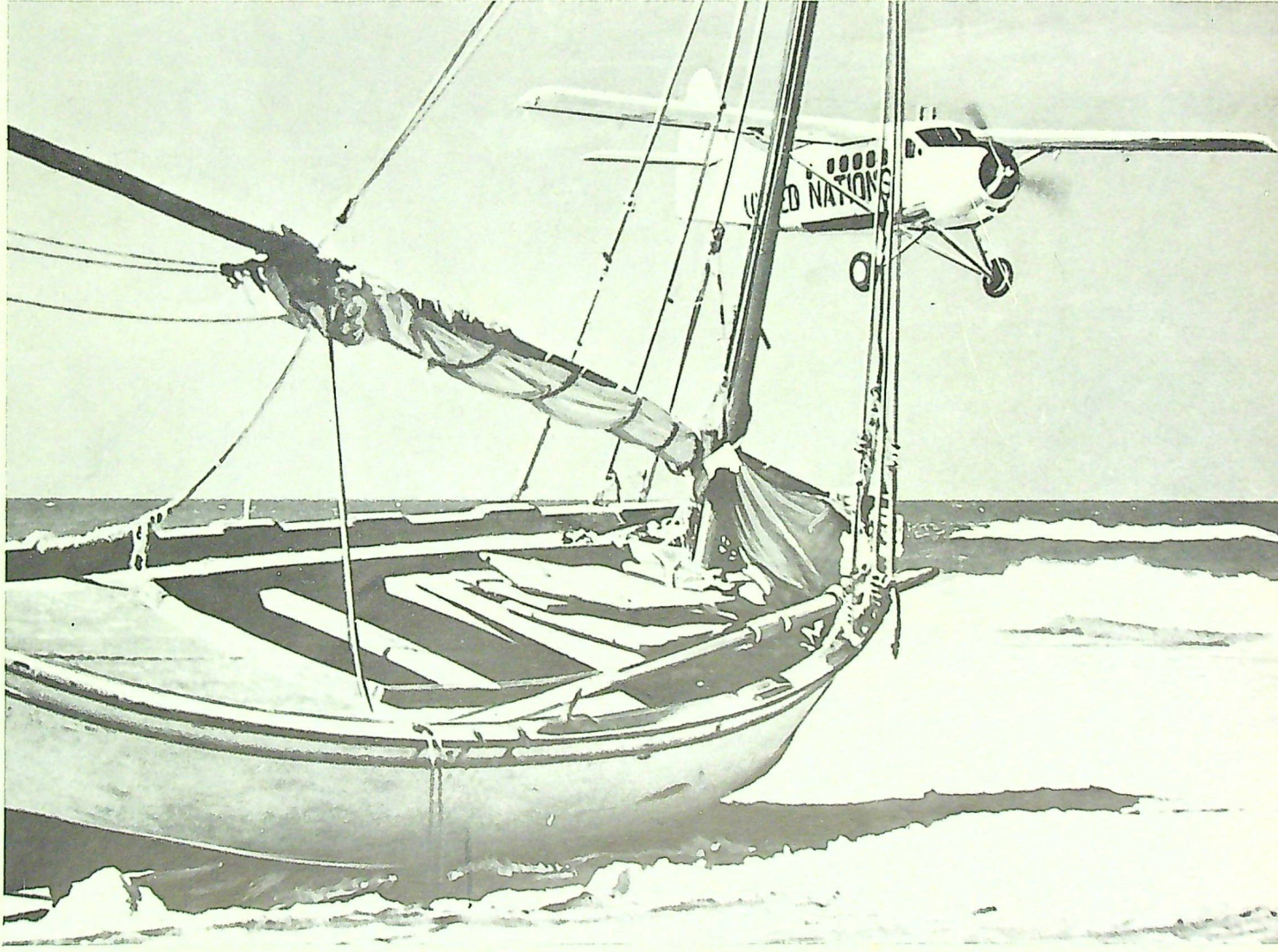


The **C**ROWNDDEL



Vol. 10 No. 5
JUNE-JULY 1958



ROYAL CANADIAN AIR FORCE

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THIS MONTH'S COVER



An R.C.A.F. Otter attached to the U.N.E.F. sweeps low over the Mediterranean shore while on a routine patrol of the Sinai desert.

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EDITORIAL OFFICES:
**R.C.A.F., Victoria Island,
 Ottawa, Ont.**

ON THE BREAK



CASTING the editorial eye over the impressive list of countries and individuals involved in the N.A.T.O. Air Training Plan, we were temporarily nonplussed as to just whom our lead article (see page 2) should be dedicated. We hope no heads of state or military leaders will feel slighted by our final selection: the flight-line instructor.

When the call for "retreads" went out eight years ago, many wartime pilots and navigators dusted off their operational hats and brought out of mothballs uniforms grown strangely tight around the middle. They soon found the peacetime airforce was a vastly

* * *

RECENT nationwide surveys have indicated that appallingly few Canadians are physically equipped for normal everyday living. They showed, furthermore, that over 90 percent of our recreational sports are impractical fitness builders. More than two years ago, the R.C.A.F. recognized these facts and hired Dr. W. A. R. Orban as a physical fitness specialist to do something about them. His solution is contained in the "R.C.A.F. 5BX Plan", which is being introduced into the service this summer, designed to meet the needs of both the champion athlete and the chronic television viewer. His views on physical fitness are contained in the article beginning on page 8.

* * *

DURING the past few weeks we have completely revised "The Roundel's" distribution lists, in order to ensure a more equitable and systematic circulation among its numerous categories of readers. An AFRO will be published soon detailing this new system, but here's a quick rundown on the plan which takes effect next month.

In so far as the R.C.A.F. Regular, Auxiliary, and Reserve University Squadrons are concerned, distribution will henceforth be made on the basis of one copy for approximately every ten established service positions as shown in AFHQ's quarterly returns.

Beginning with the August issue, copies will be shipped *only* to addresses shown under the column "Postal Addresses" in Part I (Sects. 1-24) and Part II (Section 1 to 7) of CAP 179, Postal and Message Addresses for the R.C.A.F., Vol. 1. It will be the responsibility of the addressees to ensure that proper distribution is made to units, etc., whose addresses are identical with their own, as given in CAP 179.

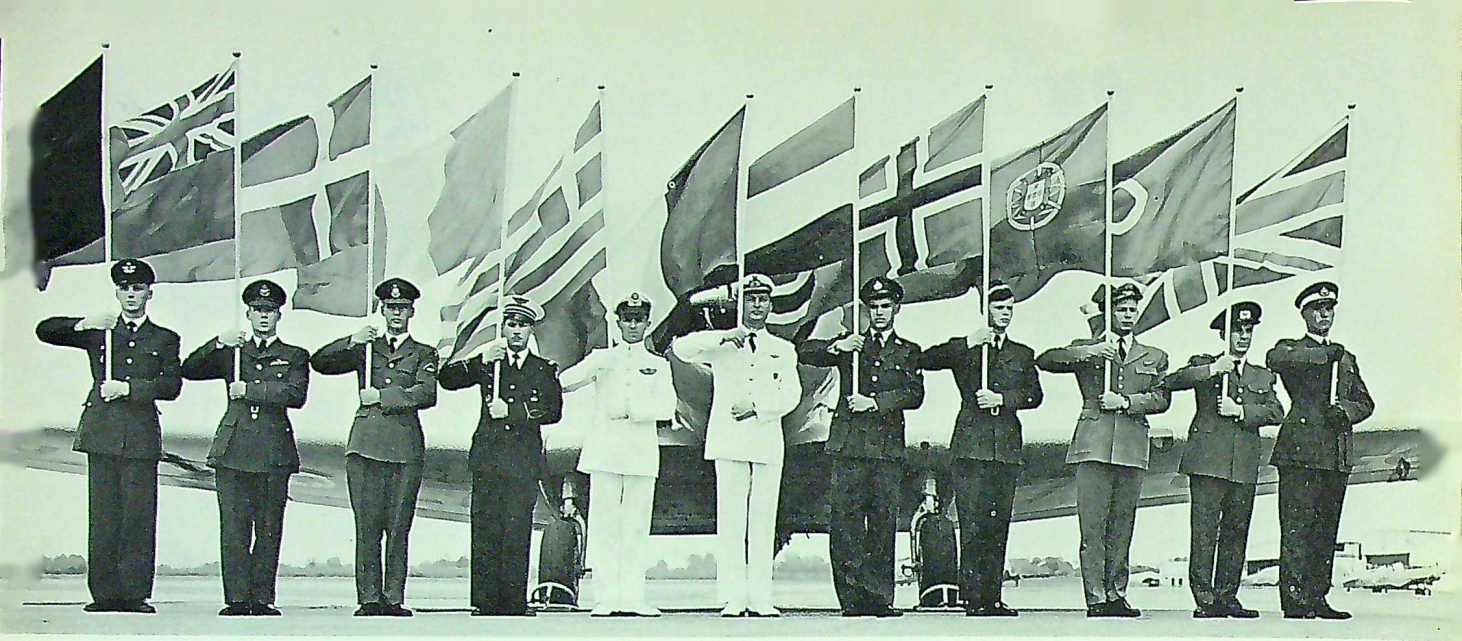
different organization from the one they remembered, but they buckled down to the task at hand with the old tenacity. Soon they were joined on the flight line by fresh-faced "youngsters" whom they had checked out just a few months previously, and the instructional staff was strengthened by a mingling of experience and youth.

As any ex-flying instructor will tell you, this is not the most glamorous job in the airforce. But it is one of the most essential, and the personal satisfaction of coaching a trainee from familiarization flight to wings parade is an intangible reward seldom equalled by the average person.



For example, the shipment addressed to the Commanding Officer of R.C.A.F. Stn. Rockcliffe will include sufficient copies for the established positions on the station administrative staff and in Practice Flight No. 408 Sqn.; however, the hospital, 3 SD, and Photo. Estab., will each receive their own shipments, since each of these has a separate postal address in CAP 179.

The Editor



AIRCREW FOR N.A.T.O.

S.H.A.P.E. TO HONOUR CANADA'S EFFORT
AT WINNIPEG WINGS PARADE JULY 19



Dutch pilots at work . . .

. . . Turkish students at play.



ABOVE the usual chatter and din in the control tower came the insistent call on the distress frequency: "Debunk, this is Tinker 023, request VHF Homing."

The homer operator went into his normal routine, giving the clipped instructions as laid down in the book. From the heavily-accented replies, he knew the student pilot was a Turk, and he soon realized that this was one very lost Turk—whose grasp of the English language was not sufficient to cope with the present emergency.

Immediate, albeit slightly irregular, remedial action was indicated. The controller called the student's flight commander, requesting that a fellow-countryman of the airborne wanderer be sent to the tower post-haste. Within minutes

the two students were conversing calmly in Turkish. By following the translated directions, Tinker 023 soon appeared over the field and was safely brought back to the fold.

This is the kind of minor crisis which for the past eight years has kept everyone connected with the N.A.T.O. Air Training Plan on his toes, and its solution illustrates how international co-operation has characterized every level of the plan's operation.

* * *

More than nine years have passed since 4 April 1949 when representatives of 12 countries assembled around the conference table in Washington, D.C., to sign the North Atlantic Treaty. Basing

their aims upon the principles of self-help and mutual aid, the representatives agreed, under Article 3 to the Treaty, to "maintain and develop their individual and collective capacity to resist armed attack."

This development of the Western World's defences was referred to by Field Marshal Viscount Montgomery, retiring deputy commander of S.H.A.P.E., in Ottawa last month when he stated, "During the past ten years, we have won the war of building up our military strength."

As Montgomery was speaking, approximately 300 N.A.T.O. aircrew students were still under training at various R.C.A.F. stations across Canada. They are the final group of students from nine European countries and the United Kingdom to be trained in Canada under the N.A.T.O. Air Training Plan since July 1950.

The administration and successful operation of this plan has been one of Canada's chief contributions in fulfilling her obligations as a member of N.A.T.O. During the past eight years more than 5200 young airmen from the U.K., France, Italy, Portugal, Greece, Turkey, Denmark, Norway, The Netherlands and Belgium have been trained here to man the air forces of their respective countries in the defence of the free world against communist aggression.

NATURAL LOCALE

Canada had a well developed background for conducting this operation. During the Second World War the R.C.A.F. had trained 131,553 aircrew for the Air Forces of the U.K., New Zealand, Australia and Canada under the British Commonwealth Air Training Plan. A limited number of personnel from France, Belgium, The Netherlands and Norway also received training at R.C.A.F. stations.

The wartime experience in mass production of aircrew paid off ten



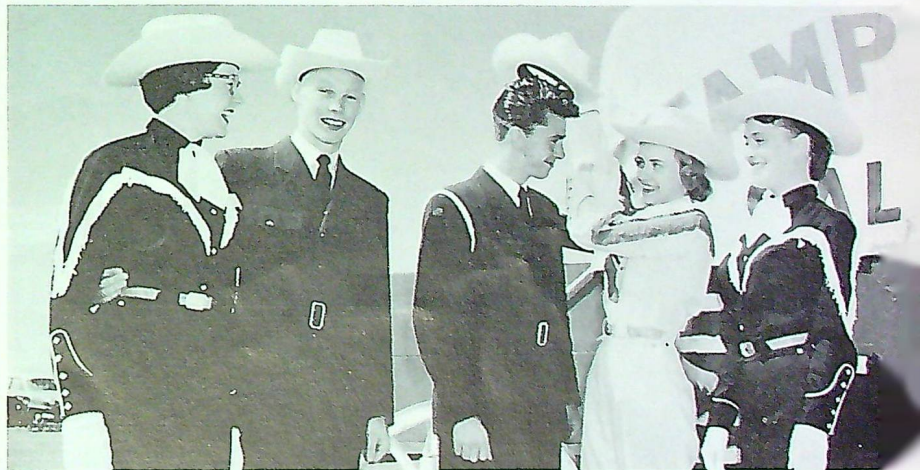
Swapping stories . . . l. to r.: trainees from Belgium, Italy, Canada, France, The Netherlands and Norway.

years later. Suitable training facilities, adequate flying space, favourable weather conditions, a good reserve of instructors—Canada had all these qualities. Early in 1950 Canada and Britain put into effect a bilateral agreement whereby aircrew from the U.K. were trained in Canada. This agreement was merged some months later with the N.A.T.O. Air Training Plan. In 1951 Canada volunteered to train additional aircrew, and continued expansion of the R.C.A.F. and its facilities resulted from acceptance of this offer. During 1952-53 19 regular airfields, stations, schools or



General salute at Centralia graduation, June 1955. L. to r.: Group Captain A. M. Cameron, station C.O.; Col. T. Neilson, Danish Military Attache to Washington; Wing Commander G. R. Truemmer, O.C., P.F.T.S.; Commandant J. L. M. Fillon, French Liaison Officer.

Norwegian trainees at the Calgary Stampede.





First solo by Flight Cadet Angelos Kagiligrakis of Athens, Greece.



R.C.A.F. instructor discusses landmarks with Italian navigator trainees at Summerside.

other units were opened. By this time the R.C.A.F. was capable of graduating 1400 N.A.T.O. aircrew members each year.

Meantime, the training of Canadian aircrew was conducted at an accelerated pace. R.C.A.F. flight cadets received their training side by side with their N.A.T.O. counterparts. A feature of the plan was the complete integration of N.A.T.O. students with Canadian trainees in the R.C.A.F. system.

INDOCTRINATION

In accepting the plan all nations agreed to use one operational language: English. Many of the desirable trainees were limited in their

knowledge of English and arrangements were consequently made to conduct a language school at R.C.A.F. Station London where students would become sufficiently familiar with the language to undergo training.

Every precaution was taken to ensure that the candidates were adjusted to their new environment. In 1955 a handbook for N.A.T.O. aircrew students, entitled "Off to Canada", was prepared for distribution among trainees before they left their homelands. In addition to conveying messages of welcome, the handbook outlined such things as the types of clothing required, mail addresses, banking

and currency, communications, population and language, as well as a preview of life in the R.C.A.F.

All students reported initially to R.C.A.F. Station London. Language School was followed by a pre-indoctrination course to familiarize students with the Canadian way of life, our culture, economy, politics, ethnic groups, etc., thus lessening the strain of aircrew training in a foreign country.

From London the trainees proceeded to actual aircrew training. In the initial years of the plan, student pilots began training on the *Harvard* before graduating to jets. Two years ago this arrangement was altered so that students were first given six weeks on the *Chipmunk* at the Primary Flying Training School, R.C.A.F. Station Centralia. The courses then went alternately to one of three Flying Training Schools on the prairies, located at R.C.A.F. Stations Moose Jaw, Claresholm and Penhold.

On successful completion of their *Harvard* training, N.A.T.O. student pilots stepped up to Advanced Flying School. This advanced instruction was given on either *Silver Stars* or *Mitchells*, depending upon the type of operational flying for which the trainees were destined. The jet training was taken in Manitoba at R.C.A.F.



Portuguese and R.A.F. navigators plot course on training flight.



Air Marshal W. A. Curtis, then Chief of Air Staff, takes salute of graduates on first N.A.T.O. pilots' wings parade at Centralia, May 1951.

Stations Gimli, Portage la Prairie or MacDonald. A.F.S. for the small percentage on piston-engine aircraft was located at R.C.A.F. Station Saskatoon.

Student observers received their entire aircrew training at the R.C.A.F.'s Air Observer School, R.C.A.F. Station Winnipeg, after the navigation school was moved from R.C.A.F. Station Summerside in 1953. Trainees all underwent the same basic 20-week course after which they specialized in one of three types of duties—observer (radio), observer (air interceptor) or observer (navigator). Flying was done in twin-engined *Expeditors*, *Dakotas* and *Mitchells*, giving students the opportunity of applying the theories they had learned in the classroom.

GRADUATION

Successful completion of these courses brought the N.A.T.O. students to the highlight of their training in Canada: Wings Parade, which took place approximately 67 weeks after their arrival.

The initial intake of N.A.T.O. trainees arrived at London in July 1950 and on 4 May 1951 the first N.A.T.O. Wings Parade was held. Seventeen students, wearing the uniforms of the Italian, Norwegian and Belgian Air Forces, graduated from the Air Navigation School at

R.C.A.F. Station Summerside. Two weeks later the first class of N.A.T.O. pilots graduated in an impressive ceremony at R.C.A.F. Station Centralia.

Since then N.A.T.O. wings parades have become commonplace. During the seven-year period from May 1951 to April 1958 a total of 5299 aircrew students were graduated. Numerically, U.K. graduates topped the list with 3042 students graduating as trained aircrew. (See box next page.)

INTANGIBLE BENEFITS

While the military aspects of the plan have long since proved their worth, other developments occurred which have been of great value both to Canada and her allies.

Emphasis was placed upon the development of friendships and understanding. Courses were designed so that trainees of different nationalities mingled with one another almost continuously. As far as possible, no two students of the same nationality shared a room; they worked and played together as a team throughout their entire training. Canadian students, too, had the opportunity to know and understand their counterparts of a

Prince Bernhard pins pilots wings on Netherlands graduate at Gimli.

similar age from other countries as R.C.A.F. flight cadets were interspersed on almost every N.A.T.O. course.

One instance of the re-development of a friendship on an international basis occurred a couple of years ago when the R.C.A.F. helped arrange a meeting between a young French Air Force student pilot and an American businessman. The event had a dramatic wartime connotation. Thirteen years previously, after being shot down and during his bid for escape, the American had been sheltered for some weeks in a French home under the very noses of enemy troops. Puzzled by the presence in his home of an "uncle" who spoke French so badly was a seven-year-old lad, whose real uncle eventually guided the American to the coast whence he safely crossed the English Channel.

Now finished the first phase of his training in Canada, this same





West German aircrew trainees greeted by Colonel F. C. Schlichting, West German Air Attache, on arrival in Canada, September 1957.

lad was pleasantly surprised to see the ex-U.S.A.F. "uncle" seated at the head table for his graduation luncheon at R.C.A.F. Station Centralia. During his stay in this country he was an honoured guest several times at the Pittsburg home of his "uncle" and the friendship has continued by correspondence since he returned overseas.

The plan has brought Canada and the R.C.A.F. a great volume of favourable publicity. Leading military and diplomatic figures from the various countries have attended numerous wings parades during the past seven years. Newspapermen, telecasters, radio and magazine writers have covered many aspects of the training scheme and interviewed students from their homelands to bring audiences and readers in other parts of the world first hand accounts of life in Canada and in the R.C.A.F. Returning N.A.T.O. students have augmented these reports and many continuing personal friendships have been maintained by correspondence half-way around the world.

The students brought their own contributions to Canada. In their multi-coloured uniforms and with their different insignia, they added variety to R.C.A.F. stations and

to the towns and cities they visited.

THE FUTURE

Subsequent to the N.A.T.O. Air Training Plan, separate arrangements have been made to continue

aircrew training on a reduced scale in Canada. These arrangements involve the continued training on a partial payment basis, of students from Norway, Denmark and The Netherlands as these countries maintain no training facilities of their own.

Separate arrangements have also been made on a payment basis for the training of 360 West German aircrew to assist the West German Air Force in its formation. A refresher course was first given to 15 veteran German pilots and on 10 September 1957 the first West German undertraining students reported for aircrew training in Canada.

Officially, the N.A.T.O. Air Training Plan will conclude in July 1958. However, actual training of the last students will not be completed until December of this year or January 1959 and a very few students will undergo training until late next spring.

N.A.T.O. AND R.C.A.F. AIRCREW GRADUATES

COUNTRY	N.A.T.O. By Year		R.C.A.F.	
			By Fiscal Year	
Canada - - -	3218	1951	184	
United Kingdom -	3042	1952	1076	1951-52 260
France - - -	1096	1953	1253	1952-53 622
Denmark - - -	307	1954	719	1953-54 536
Norway - - -	259	1955	631	1954-55 476
The Netherlands -	205	1956	620	1955-56 395
Belgium - - -	170	1957	692	1956-57 426
Italy - - -	101	1958	124	1957-58 503
Turkey - - -	86	Total	—	5299
Portugal - - -	21	Total	—	3218
Greece - - -	12	These figures are from 1 May 51 up to 31 Mar 58. Included with the R.C.A.F. totals are 29 pilots trained for the R.C.N. Approximately 300 N.A.T.O. students still undergoing training are not included.		
Total - - -	8517			



The Winds

D.J. CAREY '58

BY WING COMMANDER A. L. BOCKING, D.F.C.

(Wing Commander Bocking, whose "Memoirs of a Canadian in the R.A.F." delighted our readers for eleven consecutive issues some three years ago, has this to say in the letter which accompanied the following verses: "Having had occasion to look up the name of a local wind of the Mediterranean region, I discovered to my surprise that there are literally hundreds of winds wandering around the world with personal names given them by the various peoples whose economy or dispositions are affected by their comings and goings. The temptation was, as you see, too great for me."—Editor.)

Ruled is our world by the restless winds:
By winds like demons roaring,
By kindly winds and by cruel winds,
By the steady trade-winds snoring . . .

The Bora romps on the Tuscan plain,
The Aura brings the day;
And fishermen pray that the saints restrain
The Galerno of Biscay's Bay.

The Siffanto troubles a Roman ear,
The Conente speaks it fair;
The Etesian, rippling the waters clear,
Once lifted the Sirens' hair.

The Orkan howls like a berserk troll
As it sweeps through Norway's fjords,
And the Blaers that blow across Iceland's snow
Are keener than Viking swords;

While the Flakt of Sweden scatters the gleams
From sunlit golden tresses,
And the Thalwind whispers to him who dreams
Of the Lorelei's caresses.

The Russian hears the Koshava's wings
And buttons his astrakhan;
The Rumanian knows that the Crivetz brings
No good for beast or man;

The black Haboob, like an evil djinn,
Bedevils the Upper Nile;
And the Khamsin sings of forgotten things
That deepen the Sphinx's smile.

The Levanter speeds the foaming prow
As it homes to Palma's port,
And even the gay *cocotte* will bow
To the Bise, when her skirts are short.

Meanwhile, far off in a warmer clime,
The Feh goes softly stealing
Through almond-groves that were old in time
When Circe's pigs were squealing;

And, quiet as the wind in the painted trees
Of a willow-pattern plate,
The modest Sz in silence flees
Tien Fung, her whispering mate.

But the gentlest zephyr is that which flies
O'er Bali, the Isle of God;
And woven of music and maidens' sighs
Is the name it bears—the Klod!

Ruled is our world by the restless winds:
By winds like demons roaring,
By kindly winds and by cruel winds,
By the steady trade-winds snoring . . .



Are you fit?

BY WILLIAM A. R. ORBAN, Ph.D.

Illustrations by Peter Carey

HOW FIT, and FIT FOR WHAT? These are questions that many are asking to-day. In order to answer them, however, we must first understand what physical fitness means.

Physical fitness, although dependent on your state of health, is much more than merely keeping free from disease or being healthy in the medical sense. You should be "positively" healthy, which implies activity and vitality of life, reflected in the performance of everything you do.

The quality of your daily work is dependent to a large extent on the proper functioning of all 639 muscles of your body. Each muscle has its specific function, but they can work together in a team only when each one is adequately developed to carry out its share of the work. To do this, each muscle must have the capacity to produce

the required force to move a particular part of the body, it must be able to contract with sufficient speed, it must be flexible and it must have an adequate amount of stored energy to do the work demanded by your job. These four combined measurable qualities of muscle are referred to as "muscular power". To be muscularly fit, then, means that you have developed all these qualities in all your muscles to a sufficiently high degree for your individual needs.

However, enclosing your body with a beautiful shell of rippling, bulging muscles does not necessarily indicate an adequate level of physical fitness. The development of muscles is important in order to protect your body and to supply the power to move against external forces. But more important are the heart, lungs and other organs and glands of your body which supply the necessary energy fuels to these muscles. Although the

blood carries these fuels to the working muscle, from the lungs, stomach and other storage centres of the body, the blood must be pumped through the blood vessels by your heart. Replenishing energy to muscles is the key to physical fitness, and the combined capacity of the heart and other organs and glands to do this is called your "organic power".

The level to which you can develop both muscular and organic power is influenced by such factors as the type of body you have, the food you eat, the presence or the absence of disease and the rest that you get. The sum total of these factors is "physical fitness".

FITNESS FOR WHAT?

Physical fitness is related specifically to what you can do. You may be fit, for example, to run a mile but not be fit to swim 400 yards. You may be fit to run or swim but not fit to fly, and vice versa. Moreover, you are not just physically fit, but fit to do something in a poor, good, or excellent manner.

A person who is fit to run a mile in four minutes is also fit to run it in eight minutes. A pilot who is physically fit to fly a CF-100 has an adequate level of physical fitness to fly a *Chipmunk*. But the reverse is not necessarily true, that a pilot fit to fly a *Chipmunk* is adequately fit to fly a CF-100. The reason for this is due to the fact that although the physical requirements are the same kind, because of the greater physical stresses that are encountered in jet flying, a higher level of physical fitness is required.

Basically, sitting behind a desk and sitting in a cockpit of a jet require the same kind of physical fitness. Both require upper and lower muscles of the back to hold the body in an upright position, abdominal muscles to hold the vital organs in proper position, muscle tone of the legs to push the blood back to the heart and, lastly, both require the circulation of the blood. To counteract the natural forces of gravity on the human body, everyone requires the same kind of "basic physical efficiency". However, the force of gravity acting on a man flying at high speeds may be seven or more times greater than that acting on the man sitting behind the desk. Thus, a pilot requires a much higher level of the same kind of physical fitness than the desk man.

HOW FIT IS FIT?

The mere ability to accomplish a given task does not necessarily indicate an adequate level of physical fitness for that task. A man may be sufficiently motivated, by fear or in the heat of competition, for example, to run a five-minute mile which under normal conditions he would be incapable of doing. If, however, at the completion of this run he collapses or suffers some other form of violent physical upset, it is evident that he was not physically fit to run the mile at this

speed. The word "fit" implies that the body adapts or adjusts to the task at hand, with a minimum of disturbance, quickly and completely. A person is fit to run a mile in five minutes, therefore, when at the end of the run he recuperates almost immediately. Similarly, a pilot who on sprinting across the tarmac for a scramble "loses his lunch" or who after a flight is unduly tired, is not physically fit to carry out his duties.

The ability to accomplish a task with the least physical disturbance is possible only when the person's body functions efficiently. However, the efficiency or the ease of effort of the human body, like a machine or motor, decreases as it approaches the upper limits of its performance capacity. Therefore, when a man performs "all out" at or near the upper limits of his physical capacity, there is bound to be some physical disturbance. This disturbance is considered normal only if the recovery is complete in a relatively short time. The longer a person takes to recover, the less fit

that person is for that job. When Bannister or Landy ran a four-minute mile, which was close to the upper limits of their physical capacity, they certainly experienced physical stress and fatigue. But because they were fit for this performance, they fully recovered in a very short time without any "after-effects". Similarly, a pilot should be able to sprint across the tarmac to his aircraft and be able to recover fully before he closes the canopy.

HOW TO GET FIT

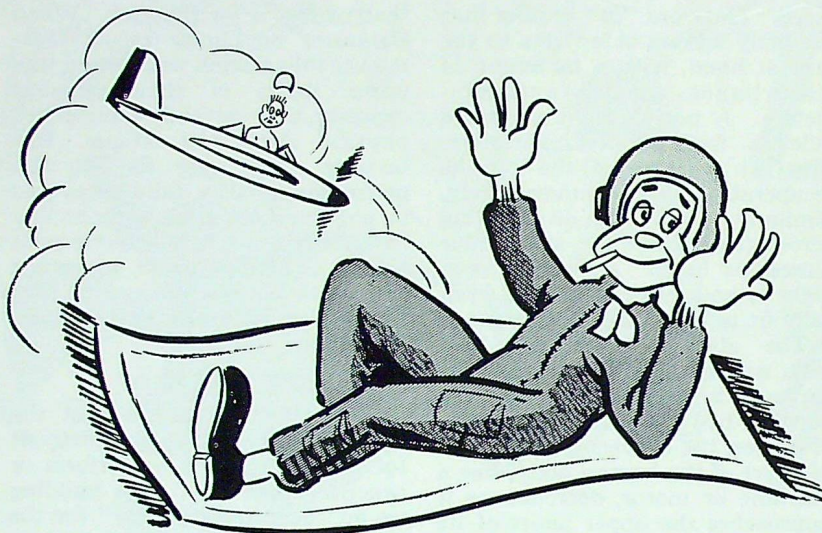
There is no question that the best way of becoming physically fit for a specific job is to perform or practise repeatedly, thus building up an "acquired capacity" for the particular activity. The best way to get fit for running is to run; the best way to get fit for flying is to fly. Although this is true, its practical application for the flyer is limited in most instances because of time and expense. To fly efficiently, the body must function at a level well below its acquired capacity. Just as a car driven at 50 miles per hour uses less gas per mile than when it is driven at 110 miles per hour, so your body working below its acquired capacity for flying uses less energy in flying.

Using the example of the runner again, Bannister acquired through long hours of training an extremely high level of physical capacity for running. Consequently, he could run a mile in six minutes with relative ease and without any undue disturbance, even though his four-minute efforts left him temporarily exhausted.

To develop a high level of physical capacity in running does not present much of a problem. All a person has to do is to run a great deal more than he will be required to do at any given time. This may be 10 to 15 times more than he will require. For aircrew to develop an adequately high level of acquired capacity by flying 10 to 15

A pilot who, on sprinting across the tarmac, is unduly tired . . .





The best way to get fit for flying is to fly strenuously . . .

times longer and faster than will normally be required is obviously out of the question. A more practical and simple approach is a well planned programme of physical exercises which supplements daily flying activities. However, exercise to be of any value in this regard must be frequently and regularly performed, in such a way as to overload progressively one's muscular and organic systems.

How can you develop an adequate level of acquired physical capacity? Firstly, you must determine what parts of the body require attention. Everyone performs more or less the same basic physical activities in the course of a day, such as sitting, standing, walking, climbing stairs, etc. Therefore, we all need a minimal level of the same kind of fitness to perform these activities most efficiently. Attention must, however, be focused on the important areas of the body that are neglected by most of us. These are the muscles of the lower and upper back, arms and

shoulders, trunk and legs, and the vital organs of the body which supply the fuel to these muscles.

The most suitable physical activities are those that will develop an adequate physical capacity in all these important areas in a harmoniously balanced manner. The best way is through the steady diet of a pleasant and interesting sports programme, just as a balanced food diet must ensure that nutritional requirements are adequately met.

If we analyze each individual sport in relation to the physical values that can be derived from it, we find that no single sport provides the balance of activity for all parts of the body. (Swimming probably comes closest to fulfilling this requirement, but this is only true on a competitive level). Adequate coverage from sports can only be obtained, however, by regular participation in a number of carefully selected ones. To get maximum benefits, these sports must be played frequently and regularly. Desirable though this

approach may be, it is nevertheless impossible for the average person for a number of reasons—availability of play opportunity, time, finances, etc.

The most practical physical fitness programme for most of us is the not too frequent participation in one or two sports, supplemented by a set of exercises which could achieve the desired results.

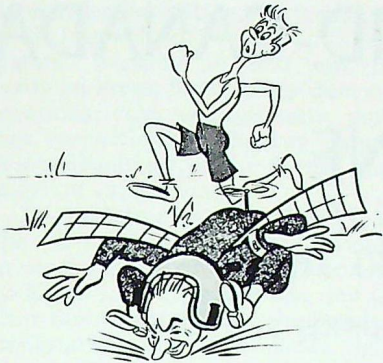
THE R.C.A.F. 5BX PLAN

In 1956 the R.C.A.F. began to do research with a view of developing such a series of exercises. Although the R.C.A.F. has always had good physical conditioning programmes, none of these has successfully motivated its personnel voluntarily to keep fit after the initial phase of their training.

The first step in this undertaking, therefore, was to find out why R.C.A.F. personnel did not keep as physically fit as they should. A survey was conducted and all the objections to exercise programmes were listed and recorded. These objections were raised by personnel in all ranks and trades, some of whom were vehement antagonists of physical activity in any way, shape or form.

After these objections were listed, classified and studied, the next stage was to analyze and resolve them. This was begun early in 1957. The problem, basically, was to develop a programme which would not only provide the means (knowledge and skills) of *how* to keep fit but to create a *desire* for all personnel to do so. This had to be accomplished through physical activities which can be divided into two basic types—sports and calisthenics or exercise.

Sports, as stated before, would be the ideal way in which to keep fit but the unavailability of the necessary facilities, equipment, time and other participants to make up teams limits its effectiveness in a balanced programme of fitness. In many instances, personnel have



You may be fit to run, but not to fly.

adequate opportunity but lack the necessary skill to enjoy playing sports. A person voluntarily plays sports because he gets a lot of fun out of it, and he can only enjoy playing if he has some degree of success. Nobody plays very long a game in which he is always badly beaten. On the other hand, one who has some degree of proficiency in the skills of a sport and can have some satisfaction from playing, will play regularly with a great deal of benefit.

New entrées in the service are not adequately equipped, skillwise, to play even our most popular sports. One problem, then, was to develop these skills in all R.C.A.F. personnel so that they would become basically proficient in all the popular sports played in Canada. A mass instructional technique was designed to enable our physical fitness instructors to accomplish this task satisfactorily with all trainees.

It was recognized at the outset that not everybody wants to play or has the aptitude to play the same sports. In order to give everyone an opportunity to find at least one sport in which he can have "fun", the programme is designed so that each trainee will be exposed to and be taught the necessary basic skills in a great number of sports.

INDIVIDUAL EXERCISE

The main problem, however, was a programme for the individual who just did not have the opportunity to engage frequently or regularly in sports. What was required was a set of simple exercises which he could do by himself, at his convenience, to develop and maintain any level of physical fitness. These exercises, employing all the physiological principles of muscular and organic development, had to be so simple that everybody could do them with a minimum of instruction and without any equipment whatsoever.

Accordingly, a research team conducted a 12-week experiment at Trenton on 120 flight cadets. The purpose was primarily to find the exercises that would meet our requirements. After analyzing and assessing hundreds of different exercises, five basic ones were selected as being adequate to fulfil the criteria. These exercises are not new, but the way in which they are used is new, and their applica-

tion resulted in the R.C.A.F. 5BX Plan for Physical Fitness.

One of the unique features of the plan is that the level of acquired physical capacity required for each individual is determined and charted in such a way that he can follow his daily and weekly development step by step. Thus, the proper level of physical fitness is made easy and available to everyone.

Next month distribution of the initial publication booklets describing in detail the 5BX Plan begins throughout the R.C.A.F. Coincidentally, a series of clinics known as "Project Fitclin" will commence "to promote, motivate, and educate" service personnel in the art of keeping fit. Aimed initially at aircrew engaged in jet flying, it is hoped eventually that the counselling and guidance programme will reach every officer and airman. If you conscientiously follow the directions so given, there should be no negative answers to the question, "Are You Fit?"

New entrées are not adequately equipped to play sports . . .





A 108 Comm. Flt. Sikorsky H-34, used to haul diesel fuel for construction vehicles on the MCL.

THE MID-CANADA LINE

PART THREE

BY FLYING OFFICER S. G. FRENCH

OPERATION WHIRLYBIRD

IN THE early planning phase of the Mid-Canada Line it was decided that, because of the nature of the terrain in which airlift of construction materials was required, the use of helicopters would be compulsory. Since no civilian operator then in existence possessed the means to supply and support sufficient helicopter strength for the operation, it was decided that the R.C.A.F. would have to fulfil this commitment. The result was the formation of the first unit in the R.C.A.F. to be equipped exclusively with rotary wing aircraft—108 Communications Flight.

R.C.A.F. Station Bagotville was selected as the base of operations for this new unit, officially born on 1 June 1954. Squadron Leader R. T. Heaslip, the most experienced helicopter pilot in the R.C.A.F. at the time, was appointed commanding officer. With him on the first day of operations were Flying Officer MacGregor, Warrant Officer II Shortt, and Sergeants Durham and Pugh. This advance party was charged with the task of setting up an organization for the acceptance and maintenance of the unit's

aircraft, and for the extensive training programme that would be required in order to operate and maintain the soon-to-arrive helicopters.

Orders were placed for six Sikorsky H-34s and six Piasecki H-21s to be delivered by late 1955. Six Piaseckis of similar design from Search and Rescue Units across Canada were diverted to 108 Communications Flight for training purposes. During the first few months, Sqn. Ldr. Heaslip was the only pilot attached to the unit and on his shoulders, therefore, rested the job of ferrying the various training helicopters from Morton, Pennsylvania, and Bridgeport, Connecticut.

While the C.O. was doing this, a training programme designed to provide the unit with a nucleus of trained S-55 pilots was in progress at Okanagan Helicopters in Vancouver. This company had been contracted to give conversion training to selected R.C.A.F. pilots who had completed basic training on S-51 helicopters at the Light Aircraft School at C.J.A.T.C., Rivers, Manitoba. The first grad-

uate from Okanagan joined the unit in November.

Ground crew airmen posted to 108 during the summer of 1954 had plenty of time on their collective hands, for there were no aircraft on strength. With typical airman devotion, we are told, they refused to spend all of their time fishing. They decided to assemble a *Harvard* for the Maintenance Flight of Bagotville. This aircraft had been out of service for 18 months, and appeared to be not only dismembered, but dispersed as well. It took about two months of labour and detective work to find all the parts and fit them together. A few months later, they had a hangar full of helicopters with only Sqn. Ldr. Heaslip to fly them.

As the year approached its demise, the unit increased both in air and ground manpower. On 10 December 1954, the first of many mercy flights was performed. Mr. Max Nebergall, a Piasecki Company pilot, Flying Officer Kirkwood, Sgt. Pugh, Bob Chesney, Piasecki technical representative, Nursing Sister Jeanette Cagne, and Mr. R. B. Less, a civilian bush pilot, were credited with evacuating a seriously ill Indian woman from a camp near Lake Manuan, 170 miles north of Bagotville, to a hospital at Roberval, Que.

The training continued: experimentation on lift loads in all types

of weather, formation of a technical training school, cross-country flights, working in and out of confined areas, flight safety demonstrations, cold weather tests, parties (conditioning), hockey games (reconditioning), night flying, and survival expeditions.

In the latter part of May 1955, the C-119s were busy moving ground personnel and equipment to Knob Lake. On the last day of that month six H-19s (the Service designation for the S-55) left Bagotville for Knob Lake. June saw the beginning of the activities for which 108 Comm Flight was originally formed—the transportation of men and materials for the construction of the Mid-Canada Line.

* * *

The R.C.A.F.'s "hill and gully riders" began to prowl the ridges of Quebec and Labrador. Operation *Backlash Two*, the site proving,

path testing, and site survey phase, began with six Sikorsky H-19s working out of R.C.A.F. Detachment Knob Lake. Three "choppers" were allotted to the site proving and radio path testing being done by R.C.A.F./S.E.G. and Bell Telephone Company engineers; while the other three carried personnel and materials to open the remote main bases while awaiting the Quebec provincial survey teams. Often the surveyors and their equipment were lowered to the ground from their hovering helicopter by mechanical hoist in areas where muskeg and/or bog prevented landing of the chopper.

As each site required at least two days to be surveyed, the waiting helicopters spent this time performing domestic transport. This was imperative because fixed-wing aircraft could not operate during the break-up period. However, some fishing expeditions were possible. Many large trout were

caught and, as is to be expected, many larger ones got away.

The site proving and survey parties and helicopters slowly worked their way west through the James Bay region to Moosonee, where a new main base of operations was set up under canvas. To expedite the operation, fuel caches had been established at a number of points by tractor train during the preceding winter.

The area on the west side of Hudson Bay was quite different from the Labrador-Quebec area. This new area was, as has been said before, almost entirely muskeg. Great care, therefore, had to be observed in the selection of landing areas. It became the practice to attempt the landing on various patches of caribou moss until one was found which could support a helicopter for a period of time. As the operation moved westward beyond Fort Severn another temporary camp, known as Camp Seven, was established.

Site proving was completed on 24 July 1955 and the two H-19s returned to Moosonee where they were joined by one of the helicopters on site survey when that phase was completed on 27 July. The three remaining machines of the site survey detachment flew on to Edmonton in readiness for future operations in that area.

During the period of work in the west in July, the H-19s were seldom unserviceable. The only major breakdown occurred at Winisk when a routine inspection disclosed metal in the oil filters. A new engine was flown to the site in a *Canso*. A ground crew was rushed from Moosonee in an *Otter*; and the helicopter was back in service within two days. All aircraft were flown for minor inspections to Winisk where, in less than one day, a hard-working ground crew, suffering most adverse conditions, would complete the job.

At the advent of September 1955, the unit had four detachments in

Vertol H-21 heads back to marshalling area after depositing load at MCL construction site.



the field. Two detachments of three *H-19s* each were employed in the propagation testing of sites. One of these worked out of Knob Lake, while the second was based at Grande Prairie, Alberta, once a port on the North-West Staging Route. The other two detachments were assisting in the fighting of forest fires from bases at Baie Comeau, Que., and Cochrane. Many of the unit's pilots and crewmen actually participated in the fighting of the fires.

Most of the latter part of 1955 was taken up in training and conversion. Thirty-four pilots had been brought to operational standard on the *H-19*, with 20 of these also qualified to fly either the *H-34* or the *H-21*. In December the unit transported one very distinguished V.I.P. to such points as Arvida, St. Honore, St. Felicien, and Mistassini. His name? Santa Claus.

* * *

No. 108 moved to Rockcliffe at the beginning of 1956. Soon the major job of supplying the sites began. Helicopters, pilots, and ground crews worked out of many bases including Winisk, Knob Lake, and Great Whale River. By May, operations on the western half of the Line had been stabilized on a full scale basis. Time was of the essence, and at one period the help of the R.C.N. was sought. The navy's helicopters were used very effectively in the Knob Lake and Great Whale areas.

One day Sqn. Ldr. Heaslip was called in the early hours of the morning to search the Uplands area for rockets that were discharged accidentally from a *CF-100*. Shortly after, Flying Officer Nicolson was despatched to Cornwall to pick up an injured Seaway employee who had received serious head injuries. The injured man was flown to the Montreal Neurological Institute in a very dramatic life and death flight. The scene of many a gridiron battle,

Molson Stadium, assumed a new function—a heliport was born. Several mercy flights were flown during this period, all done by pilots on relief rotation from the flight's main task in the North.

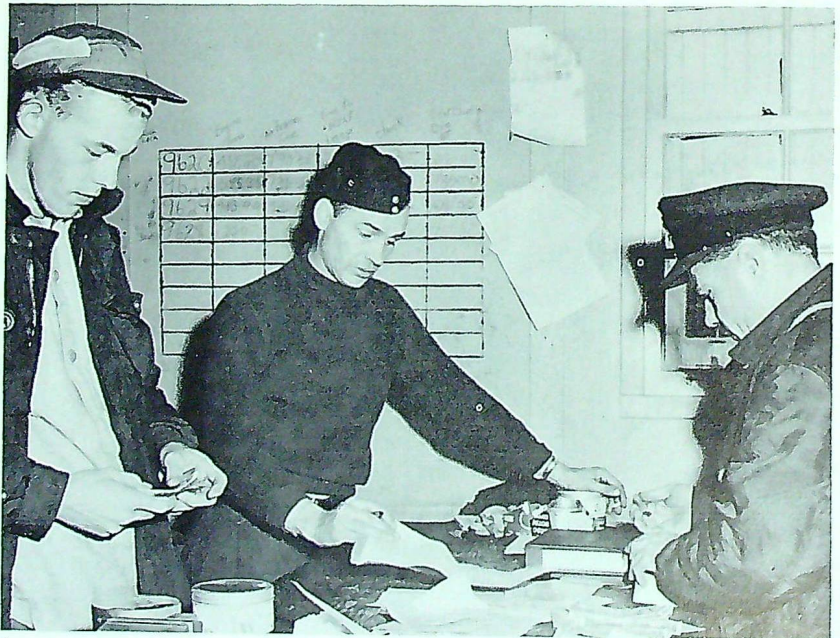
Novel tasks on the Line were almost as frequent as their more staid and routine counterparts. The need for sand at the Detection Sites in the Great River area gave rise to one of these tasks. The most suitable sand in the site areas was found and marked by helicopter survey. How could a helicopter transport sand? Very simple. A net with a tarpaulin lining was filled, picked up, taken to the hill, and then one end of the net was released.

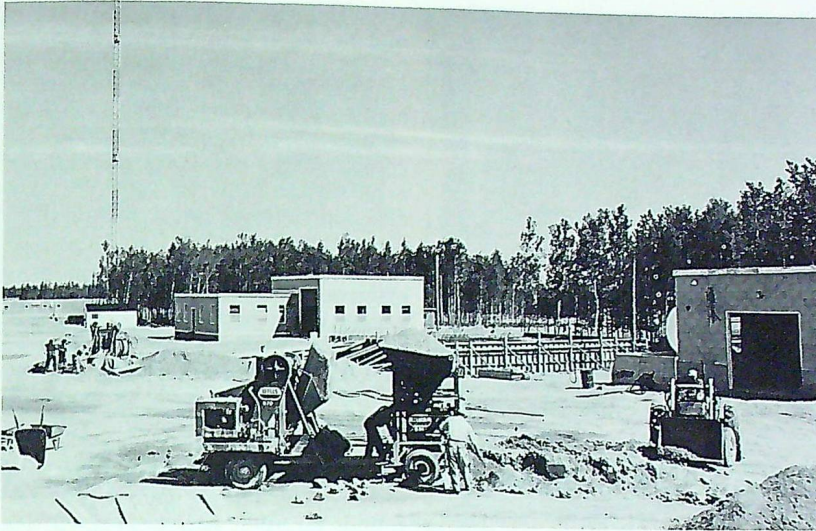
Once, in October of 1956, a strange series of incidents was born when Helicopter 9639 was flown to Knob Lake from an outside site after temporary repairs. The aircraft had been out of service for several months, since it had crashed

on its side just off the landing pad. It then started on the flight to Rockcliffe, with 9644 acting as "mother" ship. Near Baie Comeau, 9644 was forced into an emergency descent because of a supercharger failure. The remainder of the trip was carried out, after repairs, with the original lame duck mothering the mother. Once at Rockcliffe, one unsuccessful attempt was made to fly 9639 to Arnprior for major repairs. Then the decision was made to tow it the distance of 40 miles by mule. Flying Officer B. Croxton acted as mule-skinner on this two-day marathon. Needless to say, many an eyebrow was raised amongst the solid citizens of Ottawa and their neighbours on Highway 17.

February 1957 was a memorable and sad period for the members of 108 Comm Flight. With little left to do but routine day-to-day maintenance supply of the western sites, all ten *H-19s* were handed over to a

Pay Parade at Knob Lake, l. to r.: LAC R. E. Holmes, Sgt. E. R. Beers, Flying Officer B. B. Finn.





MCL main station nearing completion.

civilian contractor, Okanagan Helicopter Company. In June 1958, with the transfer of nine *H-21s* to Spartan Air Services, 108 left the Mid-Canada Line project for good and became known as No. 5 O.T.U. Commanded now by Flt. Lieut. W. J. Kelly, the unit will train future helicopter pilots on Vertol *H-21* and Sikorsky *H-34* equipment.

CONSTRUCTION AND INSTALLATION

The summer of 1956 saw building construction in high gear with electronic installations nearing completion in the western sections. The project involved the erection of several hundred steel towers, approximately 16 million cubic feet of permanent buildings in over 250 buildings ranging from small survival huts to complex equipment and operations buildings, power plants, quarters, water treatment and sewage disposal plants, and large helicopter hangars.

One instrument in this phase was Air Materiel Command. To them

goes the credit for much engineering and supply assistance, and for the superlative job done by one of their units in the fall, winter, and spring of 1954-55. It was No. 2 Construction and Maintenance Unit which performed the arduous task of constructing the original airstrip and erecting the construction camp during Great Whale River's most hostile months.

Construction of the Line, with the exception of the above, was done by a number of major civilian contractors, with the Bell field organization acting as project and site engineers, looking after transportation, and generally managing the job. Defence Construction (1951) Limited (D.C.L.) negotiated and awarded contracts for buildings and structures, calling for tenders where necessary.

D.C.L. appointed the Management Contractor as its agent with respect to field supervision of the contract. This covered complete direction of the job in the field both as to timing, quality of workmanship and overall co-ordination to meet design and all job require-

ments to the satisfaction of D.C.L. It also included the verification of progress claims of the contractors and recommending them to D.C.L. for payment.

D.C.L. organized a group at A.F.H.Q. to maintain direct liaison with its field representatives on the one hand and with the Project Agent's staff on the other. Its field representatives were located at a few key points along the Line from which they had access to all sites.

With a premium on time, especially field construction time, the use of prefabricated panels was a welcome necessity. Almost all Mid-Canada Line buildings are of steel panel construction, with structural steel wind-bracing, and concrete foundations and floors at the Main Stations. Most of the Detection Sites' buildings are set on creosoted wood sills or concrete posts.

Along the Line, soil conditions vary from clay bed 100 feet deep to muskeg, sand, permafrost, shale rock or solid granite. Foundation design problems were, therefore, multitudinous. The foundations themselves were very important, especially those used for the towers. The towers are guyed; and the rigidity requirements called for a maximum allowable sway at the 350-foot height of plus or minus six inches. The reader may imagine the problems encountered in this respect in Labrador, where winds up to 128 miles per hour have been registered.

The discovery of water fit to drink, water treatment plants, sewage disposal plants, all brought their own problems. At the western, muskeg-surrounded sites, the lack of water and its quality when obtained, have provided one of the most serious hardships. At one site the drinking water is drawn from a brown, dead-water lake, and tastes like pure chlorine. The same is true of many others where deep wells were dug without success. At one western site, the

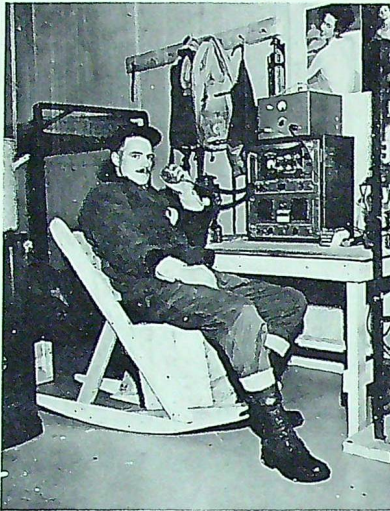
drinking water is still flown in by helicopter while its inhabitants obtain their washing water from a lake one mile away. The trip to this lake and return over muskeg requires two men, a power truck, a winch, many innocent young poplars, and five hours of back-breaking labour each week.

* * *

A typical Detection Site consists of a prefabricated building, 28 by 60 feet. The building is divided into three areas—power, technical, and living. One end of the building houses three diesel electric generators, any one of which is designed to provide the power required. Should the operating plant fail, the next diesel will automatically start and supply the power. The third plant is provided for additional standby and ensures one standby during maintenance and overhaul. The buildings are heated by heat exchangers on the diesel exhaust system.

The central portion of the building houses the detection equipment, radio relay equipment, fault alarm equipment, and at those stations which require them, the LF Beacon, HF receiver, VHF and UHF transmitters and receivers and such other ancillary equipment as is required. The remaining end of the building is designed as a living area. This is complete with built-in cupboards, stove, refrigerators and sink, as well as bedroom and shower. A deep freeze refrigerator is built into the building.

Each Detection Site has at least one tower which supports the antennae. The towers are four feet square and vary in height from 25 to 350 feet, depending upon the height of the hill upon which they stand. A helicopter landing pad is built adjacent to the site. Oil storage tanks for the diesels are also located at the site. An emergency shelter complete with rations, heating, etc., is provided in the immediate vicinity of the technical build-



L.A.C. R. S. Stirrat takes life easy in a homemade rocker at his MCL post.

ings. In the eastern sections where weight was a vital factor in transportation, magnesium panel floors were used in these buildings. While each of the Detection Sites was designed to be essentially unmanned in operation, there are sufficient living quarters provided for visiting maintenance teams who may have lengthy stays imposed upon them either by unfavourable weather or aircraft unserviceabilities.

* * *

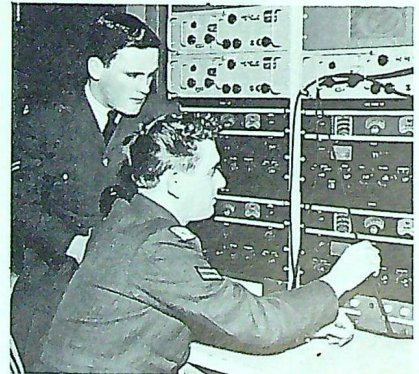
A typical Control Station consists of an operations building which houses the technical equipment, and administrative building, living quarters, mess hall and kitchen, food storage building, supply building, garage, a large and small hangar, a helicopter pad or air strip, fire hall, power house, heating plant, pump house, sewage disposal plant and a recreation/drill hall. Several of the sites contain special buildings serving special local functions, e.g., the locations that have radar towers, control towers at main stations,

tropospheric scatter arrangements, and so on.

The operations building has five main areas in addition to seven or eight rooms which include offices, record storage, wash rooms, air conditioning, etc. The five main areas are the operations room, the electronics repair and overhaul, the electronic equipment room, the telephone exchange room, and the electronic storage room. The operations room is the central control for the Detection Sites in the section adjacent to the Control Station.

Each Control Station has rearward communication to a designated A.D.C.C. consisting of a voice query circuit and a teletype telling circuit. Alternate facilities are provided to the adjacent Control Station in case of failure of primary rearward communications. In addition to these operational circuits, each station is in communication with a designated D.O.T. Air Traffic Control Centre by voice circuit and a teletype circuit with the D.O.T. meteorological office. Administration teletype circuit is also provided to the nearest R.C.A.F. communications unit. The Control Station local telephone service is supplied by an automatic dial system. Voice cir-

Corporals L. F. McDonald and A. G. Crowell man radio communication equipment at MCL site.





Barry Gunn, Dept. of Northern Affairs school teacher, his Eskimo wife Eva, and their husky pup at home at Great Whale River. Mr. Gunn teaches English to 174 Eskimo and Indian children.

uits are provided between Control Stations for operational and administrative purposes.

The electronic repair and overhaul area is a laboratory and workshop. Sub-assemblies and chassis which are replaced by maintenance personnel at the Detection Sites, are repaired and readjusted in this area. The electronic equipment room houses the technical equipment. The remote control of the technical facilities at the Detection Sites is controlled from this room, and it contains the fault alarm system which is monitoring some 30 items at each site.

By January 1957 the western half of the Line was ready for operation. In April four western Control Stations were manned by R.C.A.F. operators and, although the identification function was not complete, detection and operation commenced. Today the Line is fully operational from coast to coast.

THE LINE TODAY

The permanent organization for the operation and maintenance of the Mid-Canada Line is somewhat as follows. It is under the opera-

tional control of Air Defence Command, which has established a unit within its organization for this purpose. The C.O. of each Control Station is responsible to this unit at A.D.C.H.Q. R.C.A.F. personnel are responsible for the operation of the Line.

The maintenance of the Line has been allotted to two civilian firms, the Bell Telephone Company and Canadian Marconi. Marconi is responsible only for the Labrador-Quebec section of the Line. Many factors contributed to the Government's decision to employ civilians. One is that the R.C.A.F. strength establishment is too small to cope with the reasonably large staff required. Personnel would have been required, not only on the Line itself, but to provide extensive technical training facilities. This, it was decided, was neither economical nor necessary.

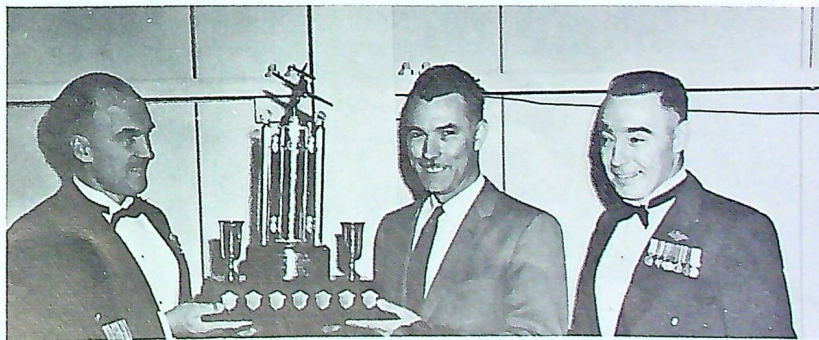
Service personnel on the Line are normally rotated every six months. The tour was shortened for some of the initial staffs to allow for future

phased turn-over. The civilians' period of duty is from one year to 18 months, depending upon the location of the site, the individual's ability to adjust to his environment, and his personal desire to stay on.

Each Detection Site is to be manned with two civilian technicians for approximately one year. Then the maintenance of these sites, it is expected, will be carried out by visits every two weeks. These visits are only practical by helicopter in the eastern sections, although this method is planned throughout the Line. The design of the Detection Sites was influenced to a large extent to provide ease of maintenance. Each site is equipped with a complete set of spare sub-assemblies and panels for replacement in case of failure. Such replaced units will be transported to the Control Station for repair and readjustment and replaced by spare units from the Control Station.

Each Control Station requires approximately 100 personnel to provide all facilities other than operations and identification in the ops room, e.g. administration, housekeeping, recreation, medical, meteorological, helicopter operation and maintenance, control tower operation, teletype operation, etc. R.C.A.F. personnel man the oper-

At R.C.A.F. Stn Dawson Creek, the first anniversary celebration of the MCL was highlighted by presentation of the "Good Citizen" award by Air Commodore D. A. R. Bradshaw, D.F.C., to station catering foreman J. Lindsay. Sqn. Ldr. V. A. Sutherland, station C.O., beams approval.



ations room and perform the identification and early warning function.

The combined messes at each Control Station provide the personnel on the Line with certain essential off-hour outlets, as do the recreation/drill halls. The men at one western Control Station have a ball team entered in the local northern league. Appropriately enough, the name of this team is the "Bell-Aires". The drill hall at this station was the scene of the Line's first major social function, a dance attended by many of the North's dignitaries. Sqn. Ldr. V. A. Sutherland, commanding officer, and Mr. George Dunn, Bell plant superintendent, received the 600 guests at the door, and pinned northern corsages on the ladies. The dance was the talk of the Alaska Highway for weeks thereafter.

The Line could easily be renamed the "New Canadian Line". At one

Control Station some 23 nationalities are represented by new Canadians. The skills these immigrants have brought from their homelands are doing much to produce a smoothly functioning chain. Most are holding jobs far below their capabilities as they adjust to their new lives. At one base, for example, an ex-Lt. Col. from the Royal Marines is in charge of despatching supplies to remote sites.

Mess life is enlivened by the intermingling of the nationalities. Many stations have organized as many as 25 separate recreational activities to amuse and educate the bachelor life, which must survive a year's isolation from the patter of tiny feet or female discussions. The Toastmaster Club organized at a base on the shores of Hudson's Bay to teach public speaking is one of the best attended and more fascinating hobbies.

Camera fiends abound and

cameras have replaced cars as conversational pieces. Indoor golf, boxing and wrestling, stamp collecting, archery, trap shooting, camera clubs and all the outdoor sports are included in the recreational itinerary.

Although the normal tour of duty for civilians is one year, one station has already had a re-signing of 80 percent of its staff for an additional term—a recommendation that life on the Line, despite the isolation, has many advantages.

To visit the Line now that the construction debris has been cleared away, is to find surprises on all sides. No seeming bustle and clatter of equipment; only the softly humming electronic machines, with their flashing lights and low-keyed bells, make one aware of the 24-hour vigilance against an invasion which could endanger our very existence.

THE END

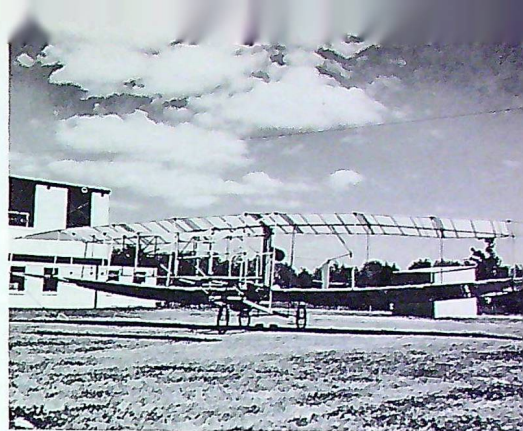
"Tuskers" Take Steinhardt Trophy

Members of No. 413 (Tusker) Squadron do a little trumpeting on learning that they have been awarded the Steinhardt Trophy (insert) as the most efficient all-weather interceptor squadron in Canada. Based at R.C.A.F. Station Bagotville, P.Q., the "Tuskers" are the second squadron from that base to win in as many years.

The trophy honours the memory of the late Hon. Laurence A. Steinhardt, the U.S. Ambassador to Canada who was killed in an aircraft crash. It was won last year by 432 (Black Cougar) Squadron, also stationed at Bagotville. The "Tuskers" are commanded by Squadron Leader C. Allison.



GOLDEN ANNIVERSARY OF FLIGHT TO BE COMMEMORATED NEXT YEAR



Silver Dart Mk. II was constructed at Trenton under guidance of Squadron Leader R. Wood, Flying Officer J. H. O'Hara and Leading Aircraftman L. McCaffrey.

PLANS now are being formulated for the observance next year of the fiftieth anniversary of flight in Canada.

The National Co-ordinating Council for the Golden Anniversary of Flight in Canada has met once a month since last September. The idea was born when the Air Industries and Transport Association of Canada invited representatives of eleven national aviation organizations to meet in Ottawa to consider plans for a co-ordinating council which would promote and integrate the observances. The Council is currently promoting the formation of local committees which will be linked to the Council only for co-operation and co-ordination of efforts across the country.

The Council now has representatives of twelve organizations: R.C.A.F., R.C.N., Canadian Army, Department of Transport, A.I.T.A. for industry and carriers, R.C.A.F. Association, Canadian Aeronautical Institute, Royal Canadian Flying Clubs Association, Canadian Owners and Pilots Association, National Research Council, Air Cadet League, and Aviation Writers Association. It has also been suggested that Boards of Trade and Chambers of Commerce be invited to appoint a representative.

Officers of the Council appointed so far are: President, Gordon Stringer of Canadair; Secretary, Victor Koby of Spartan Air Services Ltd. Executive Committee: Mr. Stringer; Arthur Stewart, Avro; Squadron Leader R. Wood, R.C.A.F.; Roy Kervin, Montreal Gazette and A.W.A.; and H. C. Luttman, Canadian Aeronautical Institute. Committee Chairmen

are: Finance, Arthur Stewart; Publicity, Roy Kervin; Special Projects, Rod MacInnes, Trans Canada Airlines; Historical Research, George Ross, Air Cadet League; Programmes, Wm. Peppler, C.O.-P.A., and Wm. Paris, Royal Canadian Flying Clubs Association.

The Council will attempt to make Canadians more aware of this country's contribution to aviation progress, of Canada's air power, aviation research and of the contribution of Canadian air transport to the country's development. Special air shows are planned and a highlight of the year will be a ceremony on 23 February 1959 marking the 50th anniversary of powered flight in Canada at Baddeck, Nova Scotia. A full-scale

replica of the *Silver Dart*, the first powered aircraft to fly in Canada, has been built at R.C.A.F. Station Trenton for use in the commemoration. It will be flown at Baddeck and then put on static display across Canada.

The Post Office Department will issue a special 5¢ stamp in 1959 to mark the occasion. 1959 is the 35th year of the R.C.A.F. and it is planned to have other displays to mark this airforce birthday as well as the Golden Anniversary of powered flight in Canada.

Arrester Barriers for Seven CF-100 Bases

RUNWAY arrester barriers are being installed at seven R.C.A.F. fighter bases in Canada this summer. R.C.A.F. Stations St. Hubert, Bagotville, Chatham, Comox, Cold Lake, North Bay and Uplands are receiving the new equipment.

Operating on the "water squeezer" principle, the arrester is an emergency device designed to stop tricycle-wheeled aircraft, up to and including the weight of the CF-100, from going off the overshoot end of the runway. Stretching across the runway about 1000 feet short of the overshoot end, the arresting device consists of a network of nylon straps supported above a steel cable which is attached on either end to a piston

inside an anti-freeze-filled tube. As the nose wheel of an aircraft passes over the cable and catches on the nylon straps, the device is triggered and the cable in turn is thrown up and around the aircraft's main landing gear. Action of the pistons being drawn through the liquid-filled tubes is sufficient to stop the aircraft before reaching the end of the runway.

Since early last summer the Central Experimental and Proving Establishment at Uplands has been carrying out tests on the "water squeezer" arrester. During test runs aircraft weighing in the order of 35,000 pounds and travelling along the runway at speeds of 150 miles per hour have been stopped by the device without damage.

BADGES OF THE R.C.A.F.: II

This is the eleventh in our series of illustrations of R.C.A.F. badges. The dates shown in brackets beneath the names of the units are the dates on which the badges were officially authorized. Black-and-white reproductions of the badges shown may be obtained by writing to: Director of Public Relations, Air Force Headquarters, Ottawa, Ont. Glossy or mat prints are available in two sizes: 8" x 10" (50¢) and 11" x 14" (\$1.00). Cheques or money orders (not cash) must be made payable to the Receiver General of Canada.

No. 2 AIR COMMAND HEADQUARTERS

(May 1947)

Between two wheat sheaves a bison's head caboshed.

Servituri Patriae

(To serve our Country)

The badge is symbolic of the prairie provinces which comprised the area of this Command.

When the British Commonwealth Air Training Plan began to contract in the closing months of the war, Nos. 2 and 4 Training Commands at Winnipeg and Calgary were disbanded and No. 2 Air Command was formed, on 1 December 1944,



with headquarters in Winnipeg. In a subsequent reorganization of Air Commands to conform with post-war plans, No. 2 A.C. was disbanded on 28 February 1947 and Winnipeg then became the headquarters of No. 11 Group in North West Air Command.*

R.C.A.F. STATION SUMMERSIDE

(March 1951)

Issuant from Barry wavy (water) a mount, thereon an oak tree fructed.

Fundamenta in Futurum

(Foundations for the future)

The oak tree with its acorns typifies the growth and strength of the Canadian Confederation which was born in Prince Edward Island. The heraldic waves of water indicate the insular location of the station, and the motto refers to both the birth of Confederation and the station's role as a training centre.

Opened in January 1941 as No. 9 Service Flying Training School, Summerside subsequently, in July 1942, became a centre for reconnaissance and navigation training which was to be its role through the next decade and more. Inactive for about a year, the site was reopened in March 1947 when Station Summerside was formed to administer the Air Navigation School and, later, the Central Navigation School which were located there.

*The original painting of this badge is missing; anyone having knowledge of its whereabouts is asked to communicate with the editor.



When navigation training was transferred to Winnipeg late in 1953, No. 2 (M) O.T.U. was relocated at Summerside and the station then became a component of Maritime Air Command.

No. 2 MARITIME OPERATIONAL TRAINING UNIT

(January 1953)

Over Barry wavy (water) a winged torch.

Cum Scientia Vires

(With Knowledge comes Strength)

The winged torch and the heraldic representation of water symbolize the unit's role in training for maritime operations.

When, in the post-war years, it was proposed to form maritime squadrons in the R.C.A.F., No. 2 Maritime Operational Training Unit was formed at Greenwood, N.S., on 1 November 1949, to

provide the necessary operational training for the crews. From Greenwood the O.T.U. was moved to Summerside, P.E.I., in November 1953.

The Suggestion Box

Air Marshal Hugh Campbell, Chief of the Air Staff, has written letters to the undermentioned N.C.O.'s thanking them for original suggestions which have been officially adopted by the R.C.A.F.



Flt. Sgt. E. J. Korody, of R.C.A.F. Station MacDonal, suggested an improvement in the method of painting "witness" marks on aircraft parts.

Flt. Sgt. R. M. Doucette, of R.C.A.F. Station Greenwood, invented an anti-vibration device for the generator engines used in *Neptune* aircraft.



R.C.A.F. ASSOCIATION CONVENTION COVERAGE

The R.C.A.F. Association has relinquished its normal space in this issue due to the fact that next month "The Roundel" will carry a complete picture and story coverage of the recent National Convention held in Edmonton, Alta. Watch for the special Association section in the August issue.

Sgt. J. P. Rogan, of 7 Supply Depot, Namao, suggested the permanent mounting of leading edge fillets on the wings of *Sabre* aircraft, preventing loss while on the ground maintenance or damage from twisting during flight. (Cash award.)

Sgt. R. Angus, of R.C.A.F. Station Toronto, devised a new rack which provides convenient and safe temporary storage of rockets undergoing periodic inspection. (Cash award.)



Everyone can give pleasure in some way. One person may do it by coming into a room, another by going out.

Royal Canadian Air Cadets



(This section of "The Roundel" is prepared by Air Cadet League Headquarters, 424 Metcalfe St., Ottawa, Ont.)

SUMMER TRAINING PROGRAMME

CLOSE to 7,000 cadets—largest number in history—will take part in the 1958 summer programme. On 30 June the Air Cadet summer camps at Sea Island, Clinton and Greenwood will welcome the first group of cadets fresh from their final school examinations. Scholarship flying training courses will also begin on 30 June in all provinces except the Maritimes, where they will start on 7 July due to later school closing dates. Two hundred and fifty R.C.A.F. scholarships, which will cover a cadet's ground school and flight training up to private pilot's licence level, will be bolstered by approximately 75 League and private scholarships.

Those who have seen a copy of the 1958 Air Cadet Annual will have read with interest Squadron

Leader W. J. Hynds' report on the operation of the Senior Leaders' and Drill Instructors' Courses. This year's Senior Summer Camp at Camp Borden will run from 7 July to 22 August. The National Drill Competition for the Larry Marsh Trophy will also be held at Borden on 20 August.

Three days later at the Minnesota State Fair, the Canadian International Drill Team, along with its U.S. Civil Air Patrol counterpart, will take part in a 1958 innovation—the first International Drill Display. The tenth and last International Drill Competition was held last August at the C.N.E. in Toronto, with Canada retaining permanent possession of the General Lucas V. Beau Trophy, having won six out of the ten annual contests.

Cadet WO1 David Ashton, of 320 Squadron, accepts from Group Captain R. O. Shaw, commandant of C.J.A.T.C., Rivers, the Western Manitoba Air Cadet Shield. The Rivers squadron placed first for the second consecutive year in competition with Brandon, Swan River and Strathclair at the annual rally held recently at C.J.A.T.C.



EXCHANGE VISITS

At time of writing, representatives from the U.K., Sweden, Holland, Norway, and Denmark, the U.S. and Canada are meeting in London, England, to finalize details for the 1958 Air Cadet exchange visits. League General Manager George M. Ross and Wing Commander L. G. R. Virr of Air Force Headquarters are the Canadian representatives.

Tentative arrangements call for 25 Canadian cadets to fly to Britain, eight to the continent and 25 to the U.S. Overseas cadets coming to Canada this year will start at St. John's, Nfld., on 20 July and visit all of the Maritime provinces before going on to Quebec and Ontario. After some sight-seeing in Montreal and the traditional visit to C. Douglas Taylor's summer home in Ste. Agathe, the overseas group will mingle with the U.S. cadets and 200 of our top cadets who will be taking the Senior Leaders' and Drill Instructors' courses at Camp Borden. The next stop will be Algonquin Park, where, with the visiting C.A.P. cadets, they will spend four days under canvas in a special camp as guests of the Ontario Provincial Government.

The city of Toronto is next on the tour and then back to Montreal. After a one-day visit to Ottawa, our overseas guests will return to Montreal on the glass-domed "Canadian" for a two-day rest before making the return Atlantic flight on 12 August.

The aircraft carrying the U.S. Civil Air Patrol cadets to Canada is scheduled to touch down at Montreal Airport about noon on 21 July. The next three days will be spent in and around the "Paris of Canada" before moving on to Hamilton and then St. Catharines and Toronto where they will be billeted in private homes. Cadets visiting Canada invariably comment on how much they appreciate



Group Capt. Swetman pins an Air Cadet flying badge on Sgt. Robert Holman, who was later presented with W.O.2 rank insignia.

SUMMERSIDE PRESENTATION

Recently No. 200 Wing, R.C.A.F. Association, the sponsoring body for No. 53 Summerside Squadron, held an Air Cadet promotion parade and parents night at the Civic Auditorium in Summerside. After the presentation of wings and rank badges by the C.O. of R.C.A.F. Station Summerside, Group Captain W. H. Swetman, D.S.O., D.F.C., the gathering enjoyed two films and a buffet supper and dance.



Sqn. Ldr. G. M. Kessler, C.O. 172 Sqn., accepts trophy from C. H. (Punch) Dickins, de Havilland sales director.

YORK SQN. HONOURED

No. 172 (York) Squadron, sponsored by No. 437 Wing, R.C.A.F. Association, has won the de Havilland Trophy, awarded annually to the Air Cadet squadron rated

highest in general proficiency in the Toronto area.

The trophy has been up for competition for the past seven years, but this is the first time 172 has won it. They missed last year by only four points.

the opportunity of learning more about our country by living for a short time with Canadian families. The U.S. cadets will join forces with the overseas group for a visit to our Senior Summer Camp at Camp Borden and continue on to the special campsite at the Lake-of-Two-Rivers in Algonquin Park. R.C.A.F. Station North Bay will then play host to the U.S. cadets for the two days prior to their departure for Washington by air on 7 August.

R.T.T.P. TRAINING

Many Air Cadets take advantage of the summer training portion of the R.C.A.F. Auxiliary's Reserve Tradesmen Training Plan. This training is normally open to high school students living within commuting distance of the training units. However, again this year, ten percent of the quota for each unit has been reserved for qualified senior cadets who live outside the immediate vicinity of these units. For 1958, 146 Air Cadets will be trained under this ten percent quota.

THE STAFF MAN

- If he talks on a subject—he is trying to run things.
- If he is silent—he is dumb or has lost interest.
- If he is usually at the office—he should get out more.
- If he is out when you call—he isn't on the job.
- If he is at home at night—he is neglecting outside contacts.
- If he is not at home at night—he must be out carousing.
- If he agrees with you—he lacks originality.
- If he does not agree with you—he is ignorant.
- If he seems too busy for casual talk—his job has gone to his head.
- If he engages in casual talk—that's all he has to do.
- If he can't give you an immediate answer—he's incompetent.
- If he can give you an immediate answer—that's what he's paid for.
- If he appears cordial—he's playing politics.
- If he appears aloof—he should be trimmed down to size.
- If he has an opinion—he is bull-headed.
- If he explains both pro's and con's—he's pussyfooting.
- If he is on the job a short time—he lacks experience.
- If he has been on the job a long time—he lacks new ideas.
- If he is well dressed—he thinks he's a big shot.
- If he isn't well dressed—he's not a proper representative.
- If he takes a vacation—he has been on one all year.

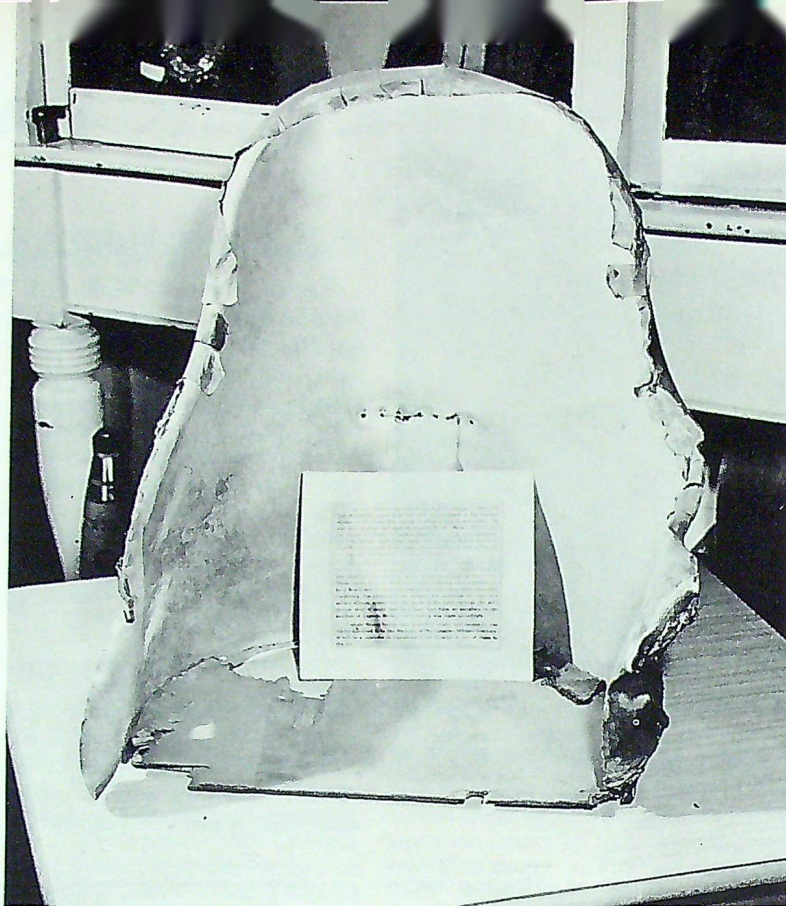
Pin-Points in the Past

BY WING COMMANDER F. H. HITCHINS,

R.C.A.F. Air Historian.

A WALKING-STICK, a bucket seat and a tattered piece of fabric in the museum of the Royal Canadian Military Institute in Toronto recall an air combat fought 40 years ago in the sky over the Somme valley in France which marked the end of the career of the greatest German ace of the 1914-18 war.

About 10.30 in the morning of Sunday, 21 April 1918, a formation of 15 *Fokker* triplanes and *Albatros* biplanes took off from the German airfield at Cappy and flew westwards towards the front lines. Leader of the German fighters was Rittmeister Manfred Freiherr von Richthofen, the commander of Jagdgeschwader 1, who the previous day had scored his 79th and 80th air victories, the largest number credited to any fighter pilot in the Great War. Born in Silesia, 25-year-old Freiherr von Richthofen had started the war as an officer in the Uhlans, but soon exchanged his saddle and reins for the cockpit and controls of an aircraft and, after a few months as an observer, trained as a pilot. In the autumn of 1916 Oswald Boelcke, the great "master" of the German fighter pilots, picked von Richthofen for a squadron that he was forming and started the young baron on the career that was to lead him to the command of the first German fighter wing, widely known on the other side of the lines as "the flying circus".



Pilot's seat of the *Fokker* tri-plane flown by von Richthofen, the "Red Baron" who was the German ace of aces during the First World War.

About an hour before von Richthofen took off from Cappy a formation of 15 Sopwith *Camels*, from No. 209 Squadron, R.A.F., left their airfield at Bertangles for an offensive patrol beyond the enemy lines between Hangard and Albert. One flight presently broke away to give chase to two German aircraft while the remaining eight *Camels*, led by Capt. A. R. Brown, D.S.C., continued on their way northwards towards the Somme.

A native of Caledon Place, where he was born late in 1893, Roy Brown had joined the Royal Naval Air Service in November 1915 after training for his pilot's license in the Wright School at Dayton, Ohio. Overseas he had been posted to one of the R.N.A.S. fighter squadrons serving on the Western Front where his successes in air combat brought the award of the D.S.C. in October 1917. Flying

behind Brown in the formation of *Camels* on that Sunday morning in April 1918, was a new member of the squadron, 2/Lt. W. R. May, who in pre-war years had been a school-mate of Brown in Edmonton. May had been instructed that, if his formation became engaged in a dogfight, he was to avoid becoming involved and, if danger threatened, he was to make for the British lines.

While Brown's formation was flying northwards, looking for hostile aircraft, von Richthofen's group of fighters had attacked two R.E.8s from an Australian squadron that were engaged on a photographic mission west of Hamel. The smudge of flak bursts in the sky attracted Brown's attention to the combat and he led his pilots toward the scene. Soon his eight *Camels* were involved in a whirling dogfight with the 15 enemy fighters. (Released

(For the illustrations accompanying this month's Pin-Point we are indebted to Mr. Eugene Dmitrieff of Toronto, who has kindly provided the photographs which he took of the von Richthofen relics.)

from their opponents, the two Australian aircraft calmly resumed the task which von Richthofen's pilots had interrupted.) The prevailing winds along the Western Front normally blew from the west—a serious handicap for crippled British aircraft—but on this day the wind was blowing from the east and gradually drifted the fighters towards the British lines. Outnumbered two to one, the *Camel* pilots were hard pressed and had to fight for their lives.

After one inconclusive combat May found himself clear of the dogfight and, following instructions, turned towards the British lines. Von Richthofen saw him break away and dived in pursuit. Then Brown, seeing his comrade in danger, dived after the triplane, and the three aircraft raced westwards across the trenches. The German pilot, intent on getting the jinking *Camel* in front of his sights for his 81st victory, perhaps did not realize, until too late, that he was himself under fire from another British fighter. His failure to watch his own tail was fatal. When the aircraft came in range a Vickers machine-gun and two Lewis guns on the ground, manned by Australian anti-aircraft gunners, opened fire on the all-red *Fokker* triplane. Brown too, coming down in a dive from the right, was pouring in a long burst from his twin Vickers. The *Fokker* staggered, swung about and came down for a rough landing two miles inside the Australian lines near Corbie.

* * *

The German pilot was dead in his seat, shot through the breast by one bullet which penetrated the body from the right rear to the left

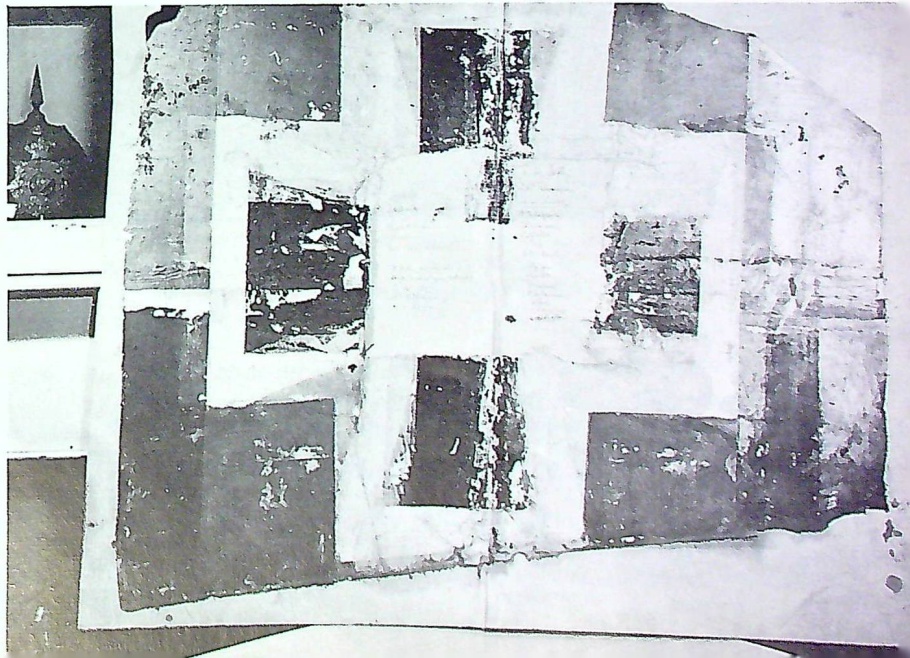
front. Doctors who examined the body expressed the opinion that the fatal bullet must have been fired from the air on the same plane as the long axis of the *Fokker*. Capt. Roy Brown was officially credited with shooting down the German "ace of aces" and subsequently added a Bar to his D.S.C.* Shell-fire and souvenir hunters did much damage to von Richthofen's aircraft. The Oberursel engine, however, was salvaged and is now in the Imperial War Museum in London, England. The pilot's seat was given to Capt. Brown, together with a cane carved from a fragment of the propeller and one of the triplane's iron

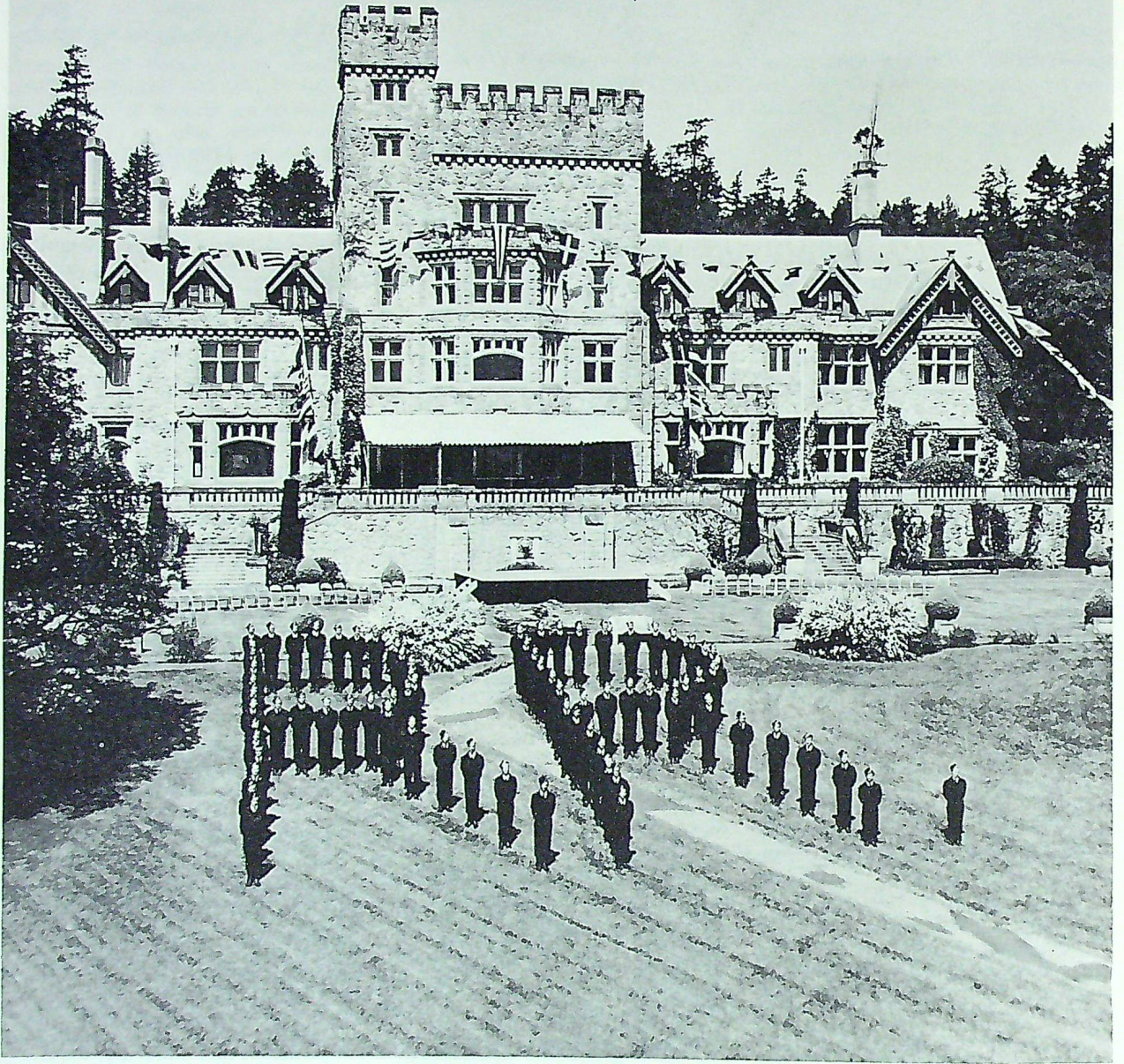
*The official badge later adopted by No. 209 Squadron depicts a falling eagle in commemoration of Brown's combat.

crosses autographed by his comrades of No. 209 Squadron. These three items, shown in our photographs, are now in the Royal Canadian Military Institute in Toronto.

Roy Brown and "Wop" May both survived the war, the latter receiving the D.F.C. in recognition of seven victories in air combat. On their return to Canada the two men pioneered in the development of commercial aviation in the Dominion. In 1929 May became the third winner of the coveted "Trans-Canada" Trophy, and six years later he was honoured again with the award of the O.B.E. for numerous mercy flights in the northwest. During the Second World War he directed air observer schools for the British Commonwealth Air Training Plan. Roy Brown died at Stouffville, Ont., in March 1944. Eight years later, in June 1952, "Wop" May died suddenly while on vacation at Provo, Utah.

Walking stick carved from the propellor of von Richthofen's aircraft, and German insignia bearing the autographs of Captain Brown's comrades. Through the paint of the insignia can be discerned the change from the "formée" or Iron Cross type, originally carried on German aircraft, to the Greek type of cross adopted in 1918. The original "formée" cross has been revived for the West German Luftwaffe of today.





Graduation at Royal Roads

A FITTING corollary to last month's article, "Education for Responsibility", is this photo of the 1958 graduation at Royal Roads, Canadian Services College near Victoria, B.C. Vice-Admiral H. G. DeWolf, Chief of

the Naval Staff, took the salute of the 81 graduating cadets.

For another, far less glamorous, method of obtaining a university degree in the service read the article on the page opposite.



COLLEGE BY CORRESPONDENCE

BY FLYING OFFICER R. M. ROSS

I JOINED the R.C.A.F. in 1950 with a sense of frustration, which only a year spent in a bank counting other people's money can induce. There had seemed to be little future in the bank for me. My main aspirations in life were to obtain a university education, make enough money to live comfortably, and to travel a bit. None of these seemed likely to be gratified as I regarded the world from the wrong side of a teller's wicket with a somewhat jaundiced gaze. If certain minor considerations such as insufficient funds, inadequate educational standards and the need to eat precluded the first of these, the other two seemed likely to be realized to some extent by joining the Air Force. At the same time more education of a technical nature was available in the shape of some of the highly specialized courses given at the various service schools. So it was that I found myself at Academic Training School in Aylmer preparing to take the Communications Technician (Air) course at Clinton. The preparatory course at Aylmer was given to people like me who didn't have sufficiently good grounding in mathematics and physics.

FREE D.V.A. COURSES

With considerable astonishment one day, while still at Aylmer, I learned that the Department of Veterans Affairs provides free correspondence courses which enable service personnel to raise their education to Senior Matriculation

level. They correspond to the high school courses given all the way from grade 8 to grade 12 (13 in Ontario). Here was an opportunity that was too good to miss. The same thing in civilian life costs quite a few hundreds of dollars. It did not take me very long to sort out, with the aid of the Education Officer, just what my true educational level was. Since my schooling had been taken in Scotland, it was not exactly equivalent to that given in Canada. However, it was decided that probably somewhere between grade 10 and Junior matriculation (grade 11) was correct.

WHERE TO BEGIN?

What should I study? Where should I start, considering the long time which had passed since I left school? Mathematics appealed to me, but this is a subject which not only is hard to learn but is also easy to forget. It seemed best to go back to grade 9 and review before attempting Junior Matriculation stuff. And so I began.

At first it was quite difficult to get down to studying. In common with most people I had the desire to better myself, but when it came

to putting forth the effort necessary for that betterment it was hard to persuade myself to do it. "All beginnings are hard" is an apt proverb. Once a start was made, however, it was not too difficult to keep going, provided the work wasn't neglected for long periods at a time when the tendency is to forget knowledge painstakingly acquired.

TUUM EST

It seems best to describe these courses right away. They are arranged so that the student is able to study entirely on his own. They are in book form, each course having four books. (One course covers one subject as it would be taught in high school, such as Latin or Biology.) Each book of the course is divided into five lessons, or papers as they are called. There is a test at the end of each paper which the student mails to an instructor, who is usually a high school or university teacher. At the half-way mark, and at the end of each course the student writes a more formal examination which is supervised by the Education Officer. Below Senior Matriculation level each paper requires about four or five hours of study and test writing. Thus, for each course a total time of 100 hours might be required. If the student could spend two hours each day, and perhaps extra time on Saturdays and Sundays, say, 20 hours a week, he could write off a course every eight weeks or so, allowing time for the instructor to return marked examinations, and so on. Since five subjects constitute an adequate basis for Senior Matriculation work, it might

(Reprinted from "The Clinton Mercury", this is a true account of a serving airman who completed his high school education and went on to receive a university degree, with the blessing and the financial backing of the R.C.A.F. The author is now an officer at R.C.A.F. Station Clinton, Ontario.—Editor.)

be necessary to study for 500 hours for a good Grade 11 average. In this way, in less than a year, a whole grade could be completed.

I was rather lucky in that it was only necessary for me to study Mathematics and Chemistry up to Junior Matriculation level; I felt confident that the other courses could be started at the higher level.

STUDY METHODS

By the time we moved to Clinton I had completed the first couple of courses and was nearly ready to start at the Junior Matriculation level. Perhaps it might help to describe my study methods. I started one course, and when it was well under way, started on another of an entirely different nature. This prevented the boredom which would result from studying one subject at a time. With two subjects under way, the two final examinations were sure to arrive close together and the feeling of progress was noticeably increased. Probably if the subjects had been studied separately, the time taken for two successive courses would have been greater than the time taken by working on the two more or less alternately.

At this period I was still fairly dilatory about the rate at which my studying was done. After all, it seemed that there was a lot of time stretching out in front of me, and my attention was somewhat distracted by a rather new wife. Gradually the point was reached where I was about ready to start working on my Senior Matriculation. Then a subtle change took place which altered my attitude and made me work about three times harder. In the insidious way women have, my spouse suggested that it might be a good idea to pursue this studying business to its logical conclusion and go to a university. The idea seemed preposterous; the obstacles and deterrents appeared to be insurmountable. Nevertheless, I enquired of McGill University what the entrance requirements were for admission to the Faculty of Engineering. To my great joy and relief, the reply was that only four subjects were required; namely, Mathematics, English, Physics and Chemistry. I set grimly to work.

In these courses there are 88 papers, and, on the average, each one took me ten hours to complete. Thus, it took me almost 900 hours

to work through all of these subjects. Translated into terms of my spare time, this adds up to two years. The significance of this may be gathered from the fact that the number of hours which a Comm. Tech. (Air) spends on course amounts to 1080!

ON TO UNIVERSITY

Eventually, it seemed that it was time, armed with the certificates stating my newly won qualifications, to approach the "Brass" about getting leave of absence without pay to attend university. There ensued an avalanche of signals, interviews, coughings for doctors hoping to find me inadequate, and the like. After a fairly wearying time, the ultimate signal arrived and I was summoned to appear before that august personage, the Educational Officer. He informed me that I had been transferred to McGill University to take a four-year course in Electrical Engineering! All books and tuitions were to be paid for by the Air Force. This is why all of you who know me have been seeing me for the last few summers going around disguised as a Flight Cadet.

My studies at McGill are now finished (for the time being). There I enjoyed myself thoroughly, despite the fact that the seats of my pants always wore out before the cuffs because of the many hours spent mesmerizing myself with such esoteric information as "the polhode rolls without slipping on the herpolhode in the imaginary plane."

It seems to me that many more people should be taking the free correspondence courses, especially as nowadays the way has been made easy by the many airmen who have taken advantage of the scheme. Thirty-three were sent to university in 1956 alone, and more are going every year. All that is required is the wish to succeed, and a little bit of perseverance.



Arrow Pilot

Flight Lieutenant F. Woodman became the first R.C.A.F. pilot to try out the CF-105 Arrow in an hour's flight out of Malton Airport. Attached to the R.C.A.F.'s Central Experimental and Proving Establishment, Flt. Lieut. Woodman will be in on R.C.A.F. flight testing of the aircraft should the government decide to buy the delta-winged interceptor.



Model Builders

Flying four-engined *Lancasters* with 407 Squadron or launching model aircraft into the sky, Flying Officers N. F. Copping (left) and K. A. Chester are two aircrew officers at R.C.A.F. Station Comox who seldom are far from an aircraft.

Their headquarters for building model aircraft is Flying Officer Copping's room which resembles a miniature hangar, complete with spare engines, wings and other equipment. They not only build power-driven aircraft but produce radio-controlled models as well. Some of the latter types have remained aloft for nearly half an hour. They also build their own transmitters and receivers.

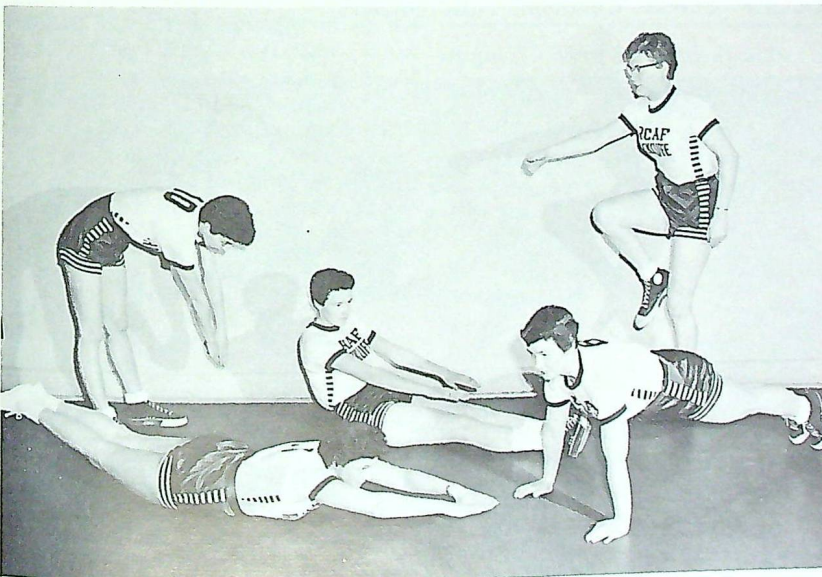
Flying Officer Copping estimates he has built more than 450 model planes over a period of 29 years. Flying Officer Chester started building models when he was six



years old, developing an interest in the hobby from his father, a former pilot in the R.C.A.F.

At present they have 17 flyable models. One of the main ambitions

of these officers and other model builders at Comox is to build a *Lancaster*. The model, which is under construction, is their first four-engined attempt.

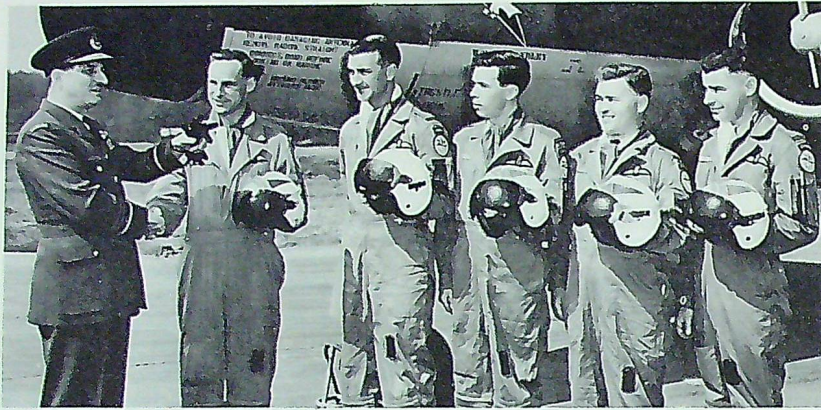


Body Builders

Just in case you skipped over Dr. Orban's description of the R.C.A.F. 5BX Plan for physical fitness (page 10), these charming members of the Rockcliffe basketball team illustrate the exercises for you.

L. to r.: Leading Airwomen L. Rutcliffe, D. Trudeau, M. Woodbridge, Corporal P. Duncan, L.A.W. I. Story.

“Security is mostly a superstition. It does not exist in nature . . . Faith alone defends.”—Helen Keller.



Meeting the Jet 'Vets'

Air Marshal Hugh Campbell, Chief of the Air Staff, congratulated members of No. 2 Fighter Wing's 1,000 Jet-Hours Club during a recent inspection of the R.C.A.F. base at Grostenquin, France. The five men, all members of 423 Squadron, have run up their thousand jet hours in CF-100 *Canucks*. From left, they are Flying Officers L. N. Kettles, R. H. Jory, A. H. Martin, B. W. Appleby and E. L. Millar.

Canada Strengthens N.A.T.O.

Contributions to N.A.T.O. countries under mutual aid agreements were highlighted in early May by the delivery of 11 CF-100 jet interceptors to Belgium, eight T-33 *Silver Star* jet trainers to Greece and 17 T-33s to Turkey.

In addition, the training of German pilots on F-86 *Sabrejets* at Oldenburg, Germany, com-

menced under the supervision of a 31-man R.C.A.F. Advisory Group. At the same time R.C.A.F. technicians are giving German ground crews on-the-job training in servicing the F-86s.

The course for German pilots is similar to the one given at the Operational Training Unit at R.C.A.F. Station Chatham, N.B.

It includes practice intercepts, battle formation flying, gunnery, tactics, instrument flying and flight simulator flying.

Total Canadian mutual aid contributions, in the form of military equipment and services, now amount to more than one billion dollars.

Beaverbank Queens

Nine airwomen of R.C.A.F. Station Beaverbank, N.S., representing six of Canada's ten provinces, vied for honours at Queen of May contest. The selection of "Queen Sharron" Sutcliffe, was followed by an evening of dancing.

L. to r.: Airwomen Denise Potvin, Zelda Turner, Johnny Hughes, Bernice Callioux, Eila Heikkila, Sharron Sutcliffe, Charlotte Beisen-thal, Audrey Joudrey, and Mary Lond.



What, When and Where in the Air

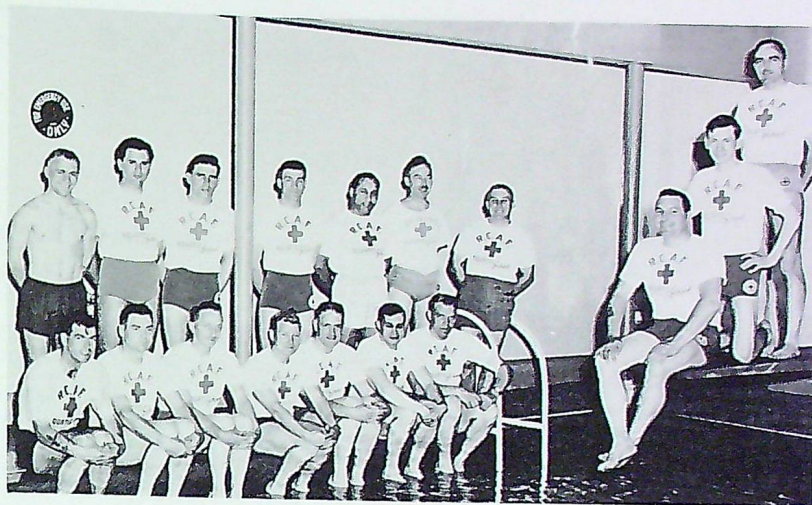
A book review by

WING COMMANDER F. H. HITCHINS

Within the covers of this book* Air Commodore Payne has compiled a chronology of some 6,000 items representing "the principal events in the fields of military and civil aviation in Great Britain and abroad." The survey opens with Pilatre de Rozier's ascension in a hot-air balloon on 15 October 1783, and it ends with an entry for 31 December 1956 reporting that 78 million passengers were carried on scheduled air services during that year. The intervening entries record many of the milestones that mark the progress of aeronautics in war and peace through that period of less than 175 years. A detailed index is provided to aid the reader in locating any particular item in which he is interested.

In gathering data for his chronology, Air Commodore Payne has cast his net rather wide; closer adherence to the principle of "selection and maintenance of the aim" would have been helpful in culling the items brought in by his net. One may question what significance it is in the history of aviation that Guatemala declared war on Germany on 23 April 1918, or why the first air victory scored by Lt. E. V. Rickenbacker should be included and no mention made of Ball, Bishop, Fonck, Guynemer or von Richthofen. About one-half of the volume is devoted to the Second World War; many of the entries in this section read like items from the contemporary Air Ministry communiques: "Bombs were dropped in East Anglia last

*"Air Dates"; Air Commodore L. G. S. Payne, C.B.E., M.C., A.F.C.; Heinemann, 1957; pp. viii + 565. Distributed in Canada by British Book Service (Canada) Ltd., Toronto; price \$8.50.



Water Safety at Edmonton

First Armed Forces water safety instructors' course ever to be checked out by a serving member of the R.C.A.F. has graduated at Tactical Air Command, Edmonton. Flight Lieutenant C. A. Hatch, an instructor at the R.C.A.F. Survival Training School, was granted authority by the Canadian Red Cross Society to teach, examine and graduate personnel as Royal Life

Saving Society Bronze Medalionists.

Front row (l. to r.): D. P. Sullivan, A. Gregory, E. Power, P. Cunningham, J. Dingle, B. Totman, K. Young.

Back row: H. Obermeir, L. Ponich, L. Bloudoff, E. Thibodeau, V. Samuels, J. Graham, W. Hawkins.

Instructors: G. Edwards, C. Boucher, C. A. Hatch.

night." Were all such attacks, by the enemy or the Allies, "principal events"?

Although the emphasis is on developments in Britain and the R.A.F., events elsewhere receive attention, including some 60 entries relating to Canada and the R.C.A.F. One of these entries—"First Royal Canadian Air Force squadron with Canadian-built Hurricanes reached Britain on 26 July 1940"—should be deleted. No. 1 Squadron had arrived over a month previously, as the book correctly reports under date 20 June 1940. Another comment that "British and Canadian bombers attacked Frankfurt" on 8/9 September 1942

may puzzle the reader. R.C.A.F. bombers had been operating with Bomber Command since June 1941, and continued to do so until the end of the war; the Frankfurt attack was in no way unique—except for the press communiques.

The lack of more rigorous editing, however, does not negate the great value of Air Commodore Payne's book; it contains a vast wealth of nuggets among the dross. As a reference book for those concerned with service and commercial aviation, as well as for the general air-minded public, "Air Dates" stands in a class by itself and is commended as a most useful guide to when and where things happened in the air.

Letters to the Editor



Weaving is Her Hobby

Christmas could come in July and Flight Lieutenant C. C. Frew, assistant administrative officer at R.C.A.F. Station Comox, would have her gift shopping for a list of 50 persons completed. Weaving cloth into Christmas gifts is a year-round hobby for Flt. Lt. Frew. She has a 20-inch four harness table loom set up in her quarters and works in her sparetime weaving presents for friends and relatives.

Scottish-born Flt. Lt. Frew was raised in Kirkland Lake and joined the R.C.A.F. during the Second World War. She studied at MacDonald College, Banff and in Sweden. She was an instructor at MacDonald College until she rejoined the R.C.A.F. in 1951, and has since served overseas in No. 1 Air Division, Parent and now Comox. This summer she plans to decrease her weaving activities and take time off to explore Vancouver Island.

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

TWO WINGERS' WINGDING

Dear Sir:

Reference the announcement in the April issue of the 2 FW reunion, this is to advise that on 17 May close to 400 gathered in the Rockcliffe recreation hall and a wonderful time was had by all.

Group Captain W. Weiser, former C.O. at Grostenquin, and several other key officers of the "early days" were present. Some came to Ottawa from points as far as Summerside and Comox, and others sent telegrams of best wishes.

The reunion idea was the brain child of Corporal June Strachan, who enlisted the aid of Sergeant Higgins and the undersigned at ADCHQ. An Ottawa committee composed of Flying Officers H. Wingate, R. Kerr, W.O.2 C. Keefe, Sgt. K. Roberts, Cpls. M. MacDougall, K. Crosby, and LAC G. Donner helped make the programme a real success.

Sgt. N. R. Avery,
A.D.C.H.Q.,
R.C.A.F. St. Hubert, P.Q.

429 SQUADRON HISTORY

Dear Sir:

I have been reading your excellent magazine for two years, and each month it brings back happy memories of my wartime service in the R.C.A.F.

Has the history of 429 (Bison) Squadron been published yet? I would appreciate any information you could give me on the subject.

ex-Flying Officer A. L. Christner,
318 Second St. E.,
Fort Frances, Ont.

(The Bisons' story has not yet been compiled by the Air Historical Section. There are references to the operations of 429 in the second and third volumes of "The R.C.A.F. Overseas", but these do not constitute a continuous record of the unit.—Editor.)

CIRCULAR LOGIC

Dear Sir:

I was pleased to see in your April 1958 issue the feature I wrote which you used as "This ENGLISH Language!" The accompanying cartoon was the best seen in that vein for some time.

A point I neglected to mention was the use of the period in the abbreviations such as RCAF, USAF, etc. It is our policy not to use them at all. However, I noticed that you very carefully inserted periods between R.C.A.F., U.S.A.F. and A.F.B. To the Americans who read "The Roundel", this will appear to be the heights of circular logic.

William F. Graves,
1st Lt., USAF,
Information Services Officer,
64th Air Div. (Defense) USAF.

(Lieut. Graves is not the first reader to be perturbed about "The Roundel's" use of the period in such instances. In R.C.A.F. service writing, of course, this punctuation is omitted.—Editor.)

MCL ARTICLES APPRECIATED

Dear Sir:

"The Mid-Canada Line" series is being closely followed by all personnel here and they are looking forward to the next edition. Thank you for your co-operation.

Sqn. Ldr. V. A. Sutherland,
C.O., R.C.A.F. Stn Dawson Creek, B.C.

CANCELLATIONS WANTED

Dear Sir:

I would like to contact readers who are collecting Canadian military cancellations, especially those of R.C.A.F. stations, R.C.N. ships, C.A.P.O.'s, C.F.P.O.'s, etc. Anyone wishing to exchange, please contact me at the following address.

Dr. H. Fenigstein,
301A Markham St.,
Toronto 3, Ont.

Safety Factor

The station's Commanding Officer was making a tour of inspection. He came to the water pumping equipment and asked the sergeant in charge:

"What do you do about purifying this water?"

"Well, Sir", said the Sgt., "first we boil it. Then we filter it. After that, we put in just a dash of chlorine. Then, to be absolutely safe, we open a case of beer instead."

THE R.C.A.F. BENEVOLENT FUND

The Royal Canadian Air Force Benevolent Fund was established in order to assist serving and former members of the R.C.A.F. and their dependents in time of financial distress.

SERVING PERSONNEL can obtain full information from their units' Orderly Rooms.
FORMER MEMBERS can obtain it from:

- The local Benevolent Fund Committee.*
- Any Wing of the R.C.A.F. Association.
- Any District Office of D.V.A.
- Royal Canadian Air Force Benevolent Fund (Inc.), 424 Metcalfe St., Ottawa, Ont.

*This address is obtainable from any of the other three sources.

Edmond Cloutier

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