

# THE RCAF

## A POTENT AIR WEAPON NEARS COMPLETION

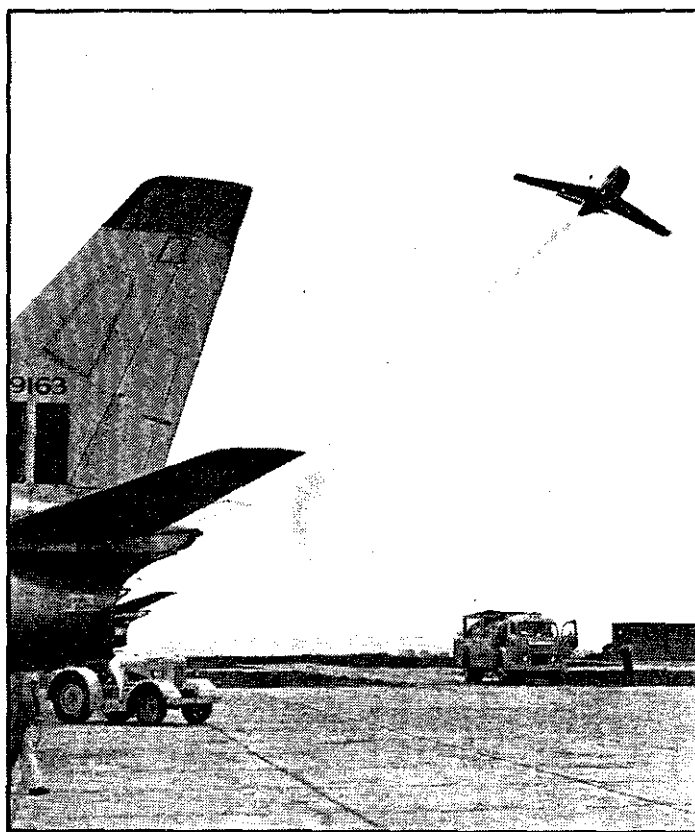
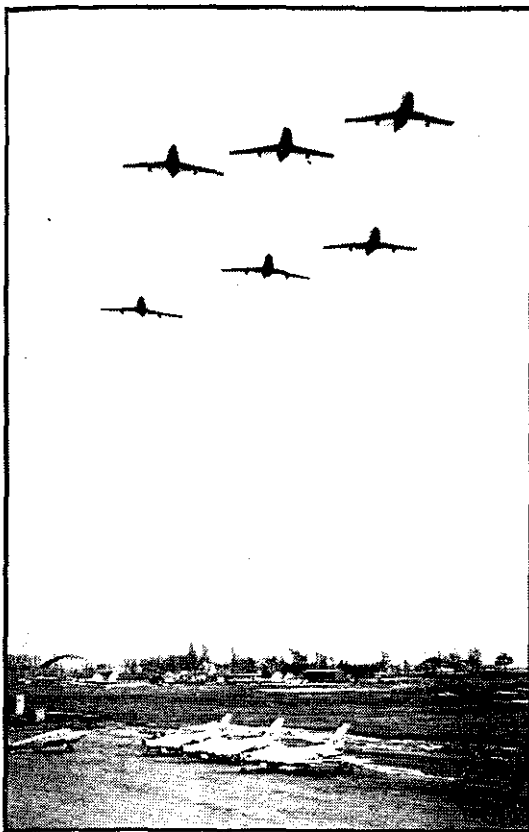
**L**ORD TEDDER, Marshal of the Royal Air Force, once said: "In war, nothing on the surface of land or sea can operate effectively unless and until the situation in the air is under firm control, that is, until the air battle has been won."

There is another battle that precedes the one Lord Tedder had in mind. That is a three-phase struggle, first, to convince the people and the government of the basic truth of his statement; second, having convinced them, to obtain the necessary astronomic funds to forge a superior weapon with which to effect control of the air; third, having obtained these funds, to create with them a force of trained men and modern machines.

Today, Canada has within reach the fulfillment of all three of these objectives. Concerning whether or not, in this fulfillment, she has created (please turn to next page)

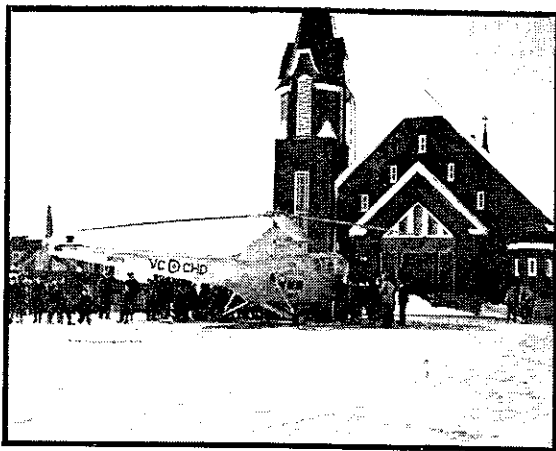
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AIRCRAFT  
OCT/53

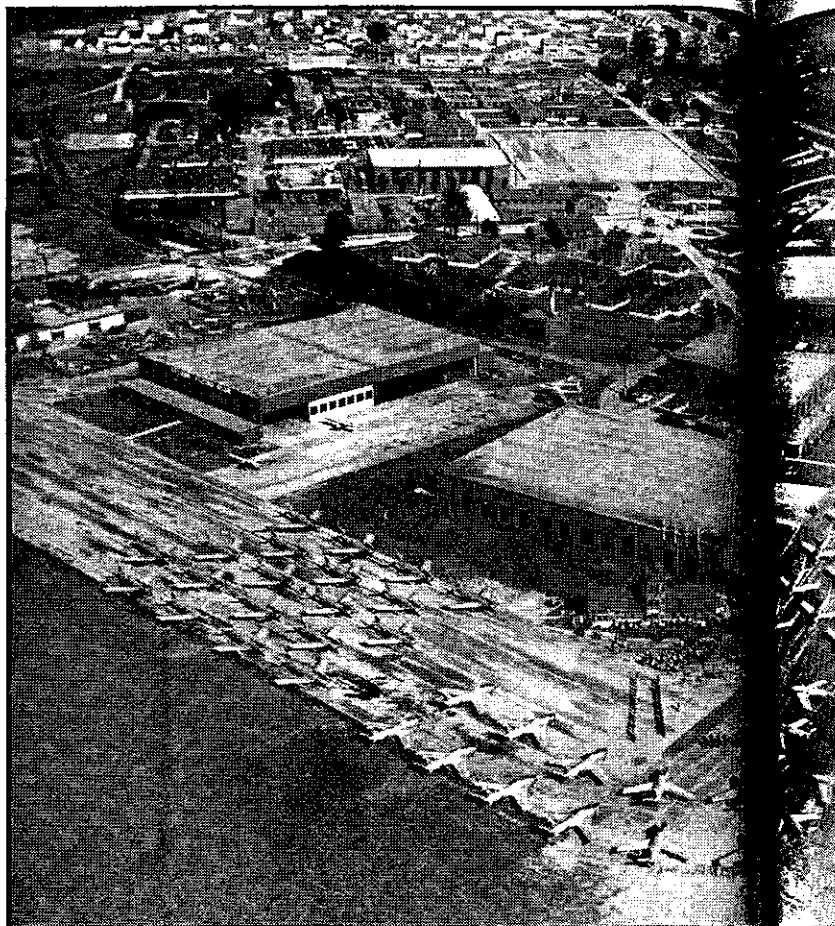
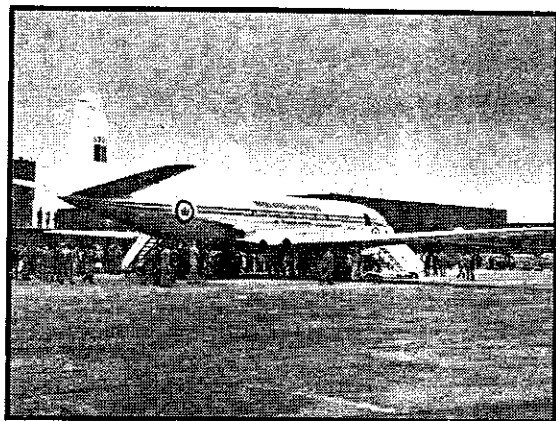


CF-100 SQUADRONS ARE FORMING NOW FOR HOME DEFENCE. ABROAD, 12 SABRE SQUADRONS GIVE NATO DEFENCES A SHARP EDGE





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FROM COMETS TO SABRES, THE AIRPLANES NOW IN SERVICE WITH THE RCAF GIVE IT STRENGTH WITH DEPTH HITHERTO UNKNOWN

a suitable weapon for Lord Tedder's air battle, there will always be an element of doubt. This doubt can only be removed, of course, by putting the weapon to the test by fire, something which no one has any desire to do.

Nevertheless, a potent and impressive weapon, the Royal Canadian Air Force, has come into being. To those who consider the paucity of CF-100 squadrons to be an indication that the creation of a modern air fighting force within the RCAF is still far from complete, it is pointed out that the formation and equipping of the home defence squadrons is really little more than a mopping up operation in the fantastic build-up that began in 1950.

The current situation might be compared to a new house which needs only to be shingled in order to be considered complete. To all intents and purposes, the construction work has been finished, yet the house cannot properly be considered complete until the shingles are in place to keep the roof from leaking. The RCAF is like the

nearly-finished house. It is all there, just waiting for the delivery of the shingles. Everything will be fine as long as it doesn't rain.

#### cause and effect

LET US consider briefly the events that went before, and brought about, the big build-up. Wing Commander G. R. M. Hunt of the Directorate of Air Plans Strategic, recently said: "It will be recalled that at the end of the Second World War, Canada, along with other Western Democratic nations, put her head in the sand and demobilized her armed forces as rapidly as possible. In fact, we demobilized to such an extent that we could not have 'fought our way out of a paper bag.'

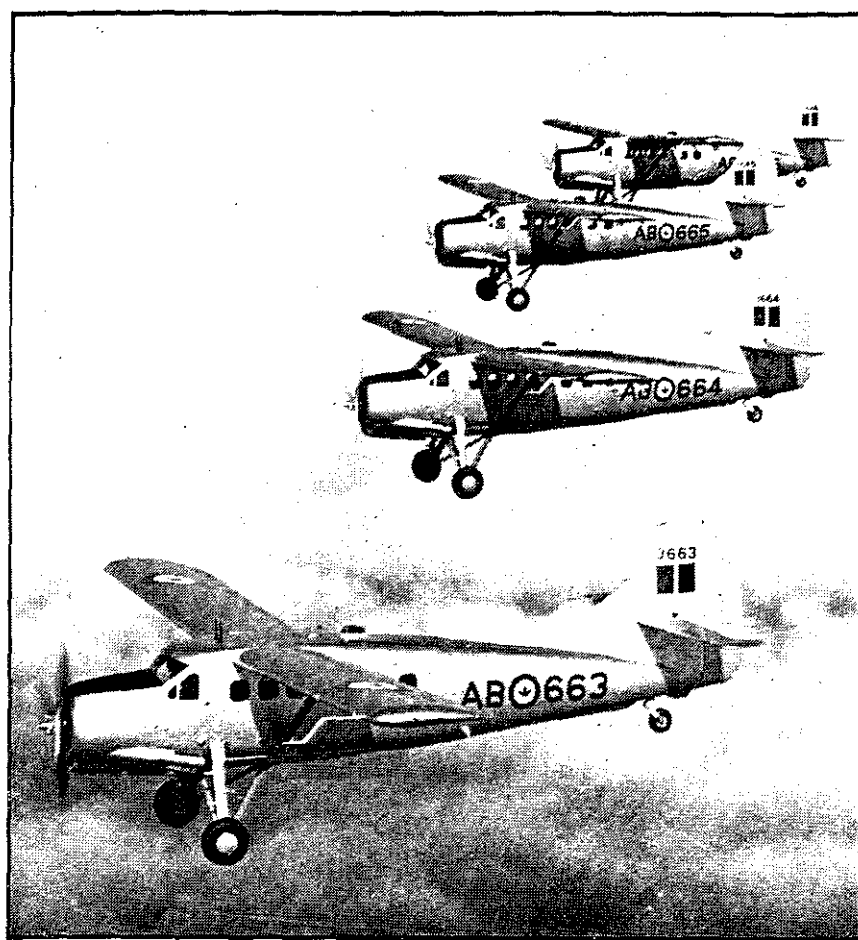
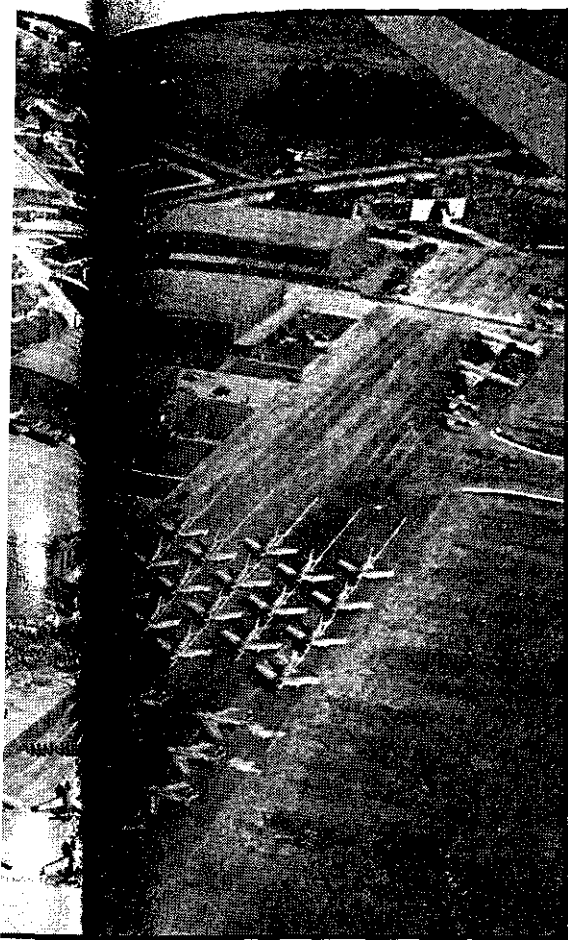
"There was, however, some excuse for this rapid and extensive demobilization. After the storm of the greatest war in history had exhausted itself, there were few clouds on the international horizon. Although the Soviet Union had become an international power of the first order, none of the Western Nations would recognize (or,

it may be, admit) that Russia was a threat to their security. Thus it was in this supposedly ideal climate of international affairs that our plans were laid."

**A Nucleus:** "We planned for a nucleus air force capable, in an emergency, of rapid expansion to any required size. In other words, our Service architects put in little more than the foundation of their structure. The weather was grand and there did not appear any great hurry to finish the house. Furthermore our funds were limited and it looked as though we might have to live in the basement for some time to come.

"Our sense of well-being was short lived. By 1947—only two years after the war—the Soviet Union had made it perfectly clear that she had not relinquished her dreams of world domination . . ."

It was at that time that the first steps in the big build-up were taken, though even then the RCAF's planners were not thinking in terms of the powerful air arm Canada is able to flex today. The accelerating force of



TO THE LEFT IS NO. 2 WING PRIOR TO DEPARTURE FROM UPLANDS TO FRANCE. RIGHT, THE FIRST OTTERS TO JOIN THE RCAF

Korea was instrumental in the planners being charged with the production of completely new blueprints for the Service now in being. According to Wing Commander Hunt, the planners have since World War II produced acceptable working drawings enabling the RCAF to: (1) fulfill the defensive role of an air force; (2) carry out an offensive role by making due contribution within the whole NATO framework of an offense and defence; (3) provide training facilities designed to strengthen NATO both for offence and defence.

Says W/C Hunt: "The structure designed by the RCAF's architects is fast assuming no unworthy shape."

#### promise fulfilled

**W**ITH the recent movement overseas of No. 4 Fighter Wing, Canada has completed the structure of the 12-squadron air division which forms a major part of her contribution to NATO strength. No. 1 Air Division is, in fact, the most powerful single component of the combined NATO air forces. It is well known, too, that for some time now Canada has been easily meeting

her commitment to train 1,400 NATO aircrew each year (additional to those trained for the RCAF).

Thus the only portion of the structure still to be completed is the home defence force. As already noted, this awaits only the aircraft.

Indeed, two CF-100 squadrons have already formed with Mk. 3 versions of Avro Canada's all-weather fighter while a third is starting to form, and as soon as sufficient Mk. 4's are available, additional squadrons will begin to form. Even now, the first production Mk. 4, claimed to be the most heavily armed fighter aircraft in the world, is flying. Other nearly completed production aircraft chafe at the end of the production line.

There now seems no reason to doubt that within one year there will exist a home defence air force truly worthy of the name. Squadrons will be forming as fast as crews can be trained to man the rapidly growing numbers of CF-100's.

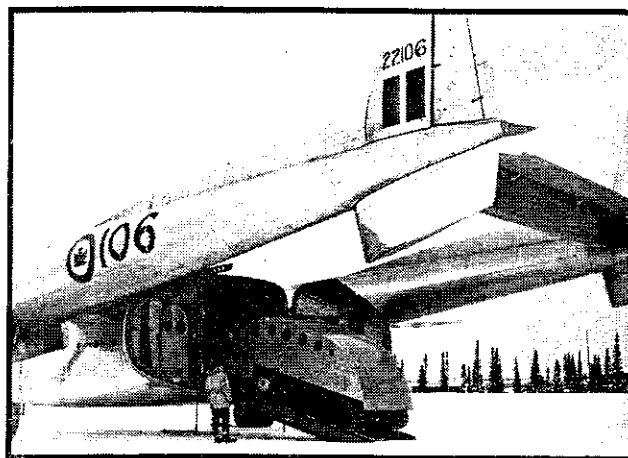
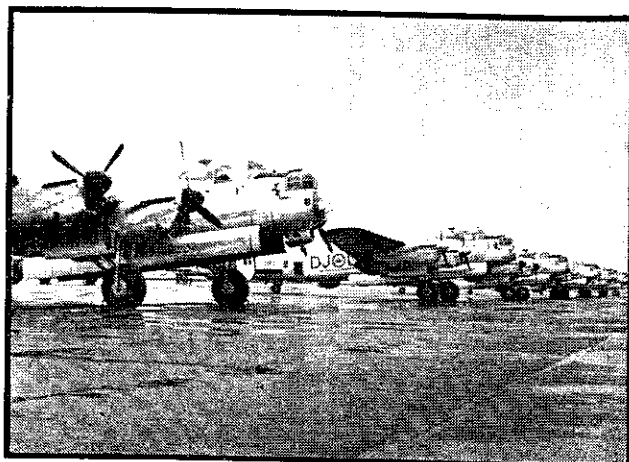
**The Alarm Bell:** In the meantime, the early warning system, the keystone of the air defence set-up, has made considerable progress in the past

year. Defence Minister Brooke Claxton has reported that the joint Canadian-U.S. network of radar stations, and associated communications facilities, would be largely completed before the end of 1953.

That most important supplementary force, the Ground Observer Corps, is growing rapidly. The Corps performs the vital task of spotting and plotting aircraft that might be slipping under the radar curtain, or flying through the gaps that undoubtedly exist between the permanent radar stations. As has been frequently emphasized, the cost of these radar installations is such that it would be economically impossible to build enough of them to throw up an unbroken electronic curtain across the continent's northern frontier. Hence, the importance of the Ground Observer Corps is no less than that of the radar network, or of the fighter forces which back up the early warning system.

#### help required

**I**T WOULD be mere patriotic braggadocio to pretend that the RCAF, even when it reaches its



MARITIME COMMAND LANCASTERS GUARD THE CONTINENT'S SEA APPROACHES WHILE ATC PACKETS LINK TOGETHER RCAF STATIONS

maximum planned strength, would alone be able to stave off any air attacks that might come from the one potential invader worthy of serious consideration at this time. Of course, nobody has suggested that this might be possible, and indeed, to expect it would be the height of impracticability. Both the U.S. and Canada have long regarded the defence of North America to be a joint problem. The two nations have no other choice but to regard it thus; joined as they are in geographical wedlock (with grounds for divorce non-existent), for better or for worse, an attack on one cannot fail to have a considerable effect on the other.

For this reason, the U.S. has financed and manned a number of radar installations at strategic points in Canada. Generally speaking, these are located where they will do the U.S. most good, while similar installations, financed and manned by Canada, are naturally situated where they can best give early warning to important Canadian areas of population and industry. Of course, defence planners think of these stations as parts of a single system, regardless of who owns or operates them. Similarly, Canada has consented to allow the U.S. to base a significant number of fighter squadrons at specified, but unpublicized, points on Canadian soil. In addition, the U.S. maintains establishments in Newfoundland and Labrador, but these are leftovers from agreements made with Britain while Newfoundland was still a British colony.

**First Line:** Other U.S. fighter units are of course based in Alaska, where they form the northernmost line of air defence. So far as is known, the

presence of fighter squadrons in Alaska is aimed primarily at protecting Alaska itself, with the secondary aim of protecting North America in general. Planners of North American air defences have not scattered their forces about the periphery of the continent, but more wisely are concentrating them about the heartland.

Thus, though an invading air force might in this way be allowed to cross almost unmolested, literally thousands of miles of North American territory, the chances of successful interception are increased manifold as the enemy funnels in on the target. It also means that the invader's fighter escort would, unless they were considered expendable, have to turn back to their homeland long before the escorted force actually came under fire.

#### top billing

**T**HE ability of the RCAF to play leading roles in the North American and European defensive theatres has continued to grow during the past twelve months. Sabre squadrons have increased in number from nine to twelve and two more fighter

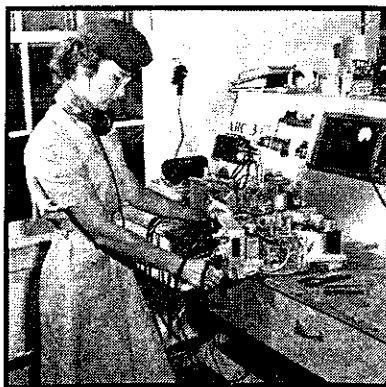
wings have formed and moved to bases in Germany. The first two all-weather squadrons have formed and are starting to shape up. A new transport squadron was also formed, bringing to six the total number of new squadrons established during the year.

The total number of activated squadrons now operated by the RCAF has reached 34, which leaves seven to go to reach the announced objective of a 41-squadron Air Force. It is quite likely that most, or all, of these remaining seven will be all-weather squadrons for home defence.

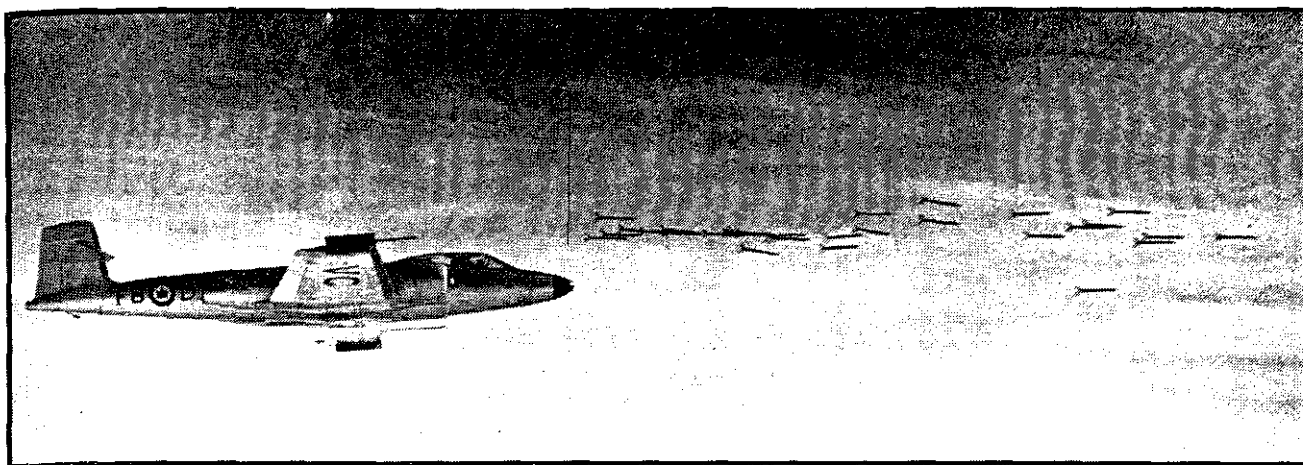
Of the 34 squadrons now in existence, 22 are regular units, while the other 12 are auxiliary squadrons. The regular fighter squadrons are scattered about various points in Europe and the U.K., as well as on the east and west coasts of Canada and in Ontario and Quebec. There is now only one regular squadron stationed on the Prairies, but this is a transport unit. Of the seven squadrons still to go, the first formative steps have already been taken on the first.

**No Change:** There has been no change in the number or location of any of the 12 auxiliary squadrons. These fly either Vampires (400 and 411, Toronto; 401 and 438, St. Hubert; 442 Vancouver), Mustangs (402, Winnipeg; 403, Calgary; 420, London; 424, Hamilton; 443, Vancouver), or B-25J Mitchells (406, Saskatoon and 418, Edmonton). All function as fighter or fighter-bomber squadrons, with the exception of 406 and 418, which are classed as tactical or light bomber units.

The strength of the Air Force has increased by approximately 4,500



NO JOB TOO TOUGH FOR THE GIRLS



A NEW POWERFUL WEAPON FOR USE WITH CF-100'S, RADAR-AIMED ROCKETS, WILL SOON BE STANDARD ARMAMENT ON MK. 4 MODELS

personnel in the past year, bringing the total to over 41,500 officers and other ranks, or very close to the authorized manpower ceiling of 42,000 (this figure is not laid down as a limit, but rather to provide a basis on which to plan establishment and rank structures). The auxiliary units' strength was up slightly at approximately 5,800. These figures include airwomen, who in the regular force have now reached 3,500 in number, including some 250 officers. Over 600 women are currently serving in auxiliary formations.

The most important top-level shift to take place during the year involved the retirement of Air Marshal W. A. Curtis, CB, CBE, DSC, ED, from the post of Chief of the Air Staff, which was taken over by Air Marshal C. R. Slemon, CB, CBE, CD. The change-over became effective on January 31, 1953, by which time Air Marshal Curtis had been in command of the RCAF longer than any of his predecessors. He was named Chief of the Air Staff in September, 1947. Air Marshal Slemon was AOC, Training Command, Trenton, Ont., just prior to succeeding A/M Curtis.

#### here and there

**T**HE GENERAL organization has not recently shown much change, its basic structure having been largely completed for some time. Major additions have been Nos. 3 and 4 Fighter Wings: No. 3 began to form late in 1952 and was moved overseas during March of this year; No. 4 started organizing early in the spring of this year, and completed its move to Europe during September.

Only other important addition to the Air Force structure was No. 3

Advanced Flying School, which commenced operations at Gimli, Manitoba, during August. The establishment of No. 3 AFS completes for the present time the RCAF's training facilities.

During the year also, Tactical Air Group and Maritime Group were elevated to command status. In the case of Tactical Air, this was no indication of increased activity or responsibility in the immediate future, the change being made mainly to standardize on the nomenclature of major formations reporting directly to AFHQ. Normally a Group is the satellite of, and responsible to, a Command HQ, while Commands are in turn responsible to AFHQ. Since both Tactical Air and Maritime were responsible directly to AFHQ, their official designation was changed to "Command".

An additional reason for the change in respect to Maritime Command was this formation's increasing activity and stature.

**Change of Address:** As the building program has advanced sufficiently

to permit the occupation of new or refurbished bases, there has been a reshuffling of quarters for a number of important units. In some cases, movement of these units has already been completed, while others are still pending. As already mentioned, No. 3 Fighter Wing and No. 4 Fighter Wing took over bases in Germany, in March and September respectively.

In Canada, No. 2 Flying Training School moved from Gimli to Moose Jaw, Saskatchewan, in June, and the base at Gimli was taken over by No. 3 AFS. No. 4 Flying Training School finally made its long-heralded move from Calgary to Penhold, Alberta, in July. No. 4 Transport OTU, which had been formed on an interim basis at Dorval last year, was moved to permanent quarters at Trenton during September.

To take place this month is the shift of No. 1 Air Navigation School from Summerside, Prince Edward Island, to Winnipeg, where it will be amalgamated with No. 2 ANS and the resultant single, enlarged navigation school will be known as No. 1 ANS. This move is part of an overall plan to provide more elbow room at the two major maritime RCAF bases, both of which have been faced with an aggravating overcrowding problem.

**Other Movements:** Following the move of No. 1 ANS to Winnipeg, No. 2 Maritime OTU will be transferred from Greenwood, N.S., to Summerside, as will No. 103 Search & Rescue Unit. Central Navigation School, where the Air Force's top navigators take postgraduate courses, is to remain at Summerside for the time be-



THE NEW MAN TAKES OVER

(Continued on page 113)

•Aeroquip Corporation is now producing a new type fitting called the "Flex Joint". The Flex Joint not only serves to join two rigid tubes in a fluid-tight seal, but, most important, permits for the first time a considerable degree of flexibility between the two rigid tube ends that are joined. This fitting was designed specifically for providing connections between wing fuel cells in aircraft having wings which undergo considerable deflection in flight. However, it has also proved useful in handling problems arising from vibration, thermo-expansion, and construction tolerances.

•Northwest Orient Airlines have purchased a braiding machine from the New England Butt Company with which it will rebind low tension ignition harnesses for the P & W R-4360 engines used on its Stratocruisers. The rebraiding of the nylon covers on the harnesses was formerly a factory job. NWA expects that the machine will effect a saving of about \$10,000 per year.

•A new ignition exciter for turbojet engines that provides more positive ignition at higher aircraft speeds or altitude has been announced by Canadian General Electric Company's Industries Department. This unit has been approved for use on four production models of jet engines.

## TRANSPORT OPERATIONS

(Continued from page 30)

poses) and chains were established in Northern Quebec/Baffin Island and straddling the northern end of the provincial boundary between Ontario and Quebec. The former comprised 76 line crossings (average length about 210 per line miles) and the latter totalled 29 line crossings.

In addition, the ashoradetic program, covering 17 sites in the Yukon and

eight sites in Northern Ontario, was completed.

## THE RCAF

(Continued from page 49)

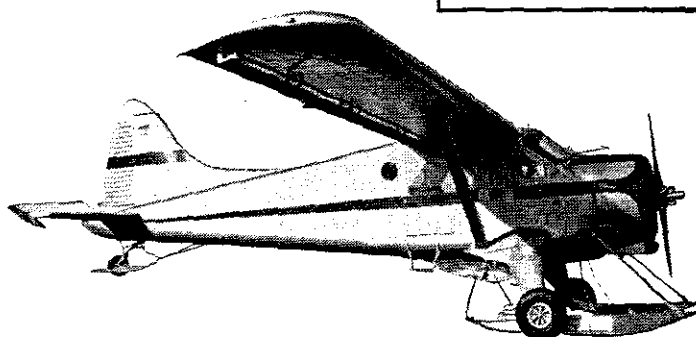
ing but will probably be shifted to Winnipeg next spring.

Only three new stations were opened by the RCAF in the past year, another indication that the Service has almost completed its growth within the present planned framework. The new stations are RCAF Station Zweibrücken, Germany, opened in January, 1953, preliminary to the mass flight over-

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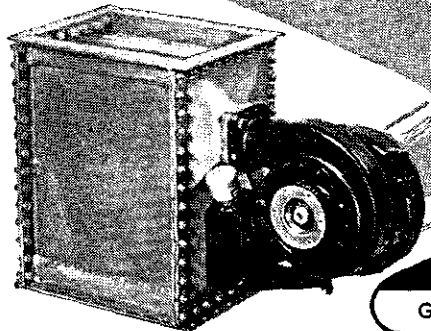
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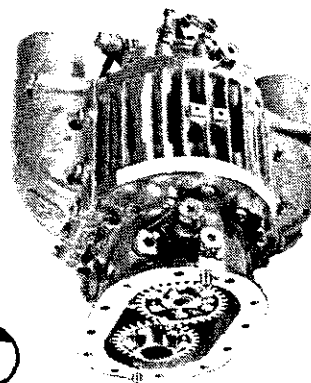
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seas of No. 3 Fighter Wing, which is now based there; RCAF Station Baden-Soellingen, opened in Germany in the early spring of 1953 as a base of operations for No. 4 Fighter Wing, which has now taken up quarters there. The third station was RCAF Station Torbay, opened when the Air Force took over control of Torbay from the DoT in the spring of this year. Previously, the only RCAF formation at Torbay was a detachment from 103 Search & Rescue Unit.

## A/M SLEMON

(Continued from page 49)

The bomber raids were carefully planned for a specific purpose. Air Defence forces were kept in the dark as to the strategy of the attackers and in this manner the maximum possible experience was given the controllers and personnel in the warning and communications system as well as to the fighter pilots and anti-aircraft guns.

For Canada's Ground Observer Corps, it was its first opportunity to participate in an air defence exercise.

Thousands of volunteers throughout Eastern Canada manned the observation posts and filter centres both day and night — some for many long hours. These civilian volunteers made a very creditable showing and came through with flying colours.

Although for security reasons it is not possible to give a statistical report of the efficiency of the bomber crews, interceptors and ground units, it may be stated that "Tailwind" was a considerable improvement over "Signpost", a similar exercise staged a year ago. The percentage of interceptions completed was much larger than last year.

At the conclusion of an exercise of this kind, most people would naturally expect that figures on the number of aircraft reported destroyed and damaged would quickly indicate the success or otherwise of the operation. In a "Controlled" exercise, bomber aircraft are not withdrawn after having been attacked by fighters, but continue on through the system and the same aircraft may be attacked many times. This is done to obtain the maximum training benefit for intercept controllers, raid reporting personnel, fighter

pilots and anti-aircraft gunners. Consequently a box score type of statistics made up from claims could be very misleading. All camera films must be studied and reports from both bomber crews and fighter pilots analysed and evaluated before accurate assessments may be made. This takes time and the results must, of course, be treated with adequate security because this information, if obtained by a hostile power, would jeopardize the effectiveness of Canada's air defences.

"Tailwind" smoothed out a lot of wrinkles. It has made available a larger number of qualified personnel; it proved the CF-100 to be eminently satisfactory both in all-weather fighting ability and maintenance; and the exercise resulted in a remarkable showing of civilian filter centres and observation posts, which play such a vital part in the over-all defence schemes.

**No Complacency:** To prevent any complacency over the state of our air defences, however, I would like to quote the remarks of the Air Officer Commanding, Air Defence Command, Air Vice Marshal A. L. James. This is what A/V/M James had to say at the conclusion of "Tailwind": "I do not want to leave the impression that all raids were successfully handled nor that I am completely satisfied. The air defence system is not yet fully complete either in equipment or in trained personnel and much hard work remains to be done before maximum effectiveness will be reached. However, 'Tailwind' did prove again that a good air defence is practicable, and that we are proceeding along the right lines."

On the other front — the NATO operations in Europe — the successful Atlantic-crossing of No. 4 Fighter Wing of the RCAF emphasizes the full part Canada is taking in maintaining the security of the Free World. This is extremely important work and is going on under pressure at all times. The training program for RCAF Sabre pilots and associated personnel in No. 1 Air Division is designed to bring Canadian pilots to peak efficiency and to keep them there.

RCAF wings have taken an active role during 1953 in numerous NATO exercises. The first one was in March when 20 aircraft from 2 (F) Wing based at Grostenquin in France, took part in an interception exercise. Exer-

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