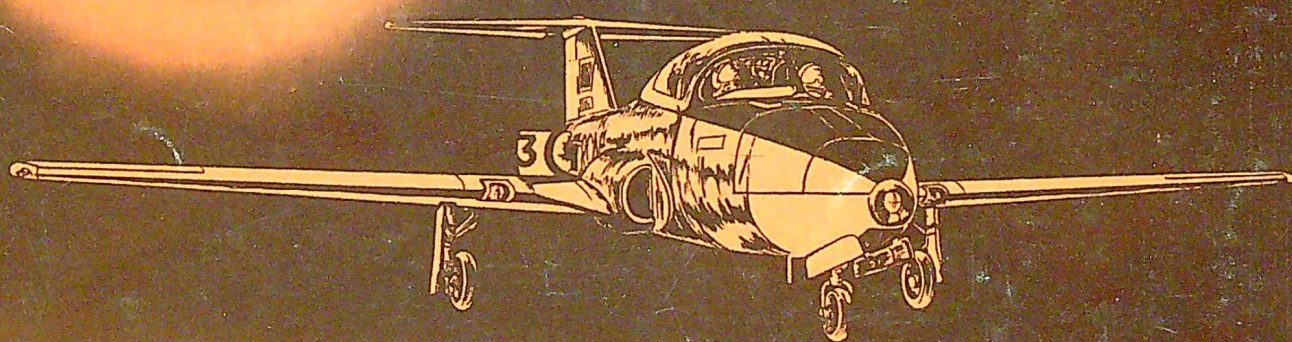


# ROUNDEL

SEPTEMBER 1964 VOL. 16, No. 7



# ROUNDEL

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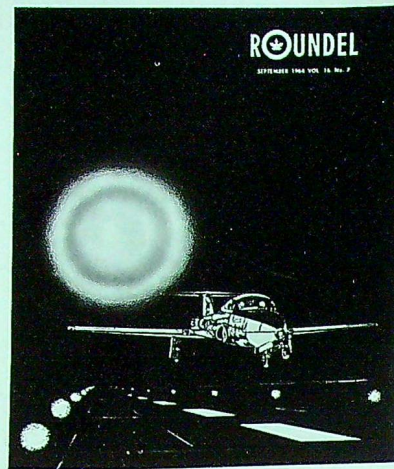
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Ottawa 4, Ont.



## COVER CAPTION

A Tutor aircraft making a night landing is Cpl. Claude Rousseau's artistic way of bringing ROUNDEL readers' attention to the article on page 10.

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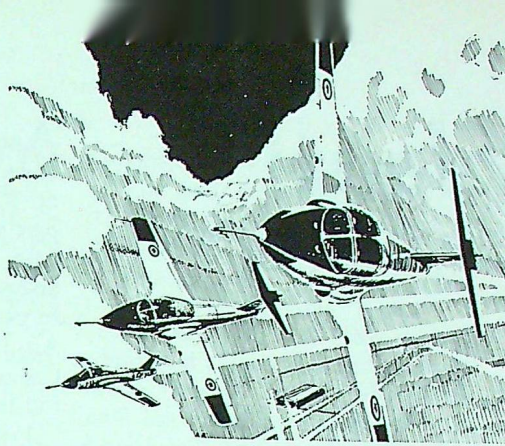
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# ON THE BREAK



W/C D. C. Wilson



S/L W. H. Farrell



G/C W. M. Garton

SEPTEMBER, 1964

SEPTEMBER is the traditional "settling in" month — adults get back to routine after summer holidays, kids joyfully return to school — and air force families on transfer start adjusting to strange surroundings and making new friends.

This year there have been an unusually large number of moves, occasioned partly by the cut-back in service strength and the closing down of several RCAF units. The article "What Happens to a Community When An Air Force Unit Closes?" (page 4) shows that many people besides those in uniform are affected by the recent re-organization. And how do wives of servicemen view the inevitable transfers? Two of them have the floor on pages 24 and 25.

THE *Tutor* test program being concluded this month by CEPE began almost a year ago. Soon the sleek little Canadian-designed and built jet trainer will be phased into Training Command operations.

The timely article on page 10 was written by W/C D. C. Wilson, DFC, who arrived at CEPE as senior test engineer just prior to the commencement of this program. A Toronto native who flew two tours of bomber operations as a navigator during World War II, W/C Wilson graduated from U. of T. in chemical engineering in 1949, later switched to aeronautical engineering after rejoining the RCAF. He spent an exchange tour in the USA working on the *Dynasoar* aero-space project before coming to CEPE last year.

AUTOMATION's effects on the lives of human beings are becoming daily more evident. Now, it seems, the question of machines taking over as teachers is a pertinent one.

Beginning on page 14 S/L W. H. Farrell discusses this topic, telling how the RCAF has been experimenting with programmed instruction. After a tour of operations as a navigator in Bomber Command, S/L Farrell graduated from U. of T. and the Ontario College of Education, then rejoined the RCAF in the education branch. He is now a teacher at RCAF Stn. Centralia.

AS FORECAST in our Jul.-Aug. issue, "integration at the top" of Canada's defence forces began last month. Gone is the position of chief of the air staff (see pg. 17), so naturally the CAS secretariate has disappeared too.

One of the many RCAF officers already affected by these changes is G/C W. M. Garton, former assistant to the CAS, who on 1 August moved into the new unified chief of the defence staff's secretariate. For almost two years G/C Garton was chairman of ROUNDL's editorial committee. We are personally very sorry to lose him as our direct boss.

ROUNDL intends to bring readers periodic progress reports as the integration process continues.

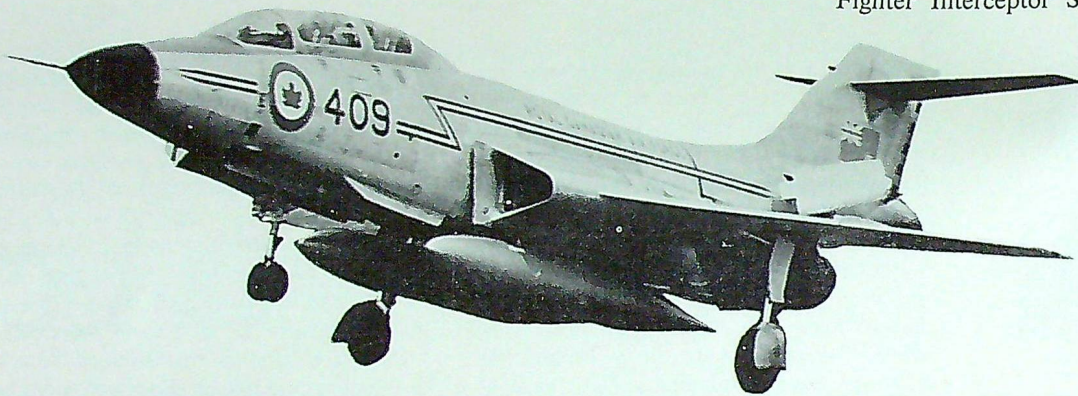
*At Paton S/L*  
Editor

# Transplant!

Photostory by 1st LT. J. T. WOLCOTT and A2C MICHEAL WICKLEIN,  
USAF Office of Information, Paine Field, Wash.

ARRIVAL of the RCAF's 409 "Nighthawk" All Weather Fighter Sqn. at Paine Field, Washington, this past summer transformed that USAF base into an international fighter arsenal. For the first time since the formation of the North American Air Defence Command in 1957, a Canadian fighter squadron operated full-time from an American air base.

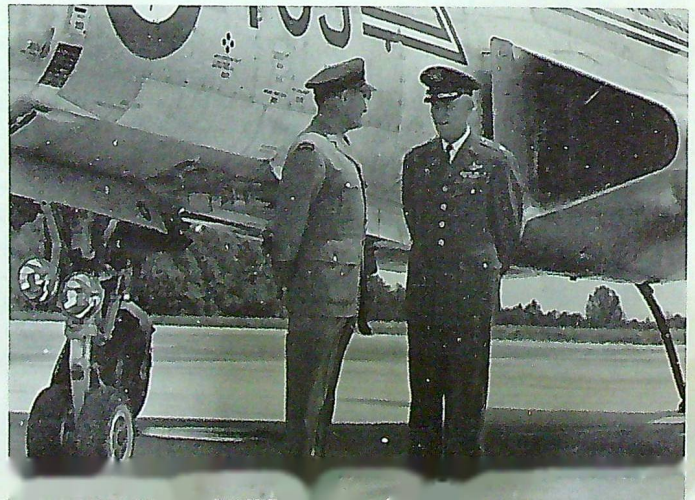
Forced to move to another air field from June to August while runways at RCAF Stn. Comox, B.C., were being repaired, the Nighthawks integrated smoothly with the 64th Fighter Interceptor Sqn. at Paine.



From 64th FIS operations building at Paine burst scrambling Nighthawk aircrew (l. to r.) F/L G. W. Rawson, F/L A. J. Anderson, F/L W. J. McWilliam and F/O J. R. Clough.



No. 409 Sqn. commander W/C G. Inglis, RCAF, and 64th FIS commander Lt. Col. R. E. Patrick, USAF, discuss joint operation of their NORAD-assigned units.



The two squadrons settled easily into a dual-alert system, with CF-101 and F-102 crews on alert duty at the same time, shoulder to shoulder. No. 409 Sqn. never changed its alert status for a moment. Nighthawk crews at Paine Field took up their commitment before others on alert at Comox were allowed to leave for Paine.

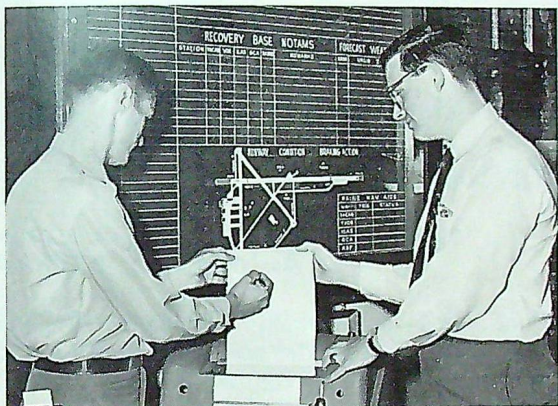
The entire operation was an excellent example of the close co-operation begun seven years ago when the two nations combined their air defence systems to protect the North American continent. The Ca-

nadians, who had to squeeze their aircraft and men into Paine's already full facilities, said the men of the 57th Fighter Group "bent over backward to help us operate effectively and comfortably."

The RCAF arrived with enough equipment and manpower to operate as an almost totally independent unit but used USAF building and furnishings and some tools that were interchangeable between the two air forces. Maintenance and fuelling systems were arranged so that both squadrons could meet their flying-training and alert com-

mitments.

"The deployment was very successful," said W/C Grahame Inglis, No. 409 Sqn. commander. "It was accomplished without any weakening of NORAD's defences. The way our people and the airmen at Paine Field worked together proves, without a doubt, that our nations really do have a unified air defence system that works in fact, not just on paper." ◎



LAC G. K. Aylward and A3C S. O. Edwards check weather teletype in combat alert centre shared by the two units this summer at Paine AFB.



CF-100s were also deployed from Comox to Paine as target force. Here EWU crew F/O J. J. Dessureault and F/O H. B. Osborne discuss training mission.

Regular air defence exercises are conducted by 25th NORAD Region units. This photo of (front to back) F-102 from Paine, CF-101 from Comox and F-106 from McChord was taken by F/O W. D. Frickleton over Pacific Northwest mountains.





## What happens to a community When an air base CLOSES ?

By FLIGHT LIEUTENANT T. G. COUGHLIN  
Assistant Editor, *ROUNDEL*

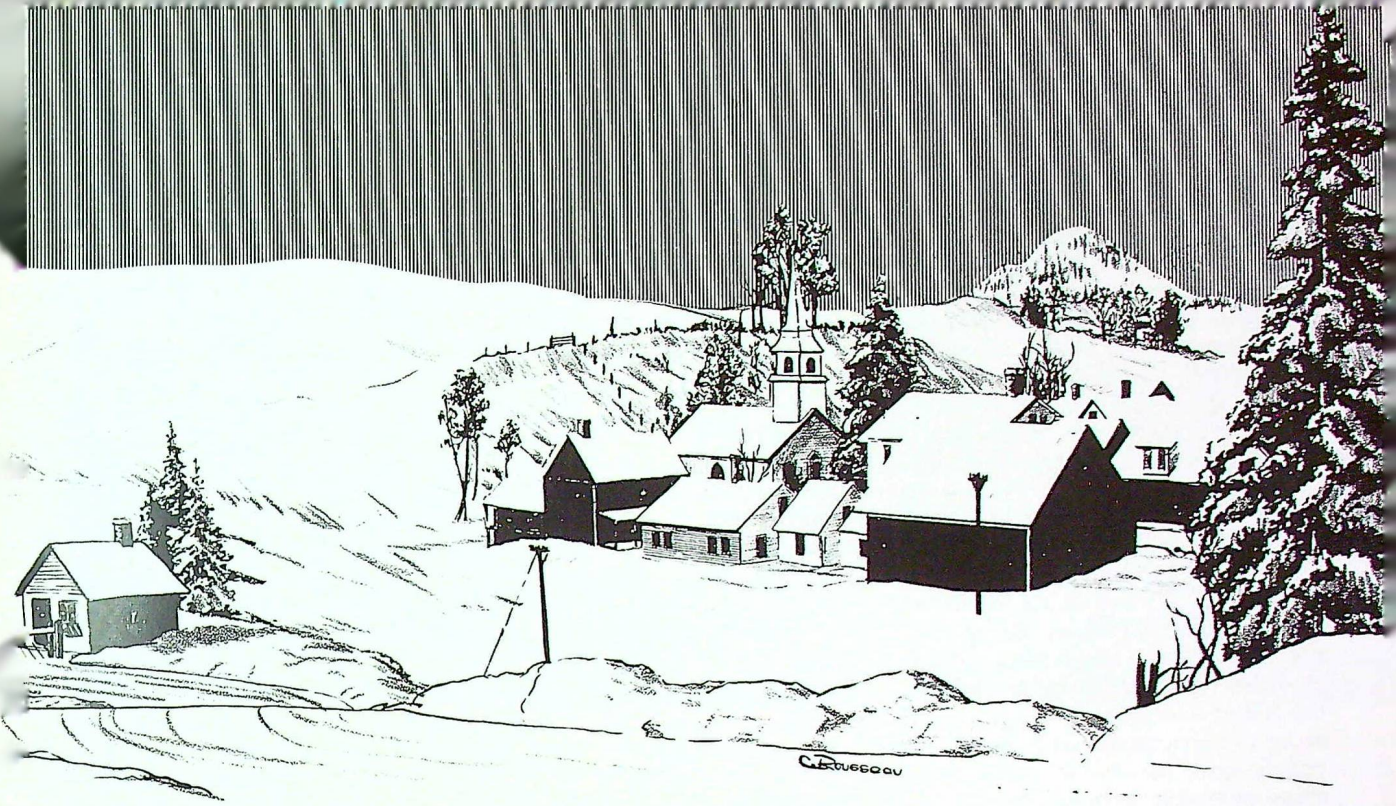
STATION personnel march past the reviewing stand for the last time; the RCAF ensign is lowered and another air force station is officially closed. This scene, repeated several times across Canada in the past few months, prompts the question, "What happens to a community when an air force unit closes?"

The short answer is that it depends on the community. Near large urban centres the closing of an air base presents no serious problem, as the local labour market is able to absorb most of the civilian employees laid-off by the military. In some cases, such as the RCAF Kitsilano site located in downtown Vancouver, real estate agents, building contractors and municipal officials were actually pleased to see the air force establishment closed and vested interests vied with each other for this valuable property. In small communities, however, the situation is very different. In such places as Torbay, Nfld; Parent, Que.; and Cranberry Portage, Man. the local air force establishments played a big role in both the economic and social life of the community. It is in such communities as these that the effects of an air base closing are most keenly felt.

Recognition of this hardship was expressed in Defence Minister Paul T. Hellyer's speech in the House of Commons last December when he announced that a

number of military bases would be closed. Mr. Hellyer stated that reductions in the defence establishment would help provide a more effective contribution to the national security. He added that there was no way of accomplishing these re-adjustments without causing some individual and community problems. "We are therefore anxious," he said, "to give the maximum advance notice of changes in order to minimize these problems of readjustment."

For RCAF Stn. Beaverbank, located approximately 27 miles northwest of Halifax, more than two months elapsed between notification of the station's closing (9 March) and the actual closing (29 May). Beaverbank was closed for the same reason that three other Pinetree radar sites, St. Sylvestre, Parent and Edgar, were closed: they became redundant. When these sites were established more than 10 years ago, radar equipment was neither as powerful nor as reliable as it is today so the stations were constructed relatively close together. But, with technological advances such as SAGE (semi-automatic ground environment) coming into existence, the greatly improved detection and tracking capabilities of the overall defence system meant that fewer radar sites were required. Thus, Beaverbank and the other units were phased-out. Another factor in the decision to close



these stations was their cost. It is estimated \$6,000,000 will be saved annually because Beaverbank, St. Sylvestre, Parent and Edgar have been demobilized.

So much for the reasons for closing. What about the community? What happens to the civilians who work on air force stations and the merchants who cater to air force customers? What do these civilians do for alternative employment and for loss of business? In addition, there are many intangibles that can't be added up in a ledger but which, nevertheless, exist. For instance, service personnel and local civilians invariably develop many friendships. They join together in service clubs, youth organizations and athletic events to their mutual advantage and for the good of the community. Residents of local towns are invited to air force establishments on special occasions and servicemen are welcomed into community churches and private homes. Obviously, when a military establishment closes there are many matters to be dealt with.

Perhaps the most important problem is the question of employment for civilians about to lose their jobs. In the case of Beaverbank, a little pre-planning paid off. The station's Civilian Personnel Officer, representatives from the National Employment Service (NES) and the Civil Service Commission (CSC) collectively prepared

for the job ahead. Each of the approximately 100 civilian employees being affected was interviewed. During the interview the employees were advised on their pension entitlement, briefed on the Public Service Superannuation Act and asked about their wishes for future employment. Reports were prepared for the NES and the CSC giving such details as the employee's qualifications, seniority and whether or not he was willing to accept a job outside Nova Scotia. As a result of this preparatory work, 40 former employees of RCAF Stn. Beaverbank were placed in other government positions. In addition, several found jobs on their own initiative. There is, of course, still a residual employment problem but this is true of Canada generally and not entirely the result of military establishment closing.

As for the merchants in the Beaverbank area, there is no doubt that the RCAF evacuation will make a difference since the station added approximately \$80,000 a month to the local economy. However, not all of this combined military/civilian payroll was spent in the local area as many individuals, civilians as well as servicemen, travelled to Halifax to shop.

One of the merchants most affected by Beaverbank's closing is Mr. A. D. Fader, owner of Fader's Clover Farm, the closest grocery store to the air force station.

Mr. Fader originally had his store at a crossroad leading to Sackville, N.S., but a year ago he re-located on the main Windsor highway in order to be closer to his air force customers and it was a blow to hear that the radar site was closing. But, like other merchants in the area, Mr. Fader is as much concerned about losing his air force friends as he is about losing air force business. Specifically, he regretted the fact that the Sackville Volunteer Fire Department was losing the valuable services of Cpl. R. Lacharite, a member of Stn. Beaverbank's supply section and chairman of the Sackville fire preventive committee.

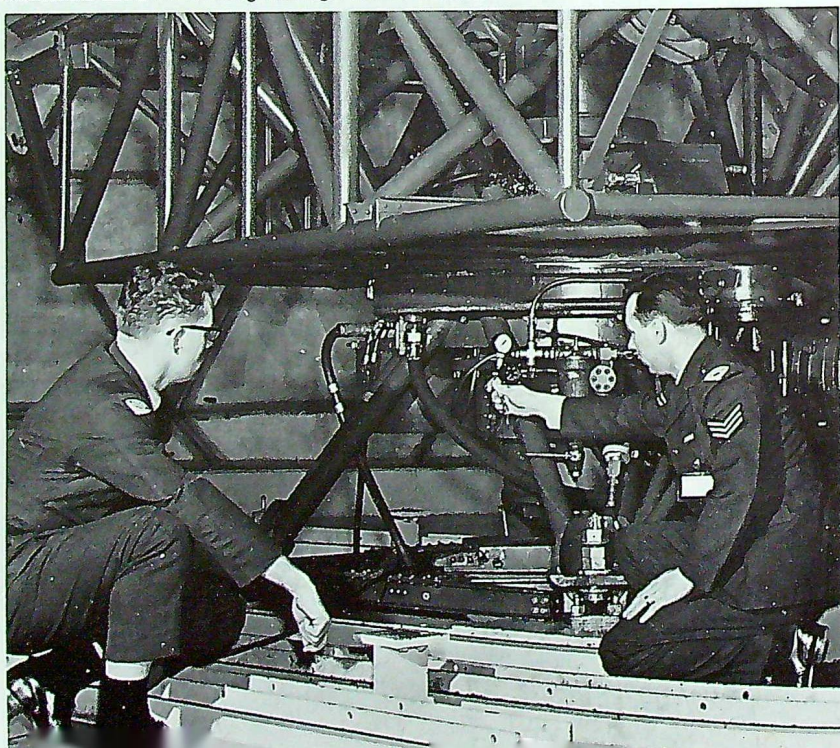
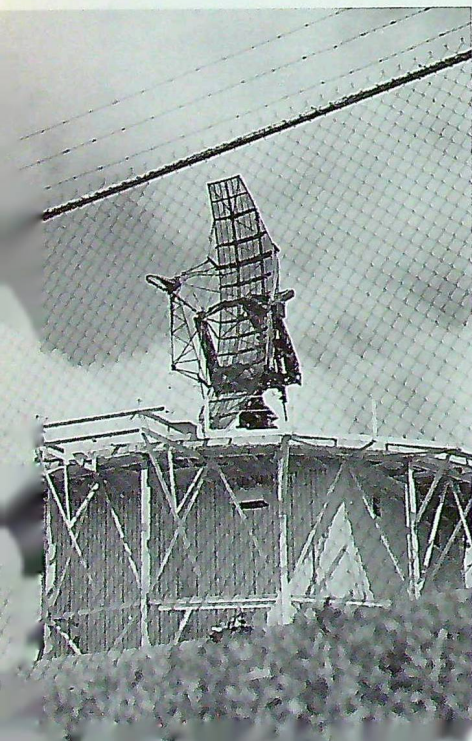
Like Mr. Fader, Mr. H. France, the owner of Bedford Home Furnishings, is concerned not only with the loss of business but also with the end of a long and pleasant relationship with RCAF Stn. Beaverbank. As president of the local branch of the Canadian Legion, Mr. France can recall many occasions when he and the Legionnaires went to the station for an evening of entertainment and conviviality. As president of the Bedford and district Boy Scout Association, he is grateful to the air force for allowing the local Scout Troop access to the station swimming pool on Saturday mornings and, as an ex-serviceman and honorary member of the sergeant's mess, Mr. France looks back with nostalgia on many enjoyable evenings spent in a familiar military environment.

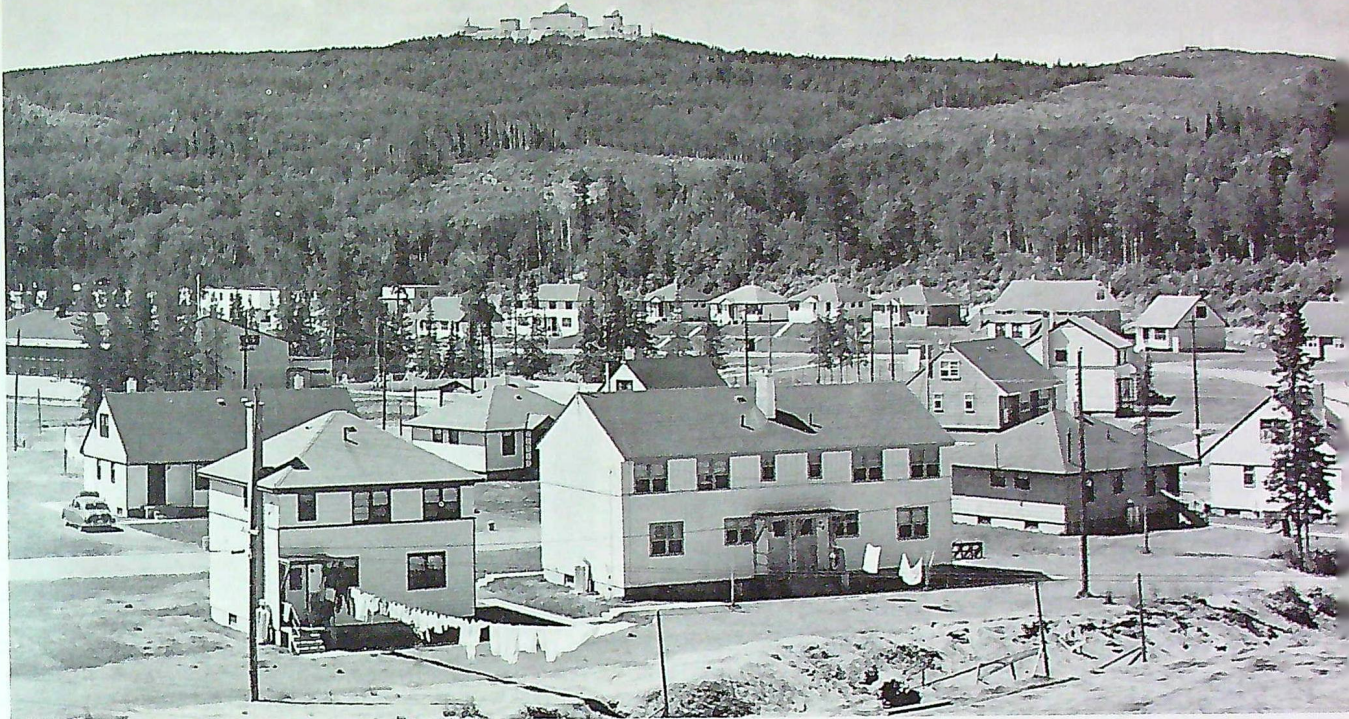
"Almost everyone in a community engages in banking", stated Mr. R. De Grasse, manager of the Bedford branch of the Bank of Nova Scotia, "so when a community is reduced in size, the community banks are most vulnerable." For Mr. De Grasse, the arrival of RCAF Stn. Beaverbank meant that his bank would have to expand. And expand it did. From an original staff of three, the number of personnel increased to 15 as a direct result of financial transactions with the station itself and with the personnel living there.

Following standard banking policy Mr. De Grasse's position with the bank grew in proportion to the amount of new business which the station brought in: therefore, the closing of Beaverbank had a personal meaning for him. When the air force left Mr. De Grasse had to be transferred to another location where an equivalent amount of business is transacted. Although, as a businessman he feels sorry about the loss of business, as a taxpayer he realizes that there is no justification for keeping open a military installation when it is no longer required.

One person who isn't moving, no matter what happens to the Beaverbank radar site, is the man who was the first RCAF member to arrive at the installation. Commissionaire C. L. Grover, formerly WO1 Grover, was foreman of works during the period 1 Sept.-15 Dec. '53 when the buildings were being accepted by the

*At RCAF Stn. Beaverbank, N.S., the radar antennae which had rotated for years as part of Pinetree's detection capability were stopped forever last March. Throwing the switches were radar technicians LAC B. R. Ling and Sgt. W. T. Green.*





*No more do air force families live in these PMQs 'neath the shadow of the domes on the hill at RCAF Stn. Parent, P.Q., one of four Pinetree sites disbanded this year. The neighbouring civilian community has been hard hit by the closure.*

RCAF from the civilian contractor.

"I was", says Mr. Grover with tongue-in-cheek, "the first CO of the station by virtue of the fact that I was the only RCAF member here for several weeks". During his tour WO Grover built a house for himself near the station. After more than three years at Beaverbank, he was posted to No. 1 Air Division overseas. In Feb. '63 he reached compulsory retirement age and in July of that year he returned to his house up the road and to Stn. Beaverbank as a civilian. Now on the job at the front gate, Commissionaire Grover says, "I was here to open the station and I'll be here to close it. Sorry to see the air force go but it was wonderful to have them here". And that about sums up the sentiments of the local people.

The recent closure of RCAF Stn. Parent, P.Q., illustrates how a community can be dealt a near-mortal blow when it depends on the military for its main support. Located approximately 120 miles north of Montreal, Parent came into existence in 1910 when the CNR established a divisional point there for a railway to the north. Then into this founding townsite came a lumbering company. The economy of the town remained relatively stable until 1953 when disaster struck. The CNR converted from steam to diesel engines and the divisional point was moved elsewhere. The town appeared doomed but a timely reprieve was given when the RCAF began constructing a Pinetree radar station three miles out of town. Once more there were jobs available in the

area with DND replacing the CNR as the major employer.

Now that the radar site has closed, the future of the town looks bleak. The NES has found work for a number of civilian employees by transferring them to other military establishments, but for those who do not want to leave the area, the only alternative work is wood cutting. Parent's mayor, Mr. A. Villemure, says hopefully that the town council has been negotiating to have a wood-products factory re-locate in Parent. The problem is accentuated because of the town's remote location. This feature, of course, was to Parent's advantage when it was selected as a radar site. But, from the point of view of a manufacturer, Parent's location presents a considerable transportation problem.

As well as reducing employment opportunities, the closing of the radar site has had other effects on Parent. One of the three hotels in town is closing since it cannot be made to pay without air force business; the town's only doctor has left for the same reason. The curé, who was also the RC padre at Stn. Parent, has been transferred since the parish priest can handle the spiritual needs of the townspeople alone. The main clothing store in Parent is offering a smaller variety of merchandise to its decreased clientele since the store's inventory must be cut back. Children from the town who formerly attended the RCAF-operated English-language school (through special arrangement with the DND) will have to live in some other locality if they wish to continue their studies in English. And the railway station, which

burnt down this spring, will not be rebuilt since the expenditure cannot be justified without air force traffic.

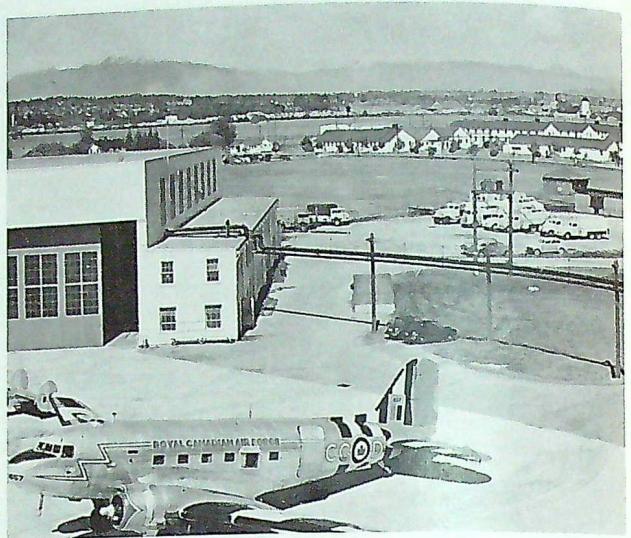
In many ways, the separation of a military establishment from a civilian community creates a hardship not only from the economic point of view but also from the social side. But, the over-riding fact is the matter of necessity. Military units are opened and closed in accordance with the exigencies of the services. And, unfortunate though it may be to the local scene, when a military establishment is no longer required for the national purpose, the only recourse is to close it.

Fortunately, not all stories have such an unhappy ending as that of Parent. In the case of RCAF Stn. Dawson Creek circumstances combined to produce a more satisfactory conclusion. Dawson Creek, in the Peace River district of B.C., was one of four sector control stations on the Mid-Canada Line to be closed. On 12 Jan. '64 the station ceased to be operational and at the end of March the unit was completely phased-out.

There were the inevitable adjustments as a result of the closing. Civilian workers were laid off, people left the area and real estate became unsettled as many homes went on the market. It also appeared that the local Masonic Lodge and Air Cadet Sqn. would be in difficulty. But, after the initial repercussions of the station's closing, the B.C. government purchased the 68-acre air force site for a vocational school which eventually will be the largest in the province. Not only was the former air force establishment, including much of its electrical equipment, acquired by the province but a substantial sum was spent on the base to improve and modify it for its new role. Fortunately, other arrangements were made to house the Air Cadet Sqn.

The 22 PMQ units the RCAF had built and which were vacated when the radar site closed, were purchased by the RCMP as homes for the Mounties. The houses in the town of Dawson Creek, sold when personnel employed by the RCAF left the area, do not pose a serious problem. As Mr. Stan Carnell, a real estate agent in Dawson Creek, said, "It seems that a few individuals sold their houses quickly after the closing was announced and suffered severe financial losses because of their hurry. But, there will be no longstanding adverse effect on real estate in the area."

The employment situation at Dawson Creek has also been clarified. For about two months, many technical people who were working for Canadian Aviation Electronics maintaining the radar site, were uncertain of their future. Some of the older employees retired, others found employment on the Peace River Dam project while several were hired by Canadian National Telegraph and others by Federal Electric for work on the DEW Line. Now CAE has transferred the employees it wished to keep and other personnel may be hired by the



*RCAF Stn. Vancouver, located at Vancouver's International Airport on Sea Island, B.C., had been an air force establishment since 1940. Municipality of Richmond was affected by its closure this summer.*

vocational school when it opens next fall. A residual group including janitors, cleaners and kitchen staff, are still without steady employment, which is not an unusual situation for those employed in such work.

Summing up the situation created at Dawson Creek when the air force unit closed, City Treasurer E. M. Hillhouse stated, "At first glance it appeared that the city would suffer a considerable loss in population and payroll. It now seems the setback will only be temporary because of the forthcoming vocational school". Or as Mr. Carnell, formerly a member of the B.C. legislative assembly for South Peace, worded it, "You can't criticize taxation and then complain about defence expenditures being reduced in your area."

As previously mentioned, in a city the size of Vancouver the departure of the RCAF is a matter of small consequence, except to those directly involved. Since 1940 an RCAF station, by one name or another, has been located on Sea Island in the municipality of Richmond. During those 24 years air force personnel and their families greatly helped the economy of the municipality and participated in many of the community affairs.

When the announcement came that Stn. Vancouver was closing this summer it meant that some 500 air force personnel and approximately 200 civilians would be affected. For the air force people, leaving Vancouver might not be in keeping with their personal wishes but being members of the military, and used to being transferred, they took the announcement in their stride. For the civilians, who aren't so accustomed to being up-



*Kitsilano Site, with Hotel Vancouver in the background, began as a supply depot during World War II. Its abandonment by the RCAF has prompted competition for the valuable downtown property.*

rooted, the closing of the base was an unpleasant event. Richmond merchants are naturally concerned over the loss of business, and the municipality will no longer get the yearly grant which it received from the DND. One of the immediate reactions to the closing of Stn. Vancouver was the cancellation of a contract to build four additional rooms to the elementary school. However, the situation has been tempered somewhat by the fact that the RCAF's No. 11 AMU will continue to operate and the Canadian Army took over the married quarters when the air force moved out this summer.

While the municipality of Richmond showed some concern about the closing of the air base, Greater Vancouver as a whole took little notice of the air force departure from the scene. Judging by items in the newspapers, the announcement that the Kitsilano site was being disbanded had small impact on the community. There was practically no public sentiment expressed one way or the other. Kitsilano site, located adjacent to False Creek under the Burrard Bridge, occupies some choice real estate and the news of the RCAF departure was received locally with interest and pleasure.\* A number of projects have been suggested for the property, ranging from parks to high-rise apartments to a CBC studio.

\*The RCAF's Rescue Co-ordination Centre will remain located at 4050 W. 4th Ave., former home of the now-disbanded No. 5 Air Div. HQ.

Calgary and Saskatoon are other large centres which have taken the air force departure in stride. As in Vancouver, RCAF auxiliary formations as well as regular units were disbanded in both cities earlier this year, but their demise was mourned more for sentimental than economic reasons.

Mayor Percy Klaehn of Saskatoon, allowing the fact that the move had been a temporary financial blow to his city, feels that Saskatoon will miss the air force people more than their money. He cited several examples of how RCAF personnel played an active part in community life (e.g. S/L J. Shaw, last CO of Stn. Saskatoon, was chairman of the United Appeal federal services' division; LAC M. E. Thompson was president of the city's 5000-member bowling league last winter; Cpl. R. Parker operated a baseball umpires' school this spring). He pointed out that the city is co-operating with the Kinsmen's Club in maintaining the 40-member RCAF auxiliary band which has won many musical honours.

RCAF evacuation of airport facilities in these cities provided opportunities for private enterprise to move in. For instance, at former Stn. Saskatoon the supply, construction engineering and recreation buildings have been taken over by a plastics firm; a World War II hangar now houses a private flying service; the RCAF Association benefitted by acquiring the former auxiliary officers' mess and some additional property.

Thus it is evident that each community is affected in different ways when an adjacent air base closes. For some, mainly those located in isolated areas and dependent solely on RCAF business, it means near-disaster. For others, it means new opportunities for civic expansion. For the Canadian taxpayer in general and the federal government in particular, these moves are designed to make more efficient use of the funds available for national defence.

An international encyclopedia firm sells service with its volumes. It guarantees to provide answers for questions which are not answerable through use of the encyclopedia. One purchaser, an officer with the Survival training School at RCAF Stn. Namao, thought he would put the service to test by asking, "How are igloos constructed?" A prompt reply was received, "Contact the RCAF Survival Training School for the answer to your question."

# TESTING THE TUTOR

By WING COMMANDER D. C. WILSON, DFC  
Senior Test Engineer, CEPE

THE APPEARANCE of the *Tutor* alongside its predecessors, the *Harvard* and the *Chipmunk*, in the National Air Force Day flying display at Rockcliffe in June, presaged a new era in pilot "ab initio" training. As the tiny single-engine, side-by-side seating jet displayed its low and high speed performance whilst forming on its obsolescent fellow-trainers and on the giant *Yukons*, few seasoned RCAF onlookers failed to register pride in this maiden public demonstration. However, one can only speculate as to how many of these onlookers reflected on the amount of testing to which the *Tutor* was and is still being subjected prior to its complete acceptance into service at Training Command's flying training schools (FTSS).

For many years the AFHQ Design Authorities have conducted intensive evaluations on newly-designed aircraft to ensure that the aircraft contractor delivers a system in compli-

ance with RCAF requirements. Through various methods of trial and error, this evaluation procedure has ultimately been classified into three main categories:

- (a) Category I – Sub-System Development Test and Evaluation;
- (b) Category II – Systems Development Test and Evaluation; and
- (c) Category III – Systems Operational Tests and Evaluation.

Theoretically, in the progression from Cat. I through Cat. III evaluations, the prime responsibility for the aircraft system passes from the contractor to the RCAF test agency to the user command. (In the case of the *Tutor*, these are Canadair Ltd., Central Experimental and Proving Establishment and Training Command.) Practically, the demarcations of interest are not so clear as are those of responsibility. On oc-

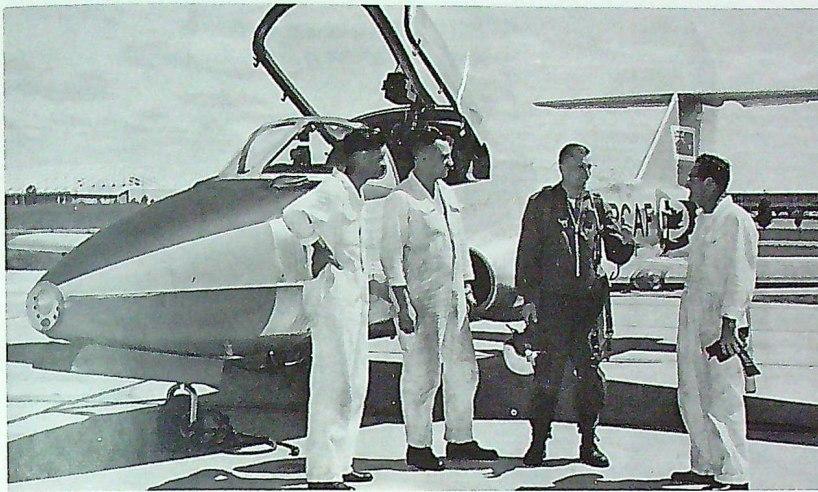
casation, these three parties participate, at least in advisory capacities, in the activities of all categories of evaluation.

The Cat. I evaluations are designed to permit the initial evaluation of performance and reliability of individual components, the establishment of the compatibility of mated components, in particular the compatibility of contractor-furnished equipment with government-furnished equipment. Next the evaluations should establish the air borne operational characteristics of sub-systems, the preliminary aircraft performance, stability and control, handling, and airworthiness characteristics. Further, Cat. I evaluations should indicate the logistics, maintenance and personnel requirements. Finally, Cat. I evaluations include a series of flight trials comprised of the contractor's preliminary flight trials and the development and design refinement trials.

The Cat. II flight test trials are conducted by the RCAF Flight Test Authority, Central Experimental and Proving Establishment (CEPE), to achieve a quantitative evaluation of the aircraft system under realistic environmental conditions. In particular, these trials will determine contractual compliance with performance characteristics, handling qualities, and system functioning requirements as published in the aircraft model specification or RCAF Air Spec, whichever document supercedes. From these trials the necessary performance characteristics

F/L R. G. Hayman, a CEPE test pilot boards a *Tutor* for an evaluation flight.





F/L Hayman discusses a test flight with (l. to r.): Cpl. W. D. Scholey, LAC R. L. McGrath and Cpl. J. G. Clow.

and handling characteristics are developed into usable forms for inclusion in the aircraft operating instructions (AOIS). Under normal circumstances, these trials are completed before the aircraft is turned over to the user command.

The final series of trials, Cat. III, entails the conduct of intensive flying and operational suitability trials by the user command on tactically configured aircraft. These trials are designed to develop the aircraft, its specialized ground handling equipment, its maintenance personnel and its logistic support into a complete system, specifically adapted to the command's operational role. Following the completion of the intensive flying trials, the user command will conduct operational suitability trials to confirm that the operational tactics and techniques and standards which were envisaged in the original operational requirement may still be applied to the fully-developed aircraft system.

In reality, the chronological sequencing of events rarely proceeds according to the theoretical plan outlined above. In this regard, at least, the *Tutor* test program has run true to form. For example, the cold weather portion of the Cat. IID

climatic trials was conducted last winter before completion of the Cat. I RCAF preliminary flight trials. Similarly, Canadair's preliminary flight and equipment functioning trials, the RCAF Cat. I preliminary flight evaluation and the Cat. II flight test trials are all proceeding concurrently to a degree. Further, it is expected that Training Command will conduct its intensive flying trials and the operational evaluation trials concurrently. Such departures from the logical successive testing phases are not as irrational as might be first envisaged. In fact, they represent well-calculated risks on the part of the AFHQ Design Authority, the CEPE Flight Test Authority and Training Command — designed to deliver the *Tutor* to the FTSS in accordance with Training Command's scheduled commitments.

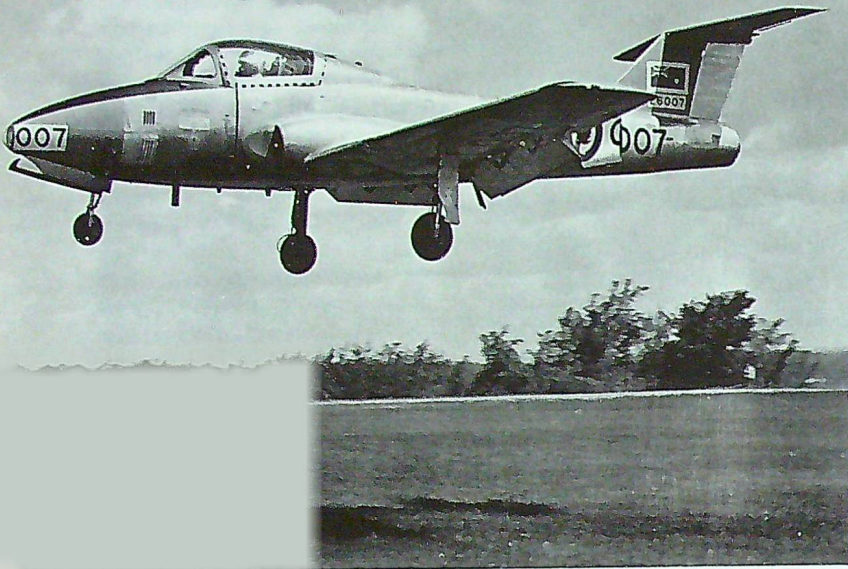
Even though this is perforce an interim report, it can be stated that the *Tutor* has progressed favourably in many phases of its test program. For example, the CEPE Climatic Detachment completed over 50 hours of flying at Fort Churchill from 23 Jan. to 9 Feb. '64. During this period the aircraft flew at ambient air temperatures as low as  $-68^{\circ}\text{F}$  and was subjected to normal main-

tenance at ground temperatures as low as  $-39^{\circ}\text{F}$ . Throughout the trial period the aircraft developed only three significant faults attributable to its climatic environment. The first fault, a tendency to develop engine rumbling during ground starts following cold soak, was eliminated by an alteration to the AOI-recommended starting procedure. The second shortcoming was attributed to the inability of the nickel cadmium batteries (following a cold soak of 15 hours at  $-27^{\circ}\text{F}$ ) to deliver the prescribed 35 minutes of emergency power. The final shortcoming was the breakdown of the static inverters following cold soak at temperatures below  $-26^{\circ}\text{F}$ . Both of these latter faults have been referred to Design Authority for consideration and action.

Last month the same test aircraft, instrumented for hot weather trials, was flown to Yuma, Arizona. Should the *Tutor* complete the hot weather trials with similar success to that achieved during the winter trials at Fort Churchill, Training Command should be assured of a relatively trouble-free, easily-maintained "ab initio" trainer.

This spring an extensive evaluation was made of the aircraft telecommunication systems.\* Antennae pattern trials were conducted to confirm that all systems antennae were positioned to register satisfactory signal strengths irrespective of the aircraft's orientation with respect to a ground receiver or transmitter. As it was anticipated that these trials would require the expenditure of a large number of aircraft flying hours,

\*Comprised of the AN/ARC552 UHF receiver-transmitter, the AN/ARC-540 Emergency EUHF transceiver, the AN/APX-46 (V) IFF/SIF transponder, the AN/ARN501 TACAN transmitter-receiver system, and the AN/AIC 502 intercommunications system. An additional emergency system, activated upon the ejection of one or both of the seats, automatically transmit 1000 cps tone on the UHF or EUHF 243 mcs guard frequency.



*A Tutor undergoing testing takes off from RCAF Stn. Uplands.*

it was decided to conduct scale model trials at CEPE's South Gloucester ground transmitter site.

Accordingly, a minutely-detailed 1/10 scale model *Tutor* was fabricated and tiny antennae of 1/10 scale were fitted precisely in the positions prescribed in the manufacturer's drawings. The model was suspended by a non-reflecting support in the centre of a radio "dark room" or anechoic chamber (lined with microwave-absorbing material) and rotated through 360° of azimuth at various attitudes to simulate flight conditions whilst being illuminated with a radio frequency of wavelength 1/10, that of the full-scale operating wavelength for the particular antenna under evaluation. A small receiver inside the aircraft relayed the received signal through a waveguide in the antennae mount to a signal strength recording system in the test shop. From the recorded data signal strength was related to model azimuth and attitude and transcribed into graphical pat-

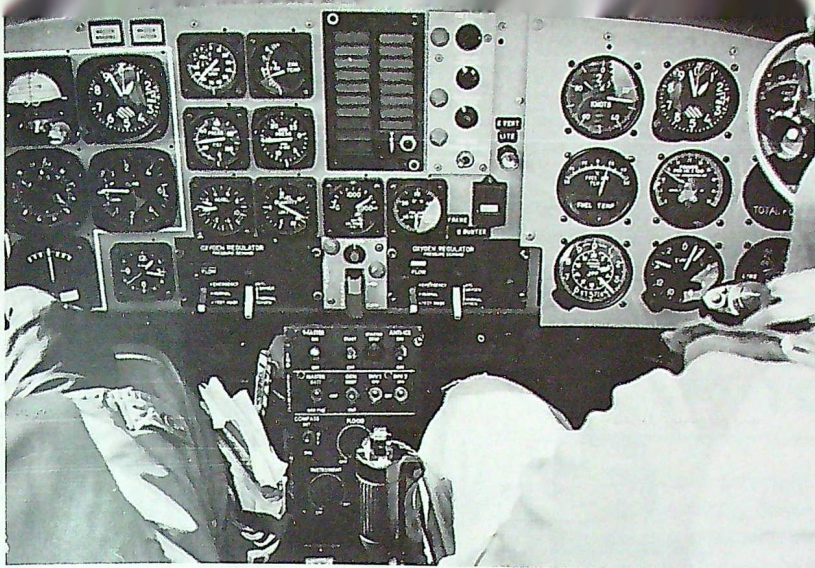
terns. A total of 90 planar patterns were obtained during the model tests for an expenditure of about 30 man hours. On the other hand, in full-scale flight tests ten planar patterns were obtained for an expenditure of about 45 flying hours. From these model trials and from a number of confirming full-scale flights, the *Tutor* UHF, IFF and TACAN antennae were found to have good radiation patterns and their respective locations on the aircraft were considered to be satisfactory. Indeed, the trials generally showed that the UHF, EUHF, TACAN, and IFF systems worked satisfactorily in all respects.

The final, most time-consuming, and perhaps most interesting phase of Cat. II testing is the flight performance evaluation from which are developed the data for the A01s. During this phase, approximately 62 hours of flying time will be expended towards the acquisition of flight data. These data, recorded by photo panel readings of standard and spe-

cial cockpit instrumentation, by high speed ground cameras, and by pilot readouts are reduced by both digital computations and by hand calculations to meaningful A01 parameters. From them a pilot may study the performance of the *Tutor* and may flight plan for specific missions.

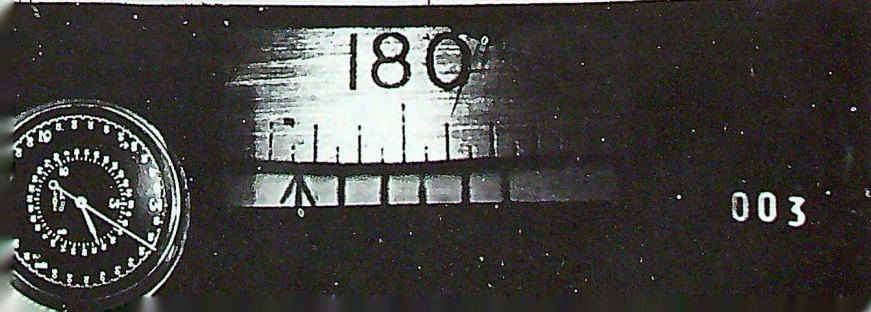
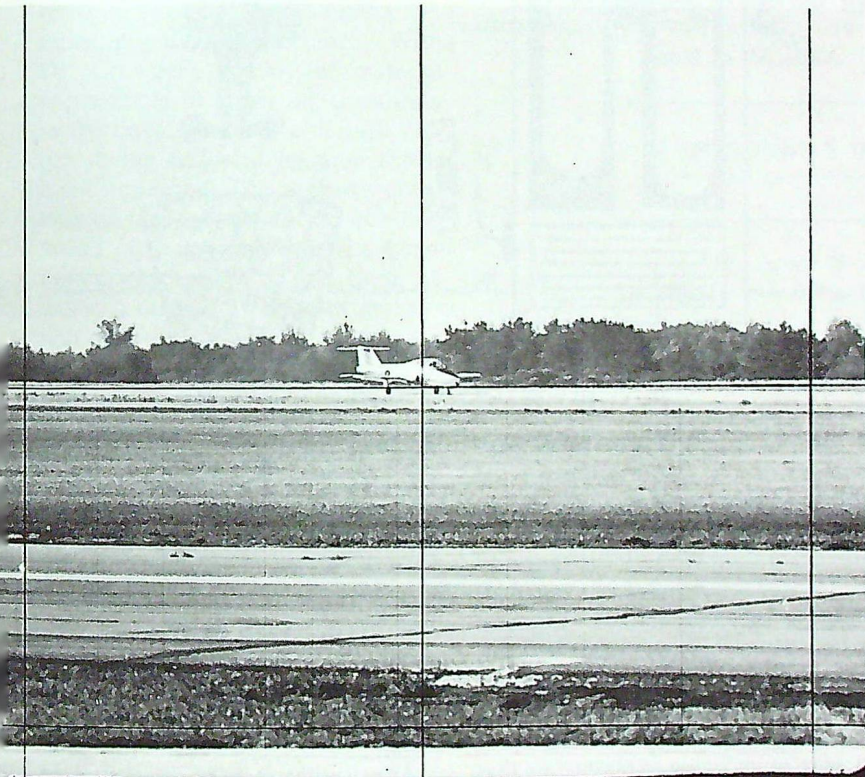
The flight performance test program, which is scheduled to be completed this month, is designed to develop airspeed and altimeter position error corrections, level speed performance, fuel consumption, range, endurance, thrust and manoeuvring boundaries, acceleration performance, climb and descent speed schedules and performance, stall speeds, altitude losses in dive recovery, take-off and landing performance and the engine altitude velocity relight envelope.

Space does not permit detailed descriptions of individual tests, but the procedure used in determining take-off and landing performance is an example of one of them. An F47 camera (focal length 20 inches and frame speed adjusted to two or four frames per second) is surveyed into a predetermined position relative to the runway. An event light mounted on the aircraft fuselage and triggered by a micro switch on the undercarriage oleo leg indicates the exact spatial/time point of lift-off or touchdown. During each take-off or landing a ground operator traverses the F47 camera in azimuth to follow the aircraft path. For each run, from the ground camera and from the meteorological observations, data are obtained on the ground run distance, the distance at which the aircraft clears a height of 50 feet, the aircraft true airspeed at an altitude of 50 feet, the time from aircraft lift-off to the point of 50 feet altitude, wind speed and direction, air temperature and air density. These ground observed data are then reduced simultaneously with photo panel recorded flight data such as



Two CEPE test pilots put a Tutor through its paces.

A Tutor begins a camera monitored take-off.



fuel contents, engine rpm, exhaust nozzle total temperature and pressure. The final results of the data reduction will appear as AOI graphs of take-off/landing distances for representative aircraft weights against landing strip altitude above sea level and ambient air temperature.

With completion of the performance evaluation trials this month, CEPE have completed its Cat. II Systems Development Test and Evaluation of the *Tutor*. Project pilots and engineers alike will quickly commit their qualitative and quantitative evaluations to paper for submission to the Design Authority in the form of recommendations for changes to the contractor's estimated AOI data. Throughout the entire test program recommendations for system changes, performance restrictions, modification procedures, etc., have been continuously passed to AFHQ for action. Thus, the final results of the CEPE evaluations which will appear in the final reports some time after the *Tutor's* assumption of its training mission, will long since have been considered and incorporated in AOIs, production aircraft, retrofit programs, modification programs, etc., as applicable.

Notwithstanding the schedule completion of the Cat. II performance trials in Sept. '64, the CEPE flight test team will still be engaged in Cat. I trials at the Canadair plant well into 1965. RCAF and contractor will be working together towards the elimination of those undesirable characteristics which have forced the imposition of flight restrictions and the granting of temporary easements in the interest of expediency.

The final chapter in the *Tutor's* extensive test program will be written by Training Command as a result of the intensive flying and operational suitability trials which have been underway since mid-June.



# MACHINES OR INSTRUCTORS?

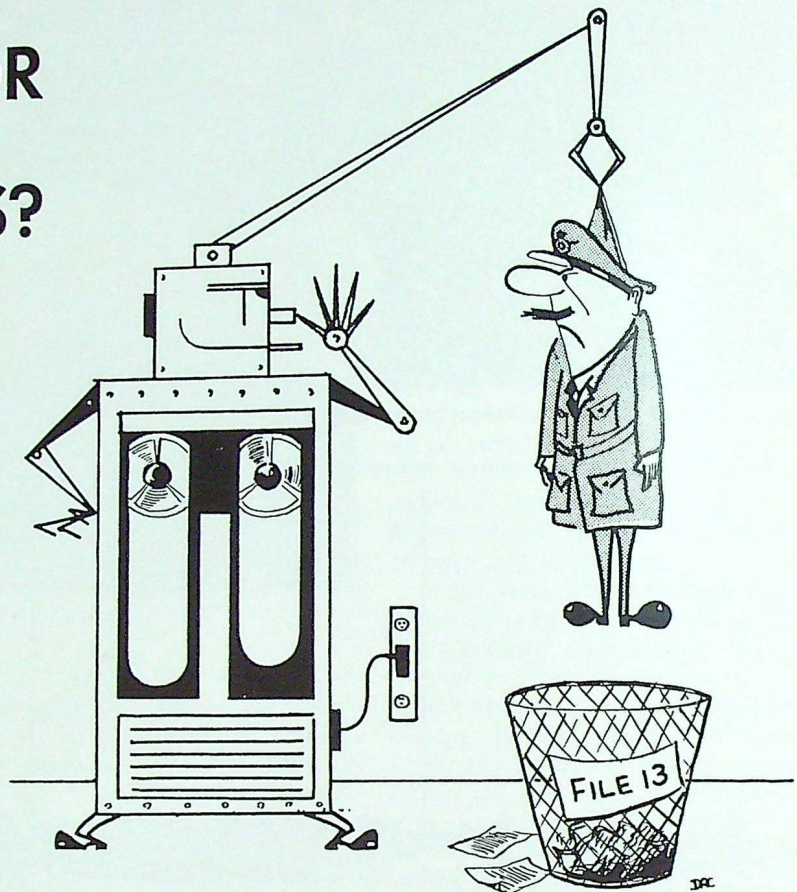
By SQUADRON LEADER

W. H. FARRELL,

R.C.A.F. Station Centralia

A TEACHING technique, variously termed programmed instruction, programmed learning, automated teaching or the teaching machine, is the latest innovation in the educational field. Many are wondering what influence this new pedagogical method will have on RCAF training. Can machines replace instructors? Could we really teach without teachers? Is the instructor's career threatened by the new pedagogy?

First let us be clear on one point. The machine itself, either a complicated mechanism or a simple special type of book, does not teach. Rather, the program (that material which is fed into the machine or is incorporated in the book) does the teaching – and judging from results thus far, most effectively. It is also important to understand that there are two major (linear and branching) and two minor (mathematics and adjuncting) methods of “programming”, the term given to the art of arranging the material in the proper sequence and format. A short description of the two major methods is presented in this article.



Deeply rooted in behavioural psychology is the linear programming method developed by Dr. B. F. Skinner of Harvard University. In the linear format the information to be learned is presented in very small portions or steps, termed “frames”. After each frame the student is required to make a response, answer a question or supply a word which reinforces his learning of the particular point being explained in that segment. He then turns the page (in the book-type) or presses a lever or pushes a button (in the machine-type) and the correct response is revealed. The key to effective learning in the linear method is active participation at each step, the immedi-

ate knowledge of results, constant reinforcement and the small, carefully written segments of material. The writing of the frames to call forth or “elicit” the correct response and thus “shape the behaviour” of the students is obviously a very difficult task, combining superior grasp of the subject material and an understanding of the psychology of learning.

The format is best illustrated in the accompanying example, taken from a program constructed at the Radar and Communications School (R & CS), RCAF Stn. Clinton. Although, for illustrative purposes, this shows the “answer” to a frame at the left margin of the next frame on

the same page, in actual practice the answers are on the left margin of the succeeding page and are viewed after the student's answer is written on a separate sheet of paper.

When a machine is used the written answers of the students become visible (but unattainable) under a glass cover at the same time as the correct answer is revealed. Utilizing this machine-type presentation prevents any "cheating" on the part of the students. It is in this context that the term "teaching machine" is used as a synonym for programmed instruction.

The alternative method of presentation is that developed by Dr. N. A. Crowder of U.S. Industries and is termed intrinsic programming or, more popular, "branching". With Dr. Crowder's system the material is presented in larger segments than in the linear method, with each section being followed by a multiple-choice question. The student's selection of the answers to the question posed after any one segment determines which page in the book he turns to next. If he chooses the correct answer he is so informed and is presented with new information. If incorrect, the student is informed of the nature of his error on the page to which he is referred and given additional information. He is then instructed to attempt the original question again. When he is finally led to the correct solution, and not before, the student proceeds to the new material.

Since the pages are not read in numerical sequence but in accord with each individual's progress, these texts have been termed "scrambled books". (Those copyrighted by Dr. Crowder are called "Tutor-Texts"). The fact that each student will have a different sequence of progression and will learn from the program according to his individual mastery of the subject makes the program in-

trinsic in nature. Utilizing the more sophisticated (and very expensive) machine methodology, different slides are presented in response to the various answers to the multiple-choice questions as opposed to the various pages in the "scrambled books". Automatic scoring and pre-

vention of "cheating" are the distinctive features of the machine (called Auto-Tutors). These unproven advantages are heavily outweighed by the lower cost of the just-as-effective scrambled books, developed and used by R & CS for RCAF trainees at Clinton.

#### Example of R & CS Programmed Instruction (Linear Method)

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The same principle applies to equations. Subtraction of an equal quantity from both sides of an equation, as indicated by the examples with the scales, (does/does not) \_\_\_\_\_ unbalance the equation.

---

Does not

If  $a = bc$  and we subtract 10 from each side, we get  $a - 10 = bc - 10$  where one side (is/is not) \_\_\_\_\_ equal to the other.

---

Is

If we subtract 8 from each side of  $v = at$ , we obtain  $v - 8 =$  \_\_\_\_\_ where one side equals the other.

---

at - 8

$r + 16 = st$ . If we subtract 16 from each side we get \_\_\_\_\_ as the equation.

---

r = st - 16

$A + 16 = bc$  is changed to  $A = bc - 16$ . We have subtracted \_\_\_\_\_ from both sides.

---

16

If we add 7 to both sides of the equation  $R = st + 16$  we get \_\_\_\_\_.

---

R + 7 =  
st + 23

If we subtract 2 from both sides of the equation  $z = xy + 10$  we get \_\_\_\_\_.

---

z - 2 =  
xy + 8

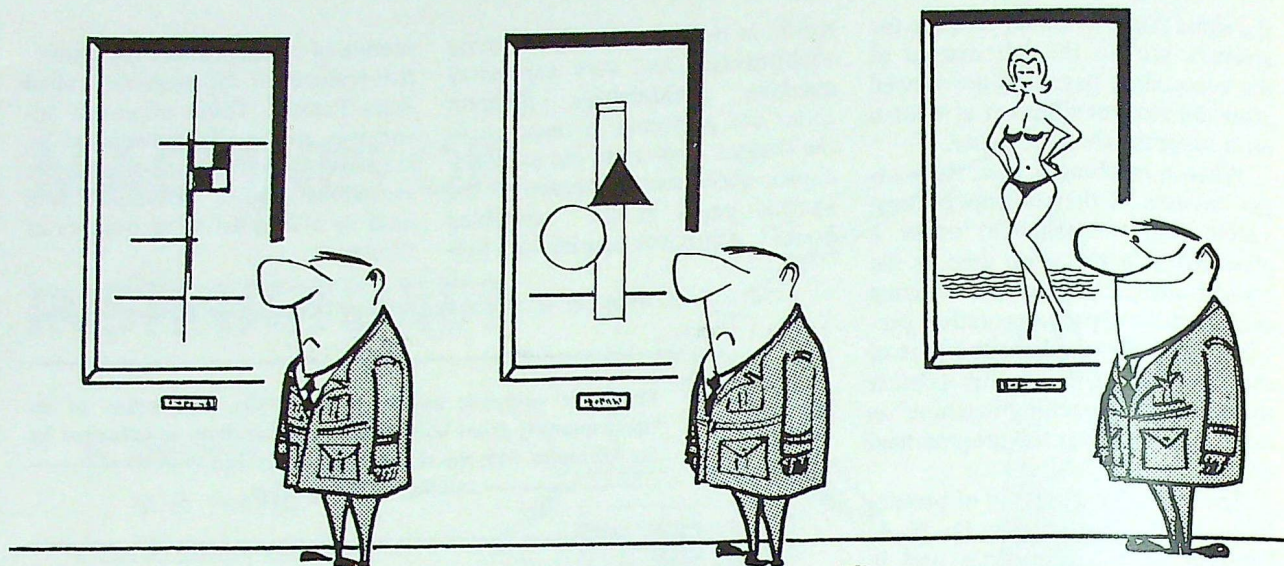
In order to obtain  $v + 16 = jL$  we had to subtract \_\_\_\_\_ from both sides of  $v + 18 = jL + 2$ .

---

2

Any equal quantity, letter or number, can be \_\_\_\_\_ from or \_\_\_\_\_ to both sides of a relationship (equation) without changing its equality.

---



*"After each frame the student is required to make a response."*

The key to effective learning with intrinsic programming is active participation, immediate knowledge of results, and "no progression without understanding". As with linear programming, branching is completely self-pacing and self-motivating; of very great importance is the fact that under both presentations the material to be learned is programmed by experts for maximum learning potential. Each student is, in effect, being taught individually by an expert. Equally important is the fact that the tutor is tireless and has infinite patience. The slow students can read a segment as often as they wish until it is mastered and they know they have mastered it. The fast students are not held back and are not so likely to become bored. Speed is rewarded with faster mastery and new challenges. Learning becomes the adventure it should be.

After this brief explanation of the two major programmed instruction methods, let us return to the question inferred in the title of this article. Does the programmed instruction movement really pose the question, machines or instructors? The

answer is no! Both instructors and programs have a valuable position in the teaching process. It is true, however, that if programmed instruction were to be introduced on a large scale, the role of the instructor would be changed. Whereas large amounts of the hard-core material in any subject would be presented through the medium of programs, the instructors would lead discussions, explain the further applications of the subject, guide the students and stimulate them to further effort. The instructor is visualized as a consultant and guide rather than as a teacher of rote material. In actual fact, the teacher would have to be a better one to cope with this new role.

Now for the \$64.00 question. Should we adopt programmed instruction in the RCAF? Although preliminary results, civilian and military, are most favourable (in some instances spectacular) we are still undecided. The only service in the world (as far as is known) which has made the decision to introduce programmed instruction on a large scale is the USAF. This decision is

based on the results of research recently completed in some of its schools which revealed performance in less time using programmed instruction.

The RCAF has been in the forefront in the experimental work in programmed instruction in North America. At the same time that the USAF started its research into programmed instruction, the R & CS at Clinton did likewise. Chronologically, the first experiment at Clinton utilizing "scrambled books" in electronics paralleled a similar one at Keesler AFB using the Auto-Tutor in the same subject. The major conclusion of these first experiments was that students could learn from the programs alone with virtually no assistance from the instructor (although as it has been previously noted, under normal circumstances the instructors would be required to assist the students).

A second experiment at R & CS confirmed the view that programmed instruction was an excellent medium for self-pacing. While some students took longer than the allotted time, several finished the pro-

grammed material (and all lab periods) in half the normal time and achieved above-average results. Of major importance was the fact that the "ceased training" rate for the experimental group was approximately one-half that of the total student population.

Preliminary work in elementary mathematics indicates that much can be learned without employing any instructors. All students awaiting courses at R & CS, who would otherwise be having no academic refresher training, are reviewing their mathematics in this manner with one supervisor for as many as 200 at one time. To see these students eagerly at work without a word being spoken is a sight to behold! The results show that, for a

total of 12 hours work on fractions, decimals, squares/square root, powers of ten, logarithms, equations, and ratio and proportion, the pre-test average of 46-48% has risen to 68-70% on post-test. No instructors were employed and no homework permitted during this program. Although much of the work was "review", for many of the students some of the topics, e.g. logarithms and powers of ten, were completely new material. The implications for home study and on-the-job training are obvious.

For those readers stimulated by this article or interested in trying some programmed instruction for themselves, there are some excellent programs on the market. The subjects range from elementary arith-

metic to calculus and from contract bridge to basic English. The best method of learning to understand programmed instruction is to try a program on a subject you previously considered beyond your scope. You will be amazed at how clever you are if you follow directions faithfully! The Doubleday series of Tutor - Texts, the TEMAC series in mathematics and languages, and Harcourt, Brace-World's English 2600 are all excellent publications.

The RCAF is definitely interested in the field, has completed important basic research and is keeping a very close watch on all developments, including the use of computers in programming. An automated assistant may be closer than you think!



## **"The Old Order Changeth, Yielding Place to New"**

*This message - the last to be sent from the chief of the air staff's office before the new integrated Canadian Forces' Headquarters came into being on 1 August - was addressed to all RCAF formations at home and overseas:*

We of the RCAF will tomorrow, in company with our sister services, embark on a new arrangement of association, identity and management and we shall share a new chief of staff.

I want to remind you of how profound over the years has been the concern of the RCAF to attain and maintain highest quality in all we are and have and do, and of how proud we are of the record which adherence to this concern for quality has enabled us to achieve. Let us be resolved never to relinquish it.

I call upon all of us in the RCAF to give to our new chief, A/C/M Miller, that quality of loyalty and support, to our sister services that quality of co-operation and initiative, and to our country that quality of devotion and performance which have become our hallmark.

Love of the air and its associations is the fundamental common denominator which has made membership in the RCAF distinctive and upon which the inspiration and treasured comradeship among us is built. I am certain that same common denominator will continue unabated in bonding our service together in the future and in ensuring that even in the widened span of friendships which the integration with our sister services will produce, we of the RCAF will always form a particular brotherhood and will remain closely in touch with each other.

In our new circumstances let us take our beloved motto with us. Per Ardua Ad Astra, forever.

(signed) C. L. Annis, A/V/M,  
Acting CAS

# MEMORIES OF A CANADIAN AIRMAN

By AIR VICE MARSHAL RAYMOND COLLISHAW, CB, DSO, OBE, DSC, DFC

Fourth of Five Parts

## BETWEEN THE WARS 1920-1939

AFTER the South Russian adventure (described in Part 3) and a spot of leave in Canada, I was sent out to Mesopotamia – or Iraq as it had by then become known. I took with me reinforcements for the RAF units there, and I spent some three years in the area, seeing action in North Persia, Iraq and Kurdistan.

On paper it sounds very romantic, all tinkling fountains in courtyards, orange groves and other exotic eastern trimmings, with perhaps the odd spot of flying thrown in. In fact it was nothing like that. Flying conditions ranged from those approximating a Canadian winter, with deep snow, to nearly 130° in the non-existent shade, with dust, dysentery, thirst, and other discomforts. During flights over hostile Arab areas our crews carried letters written in Arabic, Syrian and Turkish, known as “blood chits”. They promised that a ransom would be paid to those who aided the airmen should they be forced down. This was in the hope that hostile tribesmen would be greedy enough to desist from their normal practice of turning such captives over to the women, “to cut up what remains” as Kipling put it. Not unnaturally, our flyers fervently hoped that should they be forced down they would find themselves in the hands of tribesmen both greedy and literate.

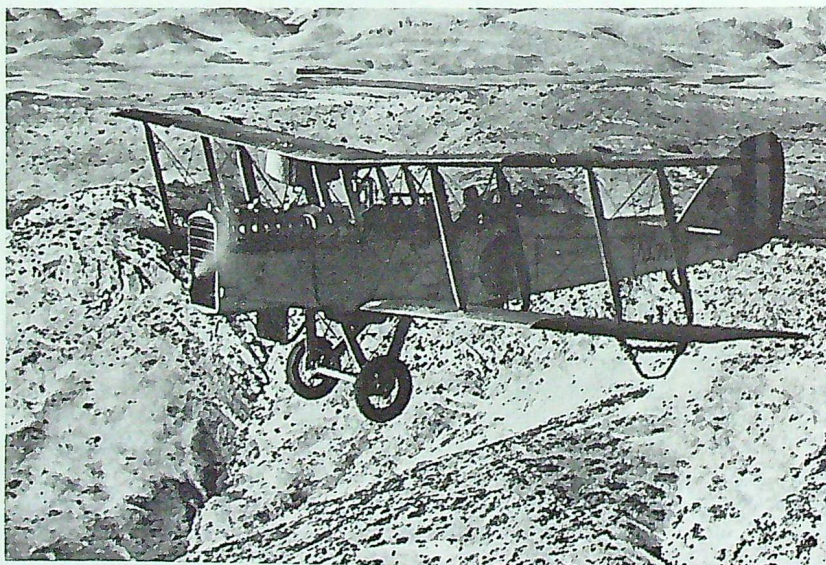
### Persian Interlude – 1920-21

When I left South Russia I thought that my flying against the Bolsheviks was finished, but this was not to be. In the winter of 1920-21 I was given command of the RAF detachment which flew with the British forces in North Persia under General Ironside. They were there to discourage Red encroachments and when I arrived winter had set in, preventing either side from making

any decisive moves. My detachment contented itself with desultory bombing and reconnaissance.

One of our main difficulties was keeping our aerodrome free from snow, and when the mountain roads leading to Iraq were closed for the winter some 5,000 army pack camels were without employment. We used them effectively to pack the snow hard on our field. Our machine maintained communications with Baghdad and it was odd to take off

*DH9a of No. 30 Sqn., RAF. Collishaw commanded the unit in 1921 when it was based near Baghdad (Photo courtesy of Air Ministry).*



from three feet of hard-packed snow and land in Baghdad with the temperature 120° in the shade!

The British forces withdrew from North Persia in 1921 and I was sent to Baghdad. Iraq had become a British mandate and we were responsible for keeping the peace. When Feisel was placed on the throne he was welcomed by only a minority of the Iraqi Arabs and trouble followed. My squadron was called on to undertake punitive action against the rebels, and we were able to seek out the hostile Bedouin in even the most remote and inaccessible regions. The rebellion was soon quashed with only a few casualties.

A combination of aircraft and armoured cars did the job quickly and cheaply, in place of the large number of garrisons and costly troop advances that otherwise would have been necessary. We were also able

to quash rebellions with little loss of life. Warning of impending bombing attacks was normally given, and the tribesmen had plenty of time to evacuate their villages.

I was in command of No. 30 Sqn., near Baghdad, in 1921 when a plan was put forward to form a Baghdad Cairo airmail service, and we were made responsible for establishing half the route, 400 miles from Baghdad to the Syrian desert. A party of desert cars staked out landing grounds and each day our aircraft flew in food, fuel, and water. Landing grounds were marked by driving the cars in a circle until the desert crust was sufficiently broken to be plainly visible from the air.

#### Action in Kurdistan

Kurdistan is a region in north-eastern Iraq, extending into parts of Persia and Turkey, and the Kurds

are a brave and hardy people who dislike the Arab. The RAF did a lot of flying against the rebellious Kurds in an effort to maintain order. So much so, that their chief, Shaikh Mahmoud, was often spoken of in RAF circles as the Director of Air Force Training.

Mahmoud had led his feudal levies in an abortive attack against the British in Mesopotamia in early 1915, and in 1919 he was captured and imprisoned. By 1922, though, there were difficulties with Turkey over the northern frontiers of Iraq, and Mahmoud was released from prison on his promise that he would rally his tribes and resist the Turkish pressure. He broke his promise and resumed his struggle against us.

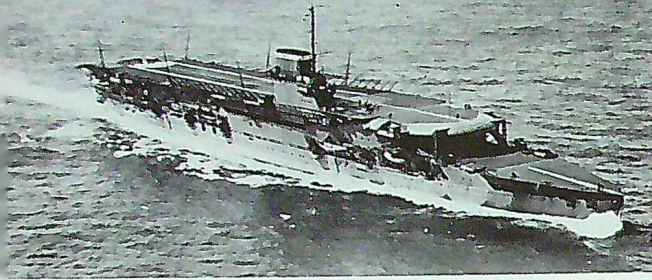
Largely through the efforts of the RAF, precarious order was restored in Kurdistan but in the summer of 1923 Mahmoud proclaimed himself King of Kurdistan and began a series of raids. Encouraged by the rebellion of other sheiks, he declared a holy war against the British and the Iraqi rulers. The Turks sent arms and political agitators into the region and the British were forced to take decisive action.

Some 12,000 British and Indian troops were concentrated at Mosul, with RAF units, to make a show of force and discourage any overt act, and it was decided to send a column into Kurdistan. I was named RAF liaison officer with the army forces at Mosul and I accompanied the column on its wintertime march into the hostile area. This was an arduous undertaking, and the RAF played an important part in the advance of the troops. Landing grounds were cleared as the column advanced and supplies were flown in. When the terrain was too rough for this, they were parachuted.

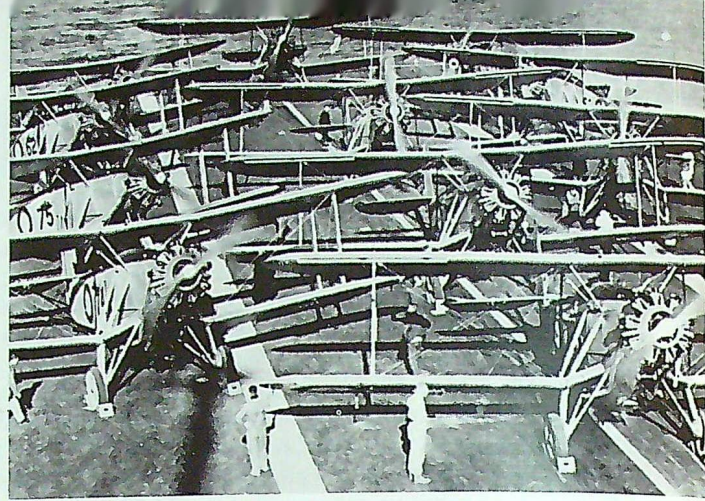
I marched with the advance guard and, in co-operation with the appro-

*Some of No. 30 Sqn. officers at Baghdad aerodrome, 1921. S/L R. Collishaw is seated second from left.*





*HMS Courageous off Portuguese Coast, 1931, W/C Collishaw served as senior RAF officer aboard this carrier, which was sunk during World War II.*



*Blackburn Baffins on flight deck of HMS Courageous (Photo courtesy of Air Ministry).*

appropriate army officers, selected the landing grounds. The day before we captured Ruwandiz, the general in charge of the column and I set off together on horseback and we entered the town thinking it had been occupied by British troops advancing over a different route. It had not. We moved about boldly amongst the hostile and surly tribesmen, looking much more confident than we were, and they must have been amazed to see two British officers appear thus in their midst. Fortunately for us, the troops soon arrived.

This expedition was the first deliberate large-scale effort by any air force to supply an army, and its success encouraged those who foresaw the possibilities of using aircraft to move large bodies of troops and to provide supplies for offensive operations. Unfortunately, the lessons learned failed to bear fruit, for until the Second World War we neglected to obtain the type of transport aircraft needed for this role.

Returning to Britain from the Middle East, I was given command of RAF Stn. Northolt, where we received the first of the new aircraft made available after the war's end.

Then came RAF Staff College, followed by a staff position at Headquarters, Air Defence of Great Britain. I headed the Department for Operations and Intelligence under Sir John Salmond.

#### **With the Navy Again**

From 1929 to 1932 I served aboard HMS Courageous as Senior RAF Officer and the Flag Officer's Staff Officer. This was at a time when the controversy went on as to whether the RAF was to continue flying operations at sea or whether the RNAS was to be revived. The Senior RAF Officer aboard a carrier found himself in a delicate situation. The naval thesis was that naval flyers could do better at sea than those of the RAF. If he did not support this, he was reactionary and anti-Navy. If he did, he was in the bad books of the Air Ministry.

Life aboard a carrier in those peaceful years was interesting. We visited all the principal countries in the Mediterranean and cruised to others more remote. In 1929 I was in command of the Fleet Air Arm disembarked during the Palestine crisis, which was for all of us an in-

teresting experience. Later on we flew air displays over various foreign cities, and I organized special features which included a massed flight over Constantinople, portraying the Star and Crescent, and the towing of a large Portuguese flag over Lisbon. This flag was 50 feet square and we towed it over the city practically at house-top level, 5,000 feet below the aircraft pulling it.

During my carrier days I served with five captains and an admiral. In a ship the senior officers are much more closely associated than in the services on shore, and the interlocking of the naval and flying duties was inclined to make the Senior RAF Officer's task a tricky one, particularly as King's Regulations and Admiralty Instructions made no provision for him to exercise any disciplinary powers, notwithstanding that he was officially in command of the RAF aboard ship.

In the early stages deck landing training was a precarious business. Most of the RAF pilots knew little or nothing about the navy, and they had to make their first landings on board with no dual training. During

my carrier service the preliminary deck landing system was reorganized and I introduced dual deck landing instruction, using the normal elementary training aircraft and instructions. This procedure brought about a rapid increase in Fleet Air Arm flying efficiency.

I tried to introduce ship-destroying large bombs and bigger torpedoes, but the commanders of the fleets did not want lethal air weapons to develop at sea. They wished the airmen's role restricted to wounding enemy ships, which thus slowed down could be destroyed by naval gunfire.

### Bomber Command in the Mid-30s

When I left the carriers I took over the Bomber Command station at Bircham Newton. I had commanded two bomber stations before this, so the experience was not new. By now I had experience in command of units in the most important branches of the service – fighter squadrons, seaplane defence squadrons, bomber squadrons, and the Fleet Air Arm. This wide experience was of inestimable value to me later on, while in command of the RAF in the Sudan and the Western Desert.

The Bircham Newton bomber squadrons were the only mobile ones in the RAF, and they were organized and trained as special service units, in readiness for mobilization as reinforcements abroad as circumstances dictated. This plan was put into effect during the Italian crisis of 1935 and the squadrons were successfully mobilized and sent to the Sudan with scarcely any flaws showing in the arrangements made years before.

Sandringham was near Bircham Newton, and the Royal Family frequently used the aerodrome. Their Majesties also regularly passed by the station on motor outings. My small daughters were thrilled at the

prospects of seeing the King and Queen, but they were somewhat nonplussed and disappointed to find when they did see them that they were not wearing their crowns. The King visited the station several times and in 1934 attended a flying display and inspected all the different types of aircraft and equipment then available. This was the first large-scale royal inspection of RAF units, and it indicated the increase in RAF prestige which developed with the expansion of the air defence of Great Britain.

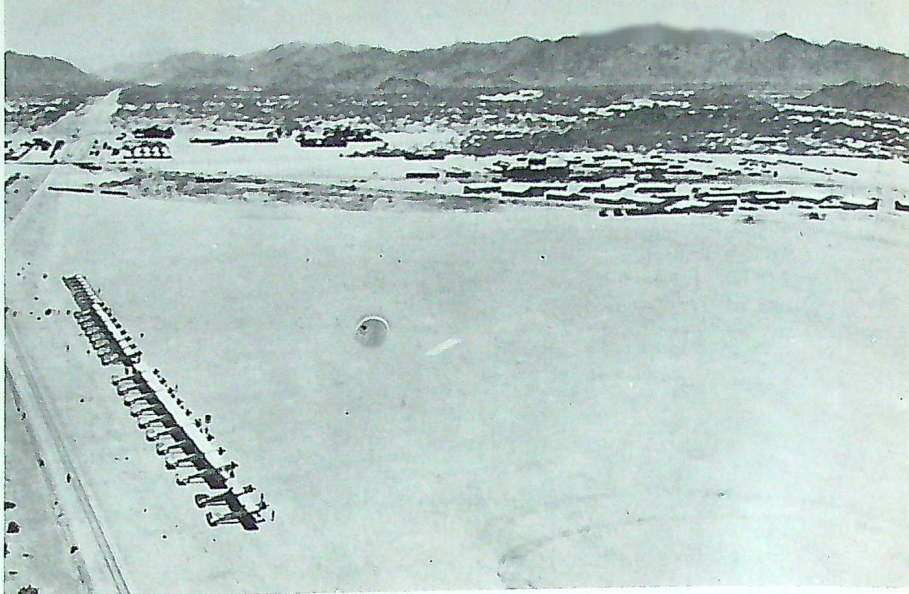
My three years at Bircham Newton were perhaps the dullest in my service career. The world economic crisis had weakened our national resolve to strengthen our armed forces and the RAF was in the doldrums. Stringent financial restrictions were imposed, and seriously hampered operational training and deprived us of vital material. There was a tendency towards complacency, and the formula of "no war for 10 years" was popular.

In 1935 I took over command of the bomber station at Upper Heyford, where the two squadrons of the short-lived overseas Canadian Air Force had been formed in November, 1918. I had been there but a few months when the Abyssinian crisis developed and I was sent to the Sudan, in command of air reinforcements. War seemed imminent and the squadrons ordered to go from Upper Heyford and other stations feverishly packed their equipment and went off as secretly as possible. Two of the five squadrons which went with me had been under my command in England and it was interesting to see how their mobilization, despatch and arrival was carried out in accordance with Air Ministry instructions for these special service squadrons. The result was a tribute to good staff work and the units were sent abroad secretly without a hitch. The squadron members did not know their destination until they arrived in the Sudan.

*Watching an air show at RAF Stn. Bircham Newton in 1934 (l. to r.): W/C Collishaw, stn. commander; HM the late King George V; Lord Londonderry, British air secretary; HM the late Queen Mary. (Photo courtesy of United Press International — UK.)*



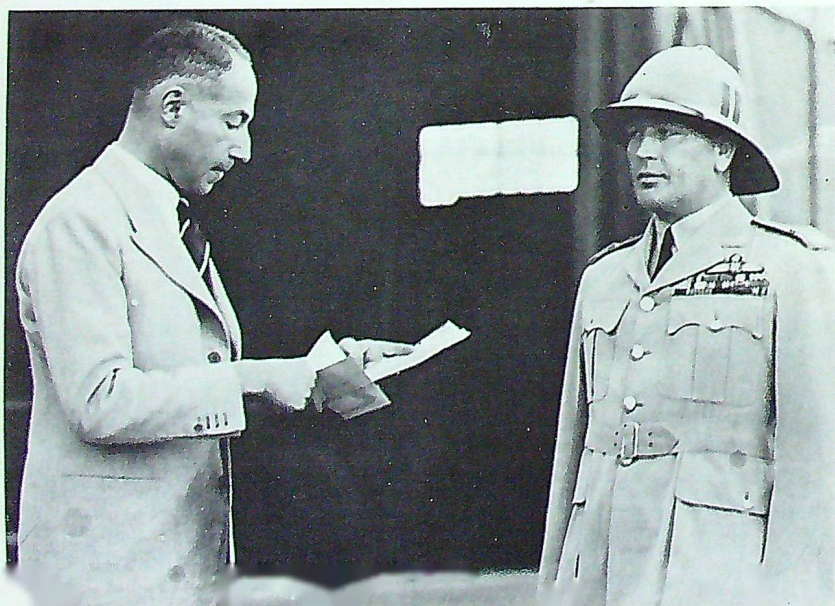
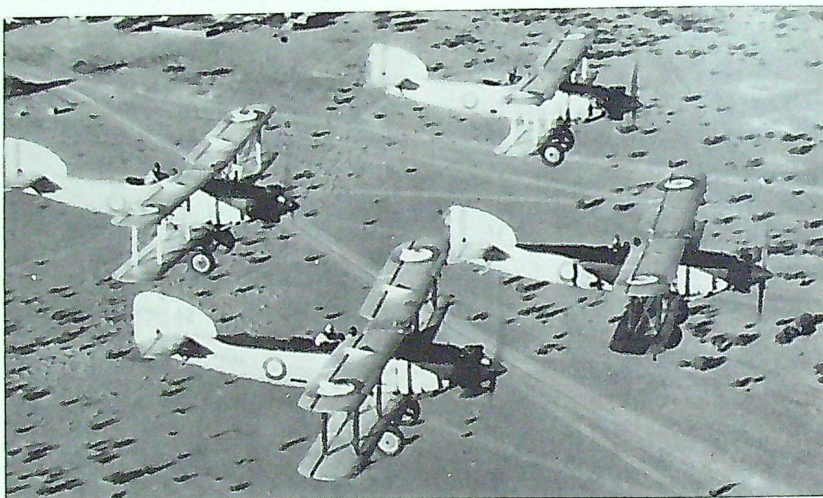
*Part of five-squadron force, which author took to Sudan from Britain when war with Italy threatened in 1935, lined up at Gebeit. Red Sea hills are in background.*



By 1936 the international situation had improved and the RAF squadrons were withdrawn from the Sudan. I was then appointed to command RAF Stn. Heliopolis, in Egypt. In 1938 I was temporarily in command at HQ RAF Middle East, and early in 1939 I became Air Officer Commanding, Egypt Group, which meant that all the operational squadrons in Egypt were under my command. When the war began Egypt Group became the Desert Air Force and we eventually had Australian, South African and Fleet Air Arm squadrons merged into the force.

*(to be concluded)*

*Fairey Gordons of No. 207 Sqn., one of five RAF squadrons Collishaw commanded in the Sudan in 1935-36, over Ed Damer. (Photo courtesy of Air Ministry.)*



*Sir Philip Sassoon, undersecretary of state for air, meets G/C Collishaw, commander of RAF Stn. Heliopolis, Egypt, in 1937.*



*Saluting the colour party are (l. to r.): A/M C. R. Slemon, Gen. C. E. Lemay, A/C/M F. R. Miller, Gen. J. K. Gerhart, A/M C. R. Dunlap and Capt. J. L. McMahon.*

## CEREMONY IN COLORADO

More than 1,000 troops representing two countries and four different military forces, took part in the retirement ceremony held for Air Marshal C. R. Slemon, Deputy Commander of NORAD.

A/M Slemon, the last of the original members of the RCAF, joined the CAF a year before it took the prefix "Royal" then served throughout the RCAF's 40 years. His flying career began with Sopwith *Camel* aircraft of World War I vintage and terminated recently by a checkout in the two fastest military aircraft in the world, the F-111 and F-104.

The air marshal joined NORAD at its inception in 1957 and he is the last of the originals of that organization as well. A highlight of the retirement ceremonies was the reading

of two letters, one from each of the governments involved in NORAD. The letter from the US President, L. B. Johnson, pointed out Air Marshal Slemon's dedication and devotion to duty and assured him that he was taking with him the best wishes of the American people.

Canada's Defence Minister, the Hon. P. T. Hellyer expressed the thanks and appreciation of the government and the people of Canada for the air marshal's outstanding service to his country and to the RCAF.

Recently, A/M Slemon recalled the early years of the RCAF, when a large part of the flying was devoted to various non-military operations such as air mapping and exploration of Canada's vast unmapped areas,

forest fire patrols and air police patrols in conjunction with Royal Canadian Mountain Police operations against rum runners during liquor prohibition days.

A/M Slemon said that during those stirring days radio had not yet been introduced into aircraft for normal use and, therefore, they carried homing carrier pigeons as their sole means of communication when they got into trouble, such as when forced to land because of engine failure, which occurred more often than he liked to think about.

At the conclusion of the ceremony A/M Slemon handed-over his position of Deputy Commander, NORAD to his successor A/M C. R. Dunlap, the last Chief of the Air Staff of the RCAF.

*A/M Slemon makes a farewell salute to a formation of NORAD supersonic fighters during his retirement ceremony.*



## Two air force wives' comments on a universal

# "TO MOVE OR NOT TO MOVE . . ."

By MRS. J. W. COOK

MUCH nonsense is constantly being written about women, about her role (it seems she must play a role, never herself), as a wife, mother, etc. She is told by educators, sociologists, psychologists, anthropologists, and by almost anyone who can write what she should or should not do. Her thoughts, feelings and actions are being continually analyzed and catalogued. In whatever role she finds herself she becomes a stereotype. Consequently, there is a similar danger in questioning an RCAF wife on her feelings about transfers.

I have great admiration for the women I have met during the past 12 years, and have been particularly impressed by the way they have coped with transfers in Canada and in different parts of the world. I think of these women as pioneers in what the late John F. Kennedy so accurately called "a new frontier." They have the same courage, stamina and humour as their pioneer grandmothers, but with the added burden of solving their problems in a highly complex society. Most wives accept their husbands' order "permission to move family and effects" as a basic fact of air force life and adapt themselves very well. This is no easy task because they are not as fortunate as their husbands who have received specialized training for *their* jobs plus a thorough indoctrination into the mores of the RCAF.

There is no doubt that air force wives have definite thoughts and feelings concerning the transfers which interrupt their lives every few

years. Some like the challenge and sense of adventure that each new move brings, but for others it is something to be endured with as little fuss as possible.

From the first awkward and sometimes frightening transfer, often as a young bride, through all the transfers that mark their husbands' careers, these wives have to work out their own individual philosophies and come to terms with transfers.

Some do it with humour. They will give blow by blow descriptions of life with three children in a trailer in France during the early years of NATO. They speak whimsically of the administrative rather than the obstetrical details of having a first baby during a northern posting. They recall the joys and frustrations of travelling long distances in assorted modes of transportation with children of varied ages. Others give dramatic accounts of tragedy and how it effects their lives or the lives of their friends. They discuss the relative merits of living in married quarters or on a civilian economy. They list the long sieges of "camping out" between moves, restricted transfers, and the agonies of searching for new accommodation as items they find hard to be lyrical about.

In any conversation I have had with these admirable women I have found that they are primarily concerned with how transfers affect their children's schooling and, most important of all, how they can create a temporary feeling of permanence in each area when there is a longing to put down roots and establish what

most of them seem to feel is a "real home".

They realize that the RCAF does everything possible to facilitate an easy transition. Most transfers occur in the early summer to coincide with school closing. Excellent schools are provided on the various stations wherever possible. Also the more realistic policy of stabilizing a tour of duty to about four years has made this problem a little easier to handle. But despite this official assistance, the transfer inevitably becomes a matter of individual family concern.

This leads directly into the feeling of wanting a permanent home. Many wives talk wistfully of the final transfer when at last they will be able to put down roots, but the wisest women I have met are those who know that we take our roots with us wherever we go.

Gertrude Stein has elaborated on this most eloquently in a conversation quoted in the ATLANTIC MONTHLY:

"Our roots can be anywhere and can survive, because if you think about it, we take our roots with us. I always knew that a little and now I know it wholly. I know, because you can go back to where they are and they can be less real to you than they were 3,000 or 6,000 miles away. Don't worry about your roots, as long as you do worry about them. The essential thing is to have the feeling they exist, that they are somewhere. They will take care of themselves and they will take care of you, too, though you may never know how it has happened."

## TAKE ME ALONG

By MRS. D. LIVINGSTON

*"Take me along, if you love me,  
Take me along,  
Oh Honey, take me along with you."*

I HAVE nightmares in which I hear that song — sung, not by Jackie Gleason or some recording star, but by a chorus line consisting of a cat, a guinea pig, a turtle and 22 fish. I haven't sought psychiatric help yet; I'll get over it if we aren't transferred again for several years.

One of the good points about our most recent transfer was that it was short enough (from Lincoln Park to Namao) so we would be able to keep our beloved cat, Mickey. Pack-

ing her might be a bit of a problem but we'd manage somehow. Don, my husband, was reluctant to part with certain members of our tropical fish collection so we decided to pick up a large plastic bag from the pet shop, fill it with two or three gallons of water and the fish. Simple. My daughter insisted that Herman, our turtle, would be no trouble as a traveller. Pressure from our seven-year old changed the plan to place Squeaky, our guinea pig, in a new home and he, too, joined the safari.

We were going by train and decided that if we put Mickey in one end of an orange crate and the bag of fish in the other end, we could

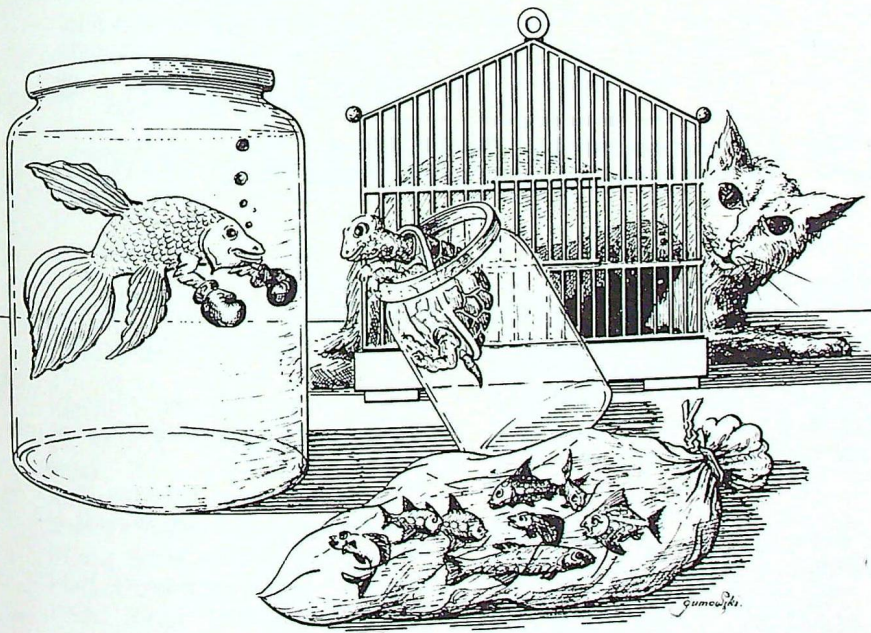
check the lot with our luggage. Squeaky was carried with us in the bird cage. (Our budgie had recently died and although he was much mourned, at this particular time I couldn't help but admire his foresight.) Herman went into a jar. So did Prince Chulalongkorn, a magnificent but extremely incompatible Siamese Fighting Fish. Also included were: Granger 7, Wendy 5 and Clancy 3, complete with quickly-aging parents.

We paraded into the CPR station in Calgary: father first with cat, fish and suitcases; Granger following proudly displaying his birdcage; Wendy next, carrying Herman with utter disregard and shrilly demanding every item on the souvenir stand. I followed clutching Prince Chulalongkorn's jar in one hand, while trying vainly to keep Clancy from succumbing to the irresistible desire small children have to run amok in a train depot.

I sat the children down and pretended nonchalance as Granger expounded the history of guinea pigs in general and ours in particular to an ever-increasing crowd of on-lookers. Just then Don returned with the news that the baggage department didn't think the fish section of the box was secure enough so although they took Mickey, Don was — if you'll forgive a cliché — left holding the bag!

Mercifully, it was time to board the train and we headed onto the platform. We made it with only one mishap. Wendy tripped, sending Herman skidding out of his jar. A charming mink-clad lady helped her retrieve him, several people inquired about his health and I decided that being a member of this impromptu circus had some benefits. At last, we were on the train and found our seats.

We settled down for the trip, Squeaky perched on the overhead rack and the fish tucked under the seat. Wendy set Herman's jar on the



floor beside them. Since Siamese Fighting Fish are air breathers, the Prince's jar was lidless and due to the jolting motion of the train I wasn't able to set him down. Finally, I took off my snow boots and put his jar in one of them.

A train trip with children is, at best, hectic and we passed the half-way mark in our journey with no more than the usual frayed nerves until it was discovered that Herman's jar had tripped over and he was once more at large. Not wishing to alarm the other passengers or attract any more attention, we began to search on our own. The youngsters got into the spirit of things and, despite our pleas, were soon crawling under the seats with noisy exuberance. Fortunately, before complete chaos resulted I noticed Herman snoozing peacefully in my other boot so we were able to halt the search before anyone had us evicted.

Edmonton at last. We got off the train and stumbled into the station. Don went to phone his brother to make arrangements to store the pets until we moved into our house on the following Monday. We had

reservations at a very nice hotel but were a motley-looking group as it was without our menagerie. While he was gone we conducted a friendly re-union with one very indignant pussycat. I was getting to the point where I didn't mind being part of an animal act and hardly noticed the amused glances cast our way. Then Don returned with a dazed look on his face and the news his brother and family had gone out of town for the week-end.

"You told him we were bringing the livestock," I accused.

He assured me he hadn't and we were faced with the task of finding a home for our furry and finny friends at ten o'clock at night in a strange city.

Then I remembered Naomi. We'd been friends during high school and exchanged infrequent letters and the occasional visit since then. It was a straw and I grabbed it. I phoned but she was out. I explained the situation to her husband Bill, whom I'd met only once and he generously offered to take the pets. I thanked him profusely, told him where we would be staying and hung up before he could change his mind. We hail-

ed a taxi, loaded in our cargo, gave the amazed cabbie the name and address and stood back breathing a large sigh of relief as he drove away.

Half-way to the hotel I noticed Wendy still had Herman but I was too exhausted to care. I could hardly wait for sleep to put a stop to this endless day. We waited impatiently in the lobby while Don registered. The clerk seemed as anxious as we were to get us out of the public eye for we were soon in the elevator on the way to our rooms. Herman was swimming luxuriously around in the bathtub and I was busy locating nightclothes for everyone when the phone rang. Naomi's voice was the same as ever.

"If you insist in turning my house into a zoo, the least you can do is join the fun!" My protests were hopeless. "Don't argue with me, you know you never could win – anyway, Bill is already on his way down to pick you up."

There was a look of quiet desperation on the face of the desk clerk as we checked out five minutes later.

"If you only knew", I thought, "if you only knew!"



## AIR FORCE COLLEGE JOURNAL

ADVANCE orders for the AIR FORCE COLLEGE JOURNAL, scheduled for publication in October, are now being accepted at the price of \$1.00 per copy. While individual copies may be ordered from the JOURNAL Editor, Air Force College, Armour Heights, Toronto 12, Ont., service personnel are encouraged to place their orders with their unit co-ordinator for JOURNAL sales.

The 1964 edition will contain these articles:

Commonwealth and Common Defence – Marshal of the Royal Air Force Sir John Slessor, RAF

Canada as a Factor in American Strategic Considerations – Mr. David M. Abshire

Modern Trends in Meteorology – Mr. D. B. Kennedy

Future Long Range Air Transport in the RCAF – S/L R. G. Husch, RCAF

Management Activity and the Military Environment – Dr. F. D. Barrett

Canada's Contribution to Truce Teams – Dr. Alastair M. Taylor

Reconnaissance – G/C L. C. Dilworth, RCAF

The Influence of Science on Mili-

tary Decision Making – Dr. D. M. Schurman

Revolutionary Guerrilla Warfare and the Principles of War – S/L A. D. Wallis, RCAF

Arms Control and the Military Profession – Lieutenant General E. L. M. Burns

The Relationship between the Academic and Military Worlds – Dr. Norman H. Gibbs

1964 Prize Winning Essay – F/L P. H. Watson, RCAF

In addition a number of worthwhile books will be reviewed.



## GREENWOOD TEAMS 1964 RCAF BOWLING CHAMPS

For the first time since the RCAF-wide annual wire bowling competition began in 1956, both men's and women's "pins" have been won by teams from the same station: RCAF Stn. Greenwood, N.S.

The women's team, which bowled

a three-string total of 3401, included (standing, l. to r.) Mrs. Nell Sydor, LAW Lil Davis, Mrs. Eleanor Sweeney; (seated) Mrs. Gert Gainforth (capt.) and Mrs. Maida Olgetree.

The men's team, with a 3786 total

in the competition, pictured here with Sgt. F. Martell, president of the Greenwood bowling league (left), included WO2 J. Bays (capt.), Cpl. J. Rolfe, F/L T. Fletcher, Mr. B. Parent and Cpl. E. Dale.

## LITTLE LEAGUE COAST TO COAST

Every Canadian province is represented in this Little League baseball lineup at RCAF Stn. Downsview. The boys point their bats to their native provinces and hometowns: (l. to r.); Thomas Collins, Chilliwack, B.C.; Ken Danylchuck, Edmonton, Alta.; Paul Dupre, Regina, Sask.; James Hardie, Winnipeg, Man.; Scott MacDougall, St. Thomas, Ont.; Terry Rigby, St. Jean, P.Q.; Ralph Flannagan, Fredericton, N.B.; Edgar McNevin, Summerside, P.E.I.; Arnold Grouette, St. John's, Newfoundland; and John

Johns, Halifax, N.S.

League games are played on the station at Stevenson Field, named after FS M. J. Stevenson, a key

figure in the organization and maintenance of the league since 1959. F/O Harry Braaksma is the 1964 league president.



## NEW ST. JOHN AMBULANCE AWARDS



FS W. C. Moody



Cpl. D. G. Graham



Cpl. H. E. French

THREE RCAF airmen have been appointed serving brothers in the Venerable Order of the Hospital of St. John of Jerusalem for outstanding accomplishments in first-aid work.

Flight Sergeant W. C. Moody, a nuclear defence instructor at RCAF Stn. Centralia, both on and off duty has had a long-standing interest in this field. After gaining his St. John Ambulance instructor's certificate, he voluntarily gave first-aid instruction to Boy Scouts and Wolf Cubs in Lucan, Ont., where he resides and initiated classes for other residents as a community service. A series of first-aid classes for service and civilian employees at his unit, held during lunch periods, was instigated and conducted by FS Moody who spends most of his leisure time seeking and developing improved teaching aids and techniques.

Corporal D. G. Graham, a medical assistant at RCAF Stn. Rockcliffe, became a St. John Ambulance Ass'n instructor in 1956 and since then has instructed a wide range of

first-aid students. Boy Scouts, Girl Guides, Army Cadets, Rockcliffe Rod and Gun Club members, various women's groups and civil defence workers have benefited from his devoted instruction. This spring Cpl. Graham put his first-aid knowledge to practical life-saving use when he successfully resuscitated a person stricken with a heart attack at Rockcliffe.

Corporal H. E. French, a nuclear defence instructor at RCAF Stn. Goose Bay, has qualified in first-aid with the St. John Ambulance Ass'n, the American Red Cross and has had a specialist course at the Royal Army Medical Corps School in England. During a tour at No. 1 Air Div. HQ he became active as a trainer and first-aid man for football and hockey teams in Metz. He also has been deeply involved in first-aid instruction for Scouts, Cubs, Guides and Brownies as well as for adult groups. For four years he spent most of his leaves as first-aider and instructor at scout camps in France and Luxembourg.

## THE WITCH'S TEARS

For more than 10 years No. 3 OTU's black witch rode her broom across an orange full moon on the fuselages of that unit's CF-100 trainers. Now the "Clunk" has gone and the witch has moved to the nose of the smaller T-Bird to ride with crews slated for *Voodoo* operational squadrons.\*

At RCAF Stn. Bagotville last May the faithful CF-100 was retired from OTU service. W/C R. J. Clark, OC of the unit, and his colleagues recalled that when No. 3 (AW) OTU was formed at North Bay in 1952, the witch and CF-100 were first mated. Together they moved to Cold Lake a year later and in 1961 came to Bagotville. Since 1952 more than 1000 crews have flown with the witch in this Canadian-designed and built all-weather interceptor and have subsequently served on NORAD and NATO operational duty.

It is reported that the witch actually shed tears that day of her last CF-100 ride last May.

\*CF-100s are still flown by Electronic Warfare Unit.

## ST. HUBERT HOSTS HIGH SCHOOL DRIVING TOURNAMENT

Sixteen teenagers, finalists of driving education courses held throughout Canada and the United States, were put to test in MGB sports cars during the 1964 Summer Nationals held at RCAF Stn. St. Hubert. The driving skill tournament was sponsored by the British Motor Corporation of Canada and the Canadian Broadcasting Corporation.



# RCAF ASSOCIATION

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



*National Executive Council meeting in Ottawa 26 June was attended by (l. to r. front row) Mr. G. A. Ault, QC, director; Miss Beth Rowand, director; Mr. G. E. Penfold, vice-president; A/M Hugh Campbell, national president; Mr. P. F. Connell, past-president; Miss Catherine Fortune, W. D. representative. Second row: A/C G. G. Diamond, RCAF chief of personnel services; Mr. Ken Harnum, director; Mr. D. C. Gillies, Ontario Group representative; Mr. A. R. Craig, director Alberta Group; Mr. Terry Penton, director Man.-N.W. Ont. Group; Mr. L. J. Schedlin, director Ontario Group; Mr. H. M. Bell, director. Third row: Mr. S. H. Wootten, director; Mr. R. J. Purdy, director Saskatchewan Group; Mr. Al. Goodwin, director Atlantic Group; Mr. J. A. Bardsley, representative Atlantic Group; Mr. J. Pope McMahon, host wing convention committee chairman. Back row: F/L M. V. Robey, RCAFA liaison officer; Mr. G. K. F. Shaw, director Quebec Group; Mr. J. C. Gray, secretary-manager.*

**P**REPARATORY to the Charlottetown Convention next month, members of the National Executive Council met in Ottawa during the last week of June. National President A/M Hugh Campbell advised council members of the action taken by the national office on their recommendations from the last meeting, highlights of which were:

**Complimentary Memberships** — All members of the RCAF on retirement from the service now receive at the unit where they are released a complimentary membership in the RCAF Association for one year. The purpose of this type of membership is to acquaint retiring air force personnel with the existence of the Association, its ideals and objectives. In this way it is hoped that they will become regular RCAFA members on the expiration of their introductory membership.

**Association Tie** — A new dress tie was introduced and enthusiastically received by NEC members. The tie is a dark blue with a small replica of the Association crest in gold.

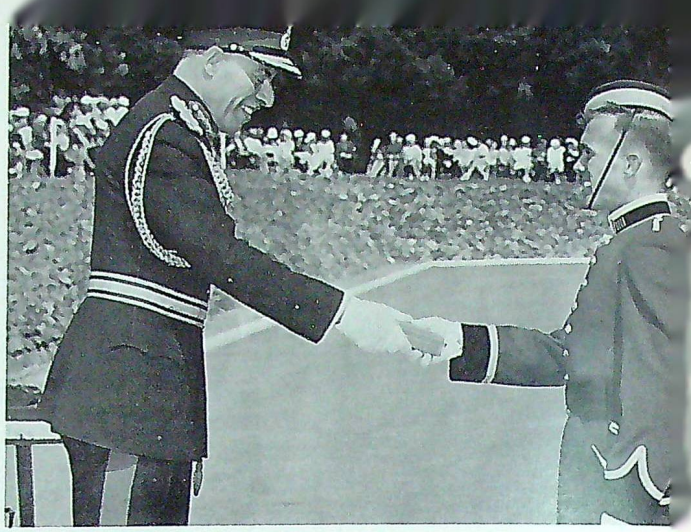
**Dues Increase** — An increase in the annual dues of the Association was considered. The Council decided to recommend to the Annual General Meeting a per capita increase to \$10.00 per year.

**Award for 15-Year Service** — A special 15-year award for continuous membership in the Association, in the form of a lapel badge with an appropriate bar bearing the words "15 years", was approved by NEC. Along with the lapel pin will be a rosette. The terms of eligibility will be issued to all wings.

**New Awards** — Four new awards were introduced and a preview



*F/O W. D. Turnbull receives the RCAFA Award from Hon. P. T. Hellyer, minister of national defence, during graduation ceremonies at the Royal Military College, Kingston.*



*Royal Roads Cadet Wing Adjutant J. M. Leitch receives the RCAFA Award from Man. Gen. R. P. Rothschild, MBE, during the graduation ceremonies.*

showing given to members of Council. This included the Grand President's Trophy, the National President's Trophy, the Vice-President's Trophy and a Group Efficiency Award. Competition for these

awards is now in being and they will be presented to the winners next month in Charlottetown.

While in Ottawa, NEC members were guests at a lunch given by the president of the Royal Canadian

Legion, Mr. Fred O'Brecht and his staff. Also present was the Hon. Roger Teillet, Minister of Veterans' Affairs. The same evening the Air Council entertained NEC members to dinner at RCAF Stn. Rockcliffe.

## RCAFA LADIES AID IN HOSPITAL

Toronto RCAFA ladies responded to a newspaper item about six months ago requesting volunteers to handle visitors at the Ontario Hospital. Previously there were no evening visits because of lack of hospital staff to work at the admitting desk.

Since that time, the RCAFA have had six ladies at the admitting desk every Thursday evening from 7:00 to 8:30 p.m. They are volunteers from No. 437 (York) Wing; No. 442 Wing in Weston; No. 444 Wing in Scarborough; the Ladies Auxiliary of the RCAFA; and ex-RCAF and RAF women.

In addition to their admitting duties, the women assist in the hospital library, obtain books for the library and assist in fund-raising for the hospital.

Organizer and co-ordinator of the volunteers is Mrs. Norma B. Berry, of No. 437 (York) Wing.

*RCAFA volunteers (l. to r.): Mrs. Kay Morrison, Mrs. Norma Berry and Mrs. Muriel Boyle admit visitors to the Ontario Hospital in Toronto.*



## SERVICES COLLEGES AWARDS OF MERIT

For a number of years the RCAF Association has provided two appropriate awards (in the form of a wrist watch) for presentation to the outstanding RCAF cadet of the graduating class at Royal Military College, Kingston, and Royal Roads, Victoria.

This year winners of the awards are:

Royal Military College, Kingston  
— F/O William Turnbull, Pointe Claire, Que., who received a Bachelor of Science Degree.

Royal Roads Cadet J. M. Leitch of Brantford, Ont. who stood first in his second year.

## NEW WING ACCOMMODATIONS

No. 404 (Kitchener-Waterloo) Wing has announced the purchase of property on which to erect a building costing in the neighbourhood of \$150,000. Judging from the architect's sketch, 404 will have a beautiful new home.

It is now becoming fashionable to build a new club house. This month No. 700 (Edmonton) Wing officially opens its \$400,000 "country estate". No. 253 (Moncton) Wing has purchased property in downtown Moncton and is planning a headquarters to cost in excess of \$50,000.



A football landed in a chicken yard one day, so the rooster called all his hens together. "I'm not grumbling, you understand", he said, "but I just want you to see what they're doing in other yards".

## Letters to the Editor

### MU SIGMA

Dear Sir:

In the article "Mu Sigma" (May '64) it is stated "Cold Lake pioneers experienced many teething troubles and, understandably, some errors crept into the first set of tables produced". I can vouch for the veracity of the first part of this statement, but the latter part is inaccurate and does the personnel at CEPE Detachment, RCAF Stn. Cold Lake, a great disservice.

We at 6 ST/R OTU were concerned with developing a simple inexpensive method of Mu Sigma computation for the strike pilot. There were two alternative computation techniques that showed promise, these being special charts or tables. The Mu Sigma charts were a monumental task of development, computation, and production that AFHQ/DAirS and the Department of Mines and Technical Surveys solved to "deliver the goods" for the operators.

The computation of the initial Mu Sigma Tables was carried out by the CEPE Detachment, in particular by Mr. Don Young, using the NCR102A. The CEPE Data Section dismisses their contribution as "only a half day of programming the computer, and 230 hours of computing time". The fact remains, however, that CEPE undertook this extra task, representing 63,000 entries, completing it in a very short time in a most businesslike manner.

The assembly of the tables was completed by the navigation staff of the 6 ST/R OTU, and reproduction was achieved through DPP & S Edmonton. The limitation of the initial 6 OTU tables was the area of coverage, which was relatively small because the tables were only intended for evaluation and use at the OTU. Despite these limits, their success can be judged from the fact that it was these "pioneer" tables that convinced AAFCE and SHAPE that the RCAF techniques should be adopted throughout NATO. The next set of tables, "The RCAF Mu Sigma Tables", produced at Ottawa presented problems in Mu interpolation but this was corrected in the "NATO Mu Sigma Tables" now in use.

Throughout the Mu Sigma computation discussions we received the greatest co-operation from CEPE, AMCHQ, Air Division HQ and AFHQ staffs such as DADSO, DAirS and DATR. This made the program very interesting and demonstrated the tremendous energy and initiative of the personnel in and serving with the RCAF.

S/L G. R. Hunn,  
6 ST/R OTU,  
RCAF Stn. Cold Lake, Alta.

### ATTENTION, SCALE MODELLERS

Dear Sir:

A Canadian Chapter of the International Plastic Modellers Society is now being formed and applications are being received by Mr. Alan Black, P.O. Box 359, Hudson Heights, P.Q. The Society has been established specifically for the purpose of disseminating information required by the serious modeller, and is able to call upon the services of a number of experts to answer its members' queries.

It also issues a news sheet which, written by modellers, contains much previously unpublished material, together with reviews of plastic model kits, details of conversions, color schemes, etc. A membership in this Society is highly recommended for the serious scale modeller.

W/C J. E. Goldsmith,  
Commanding Officer,  
RCAF Station Senneterre, P.Q.

### CAPTION CORRECTION

Dear Sir:

May I point out an error in one of the photo captions on page 26 of your June '64 issue? It may be that the eyes of your editing staff have become tired from reading so much about integration and the flag debate or possibly they were blinded by the good looks of the young lady in the picture.

Nevertheless, F/L Anderson and F/O Duncan are not CF-104 aircrew but CF-101 aircrew (as denoted by the patch on F/O Duncan's left arm). The aircraft in the background is a CF-101, belonging to the recently-disbanded No. 410 Sqn. at Uplands.

S/L H. L. Graves,  
AFHQ, Ottawa, Ont.

### ANNUAL DUNNVILLE RE-UNION

Dear Sir:

One highlight of the 19th annual re-union of wartime personnel serving at No. 6 SFTS, to be held at Dunnville, Ont., 19 Sept. '64, will be the dedication of a *Harvard* aircraft memorial at the Civic Centre. This *Harvard* has been restored by volunteer labour and is complete with instructor and student (mannequins) in the cockpit.

All former 6 SFTS colleagues are invited to attend.

Frank Scholfield,  
Secretary-Treasurer,  
Re-union Committee,  
P.O. Box 1150,  
Dunnville, Ont.

## Letters to the Editor (cont.)

### CALGARY CLAM-BAKE

Dear Sir:

A re-union of all former No. 3 SFTS flying instructors will be held in the Palliser Hotel, Calgary, 25-26 Sept. '64. Jack Dinning of Calgary has made the arrangements for entertainment, etc. Undoubtedly, some may wish to bring their wives on this occasion. This, of course, is quite permissible; however, there will be no official entertainment provided for the 'fairer sex'.

Advance notice has been mailed to all personnel we have been able to think of. Should there be others that we have missed, please forward names and addresses to the undersigned at once.

Eric L. Mallett,  
B.C. Telephone Company,  
768 Seymour Street,  
Vancouver 2, B.C.

### CREDIT UNION GROWTH

Dear Sir:

As many of our Credit Union members are located in various units across Canada, overseas and in the USA may we, thru the medium of *ROUNDEL*, toot our horn on achieving the half-million dollar mark in assets?

We feel that our task of encouraging habits of thrift among our service personnel, civilian employees and their families, providing a source of credit at reasonable rates of interest in addition to counselling them on personal funds management, is a worthwhile one.

F/O D. J. McVicar,  
Credit Union Manager,  
RCAF Stn. Bagotville, P.Q.

*(Latest overall CU statistics show that some 25,000 personnel belong to 23 RCAF-operated credit unions, with total assets now in excess of \$12,000,000. — Editor.)*

### FIRST B.E.M. FOR GALLANTRY

Dear Sir:

I was very pleased to read (Jun. '64) about the award to Cpl. G. W. Snider and LAC H. F. Schultz of the BEM for Gallantry and would like to offer to them, through you, my heartiest congratulations. However, that statement that they were the second and third RCAF recipients of this new division of the award, and that the first one was LAC R. G. Cole, started me thinking.

You see, I was privileged to have been invested with the George Medal by Her

Majesty the Queen, at Government House on 1 July '59. There were 12 other people invested by Her Majesty that day and I was sure that one of them had been an RCAF sergeant who received the BEM for Gallantry — namely Sgt. I. J. McPherson.

Perhaps you could clarify this in a forthcoming issue.

D. E. Stevenson,  
Ex-Flying Officer,  
2115 Dunelm St.,  
Ottawa, Ont.

*(RCAF Records Office confirms that reader Stevenson's memory is better than their records in this instance. Sgt. McPherson's award, which was for an incident occurring in Dec. '56, was approved by the Queen on 19 Feb. '58 — a month or so after the institution of the BEM for Gallantry. He, therefore, was the first to receive this award in the RCAF. — Editor.)*

### SATISFIED PUPIL

Dear Sir:

In reference to your item "Mahogany Sculptor" (May '64), I had the privilege of having Cpl. Anderson for drill instruction during basic training. Cpl. Anderson is not only a good sculptor but a darn good instructor as well.

LAC T. W. Heffern,  
RCAF Stn. Holberg, B.C.

### WANTS LYSANDER INFO

Dear Sir:

I recently purchased a Westland *Lysander* which has been rotting out-of-doors for about 18 years and is in deplorable condition. Although it is salvable, it will be a long and costly job to restore it to flying condition.

The Air Force number of the aircraft is 2346. I understand it was purchased in 1945 or 1946 from RCAF Stn. Trenton and has since been lying on a farm in southwestern Ontario. This letter is, firstly, to ask if any of your readers might remember flying or working on 2346 or might have pictures of it? It was used as a target drogue, according to its markings.

In searching out technical information on the *Lysander*, I have become most interested in its operational history. I would very much like to see photographs of operational *Lysanders* which your read-

ers might have and I would enjoy hearing the experiences of former *Lysander* pilots.

I anticipate that I could operate this *Lysander* only for two years or so, hopefully at air shows and anywhere it might be used to promote private aviation and interest in old aircraft. After that I hope to see it go to a museum or some other agency of that type which might keep it airworthy.

F. D. Emmorey,  
Information Officer,  
International Air Transport Ass'n.,  
1060 University St.,  
Montreal 3, P.Q.

### HANDS OFF!

Dear Sir:

Being a flight attendant with No. 437 (T) Sqn., RCAF, I was surprised to read in "Flight Feeding" (Jun. '64) the statement, "Assisting the stewards in serving the food are the transportation technicians, whose duties also require an expert knowledge of cargo handling, and the women flight attendants".

I didn't know transportation technicians required a knowledge (let alone "expert knowledge") in the handling of women flight attendants.

Cpl. G. P. Andreanopoulos,  
Chief Flight Attendant,  
No. 437 (T) Sqn.  
RCAF Stn. Trenton, Ont.

*(Whew! For a moment we thought we had dropped that all-important comma after the word "handling". — Editor.)*

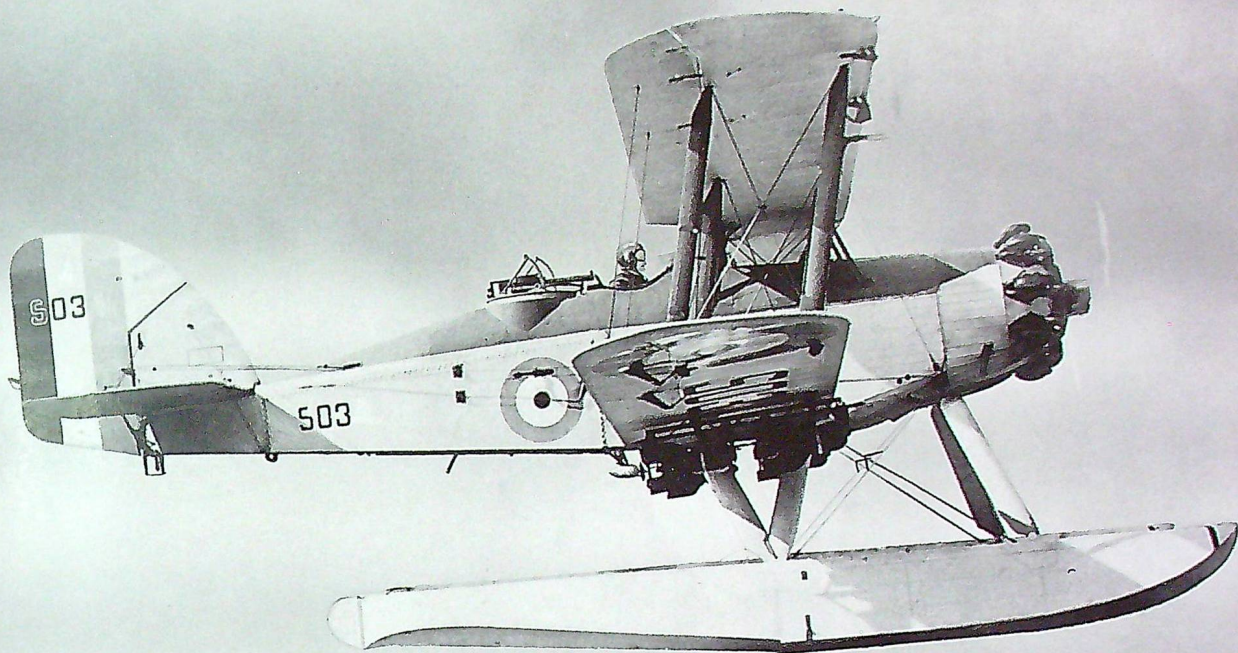
### ALBUM OMISSION

Dear Sir:

Your Aircraft Album (Jul-Aug '64) is of a type that is close to the hearts of many airmen, but the second paragraph neglects to mention the *Mitchell's* greatest claim to fame for a peace-time role, namely high altitude Trimet photography from '46 to '48. During those years No. 413 Photo Sqn. set new records for photo coverage.

I am sure your article has cut No. 413 Sqn. "old boys" to the quick since they must feel that recognition for this good job is at least worthy of mentioning in any article about these faithful and venerable B-25s.

FS J. G. Dwyer,  
No. 1229 TSD, Rexdale, Ont.



# AIRCRAFT ALBUM:

## *Westland Wapiti*

In 1935 the RCAF purchased the first of 24 *Wapitis* from the RAF. These bombers equipped No. 3 Sqn. at Trenton in 1937. The following year the squadron flew its aircraft from Ottawa to Calgary, and late in August 1939 the squadron moved to Halifax. Redesignated No. 10 (Bomber Reconnaissance) Sqn., it used *Wapitis* as an air striking force and as training aircraft until April 1940, when they were replaced by *Digbys*. In July of that year the last remaining *Wapitis* were sent to the Technical Training School at St. Thomas.

The *Wapiti* was powered by a Bristol Jupiter engine of 480 h.p. and had a top speed of 159 m.p.h. Armament consisted of two machine guns. The aircraft was designed to lift up to 1000 pounds of bombs, but personnel of No. 10 Sqn. found that 500 pounds was the most their aged machines could carry without an excessively long take-off run. The wing span was 46 feet 5 inches, length 34 feet 2 inches, and loaded weight was 5,400 pounds. Present-day pilots may be interested in the landing speed of the *Wapiti*—58 m.p.h.

*Roger Duhamel*

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