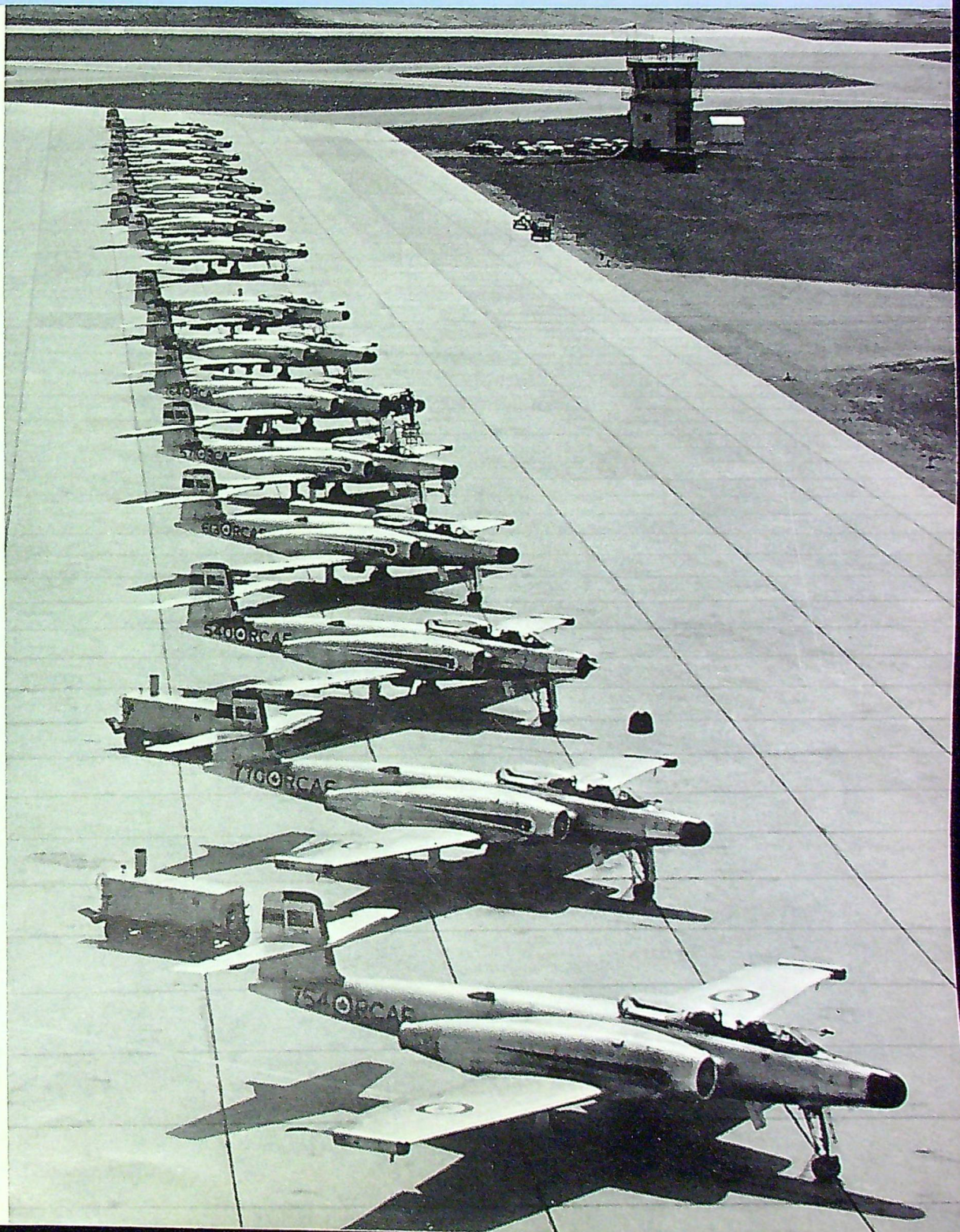




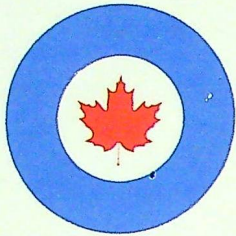
THE

Roundel

VOL. 12, No. 6



JULY-AUGUST 1960



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THIS MONTH'S COVER

On the line at RCAF Stn. Cold Lake, CF-100s from all Canadian-based squadrons congregate for the fourth annual rocket meet (see page 2).

Views expressed in THE ROUNDLE are those of the writers expressing them. They do not necessarily reflect the official opinions of the Royal Canadian Air Force.

On the Break

John Griffin Ltd.



SOME months we pick a theme for THE ROUNDel and build around it. Other times, like this month, the theme just sneaks up on us. Here, then, is an issue dedicated to our colleagues in the air defence business.

On page 2 we record the fourth annual Air Defence Command rocket meet held at Cold Lake a few weeks ago. This has become an air force classic, bringing together the top aircrews, groundcrews and radar controllers from across Canada in the keenest of competition.

Inevitably, the fly-boys seem to get the most publicity in the air defence story. We thought it only fair that for our featured station of the RCAF this month we should visit a Pinetree radar site (page 4) and show how "the other half" lives. For contrast to the article on RCAF Station Foymount, take a peek at the photostory on The Fightin' 61st (page 14).

The wartime history of No. 409 Squadron (page 8) also ties in with the general theme. Formed as a night fighter unit in England in 1941, the Nighthawks today fly CF100s from their Comox base on the west coast. Although technological progress has led to changes in air

interception techniques and tactics, the basic role of the pilot-observer crew remains the same, and the squadron's motto "Midnight is our Noon" is still appropriate.

WHETHER we like it or not, fellow veterans of the Second World War, we're no longer the gay young blades we used to think we were. This fact was brought forcibly to our attention the other day when the air historian dropped by to discuss a new ROUNDel series: "It Happened 20 Years Ago" (page 16). Replacing a former feature known as Pinpoints in the Past, this series will record highlights of the RCAF in 1940.

Incidentally, for next issue we are compiling a special section to mark the 20th anniversary of the Battle of Britain.

THOSE readers who've been with us for more than two years may remember Sgt. Shatterproof, the self-appointed guardian of the boys in the field, who used to chastize the editor on this page practically every issue. Shatterproof now lives in secluded retirement and, as we happened to be in his vicinity last month, we looked him up for the inevitable pre-prandial.

The old war dog hasn't mellowed much. Indeed, we discovered he could still work up quite a sweat over the bungling of the brass and the appalling way THE ROUNDel is being edited these days. At our invitation, he joined us in doing the rounds of the RCAF Association "at homes" during the Toronto convention. How many of you delegates spotted him there?

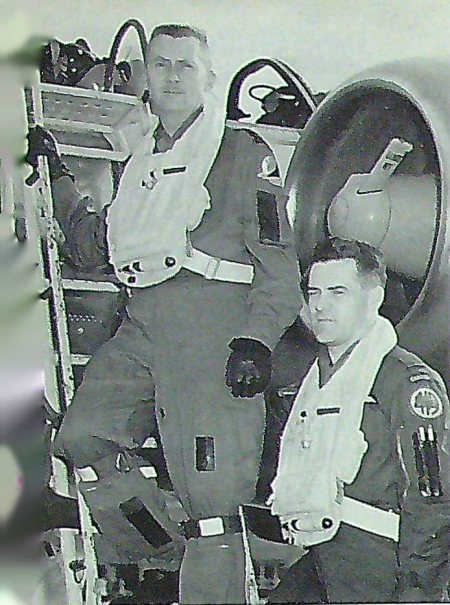
Informality pervaded this 10th annual RCAF convention. It was apparent at the president's reception on the evening preceding the opening ceremonies — when host A/M W. A. Curtis and guest of honour Sir Dermot A. Boyle mingled freely with the assembled delegates, dancing to the music of the Training Command orchestra at the RCAF Auxiliary mess. It characterized the business sessions on the following three days in the Royal York Hotel, and reached its height at the social functions liberally inserted throughout the program.

We've tried to summarize the convention's highlights, beginning on page 28.



The Editor

ADC Flexes its Muscles



G/C C. G. Ruttan, DSO, RCAF Stn. Cold Lake C.O., officially opened the meet by completing a rocket-firing pass over the Primrose Lake range with his observer, F/O J. A. G. LePine, a WPU instructor.

Munitions and weapons technicians load tube launcher with rockets. Pods were armed with six rockets each, giving CF-100 two-pass capability firing three from each pod per pass.

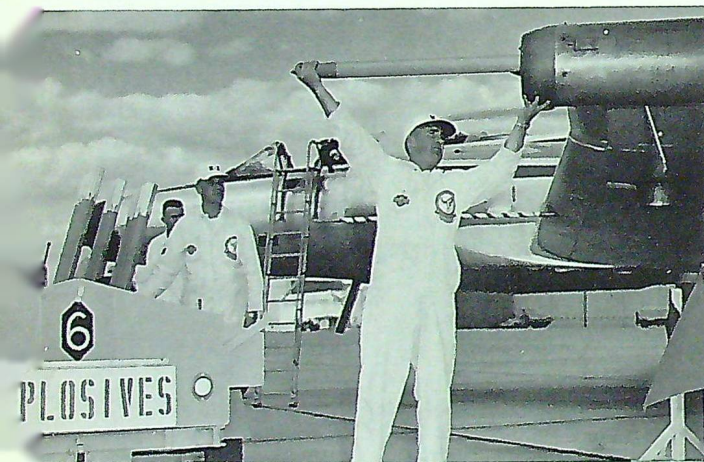
HIGH over the 4,400 square miles of the Primrose Lake weapons range a CF-100 crew closed for "the kill", guided to their target by a radar controller 40,000 feet below. Back at RCAF Station Cold Lake the aircraft's technical support crew waited eagerly for the results.

This was the RCAF's air defence team in action: at the fourth annual ADC rocket meet, designed to increase efficiency by fostering inter-squadron competition. Friendly rivalry among the nine Canadian-based CF-100 squadrons mounted as the five-day contest drew to a conclusion. Meanwhile, the host Weapons Practice Unit instructors were kept busy trailing 16-lb., 6 ft. x 1½ft. radops 8,000 ft. behind their target CF-100s for the intercepting "tigers".

As usual, the final scores were mighty close. No. 428 (Ghost) Sqn.

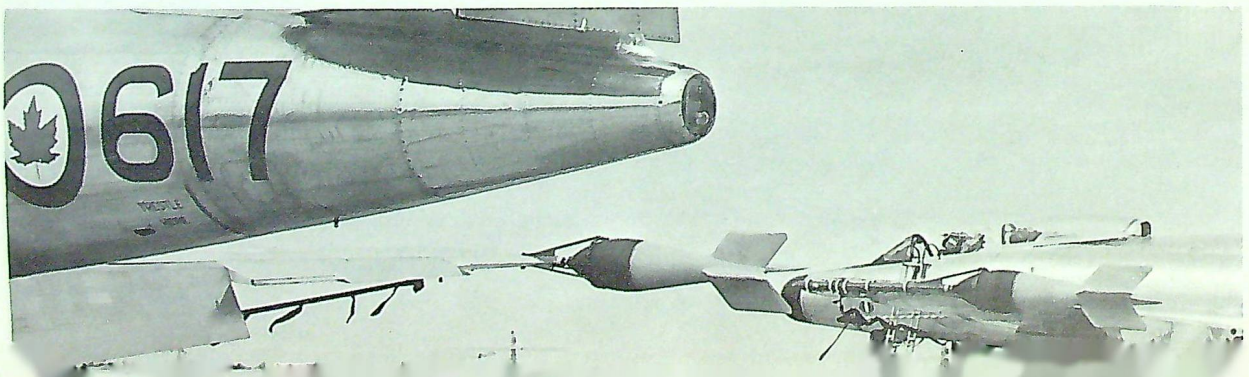
from Uplands received the top team award from its donor, A/V/M W. R. MacBrien, AOC ADC. The technical support team of 18 airmen from No. 409 (Nighthawk) Sqn. at Comox won the Groundcrew Efficiency Award. Two 22-year old F/Os from No. 416 (Lynx) Sqn. of St. Hubert, pilot R. Murrell and observer A. Wardstrom, took the Vincent Trophy for the highest scoring aircrew. Winner of the Tyndall Trophy for best radar controller was F/O D. English of RCAF Stn. Parent, edging out F/L D. Munro of Falconbridge by .2 percent.

Chief judge was G/C R. C. Stovel, AFC, former C.O. of RCAF Stn. Cold Lake, and now at NORAD Hdqts., Colorado Springs. All the competing squadrons come under NORAD operational control as part of the overall North American air defence team.



LAC R. Duguay was one of the photo techs responsible for cine cameras, carried under each CF-100 wing, from which assessments of rocket hits were made.

Weapons Practice Unit supplied and flew all target-tow aircraft, trailing radops 8,000 feet from the wing tips of their CF-100s.





A/V/M W. R. MacBrien, OBE, presents his trophy to No. 428 Sqn. representatives F/Ls R. L. Patenaude and G. B. Baker.



LAW E. Cramer and AWI L. Hopkins helped keep observers informed of meet's progress on this plexiglass chart, plotting interceptions as they happened. Both are stationed at No. 42 AC & W Unit, Cold Lake.



Tyndall Trophy winner for top radar controller: F/O D. English of RCAF Stn Parent.

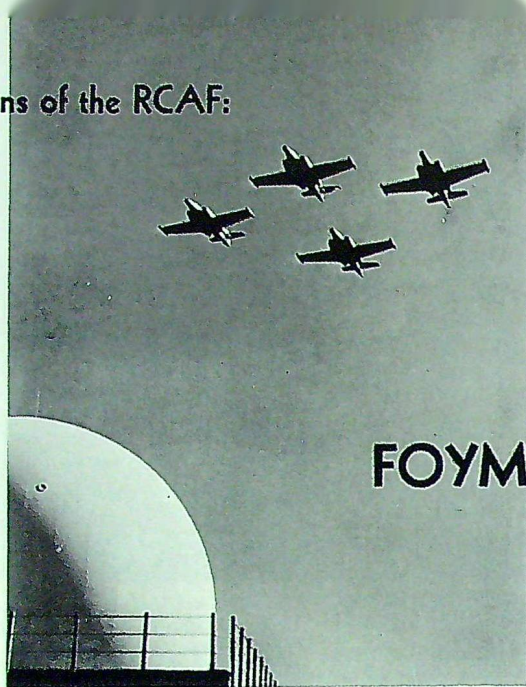
Groundcrew Efficiency Award was won by this 18-man technical support team of No. 409 (Nighthawk) Sqn., Comox.



Vincent Trophy winners for top aircrew: F/Os A. Wardstrom and R. Murrell of No. 416 (Lynx) Sqn., St. Hubert.



Stations of the RCAF:



by FLIGHT LIEUTENANT S. R. MACDONALD

FOYMOUNT on the Pinetree Line

THE Opeongo Road, running through the site of RCAF Station Foymount, has undergone an amazing change in a decade. A century ago pioneers travelled in covered wagons along this old colonization trail to settle in the quiet, beautiful northern Ontario wilderness. Today, with the eyes of radar, airmen and women observe jet aircraft crisscrossing the skies for miles around this same road.

Foymount is one of many "new stations" in the RCAF — small, self-contained communities which in toto make up the Pinetree radar system stretching from coast to coast. Ten years ago none of these stations were operational although their embryonic frameworks were being constructed all across Canada. But for most of the past decade their radars and the people who man them have been on duty 24 hours a day, seven days a week, alert for the aerial invasion which they hope will never come.

Work started in the fall of 1949 in siting Station Foymount. By July 1952 construction had progressed to the stage which allowed contractors to begin installation of electronic equipment. WO1 L. G. Smith began accepting completed buildings for the RCAF and remained at Foymount

as foreman of works until his retirement in 1957. He is now the station's civilian personnel officer.

The station's first commanding officer, W/C D. L. Ramsay, arrived with the advance party in August 1952. The unit's official opening parade was held on 1 September. The multitude of tasks performed during the next winter was repeated at many similar stations in other isolated locations. Radio and telephone communications — trials followed flight trials, to evaluate and calibrate the radar. By May 1953 Foymount was ready to go on a continuous operational basis. The results of the first operational exercise in July showed that the endless hours of work had not been in vain.

TRIALS AND TRIBUTES

On 5 December 1954 W/C Ramsay relinquished command to W/C J. Woolfenden and in the following year Foymount continued to carve out a name for itself. The original R Theta computer trials carried out in 1957 by this unit, in conjunction with 428 (AWF) Squadron, were the basis for standard tactics used by CF-100 aircrews across Canada. Many other operational trials and

exercises conducted by Foymount have provided valuable information for the air defence system as a whole.

By 1957 the unit was controlling thousands of interceptions each year. Working efficiently by day or night, and in all types of weather, Foymount had become an integral member of the air defence team. Just how skilled Foymount's controllers had become was demonstrated during the summer of 1957 at the annual ADC weapons meet at Cold Lake, Alberta.

Flying Officer Lee Roche, of Foymount, walked away with the honours as a controller; the fighters under his control had won the meet! The highlight of 1957 for Foymount was a visit by A/M Hugh Campbell, CBE, who, upon becoming chief of the air staff, honoured the unit with his first official visit to an RCAF station.

Shortly after Foymount became operational, a program was introduced to train members of 2416 and 2451 (Auxiliary) Squadrons as qualified operators. These part-time airmen and airwomen give up their time preparing themselves to serve their country in the event of an emergency. In 1958, A/V/M L. E. Wray, OBE, AFC, at that time AOC ADC, brought the matter of auxiliary training to a

head when he threw out a challenge — “for the personnel of 2416 Sqn. to completely man the operational part of RCAF Station Foymount for a 48-hour period”. The operation was to be known as “Wray Day”. The challenge was accepted and the great success enjoyed by 2416 Sqn. has led to the adoption of this type of exercise at many other sites in the Pinetree system; its annual repetition has now become a climax to each auxiliary squadron’s two week summer training program.

Wing Commander Woolfenden passed command of RCAF Station Foymount to its present C.O., W/C H. E. Smith, AFC, on 27 August 1958.

SHIFTS IN A SUB

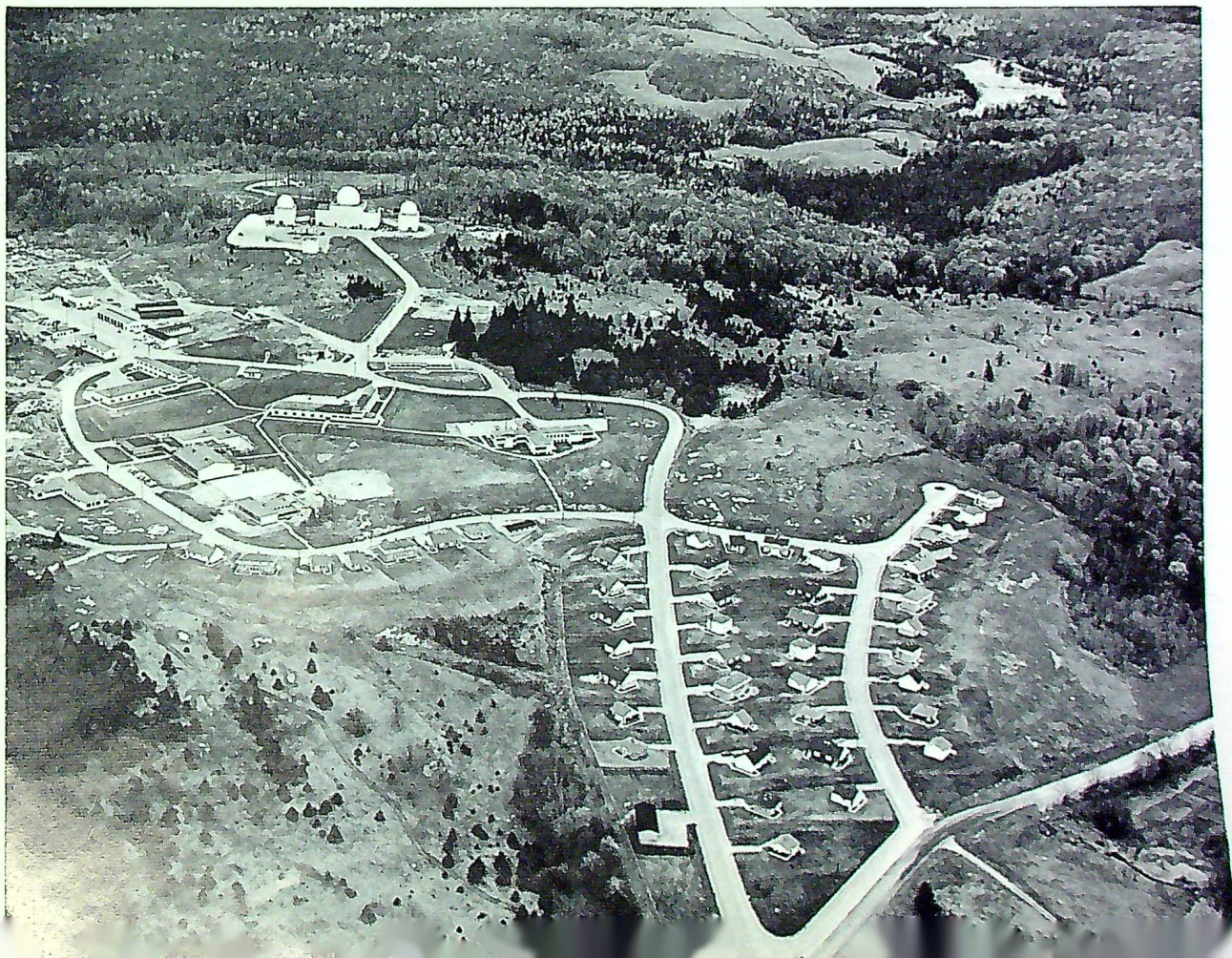
The operations building, perched on a hill overlooking the station, is

completely self-sufficient. To those inside, its windowless construction gives the feeling of being aboard a ship or large submarine, an impression that is added to by the continuous vibration of the 300 kilowatt engines and the ever-present hiss of the air conditioning system. Since there is no way of forecasting the time of any possible emergency, life in this building knows no time of day, holidays or weekends. Shifts come and go at regular times, with the incoming shift in the morning replacing a similar shift that is just going to breakfast after a long night’s work. Others, not at work, must make themselves available at any time of the day or night in the event that extra staff is required to fully man battle positions. The 8-to-5 day and the five-day week common to most of the RCAF is very rare on a radar station.

During 1958 Foymount, like other Pinetree sites, first began the annual overhaul of its radar and telephone system without civilian assistance. A brief look at the technical side of a Pinetree radar site reveals the extent of such an undertaking.

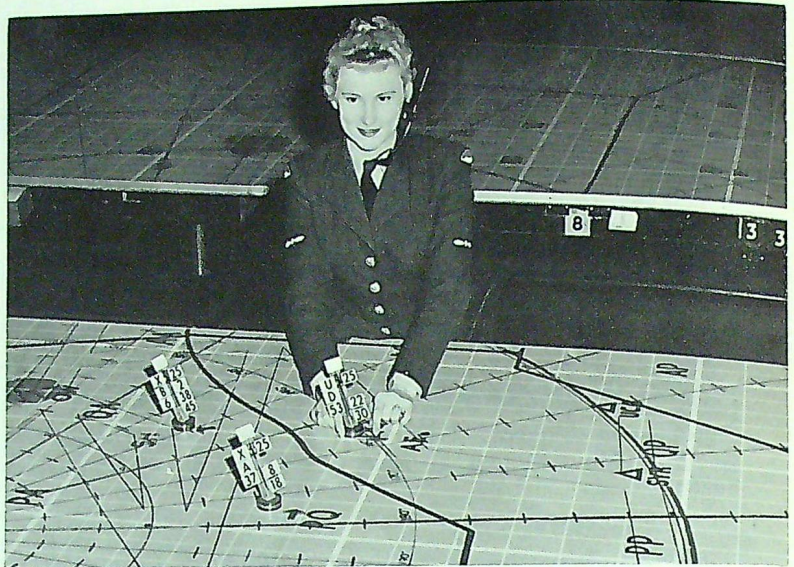
The first and second floors are a maze of cubicles and balconies surrounding the main operations room, and throughout it seems impossible to find an area that is completely free of the electronic black box. In addition to the main search radar and height finder, the technical staffs are required to operate and maintain the trainer equipment that keeps the operations staff at top proficiency. These trainers produce synthetic signals which simulate air attacks; other electronic trainers are controlled by unit personnel to simulate our defending fighters.

Aerial view of RCAF Station Foymount.





F/O D. D. Law, 1959 Tyndall Trophy winner.



LAW T. "Boots" Shortreed at the operations room plotting table.

This maze of technical equipment, costing in excess of a million dollars, is maintained to the original design characteristics by a staff of highly trained specialists on a 24 hours per day basis. That these same specialists were able to perform the annual overhaul as well is much to their credit.

The past year has been another successful one for Foymount. The unit's high level of operational skill was again proven during the 1959 ADC weapons meet when F/O D. D. Law won the Tyndall Trophy, signifying the best controller in the entire competition.

Foymount and its sister Pinetree stations play a vital role in the constant vigil of the North American Air Defence Command. Information gathered at Foymount is fed into the vast web of NORAD, under the control of the Commander, Northern NORAD. Exercises are held regularly in which the entire NORAD system flexes its muscles and during these exercises, which may last several days and nights, the entire station remains on full manning. In the event of a national emergency, Foymount, like other units in the Pinetree system, stands continuously ready to play its

part in the detection, interception, identification, and if necessary, the destruction of hostile aircraft over our country.

While the prime function of a radar site is control and warning, the life of the station depends upon the personnel who provide station services. To ensure that operations proceed without interruption, hundreds of delicious meals are prepared daily in a busy composite mess kitchen and expert medical care is given to the sick, day or night. Supply, air force police, construction engineering, accounts — in short, all the elements

W/C H. E. Smith, AFC,
C.O. RCAF Stn. Foymount.



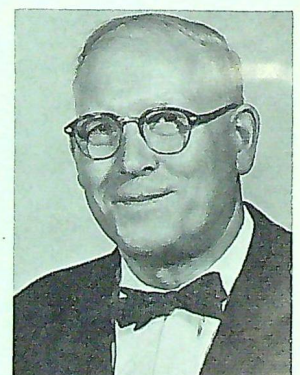
S/L S. R. Miller,
C Op O

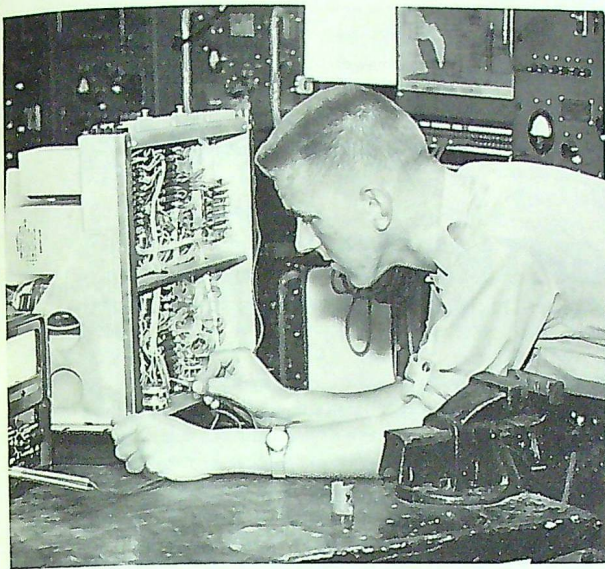


S/L M. F. Lemke,
CTSO



Mr. L. G. Smith,
Civilian Personnel Officer.





Radar tech LAC H. Rode, one of the back room boys.



FS J. Curtis and FS L. Parry (in water) teach Foymount children water safety and swimming in recreation centre pool.

which go to make up a modern, self-contained station — are located here. During the long cold winters, wind and snow combine to keep snow removal crews on the go night and day. It is during these cold and windy spells that the station fire department goes on double manning to offset the increased hazard. Foymount is a small station but its men and women have done much to make it a good place to live and a fine spot to raise a family.

MORALE BUILDERS

Each year the station enjoys over four months of Ontario winter. Throughout these winter months recreation slants toward the ski hill, the curling rink and the skating rink — reaching a monumental peak in the form of an annual winter carnival. An elected airwoman is crowned queen of the carnival, and for one week she presides over activities which range from children's skating races to snow sculpturing and moustache growing contests.

Many of the station personnel have qualified themselves as swimming instructors and life guards and assist FS Jack Curtis with his personal project of teaching each school-age child on the station to swim. There

are very few who have not mastered the art.

The recreation centre is equipped with a large gymnasium which is in use the year round. Baseball, hockey, curling and basketball teams represent

Winter carnival queen Cpl. Beverly Duchrow holds lucky Martin O'Brien, flanked by Danny Desroaches and Jimmy Orman.



the station in Ottawa Valley leagues. Foymount also participates in the Northern Ontario Recreational Association which embraces five stations. The Commander's Trophy was initially presented to Foymount for the 1959 summer activities, which consisted of competitions in archery, softball, tennis, golf and flag football.

In common with other Pinetree sites, Foymount boasts a wood-working shop and a boat shop. Both of these are put to considerable use during the winter months so that free time during the summer can be spent on the surrounding lakes — boating, fishing, water skiing and camping. From May until late fall the out of doors offer much to those at Foymount who enjoy nature. Hunting and fishing are good and devotees of hiking and camping find both as close as the gate of the station.

Scope-watching is an exacting, tedious and sometimes boring business. The necessary shift schedule to maintain round-the-clock vigilance means irregular working hours. It, therefore, seems providential that this and most other Pinetree stations are so located that their off-duty personnel can so easily take advantage of Canada's natural resources. Foymount is a happy station with a purpose.



MIDNIGHT IS STILL NOON FOR NIGHTHAWKS

by FLIGHT LIEUTENANT F. J. HATCH
RCAF Air Historical Section

The first of a two-part history of No. 409 Squadron

No. 409 SQUADRON, formed at Digby, Lincs., on 17 June 1941, was the second of three Canadian night fighter units organized overseas that year (No. 406 came into existence on 10 May and No. 410 on the last day of June). No. 409 adopted the nickname "Nighthawk" and took as its motto the Latin expression *MEDIA NOX MERIDIES NOSTER* (Midnight is our Noon). The squadron's badge depicts a crossbow against the background of a black cloak symbolizing its operations of fighting at night.

When the squadron came into existence, night fighting was still a new aspect of air warfare. Research on airborne radar (AI) that would enable a fighter to track and locate an aircraft at night had begun several years before the war, but progress had been slow for emphasis had necessarily been given to the development of day fighters that were to play such a valiant and successful role in the Battle of Britain. Moreover, the *Hurricanes* and *Spitfires* were not designed for fighting at night and when the Luftwaffe switched from day to night bombing in the last phase of the Battle of Britain their bombers were getting away almost scot free. Out of 12,000 night sorties that the Germans flew over the

United Kingdom between 7 September and 13 November 1940 only eight were intercepted by allied fighters; 54 were shot down by anti-aircraft artillery.

The best brains in the Air Ministry were put to work on the problem of improving night defences with the result that priority was given to the production of AI. Equipped with this new weapon the airmen of the Commonwealth air forces proved themselves as formidable by night as they were by day and eventually drove the German Air Force from Britain's skies entirely.

UNSEEN BATTLES

Unlike the aerial dog fights that took place over England in the summer of 1940, the battle against the night blitz went on unseen and the public learned of the night fighters' successes only in the newspaper headlines. Many people were unaware that their night's rest depended on the constant vigilance of the night fighter crews. The only witnesses of the combats in the night skies were the ground controllers in the darkened cubicles at the powerful ground interception (GCI) stations where they observed the course of every aircraft that was airborne and directed the

night fighters on patrol. As soon as an unidentified plane* appeared the ground controller guided one of the patrolling aircraft onto it. While the pilot steered according to directions coming over the R/T the navigator busied himself with his radar set; when the AI registered a blip he took over from the ground controller and guided the pilot to within visual range. From there on it was the pilot's show.

No. 409 Sqn. was formed as part of No. 12 Group of Fighter Command. The first commanding officer was S/L (later W/C) N. B. Petersen, a former flying instructor at RCAF Station Camp Borden and one of the first Canadian pilots to ferry a Lockheed *Hudson* aircraft from Canada to the United Kingdom. On reporting to Digby to take up his new appointment he found an advance party at work but as yet the embryo squadron had neither aircraft nor crews so he left immediately for nearby RAF Station Wittering to get checked out on the Boulton Paul *Defiant*, the aircraft with which the squadron was to

*IFF apparatus (Identification, Friend or Foe) carried by allied planes made it possible to distinguish between friendly and enemy aircraft.

be equipped. The two Canadian officers who were to be his flight commanders, F/Os B. A. Handbury and F. S. Watson, were already taking instruction at a night fighter OTU.

FIRST OPS

The first aircraft arrived on 6 July and the next day 409 took to the air. Under Petersen's guidance the squadron quickly took shape as a happy efficient unit. The CO himself had an active part in the initial training program, teaching his pilots how to handle the *Defiant* and lecturing them in flying discipline, tactics and R/T procedure. On 25 July the squadron moved to the satellite aerodrome at Coleby Grange to complete their training. The first operational flight was made on 3 August by F/O Handbury; on 20 August Group Headquarters declared the new unit to be fully operational.

At almost the same time the crews learned that they were going to turn in their *Defiants* for twin-engined Bristol *Beaufighters*. Although this meant a further period of intensive training it was indeed good news because at that time the *Beau* was the only aircraft with sufficiently high performance to take full advantage of AI radar and those squadrons already using them as night fighters were having great success.

The period of conversion training was marred by 409's first fatal accident which took the life of W/C Petersen. The death of its CO was a hard blow to the fledgling squadron and it was a sad day for all when they laid him to rest in the little country church yard at Scopwick. Fortunately an experienced, capable, and well liked officer was found to succeed W/C Petersen. This was S/L (later W/C) P. Y. Davoud, formerly CO of 410 Sqn., who in time was to become dean of RCAF night fighters. He had been a close friend of Petersen's and was known personally to many 409 crews. His appointment brought a feeling of uplift to an otherwise depressed squadron.

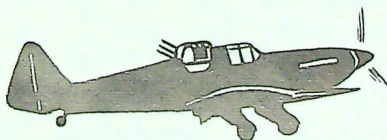
The honour of making the Night-hawks' first kill fell to the new CO. On 1 November, Davoud and his navigator Sgt T. Carpenter (RAF) were flying on night patrol when the ground controller put them into the trail of an unidentified aircraft. Soon a blip appeared on the screen in Carpenter's "little black box", showing the bogey to be well to port and 500 feet below the *Beaufighter*. Davoud's combat report describes how they closed in and shot down the German raider:

... I increased speed and turned to port and obtained a visual at 6000 feet, (silhouetted against the clouds in bright moonlight). I throttled back and lost height until slightly above and 400 yards to rear

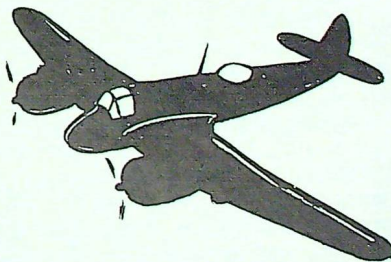
of enemy aircraft, who dived for cloud cover. I closed to approximately 200 yds., identified bandit as a Dornier 217 and fired a short burst observing hits on starboard main plane. The Dornier returned fire and having closed to about 100 yds, I fired two long bursts, seeing the second burst hit his starboard engine. Just before Dornier entered cloud, a big explosion blew his right engine and wing off. I pulled up to avoid a collision, and the Dornier fell burning, straight into the sea. I then returned to base, landing at 22.55 hours.

At the end of November the squadron was declared fully operational on *Beaufighters* but two conditions most annoying to night fighters, foul weather and lack of enemy activity, kept them from fighting any more engagements until the following spring. "No flying owing to weather," were the comments that headed many an entry in the squadron diary during that fall and winter. Nevertheless, training was a continual commitment with interception practices being flown whenever the weather warranted; when it did not, the Link Trainer came in for a lot of use. One consolation that made up in small measure for the lack of aerial activity was the news that the hard working 409 crews were well ahead of the other squadrons of 12 Group in the number of link hours flown. In November a visit from His Majesty, King George VI, was the most memorable event in an otherwise dull fall and winter season.

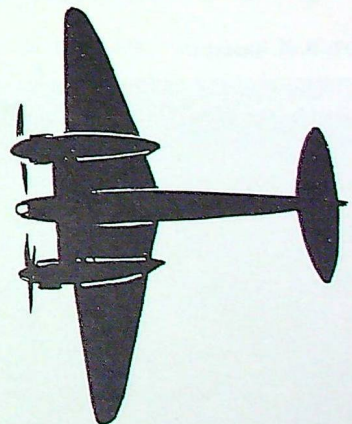
Defiant . . .



Beaufighter



. . .Mosquito





S/L J. A. Hatch and his navigator F/O J. Eames.



F/O J. Simpson.

S/L R. S. Jephson.



On 8 March 1942 S/L R. M. Trousdale, DFC, a hard flying, sharp shooting New Zealander, knocked down an *He. 111* near Grimsby. Hopes ran high, for there were definite signs of increased German activity in the air, but a few fleeting blips and exciting chases were the only operational events recorded in the squadron diary until 7 April when Trousdale again destroyed an enemy bomber and thereby won a bar to his DFC.

BUSY SUMMER

Early in June the *Beaufighter IIs* were turned in for faster and more manoeuvrable *Beau VIs*. The crews were spoiling for a chance to try out their new kites in action and they had not long to wait for the fine summer weather and Hitler's rage brought the Luftwaffe into Britain's skies to seek reprisal for the tremendous damage that Bomber Command was now inflicting on the Fatherland. F/L E. L. McMillan (RAF) was the first to score with the new aircraft when he destroyed a *Do. 217* and damaged another on the night of 23/24 July. These victories were followed by four more in July, including a pair by Davoud and Carpenter, and seven in August. Nine Nighthawk crews took part in these encounters which resulted in one enemy aircraft destroyed, four probably destroyed and eight damaged. Most of these engagements were against twin-engined *Do. 217s* which were almost as fast as the *Beaufighters*, thus making it necessary for the night fighter pilots to push their aircraft to the limit for the ardently sought tally-ho. The wily Hun pilots had learned a lot about our night fighting tactics and led the Nighthawk crews on many an exciting moonlight chase as they weaved, dived and made violent and skillfully executed peel offs and hard stall turns in an effort to throw their pursuers off their tail. These manoeuvres meant the use of deflection shooting 95% of the time and the idea that the night fighters had simply to position themselves dead astern and open fire had to be disregarded.

These summer victories got the squadron off to what the diarist cal-

led "a good start". The crews were eagerly looking forward to more "joy" at Jerry's expense but the German High Command, finding that our night fighters were taking too heavy a toll of their aircraft to make a sustained attack worthwhile, called off their bombers for the time being. Nevertheless, Britain's air defences had to be maintained lest Germany launch an offensive to halt the preparations for the invasion of Western Europe which were now going ahead in earnest.

QUIET WINTER

In a subsequent reshuffle of fighter squadrons No. 409 was moved from Coleby to Acklington, Northumberland, in February 1943. Their new role was to defend the approaches to the industrial area of Newcastle which the Germans had already favoured with two heavy air raids and many minor ones. But henceforth the Luftwaffe kept well to the south of this sector and 409 put in a rather quiet year with few operational events to record. Not until after D-Day did they have as much excitement as they had in the summer of 1942.

Before the Nighthawks moved from Coleby, W/C Davoud received the DFC for his fine work with the squadron. On 4 February he flew his last patrol with 409 and departed to head No. 418 (Intruder) Squadron. His successor was W/C J. W. ("Wendy") Reid of Sydney, N.S. who was only 24 years old when he took up his new command. He already had a lot of flying behind him, having soloed at the tender age of 17 years and had logged over 1000 hours with the RAF flying *Liberators* across the Atlantic.

Since Jerry declined to appear in 409's sector, W/C Reid kept his crews in fighting trim with a rigorous training programme. In addition to the various flying practices the pilots put in long hours studying aircraft recognition while the navigators delved deeper into the mysteries of airborne radar. Occasionally night fighters were called from their regular patrol duties to search for lost aircraft.

To offset the inactivity at Acklington, detachments of two or three

aircraft were sent to bolster other sectors but it seemed that as soon as the Nighthawks moved in, enemy activity ceased. The detachments at Coltishall and Middle Wallop flew a few Rangers (low flying sorties over enemy-held territory) on which they damaged a number of locomotives, trains and trucks. Two crews failed to return from these hazardous missions. Another aircraft was badly shot up by enemy anti-aircraft fire and the navigator, P/O E. V. Domone (RAF) was severely wounded in the right thigh. Suffering from intense pain and loss of blood, the plucky navigator carried on with his duties and worked out the return course for his pilot. After landing in England, Domone was rushed to hospital where it was found necessary to amputate his leg. He was later awarded the DFC for having displayed "courage and fortitude of the highest order".

MOSSIES FOR BEAUS

In March 1944 the squadron realized the fulfilment of a long-awaited desire when they began turning in their valiant old *Beaus* for sleek new de-Havilland *Mosquitoes*, at that time the fastest aircraft in the world. The switch-over to Mossies was a sign that better things were in store for the Nighthawks. Other significant changes that heralded the end of their long period of inactivity was their transfer to No. 85 (Base) Group of 2nd Tactical Air Command, and their move south, first to West Malling in Kent and then to Hunsdon, Herts, where No. 410 Squadron was stationed. In May the ban on night fighters chasing bandits across the Channel was lifted and the crews were issued with French money and maps. Action was obviously approaching.

"June the first came in with thunder showers and a feeling of things to come". This prophetic sentence headed the entry in the squadron diary for 1 June. But if the Nighthawk crews were aware that they were about to begin the most active period in their history they took it in stride. Training continued as usual and defensive patrols were set up whenever the weather was good. On 5 June the

squadron learned of the D-Day invasion plans and the diarist recorded the breaking of the news in a most matter of fact way:

On this date the whole squadron was CBd when the entire personnel was briefed by W/C O'Neill, station CO, and informed that to-morrow would be D-Day.

That night F/O H. F. ("Red") Pearce with F/O G. W. Moores (RAF) as his navigator scored the squadron's first victory in over a year when they probably destroyed a German bomber over the English coast.

The next night, working with mobile GCI units that had gone ashore with the assault forces, 409 Sqn. flew its first sorties over the beachhead. Patrols on the 6th, 7th, and 8th were uneventful, largely because the Luftwaffe, apart from a few scattered raids, were late getting into the fray. On the 9th S/L R. S. Jephson, "B" flight commander, got the squadron's first kill over France. Jephson and his navigator, F/O C. D. Sibbett, were flying on a beachhead patrol when the controller vectored them after a bandit. Sibbett's AI soon registered a "blip" and the navigator brought his pilot onto the tail of a Ju. 188. Following standard night fighting procedure Jephson closed in, identified his target, and opened fire. His first burst set the enemy's star-board engine on fire, a second started a blaze on the port engine, and as the Nighthawk pilot pressed the firing button once more the fuselage disintegrated and the plane fell from the sky exploding as it hit the ground about 30 or 40 miles south-east of Le Havre.

THREE IN ONE NIGHT

The next night "A" flight of 409 Sqn. experienced the satisfaction of shooting down three enemy planes in one night's operations. F/Os C. J. Preece and W. H. Beaumont distinguished themselves on this occasion by destroying two Ju. 188s. Preece knocked down his first victim with a fine bit of deflecting shooting, scoring three times with three bursts. Continuing their patrol the Nighthawk crew were vectored after another bogey about three quarters of an hour later. Beaumont got a con-

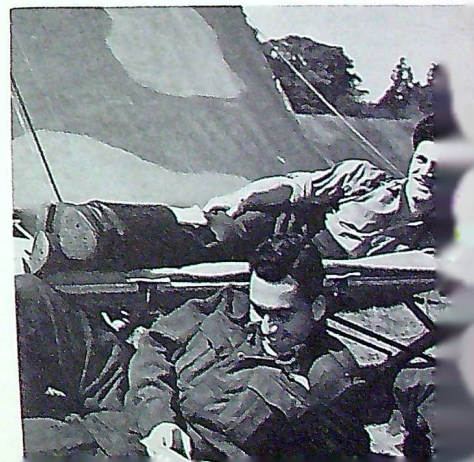


W/C J. W. Reid (left) and his navigator F/L J. W. Peacock.



P/Os F. E. Haley (right) and his navigator S. J. Fairweather.

F/Os H. S. Ellis (pilot) and his navigator W. A. Ward.



tact on his AI showing the target aircraft to be 8000 feet ahead and he brought Preece gradually onto it. At 3000 feet they got a visual, at 2500 feet they recognized it as another *Ju. 188*, and at 800 feet Preece fired a one-second burst that caused the enemy aircraft to explode in the air so violently that the *Mosquito* pilot had to pull up sharply to avoid a wing which had broken off.

The other kill went to F/Os R. L. Fullerton and P. Castellan. Fullerton had a little difficulty getting onto the tail of his target. Finally, after following four vectors "where I suspect I overshot each time," the crew got an AI contact at a range of two miles. From thereon the interception was straight forward. Two bursts from the *Mosquito's* guns sent the German aircraft spiralling earthwards with the starboard engine on fire. To add to the night's achievements S/L J. A. (Johnny) Hatch, "A" flight commander, returned from the beachhead with one engine u/s and made a perfect landing. "All in all it was a good night and "A" flight of 409 went to bed with that satisfied feeling."

In the 25-day period from D-Day to 30 June No. 409 Sqn. saw more action than in the previous three years of their night fighting operations. They flew a total of 227 night sorties, destroyed 11 enemy aircraft, probably destroyed two, and damaged five. They operated over the Normandy



LAC J. Peachell and Cpl. O. Shaw clean the 20mm. cannon from a Nighthawk *Mosquito*.

beachhead every night except one, the 26th, when patrols that had taken off had to be recalled due to duff weather. Casualties for this period included one crew taken prisoner of war and one crew killed when their aircraft hit high tension wires on returning from a patrol. Two other aircraft were written off from the results of crashes, but the crews were uninjured.

About the middle of June the squadron began to fly one or two

patrols daily against flying bombs. F/Os Preece and Beaumont bagged the first one on the night of 18 June; a second one fell to S/L Jephson's guns on 20 June. During the first part of July the Nighthawks were employed almost exclusively against V-1s and when they returned to regular night fighting duties over Normandy in mid-July they had ended the flight of eight of Hitler's secret weapons.

(to be concluded)

CANADIAN AID FOR CHILE

Disaster in Chile, produced by earthquakes and tidal waves with a finale of belching volcanos, a few weeks ago left that hapless country in a state of distress with thousands of casualties and widespread destruction. Within 12 hours of receiving an operational order, five RCAF *North Stars* were on their way bringing Canadian aid to the devastated area.

From their home base at Trenton the aircraft, loaded with approximately 55,000 pounds of medical supplies and food, took off for Puerto Montt, Chile. In 25½ hours flying time

the aircraft on their errand of mercy flew from Trenton to Charleston, Panama City, Lima, Santiago and finally their destination, Puerto Montt. One of the *North Stars* went to the Chilean town of Victoria where a complete 30-bed hospital, including a fully-equipped operating room and a generating plant, was off-loaded.

The aircrews under the command of W/C J. O. Maitland, C.O. of No. 426 Squadron, also flew a shuttle service for the Chilean government carrying relief supplies from Santiago to the disaster area.

COSMOPOLITAN VICE CC109

"Cosmopolitan" is now the official name of the new medium transport soon to come into RCAF service. It was formerly known as the CC-109.

BACK TO THE CABBAGE PATCH

Told that the stork had brought him a baby sister, a technically minded youngster of about seven replied scornfully: "By an elementary law of aerodynamics the wingspan of a stork is too short to carry a six-and-a-half pound payload."

RAF Flying Review.

It's never too hot or too cold for

THE COPPER MAN

IN their never-ending research program aimed at developing better protective clothing for members of the armed forces, personnel at the

Institute of Aviation Medicine have found a valuable ally — a copper man.

The copper man was developed in response to the need for a simple

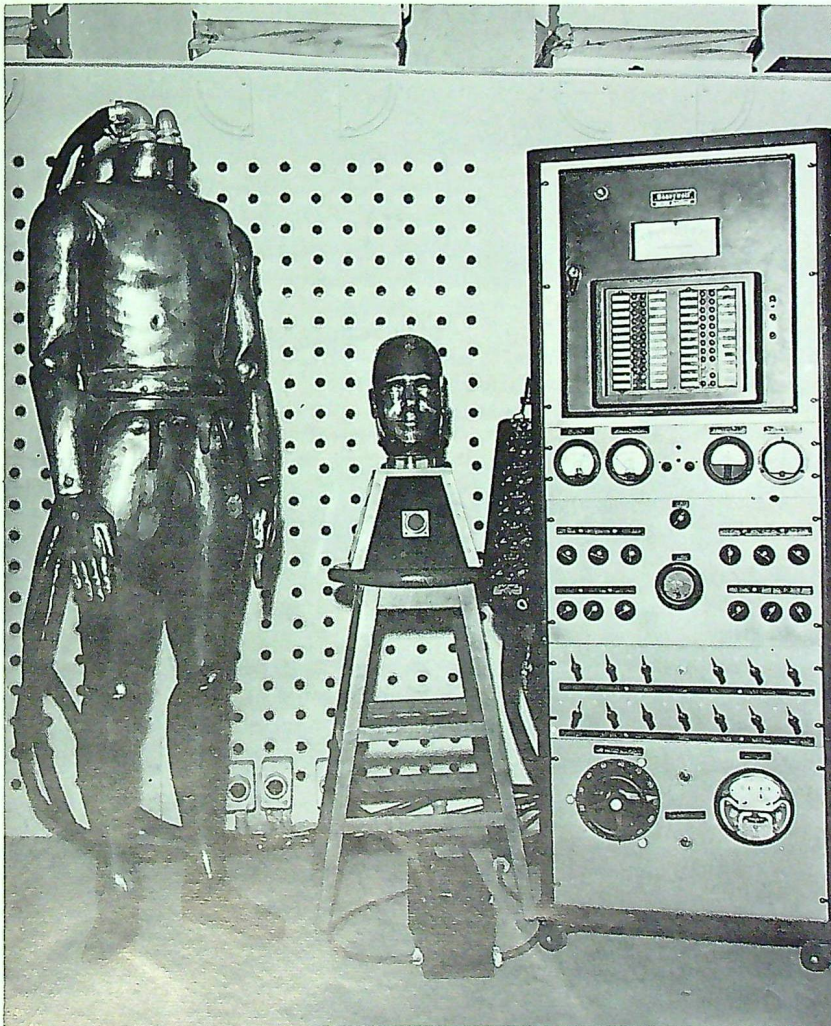
reliable device to replace human test subjects in cold environment experiments. Previously, the insulation qualities of a fabric were determined by dressing human subjects in the new clothing and exposing them to cold. This was not always conducive to the health of the subjects so it was apparent that a substitute for humans was required.

Helping I.A.M. personnel in their protective clothing research is the copper man, seen here beheaded beside his control console.

The copper man is essentially a copper shell fashioned in the shape of a human body with dimensions and surface area corresponding to the average male physique. He may be heated through a range of temperatures, dressed in the test clothing, and the insulation of the clothing determined by measuring the energy required to maintain the man at a given temperature.

In a typical experiment the copper man will be dressed in a flying suit, sleeping bag or some other item of protective clothing and set up in any room where the temperature can be controlled within reasonable limits. Using the copper man, cold weather clothing may be tested in relatively warm environments, since the energy required to maintain his temperature is a function of the temperature difference between him and his environment. This is not true of a human subject whose heat production would result in active perspiring in the same environment.

The copper man is not, of course, a perfect replacement for the human test subject. His chief deficiencies are that he does not perspire, does not move and is completely unemotional. Each of these factors has a bearing on the heat balance of the human and cannot be easily duplicated. On the other hand, the copper man is more convenient than human subjects and has proven to be a very useful instrument in many ways in the development of protective clothing.



The Fightin' Sixty-First

Photostory by No. 1 AIR DIV. SOPR STAFF



LAW Jo Vaughan writes in reverse on plexiglass plotting board.

This operations room is manned 24 hours a day by RCAF personnel of No. 61 AC & W Sqn. near Metz, France. Plots are written backwards in grease pencil behind the transparent board which covers all of western Europe.

OFFICIALLY it's No. 61 Aircraft Control and Warning Squadron, but within Canada's Air Division on NATO duty in Europe it's unofficially known as the "Fightin' Sixty-First". It's No. 1 Air Div.'s own radar squadron at Metz, the only RCAF radar squadron outside Canada.

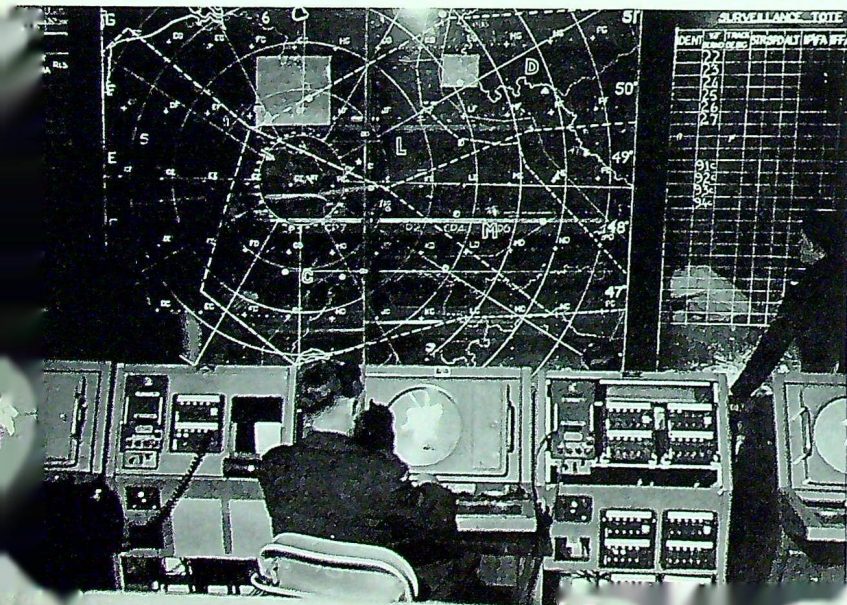
The squadron lacks the usual glamour of the division's more highly publicized operational fighter wings. There are no jets screaming overhead, no aircrew sprinting to their planes on a second-shaving scramble. Most of the important operations at 61 AC & W Sqn. go on in an undertone in a crowded, darkened room filled with tote boards, radar scopes, a big transparent plotting board, desk and telephones. About the only things a visitor sees in motion are the big radar antenna — rotating ponderously, looking almost indecent in its uncovered state — and the height finders busily jiggling up and down.

However, what the squadron lacks in glamour it makes up for in other ways. Dominating the daily operations of 61 AC & W Sqn. is one all-important aim: to be the best radar squadron in NATO. Unlike many of

the RCAF's radar squadron in Canada, 61 AC & W is hardly a showplace. Born of a crash program, the squadron came into operation in July 1955, just six months after the first holes were dug in the ground. At one time the squadron was mobile, in theory at any rate. Like a family that buys a large trailer to live in and then builds rooms and other additions, 61 AC & W has pretty well bedded down over the years. Although the one-time mobility concept has been officially discarded, the physical appearance of the unit still reflects the original plans — many of its buildings being of a temporary type, with no room to spare.

The squadron is fitted with British Type 80 radar, and the big radar antenna, constantly turning, is a familiar sight to No. 1 Air Div. headquarters personnel located nearby. Because of the Metz climate, milder through the winter than that in most parts of Canada, with comparatively little snow, the antenna is not covered with the familiar half spherical radome that has become a trademark of Canadian radar stations. Strength of 61 AC & W Sqn. is around 250, and about 35 of these are airwomen. Like radar stations in Canada, of course, the division's unit operates on a 24-hour-day basis, necessitating shifts.

Quite apart from its military value, 61 AC & W has proved a good investment from the taxpayers' viewpoint, in dollars and cents saved, to say nothing of lives. During a one-year period, the unit, through provision of navigational assistance to aircraft in distress, brought in two NATO aircraft that would otherwise definitely have been lost. The squadron was credited during the same period with "probably" having saved five more aircraft in similar circumstances. It added up to more than \$5½ million saved for the taxpayers, on the cost of the aircraft alone.



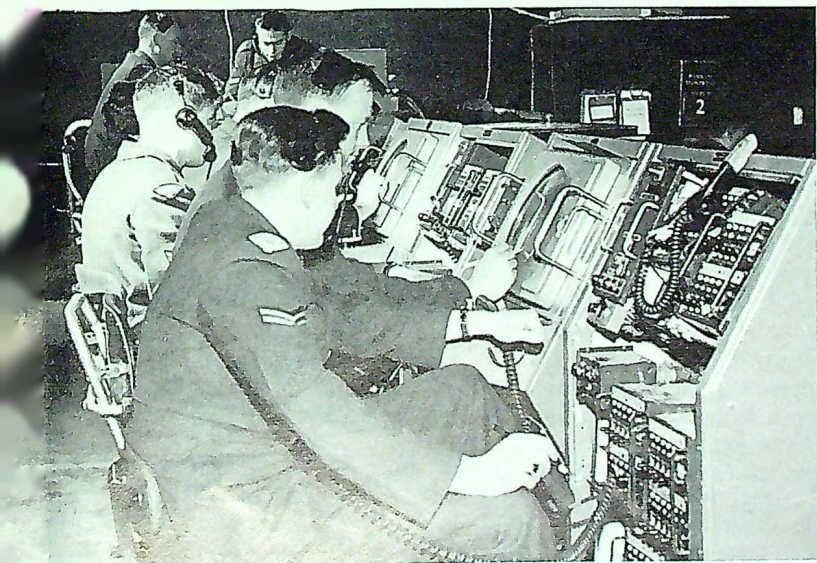


W/C C. S. Yarnell (right), No. 61 AC & W's commanding officer, and his chief operations officer, S/L R. T. Paul.



Accompanied by Ginny, No. 61's mascot, air force policeman Cpl. A. Nichols makes a security round of the radar station.

Scope watching is exacting and tedious business — whether it be in Canada or Europe.

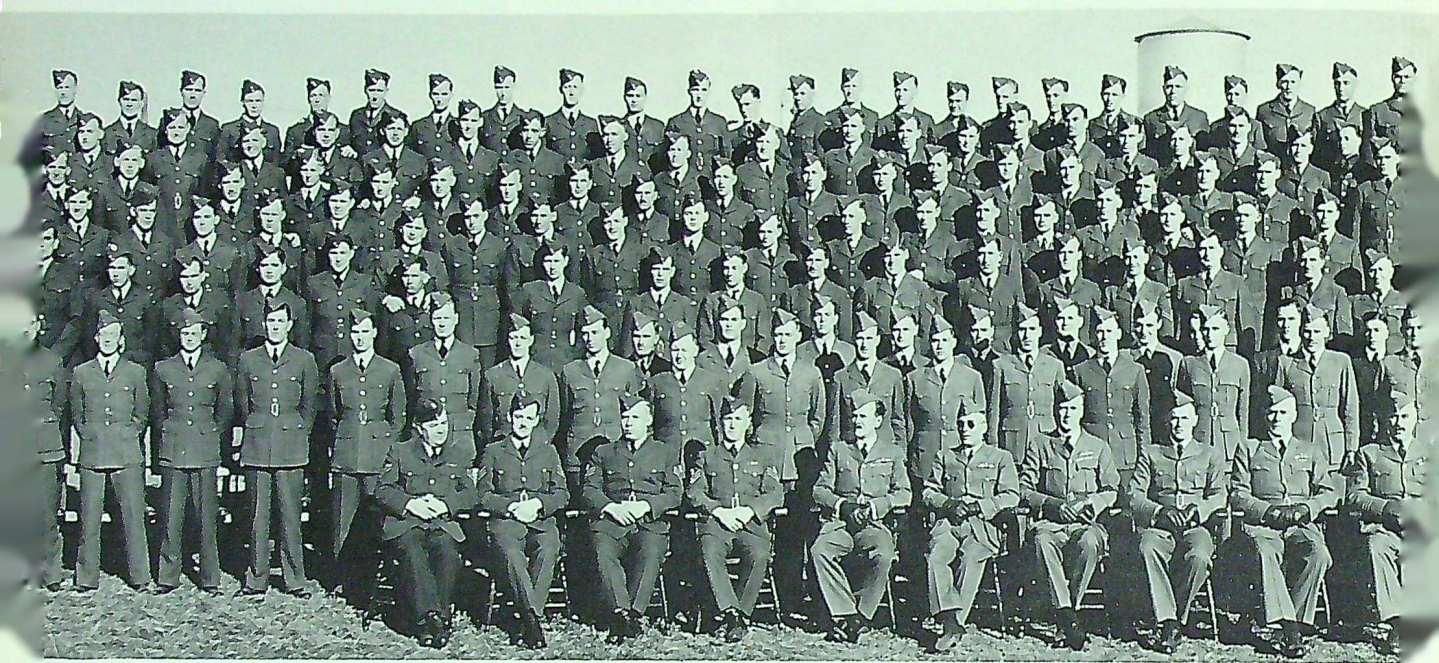


Sgt. G. Begin, radar technician, adjusts equipment used for rotating height finder.



It Happened 20 Years Ago:

THE FIRST INITIAL TRAIN



ALL through the winter of 1939-40 construction had been rushed to meet the deadline for the start of training of the first of the 130,000 aircrew who would graduate under the British Commonwealth Air Training Plan in Canada before the war was over. In April 1940, when it could be seen that the first schools would open on time, messages were sent to the recruiting units telling them to enrol the first BCATP students and send them to No. 1 Manning Depot in Toronto. From this unit on 29 April 1940, 164 ACs Standard were posted to No. 1 Initial Training School in the same city to join a group of 57 Pilot Officers, the last of the PPO courses, which had already started. The two groups were quite distinct, the last of the old and first of the new, and

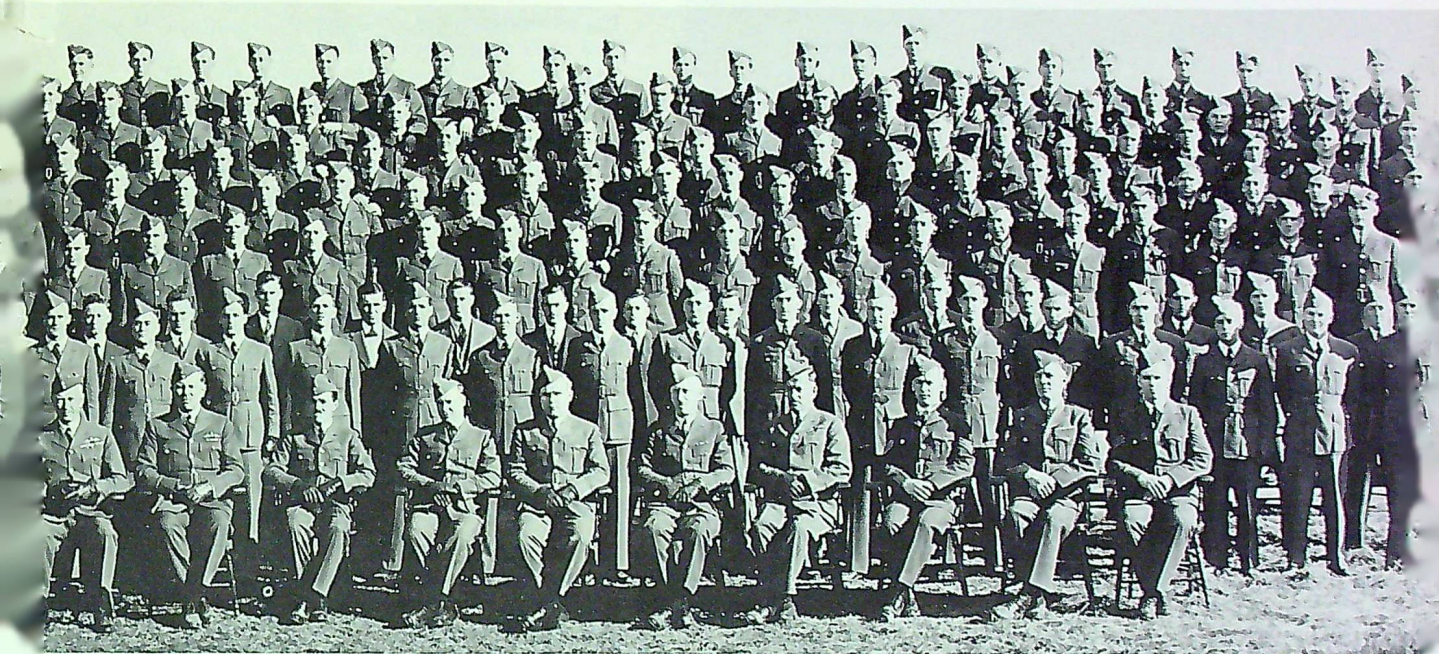
they took separate courses, but both are the subject of our photograph above and their records will be treated as one.

To provide physical accommodation for No. 1 ITS, the first of seven that were to be established in Canada, the government had taken over the old Eglinton Hunt Club on Avenue Road. This property was not without its charm, especially its bowling alleys and swimming pool, but sleeping accommodation for the new airmen students had to be found in the horse stables. One student, still in the service, remembers being put in a work gang from Manning Depot to go up to the Hunt Club to do some shovelling preparatory to the installation of bunks.

The staff of the ITS shows how

indebted the RCAF was to veterans of the First World War in getting its ambitious expansion program underway. The Commanding Officer was W/C G. S. O'Brian AFC (11th from left, front row) a former RFC/RAF pilot, the first CO of 10 Sqn. NPAAF, (now 400 Sqn. Aux.), and a Master at St. Andrews between the Wars). His second-in-command was W/C "Hank" Burden (10th from left, front row), a member of a Toronto family closely linked with the airforce (his brother-in-law was Air Marshal Bishop) and a distinguished fighter pilot in his own right. A few months later W/C Burden would assume command of the second ITS to open, No. 2 at Regina. Noteworthy among other members of the staff was Corporal J. H. Tombs VC (17 from left, 4th

WING SCHOOL COURSE, BCATP



row) and a well known airforce boxer, Flight Sergeant Jock Cameron (4th from left, front row).

The young Canadians who graduated on 23 May 1940 in this first course at No. 1 were among the finest that their country could produce. They came from every province and from every walk of life. At least three of them were Americans, in the van of more than 8,800 of their countrymen who were to serve in the RCAF. One was a refugee from Nazi-occupied Europe, W/C J. G. Gellner DFC CD (ret'd), now a well-known news analyst in Toronto (back row in front of the water tower).

Of the 221 students at the ITS, 17 were to washout in training and the rest were to become pilots, observers, WOAGs, and air gunners. Some, es-

pecially the pilots, were kept in Canada to help man the RCAF's rapidly expanding training organization, but before the war was over graduates of this course had taken part in most of the major air operations in which Canadians played a part. Some saw the insides of POW camps and one was unfortunate enough to be among the 50 RAF and RCAF officers shot by the Gestapo after the big break from Stalag Luft III. Altogether 93, or over 42% of the course, gave their lives.

They won three DSOs, a Bar, 34 DFCs, 4 Bars, six DFMs, one OBE, one MBE, ten AFCs and one AFM as well as foreign decorations. Among the graduates were two especially successful fighter pilots, W/C Lloyd Chadburn DSO, DFC and S/L H. C. "One a Day" Trainor, DSO, DFC.

AC2 Chadburn is fourth from the left in the third row from the back and P/O Trainor is fourth from the left in the second row.

Seventeen members of the course continued on in the Permanent Force after the War. Four of these, W/Cs Herb Stuart and Dave French and S/Ls Eddie Gale and Len Sawle have been killed in flying accidents. Other members of the course who have continued in the airforce and who can probably be recognized by readers of THE ROUNDUP are two station commanders in the Ottawa area and the OC of 408 Squadron, all in the front row of PPOs.

No. 1 ITS continued to operate until February 1945 when, having graduated 12,063 students, it closed its doors.

The Parable Of Joe

Let us consider the groundcrew,
Too often forgotten by all.
They get to do time in the heart of the line
But never to carry the ball!

Joe is a chap who is needed,
A problem that won't go away.
But remember of course that the knight on his horse
Would tell you the same in his day!

He'd say he was lacking in armour,
And his new iron pants weren't right.
And did he show pity to the overworked smithy?
You can't expect that from a knight!

"I must have a bigger brick privy,
Ye drawbridge is terribly short.
And get me a steed with a little more speed,
My charges must never abort!"



by WING COMMANDER L. A. YELLOWLEES

Illustration by CORPORAL P. LAROUCHE

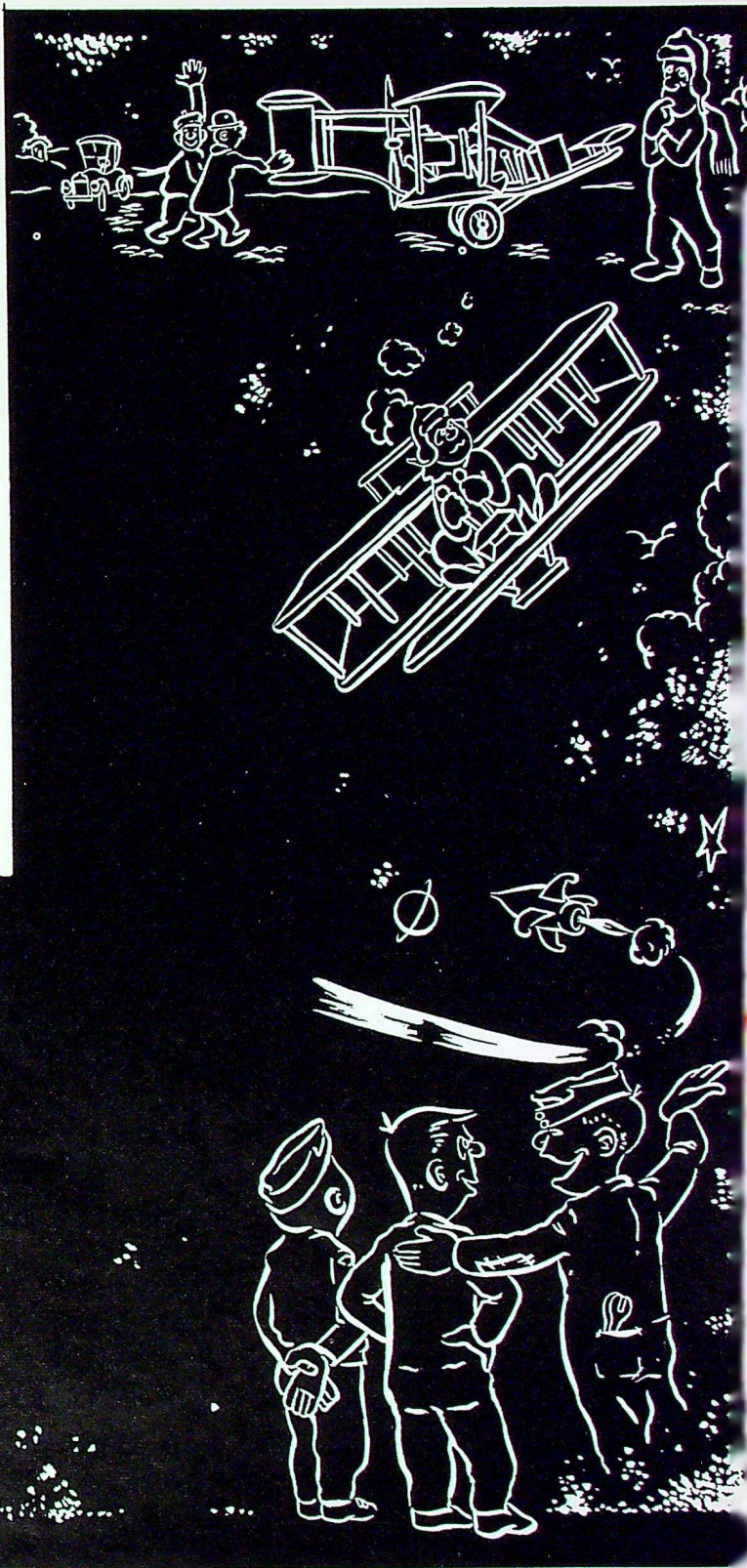
“Don’t tell me thee can’t find ye money,
Those problems don’t move me at all.
Why I’ve got a notion to block thy promotion,
Get snappin’ and get on ye ball!”

So the vassals and serfs got to sweating
And bending their backs a bit more,
‘Cause it wasn’t the rage in the chivalrous age
To ask a lord why, or what for.

But suddenly — horror of horrors!
The knight was knocked from his mount!
Pierced to the marrow by a little ol’ arrow,
And down went m’lord for the count.

There lay the lord and the master
Flat on his back on the field,
And he yelled and howled that he must have been fouled,
And swore he’d remount ere he’d yield.

(continued next page)



Well, sure enough, centuries later,
A couple of vassals named Wright
Glued a few things to a couple of wings,
And handed it all to the knight!

Up into the cockpit he vaulted
And tried on the saddle for size.
With throttle full bore and a rush and a roar,
He tore a few holes in the skies.

But the Joes were back where they started,
And they put down their tools with a sigh,
Cause they knew sure as fate when he landed the crate
They'd have to perform the DI!

"Build me another big hangar,
I need one more mile to take-off.
This aircraft won't do, I must have mach two!
Attend to it will you, old toff?"

So the chargers grew bigger and faster,
They belched out their fire and their smoke.
To the knight it was pleasant — but not to the peasant,
Joe never could savour the joke.

Then up and spake an old boffin,
He of the rapid slide rule.
"I have in my pocket the plans for a rocket,
I'm telling you, dad, it's real cool!"

"Almost as big as a mountain,
Cockpits and saddles galore.
Now surely by rights we should fill it with knights,
And we shall be bothered no more!"

Now after all was assembled,
And the brass gathered round for a look,
You could tell by their sighs and the gleam in their eyes
They were ready to swallow the hook.

Into the rocket they clambered,
Each in his own private place,
And eager as beavers they played with the levers
Till the monster roared off into space!

Thus the Joes the old world did inherit,
Mountain and river and plain.
And the knights in the sky went hurtling by
As they circled the sun once again.

The Otter Goes S.T.O.L.

AN RCAF *Otter* with a bat-like appearance is a familiar sight around Downsview these days as the aircraft undergoes a short-takeoff-and-landing (STOL) research program.

The program, which has been underway for four years, is sponsored by the de Havilland Aircraft Company, Defence Research Board and the RCAF. Two RCAF *Otter* aircraft are on loan for the trials. The Cana-

dian Army also shares in the research project by lending the motor vehicles used in ground test runs.

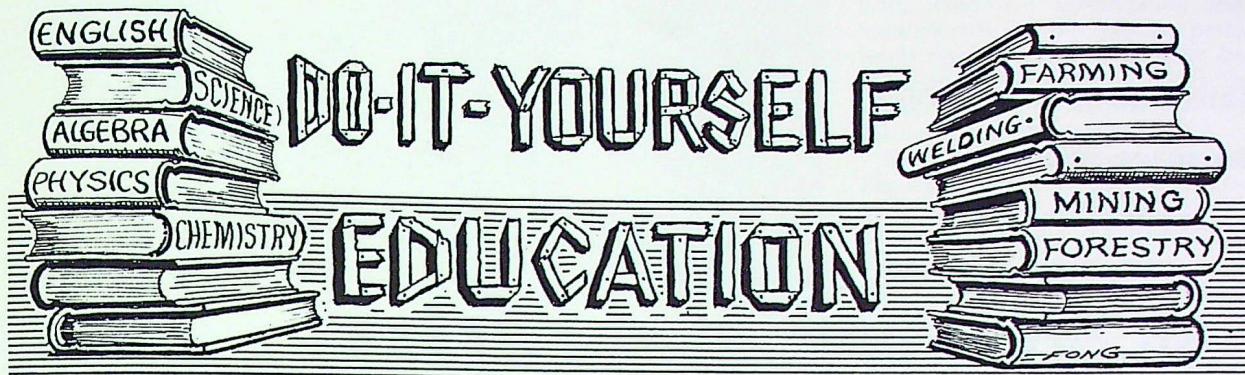
The purpose of the experimental program is to assess the aerodynamic performance, stability and control problems associated with propeller-driven STOL aircraft. The *Otter* aircraft was selected for the project because it already had good short field performance which could be even

further improved. During the test it is fitted with enlarged flaps with novel aerodynamic features to magnify their effectiveness. Other incorporated features include boundary layer control, simulated leading edge flaps, slotted elevators and a high dihedral tail. With flaps set at 60 degrees the aeroplane can maintain altitude and can be controlled near the ground at an airspeed of approximately 36 knots; with the flaps designed to deflect to 90 degrees even lower speeds are expected.

While the research *Otter* is an experimental vehicle only and not a prototype for a new STOL aircraft design, calculations by de Havilland research engineers show that the test aircraft, with a gross weight of 7,500 pounds and with zero wind, would be capable of landing over a 50 foot obstacle in a distance of less than 500 feet. Fitted with one of the new gas turbine engines which are now available, the takeoff distance would be approximately the same, namely 500 feet over a 50 foot obstacle, or something less than 200 feet ground roll.

An experimental *Otter* fitted with special flaps, flies over a Downsview runway at 36 knots.





THE famous writer Thomas Henry Huxley once said, "it is much better to want a teacher than to want the desire to learn". Judging by the teaching facilities offered by the Department of Veterans' Affairs and the response by RCAF personnel, Mr. Huxley would have no reason to worry. In the RCAF today thousands of officers, NCOs and airmen are increasing their qualifications and adding to their knowledge — all by correspondence.

The opportunity for military personnel to acquire higher education, via the mail box, originated in 1940. At that time the Canadian Legion inaugurated an educational service to provide members of the armed forces with an organized study program. Uniform textbooks, provided so students could carry on with their studies in whatever province they found themselves, proved to be an educational innovation. It was the first time that a set of textbooks was approved by every province in Canada. In April 1946 the task of carrying on with correspondence instruction was passed from the Canadian Legion to DVA.

Today, through the DVA's correspondence program, thousands of servicemen and veterans are satisfying their individual educational requirements from a choice of 70 courses. The reasons for taking advantage of this opportunity are obvious and numerous. By proper selection of subjects a student can increase his knowledge of his own trade or acquire knowledge in another field in which

he is interested; English, mathematics and science having a special appeal for airmen intent on becoming aircrew. Those wishing to further their formal education can study matriculation subjects and earn certificates recognized by Canadian universities. In the last two years alone more than 800 RCAF personnel received various certificates, and entries to that effect were made on their service records.

An example of what can be done by correspondence courses is seen in the record of Warrant Officer W. O. Black of AFHQ. Starting his home study course in 1953, Black progressively completed 10 high school subjects and, after another year of study, will receive a senior matriculation. Another successful alumnus with a mail-order education is FS V. C. Hooker, whose enthusiasm for this type of training prompted him to say

that every young man in the air force should carry out a self-improvement course by correspondence. Some of the air force's young men are doing exactly that as evidenced by Cpl. R. L. Burchinshaw who completed a grade 13 biology course in two and one-half months, then went on to night school to continue his studies towards a BA degree.

As students increase their knowledge and thus their efficiency and career possibilities, the air force automatically benefits by having better qualified personnel on the roster. Thousands of officers and airmen have discovered the value of home study through correspondence courses. Those who desire to join their ranks have only to see their unit education officer to find out how to obtain a do it yourself education.

SECRETARY NEEDS VISUAL TELEPHONE

The time when facial images will back up voices during telephone conversations can't come too soon for Mary Ann Williams, secretary in the Information Office at NORAD Headquarters in Colorado Springs.

This wish, admits pretty Mary, springs from a recent foot-in-the-telephone incident she experienced.

A photo print of seven members of the NORAD Command Band trombone section arrived in the information office without caption material. Mary Ann placed a phone call to the band office, contacted a band member and began asking for names by supplying descriptions of the men in the print. Things went well for six, but Mary Ann lucked out on seven.

"This one," she said to her unseen informant, "is elderly, a little fat, and going bald."

"That's me," said the bandsman.

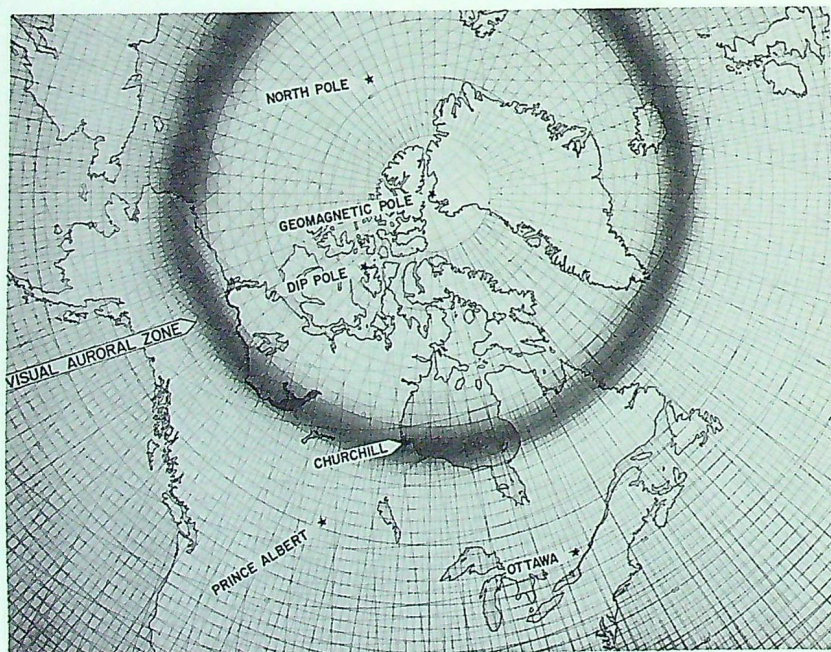
International collaboration
in space science
exemplified by

TOP SIDE SOUNDER

R. K. Brown (left), officer in charge of satellite's construction, inspects aluminum mock-up of the top flight sounder with Dr. R. C. Langille, superintendent of DRB's telecommunications establishment electronics laboratory.



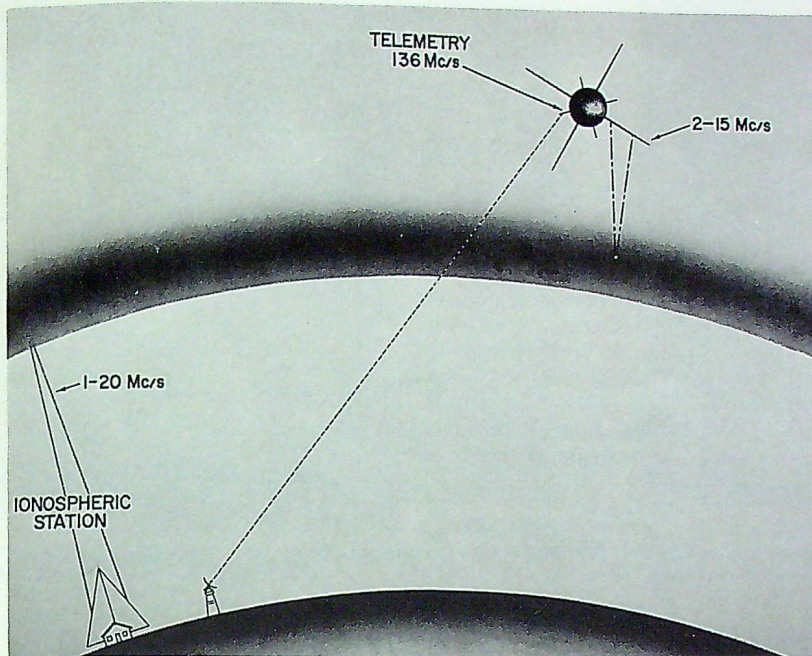
Canada is affected by the aurora borealis (northern lights) more than any other country. DRB investigates causes and effects of the auroral zone which sweeps across Canada as shown here. The satellite now under construction will pass above and across the aurora borealis during its near-polar orbits.



THERE will be a new star in the sky some time late in 1961 when a satellite, developed by Canada's Defence Research Board, is boosted into orbit by an American Thor-Delta rocket.

The satellite, which will be launched at Vandenberg Air Force Base, is being designed to achieve two objectives. First, it will examine and record fundamental scientific information about the structure of upper levels of the ionosphere by using a radio sounder above the ionized layers. Secondly, it will provide information about galactic noise ("space music") or the radio signals which emanate from outer space. This information is needed both by Canada and the United States for their research programs aimed at improving long distance telecommunications.

Initially, the DRB's Defence Research Telecommunications Establishment requested a portion of the available room in a National Aeronautics and Space Administration satellite conducting other experiments. Further consideration, however, suggested the advisability of employing



The Canadian top-side sounding satellite will be the first to look down upon the upper layers of the ionosphere. Data obtained will be relayed as shown here to a surface station. In the past lower ionospheric levels have been investigated by means of reflected ground signals as pictured at extreme left.

load. They are investigating such requirements as the precise power levels needed, the various radio frequencies to be employed, and the achievement of a satisfactory heat balance within the satellite.

The "sweep frequency top-side sounding technique" is the term used by scientists to describe DRB's method of investigating the structure of the ionosphere's upper levels. Scientists in DRB and elsewhere throughout the world have been probing the ionosphere for a number of years up to 200 mile altitudes by means of ground-based sounding equipment. The results obtained in the past relate mainly to the lower levels of the ionosphere because the higher levels are hidden above the ionosphere's most dense reflecting layer. The radio waves which penetrate through the dense ionosphere are lost in outer space and provide no information to the scientist on the ground. Canada's satellite is expected to fill this information gap by sounding or probing from above, hence the name "Top Side Sounder". The satellite will be, in fact, an airborne radio station which will orbit the earth every 90 minutes.

Soundings obtained when the satellite passes over the northern auroral zone will be of particular interest to Canada because of the special communications problems existing in high latitudes and arctic regions during auroral disturbances.

The satellite project is a dramatic example of international collaboration in space science and an illustration of the close association between DRB scientists and their NASA colleagues.

"Oh, darling, I've missed you!" she cried, and fired the gun again.

You can't push yourself forward by patting yourself on the back.

Wrinkles should merely indicate where smiles have been.

Some people are so busy learning the tricks of the trade that they don't learn the trade.

all the space in a complete satellite for the Canadian experiment. The NASA agreed to this proposal and it was decided that DRB would construct the satellite shell as well as its instrumentation.

The DRB satellite, planned to travel in a near-polar orbit, is being constructed of aluminum and fibreglass, nearly round in shape and girdled by banks of solar cells. The diameter of the girdle will be about 42 inches and the weight of the complete satellite will be approximately 200 pounds.

The experiment will require the construction of four satellites — one for environmental tests on the ground, another to be tested as the prototype and two at the launching site to provide a reasonable assurance of a successful experiment.

The long wavelengths used for sounding the ionosphere require long satellite antennas. The two 30-foot antennae projecting from the sides of the vehicle will be the longest used in satellites to date. The steel anten-

nae, coiled within the vehicle during launching, will extend like a carpenter's rule when the satellite achieves its orbit.

To protect the satellite during its acceleration through the dense atmosphere, it will be enclosed in a metal nose-cap or shroud. On reaching orbit altitude of 700 miles, both the nose-cap and the third stage rocket will be separated from the satellite.

DRB will operate four receiving stations in Canada. NASA will provide high-altitude sounding rockets and launching services to test the prototype payload and will also be responsible for ground receiving stations outside Canada. It is hoped that the satellite will continue to transmit data for about a year following the launching. The information obtained will be exchanged freely with other nations through the Committee on Space Research of the International Council of Scientific Unions.

The DRB scientists are assessing carefully the characteristics and components being prepared for the pay-

CASEY BALDWIN

— The First Canadian To Fly

(Last year the RCAF celebrated its 35th birthday and commemorated 50 years of powered flight in Canada. The names J. A. D. McCurdy, Silver Dart and Baddeck became almost household words. The date, 23 February 1909, on which Mr. McCurdy rose from the ice of Bras d'Or Lake was, of course, the starting point for the Golden Jubilee celebration. THE ROUNDDEL would be remiss in its duties, however, if it did not pay homage to another Canadian aviation pioneer whose accomplishment pre-dates the epic flight at Baddeck, N.S. — Editor.)



Baldwin in 1908.

Photos courtesy and copyright the Bell Family and National Geographic Society.

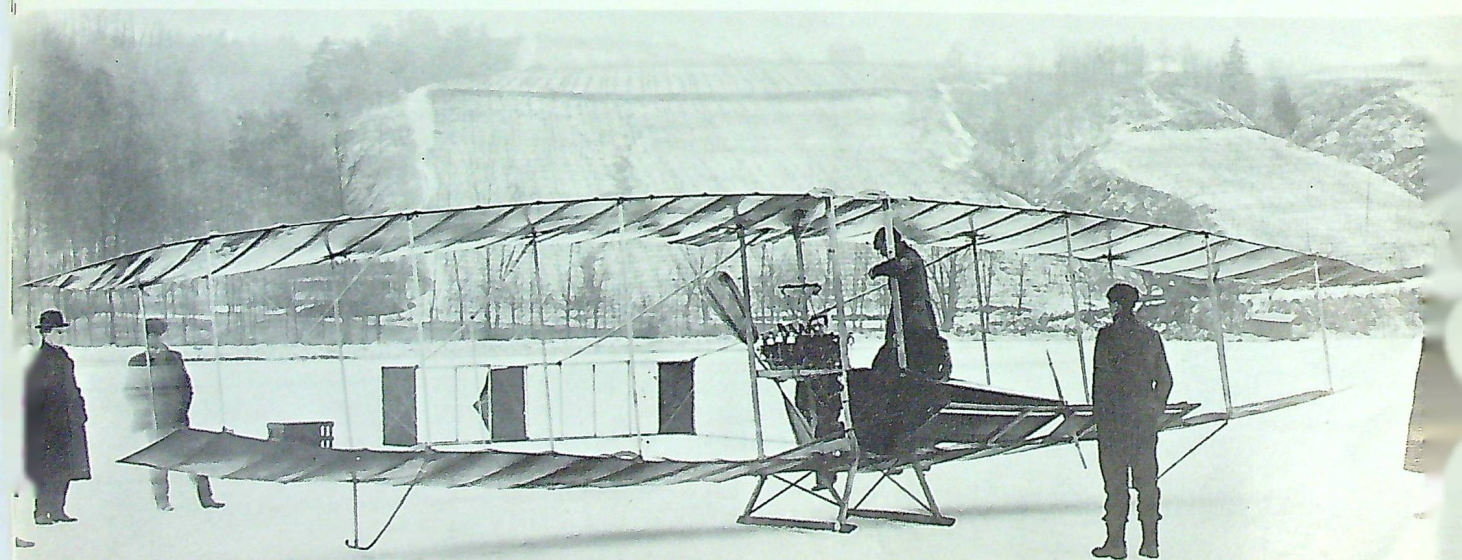
ON the brisk bright morning of 12 March 1908 a group of men manoeuvred a fragile flying machine onto the ice of Lake Keuka, near Hammondsport, N.Y. Mr. F. W. Baldwin, known as "Casey" to his friends and associates, strapped himself into the *Red Wing* and taxied away from the shore. In a matter of seconds the *Red Wing* had picked up speed and lifted into the air. Another chapter in aviation history was in the making.

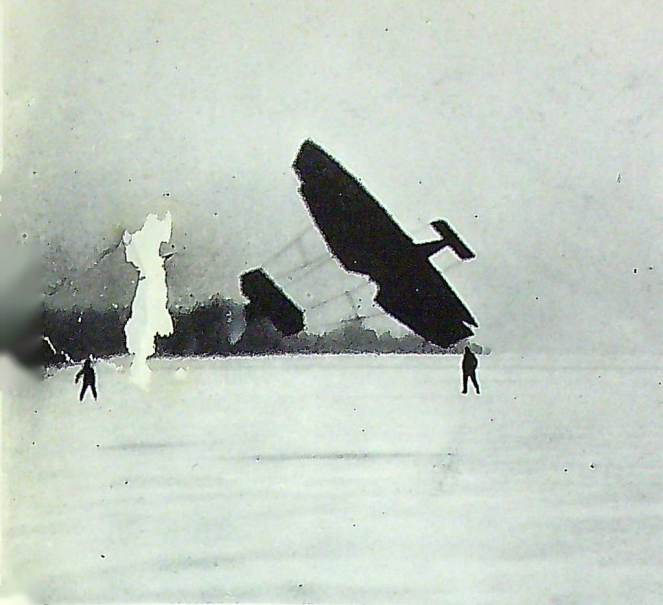
When the *Red Wing* crash-landed, Casey Baldwin had become the first Canadian to fly and he had given the first public demonstration of an aeroplane in North America.

This historic occasion was the result of intensive research into the science of flight by an organization known as the Aerial Experiment Association. Members of the Association were Dr. Alexander Graham Bell, Casey Baldwin, Lt. Thomas Selfridge,

Glenn Curtiss and J. A. D. McCurdy. The aim of this organization was to build "a practical aerodrome (sic) driven by its own motive power and carrying a man". The first man to be carried was Baldwin. The *Red Wing* was the first of four machines built by the A.E.A. The other aerodromes, as Dr. Bell insisted on calling them, were the *White Wing* (which, like the *Red Wing*, received its name from the colour of its fabric), the

Red Wing passes inspection prior to first flight 12 March 1908 at Keuka Lake near Hammondsport, N.Y. The biplane was equipped with fixed stabilizer and rudder at the rear, an elevator mounted at the nose and twin-runner undercarriage.





Casey Baldwin flew 318 ft. 11 in. before the *Red Wing* fell heavily to the ice. Immediately before this photograph was taken the plane apparently stalled.



In 1910 the Bells and Baldwins toured Australia. Here they are pictured with two Aussie friends on an outing. That year Casey Baldwin left the aviation business for good.

June Bug (so called because it was built during the month of June) and finally, the famous *Silver Dart*.

In addition to helping design and fly the A.E.A.'s aerodromes, Casey Baldwin shares the credit for the invention of the aileron and the tricycle undercarriage, both of which were used for the first time when he flew the *White Wing* on its maiden flight. Baldwin's application to aircraft of various flotation devices was another major contribution to aviation.

Frederick W. Baldwin received his early education at Ridley College, St. Catharines, Ont., then proceeded to the University of Toronto where, along with McCurdy, he graduated as an engineer. During his college years Baldwin took an active interest in sports and in this way the nickname "Casey" (from "Casey at the bat") came to be applied. Upon graduation in 1906 Baldwin accompanied McCurdy to Baddeck, N.S. with the express purpose of meeting Dr. Bell. It proved to be a fruitful meeting. Next to the subject of the telephone Bell's favourite topic was the possibility of human flight. In the A.E.A., formed in October 1907 to investigate this possibility, Baldwin was a dedicated member. When the Aerial Experiment Association was dissolved in 1909 Baldwin and McCurdy organ-

ized the first aircraft industry in Canada — the Canadian Aerodrome Company. Baldwin also took part in the demonstration flights at Camp Petawawa in August 1909 where an unsuccessful attempt was made to interest the military in a flying machine.

In the following year the Canadian Aerodrome Company folded and Baldwin turned his attention to other experimental studies, not in the field of aviation. On August 10, 1948, in a

quiet hamlet on Cape Breton Island, Casey Baldwin passed away.

Today at Baddeck, N.S., at the beginning and end of the Cabot Trail, the people of Canada have erected the Alexander Graham Bell Museum. This museum houses a valuable collection of models, scientific equipment, data and a photographic archives relating to the work done by the great inventor and his associates — among whom was Casey Baldwin, scientist, engineer and aviation pioneer.

Postscript: McKee Trophy for 1959 was presented to Hon. A/C J. A. D. McCurdy, Casey Baldwin's classmate and partner in the exploits recalled above. Mr. McCurdy received the award "in recognition of his meritorious service in the cause of Canadian aviation during the past 50 years, and for his outstanding contribution to the success of the 50th anniversary observance celebrations" last year.

PRIVATE FLYING IN CANADA

How "air-minded" are Canadians? At the beginning of 1960, reports DOT, there were 10,596 private licensed pilots in Canada. Compared to figures published by the Federation Aeronautique Internationale in Paris, this means we rank second only to the United States (albeit a long way back) in the number of amateur flyers per million of population.

U.S.A.	2,880
CANADA	623
Switzerland	445
Australia	381
France	228
Sweden	175
Chile	163
United Kingdom	125

A Day With

Photostory by SERGEANT W. PROCKIW



F/L D. R. Thompson, Protestant padre at RCAF Stn. Rockcliffe.

The church parade of Scouts and Guides is an annual event. Here F/L Thompson converses with (l. to r.) Sgt. R. Black, Johnny Black, Mrs. J. Smith and Van Charnell.



F/L Thompson visits Lt. P. B. Kristjansen, an army officer confined in Rockcliffe hospital.



The padre thanks the chapel choir after a practise session.

The Padres

of the men dedicated to the call of their church as well as to the service of their country. From morning services, through innumerable visits and visitors, to phone calls at all hours, each day has a full schedule for them.

The chaplain is a familiar figure to the sick, the distressed or the depressed but, for the majority who normally see their chaplains only one day a week, the accompanying pictures should serve as an insight into the type of work they perform on the other six days. This photostory is dedicated to the more than 100 Protestant and R. C. chaplains throughout the RCAF.



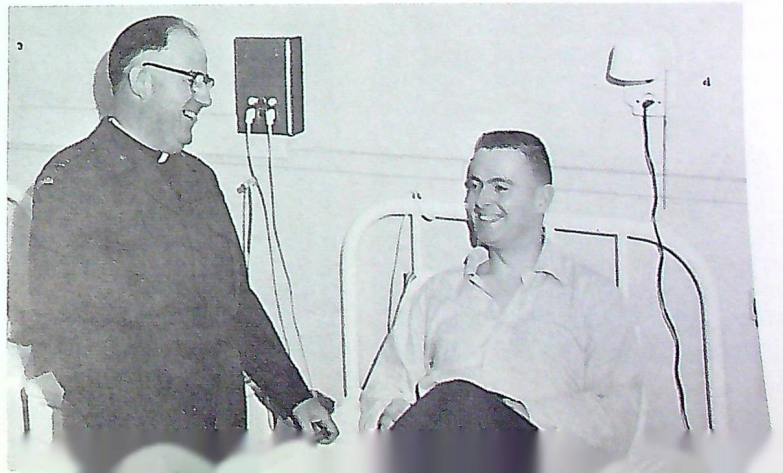
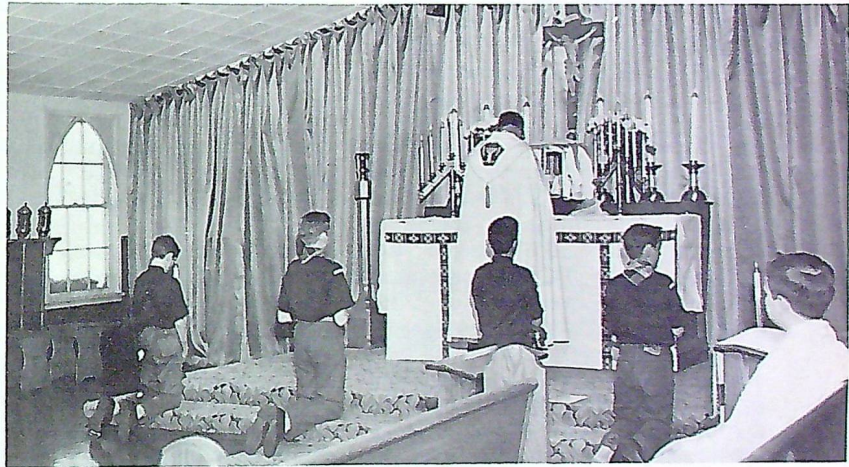
F/L B. F. McMahon, R.C. padre at RCAF Stn. Rockcliffe.

F/L McMahon conducts a service for the annual church parade of the Scouts and Guides in the RC chapel.



F/L McMahon pays a pastoral call to a PMQ resident . . .

. . . later he chats with F/L M. Robb, a patient in the Rockcliffe ~~in~~services military hospital.





RCAF ASSOCIATION

10th NATIONAL CONVENTION REPORT

By SQUADRON LEADER A. T. PATON, DFC.
Editor THE ROUNDEL

Speakers Stress Teamwork



Colour party at opening ceremonies

TEAMWORK is the key to effective defence of Canada and the other free nations more today than ever before. This was the dominant theme of speakers at the 10th national convention of the RCAF Association, held in Toronto during the week the long shadow of the shattered Summit fell across the world.

Meeting to renew wartime acquaintanceships and reaffirm support of their erstwhile service, the Second World War veterans were welcomed by RCAF national president Air Marshal W. A. Curtis, CB, CBE, DSC, — the man who, as chief of the air staff 12 years ago, was responsible for obtaining government approval and funds for founding the association. He noted that for the first time all 10 provinces were officially represented at this annual convention.

Group Captain J. E. Johnson, CBE, DSO, DFC, top Allied fighter ace of the Second World War with 38 accredited victories and twice leader of No. 127 Canadian *Spitfire* Wing,

was a natural as first guest speaker on the program. "Johnnie" painted a word-picture of life today on an RAF V-bomber station (he formed the first V-squadron 2½ years ago) and gave his personal assessment of today's defensive team.

"Despite the introduction of missiles, the emphasis is still on manned aeroplanes and will remain so," stated the still-youthful looking Johnson. "Today V-bombers scramble in less time than did *Spitfires* during the Battle of Britain. We use *Valiants* (now six years old) as tankers for *Vulcans* and *Victors*."

That evening "Johnnie" and scores of his wartime buddies celebrated at a reunion sponsored by No. 411 (Aux.) Sqn. Two days later he flew in a *Vulcan* back to England and his student's desk at the Imperial Defence College.

Air Marshal Hugh Campbell, CBE, RCAF chief of the air staff, began his briefing on today's RCAF by stating, "In these days when many countries

are confronted with changes in their defence posture, you can contribute much to public understanding." He reviewed some of the changes that have taken place in the RCAF in the past 15 years and commented on the reasons for them.

In obvious reference to the Bomarc surface-to-air missile, A/M Campbell said he had noticed a tendency on the part of some people to confuse pieces of equipment with defence policy. Air Defence (of North America) has been so much in the news lately that many people look upon it as our total defence policy. They could not be more mistaken. Canadian defence policy is derived directly from Canadian foreign policy and is designed to ensure national security and to help preserve world peace.

Noting that the objectives of Canadian defence policy are reached through collective arrangements within NATO and the United Nations, the CAS listed these four fields of

endeavour in which the RCAF has been given clearly defined tasks:

- participation in NATO Europe
- participation in the air defence of Canada and North America
- support of Canadian forces contributed to the United Nations
- carrying out of certain national responsibilities, such as search and rescue.

In the past few years, although its roles have remained unchanged, the RCAF has almost completely re-equipped its operational commands — or made provision to re-equip them. The Air Marshal stressed that we must remain progressive and open-minded, giving due consideration to new (scientific) ideas and approaches.

“Of one thing I am sure: we need the co-operation of everyone to make our defence posture effective,” concluded A/M Campbell. “Never before has the word ‘teamwork’ carried such a significant and vital meaning.”

Climax of the convention was the Air Power Banquet and Ball, and leading the long list of distinguished guests was Marshal of the RAF Sir Dermot A. Boyle, KCVO, KBE, CB, AFC, RAF chief of air staff from 1956 to 1959. Sir Dermot literally capti-

vated his audience with his sometimes witty, sometimes deadly serious, address — drawn from 36 years’ experience in the service.

“The counter to nuclear war is our ability to retaliate in kind”, Sir Dermot said in prefacing his remarks on the necessity for maintaining a flexible air defence. “Let the airman take credit for this. Neither missile nor aircraft is the complete answer — man is the important ingredient.”

A/V/M J. L. Plant, CBE, AFC, in thanking the guest speaker, summed up Sir Dermot’s remarks with this sentence, “Teamwork is the key.”

Resolutions and Reports

This statement of policy, issued by the RCAFA national executive council following the 10th annual convention, was presented to Prime Minister Diefenbaker:

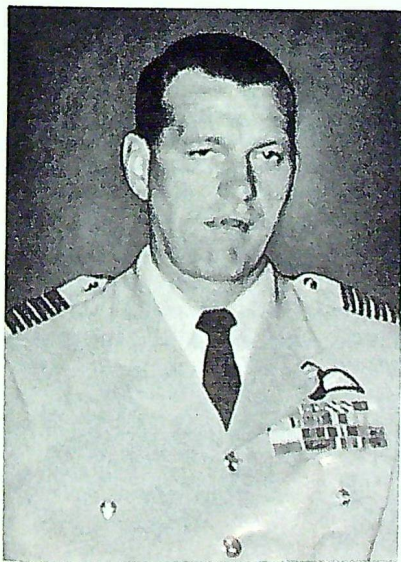
“The purpose and policy of the Royal Canadian Air Force Association has never changed nor wavered. It always will be, first to give full support to those who lead the service in which we served and in which we all have great pride. These are difficult days for the air force but they are

not the first it has known in times of uneasy peace. We live in a revolutionary period in the skies. Not all the voices which must decide the course of military aviation speak in unison as our government seeks solutions to the problems of our times. The greatest contribution Canada can make today to the cause of world peace is still through the air and to this end it is imperative that the Royal Canadian Air Force continue to bear its rightful share in the air defence of North America. The Royal Canadian Air Force Association reaffirms its devotion to the cause of freedom, to our country and to the support of those who lead the air force today and those who will be its leaders tomorrow.”

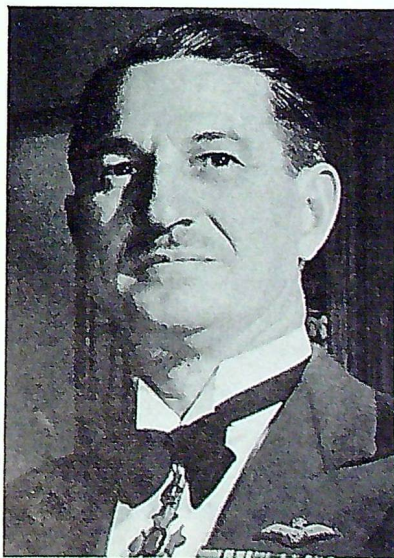
The statement came after several delegates had expressed concern, during the convention’s business sessions, over unofficial reports “that the RCAF may be relegated to a role of relatively little active participation in the air defence of North America.” A resolution, passed by the convention, recommended that a special RCAFA committee be set up to obtain from the government a policy statement on the programmed role of the RCAF.

Convention chairman G. E. Penfold

G/C Johnnie Johnson.



A/M Hugh Campbell.



Marshal of RAF Sir Dermot Boyle.





Reception desk glamour.



Lobsters, courtesy Maritime delegates, were presented to distinguished guests. L. to r.: Sir Dermot Boyle, S. MacLeod, A/M Hugh Campbell, G. Skinner.

relinquished the chair to association legal advisor G. A. Ault while the 20 resolutions, originating from wings and groups across Canada, were presented. Among those adopted for federal government consideration:

- Reconsideration of provisions of the pension act covering overseas service benefits.
- Continuation of family allowance payments to members of the armed forces while serving outside Canada and accompanied by their families.
- Formation of a parliamentary committee on national defence on which the hearing and evidence presented would be available to the public.
- Regulation that all civilian aircraft flying in remote areas be compelled to carry a radio homing device.

Other resolutions recommended gliding as a voluntary subject for flight cadets, closer liaison between the RCAF and the association, and facilities be provided for an increased number of air cadets to attend summer camp.

An impressive opening ceremony, arranged by F/L W. H. Morley and featuring the Training Command Band, preceded the first morning session. Welcoming addresses (reported above) were followed by annual reports. As of 31 March 1960 there were 10,820 members — an increase of 310 in a year. The "Bon Voyage" committee reported 60,000 passengers (RCAF personnel and dependents) were given farewells at Montreal,

Quebec and Halifax by the RCAFA during 1959-60.

Three panel discussions were held on the second afternoon. W/C W. M. Lee, RCAF director of public relations; A/C D. E. MacKell, national secretary-treasurer, headed that on the RCAF Benevolent Fund; and Sinclair MacLeod, president of the

Maritime Group, chaired the panel on RCAFA membership and programming.

Throughout the three day meeting G/C F. H. Watkins, DFC, official RCAF observer from AFHQ, was frequently asked to comment on matters affecting the service.

Inclement weather forced cancellation of the parade to lay wreaths at the cenotaph.

Presentations, Awards and Parties

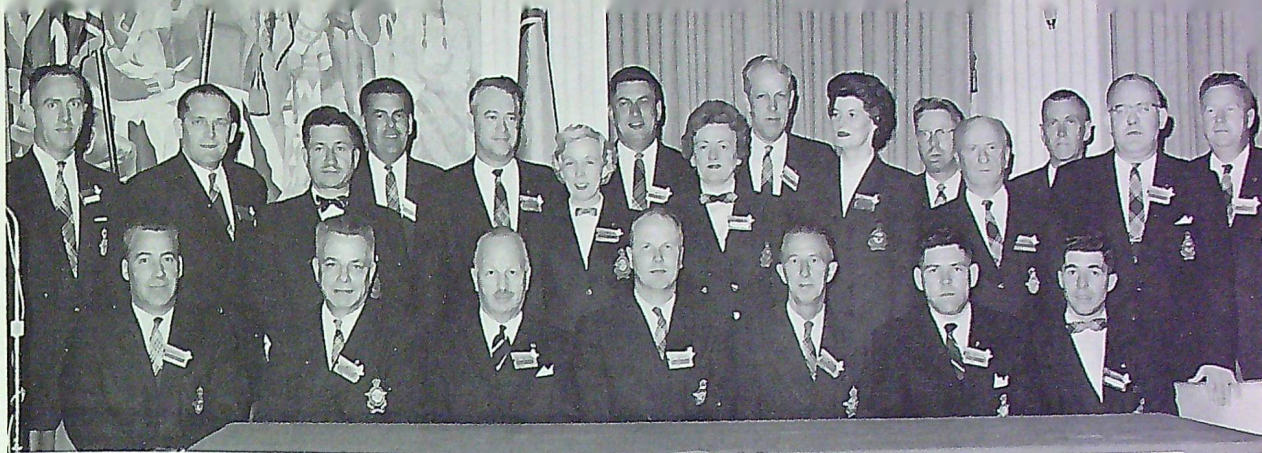
Presentations and awards came thick and fast at the 10th national RCAFA convention. A partial ROUNDEL round-up included the following:

A wristwatch presented on behalf of the RCAFA to retiring national



president A/M W. A. Curtis by A/V/M A. L. Morfee, retiring grand president (who also received a gift for his 10 years of RCAFA service) . . . an officially approved badge for No. 162 Sqn. presented to A/M Campbell by newly-elected national president L. A. Baldock . . . a portrait of F/L D. Hornell, VC, presented to the sponsoring committee chairman of newly-formed No. 700 (David Hornell) RCAC Sqn., S/L A. A. Deeks, by A/M Campbell . . . "member of the year" award to the widow of Patrick J. Haberlin (302 Wing, Quebec City) by G/C Johnson.

Awards were presented for the greatest membership increase during 1959-60 to 441 Wing, Barrie, Ont. and 302 Wing, City of Quebec . . . a genuine gold-plated pitchfork presented to convention chairman G. E. Penfold by R. A. Wright on behalf of the Alberta delegation . . . numer-



1960-61 NATIONAL EXECUTIVE COUNCIL

Standing (l. to r.): S. MacLeod, Maritime Group President; F. Michalak, Quebec Group rep.; G. Ault, legal advisor; J. Reynolds, Alberta Group president; G. Penfold, chairman; Miss E. Rowand, W. D. rep. (national); R. Swartz, Ontario Group president; Miss J. Williamson, W. D. rep. (central); A. Boyd, Saskatchewan Group president; Miss J. Etter, W. D. rep. (eastern); W. Caverley, Ontario Group rep.; G/C S. Sznuck, vice chairman; S. Coote, Man.-N.W. Ont. Group president; R. Watson, Maritime Group rep.; S. Fulton, Quebec Group president.

Seated (l. to r.): R. Wright, 3rd vice president; S. Malach, 2nd vice president; A/M W. Curtiss, past president; L. Baldock, national president; A/V/M F. Wait, grand president; P. Connell, 1st vice president; N. LeBlanc, 4th vice president. (Missing: Miss E. Halliday, W. D. rep. (western))

ous impromptu presentations — Quebec toques, Maritime lobsters and Alberta oil stocks to various “deserving” delegates.

Luncheons on the first and second days were sponsored by the Province of Ontario and the City of Toronto, respectively . . . Always a highlight of the convention social program, the provincial group “at homes” were gay and crowded events on the second evening . . . and the final “at home”, sponsored by the host Toronto Wings (408, 430, 437, 442 and 444), proved a fitting climax to a successful gathering.

Now, the slogan is “See you in Winnipeg in '61.”

1960 WING DUES

Annual dues of wing members were payable on April 1st. To ensure continued receipt of your **ROUNDEL** please pay your dues immediately to your wing secretary.

MEET THE NEW PRESIDENT



RCAFA President-elect Leonard N. Baldock is the first ex-junior officer ever to hold this post. Joining the RCAF in 1942, he served as a navigator-bombardier in Canada and Iceland until discharged in 1945.

A charter member of the Air Force Club of Windsor, which later became 412 RCAFA Wing, Mr. Baldock has been active at all levels of the association during the past eleven years. He was president of the Ontario group in 1954-55 and has served on the national executive council since that time. He was a prime mover in the establishment of 2451 AC & W Sqn. in Windsor and is a director on the Ontario provincial committee of the Air Cadet League. Last year he was chairman for celebrations of the 50th anniversary of flight in his home city.

Mr. Baldock is a director, treasurer and assistant secretary of the Toledo Scale Co. of Canada, Ltd.

Letters to the Editor

IN MEMORIAM

Dear Sir:

The RCAF Benevolent Fund would like to take this opportunity of thanking publicly Mrs. J. G. Stephenson for her thoughtfulness in inviting friends to make contributions to the RCAF Benevolent Fund, rather than send floral tributes, in memory of her late husband, Air Commodore J. G. (Joe) Stephenson.

Donations have been received from many parts of North America and up to the present time the total is almost \$900. This is some indication of the affection and esteem in which Joe was held both in and out of the service. It is trusted that Mrs. Stephenson and her sons will receive some lasting comfort from this and the knowledge that these funds will be used to help some RCAF families through periods of financial distress.

D. E. MacKell, Air Commodore (ret.),
Manager, RCAF Benevolent Fund,
Ottawa, Ont.

UP IN THE AIR

Dear Sir:

Reference is made, and with indignation, to the picture story "Clubs in the Air" (Vol. 12, No. 3, April 60.) In order to pacify some irate members of the Centralia Flying Club, would you please advise why this club was not mentioned?

To qualify our feeling of neglect we would like to advise, and make known to all, that the Centralia Flying Club has logged 285 hours of flying time since January, and that this figure is on the up-swing.

F/L E. D. Southall,
Manager Centralia Flying Club,
RCAF Station Centralia.

(Our face is red. We have no excuse for this grievous oversight. — Editor)

HOT ON DE-ICING

Dear Sir:

My attention was drawn to a photograph in the article "Combined Winter Operations" (Vol. 12, No. 3, Apr 60) showing de-icing of a Lancaster at RCAF Station Namao.

It is indeed encouraging to note the modern equipment in use for de-icing, as this has been a hazardous and almost impossible task on the units for years. The old days of swarms of airmen with fire extinguishers full of alcohol and the use of mops appear to be at an end, at least at some units.

Congratulations to AMC and the organizers of Snow Chinthe on this success.

F/O W. R. Pearson,
RCAF Station Trenton.

LADY BOWLERS

Dear Sir:

We feel that in addition to publicizing the RCAF men's bowling champions (Vol. 12, No. 5, June 60) THE ROUNDEL should recognize the ladies' team which won the 1960 wire bowling competition.

The women bowlers of RCAF Station North Bay (l. to r.: Helen Lipnicki, Gladys Groskorth, Jackie Munroe, Gloria Doiron and Donna Palmer) won both the ADC and RCAF championship with a total pin-fall of 3426.

F/L M. Majocha,
RCAF Station North Bay.



ROUNDEL ERROR

Dear Sir:

Your attention is drawn to an error in the item concerning the RCAF's annual pistol competition. (Vol. 12, No. 4, May 60.)

The article mentions that team and individual trophies, plus small replicas for the winners retention are donated by officers of the RCAF directorate of air force security; also that DAFS sponsors the competition. This information is incorrect because:

- (a) the trophies are donated by all officers of the air force security branch; and
- (b) officers of this organization as a group are responsible for sponsoring the competition to which DAFS has given approval.

F/L G. H. Reimer
DAFS/AFHQ

NO. 436 SQN. GOES NORTH

Dear Sir:

We who are involved in the air transport business at RCAF Station Downsview take umbrage of the fact that one of the major squadrons in Air Transport Command was omitted honourable mention in your article "Air Transport in the Arctic" (Vol. 12, No. 4, May 60).

It may be that the Editor is not aware that 436 (T) Squadron does carry out air transport operations in the Arctic even though we are located in the southernmost part of Canada and therefore confine our activities mainly to the "Banana Belt" areas of operation. Proof of our activities in the north is confirmed in that you have included in your article a photograph of one of our aircraft, namely 22123. This oversight is presumed to be caused by a break in your trap line communications; therefore, I am drawing this to your attention for whatever action you deem necessary.

W/C J. C. Mirabelli,
Commanding Officer,
RCAF Station Downsview.

(The "banana belt" operators of 436 are indeed no strangers to the Arctic. This spring, for instance, along with a detachment from the Canadian Joint Air Training School at Rivers, No. 436 Sqn. airlifted approx. 1,350,000 lbs. of fuel oil to Alert. Their "flying boxcars" are currently involved in another arctic airlift as this issue goes to press. — Editor.)

PLAUDITS FOR ARCTIC ISSUE

Dear Sir:

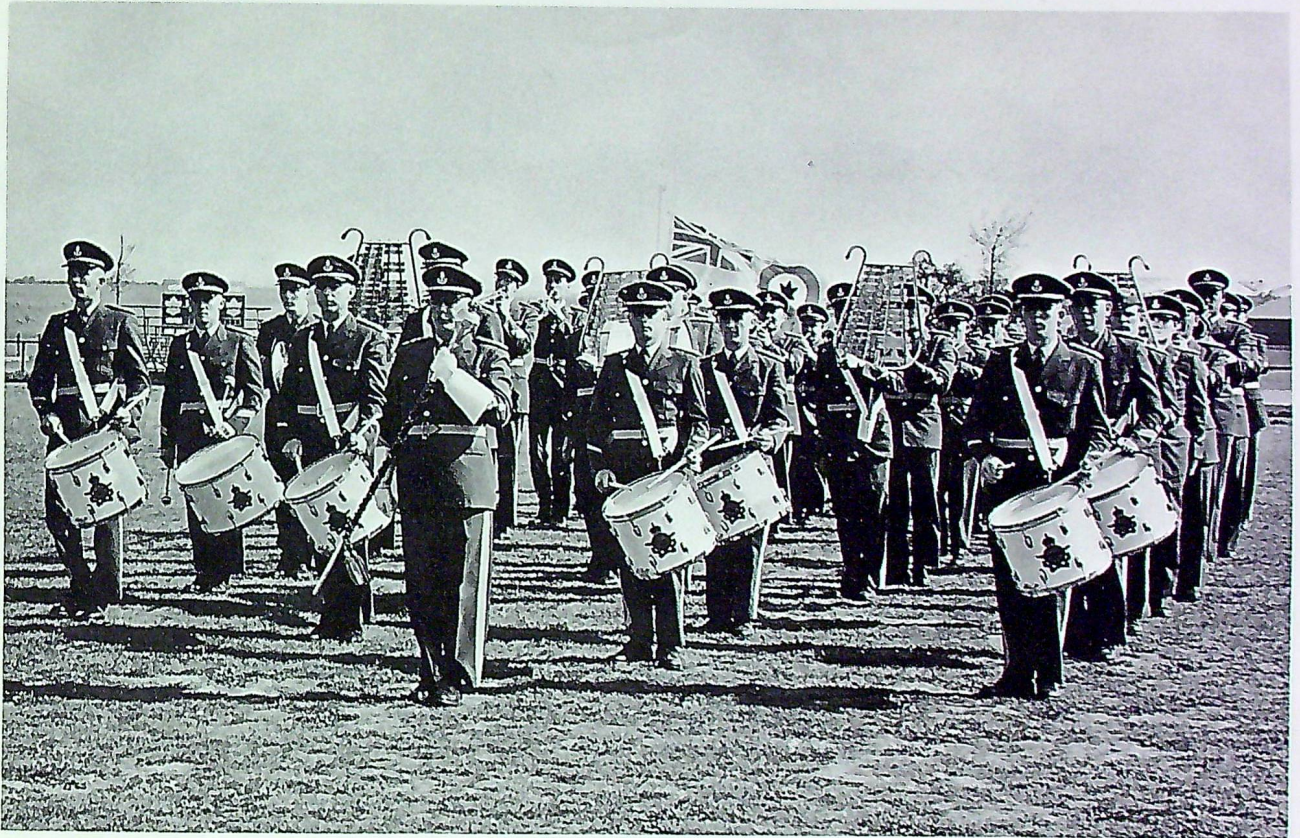
Your special Arctic issue (Vol. 12, No. 4, May 60) has just come to my desk and I want to say how nice I think it looks. I particularly like the cartoons by Walter Rudnicki, who has also done cartoons for our magazine. You are altogether to be congratulated on the quality of your magazine.

(Mrs.) Marjorie M. King,
Editor, CANADIAN WELFARE.
Ottawa, Ont.

MORAL SOMEWHERE

Every time the British think up a new idea the Americans commercialize it, the Russians invent it and then the Japanese make it at half the price. Wren—THE AEROPLANE.

Volunteer Bandsmen in Europe



THE 42-member drum and trumpet band of No. 3 Wing, Zweibrucken, Germany, has won the Air Division trophy for the best RCAF band in Europe. Led by bandmaster Sgt. K. Pells, the 3 Wing band won a closely contested victory over other volunteer bands from No. 30 AMB, Langar; No. 2 Wing, Grostenquin; and No. 4 Wing, Baden-Soellingen.

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