
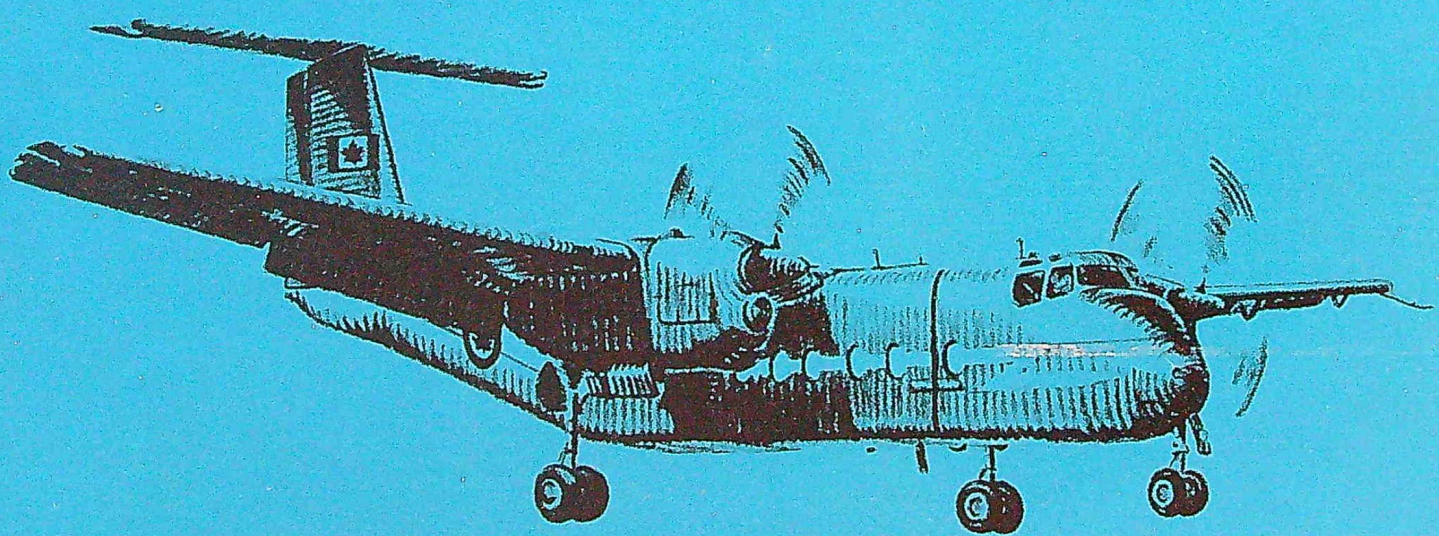
ROUNDEL

JANUARY - FEBRUARY 1965 VOL. 17, No. 1





COVER CAPTION

Increased RCAF air transport capability is forecast in this month's cover by graphic artist Cpl. Claude Rousseau. See pages 2 and 3 for further details on the Hercules and Buffalo.

ROUNDEL

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ARTICLES page

Comox – West Coast Hub of the RCAF 4
Aircraft Markings of the RFC-RAF 10
Evolution of RCAF Telecom – Part Three 16
Sgt. Electro Robot 26

PHOTO STORIES

Air Transport Capability Increased 2
Argus Ops 14

FEATURETTES

Gander Mascot 8
RCAF Pistol Champ 8
What's a Sku L? 9
Pine Trees to Pinetree Line 28

DEPARTMENTS

On the Break 1
The Suggestion Box 29
RCAF Association 30
Letters to the Editor 31
Aircraft Album . . . . . inside back cover

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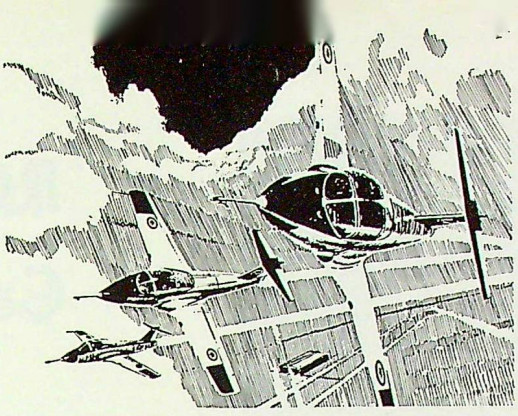


ON THE BREAK

ONE OF the main objects of integration is to make more of the defence dollar available for new equipment for Canada's armed forces. Defence Minister Paul Hellyer's Christmas package (which will cost the taxpayer $1,500,000,000 during the next five years) included a forecast of increased air transport capability for the RCAF (see pgs. 2-3). Still to be announced: the acquisition of a new tactical close ground support aircraft.

WHEN we scheduled the Comox story (page 4) for this issue, we didn't anticipate that that RCAF station would make coast-to-coast headlines last month. The record snowfall which hit the west coast during December (73.5 inches, compared with an average 9.2 inches over the past 10-yr. period) literally buried Comox.

Heavy snow removal equipment, flown in by *Hercules* from RCAF Stn. Namao, was worked overtime to unclog runways for the Comox-based aircraft. Normal operations were quickly resumed, despite mountains of the unfamiliar white stuff still on the infield.

F/L J. Kuzyk

Author of the article on this Vancouver Island hub of the RCAF is F/L John Kuzyk, a radio navigator whose primary duty is flying in *Voodoos* of No. 409 Sqn. Before his present tour, he was the station's public relations officer.

MR. Ken Molson's research into aircraft markings of 1917-18 vintage (page 10) admittedly is on the esoteric side, but should prove vitally interesting to those who cherish this by-gone era. As he points out, very little official information is available on the subject. We hope the article will stimulate ROUNDEL readers to provide additional data.

Since becoming curator of the National Aviation Museum in the fall of 1960, Mr. Molson has collected several old aircraft and restored them for display. One of his most prized acquisitions is a JN-4 *Jenny* – the type featured in this story.

Mr. K. Molson

JUST before deadline, G/C Gauthier rewrote the conclusion to his three-part article, "Evolution of RCAF Telecommunications" (page 16), due to the recent integration of such services at CFHQ. Next month we plan to present a progress report on the overall integration process in Ottawa – a subject for which we have had many requests over the past few months.

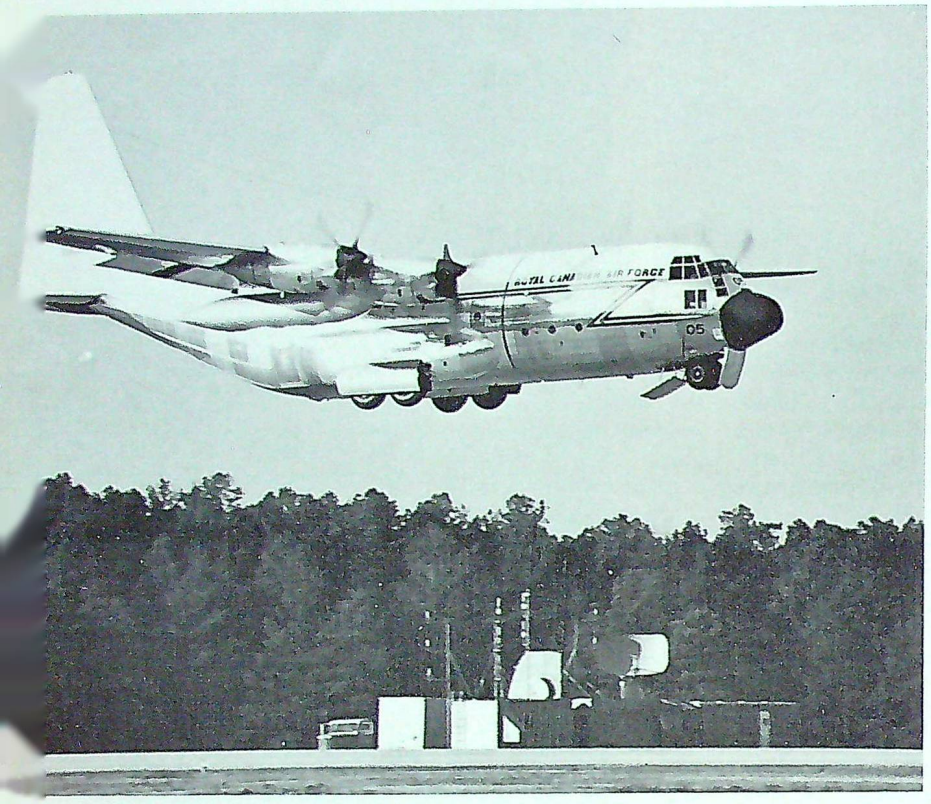
Also upcoming in future issues:

- A three-part article on the former Eastern Air Command, entitled "War on the Front Doorstep," by F/L H. A. Halliday of the air historical section.
- "Canada's Space Program" – a review of past accomplishments and a look at some of the future plans of several agencies involved in upper atmospheric research.
- Several features on off-duty hobbies of RCAF personnel – ranging from "do-it-yourself" aircraft making to the gentle art of judo.

A. Patterson S/L

Editor

RCAF Ai
Capabilit



Before the arrival of the first C-130E Hercules *at RCAF Stn. Trenton (above), where crews are now undergoing conversion training, 12 RCAF personnel took transition training at Lockheed Georgia Co.'s Marietta instruction centre. Shown below are Sgt. J. A. E. Beaudin, flight engineer, and F/L L. B. Smith, pilot, both attached to No. 436 Sqn., in the cockpit with Lockheed ground school instructor R. H. Hill.*

THE RCAF's air transport capability will be considerably improved with the addition to ATC's inventory of four C-130H *Hercules,* bringing to 24 the fleet of these long-range "air trucks", and the introduction of 15 DHC-5 *Buffalo* short take-off and landing (STOL) medium transports.

Acquisition of these aircraft is part of a five-year procurement program for all three services, announced by Defence Minister Paul Hellyer in December. Designed to enhance Canada's ability to meet NATO, UN and home defence requirements, the total planned capital expenditure is approximately $1,500,000,000. It includes new equipment to improve the Canadian Army's mobility and fire-power, and to increase the RCN's anti-submarine warfare (ASW) capability. In this area, the RCAF's *Argus* and *Neptune*, as well as the RCN's *Tracker*, aircraft will be fitted with the latest ASW detection systems.

The "E" version of the *Hercules*,* some of which are already in RCAF service, represents a major improvement in long-range airlift capacity. It can transport more than 12 tons of cargo 4,400 miles at 340 miles per hour. Considered one of the most versatile aircraft in the world, this STOL turboprop giant performs a wide variety of missions, including

*ROUNDEL, May '64.

Transport Increased

The DHC-5 Buffalo *is scheduled for RCAF service beginning in 1966.*

heavy freight and troop transport, trans-ocean and Arctic supply operations, and paradropping (from its rear-loader door) supplies and men.

Crews are now undergoing training at No. 4 OTU, RCAF Stn. Trenton, on the first of the C-130Es, delivered from Lockheed-Georgia Co. late last year. Previously several RCAF technicians and aircrew personnel underwent transition training at Lockheed's instruction centre in Marietta, Ga. Throughout 1965 *Hercules* deliveries will be made to No. 436 Sqn., based at RCAF Stn. Uplands, and to No. 435 Sqn. at RCAF Stn. Namao. The four C-130Bs which No. 435 has been flying since the fall of 1960 will be transferred this summer to No. 408 Sqn. at Rivers, Man., and converted for photo-recce and army support roles.

Classed as a medium transport, the de Havilland of Canada Co.-produced *Buffalo* is a big brother to the *Caribou*, which has been in RCAF service for some years, mainly in UNEF. The twin-turboprop *Buffalo* has a five-ton-plus carrying capacity. When long-range fuel tanks are installed, it can airlift 41 fully-equipped troops, or 35 paratroops, over 700 miles and return to base.

Designed for employment under all weather conditions in areas where short, rough, unprepared strips provide the only take-off and landing surfaces, the *Buffalo* features exceptionally low, slow-flying controlability. Like the *Hercules*, it has a rear-loading door and adjustable ramp facilities to permit fast loading and unloading of bulky cargoes, vehicles and machinery.

As a result of a cost-sharing agreement between the governments of the United States and Canada, and the de Havilland Aircraft of Canada Ltd., the development of the DHC-5 *Buffalo* commenced late in 1962. The inaugural flight took place in April 1964 and this spring four aircraft will be delivered for evaluation to the United States Army. Deliveries to the RCAF will commence early in 1966.

VITAL STATISTICS

	Hercules "E"	*Buffalo*
Length	97' 7"	77' 4"
Span	132' 7"	99'
Height	38' 4"	28' 8"
Engines	4 Allison T56-A-7	2 General Electric T64-10
Weight	135,000 lbs.	38,000 lbs.
Speed (cruise)	362 mph	260 mph

COMOX—West Coast Hub of the RCAF

By FLIGHT LIEUTENANT J. W. KUZYK

EACH DAY, high over Vancouver Island against the majestic backdrop of Forbidden Plateau and the snow-capped Comox glacier, search and rescue *Voyager* helicopters and *Albatross* flying boats, anti-submarine *Neptunes* and *Voodoo* interceptors fly to and from RCAF Station Comox. This air force station, located on a peninsula 100 miles northwest of Vancouver, is home for the RCAF's west coast SAR, maritime and air defence squadrons.

The present day hustle is a marked contrast to the quiet calm of a March afternoon in 1943 when an RCAF Grumman *Goose*, piloted by F/L H. A. McDonald, became the first aircraft to land at the station. F/L McDonald, now retired from the RCAF, recently recalled that landing over 20 years ago. Under construction at the time, the airfield was incorporated two months later as an RCAF aerodrome and given the task of providing flying control for No. 32 OTU, a Coastal Command school, and later a transport OTU for the RAF. In time the RAF unit at Comox gave way to No. 6 OTU, an RCAF transport and training establishment, under the command of G/C D. C. MacDonald. This unit, then flying *Dakotas* and *Expeditors*, continued the training of Commonwealth aircrew in the long-range transport role for the remainder of the war.

Grumman Goose, piloted by F/L H. A. MacDonald (ret.), was first aircraft to land at RCAF Stn. Comox 3 Mar. '43. Supervising airport construction was Mr. M. McRae.

Station Comox was closed in January 1946 and remained dormant until the early 1950s brought with them increasing concern over the threat of surprise air and undersea attack on continental North America. Consequently, Comox was ordered re-opened in June 1952 to support Canadian anti-submarine and air defence forces assigned to the west coast. G/C G. S. Austin (A/C ret.) took command of the re-activated station on 15 Sept. '52.

Although assigned a dual maritime and air defence role, Comox was designated as an ADC establishment under No. 5 Air Div. HQ, then in Vancouver, with a maritime lodger unit. The first operational squadron slated for Comox was the lodger, No. 407 (Maritime Patrol) Sqn., under W/C C. W. McNeill. The "Demons" were re-activated in July '52, and equipped with wartime *Lancaster* bombers. By the end of their first year in business, the squadron had had its west coast reconnaissance role expanded from local territorial commitments to joint USN/RCAF operations and exercises, extending from Alaskan coastal waters to the shores of southern California.

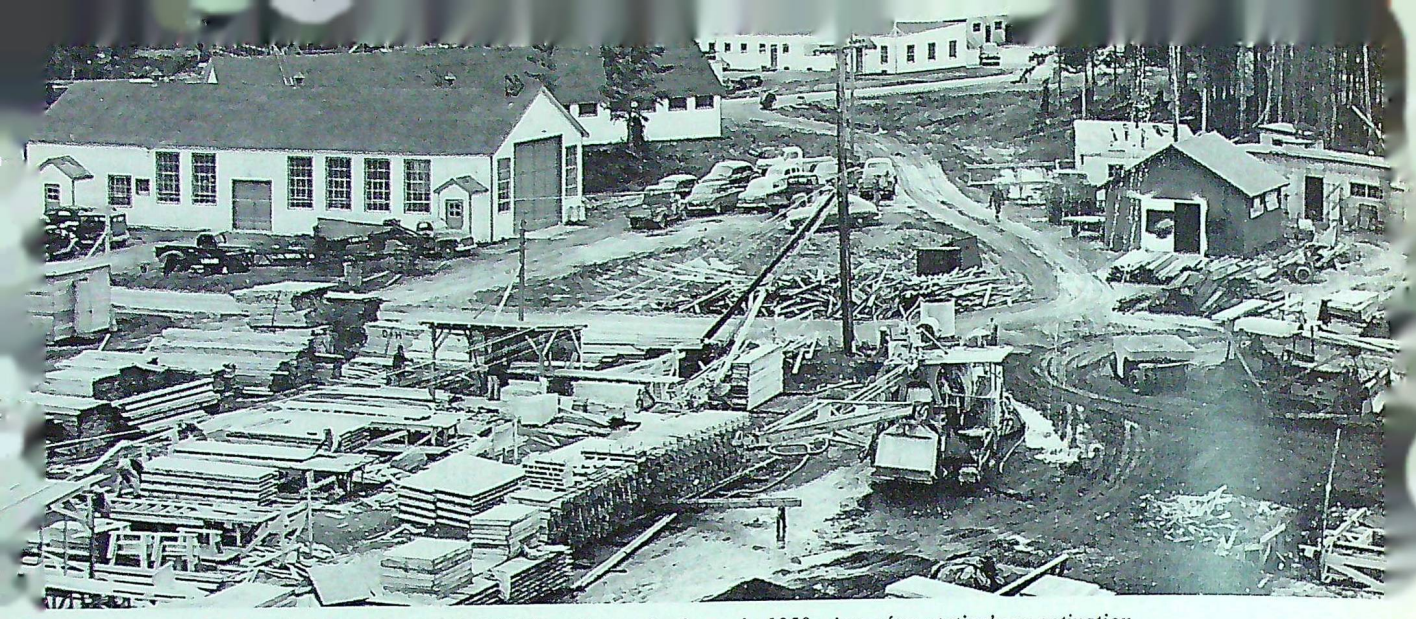
The second organization to be established at Comox was No. 51 (Aircraft Control and Warning) Sqn. which, in 1954, became part of the expanding NORAD Pinetree system. For the next five years this unit's call sign, "Waterfall", became well known and heavily utilized in the control, detection and interception of west coast air traffic.

Early in 1955 the station's main runway was extended from 5000 to 8000 feet and the CF-100-equipped No. 409 (All-weather Interceptor) Sqn. flew to Comox. S/L F. E. Haley was then the squadron's CO and held that position until the arrival of W/C T. J. Evans in March of the following year. Changes were introduced to the station's two squadrons as time went by. Number 407 Sqn. received the newer *Neptune* aircraft to replace their aging *Lancasters*; No. 409 Sqn. was integrated into the 25th NORAD Region for operational control.

Two years after their integration into NORAD the 409ers, in February 1960, under W/C H. E. Bridges, won the Steinhardt Trophy, hallmark of all-weather operational excellence. Not to be outdone, No. 407 Sqn. representatives (F/L W. Stedman and crew) brought home the Fincastle Trophy* in 1962, after winning the Commonwealth maritime bombing competitions.

*This annual award is given for the best bombing score among maritime crews of the RAF, RAAF and RCAF.

Some current Comox-based RCAF activities are illustrated in this composite photo, l. to r. from top: No. 409 Sqn. Voodoo *pilot prepares for take-off; No. 407 Sqn.* Neptune *exercises off west coast with HMCS's Marguerite and Assiniboine; No. 121 K Flt. pararescue jumper in action; meteorological observer reads weather instruments; aero-engine technician checks jet engine; medical assistant in station hospital; instrument technician at work; RCAF crash boat in Comox Bay;* Neptune *pilot in the driver's seat.*

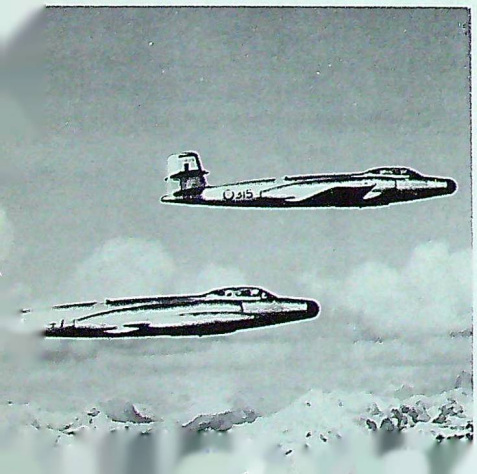


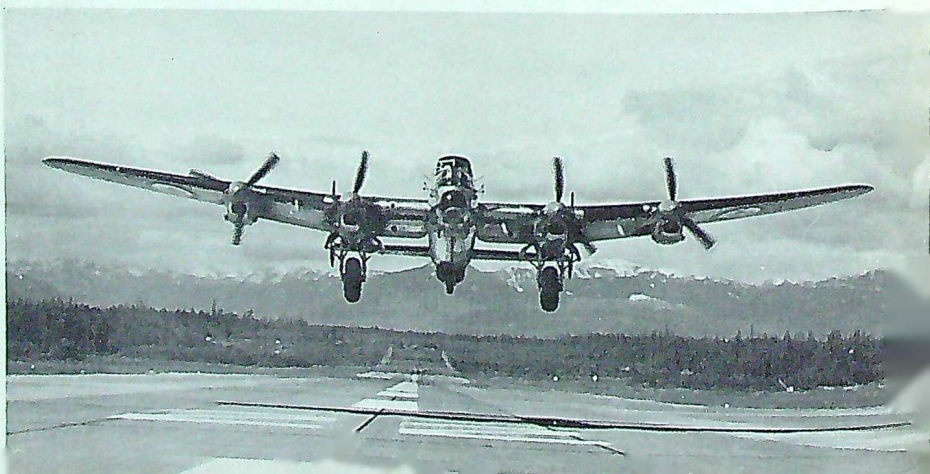
Building Boom at RCAF Stn. Comox in the early 1950s, just after station's re-activation.

Since its post-war re-activation, RCAF Stn. Comox had been an ADC establishment but, in Sept. '61, it was assigned to MAC and the positions of Nos. 407 and 409 Sqns. were, therefore, reversed. Instead of being a lodger unit, No. 407 became part of Stn. Comox and No. 409 forfeited its position as station squadron and became a lodger unit. The status of the squadrons changed again in June '64, when Stn. Comox reverted to ADC control. However, these administrative changeovers had no effect on the physical or operational make-up of the unit.

In 1961 there was another lengthening of Comox's main runways – this time from 8000 to 10,000 feet – for the arrival of CF-101Bs, due in the early spring of 1962. Number 409 crews underwent conversion training on these super-sonic aircraft at Stn. Namao during the latter part of 1961 and acquired their aircraft in mid-March 1962. Along with the arrival of the CF-101Bs came the potential problem of noise abatement. Fortunately, however, this problem never materialized. Rumours about the noise associated with the *Voodoos* had initially brought some apprehension and speculation among local residents. But the introduction of the sonic boom into the relatively peaceful valley produced only an initial barrage of queries. After a few months the queries dropped off sharply with little adverse comment over aircraft noise. In fact, there was even an entry on the credit side of the ledger as the pyrotechnic display of CF-101 afterburners in the evening skies became a local tourist attraction. (When asked about the reason for the small number of complaints at Comox compared to some other units, the

No. 409 (All-Weather Interceptor) Sqn. flew CF-100s (left) and No. 407 (Maritime Patrol) Sqn. flew Lancasters *until these aircraft were replaced by* Voodoos *and* Neptunes, *respectively.*





Voodoo *crew F/Ls D. Broadbent (left) and V. Bartlett being greeted by their wives on arrival at Comox after unscheduled swim in Toba Inlet in Aug. '62.*

station CO's quiet comment was, "Whatever it is, let's not knock it."

Five months after receiving its *Voodoos*, No. 409 Sqn. achieved the dubious honour of being the first RCAF unit to lose one of these aircraft. However, even this unfortunate event had a few redeeming features. First of all, the crew bailed-out safely and was recovered, thus demonstrating conclusively the soundness of the ejection equipment and the efficiency of the search and rescue organization. Secondly, the incident was an illustration of international co-operation since both Canadian aircraft and American helicopters were used to bring back the downed fliers.

Although the faithful CF-100s were being rapidly phased out by the RCAF, they were not yet through. In the fall of 1962 an electronic warfare detachment was stationed at Comox with CF-100s to harass their supersonic replacements and to give a workout to other NORAD squadrons.

During its years at Comox the telecommunications organization had several changes in fortune. Number 51 (AC & W) Sqn. operated successfully from 1954 until 1959 but in that year improved radar coverage from other units resulted in No. 51 being disbanded. For the next four years radio facilities consisted of only a local air traffic control agency but, early in 1963, following an electronic face lifting, these facilities were rated as one of the top air traffic control terminals in Canada.

Another milestone which marked the eventful year 1963 at RCAF Stn. Comox was two visits by ban-the-bombers. These visits were prompted by the government's announcement naming Comox as a potential special armament storage depot. On both their visits the ban-the-bombers picketed the station gate protesting nuclear arms. The demonstrations were orderly, well organized and without incident.

Last year, in addition to the aforementioned reversion of command from MAC to ADC, two changes in the composition of flying units took place at Comox. The first change was a reduction in the strength of No. 407 Sqn. and the second was the arrival of No. 121 Composite Flight from now-closed RCAF Stn. Vancouver. The tarmac at Comox today would prove a real challenge to any aircraft reconnaissance expert. There are CF-101Bs parked alongside visiting USAF F-102 (*Delta Daggers*) and F-106 (*Delta Darts*), RCAF and USN *Neptunes*, *Argus* aircraft visiting from Canada's east coast, *Hercules* in transit, *Albatross*, *Dakotas* and *Expeditors* plus the odd CF-100, T-33, *Voyager* helicopters as well as several commercial and private aircraft. Comox aircraft also do their share of visiting on operational errands. During a normal year roundel-marked *Neptunes* and *Voodoos* dot the flight lines of US naval air stations from Kodiak, Alaska, to southern California and at 25th NORAD fighter bases scattered across the states of Washington, Montana and Oregon. And, during the past summer Comox's No. 409 Sqn. became the first Canadian fighter squadron to operate full-time from an American air base.* This situation came about when No. 409 was stationed at Paine, Washington, for two months while Comox's runways were being reconstructed.

*ROUNDEL, Sept. '64.

G/C E. G. Ireland, DFC
CO Stn. Comox.

W/C G. Inglis,
OC No. 409 Sqn.

W/C K. O. Moore, DSO,
CO No. 407 Sqn.

On the non-operational side of things the story of Comox has also been one of growth. Initially, 200 housing units were constructed in 1953 in Wallace Gardens, the local PMQ area. These were filled immediately upon completion. More housing, which absorbed another 100 families, was made available in June 1956, through a low subsidy housing project in the village of Comox, about four miles from the base. Again in 1960, an additional 100 PMQs were added to Wallace Gardens. Although these efforts helped to relieve the situation somewhat, there are still more than 700 air force families scattered throughout the local area in rented or purchased properties.

A similar situation exists in the case of schools. Dependants' schools at Comox were always hard pressed to keep pace with the station's influx of personnel and dependants and, in 1960, seven additional classes were added to the station's original school. Throughout its 12-year post war history, Comox has maintained an active and varied program of sports, cultural and recreation activities. Efforts in this direction were fully recognized last year when RCAF Stn. Comox was awarded the Mynarski Trophy for its achievements in the development of youth recreation.

Station Comox is unique in several ways. It is the RCAF's most westerly flying station and the only one in the air force which has maritime, air defence and air-sea rescue units based there. It is also adjacent to the finest salmon fishing waters in Canada – which may be the reason so many retired RCAF personnel have chosen to continue living in the area.

Timmy and friend, Cpl. B. Coish, air force policeman at RCAF Stn. Gander.

GANDER MASCOT

RCAF Stn. Gander, Nfld., recently adopted a pedigree Newfoundland dog, Glenmire Cape Pine, affectionately known as "Timmy", to be the station mascot. Timmy was given to Stn. Gander by his former owner, Dr. Mike Maguire, who has left for England to further his studies. Timmy's sire, Newton, won top awards in his class at the Canadian National Sportsmans Show in Toronto in 1962. His dame was Westerland Lady of Glenmire.

Timmy has taken up residence beside the guardhouse in his renovated dog house and is cared for by the air force police. He has adjusted well to air force life, recently took part in his first CO's parade and is expected to participate in many other station functions and sports events.

RCAF PISTOL CHAMP

Leading Aircraftman K. W. English, an air force policeman from RCAF Stn. St. Jean, placed first in the air force police annual pistol shooting competition. He scored 48 points out of a possible score of 50. LAC English was also a member of the unit pistol team which finished third in the Province of Quebec service pistol championship.

WHAT'S A SKU L?

by SQUADRON LEADER L. C. Morrison, NORAD Hq.

Illustrations by F/L D. A. CROW

"NORAD Information Office – Squadron Leader Morrison speaking."

"Umm, yes, could I speak to someone in charge there, please?"

And on it goes, the continuous sparring for position that occurs when I answer the 'phone at my NORAD office in Colorado Springs and find that the call is from an out-of-town newsman who just isn't about to state his business to something called a Squadron Leader – everyone knows that important military people are Lieutenants, Captains, and the like.

I don't think the situation is peculiar to duty in the United States.

All this leads me to the point I would like to make. If integration of Canada's armed forces does nothing more than eliminate the rank titles in the Air Force it will have achieved much.

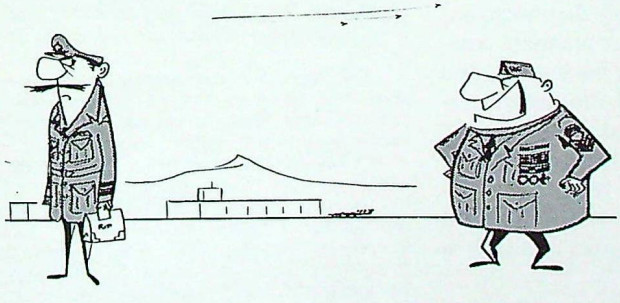
At this point I can well imagine thousands of "dyed in the barathea" airmen, active and retired, saying, "Hold it there, boy," and reaching for their pens to castigate the editor for allowing this blasphemy to proceed this far.

Yet, in their hearts they know I am right . . . to paraphrase a not-too-successful campaign slogan.

Let me assure them that I don't make this suggestion lightly or without due consideration. The RCAF and I were born in the same year and I have spent very nearly half of my life in the organization. But I get so tired answering the question, "What's a Squadron Leader?"

The rank titles of the Air Force may or may not be time-honored, but confusing they most certainly are. Take my family for example. I consider them to be fairly typical Canadians with about average exposure

". . . hey, YOU!"



". . . few civilians can tell the difference between an air commodore and an aircraftman."

to the military in war and peace. I am willing to bet a modest sum that not one in five of my various and sundry relatives can really tell you the difference between an Air Commodore and an Aircraftman. They are pretty sure, however, that a Lieutenant Colonel is much more important than a Wing Commander.

Can you imagine a Martian, one who has studied his English before coming to this planet, arriving at an air force station? Within minutes of arrival he finds Wing Commanders who don't command wings; Group Captains with no groups; Squadron Leaders who have never been near a squadron and, folly of follies, a Pilot Officer who is a navigator.

And it isn't only that the titles are confusing. They are too blasted long. While a Brigadier General and a Lieutenant Colonel can quite properly be addressed as General and Colonel respectively (you might even make points by suggesting that they should really be promoted), what are you going to call a Squadron Leader?* After the first half dozen tries, it's "hey, you" or just plain "mister."

In this era of sometimes sudden removal from the bosom of the military establishment, the penalty may be much graver than simple confusion. It may be the difference between landing a job on civvie street and not getting it. Consider the middle-aged gent presenting his credentials as a Flight Lieutenant after 15 or so years of commissioned service. There is a good chance that the personnel manager's mind may be conditioned to regard Lieutenants, either in the air or on the ground, as pretty junior people in the military structure. Don't you think that he may be inclined to reach for the file of that ex-Army Captain who, apparently, did so much better in uniform?

I say again, let's get on with the job.

*It's a good thing I checked the proofs of this yarn after my staff had inserted their own answers to this question. As a long-term "Sku L", I exercised censorship privileges. – Editor.

AIRCRAFT MARKINGS OF THE RFC-RAF — CANADA, 1917-18

By MR. K. M. MOLSON
Curator, National Aviation Museum

Canadian Training Squadron in Texas wore the green shamrock.

AN INTERESTING facet of aviation history is the study of markings that have been used on aircraft over the years. These vary all the way from those used by famous squadrons down to aircraft owned by individuals. In general, this portion of aviation history has been poorly recorded; unfortunately, no part of it has been so lacking in coverage as that of the markings of the RFC-RAF in Canada during 1917 and 1918.

As no official records on this subject are known to exist, this somewhat incomplete story has been compiled from the study of a large number of photographs loaned in recent years by individuals to the RCAF Directorate of Air Force History and the National Aviation Museum. By co-relating this and other information found in books and log books, a certain amount of the story of these markings can be reconstructed. Fortunately, a large number of water-colour paintings, done at the time by the well-known artist Franz Johnston, are held in the war collection of the National Gallery of Canada. Other help with the colour problem has been received from George Wakeman of Toronto.

For purposes of this article, all aircraft used in training in Canada may be considered as being Curtiss JN4A aircraft assembled by Canadian Aeroplanes Limited or Canadian JN4 aircraft manufactured by them.* Upon delivery to the RFC-RAF from the factory they were finished in the following manner: cowlings were painted a dark green and the fabric possessed the natural fabric colour as it had received only two coats of clear dope. The metal fittings were painted with black enamel and the struts were finished with a sealer and spar varnish to give a stained-wood effect.

*ROUNDEL, March '63.

Legend to photos opposite:

1 Well-decorated Canadian JN-4 of Lt. Vezina at Deseronto, in October 1918, was for promotion of a Montreal victory bond drive. Note squared roundel on fin.
2 The later markings of the red St. George's Cross of No. 85 Canadian Training Squadron at Camp Mohawk is carried by three Jennies.
3 A JN-4 aircraft at Camp Borden with the horseshoe insignia. Squadron number is not known.
4 Composite Curtiss JN-4A – Canadian JN-4 aircraft of Aerial Fighting Sqn. No. 2 with the turret marking, possibly red.
5 Several ambulance versions of the Canadian JN-4 appeared in 1918 and they carried the permanent red cross as shown.
6 This unknown squadron painted ailerons and elevators red to increase visibility. Circle segment squadron identification was on the rudder.
7 Canadian JN-4 wearing the black skull and cross bones of No. 90 CTS.
8 Another squadron marking used by No. 88 Sqn. Colours not known.
9 Aerial Fighting Sqn. No. 1 carried this red insignia. Repetition of the insignia on the rudder was not done later in the war.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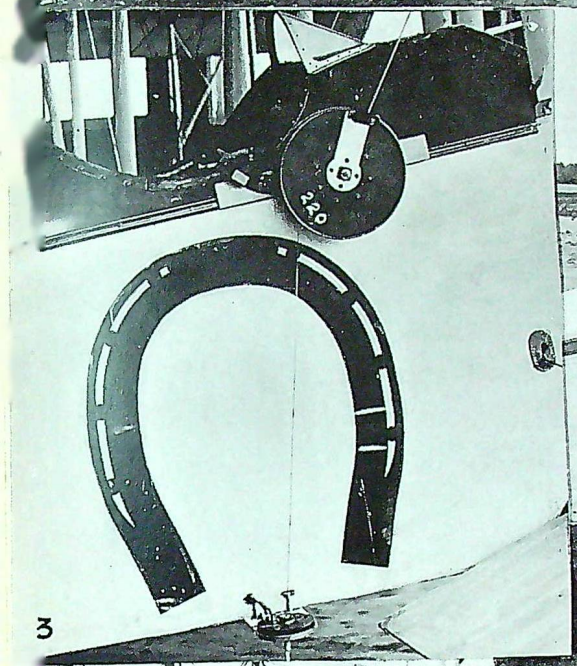
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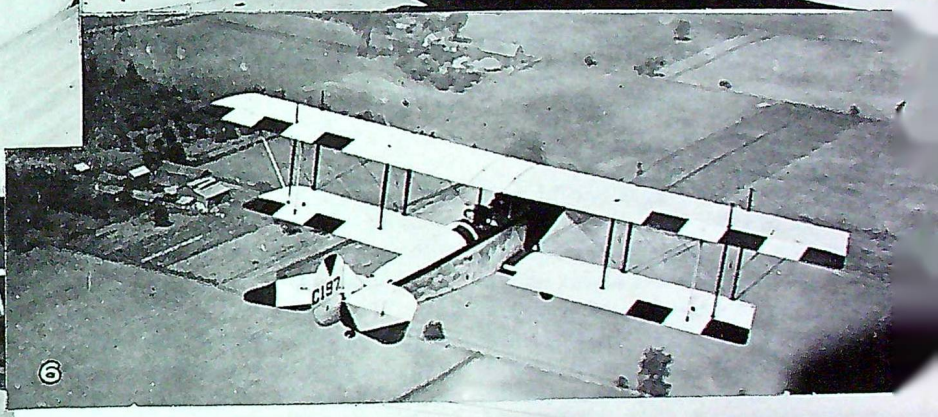
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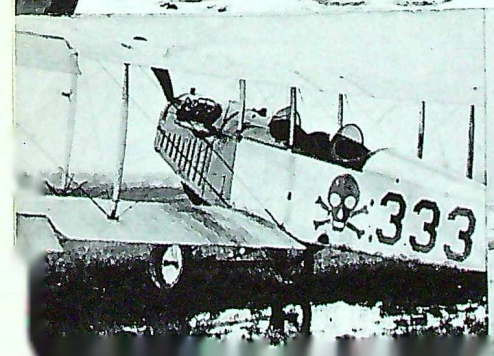
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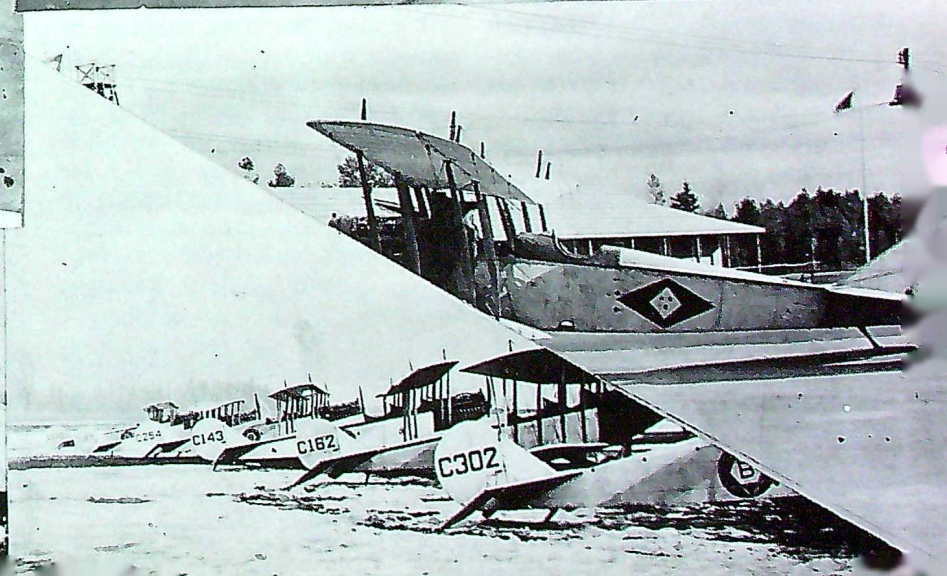
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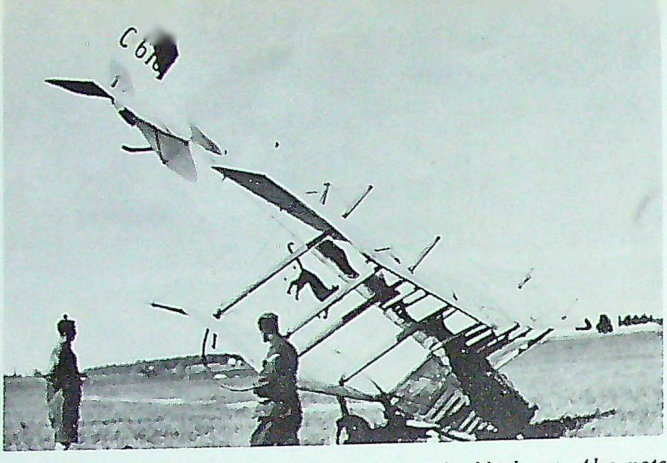
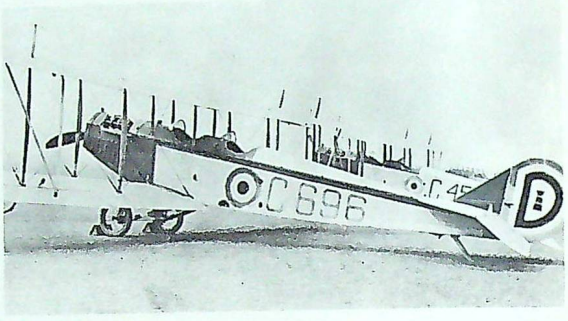


The early marking of No. 85 Sqn. featured the black cat. Also note the diagonal placing of the rudder stripes.

Canadian JN-4 wearing the beaver inset in the green maple leaf, insignia of No. 78 CTS in Texas.

Canadian JN-4 casualty carrying the Fleur-de-Lis of No. 81 Sqn.



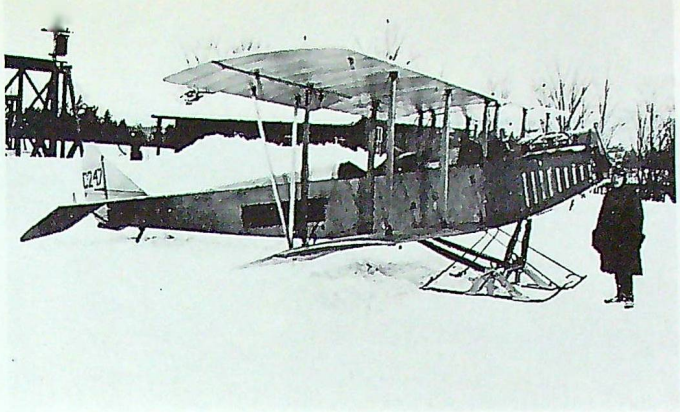
This aircraft carried the personal emblem of Lt. Vernon Castle in the centre of the squadron mark on rudder.

During this two-year period there appears to have been no official requirement for national marking of the aircraft used in Canada. However, British roundels and rudder stripes were used by some squadrons and in varied ways, apparently at the whim of the commanding officer. Rudder stripes were the most common of these markings and most were applied in the same manner as used in Britain. However, some aircraft appeared with the stripes applied at an angle rather than in the vertical position. The reason for this is not known but it may be significant that most, if not all, of the photographs showing this latter form of rudder stripe were taken in Texas, indicating an attempt to differentiate the Canadian aircraft from those of the Americans. Roundels, when used, invariably appeared on the sides of the fuselage in large sizes and no instance has been discovered to date where they were applied to the wings. A few aircraft were marked with a "squared-roundel" on the fin. The significance of this is not known and it may be either a squadron marking or a personal insignia used by a single pilot.

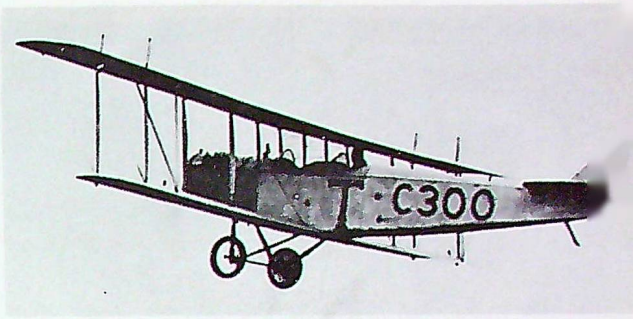
Squadron markings, in most instances, appeared on each side of the fuselage and occasionally were repeated on the rudder. Two instances are known of squadron markings being repeated on the wings but these are not believed to have been general even on other aircraft of the same squadron. Number 85 Sqn. actually changed its insignia from the Black Cat to the St. George's Cross and, as noted below, other squadrons may have also carried out a change in insignia. Some squadron markings were used in different colours, apparently to differentiate between flights.

In order that a crashed aircraft might be more readily visible, some squadrons resorted to red markings on their surfaces. Some had red wing tips, some had red striped ailerons and others combined these with decorated tail surfaces. Again it appears as if these markings were applied at the squadron CO's discretion, with the objective of making the aircraft more visible when seen against a snow background.

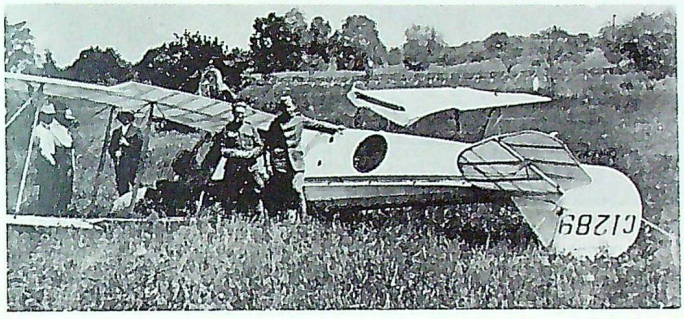
Early in 1917 aircraft went into service just as they were received from the factory and no further markings were used, with the exception of certain presentation aircraft which carried the usual inscription. Squadron insignias began to appear during the summer of 1917 and probably reached their peak during their stay in Texas. About the spring of 1918 many of the col-



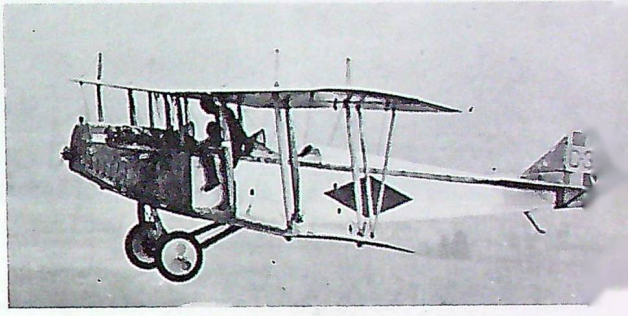
The red bar identified No. 83 CTS at Leaside during the winter of 1917-18.



Canadian JN-4 of an unknown Camp Borden squadron. The T marking was the squadron identification and. in this unit, rudder stripes were invariably used..



Aerial Fighting Squadron No. 2 aircraft bore the red ball insignia. Other flights of this squadron may have used a blue ball insignia.



A Canadian JN-4 bearing the marking of an unidentified squadron. The checkerboard marking on the rudder is in dark green.

ourful markings, such as the Black Cat, the Shamrock and the Beaver in the Maple Leaf, disappeared and in one case, as already mentioned, the Black Cat was replaced by the St. George's Cross. Therefore, it is felt that there may have been a directive during the spring or early summer of 1918 discouraging the use of such emblems and confining the squadron markings to geometric designs. Also one has the impression that in the latter portion of the war some squadrons were flying with flight markings only, usually of one, two or three bands (probably red) around the fuselage.

In November 1918 the following Canadian training squadrons were in existence and it is possible that the majority of these units had squadron insignia at one time. The many squadrons without an insignia noted for them indicates the considerable amount of work still to be done on this subject to complete the story.

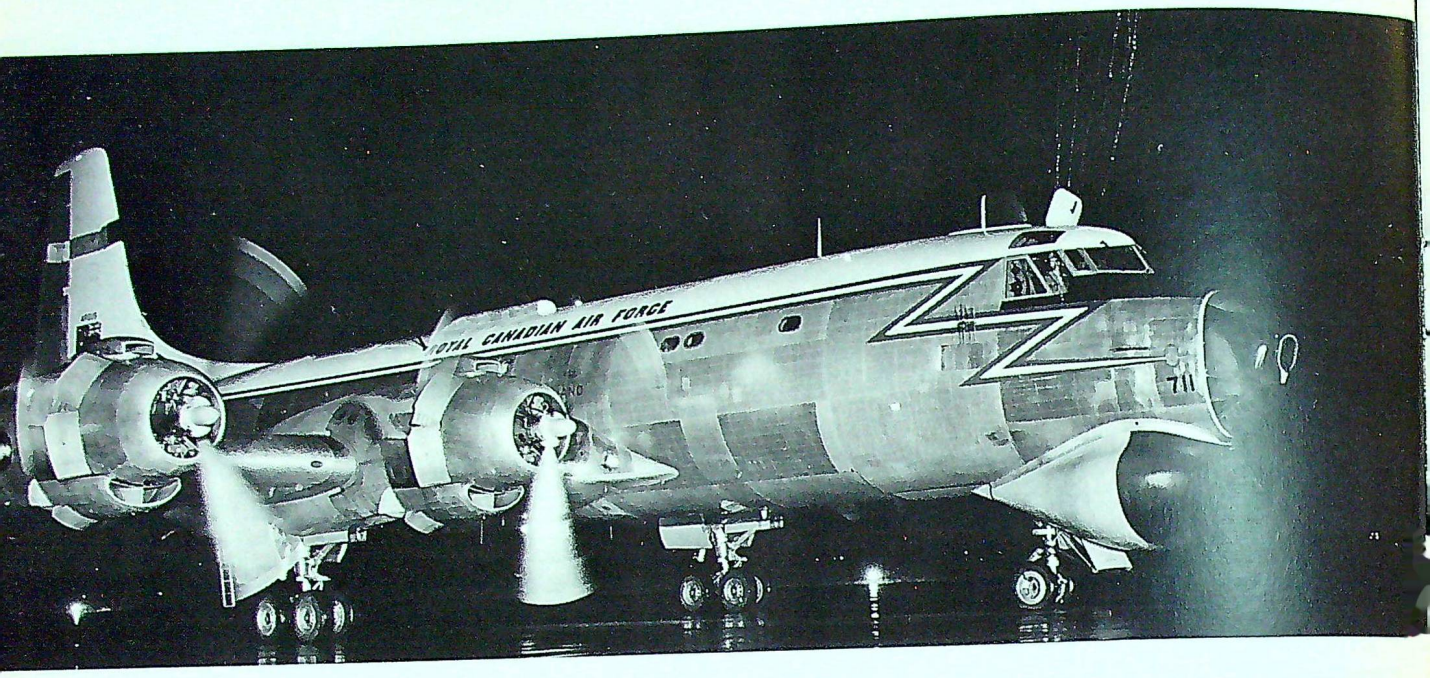
42nd Wing – Deseronto
84 C.T.S.
85 C.T.S. 1) Black Cat
2) St. George's Cross
79 C.T.S. Scotch Terrier
89 C.T.S.
82 C.T.S.
81 C.T.S. Fleurs-de-lis
90 C.T.S. Skull and Cross Bones

43rd Wing – North Toronto – (Leaside)
78 C.T.S. Maple Leaf with Beaver
83 C.T.S. Red Bar
91 C.T.S.

44th Wing – Borden
80 C.T.S.
86 C.T.S.
87 C.T.S.
88 C.T.S. Shamrock
92 C.T.S.
93 C.T.S.

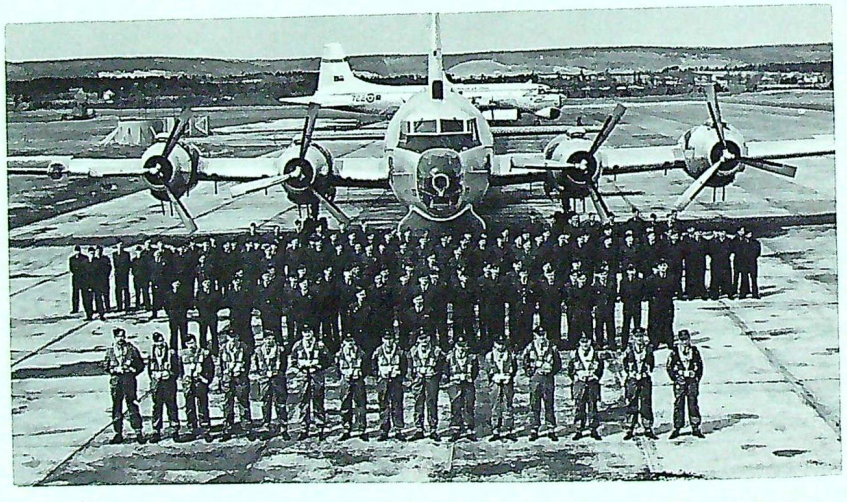
School of Special Flying – Armour Heights
School of Aerial Fighting – Beamsville
Instructional Section
Aerial Fighting Squadron No. 1 – Diamond with Square in Centre
Aerial Fighting Squadron No. 2 – Turret in Circle
Aerial Fighting Squadron No. 3 – Red Circle
Aerial Fighting Squadron No. 4

Readers who may be able to assist in this research are invited to send material to the Directorate of Historical Services, CFHQ, or to the author of this article.



ARGUS OPS

An Argus *team comprises both air and ground crew, one of which is pictured here on the tarmac at RCAF Stn. Greenwood, N.S.*

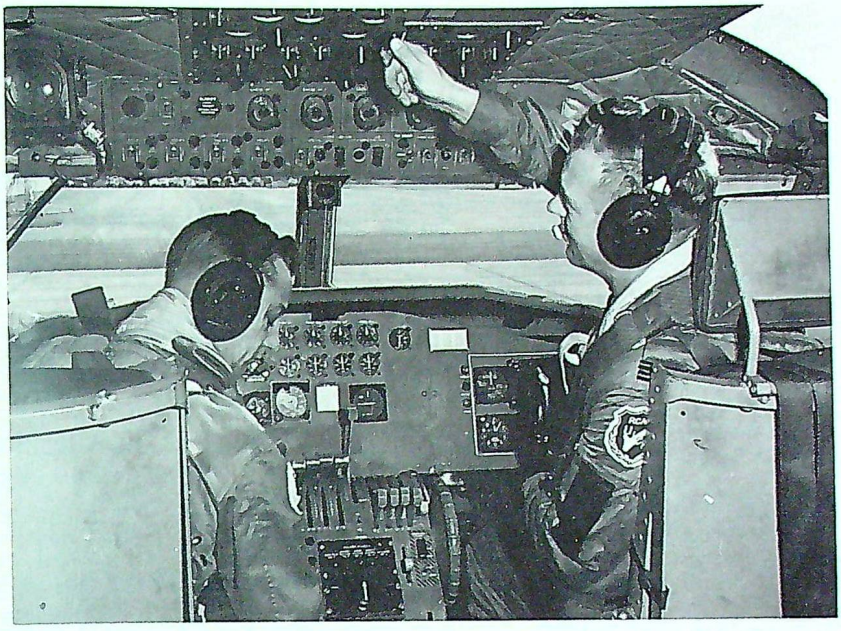


In co-operation with RCN forces, three squadrons of RCAF Maritime Air Command *Argus* aircraft are responsible for the protection of Canada's eastern seaboard approaches from submarine attack. This spring marks the seventh anniversary of the *Argus*' introduction into operational service.

Especially-built to RCAF specifications by Canadair Ltd., the *Argus* has proven well-suited to its role of anti-submarine warfare. With a combat range of more than 4000 miles and carrying a lethal load of bombs, torpedoes and mines as well as the latest devices for locating submarines, *Argus* aircraft provide potent detection and destruction capability.

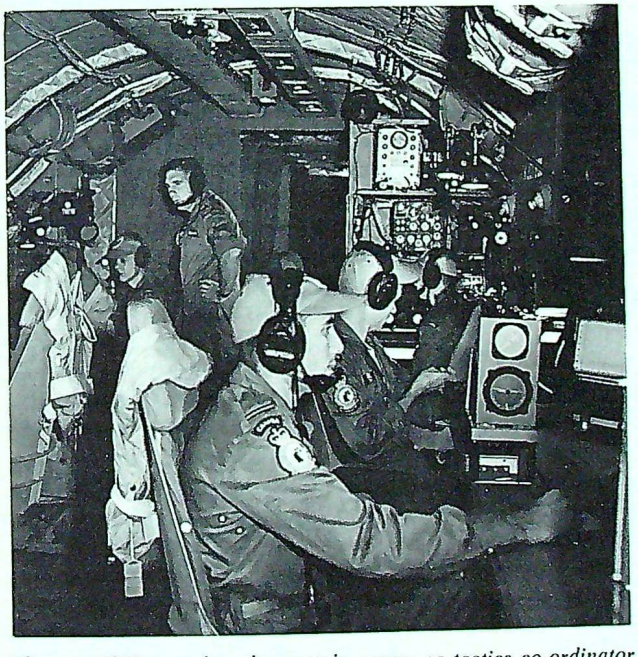
Operating from RCAF Stn. Greenwood, N.S., are two *Argus*-equipped squadrons, Nos. 404 and 405, while No. 415 Sqn. is based at RCAF Stn. Summerside, P.E.I. These units fly patrols around-the-clock, 365 days a year. Depending on the particular exercise, an operational mission may last from 12 to 18 hours.

Since many of the positions on the aircraft are interchangeable, the 15-man aircrews work a rotation system so that there is time to eat and time to rest during the long hours aloft. In addition to their routine patrol activity, MAC aircrew also practise anti-submarine warfare techniques during joint Canada/USA SACLANT exercises.



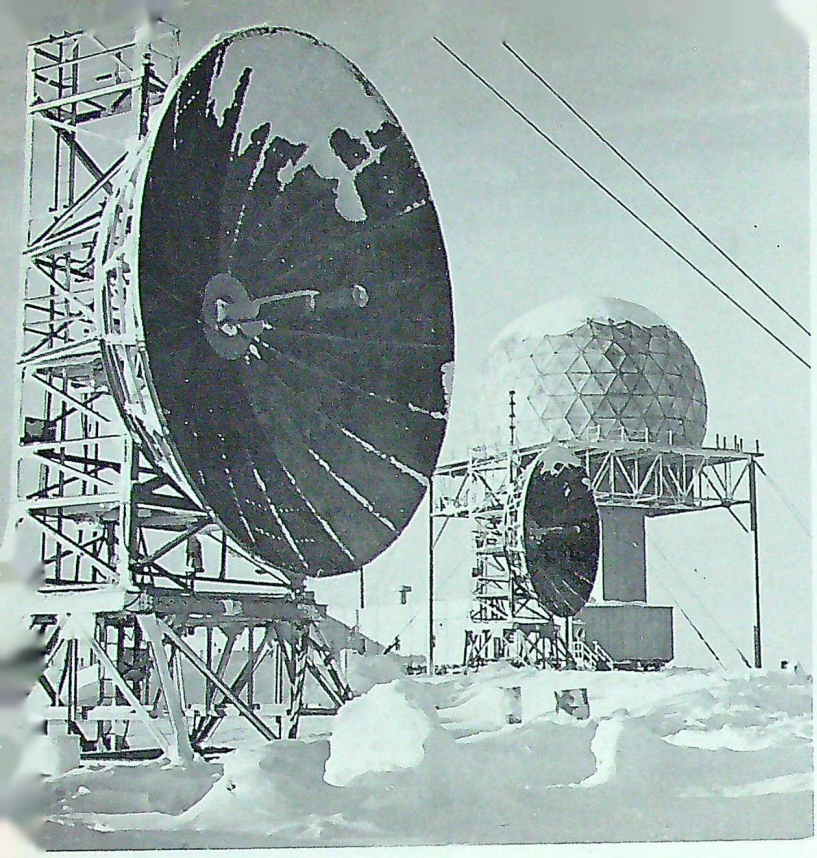
In the front office, captain and first officer prepare to start the four 3,700 hp. turbo-compound engines.

A ground technician checks the Argus' *electrically-operated camera.*

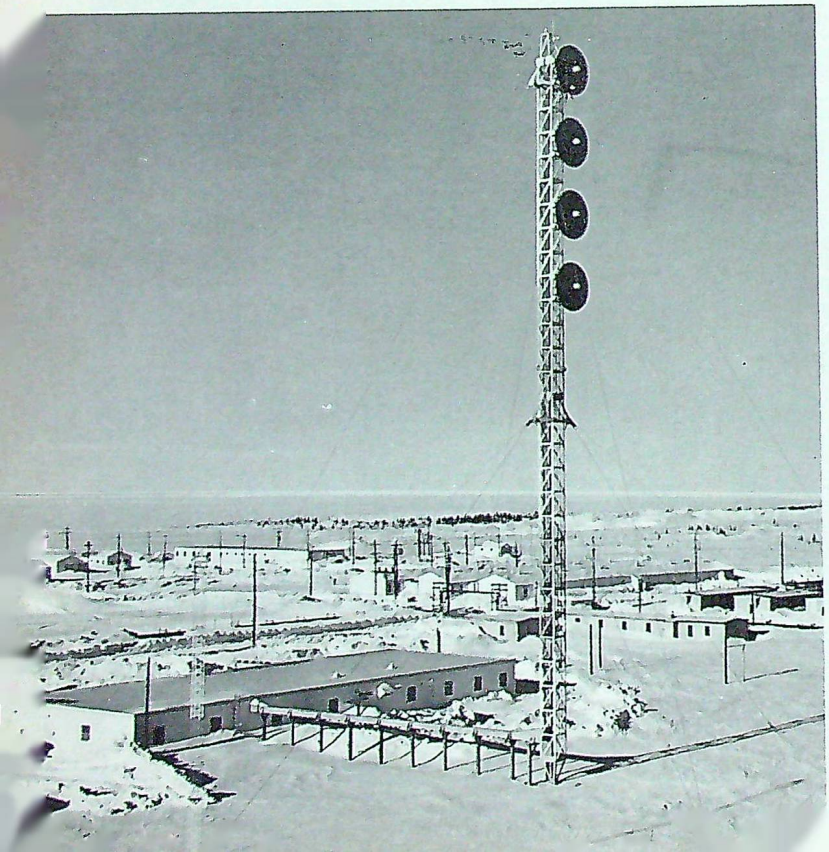


On an ASW exercise, the captain serves as tactics co-ordinator for the electronic equipment operators.

The Argus *fleet, as well as* Neptunes *and RCN* Trackers, *will soon be equipped with improved ASW systems, it was announced recently.*



Radars near Cambridge Bay on the DEW Line (above) and MCL station at Great Whale River (below) typify post-war electronic detection networks built across northern Canada.



EVOLUTIO TELECOMM

Third of Three Parts:

By GROUP CAPT
Director of Telecom Mc

TELECOMMUNICATIONS – that all-embracing term which succeeded such out-moded names as signals or wireless – became really big business after World War II. As the drastically-reduced peacetime RCAF took shape, the increasing importance and responsibilities of telecom personnel soon became evident. Today they are ubiquitous; as practically all air force functions are dependent on electronics in one way or another.

Only a few of the post-war programs will be mentioned in this series' concluding article, and then in no great detail as most have been covered previously in ROUNDEL. These include electronic detection lines across the nation with associated communication networks, additional radar sites to provide warning and control, the SAGE system, increased and improved airborne electronic equipments, navigational aids, and expansion of the administrative and operational point-to-point landline and radio circuits.

LORAN

First of a series of joint-Canadian/US projects which have characterized the post-war era was the construction of a long-range navigation system (LORAN) in northern

OF RCAF NICATIONS

The Post-War Years

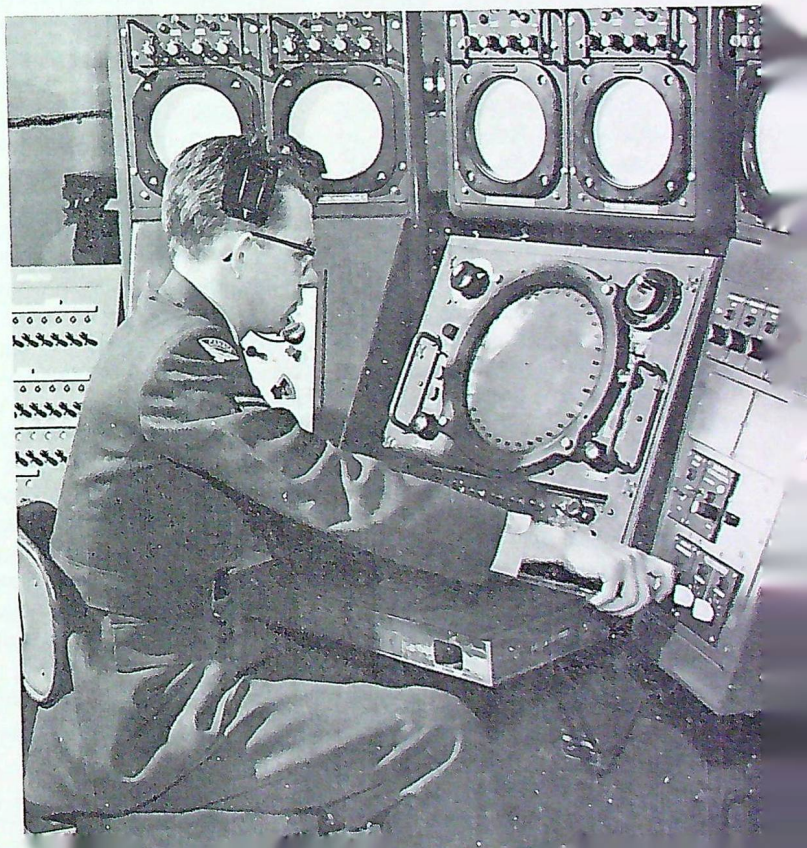
E. J. GAUTHIER,
nent and Control, CFHQ

Canada. LORAN, a US wartime development similar to the English GEE, depended on accurate measurements of distance by noting the time interval between the receipt of pulse signals emanating from two known stations.

A "trial" LF LORAN chain was established in 1946 with stations at Dawson Creek, B.C., North Battleford, Sask., and Gimli, Man. The equipment used was technically identical to that subsequently installed in the North with the important exception of the transmitting antennas, which at the trial stations was a single vertical radiator derived from a copper-clad steel wire suspended by a balloon. The balloons were tended by Canadian Army troops; all other personnel at these three stations were USAF or US civilians hired by Watson Labs. The system as demonstrated by this trial chain working with USAF test aircraft apparently worked satisfactorily.

Under the terms of the Canada/US agreement a northern chain – known as Beetle – was undertaken as a joint project starting in 1947. The USAF was to provide all systems engineering, all technical equipment (except communications) and

The disappearance of this once-familiar winter scene near Pinetree stations (above) is one aesthetic drawback inherent in the advent of SAGE (below).



supporting spares. In respect to those stations located in Canada, the RCAF undertook to provide all base construction and supporting services, to provide all housekeeping personnel and to provide operator and technical personnel.

Sites were selected by Watson Lab engineers, assisted by RCAF non-technical personnel familiar with the Canadian Arctic. Construction started in 1947 at Kittigazuit (master), Point Barrow and Cambridge Bay (slaves), Saw Mill Bay and Barter Island (monitors). The 625-foot slave support towers erected at the master and slave stations represented the first major steel jobs in the North American Arctic.

Working to a schedule under which the chain would be operational by Aug. '48, a number of RCAF personnel received LORAN operational and technical training during that summer. Two officers and some airmen were trained at the southern chain; a third officer and 20 airmen were trained by Lajoie Labs engineers in the USA. This RCAF group went into Kittigazuit, Cambridge Bay and Saw Mill Bay during Aug. '48 and all US personnel were gradually phased out except for one US tech. rep. at each station. The USAF (Watson Lab) Detachment in Edmonton continued to provide technical support and flew all tests and check-out missions.

Domestically, the stations settled down fairly well. For more than half of the stations' complement of roughly 80 people each, the days were largely filled with the job of keeping alive and reasonably comfortable. Operationally all was not well. It soon became apparent to RCAF technical staff at Kittigazuit that the ground wave transmitted by Cambridge Bay was not normally received by Kittigazuit and that synchronization was being maintained by locking on the D layer return, which at that latitude was so steady then that Watson Lab personnel had assumed it to be the ground wave and were puzzled by the time required for signals to travel between the two stations in relation to the calculated distance between them. Technical reports led to a series of discussions between RCAF and USAF personnel, and several remedies (involving use of lower frequency, more power and higher antennas) were considered but for one reason or another these were not adopted. Operations ceased during the summer of 1949 and all station personnel were withdrawn by the end of that year.

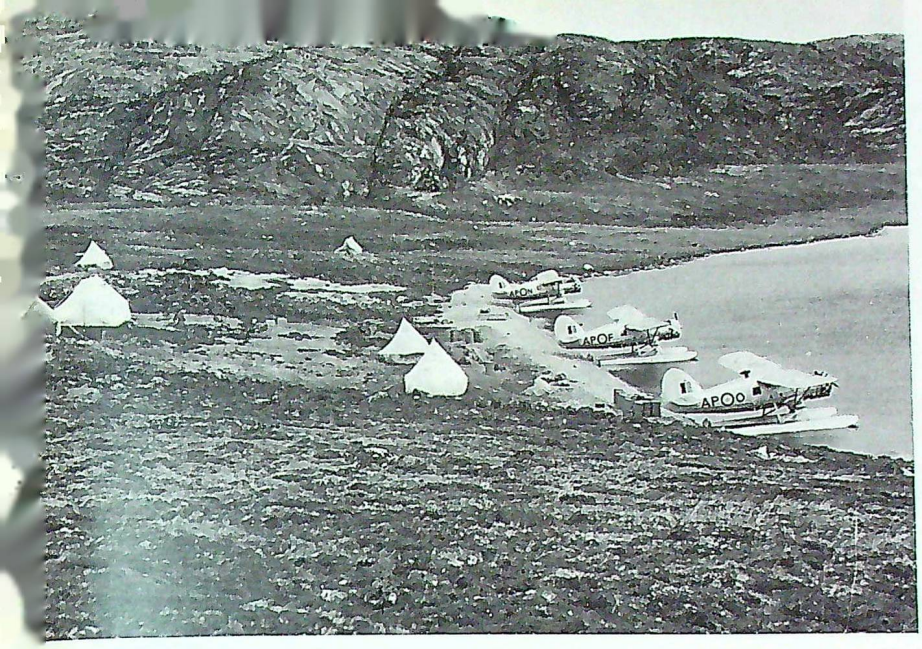
LORAN "domestic site" at Sawmill Bay, NWT, in 1949.

In retrospect, RCAF telecom personnel attained some not very valuable experience on LORAN equipment, some very useful experience in communicating in northern latitudes and some unique experience in living under remote and austere conditions. Our personnel learned a good deal about construction problems in the North and our transport crews augmented their knowledge of air operations in northern latitudes—experience which came in handy during later, more successful, joint projects.

SHORAN

The application in Canada of short range navigation (SHORAN) electronic length measurement to surveying and mapping was initiated in 1947 when experimental work by federal government bureaus was conducted in the vicinity of Ottawa. During the succeeding two winters this work was continued and the results indicated SHORAN as suitable for establishing position in Canada's vast northland, quickly and with greater accuracy than by means of astronomic methods.

The extensive organization required for the 1949-57 SHORAN program involved personnel of the RCAF, National Research Council, Meteorological Service and the Geodetic Survey. No. 408 (Photo) Sqn. provided all aircraft used in reconnaissance, clearing of sites, installation of ground stations and for line-crossing flights. Aircraft involved in this operation were *Norsemen, Otters, Dakotas,* and *Cansos* for preparation and installation of ground stations, with *Lancasters* used for line-crossing measurements. A point-to-point and air-to-ground communi-



The SHORAN program, extending from 1949 to 1957, involved extensive telecommunications installations. In 1950 No. 408 Sqn. Norsmen *operated from such camps as Miles Lake (left) on geodetic survey; in 1957 at Resolute Bay a* Dakota *flies over the SHORAN communications site.*

cations system was a necessity for gathering local meteorological data, for directing flying and ground station activities, and for safety of the ground station personnel who were mainly in isolated locations.

The National Research Council aided in the solution of electronic problems, calibration, design of equipment, and manufactured in their laboratories special recorders and navigational aids for exclusive use in this endeavour. The Meteorological Service contributed the observed data of surrounding weather stations for the areas involved, and seconded a meteorologist to assist with computations. The Geodetic Survey was assigned the responsibility for reduction and assessment of the accuracy of results, together with general supervision during the course of operations to maintain a uniform standard of procedure.

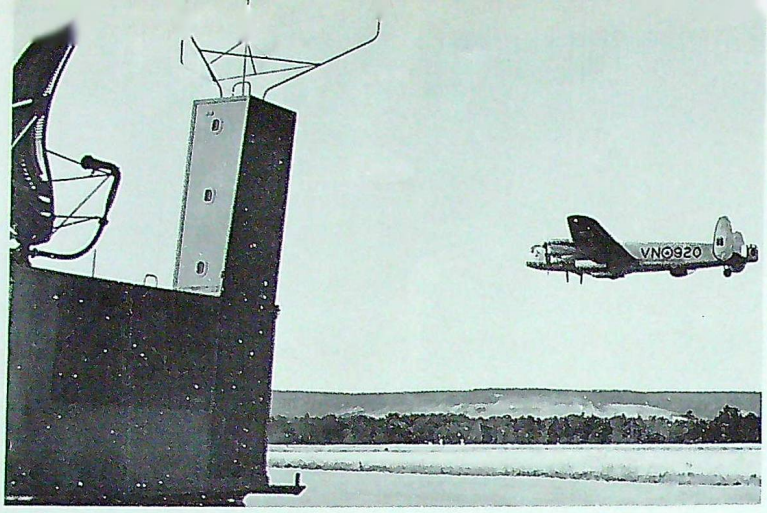
Good communications between the SHORAN aircraft and the two ground responder stations prior to and during line measurements were essential for successful co-ordination of the three sets of equipment; a communications failure could nullify the results of a flight as readily as a SHORAN equipment failure. Any trouble of this kind caused a loss of expensive flying time – especially critical as the average field season was less than three months of the year.

In the northern regions most of the ground sites were extremely isolated, hence the need for good point-to-point contact between these sites and the main operations base. Reliable, portable, lightweight communications gear was mandatory at ground stations. To satisfy this requirement a standard HF airborne 100-watt ART13 transmitter and BC348 receiver were adapted for use on the ground; also adapted for ground station use was an ICA67 VHF/AM transceiver for close in air-to-ground communications, thereby removing much of the operational traffic involving line measuring, from the HF point-to-point net. Power for the communications and radar equipment at these isolated ground stations was supplied by small portable auxiliary power units. The antennas used on the ground stations were simple double-doublets mounted between 20-ft. masts.

The main operating base was equipped with 250-watt AT3 HF transmitters, GR10 and GR17 receivers. Antennas were mainly of the long-wire, off-centre-fed type mounted between 60-ft. trylon masts. The modes of operation were voice and CW, depending on conditions, and a net arrangement was used whereby instructions from the main base could be relayed to ground stations by the advanced base, or by other ground stations.

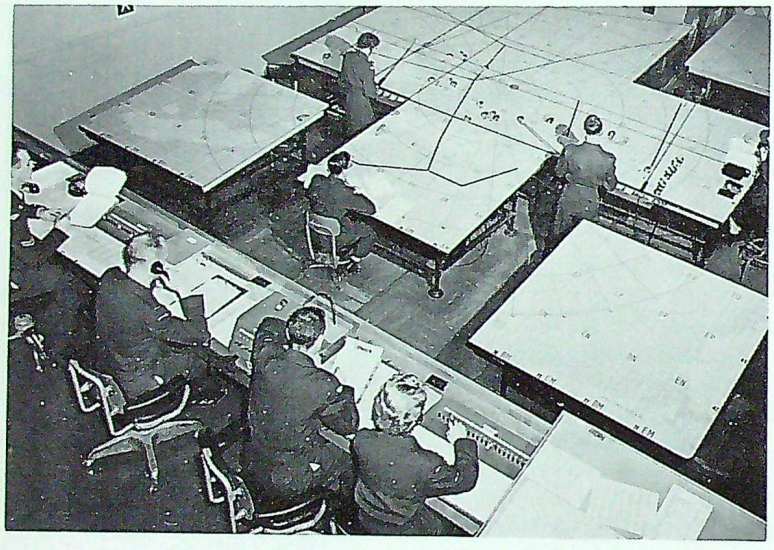
In 1954 7,841 line miles of SHORAN-controlled photography were flown in support of Mid-Canada Line planning.

The last SHORAN operations were in the Arctic Archipelago in 1956 and 1957 and were the most challenging of all operations since working conditions were altogether different from those previously encountered. Weather, navigational problems (North Magnetic Pole was roughly in the centre of the working area), living and operating condi-



Peacetime application of radar aids to navigation, such as GCA, has been extensive.

Pinetree radar stations were located in remote areas, requiring elaborate voice and telegraph installations to make them integral parts of NORAD network.



tions in the extreme cold, installation of ground stations, posed many problems that were overcome through trial and error. After successful completion of the 1957 operation the RCAF SHORAN effort was disbanded, and men and equipment assigned to other duties.

Peacetime application of radar aids to navigation facilities in the RCAF has been extensive. Many airfields in Canada and overseas have Ground Control Approach (GCA) radar equipment to assist aircraft in landing during inclement weather. Radar Approach Control (RAPCON) facilities have been installed at selected airfields to assist in positive control of air traffic in congested areas. Tactical Aircraft Control And Navigation (TACAN) ground beacons are being built across the country as aids to navigation for military aircraft.

GROUND CONTROL ENVIRONMENT

Not long after World War II, the threat of aerial bombardment from aircraft approaching over the North Pole necessitated construction of the Pinetree heavy radar network. This radar line, installed as a joint RCAF-USAF project and financed on a cost-sharing basis, became operational in 1955. The radar stations were sited and integrated to provide essential information required by the defensive forces of both countries.*

Practically without exception the radars had to be located in remote areas, necessary to afford required aerospace coverage and to facilitate satisfactory control of airborne defence forces. The installation of this defence net required construction of elaborate voice and telegraph networks to tie the radar units to control headquarters. The provision of these military communications re-

*ROUNDEL, Apr. '54.

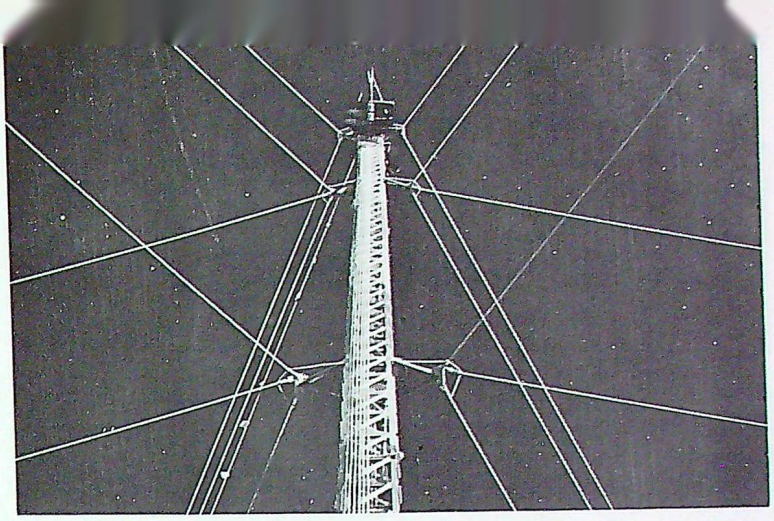
quirements have been of great assistance in aiding establishment of civilian communication circuitry throughout the area where previously the potential civilian market would not have justified this type of service for many years to come.

The Mid-Canada Line (MCL), an RCAF doppler radar defence system across the 55th parallel was conceived in the early 1950s and became fully operational in Jan. '58. This line, extending from Hopedale, Labrador, to Dawson Creek, B.C., was based on researches carried out under the Defence Research Board at McGill University. Designed, fabricated and installed entirely by Canadian endeavour (and paid for by Canada to offset the work being done by the Americans in paying for and installing the DEW Line farther north), the MCL was an interesting example of government co-operation with industry.* The Line had substantial lateral communications capability, built by the Trans-Canada Telephone System, and was linked with the south via RCAF microwave, tropospheric and commercial communications facilities. With the opening of five new Pinetree heavy radars in Western Canada, MCL coverage has been overlapped and accordingly its B.C. to Manitoba sector control stations and unmanned sites were closed down in 1964.

As the speed of aircraft increased, radar warnings in the far north became essential. The RCAF co-operated with the USAF in the construction of the Distant Early Warning (DEW) Line from Cape Dyer in the east to Barter Island in the west.** An extensive multi-channel point-to-point communication system links these stations with the MCL and vital defence installations throughout North America. Although these are

*ROUNDEL, Apr.-May-Jun. '58.

**ROUNDEL, May '60.



Doppler radar antenna tower at Mid-Canada Line site.

Curling was introduced to DEW Line Eskimo employees at Cape Parry by S/L E. C. Tuckey (right). At Cape Dyer DEW Line site (below) these huge communications antennae overlook Davis Strait. Note size compared to figure in centre of photo.

primarily military facilities, they present major advantages to civil flying operations. Aircraft in the north now have access to various communications and navigation aids when required. Moreover, operation of the line has resulted in a considerable increase in the number of Canadian citizens employed in the North. In 1963 some DEW Line intermediate sites were disbanded, with no loss of early warning capability.

The Radar Improvement Program (RIP), the Radar Extension Program (REP) and the Continental Air Defence Integration North (CADIN) program followed the initial installations. The former consisted primarily of improving or replacing the radar equipments and communication facilities at existing sites. The latter includes siting and installing additional radar facilities to provide required aerospace coverage and airborne vehicle control facilities for selected areas in the present semi-automatic ground environment (SAGE) era.

COMMUNICATIONS

Following a joint Canada/U.S. agreement in 1947, the Meteorological Services Branch of the Department of Transport and the United States Weather Bureau established a chain of weather reporting stations at Resolute Bay, Isaachsen, Mould Bay, Eureka Sound, and Alert in the Canadian Arctic. At the same time an airstrip with navigation aids and communications facilities was developed at Resolute Bay, which thus became the base from which annual air-resupply of the remote weather stations are accomplished. The year 1947 saw the implementation of the first Canadian Military Radio Telegraph Teletype (R/T/T) circuit across the Atlantic between Ottawa and London.

Also in 1947, the National Defence Communications System (NDCS) was established. It comprised five major tape-relay centres over which messages of the three Canadian military services were relayed. The primary tape relay was situated at Ottawa and was operated by the army. Major relays were operated by the navy at Halifax, the army at Edmonton, and by the RCAF at Winnipeg and Vancouver. The NDCS was later re-organized into three separate networks of relay stations operated by the individual service with each service responsible for handling its own traffic.

The RCAF Administrative Communication System was activated in the spring of 1955 and the RCAF tape relay network, known initially as the Air Force Communications System (AFCS), moved to permanent headquarters at Rockcliffe. Relay centres were located at Rockcliffe, Winnipeg, Vancouver, Edmonton, St. Hubert and Halifax. In 1957 the term AFCS was changed to Main Communications Relay Network (MCRN), which required the services of over 600 personnel and embraced the original Communications Control Headquarters plus the six Communications Units interconnected and serving the various message centres throughout the RCAF. The system was connected to RCAF major relay centres at Goose Bay, Torbay, and Washington, D.C. It was also connected to Melbourne, Australia; Stanbridge, England; Metz, France; U.S. Military Services, and Canadian Military Services across Canada.

To service the RCAF's expanding air transport operations, communication networks have been augmented with circuits directly connected to the various Transport Operational Centres to expedite message traffic between these centres. Single side-band radio circuits were also provided between the Canadian transport base and overseas terminals such as Marville and Leopoldville – representative of the expanding communications services being provided in the RCAF. The Air Defence Ground Environment has seen the introduction and increased use of microwave, tropospheric, ionospheric and digital data communication techniques.

Besides the relay facilities at the Comm Units, RCAF Military Aeronautical Communication Service (MACS) stations were located at four of the six units. In addition to normal air-ground-air communication services, they provided communications for search and rescue operations as directed by the Area Rescue Co-ordination Centres.

TRAINING

Training in the electronics field expanded continually since the war and basic courses were given to radar technicians, telegraph technicians, radio and teletype operators, communications operators, communications technicians, and crypto operators, as well as special field maintenance courses (FMC) to more senior technicians. As would be expected, the longest courses were provided to trainees entering one of the electronics trades. Also, technical conversion training, in the electronics trades, was an ever-present and increasing commitment due to changing technology.

Recruits selected for basic electronics go from the St. Jean, P.Q. Manning Depot to Radar and Communications School (R & CS) at Clinton. All electronic technician selectees, prior to actual applied trade training, take the Basic Electronics Course (BEC) of 14 weeks. During this course tests are rendered which determine the suitability of the student for either the follow-on Basic Radar Course (BRC) or the Basic Communications Course (BCC). Those selected for either instrument or electrical trades do not take either of the aforementioned follow-on courses, but proceed directly to Camp Borden for applied training.

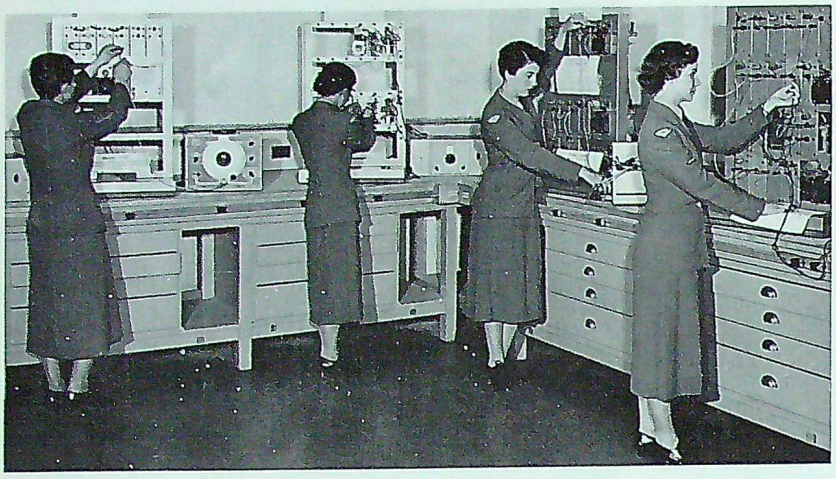
Sgt. G. W. Keenan and FS R. E. L'Abbe repair radar antenna in Canadian Arctic, 1957.

LACs D. Leslie and M. James contact Canada for A/C C. G. W. Chapman, UN Congo contingent commander, 1960.

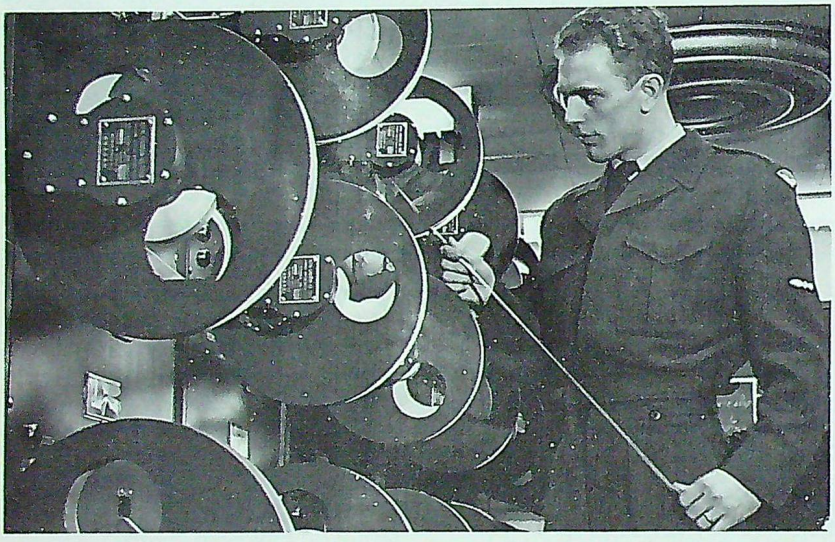
TELECOM TECHNICIANS AT HOME AND ABROAD

Cpl. W. Jackson in telecom section, 30 AMB, Langar, England, 1960.

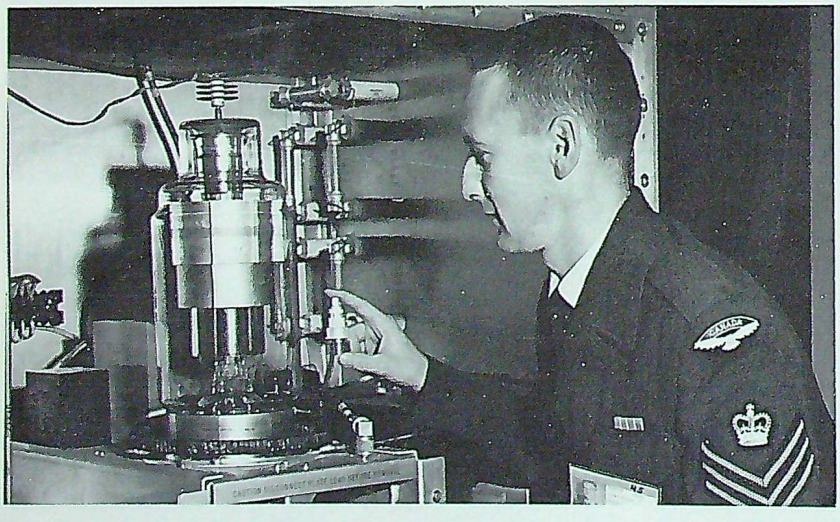
Cpl. P. J. Malcolm installs radio in Sabre *at AWU, Decimomannu, Sardinia, 1958.*



Airwomen trainees in R & CS electronics lab, Clinton (1955). L. to r.: LAWs Audrey Maida, Suk Vyeyama, Rita Ortram, Patsy Lacroix.



LAC R. Pelgrin reels decoded messages into storage bins at former Northern NORAD Combat Operations Centre, St. Hubert (1958).



FS H. W. Thompson, telecom maintenance supervisor at RCAF Stn. Chibougamau (1963), compares two power tubes – larger of which is about 1000 times as powerful as the one he is holding.

The longest course at Clinton, from basic BEC phase to graduation as a group one specialist, is that of telegraph technician which, including BEC of 14 weeks and the applied course of 34 weeks, has a total training "pipeline" of 48 weeks. Thus well over one year elapses before the student can be productive in the field, when you add the Manning Depot 10-week total to the 48-week training pipeline.

Although R & CS Clinton can be considered somewhat of an alma mater for electronics training in the RCAF, developments during the past few years have been aimed toward centralizing training, resulting in increased efficiency at reduced cost. Hence, all officer technical list training, including electronics training, is now completed at Central Officers School (COS), Centralia.

ORGANIZATION

Signals persisted as the official name of this branch until several years after World War II. In Oct. '48 it was decided to amalgamate all functions under one department head to be known as the Chief of Signals. This department, consisting of two directorates (signals and electronics), was directly responsible to the CAS with liaison channels to Air Member for Air Plans (AMAP), Air Member for Operations and Training (AMOT), and Air Member for Technical Services (AMTS).

In 1949 these titles were changed to Chief of Telecommunications (CTel), Director of Telecom Operations (DTelOps), and Director of Telecom Engineering (DTelEng). Two years later the CTel organization was made a sub-division of VCAS division. CTel was also responsible to AMTS for technical matters requiring liaison and coordination with other sub-divisions and directorates in the AMTS division.

In 1962 the CTel sub-division was made responsible to AMTS. With the increasing importance and responsibilities of telecommunications in the RCAF, this sub-division had expanded into four directorates under CTel, responsible for the ground telecom function:

DTMC–Directorate of Telecom Management and Control
DCom –Directorate of Communications
DRDP –Directorate of Radar and Data Processing
DEW –Directorate of Electronic Warfare.

The former Directorate of Airborne Telecom had previously been amalgamated with the former Directorate of Instruments and Electrical Engineering (DIEEng) into the Directorate of Airborne Instruments and Telecom (DAITel), under the Chief of Aeronautical Engineering (CAE).

Then, a few weeks ago, came integration. The RCAF Telecom Branch at CFHQ faded into the past, only to be born anew in an integrated role. Telecommunications in the RCAF, Signals in the Army and Communications in the Navy have been amalgamated as the Director General of Telecommunications Logistics and Engineering under the Chief of Logistics and Engineering, Director General of Communications under the Chief of Operational Readiness, and a separate and autonomous field organization titled the Canadian Forces Communications Services.

As the names imply, the Director General of Telecommunications Logistics and Engineering with four directorates is responsible primarily for telecom (communications and radar), ground (fixed); the Director General of Communications with three directorates is responsible for communications operations; while the Commander of the Canadian Forces Communications Services is responsible for the day-to-day operating of all communications systems, air-ground-air and point-to-point.

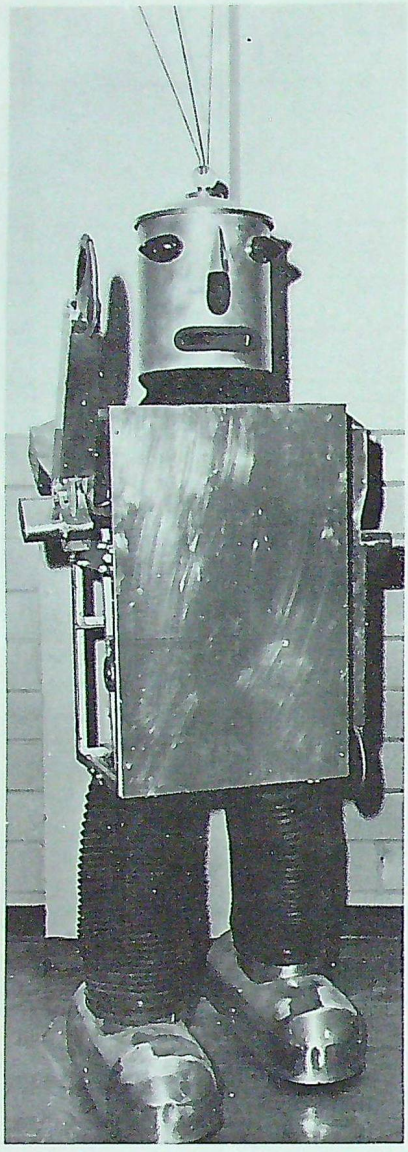
This three-part article has not attempted to cover all past, present or future aspects of telecommunications but is intended to provide some insight into the growth of Telecom (Signals) from its inception in the RCAF in 1934 to the present day. The future portends the continued and increasing importance of telecommunications within the integrated military concept, opening a new and challenging chapter in the evolution of this fascinating field.

WANTED - by the Air Historian

ROUNDEL readers may be able to provide articles and information which will assist those now working on improving the RCAF Museum located at RCAF Stn. Rockcliffe. Specifically, the Air Historian requires:

- Copies of the book, "RCAF Overseas Vol. I – The First Four Years".
- Navigation instruments
- Information regarding the colour and markings of the German V-I (buzz bomb).

Contributions should be sent to: W/C R. V. Manning, Air Historian, CFHQ, Ottawa 4, Ont.



Making his first appearance in print in CANAIRCOMMENTARY last November, Sgt. Electro Robot is hereby introduced to ROUNDEL readers by courtesy of that RCAF communications training and information bulletin.

SGT. ELECTRO ROBOT

By LEADING AIRCRAFTMAN S. WILSON
No. 4 Communications Unit
RCAF Station Rockcliffe

THE SERGEANT creates quite an impression wherever he goes. With a height of 6′ 4″ and weight of approximately 400 pounds, he towers above his ever-increasing host of admirers. However, the sergeant's chief claim to fame is not his massive size but his ability to walk and talk – quite an achievement for a mechanical man.

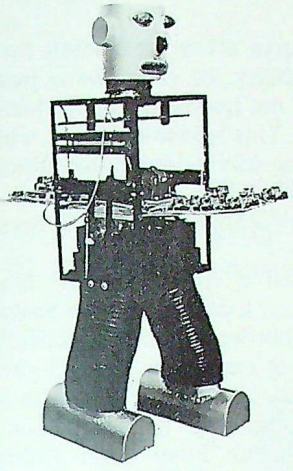
Sergeant Electro Robot was conceived in 1956 at RCAF Stn. Clinton when the training staff decided that a robot would be an ideal way to demonstrate mechano-electro functions by remote control. After some months of preliminary planning, the design and development work was undertaken. In the fall of 1957 Sgt. Robot was completed. He attained the rank of sergeant by "spot promotion" when one of his builders glued a pair of stripes onto his mechanical arms.

The robot exceeded all expectations. Not only did he put on numerous command performances for students at the RCAF's Radar and Communications School, but he became an international celebrity through television and personal appearances. His debut into the entertainment field took place at the Canadian National Exhibition in 1957. Following that performance he appeared on the Dave Garroway TV show.

In the spring of 1958 Sgt. Robot attended the annual Manufacturers' Fair at London, Ont., where he helped to demonstrate various products. A few months later he was one of the star attractions at Air Force Day, RCAF Stn. Centralia. Sgt. Robot's next assignment was in western Canada where he spent two hectic months helping British Columbians celebrate their centennial.

The year 1959 was a repeat performance. Wherever and whenever Sgt. Robot could use his particular talents to help the RCAF, he did so. But, during the Centralia Air Force Day, the inevitable happened. Sgt. Electro Robot suffered a nervous breakdown. He was returned to Clinton for hospitalization. It was discovered that major surgery was required so his internal control system was removed and a newly designed and completely different method of control was grafted into his system. After convalescing for approximately five months, he made a comeback by appearing at the Key Club Fair in Sarnia, then attended spring fairs in Wingham and Dundalk, Ont., in 1960. He also played a two-week engagement at the CNE in Toronto, followed by Air Force Day demonstrations at Centralia.

In February 1961 he showed up at the Sarnia Industrial Fair but owing to technical difficulties he was unable to carry out a two-way conversation. By midsummer his vocal cords were again operating satisfactarily and he completed the summer by visiting fairs in smaller Ontario towns. Following a public appearance at Quebec City in the fall of 1961, he went into retirement until



Sgt. Robot disrobed.

the summer of 1964, when he was transferred to No. 4 Communications Unit in Ottawa. That's where I became involved with Sgt. Robot. Along with Sgt. Don Hanson and LAC Joe Maltais, I was given the responsibility of getting Sgt. Electro Robot into shape for his appearance at the CNE in the fall of 1964.

Our first meeting with Sgt. Robot was disastrous for he and his associated equipment appeared to be nothing more than just a jumble of junk. He had obviously had a rough ride when he was shipped to Ottawa. His control transmitter had shifted in transit and many tubes had been broken. The box labelled "spares" was almost empty and the tubes and hardware in it were scattered about the bottom in broken confusion.

Sgt. Robot looks good but the fact remains that he was manufactured from bits and pieces of scrapped aircraft and leftover parts from unserviceable equipment. This arrangement guarantees that whoever has to overhaul him has a real job on his hands. There is nothing a communications technician hates more than working on "buckshee" equipment and Sgt. Electro was the "bucksheeingest". However, after much frustration and little bucksheeing of our own, all systems were go. We quickly packed the Sgt. before anything could go wrong and shipped him off to Toronto.

The day we arrived at the CNE we assembled and tested the robot. Our findings were that although he responded well to our command, he also responded well to someone else's command. At times, without any prompting from us, he would start walking across the stage and we would have to chase after him and switch off his batteries before he'd crash through the wooden rail. After a bit of checking we found the foreign commands were coming from the transmitter which CNE officials used to contact their policemen on crowd control duties. They were operating on the same frequency that controlled Sgt. Electro. We eventually overcame this interference by increasing our output and decreasing the sensitivity of the Sgt's receiver. However, periodically the CNE transmitter would come booming in and the Sgt. would go flashing across the stage and one of the personnel assigned to "baby sit" with him would dash out to switch him off. Imagine the squeals of excitement that came from the hordes of children watching this and other mishaps, like the smoke which started pouring from his neck.

One day it rained. There was no warning but down came a real downpour. A slight delay in covering him up and Sgt. Robot was completely drenched. It must have looked pretty funny when Joe and one of the fighter control operators, who was giving us a hand, tipped Sgt. Robot forward to let several quarts of water drain from his chassis. However, despite all the troubles he gave us, Sgt. Robot was a real hit with the spectators, especially the children. Wherever he appeared, Sgt. Robot had a host of young admirers.

Whether or not I will be working with Sgt. Robot during 1965, I can't say. In addition to the possibility of a normal air force posting, the process of integration has raised a further question as to my whereabouts this year. Come to think of it, the same situation holds true for Sgt. Electro Robot.

Alouette Club Sponsors European Excursion

A two-week return visit to World War II RCAF training and operational bases in Yorkshire, plus a sightseeing trip to London, Bournemouth and Paris, is being arranged by the Alouette Club.

The trip is being offered not only to ex-members of the Alouette (No. 425) Squadron but also to all ex-members of No. 6 Group. The chartered jet flight overseas will leave Montreal International Airport on Sunday, 2 May '65.

Anyone interested in further details on this excursion is requested to get in touch with:

Mr. Bob Bruyere,
National President, Club des Alouettes,
1000 Henri-Bourasso E,
Ahuntsic,
Montreal, Que.

PINE TREES TO PINETREE LINE

Tree-planting ceremony at RCAF Stn. Alsask: (standing, l. to r.) G/C A. M. Jardine, commanding officer of RCAF Stn. Penhold, and Mr. R. Anderson, U.S. Forestry Service official; (kneeling, l. to r.) W/C H. Spector, commanding officer of the Pinetree Stn. Alsask, and Col. R. Greigg of NORAD HQ., Colorado Springs.

RADAR SITES are chosen for their suitability for radio wave propogation, not for the beauty of local scenery. This selection system, while resulting in efficient radar stations in Canada, has also produced some bleak locations for RCAF personnel to live.

Such a spot is RCAF Stn. Alsask, on a part of Alberta-Saskatchewan border which is practically devoid of trees. The treeless situation was alleviated somewhat with a simple ceremony recently when four Bristlecone Pines from Colorado's Pike National Forest were planted in front of the station's headquarters.

They were presented by Colorado Governor J. Love and NORAD Commander-in-Chief Gen. J. K. Gerhart, in co-operation with the US Department of Agriculture and Pike National Forest officials. The gift came after a routine visit to the station by Gen. Gerhart. Noting the absence of trees, he remarked to W/C H. Spector, station commander, that perhaps some Colorado evergreens might fill the void. W/C Spector agreed they would be welcome, but pointed out the difficulty of growing trees in the Alsask soil.

General Gerhart approached Governor Love who endorsed the project, and US Forest Service officials were contacted to determine the tree most suitable.

A Forest Service study of soil samples and weather charts resulted in the decision that the Bristlecone Pine could grow at Alsask because of its hardy nature and ability to resist severe weather. Then the Forest Service went one step further and offered to donate four trees from the Pike National Forest.

Bristlecone Pines are said to be the oldest living things on earth; some in California are up to 4,000 years old.

The Suggestion Box

The following individuals have received awards from the Department of National Defence, for suggestions which have been officially adopted by the RCAF. Photographs of winners of $100 or over appear below. Proper procedure for submitting suggestions is detailed in AFAO 99.00/01.

Cpl. L. E. Nielsen of No. 43 Radar Sqn. Stn. Penhold, made a suggestion concerning the local manufacture and use of adjustable shims for the FRT 49H pole frames.

Cpl. W. A. Theobald of Stn. Cold Lake made a suggestion concerning the design and fabrication of a jig to facilitate welding of the honeycomb seals on J79 engines in CF-104 aircraft.

Other award winners:

S/L D. J. Langdon
F/L K. C. Mitchell
F/L R. J. Murrell
WO2 D. A. Walrod
WO2 J. Logus
WO2 C. N. Vincent
WO2 A. M. Curran
WO2 H. W. Reynolds
FS R. C. Broderick
FS R. G. Yeoman
FS P. A. Burgess
FS B. McKague
FS J. R. Hammond
FS L. E. Thompson
FS L. G. Wile
FS K. P. S. Lozanski
Sgt. R. E. Morris
Sgt. J. R. Berube
Sgt. W. H. Carnahan
Sgt. N. R. Everatt
Sgt. J. W. McMillan
Sgt. G. Stewart
Sgt. H. Richardson
Sgt. G. C. MacLennan
Cpl. R. E. Lecuyer
Cpl. A. Lesperance.
Cpl. N. W. Mercer
Cpl. E. M. McConnell
Cpl. J. A. Melancon
Cpl. T. A. FitzGerald
Cpl. L. G. Hansen
Cpl. D. W. Muckley
Cpl. F. C. Verbieren
Cpl. R. J. Walker
Cpl. R. J. E. Schaus
Cpl. R. C. Taylor
Cpl. J. M. M. Lapointe
Cpl. P. Zarecki
Cpl. M. Kusnir
Cpl. W. F. King (2 awards)
Cpl. J. A. Senecal
LAC A. Kondor
LAC N. H. Cooper
LAC J. W. Saulnier
LAC J. M. Dupuis
LAC J. S. Sharman
LAC L. E. Nicholson
LAC P. J. A. Richard
LAC G. F. Graham
LAC R. G. Schock
LAC D. C. Stevens
LAC H. J. Ayres
Mr. J. R. Connell
Mr. G. D. Allison

RCAF ASSOCIATION

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

VANCOUVER REMEMBRANCE

No. 802 (Vancouver) Wing arranged an impressive tree-planting ceremony at the Air Forces Garden of Remembrance in Vancouver's Stanley Park recently. On behalf of the RAF Association, A/C/M Sir John Baker planted a small but sturdy oak in the garden.

A plaque placed near the tree reads: "The Royal Air Forces' Association gave this English oak tree in memory of those airmen of the United Kingdom who trained in Canada and lost their lives in World War II, and in gratitude for the kindness they received from the people of Canada."

At the same time, Mrs. H. V. Collins, who lost three sons in the RCAF during the war, placed the "Lamp of Brotherhood" in the garden.

National President's Western Tour

MR. George E. Penfold, national president of the RCAF Association, made a pre-Christmas flying tour of the Association's Western Wings, during which he visited eight Wings in seven days. Although it is reliably reported that he was wilting a bit towards the end, nevertheless he assured us that he is even more convinced now of the importance of these personal contacts than he was before, and that at each Wing he was tremendously pleased by the warmth of the welcome and by the enthusiasm of the members.

Mr. Penfold started his tour in Vancouver, went west to Victoria, and then back to Calgary, Lethbridge, Edmonton, Saskatoon, Regina, Moose Jaw and Brandon.

A special meeting had been arranged at each place, on quite short notice, and he was able to meet the executive and a good number of the members. He reports that all the Wings visited were involved in active programs for 1964/65 and that those Wings that did not, as yet, have quarters of their own were taking measures to acquire accommodation.

In his tour, Mr. Penfold spoke to the Wing members of the Association's plans for the coming year, and of the official viewpoint of the Association regarding certain matters of national defence.

Mr. Penfold hopes to follow this successful trip with a visit to other parts of the country early this year.

A/C/M Sir John Baker plants oak in Vancouver's Stanley Park Garden of Remembrance on behalf of RAF Association. WO1 B. Goff of RCAF Stn. Comox looks on. Right: RAF ensign is lowered following ceremonies arranged by No. 802 (Vancouver) Wing, RCAFA.

At No. 433 (Renfrew) Wing's Polish Night: (l. to r.) J. J. Greene, MP; Z. Wolniak, Polish ambassador to Canada; H. Winters; Mrs. B. Melnyk; P. Yakabuski, MLA; A. Kedrosky, wing president.

RENFREW ETHNIC NIGHTS

No. 433 Wing in Renfrew sponsored a "Polish Night" dinner and dance a short while ago. The food, music and atmosphere were as authentic as they could possibly be and a good time was had by all. The Wing is planning to follow up with other "ethnic nights" in the coming months.

MONTREAL LOOKS AHEAD

With a forward look to the 1967 National Convention in Montreal, No. 306 (Maple Leaf) Wing already has set aside $2500 to help defray convention costs. This impressive sum was raised during "Operation Trail", the wing's fund raising drive which culminated at No. 306's annual dinner-dance in the Queen Elizabeth Hotel.

National President Penfold and other honoured guests were on hand to see the draw for winners at this very successful social function.

N. E. C. MEETING

A meeting of the National Executive Council and members of the RCAFA Advisory Committee was held in Ottawa 22 and 23 January. Agenda items, which will be reported in more detail in next month's issue of ROUNDEL, included:

- Awards Committee – 1963-64 report by Mr. G. Ault, 1964-65 report by Mr. L. Schedlin.
- Membership – increase in life membership dues and complimentary memberships.
- B.C. Group formation plans.
- National Conventions – 1965 arrangements and 1966 application; frequency – annual or bi-annual.

MEMBERSHIP DRIVE

Remember that the National Membership Campaign started in January. Please refer to the bulletin that was sent out from Association Headquarters in December and help to make 1965 a memorable year for the Association.

Letters to the Editor

CREDIT WHERE DUE

Dear Sir:

In your interesting article on "The UN and the RCAF" (Dec. '64), you say: "In that year UNOGIL (United Nations Observer Group in Lebanon) included representatives from the Canadian external affairs department but no military personnel."

Most of the brown jobs who were there thought of themselves as military personnel. And just to complain a little more – either your picture caption on the Saigon-bound flight needs editing or we have several hundred officers who should apply for a UN medal!

Major W. L. Campbell,
Camp Petawawa, Ont.

(Major Campbell is quite correct on both points. There were approximately 50 Canadian army personnel in Lebanon. And, the caption on page 3 should have read "Canadian Truce Commission" not "Canadian UN Truce Commission".–Editor.)

RCAFA EXPLAINED

Dear Sir:

I suspect that the main reason why serving members of the RCAF "take a dim view of space being provided in their magazine for RCAF Association and Air Cadet activities," as reported in the results of your readership survey (Nov. '64), is that many of them are not fully aware of the purpose of either organization or of the close links they both have with the Air Force.

As far as the RCAFA is concerned, it exists primarily to support the RCAF and to provide means whereby ex-air force personnel may continue to enjoy the fellowship they found in the service. During its 15-year history, it has consistently furthered both aims, a fact the RCAF officially recognizes as the contents of AFAO 56.00/06 indicate. The couple of pages in ROUNDEL are simply part of the manifestation of the regard the service has for its own ex-service organization and do not seem to detract from the excellence of the magazine in any way.

In fostering an Air Force Association, Canada is in tune with all Commonwealth countries that supported independent Air Forces in World War II, and with the United States. I think we should be pleased, first of all, that we in the regular force continue to enjoy the goodwill

of so many former airmen, and, secondly, that we will have an opportunity in the future to keep up our interest in the service. After all, retirement or release (like death) eventually comes to us all.

F/L M. V. Robey,
CFHQ, Ottawa, Ont.

GROSTENQUIN MEMORIES

Dear Sir:

Thanks to Norm Avery for his interesting and amusing article on Grostenquin (Dec. '64). It seems unbelievable that a dozen years have passed since those muddy, frigid days in the "big swamp" in 1952, but for those of us who were there they will never be forgotten.

Norm mentioned some of the "characters" but did not elaborate on their exploits, such as the time Howie Portman rode a horse into Ma Hemmering's cafe or the desperate efforts of Yakowich to save the life of 430 Sqn.'s goat. The goat, who lived in Yak's room, eventually succumbed to an overindulgence in Canadian cigarettes.

If Norm ever decides to put the whole story into book form, I can assure him of the sale of at least one copy.

Sgt. Jack Lewis,
CEPE, Uplands, Ont.

NAME THE BADGE

Dear Sir:

In the hope of jogging the memory of some of your readers, I am sending you the photograph of a First World War style metal cap badge, 1¾" high by 1¾" wide, which has been sent to us by Mr. Colin Howard of Hamilton, Ont. for identification.

Research in Ottawa has failed to reveal a clue, although it does bear a certain resemblance to an officer's cap badge proposed for the Royal Canadian Naval Air Service in 1918. As far as is known, however, no insignia was specifically manufactured for that force.

Any information would be much appreciated.

E. C. Russell,
Naval Historian,
CFHQ, Ottawa, Ont.

LOST UNIT BADGES

Dear Sir:

As a result of the ROUNDEL appeal for lost unit badges (Dec. '63), we have recovered the No. 2 Air Command and No. 405 Sqn. badges, for which we are grateful.

Please bring to your readers' attention the fact that we are still seeking a number of originals, including the badges of No. 6 Group HQ; No. 2(M) OTU; Nos. 8, 403, 404, 406, 410, 416, 417, 419 and 426 Sqns.; Air Armament School; No. 1 FIS and No. 5 ED.

Anyone knowing their whereabouts is asked to write to the undersigned.

WO1 H. A. Diceman,
Directorate of Ceremonial,
CFHQ, Ottawa, Ont.

BUDGET BREAKER

Dear Sir:

When my Dad joined the RCAFA he signed up for ROUNDEL but we've missed a few issues. I am 11 and in Grade 6. I like your magazine and the interesting stories in it. I am not sure which ones we've missed but I will be willing to pay if it fits my budget. If you can send these I would be greatly thankful.

Terry Morin,
11224 - 127 St.,
Edmonton, Alta.

P.S. Please send the issues from January to May. My budget is 10¢ a week but I can always earn more.

(Terry's budget has not been affected. The requested issues have been forwarded with our compliments. – Editor.)

REFLECTIONS ON FORT CHURCHILL

Dear Sir:

There is one discrepancy in this otherwise excellent article (Oct. '64). The writer states that the RCAF took over from DOT the responsibility for the airfield, hangar, and other facilities exclusive of the radio range and meteorology. This is not correct. The meteorological section was under RCAF control from 1947 until July '64 when it was returned to DOT. RCAF meteorological officers (seconded from DOT) and RCAF meteorological observers served at Fort Churchill throughout this period.

Sgt. W. T. Evans,
4 Wing RCAF, CAPO 5056,
Canadian Armed Forces Overseas.

NAVAL AVIATION HISTORY

Dear Sir:

I would like to take this opportunity to thank you for the recent article entitled "Canada's Flying Sailors" (Oct. '64). You have indeed honoured those of us who wear the naval aviation wings. I was a fighter pilot in the original 803 Sqn. in "Warrior" and therefore your article has a special meaning for me and a few others who still remain in the service.

In Shearwater we have been compiling some of the old photos and literature pertaining to the history of this base. Assistance from your readers in providing information would be appreciated.

Cdr. W. P. Rikely,
Training Commander,
RCN Air Station,
Shearwater, N.S.

CALLING EX-RAF ATTACHEES

Dear Sir:

F/L Berry's query re Canadians attached to the RAF in World War II (Oct. '64) prompts this appeal for aid in completing my notes on the subject. I retired from the RCAF in December.

I ask the following to please contact me at the address below: my three skippers of the Polish Air Force in 1942, Sgts. Pieniazek, Cichosewski and Szmaciarz; these ex-No. 405 Sqn. pilots, W/C G. Gosman, F/L Hunt and Sgt. Smale; W/C J. Charles and N. Bretz, formerly of Biggin Hill.

I would also like to hear from these or any member of their crews: F/Ls H. Smith, H. R. Whittall, E. O'Connor, L. B. Burnand, W. J. L. Weicker, and F/Os H. A. Hannah, J. W. McDonald, Kettlewell, V. T. Woods, J. Tite, L. A. Friedman, J. R. Coffey and J. R. Hartley.

J. E. Dove, DFM, CD,
532 Bedford St.,
Cornwall, Ont.

LAST BIPLANE?

Dear Sir:

In the "Aircraft Album" (Dec. '64) you mention that the last operational biplane used by the RCAF was the Fairey *Albacore*. I would be interested in knowing where and to what date the RCAF used this type.

On the west coast, we were flying Blackburn *Sharks* on operations until late in the spring of 1943.

I hope the west coast hasn't been forgotten again. Thank you.

W/C F. D. Avent,
Commanding Officer,
RCAF Stn. Puntzi Mountain, B.C.

(For the answer to your question, see this month's Aircraft Album. . . . Ed.)

AIRCRAFT ALBUM:

Fairey Albacore

To the Albacore must be credited two distinctions; it was the last operational biplane to be used by the RCAF and the only one ever to see action.

The Albacore was designed to replace the Swordfish on Royal Navy carriers, but in fact the "Stringbag" outlived its proposed successor. Albacores did, however, serve with distinction in several actions in the Mediterranean, notably at the battle of Cape Matapan.

In November 1943 "A" flight of No. 415 Sqn. was equipped with Albacores for use in coastal operations. The aircraft usually operated singly at night. Highlights in the career of these aircraft included the sinking of the German torpedo boat Grief, on 24 May '44, and the suppression of enemy "E" boats which attempted to interfere with Allied shipping following the invasion of Normandy. When No. 415 Sqn. was transferred from Coastal to Bomber Command, its Albacores and most of the aircrews who were nearing the end of their tours were sent to No. 119 (RAF) Sqn.

The Albacore was powered by a 1,065 h.p. Taurus II radial and cruised around 175 mph. On anti-shipping patrols No. 415 Sqn. aircraft carried a crew of two and armament of six 250 lb. bombs in lieu of a torpedo. Wing span of the aircraft was 50 feet and length 42 feet 5 inches.

Roger Duhamel

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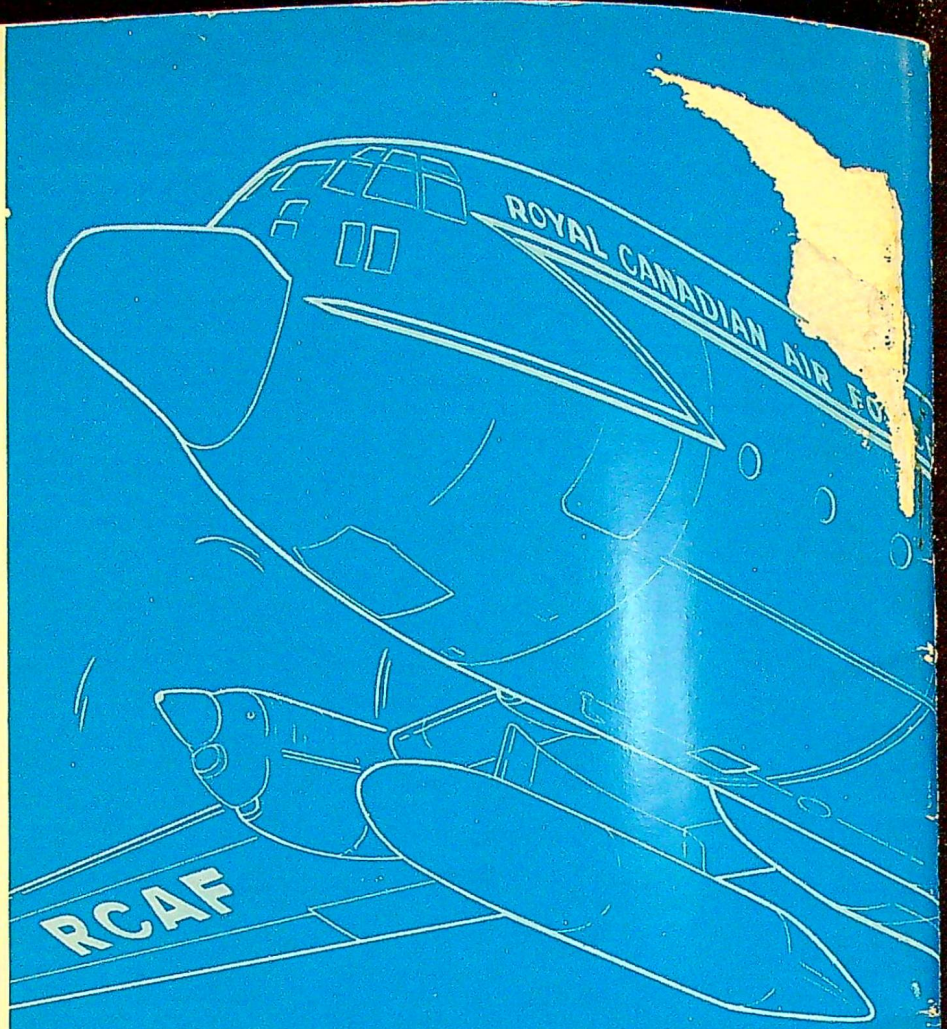

Royal Canadian Air Force