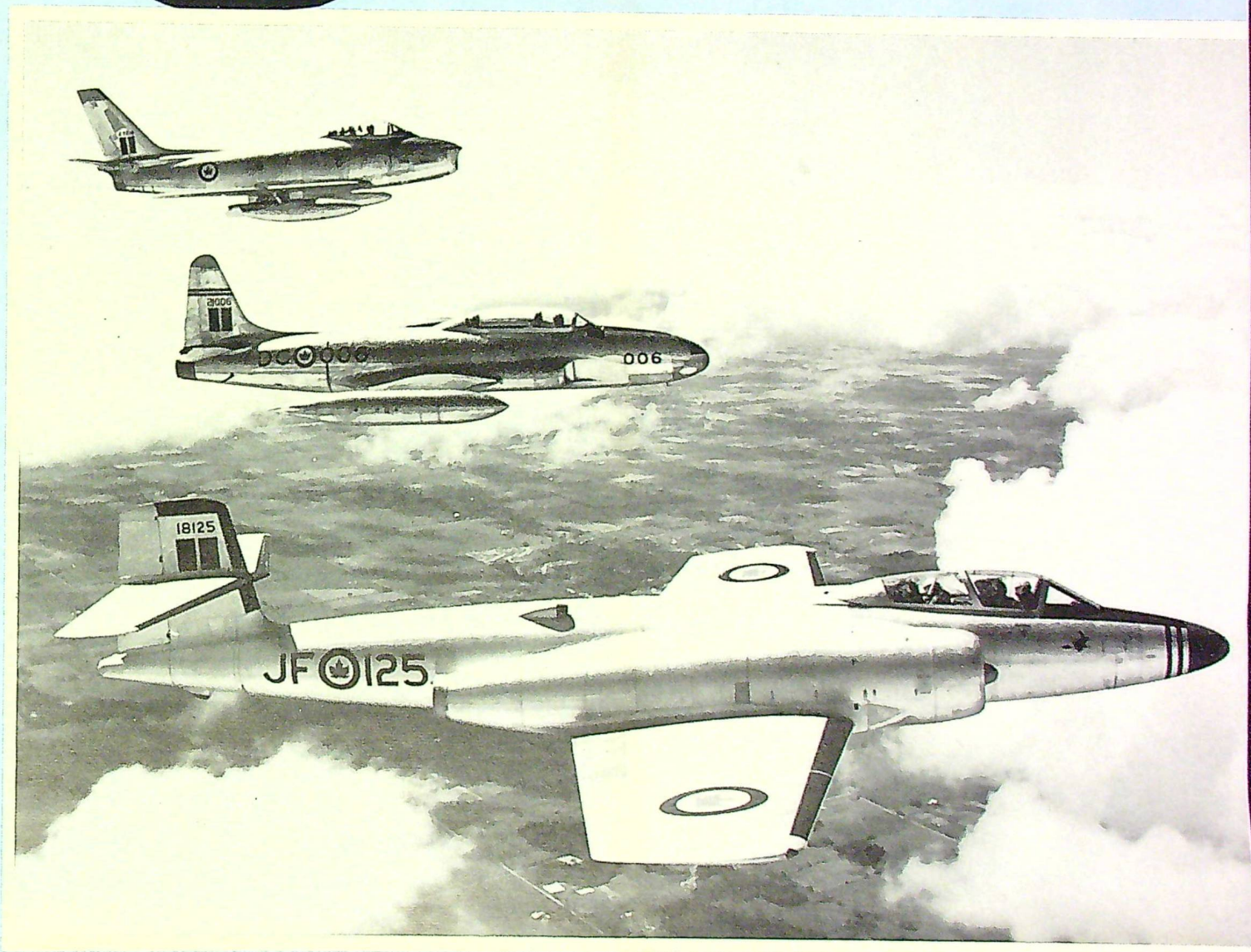
The CROUNDEL

Vol. 6, No. 10
NOVEMBER 1954



ROYAL CANADIAN AIR FORCE

The Roundel

Issued on the authority of
THE CHIEF OF THE AIR STAFF
Royal Canadian Air Force

Vol. 6, No. 10 NOVEMBER 1954

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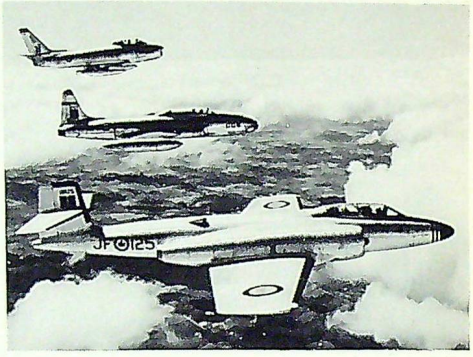
This Month's Cover



Our photograph, taken by Flying Officer J. H. L. Le Compte, shows a formation of three types of aircraft that took part in Operation "Prairie-Pacific" (see story on page 42). Top to bottom, they are: F-86 Sabre fighter, T-33 Silver Star trainer, and CF-100 Canuck fighter.

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

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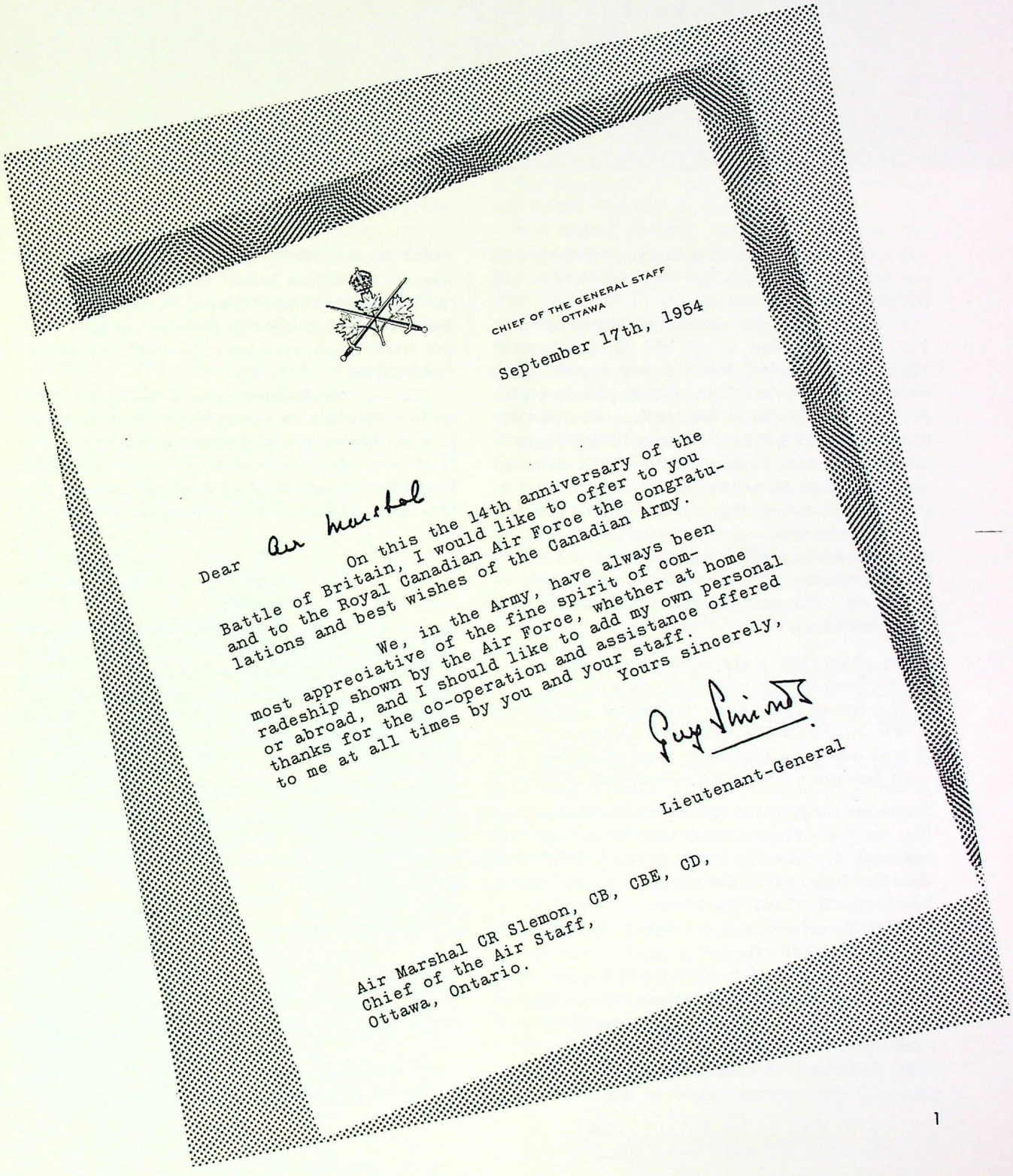
A Letter from the C.G.S.



CHIEF OF THE GENERAL STAFF
OTTAWA

September 17th, 1954

Dear Air Marshal

On this the 14th anniversary of the Battle of Britain, I would like to offer to you and to the Royal Canadian Air Force the congratulations and best wishes of the Canadian Army.

We, in the Army, have always been most appreciative of the fine spirit of comradeship shown by the Air Force, whether at home or abroad, and I should like to add my own personal thanks for the co-operation and assistance offered to me at all times by you and your staff.

Yours sincerely,

Guy Simonds

Lieutenant-General

Air Marshal CR Slemon, CB, CBE, CD,
Chief of the Air Staff,
Ottawa, Ontario.

SGT. SHATTERPROOF WILL NOT ADVERTISE

I turned with a sigh from the manuscript before me and gazed through the office window at the leaden world beyond.

It was not that the manuscript lacked interest. Far from it. When kindly old Group Captain Heavywater, the R.C.A.F.'s nuclear pundit, takes to the pen, the result is frequently pregnant with possibilities. His latest masterpiece was particularly pregnant. Entitled "Fun with Hydrogen — an Atomic Primer for Service Kiddies," it appeared to contain full directions for the manufacture of small H-bombs on the kitchen stove. But the vision of countless married quarters mushrooming skyward, fascinating though it would have been in the ordinary course of events, now failed to divert me. The editorial heart was heavy with autumnal gloom . . .

"The skies they were ashen and sober;
The leaves they were crispèd and sere —
The leaves they were withering and sere;
It was night in the lonesome October . . .
It was down by the dank tarn of Auber
In the ghoul-haunted woodland of Weir."

Despite the fact that it was only eleven a.m. and that the grimy flood of the Ottawa River could not justly be described as a "dank tarn," I reflected that Poe had caught the atmosphere of Victoria Island to a T. Even the odd ghoul —

"Ha! So we mope at the helm, Sir! While all Canada hungers for the next issue of 'The Roundel', we sit thirsting for five o'clock and the evening's flesh-pots. Come, Sir! Let us shake off our apathy. Let us seize our pencil and hurl ourselves once more into the cultural fray!"

At the sound of that all-too-familiar voice, I glanced round — then leaped to my feet with a stifled scream. Watching me from the doorway was an apparition beside which the run-of-the-mill ghoul would have seemed to radiate benevolence and good-fellowship. Even as I goggled at it, the red-rimmed eyes narrowed and the yellow tusks parted:

"Tut-tut, Sir! Our nerves need toning. But have no fear. Beneath this mask there hides the genial face of Shatterproof. I am wearing it to the Hallowe'en party at the Mess to-morrow night. I have hopes that its judicious employment may keep Mrs. Gallstone at arm's length."

When I could trust myself to speak steadily:

"To what, Sergeant," I asked, "do I owe the pleasure of this visit?"

A shocking tumour on his forehead twitched as he frowned. Slowly he advanced towards my desk, rather like a fiend moving in on a damned soul. Then, taking from his pocket a battered copy of the September "Roundel", he handed it to me.

"To editorial ineptitude, Sir," he said. "Turn to page three."

I did so. In the fourth paragraph a word was circled in red.

"Now, Sir," he enquired with icy courtesy, "would you be good enough to tell me what 'chessecake' is?"

I laughed. "Why, it's a misprint for 'cheesecake', that's all. Everyone will realize that."

A loathsome rubber sore to the right of his nose pulsed with indignation.

"You may realize it, Sir, and I may realize it, and the boys in the field may realize it. But will Sir Winston Churchill? Will Mr. St. Laurent? Will Mr. Eisenhower?"

I hesitated, momentarily bereft of speech by the collapse of the horn over his left eyebrow.

"No, Sir," he continued, "they will not. 'What', they will ask themselves, 'what is this problem about which the old wardog is so concerned? If forty-eight full-page illustrations of Miss Monroe cannot settle it, it must indeed be vital to our way of life.' And while they pore in vain over their dictionaries, our civilization may well totter into the abyss."

He paused, in order to allow the mask (which had somehow become inflated with air while he was talking) to return to its normal ghastliness.

"And now, Sir, let us turn to page forty-two."

Another red-encircled word awaited me. I glanced at the context.

"My dear Shatterproof," I began, "our readers will recognize —"

"Editorial ineptitude," he finished for me. "The two young men referred to in Mr. Feast's narrative were escaping on bicycles from a hostile Italian mob. How, Sir, will the world react to your statement that they were 'peddling down the broad street'? What had they to peddle? And furthermore, would they have chosen such a moment for exercising their powers of salesmanship? Have a care, Sir! Even the readers of 'The Roundel' will tolerate only so much insult to their intelligence."

He fell silent again, just in time to prevent a purple boil above his right ear from bursting. I grasped the opportunity.

"Shatterproof," I said firmly, "I am the last man in the world to excuse my own —"

And there I stopped. It was not, however, the sudden ballooning of his nose that silenced me. Nor was it the unexpected popping up of his collapsed horn. It was the entry of Claudette, our messenger girl, with the mid-morning tea and biscuits.

Claudette's ensembles, as I have said on earlier occasions, are always worthy of the connoisseur's attention. But when both her hands are occupied in carrying refreshments and therefore unable to readjust the neckline of a blouse which at no time seems very securely suspended from her shoulders — well, the beholder is apt to lose his previous train of thought.

Not for me, though, was the smile with which she tripped across the room. Not for me was the promise of her whispered words: "Hi there, Muscle-bound! Ain't seen you in a dog's age. How long ya here for?"

The object of her attention, whose back was towards her, started like a demon at the impact of holy water. Then, recovering himself, he turned majestically . . .

A shriek rent the air. There was a sound of smashing crockery, a bewildering flurry of skirts, and a flashing of the two unsurpassed legs which carried Claudette screeching from the office.

Sgt. Shatterproof stared after her in astonishment. Finally, with a pensive "H'm", he moved forward like a mastodon to the mating-call. In the doorway he turned again to me and removed his mask.

"A wise old devil, Sir," he remarked as he stuffed it into a trouser-pocket, "always gets further without advertising."

He gave me what from a lesser man might have been a wink; and then, with a slightly preoccupied salute, he was gone.

THE PARTY LINE

THE R.C.A.F. AND THE PUBLIC

By R. V. Dodds, Director of Public Relations (R.C.A.F.)

(In May 1953 we published an article by Sqn. Ldr. W. M. Lee entitled "The Meaning of Public Relations," in which the writer dealt with the broader aspects of the subject. In the present article, which is a digest of a talk he gave at R.C.A.F. Staff College, Mr. Dodds deals with the same subject in a slightly different and, in some cases, more detailed manner. We feel that the risk of reiterating certain of the points already stressed by Sqn. Ldr. Lee is well justified by the importance that the science of public relations has assumed in our modern world.— EDITOR.)

A DEFINITION

THE CONDUCT of a proper public relations programme is highly important to the R.C.A.F. We find, however, that this conduct is hampered in many instances because of a general lack of understanding of what public relations really is, why it is necessary, and how it should be carried out.

There are many different definitions of public relations, and I doubt whether you could find many public relations counsellors who would agree completely on any one of them. None the less, the various definitions, as accepted by public relations authorities, do, in point of fact, agree in the analysis. The differences lie in the phraseology used.

The definition which I personally like best is as follows:

"Public relations is the science of obtaining the *merited* understanding, confidence, and support of the public."

WHAT PUBLIC RELATIONS IS NOT

To understand just what public relations *is*, we must understand also what it is *not*. To begin with, it is not press agentry. Neither is it propaganda, nor is it publicity.

Press agentry can mean trying to convince the public, or a segment of it, that a certain state of affairs exists, whether it actually does or not. It may mean trying to convince the public that a certain movie actress is at heart a simple, honest, home-loving type who actually wants nothing more than to meet her true love and spend the rest of her life in the kitchen while the patter of little feet makes music throughout the house. It may try to prove that she is not the beautiful but moronic and immoral individual that we have been unfairly led to believe, but a truly admirable girl, whose seven marriages and divorces, whose hair-pulling exploits in night clubs, and whose other misfortunes have been purely the result of unfortunate circumstances in which any girl might find herself. I don't mean to slander all press agents by implying that press agentry, as such, is dishonest; but the fact remains that some of them do now and then try to sell phony products.

I said also that public relations is not propaganda. Propaganda today has a rather unfair connotation. Properly interpreted, propaganda is a means of influencing people. It can be concerned with a safe-driving or fire-prevention campaign, and can, when correctly used, be part of an honest public relations programme. On the other hand,

propaganda can also be of an insidious type, and may be used to produce in the public mind a picture that bears little relationship to the true facts. But, even at its best, propaganda can form only a small part of a public relations programme.

Publicity, like propaganda, is merely another small part. It is not public relations in itself.

* * *

The necessity of public relations has been recognized, in one form or another, ever since men learned to communicate with each other. Even the cave man must have wanted to set up a more or less satisfactory relationship with some of his fellow men now and again. Certainly, many leaders of nations in ancient times realized the necessity for obtaining the support, by this or that means, of their people. The Romans tried it by providing free entertainment on a spectacular scale. Others tried different methods. The Guilds realized the advantages of setting certain standards and doing what they could to tell the public about them.

Public relations as we know it today, though, did not come upon the scene until after the turn of the present century. Since then, the importance of a sound public relations programme has been recognized by just about every business agency of any size or importance in this country, and even many small businesses retain the services of public relations counsellors to guide and advise them in their relationships with the public.

PUBLIC RELATIONS IN THE R.C.A.F.

The R.C.A.F. simply cannot operate without the voluntary support of the public, and it cannot enjoy this support without good public relations.

Perhaps we can better understand the necessity for a public relations programme if we look at what it determines as far as the R.C.A.F. is concerned. It determines, either directly or indirectly, and either in whole or in part:

- The general public's regard for the R.C.A.F. as a whole.
- Service pay rates, and the type of amenities provided for personnel.
- The type of person attracted to the Service.
- Many aspects of off-duty life for Service personnel, such as treatment of Air Force personnel by the general public.
- The morale of those within Service.

A good many members of the R.C.A.F. assume that public relations in the Service is handled or created by the Public Relations staff alone. This, of course, is a completely wrong impression. The R.C.A.F.'s Public Relations staff handles those aspects of the Service's public relations programme which call for trained personnel working on a full-time basis, and which require specialized knowledge and skills. But the R.C.A.F.'s Public Relations staff cannot by itself ensure good public relations for the Service. That, in the final analysis, is the responsibility of the Service as a whole, and of all its individual members.

The R.C.A.F.'s relations with the public are determined generally by three factors:

- How the R.C.A.F. does things, and what it does. (This applies to actions and decisions at all levels, from A.F.H.Q. down to commands and groups, and to station and detachment level.)
- The manner in which members of the R.C.A.F. behave themselves.
- The way in which the R.C.A.F. story is told.

The function of the actual Public Relations staff is to advise, on appropriate levels, as regards the broad public relations programme, and upon the public relations policy to be followed in the Service; and it carries out directly, both from A.F.H.Q. and from commands and groups, many aspects of this programme.

It attempts to anticipate public relations difficulties and to come up with preventive or remedial action.

It also carries out a programme aimed at providing instruction and assistance for part-time Station Public Relations Officers by means of visits, monthly public relations bulletins, and other means. In addition, it provides speech material for personnel making public addresses, it provides photographs for recruiting purposes, and it carries out many other duties aimed at promoting the idea of good public relations throughout the Service.

To a very large degree, however, the Public Relations staff is engaged in seeing that the R.C.A.F.'s story is told in the best possible fashion and to the maximum degree possible. This means telling it honestly — although the need for security

prevents disclosure of certain information to the public. It means keeping the public informed about what the R.C.A.F. is doing, has done, and is to do —and why. It also means telling the facts when asked for them. It should *not* mean going all out when we have something good to say about ourselves and then clamming up completely when something bad happens.

The R.C.A.F.'s story is told by the Public Relations staff in many ways. These ways involve the production and distribution of news releases (which may deal with anything from major policy announcements, sent to all major news media, to "local" stories sent to home-town newspapers or radio stations). They involve, too, the sending to appropriate news media of photographs showing R.C.A.F. activities or personalities, and also the production of radio tapes for distribution to radio stations.

Motion picture organizations, including the National Film Board and commercial agencies, are invited to cover for themselves various phases of R.C.A.F. activity considered of interest to the public. With the development of TV in Canada, Public Relations is beginning the production of cine-footage, which is passed to the TV stations for their use. The Public Relations staff must be available to answer on the appropriate level the many questions placed by the Press, questions that often require an immediate reply.

In one sense the Public Relations staff creates news. It may be found, for example, that a certain phase of Air Force activity is highly important, and that it is in the public interest to bring it as strongly as possible to the attention of the Canadian people. News media, however, must present their facts in a readable fashion, with a "news angle"; and it is one of the jobs of the P.R. staff to create this news angle to the complete satisfaction of the R.C.A.F., the news media, and the public.

Further, it must arrange for visits to R.C.A.F. establishments by special groups and by the representatives of the various news media. It must prepare and provide textual and photographic information to civilian free-lance writers, school children, and many other individuals who request information on the R.C.A.F. Another of its tasks is to seek for opportunities to bring to the attention of the public the meaning of air power.

The foregoing are only a few of the duties of the Public Relations staff, but they are enough to give some idea of its multifarious activities.

PRINCIPLES OF A SOUND PUBLIC RELATIONS PROGRAMME

Perhaps the most important principle of all is that the public relations policy must be based on honesty.

I imagine that almost any public relations man, speaking about the principles of good public relations, would want to bring in Abraham Lincoln's famous saying: "You may fool all the people some of the time; you can even fool some of the people all the time; but you can't fool all of the people all the time."

That sums up what I mean about honesty in a public relations programme. Let us assume that I am approached by a newspaper reporter who has heard of an incident not exactly to the credit of the R.C.A.F. In many cases, if I lied to him, it would be possible to avoid publication of the story. He would probably believe me the first time, and, if I were clever enough to produce a plausible excuse for my first deception, he might even believe me the second time I lied to him. But I am sure he would not believe me the third time, nor ever again as long as we lived. And, unless he could be convinced that my action was in no way condoned by the Service I work for, he would never think much of the R.C.A.F. either.

The R.C.A.F.'s public relations policy must be based on honesty. It must be a firm and continuous policy which is adhered to religiously. A good public relations programme or policy is more than a mere set of directions: it is an attitude of mind. Like true generosity or honesty in an individual, it cannot be turned on and off like a water-tap. It must be honest *all* the time — not just when we feel that we can afford to be.

Another vital principle of any public relations programme is that recognition and support must come from the top. An organization in which top management grudgingly puts up with an accepted public relations policy can hardly achieve good

public relations. Fortunately for us, such recognition and support are always forthcoming from those at the top, both in the Department of National Defence and the R.C.A.F.

The men responsible for the specialized aspects of the public relations programme must be close to those at the top, regardless of what level is being considered. The Public Relations Officer who does not have free access to his "top management" will find himself fighting a losing battle.

It is vitally important that public relations be considered *before* decisions are made, not *after*. This applies equally to all levels — A.F.H.Q., command, group, station, detachment, and even to the Service individual. We should not only ask ourselves whether a given decision is right from the viewpoint of good public relations, but also how we are going to tell the public about it.

In cases of what we call "bad press," or bad public reactions, we should ask ourselves whether they were the result of an improper decision or action or whether they were the result of failure to tell the R.C.A.F. story in the proper fashion, bringing the facts to the public's attention. We must not ask ourselves, as I am afraid we all sometimes have a tendency to do: "How did that get out to the Press? We didn't want the public to know about it!" (I am, of course, referring to instances of "bad press," and not to security leakages.)

THE PRESS

Possibly the average Canadian, and certainly the average person abroad, receives most of his information about the R.C.A.F. from the Press. (I use the term "Press" somewhat loosely here. For the sake of brevity, I use it to include *all* news media — the daily and weekly newspapers, magazines, motion pictures and newsreel agencies, and radio and television.) It is essential, therefore, that we understand certain principles regarding news values, news ethics, and the way in which the Press operates and thinks. We must also maintain cordial relations with the Press, and must conduct our public relations programme in such manner as to retain its deserved confidence.

We should perhaps begin by understanding that the Press is not a charitable institution. By virtue of its position, it rightly feels that it carries a heavy responsibility. It conforms to certain self-imposed ethical standards, and carries out many activities in the public service. At the same time, however, like all other privately owned businesses, it is a business enterprise, and it exists to make a profit for its owners. And, lest we fall into the error of cynicism, let us remember that neither the doctor nor the lawyer are pure philanthropists.

We must therefore be cautious about asking news media to give space or time to various R.C.A.F. activities or announcements "because we want to get the story across to the public."

Many news media can and will, on occasion, co-operate along such lines, particularly in emergencies; but in the ordinary course of events we must — quite rightly — be prepared to purchase our space or time if we feel it essential to tell, in our own words, a story that has no particular news angle. All the news media are swamped by continuous calls for non-paying support of campaigns or agencies, and if they accepted all such requests, they would quickly go into bankruptcy. Nor would we ourselves be likely to subscribe to a newspaper whose news columns were largely filled with pleas for safe-driving or fire-prevention, appeals to attend church, recruiting information, and solicitations by charitable institutions.

We must remember that, when we invite any news media to devote space or time to the R.C.A.F., we must have a news angle to offer. This does not mean that we must distort the facts or bring a bevy of pretty girls in Bikinis to pose on the wing of an aircraft. It does mean, though, that we must keep in mind the requirements of the news media when we speak with their representatives: we cannot think merely in terms of what the R.C.A.F. wishes to pass on to the public, and how it wants it passed. The news media know, better than we, exactly how our story should be told in order to appeal to their readers or listeners. Nor would we gain anything from printed stories that no one bothered to read.

It is important that we understand something of those many factors to which the news media must conform, and over which they have little or

no control. One of these is the system of deadlines and speed. Speedy action on our part may mean the difference between the appearance of an incorrect report about the R.C.A.F. and the publication of a full and factual account of what really happened. Let us assume, for the sake of example, that an inaccurate report reaches the newspapers that $50,000 in public funds has been stolen at R.C.A.F. Station X. Speedy action by the Station P.R.O. may well result in the *true* story being printed in the papers or reported over the radio — namely, that someone broke into the station canteen during the night and made off with three boxes of candy bars and $4 in cash. A "no comment" attitude might result in the passing along to the public of the erroneous report.

On the other hand, even though the initial report might have been basically correct, we would gain little (and stand to lose a good deal) by trying to "cover up." Our job is to ensure that the facts will be reported and that the R.C.A.F. will be given fair and proper treatment by furnishing the Press, as quickly as possible, all the information that can be released. If certain facts cannot be given at the moment, we must explain this to the Press, and state why they can't. One thing is certain: we aren't going to prevent the story's appearance by saying nothing.

Bumbling, dishonesty, or evasion, will be recognized by the Press more quickly than by any other group. If considerations of security or policy prevent us from supplying the Press with the information it requests, we must tell it so. If our reasons make sense, they will be accepted. In the same way, if we are not able to produce what they require within the necessary time limit, we should explain why.

There must, of course, be limitations set upon what may be made public, and by whom. It is the duty of all of us to be as familiar with Service security regulations as possible, and with the regulations explaining "who says what" to the Press. But we must also be constantly on guard against using security as a mere excuse to withhold required information.

* * *

It is obvious that it would not be in the public interest to allow every member of the R.C.A.F. to serve as an official spokesman to the news media upon any Service topic. Statements by a newly-winged pilot, fresh from the training schools, upon R.C.A.F. planning as regards Air Defence Command, would in most cases result in the passing out of uninformed and inaccurate information.

Regulations lay down as closely as possible (A.F.A.O. A19/1) who may speak for the R.C.A.F., and upon what subjects. Roughly interpreted, it prescribes that members of the Service must restrict their comments to the Press upon matters that are actually their responsibility. While there must be restrictions of some sort in this regard, there is nevertheless a responsibility for each member of the Service to be polite, courteous, and helpful, in whatever contacts he or she may have with news media representatives. Corporal Jones or Flt. Lt. Smith, if approached by members of the Press, must realize that there are many things pertaining to the Service that he is not free to discuss. He should realize equally, however, that it is his duty to see that the Press representative is directed or conducted to someone who can properly provide or obtain for him the information or facility that he is seeking.

If feasible, the logical persons to whom the Press man should be directed would be the Public Relations staff — at A.F.H.Q., command, group, or station H.Q. In order to avoid confusion, waste of time, and dissemination of inaccurate information, initial Press contacts should be funnelled as far as possible through the Public Relations staffs, but in many cases it will be desirable to place the Press representative directly in contact with a news source, whether that someone be the Minister of National Defence, the pilot of the search-and-rescue aircraft that found the survivors of an aircraft crash, or a newly enlisted recruit. In such cases it is the P.R.O.'s duty to decide whether any useful purpose would be served by direct contact of this nature, or whether it would be a mere waste of time. It may frequently be the responsibility of the P.R.O. to ensure that the Service

individual concerned complies with Service security regulations.

* * *

From time to time the Press publishes stories containing what the R.C.A.F. feels to be classified information. As a rule, we can depend on the co-operation of the Press in withholding publication of information that provides a potential enemy with facts that he would otherwise be unable to obtain. But before we can count on this co-operation, we must be able to convince the Press of several things. It is not enough to convince them that the information is, in R.C.A.F. terminology, classified. If they have reason to feel that the information is freely obtainable from other sources by the potential enemy, they will not agree that the public interest is served by withholding the story from their news-pages or microphones. Neither will they agree that the public interest is served by withholding publication of information which, though we may label it as "classified", cannot actually be construed by any reasonable stretch of the imagination as providing aid and comfort to the enemy. If we have a reasonable explanation to give to the Press, we can look for co-operation as regards security. As I have already said, however, our story must be reasonable, and and we must never be guilty of using security as a false reason for non-publication.

It is not necessarily the duty of the R.C.A.F. to provide every possible type of information to the Press, even though it might be unclassified from the viewpoint of providing valuable information to the potential enemy. It would not, for instance, be in the public interest to publish, shortly before promotion examinations, a list of questions included in the examination papers. Certain other facts, such as medical records or confidential assessments, can be considered the personal property of Service individuals, disclosure of which would be a violation of the personal privacy of that individual. There are numerous matters of this sort which, while not military secrets, can quite properly be regarded as information not for public disclosure.

The contact between the R.C.A.F. and the news media, as I have said, is important not only to the R.C.A.F. but to the Canadian public as a whole. It can work properly only if it is a friendly contact. It cannot be cold and impersonal. We must know the news media representatives who deal with us, and they must know us. Furthermore, we must enjoy their confidence and respect. They will excuse many of our mistakes, but not an attitude based on hostility or grudging co-operation. They know well the importance of the job being done by the R.C.A.F., and we in turn must understand the importance of the job they are doing. Such an understanding will eventually mean a better understanding of the Service on the part of the public.

We must be prepared to offer many facilities to members of the Press in enabling them to tell this story. Few newspapers could afford to send a reporter to a point several hundred miles distant by commercial airline in order to cover an event which, while of interest, is hardly earth-shaking news from their viewpoint. Provision of R.C.A.F. transport might thus easily result in another phase of the R.C.A.F.'s story being passed on to the public.

HOW YOU CAN HELP*

Possibly you can best help the R.C.A.F.'s public relations programme by recognizing public relations for what it is, by appreciating its importance to the Service, and by understanding how it operates and the principles upon which it is based — and by abiding by these principles and ensuring that your subordinates do likewise.

You can help, when confronted with a public relations problem, by asking assistance from the Public Relations staffs at A.F.H.Q., commands, or groups. The personal behaviour and morale of those under you play an important part in our public relations programme, and constant recognition of this fact will help everyone.

You can also help considerably, whenever you have reason to deal directly with representatives of the news media, by keeping in mind their

*We would remind the reader that this article is, as stated in our foreword, a digest of a talk given to Staff College students.— Editor.

importance, their function, and their problems.

Some of you may leave here to take command of stations. In this case you will have added public relations responsibilities. Ensure that a Station Public Relations Officer is appointed in accordance with regulations. Ensure, too, that he understands his duties and is given time to do his job properly. Your Command or Group Public Relations Officer, or the A.F.H.Q. Public Relations staff, will be ready to advise on any aspects of your station public relations programme, and to assist your Station Public Relations Officer. It is not essential that he be an accomplished writer, but he *should* have a working knowledge of what the Press wants and how it operates. Up to a point, the Press will forgive him (and you) for lack of knowledge and experience regarding many of the more or less mechanical phases of Press-Service relationships; but it will never forgive what appears to them to be unfriendliness or uncooperativeness.

The station C.O. carries a heavy responsibility as regards the relationship between his station and (if there is one, and there generally seems to be) the neighboring community. I cannot go into detail here on the various phases of organizing a community relations programme, but the Public Relations staffs at A.F.H.Q., command or group H.Q., are ready at any time to advise you on this important matter.

Very likely many of you will be serving at our overseas bases. Remember that our personnel overseas are doing more than creating good or bad public relations for the R.C.A.F. They are representing not only the R.C.A.F., but Canada. Their responsibilities are indeed heavy.

Do your best to see that we, both as individuals and as the R.C.A.F., do the right thing, and that, as far as security allows us, we tell the people about what we are doing, and why. Small "public relations mistakes" are always possible, but the man who keeps the foregoing points in mind won't make any big ones.

A TRIP TO STORES

"Any shirts?"
"What size?"
"15."
"Loose 15 or tight 15?"
"15."
"14½ too small, hey? . . . "
"15."
". . . and 15½ too big?"
"15."
"Color?"
"Preferably."
"What color?"
"Blue."
"Air force blue or pearl blue?"
"Blue."
"Sleeves?"
"Yes, please."
"What length?"
"32."
"Settle for a large 28?"
"32."
"How about a small 35?"
"32."
"Anything else?"
"Nope, just shirts."
"Sorry, no shirts at all! NEXT ! ! ! "

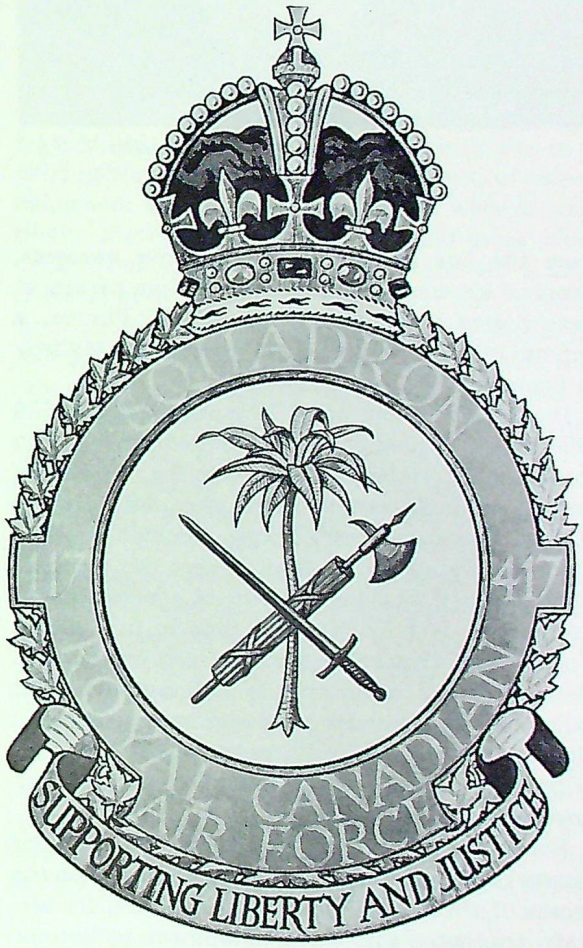
(H.O.J.S. in "The Clinton Mercury", R.C.A.F.)

No. 417 (City of Windsor) Squadron

THE STORY of No. 417 (City of Windsor) Squadron is unique in the annals of the Royal Canadian Air Force. The only Canadian fighter squadron in the Mediterranean theatre during the Second World War, it carried the emblem of the maple leaf from the banks of the Nile to the plains of northern Italy, and, flying with the famed Desert Air Force, it fought in support of the Eighth Army in its campaigns from Tunisia to Venetia. The squadron badge, a sword and fasces crossed in front of a palm tree, graphically summarizes its career, "supporting liberty and justice" from Egypt to Italy.

The squadron was formed on 27 November 1941 at Charmy Down, a few miles from Bath, in Somersetshire. The first commanding officer of the new Canadian unit in No. 10 Group of Fighter Command was Sqn. Ldr. C. E. Malfroy, a New Zealand officer in the R.A.F., who had as his flight commanders Flt. Lts. F. B. Foster and W. H. Pentland, both of whom had previously seen action with No. 402 Squadron of the R.C.A.F. The other 20 pilots that were posted in on formation of the unit were all fresh from courses at Operational Training Units. Spitfire IIAs were ferried in, marked with the letters AN which No. 417 carried throughout its long Odyssey of 43 months, and the squadron began an extensive training programme to become operational. After two months at the Charmy Down satellite, No. 417 moved to the parent station at Colerne where it exchanged the time-worn IIAs for more modern Spitfire VBs and completed its training. On 17 February 1942, three pilots carried out the first operation, an uneventful scramble after a "bogey" (unidentified aircraft), and the squadron then began taking its turn at readiness.

A few days later, in the last week of February, No. 417 moved by air and rail to Tain in northern Scotland, a relatively quiet area of No. 14 Group. Here it remained for six weeks, with four sorties on a scramble and one convoy patrol constituting the total of its war flying from that base. In contrast to the calm of this area, storm clouds were raging in other and more distant theatres, and late in March the squadron was withdrawn



Sqn. Ldr. P. S. Turner, D.F.C.

from the line preparatory to a move overseas. Tropical kit was issued, more Canadian personnel were posted in, and Sqn. Ldr. P. B. Pitcher, a veteran of the Battle of Britain, replaced Malfroy in command.

In the early morning of 13 April 1942, the 350 officers and airmen of No. 417 Squadron left Tain for Glasgow, embarked there on the "Aorangi" and set sail southward two days later. After a short stop at Freetown, Sierra Leone, the ship reached Durban, Natal, on 18 May, where the men felt the curiously heaving bosom of *terra firma* under their feet for the first time in five weeks. For six days they relaxed in a transit camp; then they embarked again on the "Mauretania" and sailed northward under a hot and humid sky until they reached Port Tewfik, near the southern end of the Suez Canal, on 4 June. The long 53-day voyage was over.

For six weeks most of the squadron lived under canvas in the Middle East Pool at Kasfareet on the shores of the Great Bitter Lake, waiting for aircraft, transport, and other equipment to become available. During this period many of the pilots were attached to an Aircraft Delivery Unit for duty on the ferry route across Africa, and some of the ground personnel were employed in Maintenance Units. While the squadron was thus dispersed, the war situation in the Middle East became increasingly grim as the Afrika Korps swept across the desert to El Alamein, and special precautions were taken at Kasfareet to guard against possible paratroop attack. In mid-July the scattered ground crews were reassembled, and No. 417 moved to a new camp at Deversoir where it acted as the servicing unit for a U.S.A.A.F. medium bomber (B.25) group until the American ground crews arrived late in August. The pilots then rejoined the squadron and the reunited unit moved to Shandur on 5 September.

At Shandur No. 417 was equipped with Hurricane IICs and became operational once more on 13 September. For the next five months, while the squadron was attached to Air Headquarters Egypt, it was employed on the air defence of the Suez Canal and the Nile delta, flying standing patrols and scrambles to intercept high-flying reconnaissance aircraft that came over to spy on shipping activities in that busy area. Flt. Sgt. J. H. G. Leguerrier drew first blood for No. 417 when he caught a Ju.88 at 28,000 feet over Suez on 26 September and shot it down into the sea. A fortnight later the squadron moved to Idku, where it remained for almost four months while the pilots wore a groove in the sky as they shuttled their Hurricanes back and forth from Port Said to Alexandria, keeping watch over the convoys that came and went with supplies for the Eighth Army's offensive late in October and its subsequent advance across the desert. These weeks of stirring events in the Western Desert were extremely monotonous for the pilots at Idku; only twice were enemy aircraft encountered, and a Ju.88, damaged in one of the engagements, was all they had to show for more than 800 sorties. Warrant Officer W. K. Grant was killed in a flying accident early in November. Later that month Sqn. Ldr. Paul Pitcher was repatriated and F. B. Foster stepped up to commander of the squadron. Spitfire Vs gradually replaced the Hurricanes until the unit

was entirely re-equipped by the middle of January 1943.

During the weeks that No. 417 was based at Shandur and Idku, it sent out four detachments for operations farther afield. In October four pilots and ground crews went to Heliopolis for seven weeks on the air defence of Cairo; in November another detachment moved to Kufra Oasis in the Libyan desert for a few uneventful defensive patrols; and in December a third group went off into the blue for some operations at Benina, near Benghazi, while a fourth detachment was sent to Cyprus for a month's duty. Flying Officer J. F. Paterson was shot down and killed on 30 December while on an interception patrol over Cyprus.

On 25 January 1943, No. 417 left the sand and mud of the Nile delta and began moving westward in the wake of the Eighth Army, which was then fighting on the border of Tunisia. For a fortnight the squadron stopped at Landing Ground 175 to carry out a few final convoy and interception patrols over the Alexandria area; then, on 8 February, it headed westward once again to join the Desert Air Force, and in that gallant company won its spurs as a top-rank fighter unit. The vehicle convoy, led by Flt. Lt. James Sinclair,* the newly appointed adjutant, had over 1100 miles to travel along transport-jammed roads. For twelve days the trucks bored through the dust clouds, past Mersa Matruh, El Adem, Benghazi, El Agheila, Marble Arch, and Homs — places that a few weeks earlier had been in the headlines — until they reached Castel Benito, an aerodrome about 12 miles inland from Tripoli, on 19 February. The pilots left L.G. 175 five days later and, staying overnight at Benina, reached Castel Benito on the 25th.

Sqn. Ldr. A. U. Houle, D.F.C.

No. 417's hopes of immediately entering the battle that was being fought along the Mareth Line were deferred for six weeks, as it was again assigned to a defensive rôle, escorting convoys and guarding the harbour at Tripoli. After resuming operations from Castel Benito on 27 February, the squadron moved the next day to Mellaha, a few miles away, where it laid out its camp site in a palm grove and settled down to a routine of reconnaissances, escorts, and patrols, that were depressingly uneventful day after day and week after week. Finally, on 4 April, two pilots had a long chase after a Ju.88 that got away, and a week later another pilot caught an Me.210 which he was able to damage before his ammunition was exhausted. A detachment that was sent forward in March to operate from the beach at Ben Gardane in Tunisia, 125 miles to the west, was more fortunate. On one of their first missions, a convoy escort on 22 March, Sqn. Ldr. Foster and three of his pilots intercepted an He.111 torpedo-bomber which they crashed into the sea. The Ben Gardane detachment also carried out the squadron's first offensive missions over enemy territory when they escorted medium bombers attacking targets beyond the Mareth Line.

Released at last from its defensive duties, No. 417 moved forward to La Fauconnerie, inland from Sfax, on 11 April, and thence, four days later, to Goubrine South. Exactly one year after leaving Glasgow the squadron had reached the battle front and begun operations with 244 Wing

*Then a member of Parliament, now Minister of Fisheries.

Sqn. Ldr. W. B. Hay, D.F.C. (left) and Flt. Lt. D. L. G. Turvey, D.F.C.

of the Desert Air Force in the closing stages of the Tunisian campaign. Its baptism of fire in the D.A.F. was severe (five pilots were lost within a fortnight), but the squadron gave proof of its fighting spirit, scoring a destroyed, a probable, and two damaged. For four weeks the squadron was very busy, flying as many as four operations a day, chiefly on escort to Kittyhawks as they strafed roads and bombed targets in the battle area. On one of these escort missions on 19 April, No. 417's twelve Spitfires were heavily engaged by about 24 enemy fighters which dived on them out of the sun. Four pilots were shot down; Flying Officer D. E. Bruce was killed and Flying Officers G. C. Armstrong, L. C. Grant, and J. M. Riley were taken prisoner. Taken by surprise and greatly outnumbered, the Canadian pilots could claim only one Me.109 damaged. As he headed for home "on the deck" after his Spitfire had been damaged in the action, Flying Officer B. N. M. De Larminat, an Argentinian member of the squadron, came upon a pair of Ju.87s, one of which he probably destroyed. On an air-sea rescue mission over Hammamet Gulf a few days later, Flying Officer A. E. Pourbaix was lost. Pilot Officer J. Scott Bushe scored the unit's third kill on 28 April when he destroyed a Macchi 202 in an encounter off Cape Bon, during which another pilot damaged a Me.109. From Goubrine the squadron moved up to an advanced landing-ground at Hergla, north-west of Sousse, on 6 May, escorted bombers while they pounded Pantelleria into submission, and made anti-shipping reconnaissances to guard against an enemy "Dunkirk" during the last days of the Tunisian campaign.

When operations ceased temporarily on 12 May, No. 417 moved back to Ben Gardane to prepare for the next campaign. Here in Tunisia the squadron's much-travelled Christmas mail caught up with it, and here too it was adopted by the City of Windsor and acquired the *nom de guerre* by which it was generally known through the next two years. The "Windsors" had now been in Africa for a year, and, completely mobile, had become as expert as the Bedouins in striking their tents and moving on to a new camping-ground, leaving behind a trail of rough baseball diamonds in the sand to mark their progress from the Red Sea to the Gulf of Tunis.

After a month of tough assault and tactics training, No. 417 left Ben Gardane and crossed the sea to Luqa on bomb-battered Malta. Sqn. Ldr. Foster turned over his command now to Sqn.

Flt. Lt. B. J. Ingalls, D.F.C.

Ldr. P. S. Turner, D.F.C. and Bar, who had flown with No. 242 (Canadian) Squadron of the R.A.F. in the Battles of France and Britain and had at least 12 enemy aircraft to his credit. In Malta, too, Flt. Lt. A. U. Houle, D.F.C. joined the squadron as a flight commander. Operations over Sicily began on 20 June 1943, but there was relatively little to do until 6 July, when the endless shuttle-bombing of the island's defences and airfields began, recalling memories of the last days in Tunisia. No. 417's Spitfires escorted Mitchells, Liberators, and Marauders, as they softened up Sicily for the invasion, and then, from 10 to 14 July, covered the landing-beaches where their comrades in the 1st Canadian Division were going ashore. Rarely were enemy aircraft seen during these days.

On 15 July, Sqn. Ldr. Turner's unit set out to follow the other squadrons of 244 Wing across to Cassibile, south of Syracuse in Sicily, where the dispersal site was laid out in a big almond grove and the tents were pitched in a vineyard. After the sandy wastes of North Africa this was a land of plenty — fruits, vegetables, and good red wine — marred only by frequent enemy air raids at night over the nearby ports and beaches. After nine days at Cassibile, the "Windsors" moved on, as the vanguard now of the wing, to Lentini West, 12 miles from Augusta, where the airfield was laid out in a great valley of wheat and the pup-tents were erected in a shady fig grove and vineyard. Here the squadron remained for almost two months — a remarkably long period. During the 39-day Sicilian campaign the pilots flew 805 sorties on 125 missions, patrolling over Catania and Gerbini, escorting Kittyhawks and medium bombers as they attacked Cape Milazzo and shipping in the Messina strait, and making fighter sweeps along the north coast of the island. While on an air-sea rescue mission on 13 August, four pilots were jumped by several Macchi 202s that shot Pilot Officer J. T. Field down in the sea, whence he was rescued by the enemy as a prisoner of war. Otherwise there was little seen of the Luftwaffe except for one noteworthy occasion, the night of 11 August, when a force of bombers made a sharp attack on the airfield, damaging several of No. 417's aircraft but causing no casualties, although other units in the wing suffered quite severely. "Remember Lentini" became a watchword in the squadron. The Sicilian campaign ended on 17 August and, re-equipped now with Spitfire VIIIs, the "Windsors" were ready for the next battle, the invasion of Italy.

Sqn. Ldr. O. C. Kallio, D.S.O., D.F.C.

The squadron had now been on operations in the Mediterranean theatre for almost a year. In that time it had travelled about 2000 miles, but combats had been relatively few, the score standing at only three enemy aircraft destroyed, one probably destroyed, and four damaged. In the next 20 months its progress on the ground was much slower, but there was much more action in the air and the pilots added 26 destroyed, 7 probably destroyed, and 18 damaged, to the score in the eight months between October 1943 and May 1944. Then, through the last year of the war when the Luftwaffe had virtually disappeared from the daylight skies over Italy, No. 417 was employed in a fighter-bomber rôle, blasting defences in the path of the Army and paralysing road and rail movement behind the enemy lines.

Operations over Italy began on 21 August 1943, with the pilots flying in their usual escort rôle for

Left to right: Pilot Officer R. A. Shannon, Flt. Lt. A. F. McWilliams, Flying Officers K. R. Curtis, R. E. Kent, R. L. Cotnam, and W. G. Jewitt.

Kittyhawks on armed reconnaissance along the roads in the toe of the peninsula, for medium bombers on missions farther afield, and for naval vessels shelling the coastal defences. They covered the landing-beaches when the invasion began on 3 September and continued operations from Lentini for the next fortnight. Then, on 19 September, the squadron left Sicily for Grottaglie, north-east of Taranto, moved to Gioia delle Colle on the 25th and pushed on to Foggia ten days later. Autumn at Foggia gave the lie to Italy's "sunny" reputation; it was getting colder, and heavy rains almost flooded the camp. Enemy resistance was stiffening now and a battle raged at Termoli while the Spitfires stood guard above. During one of these patrols on 4 October, Flt. Lt. Bert Houle destroyed an F.W. 190 and damaged two more. A fortnight later, just before leaving Foggia, the squadron added a damaged Ju.88 to its score.

On 18 October the wing moved again to Triolo, a few miles distant, in a malarial district where mosquitoes swarmed, and for a month the squadron guarded convoys moving into Bari, escorted medium bombers on their missions, carried out standing patrols over Foggia, and kept watch over the bomb-line along the Sangro River where the Germans had dug in on their "Winter Line". Rain forced the squadron to move on 26 November to a drier site at Canne, near Termoli, where the small, rather hazardous landing-strip, running at right angles to the beach, was frequently lashed by high winds sweeping down the coast. Stan Turner took command of the wing at this time and Bert Houle replaced him as leader of the "Windsors".

The move to Canne coincided with a flare-up in the battle along the Sangro and for the next seven weeks standing patrols over the bridgehead across the river were the pilots' daily routine. In one action with enemy fighter-bombers trying to destroy the bridges, on 30 November, Flying Officer D. E. Eastman blew up one F.W. 190, Warrant Officer H. G. Johnson sent another down in flames, and a third was probably destroyed. Three days later Sqn. Ldr. Houle engaged a gaggle of seven Me.109s, two of which he shot down in flames. There was good hunting over the Sangro again on 8 December, when one pilot probably destroyed an F.W. 190 and damaged another, while Flying Officer G. E. Horricks, D.F.M. crashed a third Focke-Wulf. Hit by flak as he pursued another opponent, Garth had to bail out over "no man's land", where some New Zealand machine-gunners came to his rescue. After these engagements little more was seen of the Luftwaffe while the pilots patrolled over Orsogna and Ortona, where the New Zealanders and Canadians were fighting hard through the dismal December days. 1944 opened with a gale that wrecked half the camp site at Canne. Lacking opposition in the air, the pilots now sought targets on the ground as they carried out their patrols and weather reconnaissances, and in one week they shot up 6 locomotives, 14 freight cars, 13 vehicles, 2 gun posts, and several other objectives. So ended the squadron's first tour with the Eighth Army on the Adriatic coast.

The major centre of pressure had now shifted to the west coast, where the U.S. Fifth Army was trying to crack the Gustav Line. Leaving Canne on 17 January, No. 417 crossed the peninsula to Marcianise, 12 miles north of Naples, where its first duty was to patrol over the great armada of shipping assembled in the Gulf of Gaeta for the landings which took place at Anzio, behind the

German right flank, on 22 January. For the next three months the "Windsors" were engaged in the battle at Anzio, flying patrols over the beach-head, escorting bombers, and occasionally carrying out a fighter sweep; and this period, thanks to a resurgence of enemy air activity, brought them the best hunting in their career. The scoring began on 22 January, on their first patrol over Anzio, when Sqn. Ldr. Houle crashed an F.W. 190 fighter-bomber. On each of the four days, 25 to 28 January, there were further encounters in which the squadron broke up enemy attacks on the beaches, destroying three Focke-Wulfs and Messerschmitts, probably destroying two more, and damaging four. Two of the kills were credited to the squadron as a whole, and the third to Bert Houle. In the engagements one Spitfire was shot down, the pilot of which bailed out safely.

There was a lull then until 7 February, when Sqn. Ldr. Houle sent an Me. 109 down in flames near Lake Bracciano, and the next day the squadron damaged three enemy fighters over the Anzio beach-head. On St. Valentine's Day, in a combat between nine Spitfires and 18 F.W.190s plus 12 or more Me.109s, the "Windsors" fought their most successful action, destroying three and damaging three more. Flt. Lt. H. J. Everard shot down an Me.109, Flying Officer Garth Horricks crashed an F.W.190, and Sqn. Ldr. Houle destroyed another Focke-Wulf as well as damaging one. Slightly wounded in the engagement (in which he had raised his score to seven destroyed and four damaged, plus four destroyed before joining No. 417), Bert Houle was now at the end of his tour and was repatriated with a Bar to his D.F.C.— the squadron's first decoration. A second D.F.C. soon followed, awarded to Flt. Lt. Everard, who, in the last days of February before he too became tour-expired, scored a destroyed and two probables in a series of combats over Anzio.

When Houle left the squadron, Sqn. Ldr. K. L. Magee took command, but illness soon forced him to relinquish the post and he was replaced by Sqn. Ldr. W. B. Hay, an American in the R.C.A.F. Meanwhile the squadron had added Cassino to its operations book, making many sorties over the centuries-old monastery nestling on the mountain-top, until the position was finally captured in May. But Anzio was still the major commitment for the "Windsors", and their score continued to grow: an Me.109 which Flt. Lt. L. A. Hall destroyed on 8 March as it was molesting a little "Cub", another Me.109 damaged over Cassino a week later, two F.W.190s crashed on 16 March by Flying Officer J. A. O'Brian and Flt. Lt. B. J. Ingalls, D.F.C., an Me.109 destroyed by Bruce Ingalls on the 19th, and yet another F.W.190 damaged by another pilot the same day. On the 29th, when eight "Windsor" Spitfires engaged 20 of the enemy over Anzio, Pilot Officer J. J. Doyle crashed an Me.109 and probably destroyed an F.W.190, Flt. Lt. D. L. G. Turvey made the pilot bail out of another Focke-Wulf fighter-bomber, and Flying Officer C. B. Everett destroyed yet another 190. A fourth Focke-Wulf was counted as damaged. In the action Jack Doyle was wounded and Pilot Officer Harry E. Morrow was shot down into the sea.

On 11 April the wing began using a landing-strip at Nettuno on the beach-head, where the squadrons took turns at doing 24 hours on readiness. The incessant shelling, bombing, and flak barrage gave the pilots little sleep at night. A small ground detachment was stationed there to look after the aircraft and their crews, and one of the airmen, L.A.C. L. W. K. Bedwell, was mentioned in despatches for his outstanding work. Two final victories ended the squadron's stay at Marcianise and Nettuno. On 23 April, Pilot Officer Johnny Saphir crashed an Me.109 after a long chase to the outskirts of Rome, and later in the day, on a scramble from the beach-head, Flying Officer Jimmy O'Brian destroyed an F.W.190, also near the Eternal City.

From Marcianise, where the "Windsors" had witnessed the awesome spectacle of Mount Vesuvius in eruption, the squadron moved up to Venafro, on 24 April, to support a new offensive which the Army opened on 11 May against the defences at Cassino. At its new base the squadron was much nearer the battle-front, and slit trenches were again essential as an adjunct to the tents which had been brought out of winter storage.

Sqn. Ldr. D. Goldberg, D.F.C.

On a long sweep into enemy territory on 9 May, Pilot Officer T. H. Hough was forced down by engine trouble and became a prisoner of war. Five days later No. 417 had its last good fight with the Luftwaffe when six pilots engaged more than 18 fighters over the Cassino battle area and destroyed two (credited to Flying Officers Cam Everett and G. I. Doyle), with three more claimed as damaged (one each by Everett and Doyle and the third by Flt. Lt. Turvey). The squadron's score was now 29 destroyed, 8 probably destroyed and 22 damaged — and there it remained until the war's end.

With no opponents in the air the pilots again turned to the ground and made armed reconnaissances along roads and rail lines as the Army, having broken through at Cassino, drove northward beyond Rome. The rapid advance of the troops soon made another move necessary, and on 12 June the pilots flew up to Littorio, near Rome, carried out a few operations from that airfield and then moved on to a landing-ground at Fabbrica. On one of the missions from Littorio, on 16 June, Flt. Lt. Bruce Ingalls was killed by flak while strafing some vehicles. Sqn. Ldr. Hay completed his tour at Fabbrica, receiving a well-merited D.F.C., and another American officer, Sqn. Ldr. O. C. Kallio, D.F.C. succeeded him as leader of the "Windsors".

Fabbrica marked a turning-point in the squadron's work. Here it was converted to a fighter-bomber rôle, with racks fitted under the Spitfires to carry a 500-lb bomb. On 26 June the squadron carried out the first mission in its new function when 12 pilots dive-bombed a crossroads and bridge, and set the pattern for most of No. 417's work through the next ten months. July, August, and September were a particularly busy period, almost 450 tons of bombs being dropped on roads, bridges, and rail lines; but it was also a costly period, with seven pilots reported killed or missing.

On 3 July the wing moved up to Perugia, nearer the front, where it was honoured to receive a visit from the King a few weeks later. Operations continued with almost monotonous regularity — 645 sorties in July and 646 in August; there were still a few calls for bomber escort, and an occasional weather reconnaissance, but the great majority of the sorties were for incessant harrying of the enemy's lines of communication with bomb, shell, and bullet, to the accompaniment of flak that was usually intense and unpleasantly accurate. On 3 July, Flying Officer R. W. McLaren was shot down by the enemy gunners; the next day Flying Officer J. R. Daly was lost, and on 8 July Flying Officer G. S. Kimber was killed while strafing a vehicle. Later in the month, on the 26th, Flt. Sgt. J. T. MacLeod was taken prisoner when he had to abandon his damaged Spitfire. Another casualty was suffered when Pilot Officer N. H. Gerrand died from injuries received in a flying accident. Engine trouble forced Flying Officer J. E. R. Locke to take to his parachute behind the enemy lines on 10 August. Coming down in an area held by Italian partisans, "Junior" joined them and spent an exciting 11 weeks, sharing in their activities until guides finally led him back to the Allied lines. He received a mention in despatches for his successful evasion. Another honour awarded at this time was a D.F.C. conferred upon Flt. Lt. D.L.G.

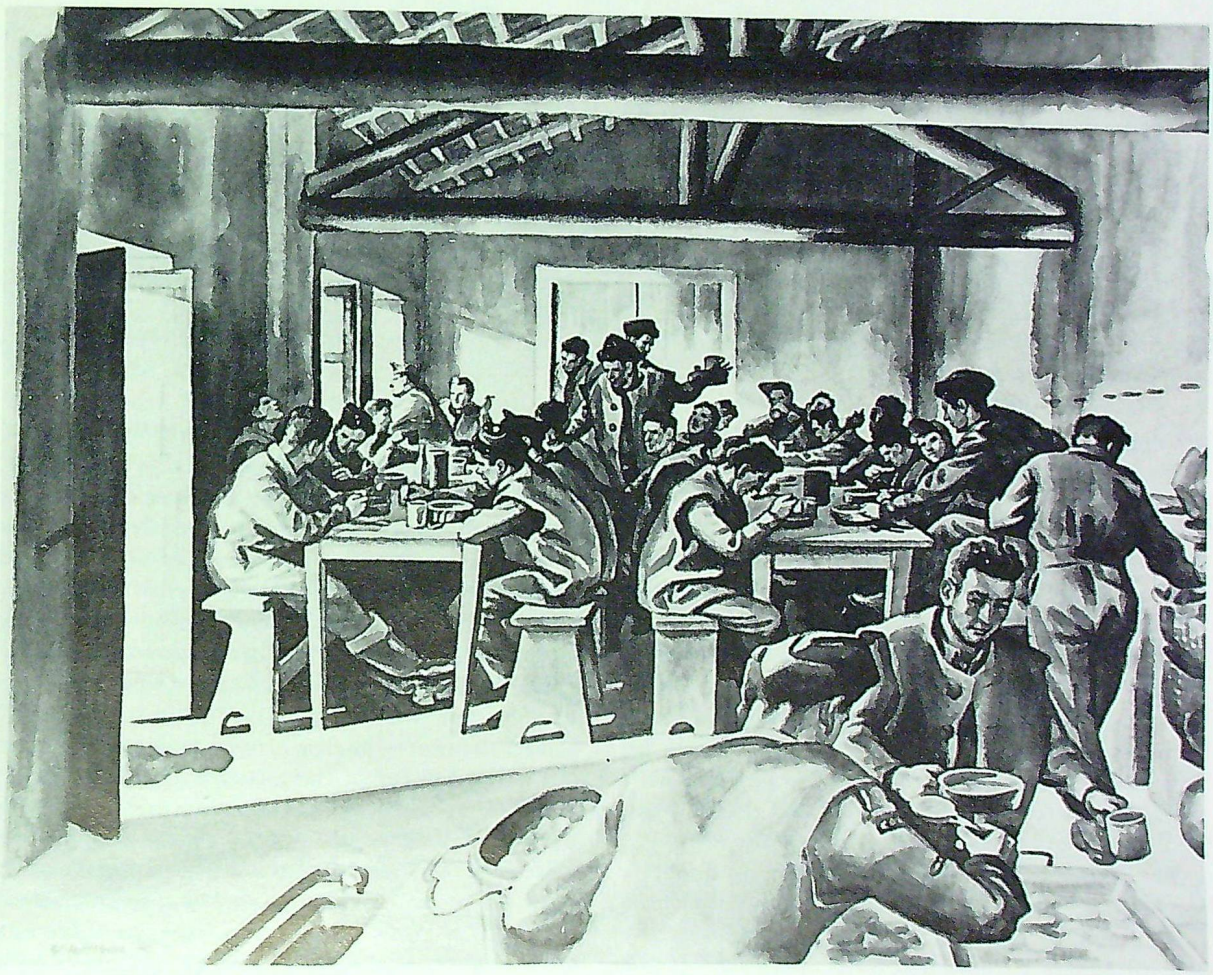
Turvey at the end of his second tour with the Desert Air Force.

A new type of operation, known as "Rover", was introduced in August, on which the pilots, after becoming airborne, were directed on to targets (usually gun positions and similar tactical objectives) by controllers in reconnaissance cars with the forward troops.

From Perugia the squadron moved, in a great cloak of secrecy, to Loreto on the Adriatic coast of Italy, on 26 August, and nine days later pushed ahead to Fano where it remained for three months. Flying once again in close support of the Eighth Army, the "Windsors" strafed roads and rail lines, knocked out gunposts and blasted enemy strongpoints as the "Desert Rats" drove across the Savio and on to Ravenna. Warrant Officer L. J. Baxter was killed by a direct hit from flak on a dive-bombing mission on 12 September. A fortnight later five pilots scored bull's-eyes on an enemy battalion command post, killing the colonel and filling four ambulances with casualties.

After September, during which there were 593 sorties on 111 missions, the scale of operations diminished as fall and winter closed in with rain, mists, frost, and snow. From October 1944 to February 1945, inclusive, the bomb tonnage decreased to an average of only 56 tons per month.

Lunch-hour in the airmen's mess at Marcianise. (Water colour by Flt. Lt. P. A. Goranson.)



Briefing at the ops. truck at Marcianise. (Water colour by Flt. Lt. P. A. Goranson.)

Flt. Lts. T. P. McElhanney and R. E. Evans, both flight commanders, ended their tours in October and received the purple and white ribbon. In November, Sqn. Ldr. Kallio also became tour-expired, with a D.S.O. for his outstanding leadership of the squadron during the past five months. Sqn. Ldr. David Goldberg, a veteran of fighter operations over north-western Europe, where he had made a successful evasion from enemy-held territory, took command of No. 417 through the final stages of the war.

From the crowded airfield at Fano the squadron moved, on 4 December, to Bellaria, an airfield quite close to the sea, about seven miles above Rimini, where it remained until operations ended five months later. Most of the work from this base, when the abominable winter weather permitted, was in support of Army operations in the area west of Ravenna. On one dive-bombing mission on 10 December, Pilot Officer R. A. Shannon and Warrant Officer R. W. Rideout, an American, were killed when their aircraft collided over the target. The next day another American member of the squadron became a casualty when flak hits forced Pilot Officer H. C. Murray to bail out behind the enemy lines, where he became a prisoner of war. At the end of the month Pilot Officer K. S. Hanson was lost over the sea through engine trouble. A long-range fighter sweep one day in December was marked by a brief encounter with some Messerschmitt fighters, the first that had been seen in many weeks. A month later there was another short dogfight between six Spitfires and a

Dispersal area at Marcianise. (Water-colour by Flt. Lt. P. A. Goranson.)

dozen 109s, but it ended before any decisive hits had been scored.

Continuing their blitz against the enemy's rolling-stock and transport, the "Windsors" claimed 116 freight cars and 13 vehicles in January but lost three pilots. Pilot Officer R. J. Ashley was a victim of engine trouble on the 15th, and Flt. Lt. James Waslyk and Flying Officer Raymond Edge did not return from a bombing mission over Faenza on the 20th. Wounded by flak over Vicenza, Flying Officer T. R. Wilson won the D.F.C. for the courage and fortitude which he displayed in bringing his aircraft back to base.

Late in February the tempo of operations quickened as the foggy skies began to clear, and in March, when Italy *did* justify its sunny reputation, the "Windsors" dropped almost 106 tons of bombs on the enemy's lines of communications and defences. Forty-three rail cuts were claimed; and one locomotive, 80 freight cars, 7 passenger coaches, 47 vehicles, and 16 barges were knocked out, as well as many strong-points and gunpits. Pilot Officer R. W. McKinnon was killed while strafing a barge on 6 March, and ten days later Flying Officer J. W. R. Weekes was taken prisoner when shot down while bombing a rail tunnel. On another mission Sqn. Ldr. Goldberg's section strafed three "horse-drawn" vehicles loaded with hay, but the curious manner in which one of the vehicles ambled on and manoeuvred around a corner convinced the C.O. that it was actually a camouflaged tank.

In April 1945, when the squadron exchanged its Spitfire VIIIs for IXs, operations rose to a final climax. No. 417 flew 938 hours on 723 sorties, dropped over 244 tons of bombs and claimed three rail cuts, one locomotive, 24 freight cars, 18 tanks, 148 motor vehicles, 121 horse- and ox-drawn vehicles, 8 barges, 7 pontoon bridges, and 7 guns. After 8 April most of the operations were in direct support of the Army in its final drive across the Senio and the Po into the plains of Venetia. Flying Officer R. L. Cotnam was lost on the 8th, and Flying Officer J. T. Rose was killed on the 16th as he attacked enemy trenches. The squadron's last casualty was Flying Officer F. A. Doyle, who was hit by flak on the 22nd and crash-landed in flames behind the lines. Italian peasants sheltered him for two days until he could reach our own troops. On 2 May the German forces in Italy surrendered. Outstanding work during the final months of the campaign won D.F.C.s for Sqn. Ldr. Dave Goldberg, Flt. Lt. A. J. A. Bryan, and Pilot Officer D. H. A. McKay.

The day after hostilities ceased, No. 417 Squadron moved to Treviso, 130 miles to the north. After taking part in the Desert Air Force's victory fly-past over Udine on 28 May, the squadron was disbanded at the end of June 1945, with a message of thanks from the A.O.C. for its "excellent contribution" and "the high, repeat high, operational standard" that had been maintained by pilots and ground crews throughout the long campaign.

On operations No. 417 had lost 28 pilots (18 killed or presumed dead, 8 prisoners of war, 2 evaded), and two more had been killed in flying accidents. Two airmen had also been accidentally killed — Cpl. H. W. Yates, one of the squadron cooks, who died of injuries received while on leave in Alexandria in January 1943; and L.A.C. J. M. Bélanger, a fitter, who lost his life in a motorcycle accident at Bellaria in February 1945. As a fighter squadron it had destroyed 29 enemy aircraft, probably destroyed 8 more, and damaged 22, with top honours going to Sqn. Ldr. Bert Houle who had accounted for 7 destroyed and 4 damaged; and as a fighter-bomber unit it had made a great contribution to the victories of the Eighth Army in Italy. Its honours included 1 D.S.O., 1 Bar to the D.F.C., 9 D.F.C.s, and at least 5 mentions in despatches.

Pin-Points in the Past

In 1935, at R.C.A.F. Station Jericho Beach, one of the flying officers posted to No. 4 (Flying Boat) Squadron proved himself on several occasions to be somewhat less than averagely talented as a pilot. The following poem was scribbled on the back of a sheet of D.R.O.s by Sgt. H. Pearce (now Wing Cdr. H. Pearce, M.B.E.) on the evening after the young officer's most notable piece of ineptitude. The aeroplane referred to was of the type shown in the accompanying photograph, a Vickers Vancouver.

The rush was on in the flight that day
For "904" was going away.
The stores were drawn and rations too,
And extra things by all the crew.

They stacked them up upon the floor
Around the hull of "904";
Then bit by bit they put them in
That poor old hull of patched-up tin.

They stowed stuff here, they stowed it there—
In fact, they stowed it everywhere;
And, when they'd done, the poor old craft
Was fit to burst both fore and aft.

But down the ramp she went that night,
And on to the buoy they moored her tight.
At crack of dawn, if skies were fair,
Old "904" would take the air.

Dawn cracked, as dawns have always done:
They warmed her up, they gave the gun,
And — round and round that aircraft went
Until her gas was all but spent!

In desperation, all the lads
Took out their pencils and their pads;
The C.O. cried: "Let's wire and see
How much'll go into an old Mark III!"

The answer came: "It doesn't sound
As though you've more than ten thousand pound.
We cannot figure, from what you say,
Just why your 'plane won't fly away.

"Check rigging and gas and oil and pitch
And anything else you notice which
Might keep the craft upon the water.
If STILL *she won't fly — well, she oughter!"*

The checks were made; once more they tried
With throttles opened very wide —
But round and round again she went
Until again her gas was spent.

The engines had not missed a cough,
Yet "904" would not take off.
The pilot cried: "We'll try no more.
Pull the old witch back on to shore!"

The tractor hauled her up the slip,
And — what do you think came with the ship?
Two freight-car wheels from a C.P. train,
The mooring-buoy, and a length of chain!

The Suggestion Box ★ ★ ★

The Chief of the Air Staff has written letters of thanks to the undermentioned personnel for original suggestions which have been officially adopted by the R.C.A.F.

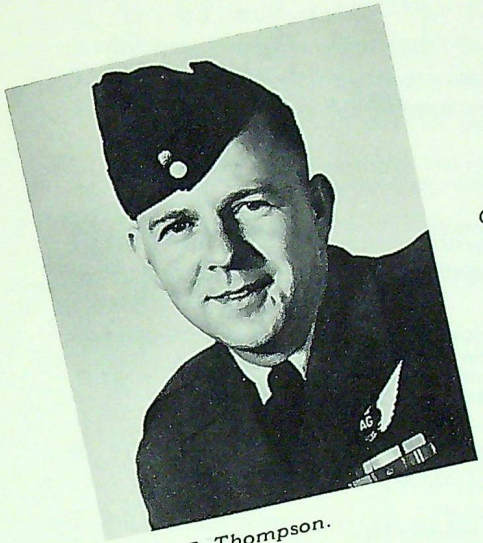
Sgt. L. E. Thompson, of R.C.A.F. Station Saskatoon, designed a modification of the B9 shackle that eliminates the necessity of installing light bomb-carriers on Mitchell aircraft when changing over from H.E. bombing to practice-bombing.

Sqn. Ldr. J. W. Murphy, of R.C.A.F. Station Greenwood, suggested modifications to certain telecommunications equipment that will materially enhance its operational value.

Sgt. R. A. McKay, of No. 5 Supply Depot, made a valuable suggestion concerning the use of mattress-covers to protect matresses from becoming soiled by dirt and grease during shipment and handling.

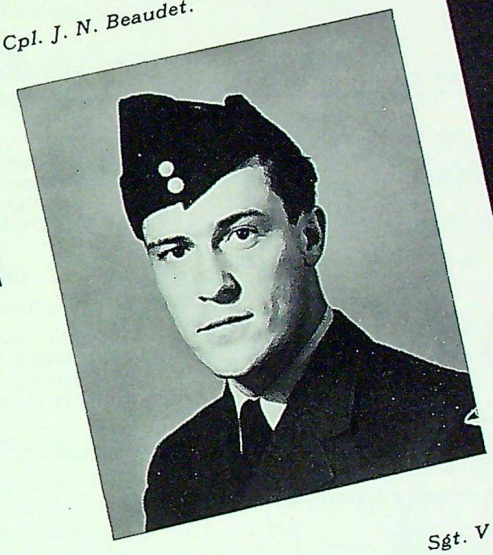
Sgt. V. R. Ducummon, of R.C.A.F. Station Penhold, designed a new type of wrench for use in removing the carburettor nuts in the Wasp S1340 engine.

Cpl. J. N. Beaudet, of R.C.A.F. Station Trenton, put forward a suggestion for a voucher hastener stamp that will speed up and increase the efficiency of operation of the whole hastening system.



Sgt. L. E. Thompson.

Cpl. J. N. Beaudet.



Sqn. Ldr. J. W. Murphy.

Sgt. R. A. McKay.

Sgt. V. R. Ducummon.

WHAT'S THE SCORE?

("Rubber?" mused Sgt. Shatterproof, when we asked his opinion on the matter. "An excellent subject for a Service questionnaire. But, Sir, when we carry out our research, let us make sure that our check is a good one." He then began to shake like a brontosaurus surprised by an earthquake, at the same time emitting the peculiar rumbling noises usually associated with seismic disturbances. We stared at him, aghast . . . until it suddenly dawned on us that the old wardog was under the impression that he had cracked a jest. When we had rallied a little, we made our way to the Directorate of Development "A". There, Sqn. Ldr. H. J. Londeau, a chemical-engineering pundit who has just returned from a 2-year post-graduate course in aeronautical engineering at the College of Aeronautics in England, kindly assisted us to compile the following twenty questions. Correct answers appear on page 48.—EDITOR.)

1. Rubber first came to a European's attention when:
   (*a*) Marco Polo saw it used for the gloves worn by Ghengis Khan.
   (*b*) Columbus watched South American Indians playing with solid rubber balls.
   (*c*) Bruce observed latex employed by the Abyssinians as surgical dressings.
   (*d*) Clive's native servant shot a pea-hen with an elastic catapult.

2. Rubber was first used in Europe:
   (*a*) To erase lead-pencil marks.
   (*b*) For soling shoes.
   (*c*) For children's catapults.
   (*d*) In tennis balls at the court of Versailles.

3. Rubber is obtained from trees of the Hevea species in the form of an impure liquid known as:
   (*a*) Buna.
   (*b*) Neoprene.
   (*c*) Caoutchouc.
   (*d*) Latex.

4. The best rubber is obtained from plantations of the tree Hevea Brasiliensis, and the chief sources of its supply are:
   (*a*) Malaya, the Dutch East Indies, and Ceylon.
   (*b*) Sarawak, India, and Borneo.
   (*c*) Brazil, Burma, and West Africa.
   (*d*) Assam, Indo-China, and Siam.

5. Pure solid rubber is known as:
   (*a*) Buna.
   (*b*) Neoprene.
   (*c*) Caoutchouc.
   (*d*) Latex.

6. Almost all rubber today is vulcanized before use. Vulcanization is a process in which rubber is:
   (*a*) Mixed with certain plastics to give it strength.
   (*b*) Polymerized with bitumen.
   (*c*) Impregnated with asphalt at a temperature of 194°C.
   (*d*) Heated to about 140°C. with sulphur.

7. One of the articles in the manufacture of which unvulcanized rubber is used is:
   (*a*) Cellulose tape.
   (*b*) Surgical adhesive tape.
   (*c*) The self-sealing envelope.
   (*d*) Marine glue.

8. A product identical to natural rubber in physical and chemical properties:
   (*a*) Has never been synthesized.
   (*b*) Was first developed by Dunlop in 1910.
   (*c*) Is recorded as having been used on Assyrian war-chariots.
   (*d*) Was first produced by German chemists in 1943.

9. To merit the name "synthetic rubber," a material must:
   (*a*) Be immune from attack by nitric or sulphuric acid.
   (*b*) Possess insulating properties capable of resisting an electric charge of 20,000 volts.
   (*c*) Have a melting-point not below 115°C.
   (*d*) Be, at room temperature, susceptible of considerable stretching and of immediate retraction on release.

10. The first *good* synthetic rubber was produced:
    (*a*) In Germany, during the Second World War.
    (*b*) In the U.S.A., during the First World War.
    (*c*) In France, by Michelin.
    (*d*) In Italy, by Bugatti.

11. Synthetic rubber:
    (*a*) Needs no vulcanization for any type of use.
    (*b*) Is twice as expensive as natural rubber.
    (*c*) Is vulcanized, for most uses, in the same way as natural rubber.
    (*d*) Is only half as expensive as natural rubber.

12. The first rubber goods were manufactured in:
    (*a*) England, in 1819.
    (*b*) Assyria, in 1056 B.C.
    (*c*) The United States, in 1823.
    (*d*) France, in 1831.

13. The word "polymerization":
    (*a*) Is applied only to a certain process in the manufacture of synthetic rubber.
    (*b*) Is derived from the name of an Assyrian king, Polymer III.
    (*c*) Denotes a chemical process whereby two or more molecules of the same substance unite to give a more complex molecule.
    (*d*) Denotes a chemical process whereby two or more molecules of one substance are broken down to give a simpler molecule of a different substance.

14. The principle of the pneumatic tyre was patented by:
    (*a*) R. W. Thompson, in England: 1845.
    (*b*) The Wright Bros.: 1903.
    (*c*) Dunlop, in England: 1899.
    (*d*) Leonardo da Vinci: 1497.

15. Pneumatic tyres were first used:
    (*a*) By the London General Omnibus Co.
    (*b*) On the Wright Bros.' first aeroplane.
    (*c*) On a horse-drawn brougham.
    (*d*) On Queen Victoria's personal cabriolet.

16. Synthetic rubber should not be used if it must come in contact with certain fluids. It will not be harmed, however, by fluids of:
    (*a*) Vegetable base.
    (*b*) Water base.
    (*c*) Mineral base.
    (*d*) Alcohol base.

17. The F-86 Sabre's tyres are made of:
    (*a*) Natural rubber.
    (*b*) Synthetic rubber.
    (*c*) Reclaimed rubber.
    (*d*) A mixture of natural and synthetic rubber.

18. Synthetic rubber is superior to natural rubber in:
    (*a*) Elasticity.
    (*b*) Extensibility.
    (*c*) Resistance to castor-base oils.
    (*d*) Resistance to the effects of aging.

19. The rubber used in the batteries of R.C.A.F. mobile equipment are made of:
    (*a*) Natural rubber.
    (*b*) Synthetic rubber.
    (*c*) Reclaimed rubber.
    (*d*) A mixture of natural, synthetic, and reclaimed rubber.

20. Used by banks to condemn a certain unstable type of rubber are the initials:
    (*a*) S.F.A.
    (*b*) D.O.A.
    (*c*) R.I.P.
    (*d*) N.S.F.

Who takes a donkey to the roof will have to bring it down again. (Turkish proverb.)

Principles of Military Aircraft Development

By Group Capt. H. R. Foottit, Director of Development "A", A.F.H.Q.

(Reprinted by courtesy of "Aircraft": Can.)

"Research programmes must be far-sighted and they must be continuous, for no process is more delicate than the production of new ideas and the development of new and better devices."

WITH THESE words the former U.S.A.F. Chief of Staff, General Hoyt S. Vandenberg, highlighted the fragile strength of the foundation of air power — new ideas and their development. For the development of aircraft (including airplanes, missiles, and their equipment, in the broadest sense of the term) is pressing forward into the unknown reaches of aerodynamics, structures, electronics, and the myriads of sciences that contribute to fighting the air war. With the resulting uncertainties, opinions and ideas run rife. One individual will argue for the curtailment of fighter aircraft and the rapid development of the ground-to-air missile; another will document the opposite view.

In the half century of aeronautical progress since the days of the Wright Brothers, files and files of technical and operational data have been sifted and analysed. But only now are the first principles of aircraft development beginning to show through the masses of detail. To draw forth these principles is important. For principles are, as the dictionary says, "fundamental truths used as a basis of reasoning, or, general laws used as a guide to action." And only by sound reasoning and sound action can we reap the maximum benefits that technology offers to future air power.

Principles that cannot be proven by mathematical formulae are always open to some differences of opinion. Adam Smith's principles of economics have drawn the fire of economists since that day in 1776 when he first published his famous "Wealth of Nations." Still, he provided such a firm foundation for economic thinking that many of his principles are still quoted and many have never been excelled.

There may also be some differences of opinion concerning the following ten development principles that have been culled from the past. Some of the principles may overlap in parts, may be combined in parts, or may be added to. Yet, taken as a whole, from the military viewpoint, they act as a *guide* for reasoning and action in initiating, and progressing through production, vital aircraft developments.

Principle I: System

A new aircraft must be designed to fit into a "weapons system."

In the Battle of Britain in September 1940, the German Luftwaffe went down to defeat under the eight-gunned Spitfires and Hurricanes of the Royal Air Force. These famed fighters were certainly the spearhead that struck the blow. But they would have been essentially ineffective if they had not been backed by the vast air defence system that the U.K. had built around Dr. Watson-Watts' discovery of radar. This was Britain's air defence cell, which included the radar screen, filter centres,

anti-aircraft batteries, communications network, fighters, airfields, and the other elements that formed the cellular defence against the air aggressor.

And it took the whole air defence system, including the fighters, to break the Luftwaffe. Four years later, when Germany unleashed her V weapons, the V-1 flying bomb and the V-2 rocket, the lesson was again driven home. It wasn't just a missile, but a whole offensive missile system of launching-sites, stations, crews, and special logistics support facilities. This too was a weapons system.

Once this weapons system concept was realized, it became important to design the aircraft or missile to fit the system. In the case of the air defence cell, the geographical layout of the ground installations, particularly the radar station, airfields and targets, define a particular cell shape for a particular country. The fighter's performance, speed, rate of climb and range, must then be matched to the dimensions of the air defence cell for a particular bomber threat. To ask for more than is necessary to fit the system and counter the threat, is wasteful of technical and industrial effort.

Similarly, bombers must be matched to complete bombing systems. For example, the bomber range must match the bomber bases and probable targets. The bomber itself must be equipped with the navigation aids that form part of such an offensive system. It must also be designed for the facilities of the base, such as hangar size, runway lengths, and runway strengths.

In the same way the tactical air force, the transport force, the anti-submarine force or the reconnaissance force, must be manufactured to work into the system as a whole. In many cases the system will cut across Service lines. The tactical air force meshes with Army and Air Force; the anti-submarine force in Britain, with Coastal Command and the Royal Navy.

Hence the aircraft and its equipment must be fitted to the system of which it forms a part, if the best is to be achieved for the least number of dollars. Conversely, there is no use developing an aircraft to the extreme state of art if the rest of the system is not developed to suit it.

Principle II: Rôle

An aircraft must be designed initially for a single primary rôle.

In the days before the Second World War some air forces had a fatal predilection for the "General Purpose" airplane. But war soon proved that the "G.P." was a poor weapon that was quickly shot down by the specialized aircraft. Yet the ghost of the general purpose aircraft still has a fatal lure, particularly in peace-time when military finances are at a low ebb.

When new requirements are being thought out on paper at any air force headquarters, an estimate of future trends may bring out numerous different rôles that the aircraft may play with the passing of time. It is important, of course, that this be looked into. But it is equally important that, when the manufacturer is first passed the operational and technical requirements, the specification makes it absolutely clear that the primary rôle must not be compromised for any secondary rôles. If this does not happen, then the resulting aircraft will always be a second-best.

The Convair B-24 "Liberator" was initially designed as a bomber and later doubled as an anti-submarine aircraft. In the latter rôle it played an important part in closing the mid-Atlantic air gap, and helped toll the death-knell of the U-boat. Suppose the original Liberator specification had called for both bomber and anti-submarine rôles. The designer, struggling with the maze of design details in the prototype phase, would have undoubtedly ended up with some good bomber features and some good anti-submarine features. In both cases, neither would have been the best.

In the anti-submarine rôle the Liberator may have got by, since it only shared this rôle with the Navy. But in the tougher lone air-power rôle of the strategic bombing of Germany, it would probably have been a failure.

The F-86 Sabre was initially designed as an air superiority weapon. When matched against the Russian MiG-15 in the air battles over Korea, it proved itself a 10-to-1 winner. However, it was so marginal in performance that every pound that went into a new modification had to be carefully

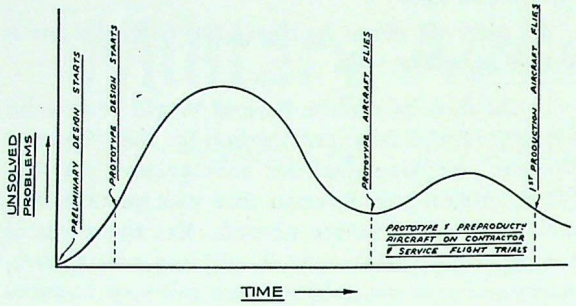


FIGURE 1
AIRCRAFT DESIGN PROBLEMS.

watched so that the performance did not deteriorate to an unacceptable standard. If it had been initially designed with a compromised air superiority and ground attack rôle, it probably would have lost its air superiority capability against the specialized MiG-15.

This principle does not mean that the secondary rôles should be ignored. It only means that the primary rôle must not be compromised in the initial design phase for any secondary rôle. Nor does it mean that a secondary rôle initially may not become a primary rôle at a later date when the aircraft may have passed into obsolescence for its major task.

Principle III: Time Scale

A realistic estimate of the development time scale for new aircraft is vital.

In the preliminary stage, any aircraft may be considered as a complex package of unsolved and, in many cases, unknown problems. As the design advances, and more details are looked into, known problems increase. Development engineering gradually unearths and solves the majority, until the prototype takes to the air. Operational use, however, will add a multitude more.

The solution to these problems is possible with a firm foundation of research and a back-log of development experience. In some cases the research may not even be started, hence the successful development of the aircraft may be decades away. In other cases development experience is practically non-existent, and the successful aircraft may be years from completion.

Missiles are a case in point. Even today the research and development background still has many gaps, although Germany started work on missiles 20 years ago. One authority has said that, if we had to mass produce a ground-to-ground missile for war now, we would probably turn to a modified version of the German V-2; yet the design of the missile commenced in 1940, fourteen years ago, and many other western-nation missiles have been designed in the interim.

Having a realistic estimate of the time scale for development is vital since:

- the aircraft is part of a system, and the other components of the system, including trained man-power, must be time-scaled on the same basis; and
- the fighting effectiveness of the air force may slump if the development time scale has to be unexpectedly extended.

There is often a tendency amongst manufacturers and military personnel to minimize development difficulties and shorten the time scale. They do this because they fail to appreciate the fact that all the problems in any one development, at any one time, may not be known. When the time scale lengthens as new problems are revealed, military facilities, manpower, and logistics services, are reduced to wasteful inefficiency.

Wars can be lost by such poor estimates. Probably the most notable example of our time is Hitler's decision, in December 1942, to launch his strategic air offensive with *Vergeltungswaffen,* "weapons of revenge." He foolishly compressed the development time-scale so that one year later, December 1943, the V-weapon offensive was scheduled to start. And by this time Hitler had allowed his bomber force to dribble to impotency.

On the other side of the English Channel the Allies had decided some years before that the manned bomber was the right offensive air tool. Both the missile and the bomber had a background of research and development. But the Allies' estimate of the time scale for large bomber development was good; Hitler's for missiles, fantastically poor. As the Allied bomber offensive mounted to a deluge in 1944 and 1945, Hitler's V-weapon campaign,

delayed six months owing to Allied bombing, never became anything more than a drizzle.

Germany did manage to launch about 10,500 V-weapons against England, of which about two-thirds crossed the Channel. In *one month,* March 1945, the total Allied bombing effort amounted to 221,000 tons. Such was the result of underestimating the development time-scale. And Germany reaped the grim result.

Principle IV: Insurance

There must always be an alternate programme to insure against failure of a projected aircraft development.

Failure to develop a future aircraft in a given time must not lead to impotency of the fighting force. Consequently it is essential that every future development programme have one or more back-up programmes on which success is relatively certain, or at least scaled down in risk. This principle comes from the fact that there are too many pitfalls, both in time and technical difficulties, to ensure absolute success.

Fighters are a typical technical example. In the seven years following the signing of the Japanese peace treaty, the U.S.A.F. ordered 18 separate types of fighters, of which all but four died in the early stages. This is a ratio of success of about 1 in 5. Some of those which failed to go into quantity production, of course, might have been cut off by financial limitations. Still, it indicates that there is always a certain element of technical risk in any development project.

In the "Rommel Papers," the great German field-marshal drew the line between the bold course as opposed to the gamble. "A bold operation is one in which success is not a certainty but which, in case of failure, leaves one with sufficient forces in hand to cope with whatever situation may arise. A gamble, on the other hand, is an operation which can lead either to victory or to complete destruction of one's forces."

Similarly in the technical development field, bold decisions for future aircraft are essential, if we are to gain knowledge and keep in the forefront of the weapons race. But national security is too vital a thing to be subjected to a technical gamble. The unconventional aircraft, then, is a gamble, but, backed by a sound insurance programme, it becomes a wise, though bold, venture.

An insurance programme is also necessary since the aircraft may be dependent for positive action on other parts of a vulnerable weapons-system, and the system may be knocked out by simple enemy countermeasures that we haven't thought of. In 1942, for example, the British tested their radar-confusing strips of tin-foil, "window". But they didn't use it against Germany right away.

As Churchill says in "The Hinge of Fate", "The device was so simple and effective that the enemy might copy it and use it against us. If he had started to bomb us again as he had done in 1940, our own fighters would be equally baffled and our own defence system equally frustrated."

Back-up programmes should therefore cover a broad field of different weapons systems, with airplanes, missiles, and even ground equipment (such as anti-aircraft artillery) all being developed to the same objective. To bank on one development, to the deterrent of all others, is to bank on a gamble.

Principle V: Costs

In aircraft development, costs are important but they are not paramount.

The dollar sign is a symbol representing the man-hours and materiel that went into a particular development. These man-hours and materiel are a portion of the resources of a nation, and any one nation, at any one time, has only so many resources available. Since development is a tapping from this total reservoir, the cost is always important. But dollars must not completely dictate development; development costs must be looked at in their right perspective.

The spearhead of attack or defence is the weapons system. Properly to assess the operational effectiveness of new techniques and ideas, the development of the system, including the aircraft, must continue. For this cost is minute, compared to the total effort. As Dr. Vannevar Bush says in his book "Modern Arms and Free Men," and speaking of air defence, "Research and devel-

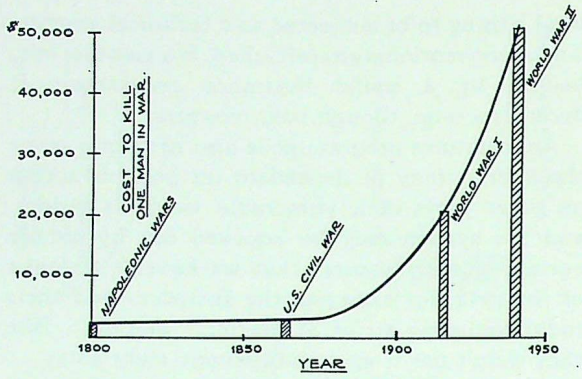


FIGURE 2.
WAR COSTS.

opment cost money, but their cost fades into insignificance compared to that of the construction and maintenance of great defence systems, alert and in effective operating condition under highly trained personnel."

A typical system-development project in the U.S. is the Cape Cod Experimental System. This system is tied in with the Massachusetts Institute of Technology and its Lincoln Laboratory. Here scientists and a small air force unit operate a miniature air defence cell, with radars, airfields, communications system, and a miniature defence command headquarters. Exercises are conducted with the bombers of the Strategic Air Command.

Here, in minute form, ideas and techniques are invented, tried out, and evaluated. If they are poor, little is lost. If they are good, eventually the whole Air Defence System of the U.S. and Canada will be modified to reap the benefits. This system costs about $40 million annually to operate. This is a small part of the U.S.A.F. budget, but the results achieved can be enormous.

To keep in this vanguard of development may be considered relatively costly. But here again, the perspective of the total costs of war must form the background for judgment. Equated against the cost of killing one of the enemy, the cost of war has risen from 75 cents in Caesar's day (44 B.C.) to $50,000 in the Second World War (Figure 2). And as the industrialism of nations rises at a rapid rate, so will the cost of killing a man increase. But a few costly bombers armed with atomic bombs in the next war, will do far more damage than the one-thousand bomber raids of the last war. Operational efficiency, then, is the keynote to proper development, not the dollar sign.

Principle VI: Potential

The new aircraft must have potential for future development.

To get the highest dividend from any development, the designer must ensure that the new aircraft has developed potential. Arthur Raymond, vice-president of Douglas Aircraft, summed it up as follows: "A long view is required to sacrifice immediate advantage for the benefit of longevity. A good aircraft may be in service for ten years or more, and it is wise to keep its growth possibilities well in mind from the beginning."

Two points are paramount in the initial design to ensure long production life:

- space by minor modification for new and better powerplants and equipment; and
- space by minor modification for new and better armament.

In each case, the new engine, equipment, or armament, may not have been thought of when the aircraft design started. For guided missiles these requirements might be interpreted as space for new power and guidance equipment, and space for larger war-heads.

These demands do not necessarily mean that the aircraft must be excessively large. But they do mean ingenuity in layout of the interior. Just as the simplest mechanical arrangement is always the hardest to design, so the best internal arrangement to allow development potential takes the most layouts and the closest supervision. This is particularly difficult today when as much as 50% of the cost of the average aircraft goes into bought-out equipment, and engineering staffs are large and hard to supervise closely.

An example of this ingenious layout is the A. V. Roe Canada Limited all-weather fighter, the CF-100 "Canuck". It is certainly by no means any larger in size than contemporary fighters in its class. But it was originally laid out with an arma-

ment bay in the bottom of the fuselage. Obviously such a bay allows some flexibility in fitting new weapons, in the future, without having to go to extra large external drag-producing pods, and thus sacrifice performance. The basic design has built-in flexibility which will help extend its useful life.

Principle VII: Reliability

The development of aircraft reliability must be a continuous process.

Air forces, like industrial forces, only have a given number of man-hours available for specific jobs. Production-run aircraft that eat up man-hours with poor serviceability records, mean a lower fighting efficiency for the force as a whole. If the serviceability of a squadron is only 45%, instead of 90%, then twice the number of aircraft and man-hours are required to do the same job. And this, in turn, drains twice the industrial strength and resources from the nation.

There is often a feeling in democratic nations in peace-time, and even among some aircraft manufacturers, that military personnel have lots of time available and can afford the extra effort of maintaining unreliable equipment. This reflects itself in wavering financial support for reliability development programmes. But in this day of lightning war, every effort must be bent to increasing reliability from the day the prototype leaves the hangar, to the day the last squadron is retired from the Service. For war may strike at any time, and wasted man-hours may mean defeat.

When such a programme is carried out, however, it can generally be said that reliability will increase with time. This is an important point in the development process. For, in the early development stages, some lower standard of reliability may be accepted into the fighting force, if, for example, it would improve the aircraft effectiveness in the long run. But one can only accept this lower standard if a reliability development programme is assured.

The fire control system of the F-86 Sabre is a typical case of a reliability development that was sparked by pressure of war, but vital even if peace had prevailed. The initial fire-control installations were unreliable. Gradually, as the Korean War developed, the reliability was improved. In the end the fire-control system received its just acclaim as a primary aid to the Sabre pilot in establishing air superiority over the MiG-15.

Missiles are presently suffering from this lack of reliability. Hitler's V-2 missile is an example of what may have to be done to increase reliability. Out of the first 18 V-2 missiles produced, only two were launched satisfactorily — for a reliability score of 11%. In the following three years over 3,000 missiles were fired for test and training. And over 62,000 modifications were made to correct deficiencies in the original design. These resulted in the reliability being raised from 11% to 80%. Again this was a war programme, but it would have been just as vital in peace-time.

Principle VIII: Effectiveness

The operational effectiveness of the aircraft must be continually improved.

In most cases the ultimate aim of military aircraft is destruction: the fighter or missile to destroy enemy fighters or bombers, the bomber and fighter-bomber to destroy ground installations and personnel.

Other aircraft, too, have operational goals: the transport for the efficient movement of key personnel, the reconnaissance aircraft for efficient detection of the enemy forces. Whatever the ultimate operational goal, there must be a continuous programme for getting the maximum effectiveness from the aircraft, from prototype to the last aircraft in use.

The British Spitfire, of the Second World War, was probably one of the greatest fighters ever designed. From birth to death it went through 33 different versions, many of which were produced to increase its effectiveness. The Spitfire Mark I grossed 5800 lbs., had a maximum speed of 362 m.p.h., a service ceiling of 34,000 ft., and carried eight 30-calibre guns. The Mark 47, produced six years later, weighed 10,300 lbs., went 452 m.p.h. with a service ceiling of over 40,000 ft., and carried four 20 mm. cannons.

Today the various versions of the Northrop

F-89 "Scorpion", the A. V. Roe CF-100 "Canuck", and others, have been produced with a variety of missile and rocket installations, fire-control systems, and other modifications, all aimed at increasing their operational effectiveness.

There are various reasons for a continuous development programme to improve effectiveness. In the first place, during the prototype development of aircraft, the aerodynamic, structural and vital equipment layout problems, are paramount. Since there is only so much brain-power in any one company, most of it is devoted, in the initial stages, to solution of these problems. Consequently it is only after the prototype stage, and with a planned programme, that operational effectiveness receives the thought that it should.

In the second place, increasing operational effectiveness is probably the cheapest way to extend the life of the aircraft. Obsolescence is a gradual process related to a threat. The fighter turned out today is a good weapon against today's bomber. But tomorrow the enemy start turning out bombers that can easily outrun the fighter. As bomber production rolls, the fighter has fewer and fewer bombers it can cope with: it is becoming obsolescent unless it can be modified. Soon, of course, no modification can be devised that will make the old fighter a match against the new bomber. A new fighter is required. The old one fades into obsolescence.

Graphically, obsolescence can be shown as a curve of operational effectiveness against time. And a continual development programme must be kept under way to extend the effectiveness as far along the time scale as possible.

Principle IX: Evaluation

The operational efficiency of any aircraft must be continually evaluated to ensure sound development.

Lawrence of Arabia, discussing his operations in the desert during the First World War, pointed out: "We kindergarten soldiers were beginning our art of war in the 20th century, reviewing our weapons without prejudice. To the regular officer, with the tradition of forty generations of service behind him, the antique arms were the most honoured." ("Seven Pillars of Wisdom".)

The tactics of the enemy change; technological advances alter his equipment; our own technical developments bring forth new weapons; consequently it is essential that one conduct a continual evaluation of the weapons on hand. Otherwise there is a tendency to fall into the prejudiced thinking that Lawrence was aware of, and a development programme may be continued on one weapon when it is no longer capable of meeting the enemy threat. This operational efficiency evaluation must be made by considering similar types of weapons and also weapons of different types to do the same job.

Operational efficiency can be defined as:

$$(Reliability) \times (Effectiveness).$$

This is not a mathematical formula, since it is impossible to pin down reliability and effectiveness to percentages for the purpose of comparing one weapon with another. If this were possible, it could be said that one weapon, with 80% reliability and 50% effectiveness, has an operational efficiency of 40%; another weapon, to do the same job, but with only 40% and 25% respectively, has an operational efficiency of only 10%. Thus four times as many of the latter would be required to meet the threat, with four times the drain on the national resources.

Defining operational efficiency as a function of reliability and effectiveness is not the complete evaluation formula. But it does provide a convenient guide for clear thinking in establishing some basic philosophical approaches.

For example, the guided missile exponent, who feels that missiles should be developed at the expense of the air defence fighter, very often talks in terms of theoretical "kill probabilities" to prove his case. He completely neglects the fact that missiles have had a long history of unreliability. And reports on actual effectiveness from true test data is often completely missing. Hence his argument is often highly theoretical and it would be unwise completely to predicate air defence developments on this approach.

On the other hand, reliability will increase with time if a properly planned development programme is instituted. Consequently the unreliable missile of today will be the reliable keystone of defence in the next decade. So one can be assured that missiles will come into extensive use and it is only a matter of continual evaluation of the fighter and missile over this period to ensure that, at the appropriate time, the development of the fighter, in certain rôles, tapers off while that of the missile forges ahead.

Reliability and effectiveness, however, are only the backdrop for starting an evaluation. In the end, all evaluations must get to grips with mechanical details, costs, performance and other operational and technical features of the weapons. If this is done on a continual basis, then the best weapon will be developed to do the best job, and a proper phasing of development can be established. (Figure 3).

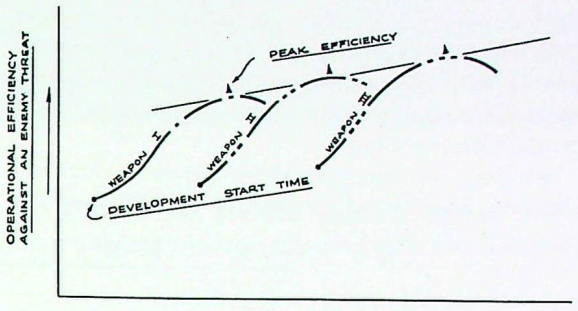


FIGURE 3
WEAPON PHASING

Principle X: Balance

There must be a balance between aircraft development and aircraft production.

The development of an aircraft commences with the prototype and pre-production phase, and continues on through production. Within these two stages there must be a proper balance between engineering and manufacture to ensure that development does not completely dominate production, and *vice versa*.

In the prototype design and construction stage, the military force is pressing to get the aircraft into service. It is eager to use the superior capabilities that are outlined in the model specification. The contractor, on the other hand, has the design in the hands of his engineering department, and he must get the design tested and frozen before he can tool up for production. In this first phase the average engineering department, if left to its own resources, will go on developing, re-developing and re-testing, with little concern for getting aircraft to Service trials.

When the contractor finally freezes the design and tools-up, he then wants to produce an unchanged aircraft in the greatest possible quantity. Any slow-down or any change means costly delay, lay-offs, re-scheduling, re-ordering, and possible plant rearrangement. By this time the military have the early models in Service tests, and are just beginning to find a whole series of operational faults. Now the shoe is on the other foot. The military want to hold up production, and a pitched battle is waged.

Obviously there must be some balance between the initial development and the production development phases. In the initial stages the development must proceed as rapidly as possible to get the physical article to Service test. What may seem like a grave deficiency on paper, or even in the contractor's prototype trials, may be dwarfed by greater problems of greater priority when the aircraft gets to Service tests.

Igor Sikorsky is reported to have said that one of the major reasons he made a success of the helicopter was his decision to continue with the first prototype when it was half-completed and he felt sure it was no good. Actual service trials usually bring to light hosts of new problems and shadow many that were thought to be decisive.

Once production starts, however, suggested changes must be carefully screened to ensure that only the truly vital ones cause any production delay. This is important in peace-time since air power-in-being is just as powerful a force as the fleet-in-being was in Admiral Mahan's day, when merely having sea power deterred the possible aggressor. In addition, deception is an art that has been practiced by every great commander of the past. Sometimes, then, it is advisable to delay

peace-time development, accept the fair or good, instead of the excellent, and so deceive the possible enemy with quantity instead of quality. Quality must come, but it is not always paramount, when production is rolling.

Similarly in war, only developments which are certified operational necessities should slow delivery. Opinion and operational viewpoints based on scanty evidence are no criteria. Moreover, the use of the aircraft, the theatres of operations, and the enemy forces must be evaluated before a development is allowed to delay deliveries. The development balance must be carefully maintained.

Heinrich Schnibble Complains to the Air Force

(The following item is reprinted by special permission of "The Saturday Evening Post," copyright 1953 by the Curtis Publishing Company. It came to our attention after it had been "adapted" to the R.C.A.F. by a Service humorist. The version reprinted here is, of course, the original one by Dave Morrah, as it appeared in "The Saturday Evening Post" of 14 February 1953.—EDITOR.)

"HERR Oberkommander Colonel Wickett?"

"Yes, I am Colonel Wickett, base commander."

"Herr colonel, meinself ben Heinrich Schnibble und ich ben bringen ein complainer. Mein milchers und mein —"

"How do you do, Mr. Schnibble? Did I understand you to say you have a complaint?"

"Ja. Mein farm ben closer besiden mit milchers und cacklers und porkers. Mit mornen ben gecomen der schnortenzoomers, upsetten der milchers und also —"

"I beg your pardon. The schnortenzoomers?"

"Der schnortenzoomers mit jetten tailers gespouten ben obersailen mein farm und —"

"Oh, yes, der schnorten — I mean, jet planes. Well, what about them?"

"Das earthen-gesplitten noiser ben upsetten mein milchers und mein cacklers. Ist das milchen pailer ben upfullen? Nein! Ist mein nesters gerollen mit eggers? Nein! Also mein porkers ben ausgeleaven das mudden puddler."

"But, Mr. Schnibble, we are engaged in training pilots who may someday play an important part in our national defense. Surely you don't expect the Air Force to — "

"Herr colonel, der schnortenzoomers ist stoppen, elser meinself ben sooner uptooken der bangenschpitter und —"

"Uptooken der whatenschpitter?"

"Mein bangenschpitter und loaden mit quicker potshotten der schnortenzoomers. Ach!"

"Mr. Schnibble, do you realize the importance of the jet programme? What do you think the consequences might be if you potshot — if even a small part of its activity were curtailed?"

"Mein milchers und mein cacklers ben sooner oudtgaben und mein porkers ist —"

"Now, Schnibble, try to be reasonable. And if you can't, get this straight: Our jets must fly. Any idea you might have that your milchers and cack —"

"Mit buckshotten! Meinself ben oud-ten-getooken der bangenschpitter —"

"You'll oudten-getooken no bangenschp —"

"Und ich ben tooken der aimen mit uppengeshooten und geschplatten der schtunken schnortenzoomers!"

"You just try geschplatten one single schtunken schnort — Ach! Excuse me one moment, Herr Schnibble? . . . Hello, Operations? Ich ben Oberkommander Wickett. Get this: ground all der schtunken schnortenzoomers! Mitout fail!"

Feminine Gen

In our March 1954 issue, Cpl. V. R. Dudley, of R.C.A.F. Station Trenton, applied the acid test of realism to several points of Service etiquette. This month the same sprightly lady once more looks at things as they are and makes an impassioned plea for —

NO PICTURES, PLEASE!

As a reader of "The Roundel," I take great interest in your "Pin-Points in the Past." However, one recent pin-point in my own past left me clammy — nay, mackerel-cold.

It was a three-year-old photograph of a squadron of Vancouver girl Air Cadets and their instructors clustered around a North Star. They were grinning happily — all except me. Besides the ten overweight pounds and a crumpled uniform, I wore my usual "returned missionary" look, which amounts to a smug smirk. Needless to say, everybody and his Sergeant saw the picture and rushed to tell me, leering at my discomfort in having to confess that it was I.

While most humans, faced by a camera, have the faculty of looking reasonably happy and adequately well pressed, a camera only seems to accentuate my negatives. This has happened all my life, and I cannot blame it on the Air Force photo types. On certain occasions — such as the Air Cadet do — I would rather have faced a gun than a camera. But I have my value in the laughs department. If my friends get depressed, I dig out my "pictures," the first of which shows me as a chunky two-year-old wearing a ferocious frown. Apparently I bit people at that age, and the picture clearly indicates I had similar designs on the taker.

Time had scarcely abated the agonies of school-day and group pictures when I met Service photographers intent on immortalizing me for "identification purposes". The first of such official photographs must have horrified some poor dark-room Joe. Later, I was re-photographed with my cap on, and for the next three years I had to produce this damning piece of evidence against my true character upon demand. My "I" card was the first thing that I turned in upon release.

When one has little to start with (and a camera doesn't lie), course graduation and other group photos are discouraging, to say the least. Whenever the photographer says "Say cheese", I say "Cheese", but when the picture is developed it always looks as though I am practicing spitting through my front teeth.

I once decided to beat any situation involving cameras. When the photographer began setting up his equipment, I would rush to hide in the nearest washroom. Later, in a psychological flash, I realized that this was being cowardly and also depriving my friends of laughs, so I determined to brave it out. I read that if a person had beautiful thoughts while being painted or photographed, some of the beauty would be projected into the picture. After thinking of beautiful things such as Gregory Peck, Spanish onion sandwiches, and frost-beaded tumblers, I can produce evidence that this theory is strictly for the birdies who supposedly inhabit cameras.

I had a terrible nightmare recently. I dreamed I was Chieftainess of the Air Staff and had to have thousands of pictures taken with visiting V.I.P.s, winning bowling teams, and upstanding Air Cadet types. I woke up in a cold sweat, whimpering: "WHAT good side?"

Things have taken a turn for the better, though. The picture on my Regular Force identification card was taken on a blue-blue Monday morning. It helped. My smirk isn't so pronounced, and I am left with an extremely honest expression. One wag remarked I could probably even get a loan from Household Finance on the strength of it.

Oh yes . . . I did look pretty glamorous in a candid shot taken by a shutter-fiend in the airwomen's quarters at St. Johns Manning Depot. She caught me rushing from the ablutions to my room, unmentionably attired, and with a cigarette drooping from my lower lip. If I had only been clutching a smoking revolver, who knows but that I might have made the cover for Mickey Spillane's newest work?

But I still say, without reservations, "NO PICTURES PLEASE!"

DEADLIER THAN THE MALE

Published here is a photograph of the W.D. softball team, R.C.A.F. Station Goose Bay, which tied with the station officers (male) in a challenge game — until, we are told, the game was called off at the end of the fifth innings because of darkness and general fatigue on the part of the officers (male).

When facing up to the Married Women's team, the Otters did not fare quite so well. Out of seven games they won only three. The girls expect to do better next year and will take on any "outside station" teams. Officers (male) are advised to start training early.

Shown in the front row of our photograph are (l. to r.): Flt. Lt. M. Deneau, L.A.W.s E. Gallant, N. Hutton, R. Rundle, Flying Officer A. Maybee, Flt. Cadet P. Gardner. Back row: Miss O. Galuga, Cpl. "Stretch" Althouse, L.A.W.s H. Sek, J. Burton.

LOVE AT LANGAR

THE FACTS show the Canadian airman certainly takes his romance seriously; for to date at this very busy Air Materiel Base, over ten per cent of the total Canadian strength have married English, Scottish or Irish brides — with Nottingham girls leading the field by some 90 per cent. Only four weddings out of some two score have been 100 per cent Canadian since the Base opened in May 1952.

This requires a deeper study, for it is obvious there is something afoot when overseas nuptials seem to get out of hand. In fact, those Servicemen tending to remain single have already sized up the situation with amazing insight and are spending, their time in the snack bar, cinema, radio station and bed, frittering their tour away. One step outside the camp, they think, and they are liable to be living out permanently.

Those who have taken the plunge and married English girls cannot understand what the fuss is all about. When one was queried as to why he did such a thing he was amazed to think that there was a vestige of unreasonableness in his act.

"She's a woman, of course!" he cried. "Isn't it a woman a man is supposed to marry?"

It seemed cold logic, sure enough — but squaring the shoulders and getting deeper than ever, we queried further: "Yes, but why English? Why can't you wait till you get home?"

There are individual reasons, of course, but most bear out the general feeling as expressed by one officer. "When you fall in love, nationality doesn't matter." Another Canadian groom said: "English girls are not so demanding on the husband. They are more content with being a wife rather than the big boss." Another countered "It isn't that they've got more than Canadian girls, it's just that they have it here." "They make swell chips", said one. "Mash smashing tea", said another.

Seriously, this spate of marriages overseas, as with those during the First and Second World Wars, has caused more than a resentment on the part of Canadian girls at home. It almost mounted to a bitterness at the end of the last war. It may be as they think, that the English girl schemes to get a Canadian as a husband. But it is rather far-fetched to assume that all overseas marriages are the result of some diabolical English female plan. When you appraise the individual concerned, you are faced with a mature man, level-headed and a clear thinker, and the diabolical plan seems impossible.

There are factors of environment to be considered also. The English girl has a different life entirely from that of her Canadian cousin. In comparison the English girl comes closest to the girl from Montreal — she is more urban than the rest. Girls from cities like Winnipeg, Edmonton, and Hamilton, are confined to the city limits by geographic necessity; but girls from Nottingham can be considered part of a city of 50 millions in comparison. England is so small it can be considered one large city. The liberal viewpoint — the broader outlook — the culture —the vibrancy in living makes the English girl different.

Maybe it's that difference that makes a deep-thinking Canadian marry an English girl.

(*"Langar Log": No. 30 A.M.B., R.C.A.F.*)

SPEED MEANS HEAT

In Cornell's Aeronautical Laboratory is a hypersonic wind tunnel that tells how intense is the heat that will be generated in the vicinity of a wedge-shaped body when struck by a blast of air moving at a speed of 10,000 miles an hour. The escape velocity from the earth is 25,000 miles an hour, yet astronauts talk glibly of achieving it, though they are fully aware of the heat that will be generated.

The Cornell engineers found that instantaneous temperatures near the wedge reached 7,000 degrees F., which is more than half the temperature of the sun's surface. The hypersonic flow is maintained for only a thousandth of a second, but that is enough to show that at speeds of 10,000 miles an hour known materials will melt in seconds.

Cornell's Aeronautical Laboratory has long been engaged in developing new alloys that will stand temperatures of 1,500 degrees F. During 1953 three stainless steel alloys were developed that stood up better at 1,500 degrees F. than standard alloys. The performance of the alloys at high temperature is impressive. Unfortunately they contain much chromium, nickel and cobalt, all of which are strategic materials and all of which are expensive.

(*"The New York Times".*)

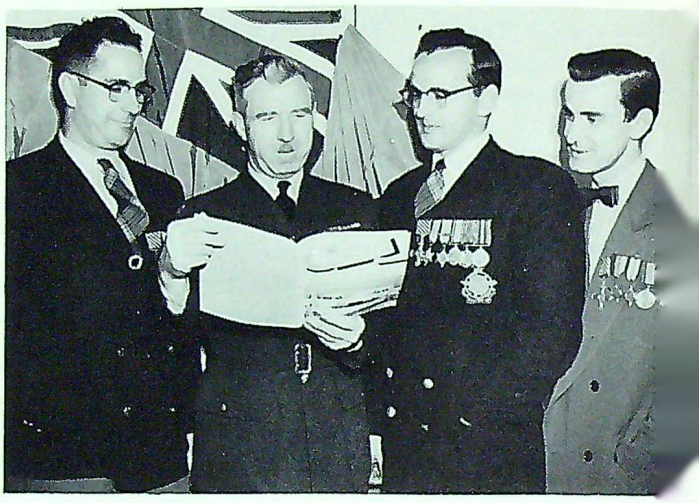
ROYAL CANADIAN AIR FORCE Association

BATTLE OF BRITAIN ANNIVERSARY

"Never in the field of human conflict was so much owed by so many to so few."

Once again, as they observed the 14th anniversary of the Battle of Britain, Association members all across Canada remembered the words with which Sir Winston Churchill paid tribute to that small group of men who defended their country and the whole world against overwhelming odds.

In keeping with the hope of our Association that Battle of Britain Sunday may be permanently established as an Air Force Day of Remembrance, Wings across Canada joined in Battle of Britain banquets on the preceding Friday and actively participated in the commemoration services on the Sunday.



No. 253 (Moncton) Wing joined in the remembrance celebrations held at No. 5 Supply Depot, R.C.A.F. Taken at the Depot after the parade, photograph shows (l. to r.) O. E. Jones, W.O.1 Keays, A. R. Wood, L. Gallant. (Ahearn Studio photo.)

Training Command band leads members of No. 424 (Cornwall) Wing in Battle of Britain parade.

Air Vice-Marshal G. E. Brookes, C.B., O.B.E., lays wreath at the Cenotaph, Lancaster, Ont.

D. McLean, president of No. 254 (Miramichi) Wing, lays wreath.

W. J. Beuree, president of No. 101 (Atlantic) Wing, Halifax, lays wreath at the Cenotaph.

No. 302 (Quebec) Wing.

Air Force veterans of No. 302 Quebec Wing joined in the ceremonies in that city. His Excellency the Governor-General, the Honourable Vincent Massey, deposited a wreath on the Cenotaph during the ceremony.

Montreal Wings.

Members from the different Wings in Montreal attended the Battle of Britain service and marched in the parade commemorating September 15th, 1940, which marked the beginning of the Allied victory.

No. 427 (London) Wing.

No. 427 Wing participated in the special services held in St. Paul's and St. Peter's Cathedral, London, Ontario, and marched in the parade to the Cenotaph, where a wreath was deposited on behalf of the Wing. Group Captain R. C. Hawtrey, of Training Command H.Q., took the salute.

No. 602 (Saskatoon) Wing.

A special banquet was held in the officers' mess of R.C.A.F. Station Saskatoon by the members of

No. 602 Wing. Air Vice-Marshal K. M. Guthrie, C.B., C.B.E. (ret.), was guest speaker. On Sunday, the Wing also took part in the commemoration services.

R.C.A.F. Station Summerside.

A colourful parade under Wing Cdr. J. E. Creeper, D.F.C., was witnessed by a great number of residents of Summerside and the surrounding districts on Sunday, 19 September 1954. Before the parade, special commemorative services were held at the station in the Roman Catholic Chapel and the Protestant Chapel.

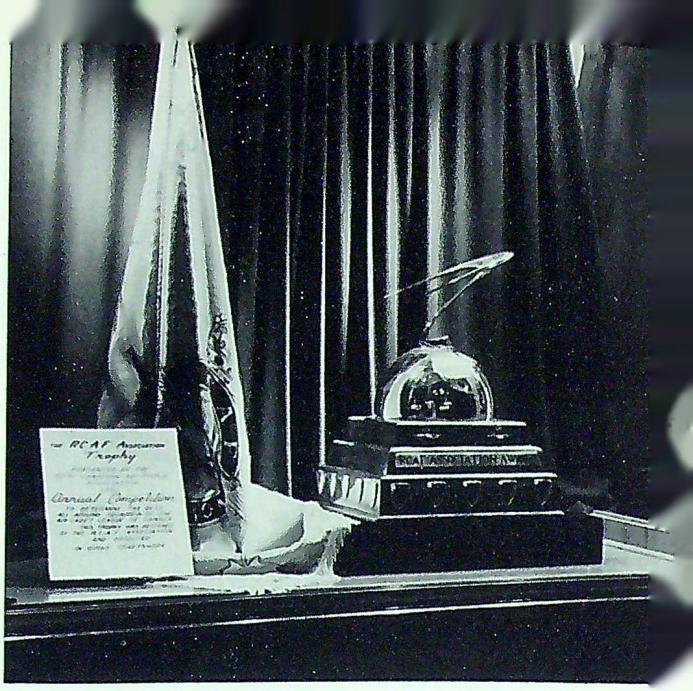
Having formed up, the parade received Group Capt. W. H. Swetman, D.S.O., D.F.C., the station's new Commanding Officer, who was accompanied by Mr. J. Watson MacNaught, His Worship Mayor Henry Wedge, and Dr. G. J. Gallant, President of the Summerside Wing of the Association.

At the Cenotaph, wreaths were deposited by the Commanding Officer, Mr. McNaught, Dr. Hubert McNeill of the Canadian Legion, and by Dr. Gallant on behalf of the local Wing. The C.O., accompanied by his guests, then proceeded to the reviewing stand where he took the salute during the march-past.

R.C.A.F. ASSOCIATION AWARD

This year's winner of the R.C.A.F. Association Trophy is No. 266 (Kimberley) Squadron of the Royal Canadian Air Cadets. In second position was No. 22 (Powell River) Squadron, last year's winner. The winning squadron scored a total of 1975 points out of a possible 2,000. The trophy is awarded annually to the most proficient air cadet squadron in Canada, and the adjudication takes into account all factors of squadron operations, including attendance at parades, effectiveness of the training programme, and the value of the squadron to the community. The activities of the civilian sponsoring committee are also considered. This is the third year in which the trophy has been competed for.

The trophy will be presented to the winning squadron at a later date, together with a cash award and a parchment certificate for permanent possession.



The trophy.

VISITS BY THE NATIONAL PRESIDENT

Air Vice-Marshal Brookes recently visited wings at North Bay, Kirkland Lake, Chapleau, and Sudbury, and found all Wings eager to start in on their fall and winter work. At each Wing he had an opportunity to speak to the Wing members. Optimism was high, and we look for good reports from the Wings in the near future.

The National President also visited Wings at Cornwall, Brockville, Kingston, Belleville, and Oshawa. While in Brockville, as an Honorary Member of the Ground Observer Corps, he presented Air Observer Wings to some fifty ground observer personnel from Brockville and the Delta area.

AUGUST RECRUITING

The Association's recruiting for the R.C.A.F. during the month of August 1954 produced the following contacts and enrolments:

Wing	Place	Contacts	Enrolments
416	Kingston	16	2
402	Sudbury	3	—
703	Red Deer	11	2
		30	4

The National President visits No. 418 (Belleville) Wing. Front row (l. to r.): Sqn. Ldr. F. P. Clark, A.F.C., R.C.A.F. Liaison Officer; Air Vice-Marshal Brookes; P. Burnett, pres.; Air Cdre. W. W. Brown, Chief Staff Officer, Training Command; G. Maybee. Back row (l. to r.): J. O'Bryan; F. Armstrong; J. A. Smith, sec'y.; H. Byers; Flt. Lt. A. F. MacKell, A.F.H.Q. Liaison Officer; L. Murphy; L. Foley; B. Servos; L. Monteith, Canadian Legion; A. Dempsey.

AMHERST AIR SHOW

The Eastern Canada Air Show was held on Labour Day at Amherst, N.S., under the joint sponsorship of No. 105 (Cumberland) Wing and the Moncton Flying Club. A thrilling twenty-minute display was put on by Sabre jets from R.C.A.F. Station Chatham, and the Navy staged a "sea-air rescue" with helicopters. R.C.A.F. Station Summerside band was in attendance.

LIFE MEMBERSHIP

We are pleased to announce the following addition to our Life Membership List: Air-Vice-Marshal A. L. Morfee, C.B., C.B.E., Grand President of the R.C.A.F.A., and Mr. E. O. L. Markell, of No. 601 (Moose Jaw) Wing.

MISS ANNE BREADNER

We deem it an honour to have as a new member of our Association, Miss Anne Breadner, daughter of our late honoured Grand President, Air Chief Marshal L. S. Breadner, C.B., D.S.C. Miss Breadner is now a member of No. 410 (Ottawa District) Wing.

Mr. E. H. Norman, High Commissioner of Canada to New Zealand, lays R.C.A.F. wreath.

CIVILIAN AERODROME FOR BROCKVILLE

Under the guidance of President Hal Willis and Creighton Nutbrown, a member of the Wing executive, No. 426 (Brockville) Wing, is embarking on one of the most ambitious projects yet undertaken by a Wing of the Association. The Wing is sponsoring a move to construct a civilian aerodrome for the city of Brockville and it hopes to sponsor and operate a civilian flying club under the Royal Canadian Flying Club Association, with eventual participation in the Chipmunk training plan of the R.C.A.F. All the preliminary survey work has been done by Wing personnel, and an option has been taken on suitable land. The Wing has been assured of sufficient financial backing both from the city of Brockville and individuals in the area, and the project will probably get under way in the spring.

WELLINGTON, NEW ZEALAND

Mr. E. H. Norman, Canadian High Commissioner to New Zealand, represented the R.C.A.F. Association at the Battle of Britain commemoration services at Wellington, New Zealand.

Our wreath carried a ribbon of Air Force blue bearing the words "Royal Canadian Air Force Association."

OPERATION "PRAIRIE-PACIFIC"

(From Squadron Leader R. Wood, of Training Command H.Q., we have received this pictorial record of a recent peace-time operation that has done much to bring the R.C.A.F. closer than ever to the civilian population of Canada. Sqn. Ldr. Wood, who flew as a navigator with No. 35 (R.A.F. Pathfinder) Squadron during the war and who subsequently spent four years on arctic operations with No. 414 (Photo.) Squadron of the R.C.A.F., is now serving as Command Public Relations Officer. The photographs were all taken by A.C.1 B. Herron, P.R. photographer at T.C.H.Q.—EDITOR.)

ON A MORNING early in August about a hundred officers and airmen, as well as two airwomen, assembled in the Flight Cadets' Lounge at Stevenson Field, Winnipeg, to hear a few words from the Wing Commander who had been selected to serve as O.C. a peace-time operation of a kind new to the R.C.A.F.

"I'm Cal Lee, from Station Trenton," he said informally, "and I'll try to outline, as briefly as I can, who we are and what's expected of us while we're serving together as a unit. In that way we'll all start out on this tour with a full understanding of our responsibilities both towards the operation and each other."

Saskatoon.

Four CF-100s over the bush between Nanaimo and Comox, on Vancouver Island.

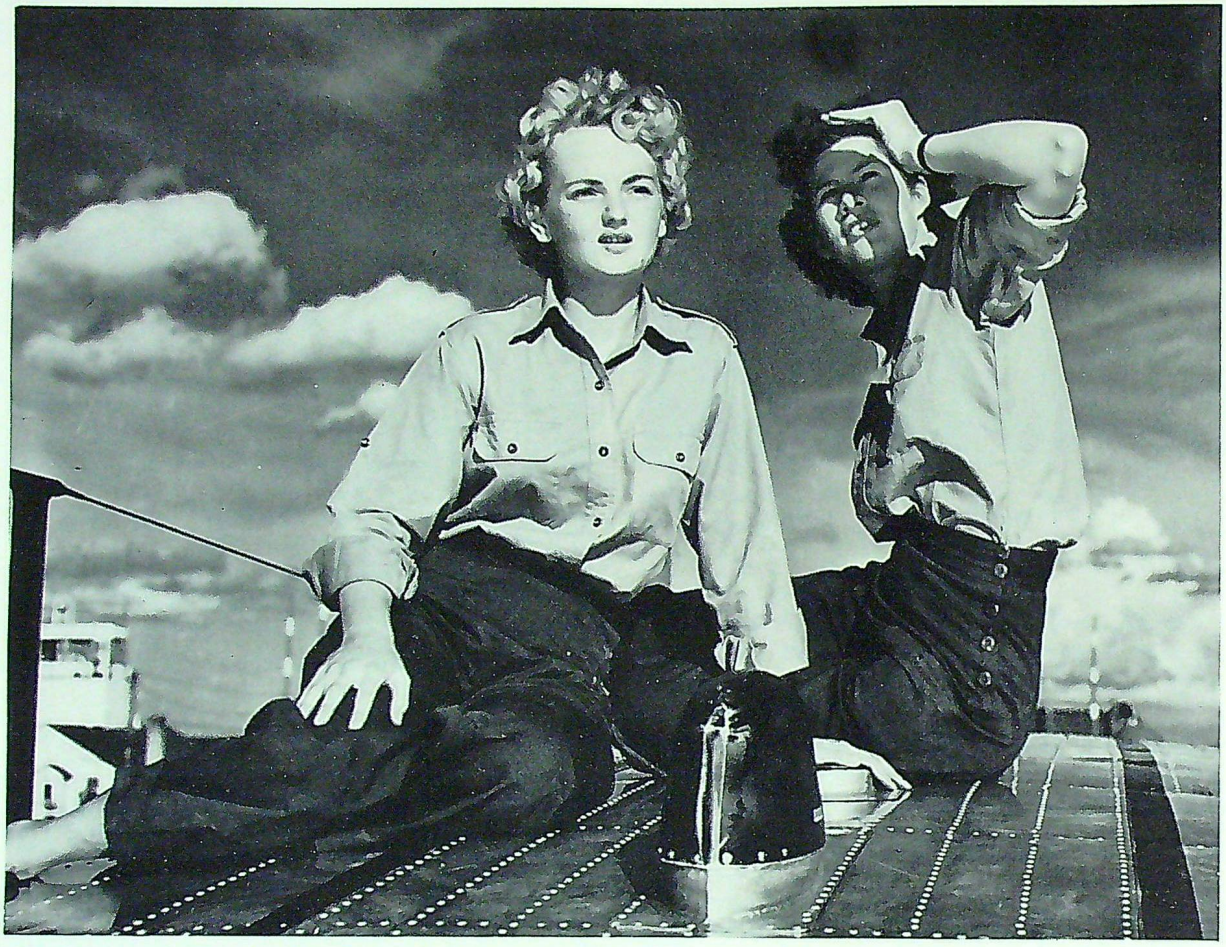
He then went on to explain that the name of the operation was "Prairie-Pacific," and that it had been conceived at Air Force Headquarters as a mission with a threefold purpose. First it would stimulate interest — particularly among younger Canadians — in the R.C.A.F. and its expanding jet operations; secondly, it would acquaint the people of the prairie provinces and the west coast with the new jet aircraft and the rôles played by them in the post-war Air Force; and thirdly, it would serve as an exercise to test the efficiency and mobility of a task force composed of elements drawn from different jet formations and supported by piston-engined heavy transport.

And so, for the first time in the history of the R.C.A.F., a composite squadron of 19 aircraft (15 jets, 3 heavy transports, and an amphibious Canso) awaited the "cleared for take-off" that would send them off on a four-week and 80,000-mile operation.

On August 15th, at Winnipeg, the CF-100s from No. 423 Squadron, the Sabres of No. 431 Squadron, and the Silver Stars of Central Flying School, took to the air in the operation's first 50-minute all-jet display. This performance, seen by an estimated 25,000 persons, gave some indication of the general public's interest — an interest

Wing Cdr. C. C. Lee.

Silver Star aerobatic team. Front row (l. to r.): Flt. Lt. R. Scott, Sqn. Ldr. L. Hill, Flying Officer J. Seaman. Back row (l. to r.): Flt. Lt. D. Payne, D.F.C., A.F.C.; Flt. Lt. A. Bowman.



The two airwomen who took part in the Operation: L.A.W. R. M. Koehn (left) and L.A.W. H. L. Soucy.

that was to mount steadily as the aircraft proceeded westward.

The next week between 25,000 and 30,000 people from Saskatoon and Northern Saskatchewan witnessed the display. ("The biggest crowd in Saskatoon history", reported the "Star-Phoenix"); and two days later, 20,000 persons from Regina and the surrounding district thrilled to the same programme. The latter event was attended by Lieutenant-Governor W. J. Patterson and other representatives of the Provincial Government, the City Council, and the military.

At Calgary, Lethbridge, and Victoria, the story was the same — record crowds, all enthusiastically interested, not only in the flying, but also in the aircraft on static display. Then came the performance at Vancouver, which brought out the greatest crowd in that city's history. According to the press, "more than 100,000 people jammed Sea Island for the R.C.A.F. jet air show." The "Vancouver Province" stated that the display was the biggest and best air show in its (the R.C.A.F.'s) history.

On September 7th, the Port Arthur "News-Chronicle", reporting on the task force's visit to the twin cities, reported that "the largest spectator audience in the history of the Lakehead marvelled

at the spectacular flying aerobatics of the R.C.A.F. jet teams on Sunday, when more than 35,000 Lakehead people witnessed the memorable events." The Lakehead press also paid tribute to the fine work of the ground crew, commenting particularly on the excellent record of serviceability

Sabres crews. Front row (l. to r.): Flying Officers J. A Villeneuve, S. MacDonald, F. Rudy. Back row (l. to r.): Flying Officers G. Fulford, D. Landreville, J. McIlraith.

Some of the C-119 crews. Kneeling (l. to r.) Flt. Lt. C. N. Agar, Flying Officers R. H. Thiessen, A. Pickering. Standing L.A.C.s J. Watson; J. M. Brown; N. S. Justice, flt. eng.; Flying Officers A. Edwards; J. L. Nelson, A.F.C.; L.A.C. M. La Plante.

Miss Helen Teskey, of the Saskatoon "Star Phoenix," about to embark for a cross-country flight.

Two Winnipeg Air Cadets being checked out by Flying Officer Hesjedahl.

which had, up to that time, kept the show operationally in the air for more than eighteen consecutive days.

On September 11th, nearly 200,000 Canadians, ranged along Toronto's lake-front at the Canadian National Exhibition, saw the last performance of "Prairie-Pacific" when the CF-100s (led by Sqn. Ldr. L. P. Bing, D.F.C.), the F-86 Sabres (led by Flying Officer Villeneuve), and the Silver Stars (led by Sqn. Ldr. Hill), flew the last of ten scheduled air displays. The final boom as Flying Officer McIlraith, of No. 431 Squadron, broke the sound barrier for the seventh consecutive time, marked "Prairie-Pacific" as an operation completed.

It may take some time to assess fully the value of the operation, but in the meanwhile it is quite certain that few if any enterprises yet undertaken by the R.C.A.F. have drawn greater crowds, won higher public acclaim, or been carried out over a wider territory.

PINCHED BY HIS OWN PETARD

A policeman stopped a distinguished Briton driving from Toronto to Kingston and accused him of speeding. The offender saw the policeman's evidence, an electronic speed meter, and paid the $12.50 on-the-spot fine without complaint.

The meter is a radar device — and its victim was Sir Robert Watson-Watt, otherwise known as the "father of British radar."

("*Globe and Mail*": Toronto.)

TECHNICAL JARGON

(The following letter appeared recently in "Aviation Week." Perish the thought that it might bring a guilty blush to the cheeks of any of the R.C.A.F.'s technical letter-writers! — EDITOR.)

Engineers usually have little training in writing, but why make a cult of their more barbarous practices by propagating them in a technical magazine? The use of strings of nouns as adjectives is a clumsy expedient, but it seems frequently to be almost inescapable in technical writing, though it is needlessly overdone.

However, the use of nouns as verbs is certainly unnecessary. In the Mar. 15 issue you use the phrase "to vector interceptors to fast-moving target." Vector is a noun, not a verb, and what's the matter with the word "direct," which says just as much and is intelligible to more people? (I suppose that's the difficulty,— it doesn't sound so "scientific" to unscientific people.)

Then something is "optimized", a word which doesn't appear in some dictionaries, but in one, optimize means "to treat optimistically!" The word is miraculously reconverted to a noun in the strange form of "optimization".

Most wonderful of all is the phrase "get firmed up in tangible hardware" which means "get into production." And what's this tangible hardware? What other kind is there? The process is also expressed as "Kellerized", an expression which will probably never be heard again.

Another sort of thing that bothers me is "proved out" (or "proved in") and "phased out", which seems to mean "discontinued".

The suffix "-wise" is sprinkled freely throughout technical discussions where a little rephrasing is usually clearer and more concise. "Performance-wise they do not meet the requirements". Why not say "the performance does not meet the requirements."? There is also development-wise, configuration-wise, and even size-wise!

Semi-technical discussions would be intelligible to more people if all this needless jargon were replaced by plain English.

"BEAU SABREUR"

At an air show in France, two members of the famous Foreign Legion were caught by the R.C.A.F.'s photographer in conversation with Flying Officer T. R. Axcell, a Sabre pilot in No. 410 (F.) Squadron.

Letter to the Editor ★ ★ ★

UNUSUAL REUNION

Dear Sir:

Possibly those of your readers who served during the war at No. 6 Service Flying Training School, Dunnville, may be interested to learn that the No. 6 S.F.T.S. ninth annual reunion was held at the Dunnville Golf and Country Club, Ont., on Sept. 25th.

Total attendance was 85, and members came from many points in Canada and the States — Maryland, Indianapolis, Detroit, Buffalo, Windsor, Toronto, Hamilton, London, Owen Sound, Niagara Falls, Welland, Simcoe, Dunnville, and numerous other places.

A golf tournament was held, but many members preferred to sit around the club-house, reminiscing and fighting over and over again the battle of No. 6 S.F.T.S. Forty or so of those who attended revisited the old station and indulged in on-the-spot nostalgic memories, both pleasant and unpleasant, of bygone days. This was one of the day's highlights and was made possible by the full co-operation of Cpl. Roussell and the R.C.A.F.

Mr. V. B. Collins presided at the banquet, which was provided by Mr. and Mrs. Wm. Muir of the Golf Club. A toast to the Queen was proposed and Padre E. C. McCullagh said grace. The Chairman thanked his committee and those who assisted for their help in making this reunion the best yet.

"Pop" Corn of Detroit was elected president for the coming year, with Ken Gordon of Toronto as vice-president. Frank Scholfield was appointed secretary-treasurer.

Mr. Marian Wodzianski, a former squadron leader in the Polish Air Force, was introduced by Mr. Collins, and he related some of his experiences while flying with the Polish Air Force during the last war.

"Bud" Cleary of Dunnville presented the golf prizes to the fortunate winners. Mr. Tom Fraser of Toronto received the Clare Thundermug Trophy for the best golfer. This masterpiece of Canadian crockery, which has been in circulation since the first reunion in 1946, was donated by Fred Clare of Hamilton. However, Alf Coome of Ancaster, last year's winner, forgot to bring it with him, thus making a formal presentation impossible. The other prizes were won by the following:

Ken Gordon	low gross
"Pop" Corn	low net
Jim Bird	high gross
Reid Richardson	most strokes on any one hole
Jim Buchanan	best-dressed Golfer
Fred O'Brecht	longest put
Art Harrison	most strokes on the sixth hole
Maurice Seim	most honest golfer

Jake Robertson of Indianapolis was presented with a prize for being the member from the most distant point.

A vote of thanks was extended to Herb Rothschild, "Corky" Corkin, Ron Foley, and Reg Richardson for prize donations, to Hazel's Flower Shop of Dunnville for the centre-pieces, and to Maurice Seim, Earle Germano, Jack Welsh, and "Nibs" Vale, for donations of cash to help offset the advertising costs.

Those wives who accompanied the husbands (brave women) were entertained in the afternoon by Mrs. V. B. Collins, and, after a dinner at the Victoria Hotel, joined their husbands at the golf club for dancing and refreshments. Jim Buchanan then showed coloured movies of the celebration in 1952 and 1953, which were most amusing and enjoyed by all.

Frank Scholfield,
P.O. Box 814,
Dunnville, Ont.

FIRST SIKORSKI

The first of ten Sikorski S-55 helicopters recently purchased by the R.C.A.F. is shown here landing at R.C.A.F. Station Sea Island. The aircraft is to be used in search and rescue operations.

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

Answer to "What's the Score?"

1: (b)	2: (a)	3: (d)	4: (a)
5: (c)	6: (d)	7: (b)	8: (a)
9: (d)	10: (a)	11: (c)	12: (a)
13: (c)	14: (a)	15: (c)	16: (c)
17: (d)	18: (d)	19: (d)	20: (d)

ADVENTURE

Why must adventure stories be
Tales of the wild and restless sea?
For me the true adventure lies
Not in the sea but in the skies —
The wind outstripped, unfathomed space,
The changing moods of Heaven's face,
The thrill of speed, the sense of pow'r —
A lifetime in a crowded hour.

Look up, look up and see me soar
Up thro' the blue to Heaven's door!
My spirit's free, my heart is light:
I climb, I dive, I wheel in flight.
My God is here, I feel Him nigh!
Was ever man who lived as I?
Go take your wild and restless brine:
Mysterious space, unsearched, is mine!

L.A.W. W. Kynaston,
No. 6 Repair Depot.


The
ROUNDEL