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ROYAL CANADIAN AIR FORCE



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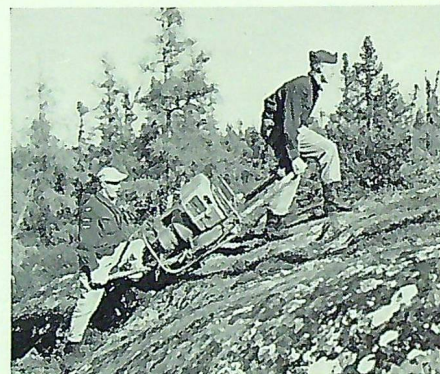
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This Month's Cover



LAC's Lalancette and Tomchuk carrying the power unit for Shoran ground equipment. (See article on "Shoran Survey.")

Sgt. Shatterproof...

We Presume

RETURNING from lunch two days ago, we found a note pinned to the editorial blotter with a paper-knife. Who put it there is a complete mystery. The office door was locked, as we had left it an hour or so earlier; and the guard at the front desk of "A" Building was emphatic on the score that nobody could have obtained possession of the duplicate key without his knowledge. Nor has examination of the knife for fingerprints revealed anything except certain curious markings on the hilt. According to Wing Commander Atherton (our Chief Provost) and his posse, they look as though they might have been made by the tendrils of some climbing plant . . . perhaps a grapevine. In other words, the best brains of the R.C.A.F. are baffled.

The message itself proved to be no less cryptic than the method of its delivery. It was typed on the blank side of a dog-eared title page torn from a copy of K.R. (Air), and it bore no signature . . .

To every man comes his finest hour. I am at last locked in a death-struggle with the Kremlin. I can say no more at the moment, as wrestling with the

octopus of international espionage demands my full attention. I will get in touch with you again as soon as I have unravelled the tangled skein of intrigue that is even now tightening about the throat of our Service. Until then I am incommunicado - though should the Brass get themselves into more than normal difficulties, it is just possible that a top-secret signal addressed to FIELDBOY may find its way to me through the closing dragnet of enemy agents. And, Sir, should this be my last fight, tell His Majesty -

Since the note ends at this point, and since a top-secret signal to FIELDBOY has failed to elicit anything but a suggestion that its originator ought to take his annual leave as soon as possible, there seems to be nothing for it but to await further developments.



No. 416 (Fighter) Squadron



By Wing Cdr. F. H. Hitchins, Air Historian

SEVENTY-FIVE enemy aircraft destroyed and a further 40 damaged in air combat, 874 vehicles, 14 tanks and armoured fighting vehicles, 21 trains, 69 locomotives, 127 railroad cars, 44 rail-lines, and a miscellaneous assortment of other targets clobbered or blasted in ground attacks — such is the war record of No. 416 (Fighter) Squadron of the Royal Canadian Air Force. For forty months the squadron played its part in the long air war over north-western Europe. It guarded our shipping moving along the east coast of Britain; it shared in attacks on enemy convoys creeping along the shores of Hitler's "European Fortress"; it fought the Luftwaffe over the Netherlands, northern France, the Norman beaches, Arnhem and western Germany. With bomb and bullet it harassed the Wehrmacht's lines of communication and, as the figures cited above indicate, it took a heavy toll of rolling stock and vehicles. After the fighting ended, it served with the British Air Forces of Occupation in Germany until March 1946.

On these varied air operations No. 416 lost 35 pilots missing, of whom 19 were killed or presumed dead, 14 were taken prisoner (two of whom escaped), and the other two presently turned up safe, although wounded. Seven pilots lost their lives in mishaps in the air or on the ground. By its services the squadron won 11 D.F.C.'s, one Bar to

the D.F.C., a D.C.M., an American D.F.C., a Netherlands Flying Cross, and at least one Mention in Despatches.

The squadron's story began at Peterhead, on the east coast of Scotland, late in November 1941 with the arrival of 23 Canadian pilots fresh from their courses at Operational Training Units. The Commanding Officer, Sqn.Ldr. P. C. Webb, and his two flight commanders were experienced fighter pilots from the Royal Air Force, and under their guidance the squadron settled down to the usual period of intensive training preparatory to becoming operational.

In January 1942, No. 416 was passed as fit for war duties and embarked on a long tour of convoy patrols and defensive scrambles. Peterhead was in a relatively quiet zone, although enemy reconnaissance aircraft and "hit-and-run" raiders occasionally came across the North Sea. In one attack on the airfield, late in November 1941, the squadron suffered its first casualty when one of the R.A.F. flight commanders was killed by the raiders' bullets. Changes in personnel were frequent during this early period as many of the pilots were posted away, most of them going to Malta and the Western Desert. Among those who left was Sqn.Ldr. Webb; and Lloyd V. Chadburn,

Sqn. Ldr. L. V. Chadburn





Kenley, 1943. Seated (l. to r.): Pilot Officer J. C. McLeod, Flying Officers R. D. Phillip, D. B. Rogers, Sgt. K. R. Linton, Flying Officer N. A. Keene, Sqn. Ldr. B. D. Russel, D.F.C., Flt. Sgt. R. F. Breen, WO L. G. D. Pow. Standing (l. to r.): Sgts. C. W. McKim, N. F. Houghton, Pilot Officer H. A. Terris, Flying Officer L. Foster, Flt. Lt. R. H. Walker, Flying Officer J. F. Richardson, Flt. Lt. R. A. Buckham, Pilot Officer B. S. Siddall.

one of the R.C.A.F.'s greatest fighter leaders, took over command of the unit in March 1942.

The squadron fought its first combats late in May when two He.111's were engaged over the North Sea and one was claimed as damaged. A month later No. 416 left northern Scotland for southern England to take part in the combined operation against Dieppe. To its great disappointment, however, the operation was postponed and the squadron was soon back at Peterhead and Dyce. While the squadron was in the south, its only activity had been some coastal patrols on which two pilots were shot down into the Channel by enemy fighters.

The long tour in the Highlands finally ended in July 1942, when Sqn.Ldr. Chadburn's unit again moved south to Martlesham Heath in Suffolk to join No. 11 Group, with which it remained until May 1943. For a time the pilots were still engaged on convoy patrols and scrambles, but these activities were more fruitful than they had been in the north, and within a day of its arrival at Martlesham the squadron destroyed its first enemy aircraft, a Do. 217 which Flt.Lt. P.L.I. Archer shot down in flames. A second Dornier was destroyed a fortnight later in another combat over the sea.

Then, on August 19th, the postponed operation against Dieppe took place, and No. 416 went into

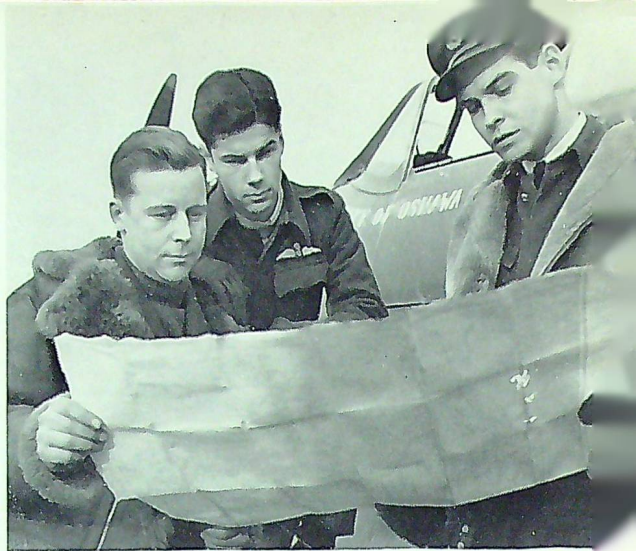
action for the first time as a squadron. Brilliantly led by Sqn.Ldr. Chadburn, who received the D.F.C. as a sequel to the day's work, the pilots destroyed three enemy aircraft, probably destroyed one more, and damaged seven.

In September 1942 the squadron moved to Redhill, where it remained for the next four months. This period was marked by "circuses" on which No. 416 usually flew as a wing with Nos. 403 and 412 Squadrons, escorting bombers to attack targets in northern France, Belgium and the Netherlands. "Rhubarbs" (low-flying attacks on ground targets) were another feature of the pilots' work during these autumn and winter months. Bad weather, however, seriously hampered operations, and on the occasions when they were able to penetrate over enemy-held territory the pilots seldom saw enemy aircraft. Only the "rhubarbs" yielded any items for the squadron's bag: 13 locomotives, several flak posts, block-houses and signal boxes, a small ship, and a number of German soldiers.

In the course of one squadron "rhubarb" on 23 January 1943, Sgt. J. R. McLeod's Spitfire was put out of commission by a flak burst, so that he was forced to crashland near Le Havre. The pilot was captured and spent several months in a P.O.W. camp until, after repeated efforts, he succeeded in escaping and made his way back to the United Kingdom. For his services, McLeod (who had been promoted to Warrant Officer and was later commissioned) was awarded the Distinguished Conduct Medal, a decoration rarely won by an airman. Ron McLeod, indeed, was the only member of the R.C.A.F. to receive the D.C.M. during the war.

During Sqn.Ldr. Chadburn's tenure of command, his unit was adopted by the City of Oshawa which kept it well supplied with generous gifts of cigarettes and other comforts. The name "City of Oshawa" was painted on many of the Spitfires, together with the squadron badge. The badge depicts a leaping lynx on a maple leaf background, and carries the motto "Ad Saltum Paratus" (Ready for the leap).

Early in January 1943, Sqn.Ldr. Chadburn finished his tour in command of the squadron and was succeeded by Sqn.Ldr. F. H. Boulton. A few



Left to right: Sgt. J. R. McLeod, Pilot Officer J. F. Richardson, Flt. Lt. Hugh Russel.

weeks later No. 146 moved from Redhill to Kenley, joining Nos. 402, 403 and 421 in a Canadian fighter wing led by Wing Cdr. K. L. B. Hodson, D.F.C., and later by Wing Cdr. J. E. Johnson, D.F.C. Here it stayed for four eventful months, making frequent "circuses" across the Channel and North Sea, in the course of which eleven enemy fighters were destroyed, another was probably destroyed, and six more were damaged. The squadron lost six of its own pilots, three of whom were missing from one engagement against heavy odds in February.

Sqn.Ldr. Foss Boulton was outstanding during this period with the Kenley Wing. He personally destroyed five Messerschmitts and Focke-Wulfs, probably destroyed another fighter, and damaged three, a record which brought him the D.F.C. Before the award was promulgated, however, Boulton had become a casualty. Shot down, severely wounded, in a combat over Doullens on 13 May 1943, he spent almost a year behind prison barbed wire before being repatriated.

When Boulton went missing, Sqn.Ldr. R. W. McNair, D.F.C., took command of No. 416 for a month (17 May to 18 June 1943), and then Sqn.Ldr. F. E. Grant (19 June to 27 August 1943), Sqn.Ldr. R. H. Walker (29 August to 20 October 1943), and Sqn.Ldr. F. E. Green, D.F.C. (20 October 1943 to 29 June 1944).

From Kenley the squadron moved north, at the end of May 1943, to Wellingore, a satellite of R.C.A.F. Station Digby in Lincolnshire, where it stayed for a few days before travelling on to the

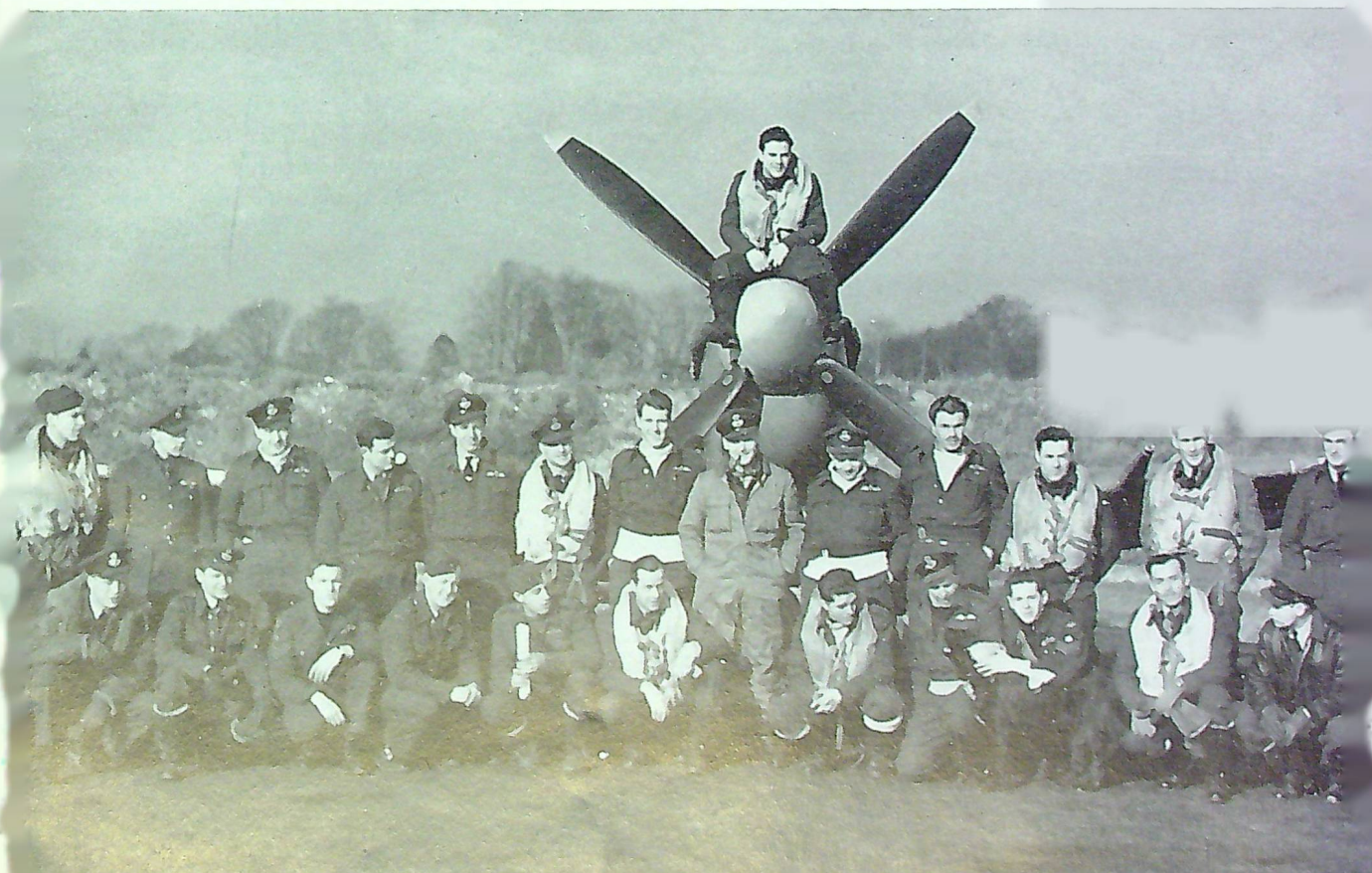
parent station. It was at this time that Flt.Lt. R. A. Buckham left No. 416 at the end of a long 18-month tour. Joining the squadron upon its formation in November 1941, Buckham had risen from sergeant pilot to command of a flight, had destroyed four and a half enemy aircraft and damaged two, in addition to half a dozen locomotives and other targets shot up in ground attacks; and had won both the British and the American D.F.C.'s.

At Digby, No. 416 joined No. 402 Squadron in a Canadian fighter wing under the leadership of their former C.O., Wing Cdr. Chadburn. During the eight months that the squadron flew with the Digby wing, that station was its "home" only in a restricted sense. For operations the pilots (and



Left to right: Flt. Lt. L. L. Nault, Flying Officers J. F. G. Picard, J. J. M. Menard, R. O. Brouillard.

Kenley, 1944. Front (l. to r.): Pilot Officer W. H. Palmer, Flying Officer W. J. Simpson, Flt. Sgt. J. A. R. Boulais, Flying Officer A. J. Fraser, WO J. E. R. McCrae, Flying Officer J. B. Rainville, Flt. Lt. D. W. Hayworth, Flying Officer S. T. Lundberg, Flt. Sgt. J. C. R. Maranda, Flying Officers B. Eskow, R. R. St. Georges, Pilot Officer K. F. Scott. Rear (l. to r.): Flt. Sgt. J. C. Greenman, Flt. Lts. W. F. J. Mason, G. R. Patterson, Flying Officers D. R. Cuthbertson, A. G. Borland, A. R. McFadden, Flt. Lt. D. E. Noonan, Sqn. Ldr. F. E. Green, D.F.C., Flt. Lts. D. F. Prentice, J. L. Campbell, Flying Officers J. B. Gould, D. W. A. Harling, Pilot Officer G. H. Farquharson. On prop. boss: Flying Officer A. J. Tafuro.





Flt. Lt. Frank Grant.

sometimes the groundcrews) went to airfields nearer the coast (Coltishall, Matlask, Bradwell Bay, Ford, Hurn, West Malling, etc.), returning to Digby, often after an absence of several days, to have a brief rest, get a change of clothing, and catch up on the mail from home while the maintenance personnel checked the aircraft and equipment. On their operations the pilots ranged over the enemy-held coastal sector from Texel to the Cherbourg peninsula, escorting Beaufighters on antishipping strikes ("roadsteads") against Nazi convoys moving along the Dutch coast, or covering medium and heavy bombers while they pounded inland targets. The squadrons in Chadburn's wing were very mobile, often carrying out two operations on one day from widely separated advanced bases.

For his brilliant leadership during this period Wing Cdr. Chadburn was awarded the D.S.O. and Bar, being the first R.C.A.F. officer to win this high decoration twice. While serving under his command, No. 416 Squadron destroyed eleven

enemy fighters (including three in which the Wing Commander shared), probably destroyed one more, and damaged a further six (one of which Chadburn also shared). In addition to the "shares" mentioned, the wing leader personally shot down four aircraft, probably destroyed two, and damaged two while flying with the squadron. Outstanding among the many engagements of this period was an action fought off the Dutch coast near Ijmuiden on 3 November 1943, in which Wing Cdr. Chadburn destroyed two Me. 109's, the pilots of No. 146 shot down four more, and those of No. 402 accounted for a further three. One Canadian pilot was lost. By an odd coincidence, the squadron's score (11-1-6) with the Digby wing was exactly the same as its previous record with the Kenley wing.

In February 1944, when plans for the Allied invasion of the continent were beginning to take shape, the squadron returned to Kenley, where it joined Nos. 403 and 421 Squadrons in 127 R.C.A.F. Airfield (or Wing). These three squadrons flew together until the end of the war. Equipped now with Spitfire IX's, No. 416 began dive-bombing operations, chiefly against "noball" or flying-bomb sites, but including also rail junctions, bridges, artillery posts and other targets in the future battle area across the Channel. The squadron continued its escorts to bombers, and made fighter sweeps in search of the Luftwaffe; but the enemy fighter force was very elusive, and in this pre-invasion period (February through May 1944)

Left to right: Group Capt. W. R. MacBrien, C.O. No. 127 Wing; Air Marshal L. S. Breadner, C.B., D.S.O., A.O.C.-in-C. R.C.A.F. Overseas; Sqn. Ldrs. E. P. Wood, J. F. McElroy, D.F.C., W. A. Prest, H. W. McLeod, D.F.C.





Groundcrews of No. 416 at Petit Brogel, March 1945

the pilots could score only five kills, all shot down in one brisk encounter near Etrepagny on May 22nd. These successes raised the squadron's total to 29 destroyed, 3 probably destroyed, and 20 damaged.

The weeks preceding D-Day were filled with numerous exercises in conjunction with the Army, and practice-moves to give the units training in mobility. After two months at Kenley, No. 416 Squadron moved with 127 Wing to Tangmere on the Sussex coast — their "invasion station."

D-Day (June 6th) marked the opening of a period of intense activity, the squadron flying a schedule (weather permitting) of four patrols per day over the western (American) sector of the beach-head. On the 13th the pilots made their first landings on the beach-head to refuel and rearm between patrols. It was a sad day for 127 Wing and particularly for No. 416 Squadron, however, as Wing Cdr. Chadburn, who had become Wing Commander Flying for the wing at the end of April, was killed in a collision with another aircraft.

On June 16th the squadron crossed the Channel to an airstrip at Bazenville on the Norman coast and began operations from that base on the following day. Armed reconnaissances in search of enemy transport vehicles now alternated with patrols over the beaches and battle lines. A few



Airfield in Holland. Left to right: LAC's G. L. Stosen, J. J. Jerry, J. P. Jerry, G. L. Watson, C. B. Robb.

ground targets were found — 16 M.E.T. (mechanized enemy transport) “flamers,” 10 “Smokers” and 9 damaged — but the pilots had no luck in the air until June 28th, when they finally had two good combats which cost the Luftwaffe four fighters destroyed and another damaged.

Sqn.Ldr. Freddy Green was injured the next day in a crashlanding with his flak-damaged Spitfire, and command of the squadron passed to Sqn.Ldr. J. F. McElroy, D.F.C. A veteran of Malta, where he had destroyed five enemy aircraft plus several probables and damaged, McElroy had recently added two more kills to his score while leading a flight in No. 421 (Red Indian) Squadron.

In July, a month of very good hunting in the air, Sqn.Ldr. McElroy’s pilots shot down twelve German fighters and counted another four as damaged. Nine of these successes were won on July 14th, France’s national holiday, when squadron patrols three times engaged the enemy. One encounter took place right over the airfield at Bazenville — to the delight of the cheering ground crews. Flt. Lt. D. E. Noonan was the top scorer this month with two and a half destroyed, which gave him a total of four destroyed plus three shared during his extended tour, an achievement for which he received the D.F.C.

Only one pilot was missing from the many operations carried out in July, and he was absent for only a short time. Forced to bale out over

Proud father J. F. McElroy passes out cigars to Flt. Lt. J. B. Rainville, Flying Officer W. J. Simpson, and Flt. Lt. A. H. Sager.



Flt. Lt. N. G. Russell, D.F.C.

enemy-held territory on July 12th, Flt. Lt. J. L. Campbell was captured and confined in a stable, pending transfer to a P.O.W. camp in Germany. The transfer was never made, for Campbell managed to get possession of a saw and, with several companions, made his escape. The French underground looked after the men until they were able to reach the Allied lines.

In August, ground-strafting along the roads behind the battle front reached a peak. No. 416 counted 150 enemy vehicles in flames, 105 more smoking and a further 103 damaged, in addition to 10 tanks, 8 assorted vessels, and a locomotive destroyed or well battered. Most of this record was achieved on two days (August 18th and 19th) when the beaten Nazi army, caught in an iron trap, was trying to escape eastward through a narrow gap by Falaise. The Luftwaffe made little effort to protect the Wehrmacht in its plight, and the squadron was able to add only three enemy aircraft destroyed and one damaged to its score.

By the end of August the Battle of Normandy was over and the pursuit to the Rhine was under way. Since D-Day the pilots of No. 416 had shot down 19 Nazi fighters and damaged 6 in air

combat, and in ground attacks had deprived the enemy, permanently or temporarily, of the use of 370 vehicles, 9 tanks, 8 vessels and a locomotive. Their own losses in that period were one pilot missing, presumed dead, and another temporarily "detained" behind the enemy lines.

Following in the wake of the armies, No. 416 Squadron moved with the Wing from Bazenville to Illiers l'Évêque, near Dreux, in the last days of August; but the battle front was already out of range of the Spitfires, and for almost three weeks the squadrons were off operations. Then they moved forward again to Le Culot in Belgium for a brief but spectacularly successful stay. Between September 25th and 30th, Sqn.Ldr. McElroy and his pilots brought down 19 enemy fighters confirmed as destroyed, and fired damaging bursts into 9 more. They lost two pilots killed and one taken prisoner. Most of the action on these days occurred around Arnhem and Nijmegen, where the great airborne attacks had been delivered earlier in September, and where the Luftwaffe was now trying to knock out some vital bridges. Included in the squadron's long list of victories was one of the new German jets, an Me. 262 which Flt. Lt. John McColl damaged before it streaked out of range.

From Le Culot the squadron advanced to Grave, an airfield in the Netherlands that was but a few miles from the front lines. Me. 262's frequently came over to drop anti-personnel bombs that caused some casualties among the Wing's ground personnel. After a few days at Grave, however, heavy rains made the field unserviceable and the squadrons fell back to the Brussels area, going first to Melsbroek (October 22nd to November 3rd) and then to Evere (November 4th to March 2nd). Sqn.Ldr. McElroy came to the end of his tour at Melsbroek and J. D. Mitchener, D.F.C., stepped up from "B" Flight to take command of the squadron.

The winter months by Belgium's capital were comparatively quiet, in so far as No. 416's air operations were concerned. Weather was a serious handicap, and the number of sorties for November, December and January averaged only 107 per month — in contrast to August's record 820.

There were two breaks in the last weeks of 1944, when the squadron went to England for an air-firing course and went back again to pick up new Spitfire XVI's to replace the IX's. Re-equipment was completed just in time to permit the pilots to share in a flare-up of aerial activity resulting from the Nazi counter-attack in the Ardennes. Flak was extremely "hot" over the area where the "Battle of the Bulge" was being fought, but few enemy aircraft were seen. Earlier in December, Sqn.Ldr. Jake Mitchner had crashed an Me. 109, and on the last day of the year Flying Officer Rex Tapley blew an F.-W.190 to pieces in the air. But against these two destroyed and damaged, the squadron reported four pilots missing, two of whom were presumed dead, one was taken prisoner and the other was later reported safe, although wounded.

On the morning of New Year's Day 1945, the German fighter force made a series of surprise low-flying attacks on many Allied airfields in Belgium and the Netherlands. Thirty or more F.W. 190's and Me. 109's strafed Evere, doing considerable damage to No. 416's aircraft. Several of the Spitfires were preparing to take off when the attack began, and three were hit before they could leave the runway. Only one pilot, Flt. Lt. D. W. A. Harling, was able to get into the air: single-handed he engaged the enemy over Brussels and was shot down and killed. Only a few days before his death, Dave Harling had been awarded the D.F.C. in tribute to his successes in the air (4½ enemy aircraft destroyed, one damaged) and on the ground (at least 30 vehicles).

Although the Luftwaffe attack left the squadron with only four aircraft serviceable, replacements were soon flown over from England, and within a few days it was again operating at full strength, making armed reconnaissances into the Rhein-Münster area to interdict enemy movements by road or rail. In February the pilots began toting bombs once more to blow up rail lines or other suitable targets. The total yield from these operations in the first two months of 1945 was: 4 rails cut, 11 vehicles and 4 locomotives destroyed, 66 vehicles, 15 locomotives, and 66 railroad cars damaged.



Sqn. Ldr. D. C. Laubman, D.F.C.

Much of the squadron's work in these weeks had been connected with the aerial preparation for the proposed airborne crossing of the Rhine by Wesel. As the time for that operation drew nearer, 127 Wing moved up from Evere to Petit Brogel in north-eastern Belgium, where it remained until the end of March. The attack, on the 24th, was a success, the personnel at Petit Brogel having a "ringside seat" for the show, as the great fleets of transports and gliders passed directly over the airfield. No. 416 had a good month at cutting rails (24) and clobbering ground targets, but the only air victories were two Focke-Wulfs which

Flt. Lt. Webb Harten shot down in flames in one brief combat.

With the crossing of the lower Rhine, the Army poured into northwestern Germany and 127 Wing followed close behind in a series of rapid moves, first to Eindhoven (March 31st to April 11th), then, by way of Goch, to Diepholz (April 14th to 26th), and finally to Reinsehlen, where it was based on V-E Day. Dive-bombing and ground-strafting filled these last weeks, the total results running to 16 rail cuts, 338 assorted vehicles, 13 locomotives, 39 freight cars, 12 (or more) buildings, and 5 guns.

The enemy's flak defences hotly opposed the low-flying Spitfires and two pilots were shot down and killed. Enemy aircraft, however, were now rarely seen, the one noteworthy exception being a Do. 217 which Pilot Officer Larry Spurr and Flying Officer Rex Tapley crashed in flames on May 3rd to score the squadron's 75th and final victory.

After hostilities ceased, No. 416 took part in several "fly-pasts" over German cities. Then it was selected as one of four fighter squadrons which the R.C.A.F. contributed to the British Air Forces of Occupation, and early in July it moved from Reinsehlen to Utersen, near Hamburg, to join 126 Wing. The next eight months passed quietly with much practice flying and a few more "fly-pasts." Finally the squadron's long overseas tour — four years and four months — came to an end, and on March 15th, 1946, No. 416 Squadron was disbanded.

After a lapse of almost five years the squadron was reformed at Uplands, Ontario, on 8 January 1951, as a Regular fighter unit in the Air Defence Group, under the command of Sqn.Ldr. D. C. Laubman, D.F.C. and Bar, one of the R.C.A.F.'s leading fighter pilots. Initially the squadron is being equipped with Mustang fighters, until Sabre jets are available.

50 Years Ago

A proposition is under way to make an endeavour to lighten to some extent the equipment of an infantry soldier in heavy marching order. When it is taken into consideration that an infantry soldier under heavy marching orders has to carry 73 pounds 15½ ounces, exclusive of the water in his canteen which weighs approximately three pounds, it will be seen that this question is worthy of action.

("Army Navy Air Force Journal": U.S.A.)

Shoran Survey

By Flt. Lt. K. W. Macdonald, No. 408
(Photographic) Squadron

(The author of this article has been the officer commanding No. 8 Shoran Detachment of No. 408 Photographic Squadron since Shoran was first put to operational use in 1949. During the war he completed a tour of operations on Halifaxes with No. 192 Radar Ferret Squadron, R.A.F.—EDITOR)



The author.

FOR THE PAST TWO SUMMERS, Air Force personnel at Stations in various parts of Western Canada have been mystified by the appearance of certain strangely equipped Lancasters of No. 408 (Photographic) Squadron. Instead of the normal aerial cameras, they were fitted out with an impressive array of mysterious "black boxes," strange navigational instruments, and coloured flashing lights. They were not, however, new secret weapons. They were merely Shoran aircraft, used for a particular type of survey. As the mists of security which cloaked the experimental stages of Shoran are dispelled, the paradox of photographic squadron aircraft incapable of taking aerial photographs is now gradually being accepted.

* * *

For some time, the Department of Mines and Technical Surveys had been faced with a problem which is peculiar to a country like Canada. Only in the narrow fringe of the Dominion north of the American border had *accurate* surveys been made, and coverage was desired, for various reasons, over the entire country. Remarkable progress had been made in the aerial photographic programme, but photographs of the ground

are of no practical use for map-making without reference points on the earth's surface with which to fix the position of the photographs. How were these reference points to be obtained?

The normal method of surveying by the use of a theodolite (an instrument used for measuring angles) and a chain (a long metal tape measure) was obviously unsuitable for covering a vast, sparsely populated and — in many regions — extremely rugged country. Such a proceeding would take many decades. Therefore the familiar Astro (a method of positioning from observation of celestial bodies) was utilized for many years as a temporary expedient. But, since the maximum error of Astro is in the region of 300 feet, it was not sufficiently accurate for all the purposes to which the results of surveying are applied. The problem was to find a method of survey which would be more accurate than Astro and at the same time faster than normal survey by visual triangulation.

The solution to this problem was another achievement based on the accelerated development and production of radar gear that resulted from the Second World War. One of the many

such items of equipment to be produced was Shoran (a distant relative of Loran), which was intended primarily to be used as a blind bombing aid. To explain the matter simply, Shoran equipment measures the time taken for a pulse transmitted from the aircraft to travel to and return from a distant radar station, divides this time in half, and converts the resultant time into units of distance.

So here was a method, using equipment already available, to measure the distance between points on the ground without having to travel a tortuous path between them. By beginning in the surveyed fringe of Canada, and progressively moving the ground radar stations further northward, the distance between pairs of these stations could be

LAC's Belanger, Melanson, and Ryder at Cree Shoran station.



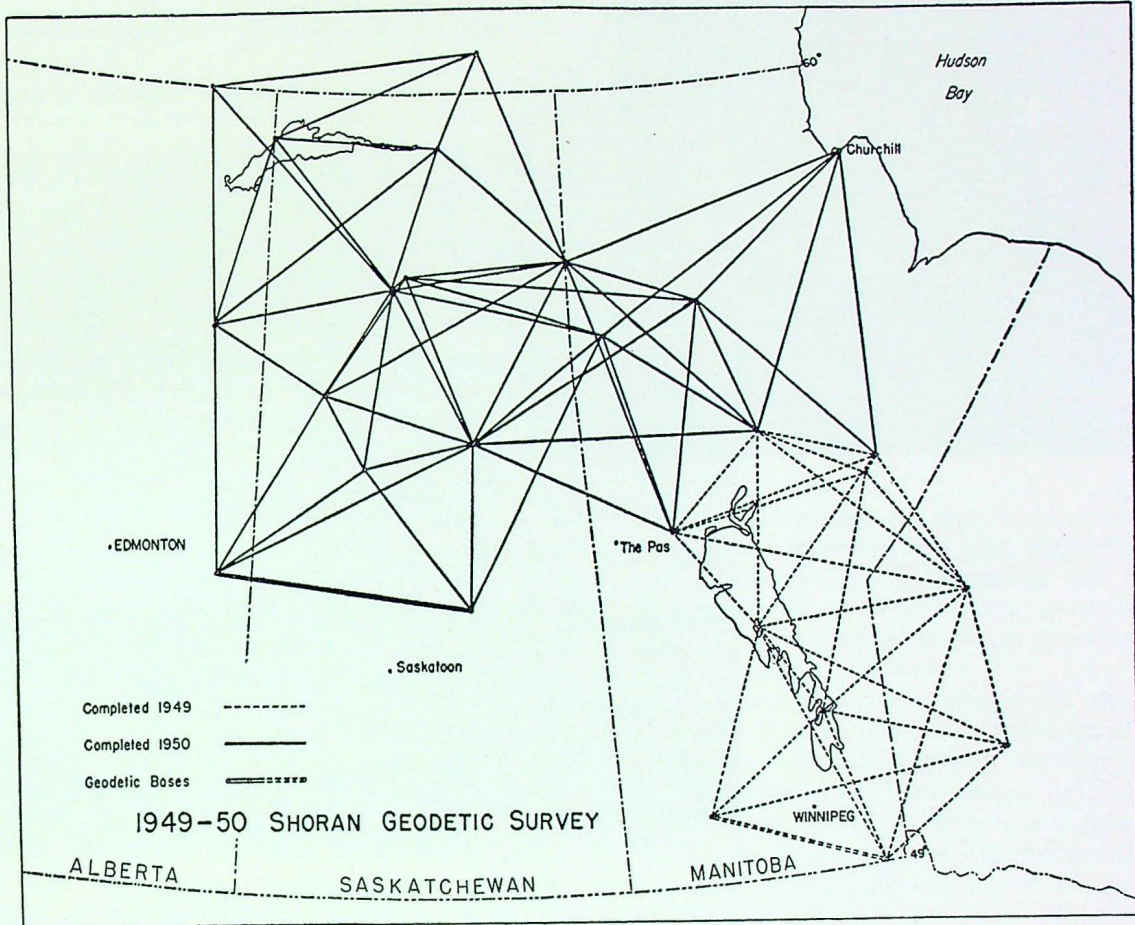
Norseman about to leave ground station at Lac la Ronge.



Shoran ground station at Peter Pond.

measured, and used to build up a lattice-work of accurately known positions. Shoran appeared to be especially suitable for this purpose because of its extreme accuracy (1 in 58,000, or an error of about one foot in ten miles).

Other countries, it will be interesting to note, are developing survey methods along similar principles, but, as far as can be ascertained, none



of them are so advanced as Canada in their practical application. Basically American equipment, Shoran has been used for a similar purpose in the United States, with an accuracy of 1 in 28,000 (an error of about one foot in five miles).

A preliminary period of experimentation was, of course, necessary, during which the National Research Council's engineers succeeded in converting the basic Shoran equipment from a blind bombing aid into a precision survey instrument. The regular cycle of operations began in 1948, with the selection by the Geodetic Survey Section (Dept. of Mines and Technical Surveys) of sites for the ground radar equipment, which would be

suitable from a survey point of view. The Shoran Detachment, operating with Cansos and float-equipped Norseman aircraft, then flew geodetic parties into the selected sites to prepare them for occupation by the radar stations during the following season. During 1949, after the arrival of the Shoran support and Shoran detachments in Winnipeg from their squadron home base at Rockcliffe, the first actual operational installations of these Shoran ground stations began.

The transportation of the installation parties is done by the Shoran Support Detachment, using Canso and Norseman aircraft. The detachment also fulfils the vital function of keeping the radar



*Main base of Shoran operations in 1950
at The Pas.*

*Wholdaia ground station. LAC Isaenko
makes furniture while LAC Tomchuk
establishes contact with main base at
The Pas.*



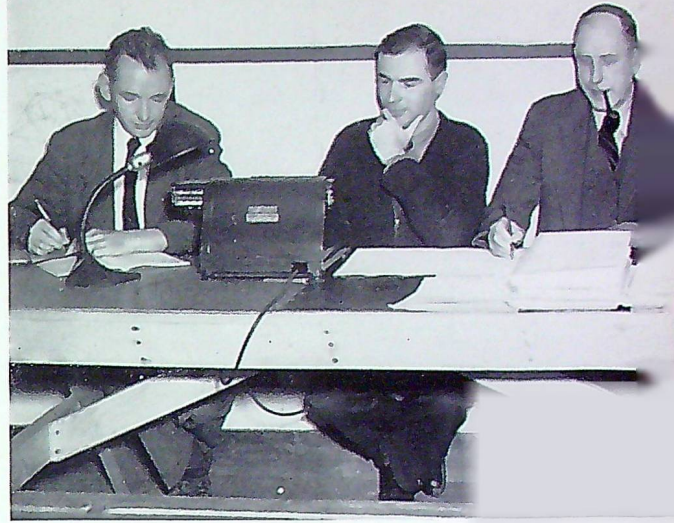
Canso unloading supplies at Wholdaia ground station.



stations supplied with rations, spares, and other essentials.

The normal complement of personnel at each radar station is two or three airmen of the Shoran Detachment. One of the most interesting facets of Operations Shoran is the life led by these airmen. Isolated except by radio contact, living in tents, often working long hours under trying conditions, beset by blackflies and mosquitoes, theirs is no easy job. There are cases on record of tents being torn open by bears while the unarmed occupants slept. (Revenge came later, when firearms were flown in.) There have been instances too, of wolf hunts organized to stop the pilfering of rations. None the less, it is a life that everyone seems to want to go back to, once they have experienced it.

After the first two radar ground stations have been installed and their equipment made ready for operation, the stage is set for the actual line-measurements by the Shoran Detachment's Lancasters. To ensure accuracy, each line is measured by radar a minimum of sixteen times, normally eight measurements being made on one day, and eight on another. These measurements are made at the mid-point of a line joining the two radar stations and are all recorded by a movie-type camera which takes pictures of the readings of the airborne radar and other instruments. The chart accompanying this article shows the progress made



Mr. Neale, of N.R.C., and Messrs. McLean and Ross, of the Dept. of Mines and Technical Surveys.

in terms of lines measured up to the end of the 1950 season. The length of each season is, of course, dependent upon the length of time that lakes adjacent to the Shoran ground station sites remain free of ice and thus permit operation of Canso and Norseman aircraft.

In conclusion, it is encouraging to note that the finishing touches being given to the calculations by geodetic survey show that an extremely high degree of accuracy has been reached by this new method of survey. All evidence to date indicates that the R.C.A.F. has achieved its goal of providing a rapid and accurate method of survey in Canada's northland.

New Killer-Sub

THE FIRST of the Navy's post-war anti-submarine submarines is 195 feet long and displaces 750 tons as compared to the present fleet type submarine, 311 feet long and displacing about 1,500 tons.

Rear Adm. C. B. Momsen, U.S.N. emphasized the importance of the new killer-type submarine in the Navy's future programme when he said: "It is around this type that we propose to build

the submarine defence against the submarine. I can say that from my own experience there is no foe that strikes more terror in the heart of a submariner than an enemy submarine operating in the same waters. It is somewhat analogous to two blindfolded antagonists armed with baseball bats, each waiting for the other to break silence."

("Army Navy Air Force Journal": U.S.A.)

ROYAL CANADIAN AIR FORCE

Association



As this is being written, the Ontario Group Convention is the only Provincial Convention of which we have received the minutes. They indicate a healthy situation, with an increase of seven new Wings during the past year. There are now thirty-nine Wings in Ontario.

The new executive for the coming year consists of:

President	Air Vice-Marshal Brookes, C.B., O.B.E. (ret'd)
Vice-President	H. C. Beaupré (Kingston)
Treasurer:	H. M. Cootes (Toronto)
Secretary:	H. W. R. Sayers (Richmond Hill)
Northern Ontario Representative:	R. Christie (North Bay)

Several resolutions of general interest were adopted at the Convention. They were:

● That, since the Government has eliminated the word "Dominion" as part of the official name of this country, the Dominion Executive Council of the R.C.A.F. Association consider the discontinuance of the word "Dominion" with reference to the Association, and that the term "Federal" or "Central" (Executive Council), or some similar title, be substituted.

● That the Dominion Executive Council be expanded to provide for W.D. representation from Eastern Canada (the Maritime Provinces), Central Canada (Ontario and Quebec), and Western Canada.

● That officers of R.C.A.F. Reserve Units be issued with and permitted to wear battle dress.

● That, since the R.C.A.F. appears to be concentrating on certain branches of the R.C.A.F. Reserve to the exclusion of others, the Service be

asked to come out with some specific policy with regard to R.C.A.F. veterans of all trades.

● That immediate steps be taken by the Department of National Defence to provide training for Reserve Air Force Personnel where the location of existing or anticipated Air Force facilities make such provision practicable.

● That, in providing Reserve Training, the Department of National Defence (a) consider the provision of Air Force facilities to groups organized by R.C.A.F. Association Wings for Service re-familiarization of all trades, and (b) supply transportation, quarters and rations to personnel taking part in such a training programme.

● That the Departments of National Defence and Transport review the air facilities at the various strategic industrial centres already designated by the Provincial Secretary of the Province of Ontario.

● That ex-aircrew personnel who, though not pilots in the R.C.A.F., now hold Commercial Pilots' Licences, be given an opportunity of participating in the Chipmunk scheme.

WING NEWS

We would again like to remind Wings that we cannot publish their activities if they do not give us the information.

No. 403 (City of Sarnia) Wing

The Sarnia Wing is now publishing a newsy little bulletin of its activities, which includes an agenda of future meetings, plus items of general interest to members.

No. 700 (City of Edmonton) Wing

On February 12th the Wing held its annual meeting for the election of officers for the coming year. The following were elected:

President:	James G. Rowand
Vice-President:	Mrs. Ishbel Ferris
Vice-President:	Roy T. Martins
Secretary:	Harold D. Lee
Assistant Secretary:	Victor Fowler
Treasurer:	Ross Gould
Ways and Means:	George Burnett
Membership:	Chester Wallace
Programme:	R. A. Wright
Entertainment:	Walter Howard
Welfare:	Miss Beth Rowand
Publicity:	J. W. Wasney

The new President and his executive were congratulated on their election to office by retiring President, Air Vice-Marshal K. M. Guthrie, C.B., C.B.E., (ret'd.).

The financial statement for the year revealed a healthy bank balance amounting to \$4,482.38.

No. 500 (City of Winnipeg) Wing

As a result of the annual elections, the following new executive has been elected:

President:	Oscar Olson
1st Vice-President:	A. H. Turner
2nd Vice-President:	Jack Thornton
Secretary:	Jessie Joscelyn
Treasurer:	Fred J. Arthur

No. 418 (Belleville) Wing

A résumé of the activities of No. 418 (Belleville) Wing has been received which indicates that it has been very active and is well organized.

The Wing's first Annual Banquet was held on 29 September 1950, with Air Vice-Marshal A. L. Morfee, C.B., C.B.E., (ret'd), the National President, and Air Vice-Marshal C. R. Slemon, C.B., C.B.E., A.O.C. Training Command, as guest speakers. Other guests included representatives of local armed services units, city council, service clubs, and various veterans' organizations.

Just prior to the October general meeting, plans were laid by the Wing executive for the remainder



No. 418 Wing. Standing (l. to r.): R. Knowlton, W. Countryman, H. Gibson, J. Hunter, L. Digby, B. Gill. Seated (l. to r.): H. Middleton, W. Stovin, J. Godwin, Miss D. Chant, F. Evans.

of the club year. No. 418 Wing is fortunate in being located near a permanent unit, and advantage was taken of this fact in drawing up a programme. At the October meeting, Sqn. Ldr. M. W. Lupton, A.F.C., of Training Command, gave a talk on jets that held the members enthralled.

During the latter part of October and the beginning of November the Wing, through a group of members, co-operated with the local Poppy Fund Committee. Members assisted in selling poppies and wreaths, and Wing representatives took part in the Remembrance Day Parade and laid a wreath on the Cenotaph.

Wing President John Godwin joined presidents of other Belleville veterans' associations to greet Prime Minister St. Laurent when he arrived in Belleville recently to unveil the memorial plaque to former Prime Minister Sir Mackenzie Bowell.

The November meeting was held in Bridge Street Armouries. The speaker was Sqn. Ldr. G. O. Godson, A.F.C., on the subject of modern armament. The meeting ended with a "hard-times dance."

In December the Wing organized a Christmas party, and its January smoker achieved a record high in attendance.

A.M.E.S. 894: Part 2

The Story of a Mobile Radar Unit in North Africa

By Marshall S. Killen

ALGIERS

TRAVELLING SLOWLY on account of the number of freighters in our convoy, we made an uneventful voyage from Greenock to Africa. A.M.E.S. 894 was allotted the job of maintaining in the bows the three-man watch for submarines during daylight hours. Since the weather was fine and sunny and we were the only troops allowed up forward, we found this duty far from irksome, particularly as circling destroyers and Coastal Command aircraft gave us a feeling of complete security.

Our route took us round the coast of Northern Ireland and far out into the Atlantic before we dropped down to the latitude of the Azores and slipped in to Gibraltar. Cpl. Allcock, our radio N.C.O., had been a meteorologist in civil life, and he had brought many of his instruments with him. Each night he took observations and plotted our position on a chart, thereby occasioning much curiosity among the other R.A.F. personnel, who wondered how on earth we were getting our inside information. The only excitement occurred when a destroyer reported a contact on its radar, and proceeded to drop a pattern of depth charges which put an end to the prospects of a cruising whale. Life was, all in all, a leisurely affair. Each morning there was a strict boat drill, and in the afternoon a parade. Apart from these duties, those who were not required for special work were left to their own devices. We had to wear life-jackets at all times, and we were instructed not

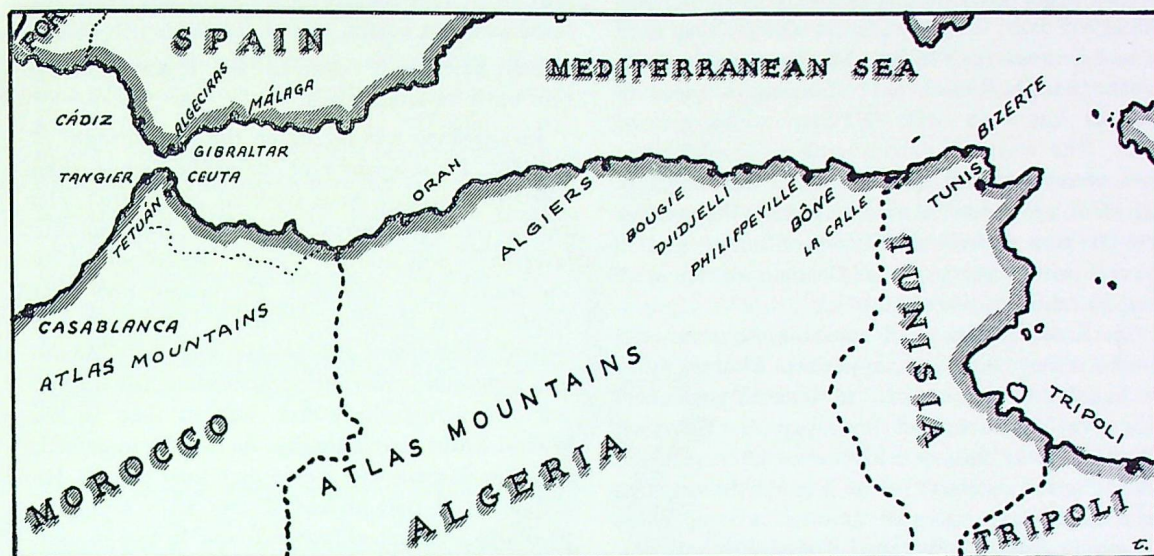
to undress even at night. None the less, most of us took a chance on disobeying the latter order.

We passed through the Straits of Gibraltar during the hours of darkness. It was a clear night, and the giant mass of the Rock stood out clearly against the starlit sky. The only light on it was a tiny glimmer near the summit. In contrast, the cities of Cadiz and Algeciras on the port side, and Tangier, Ceuta, and Tetuan on the starboard, were all brilliantly lit. These were the first lighted cities that many of us had seen for more than three years.

The next morning a number of ships left our convoy and turned in towards Oran. All that day preparations were being made for our landing. The officers in command of units were issued with booklets giving a brief history of Morocco, Algeria and Tunisia, with the customs and background of the natives. A vocabulary of common French and Arabic words and phrases was included, together with a list of "do's and don't's". Everybody was required to turn in his sterling currency and received B.M.A. (British Military Administration) money in return for it. B.M.A. money, which was at first worth three hundred francs to the pound sterling, was later reduced to two hundred francs; but even this latter figure was higher than the normal rate of exchange.

Having passed Gibraltar, the convoy ran close in to the African coast throughout that day. The next dawn it rounded a lofty headland — and Algiers lay glittering before it in the bright

Apologies are extended to the author for a misprint in the title of the first instalment of this story in our April issue. The sub-title should read North Africa, instead of South Africa.



morning sunlight. Tier upon tier of white buildings rose up from the sea to a height of more than a thousand feet, their red roofs shining in the sun, and with green pine woods on either side of the city. Clear and blue in the background, we saw the first ranges of the Atlas mountains.

As we approached our temporary anchorage, a British destroyer came alongside and told us to follow him closely. German aircraft, it seemed, had been dropping mines in the fairway only a few hours earlier. Both harbour and bay were crowded with ships, chiefly troop transports and freighters. Farther out, cruisers and smaller warships could be seen constantly on the move. We dropped anchor close to a ship which had been torpedoed on the previous day and was now lying well down by the stern. A few nights later, when a storm blew up, this vessel dragged her anchors and was swept ashore. At the end of 1944 — still in the same position, though with a list of forty degrees — she was being used as a military bakery. When she was torpedoed, she was carrying mail; and, as luck would have it, the mail was in one of the flooded compartments in the stern. Months afterwards, a few water-stained letters were actually delivered to us. These letters had been

addressed to us at Wilmslow, but had arrived just after the unit's departure.

Amid a bustle of colourful activity, we disembarked. Our bivouac area was Hussein Dey, a French aviation camp four miles east of the city. Although it was near the end of November and the afternoon was drawing to a close, we were hot and tired when we reached our destination. We were wearing heavy battle dress, leggings and boots, and carrying arms and light equipment; and the Algerian cobblestoned roads were hard to march on until we got used to them.

At Hussein Dey we had great trouble in finding an officer who knew the answers to anything at all. Foraging more or less on our own, shortly after dark we discovered an empty hangar. There we spent the night, alternately lying on the hard concrete floor and watching the fireworks outside — for the Germans had come over and started their bombing as soon as night fell. It was the first strafing most of us had experienced, and we didn't feel too happy about it. British and American ack-ack guns were hard at it on the roads, along the beaches, and on the hills above the town. The noise was deafening: a British 3.7-inch battery, less than fifty yards from our

The Roundel

hangar, split our heads wide open. Shrapnel was falling all over the place, so it wasn't long until we had a casualty. Flt. Sgt. Maxim, who slept out on the sands, found next morning a piece of shell as big as a softball lying on his ground sheet. The warrant officer lying beside him had been wounded in the foot. That first night in Algiers made seasoned veterans of us. We saw our first German aircraft shot down in flames, and on the following day two dead German airmen were washed ashore quite close to us.

Our first experience of bombing, however, did not interfere with our appetites. Shortly after we had found our hangar, we learned that there was a ration dump not far away. By following other shadowy figures which were all moving in one direction, a party of us located it and soon returned with six cases of "compo" rations. These composite rations included biscuits, chocolate, cigarettes, canned fruit, cheese, several kinds of stew, syrup pudding, treacle pudding, butter, jam, tea, milk, sugar, bully-beef, fish, sausages, candy, and various kinds of canned vegetables. In addition, alcohol heaters were supplied to heat the various cans.

In the fresh light of dawn, we stood revealed as a pretty dirty and unkempt gang. We located a pump, where everybody washed and shaved. Then, not far away, we discovered a pile of lumber, so it was not long before the cooks had fires going and breakfast under way. While some men cleaned the floor of the hangars, others carted the lumber in to make temporary beds and tables, as we had decided that lying on bare concrete was not conducive to restful slumber. While engaged in this task, LAC Hoyle suddenly yelled out that he had been stung by something. The something turned out to be a small scorpion, and Hoyle's hand swelled rapidly and began to turn a bright blue. Our medical orderly, LAC Charlesworth, was naturally enough not very well up in the theory and practice of treating people for scorpion-bites — and, furthermore, he had with him no medicines of any sort whatsoever. We were therefore forced to improvise. We sterilized a jack-knife, cut the hand open at the sting, and poured in quantities of iodine which I happened to have in my first

aid kit. Hoyle nearly hit the ceiling, but his hand soon got better.

That morning it began to rain. It continued to rain until we left Algiers.

Just as dusk was falling on the second night of our stay, I was washing at one of the pumps when I heard a "ping" on a piece of corrugated iron behind me. I paid no attention to it, but a minute later there was another "ping", accompanied by the sound of a rifle shot. Convinced now that someone was shooting at me, I lost no time in getting back inside the hangar. Flt. Sgt. Maxim and a warrant officer from another outfit dashed out and across the street, just in time to see several Arabs running away. As may be imagined, Flt. Sgt. Maxim had a field day with his .45. He claimed later that he had hit one Arab, adducing as evidence the blood that he found on the ground. To make him happy, we awarded him one probable.

Each morning and afternoon the Adjutant or I had to report to the R.A.F. Embarkation Staff Officer, who was located in a canvas hangar some five hundred yards away. This hangar had belonged to the local Algerian Flying Club and was so full of holes that it was nearly as wet inside as it was out. A.M.E.S. 894 and 895 had been fortunate in getting into a permanent building: the units that came after us had to sleep in pup tents on the beach. These tents were constantly flooded, and the men soon got soaked and remained so for days. In addition, they had no cover from the ack-ack and shrapnel that fell around at night, so that several of them were wounded before they had been on African soil for more than a few hours.

Outside the wicket fence near our hangar swarms of dirty Arabs sold oranges and tangerines at exorbitant prices. Service personnel did not buy any of this fruit until a supply of potassium permanganate crystals was issued. Fortunately for us, I had about a dozen packets with me, so we filled empty biscuit cans with water and put a packet of crystals into each can. We then soaked the fruit in this solution for about an hour. It was worth the effort, for most of us had not tasted either an orange or a tangerine in three years.

The Arabs around Algiers were friendly enough during the day, but it was only a surface friendship. During our first night ashore, three R.A.F. men returning from Algiers to camp were stabbed and robbed, while more than twenty soldiers had already been sniped. This state of affairs continued until the Allies secured a firm foothold in the area. Kit and arms both on the docks and at Hussein Dey had to be guarded every moment, otherwise a kitbag or a rifle would disappear like magic. When I went to collect my blue kitbag, I discovered that an incendiary bullet or cannon shell had pierced it, much to the detriment of my drawing instruments.

BÔNE

On November 26th we received orders to send half the crew into Algiers at 1000 hours and the remainder at 1300. The entire unit was to embark at 1600 hours, for an unknown destination. The assault craft on which we were to sail turned out to be the "Princess Beatrix," a cross-Channel steamer on which I had crossed from the Hook of Holland to Harwich in February 1939. A.M.E.S. 895 sailed on a companion assault boat.

As we shortly found out, we were headed for Bône. Bône was the main advance supply base for the Allied First Army, which by this time had contacted the Germans moving west from Tunis and Bizerte at several points close to the Tunisian-Algerian border. It appeared that the Luftwaffe and Italian air force were making things so hot for the Allied convoys in Bougie, Djidjelli, Philippeville, and Bône, that the Navy could hardly get a ship through. The R.A.F. could do little to help because, although it was able to keep the Germans away fairly well during the day, it was helpless at night for lack of night-fighting aircraft. Our troops were therefore feeling the pinch, and the Navy had asked for complete twenty-four-hour air cover before sending in any more large convoys. The R.A.F. had guaranteed this, and was planning to bring up a squadron of night-fighters from the Middle East Command to be controlled by a G.C.I. (Ground-Controlled Interception) mobile radar unit strategically located near Bône airfield. Other G.C.I. units were to be

placed later at Philippeville and Djidjelli, and C.O.L. (Chain Overseas Low) and M.R.U. (Mobile Radio Unit) units located at various points along the coast between La Calle and Bougie. By means of this radar chain the entire coastline would be protected.

The trip was peaceful. At 0900 hours the following morning the vessel carrying A.M.E.S. 895 turned off into Philippeville, and at 1400 hours we arrived off Bône. At the moment everything was quiet. As we entered the harbour and tied up at the dock we could see British Tommies working hard unloading three freighters across the harbour. These R.A.S.C. chaps and the Dock Engineers carried on with their work even when the Germans were right overhead and the bombs were raining down in the harbour area. Lots of them were killed, but the work went on. Before we stepped ashore the ship's cook gave me twenty-four huge loaves, nice and brown and just out of the oven. We made that bread last us nearly a week while everyone else was eating hard biscuits.

When we came ashore, the E.S.O. (Sqn. Ldr. George, G.C.) arrived and told me to report to his office. Flying Officer Hurcombe, meanwhile, was to march the unit to the Tabacoop a mile away. This Tabacoop had formerly been a huge tobacco-processing factory and was now being used as an assembly centre for Army and Air Force personnel and also as a prisoner-of-war camp. It was largely made of glass and was therefore a pretty awful place to be in during an air raid. A.M.E.S. 894 marched off (with Flt. Sgt. Maxim bringing up the rear as usual) while the E.S.O. took me to his headquarters. There I learned that our vehicles, camp equipment, and stores were on board one of the freighters in the harbour. (Incidentally, when I went later to collect the Humber staff car, I found that it had been borrowed by the Chief Signals Officer of No. 242 Group. It took us more than a month to recover it.) I visited the ship to make a few arrangements about unloading, and learned that the 15-cwt. truck had already been taken off and moved to a quarry outside the air-raid area. Then I returned to the Tabacoop for supper.

The buildings were packed with troops, and a large number of recently captured German paratroopers were being held in the cellars. They were a rather downcast-looking lot who seemed very glad of the chocolate and cigarettes we passed in to them through the iron bars of the windows. After supper I hitched-hiked out to the quarry and managed to get the truck started after borrowing the rotor arm from another vehicle.

I had scarcely got the truck back to our unit when enemy bombers arrived. All night through they kept coming over. Since their target area was small, we had a rough time of it. The ack-ack defence was in a circle around the town, while the warships and freighters in the harbour also kept up a continuous fire. We were not allowed outside and of course couldn't even light a match. I slept on a bale of tobacco leaf and smelled of it for days afterwards. Shrapnel fell through the roof and broken glass kept dropping on us at intervals.

The next two or three days were spent in getting the remaining vehicles and stores off the freighter and in locating them in a safe area as quickly as possible. The docks by now looked like a shambles: not a building stood undamaged. The 5th British General Hospital, operating in the local hospital building close to the docks, received a direct hit the night we arrived, and more than fifty men were killed. Everyone was somewhat annoyed by the fact that a big bunch of German prisoners in another wing of the hospital didn't receive a scratch.

On November 29th we received instructions from No. 322 Wing Headquarters to move the

unit to a safe area at least five miles away from Bône and to remain there until our technical convoy was complete. Hurriedly completing our preparations, we eventually were able to move away along the Philippeville road. About ten miles out from Bône, I discovered an excellent camp site on a small knoll well surrounded by trees and affording good camouflage. That evening we set up camp as a unit for the first time.

Luckily, LAC Connor, the Diesel fitter, had worked in a circus most of his life. Knowing all about tents, he was therefore forthwith put in charge of tent erection. As for water, we were well off. The 300-gallon water Bowser had been filled in England two months previously and its contents were still in perfect condition. By nightfall we had the camp in such good shape that, after supper, we were able to sit back in security and watch the fireworks display over Bône. Philippeville to the west was taking a beating, too. Aircraft were overhead most of the night—and they were all hostile. Some of them were flying as low as a thousand feet, and we could see them distinctly, silhouetted against the stars. Since the Germans were supposed to be dropping paratroops around Bône to sabotage bridges and to attack isolated units, three men patrolled our camp throughout the hours of darkness.

It gave us all a pleasant feeling to lie in our tents that night and to feel that we were actually on our own at last and no longer at the disposal of all and sundry.

(To be continued.)

North Pole Flights

A NEW RECORD in Arctic flying was made in November of last year when a B-29 Superfortress of the 375th Strategic Reconnaissance Squadron completed the 375th Air Force Weather Flight over the North Pole. The big bomber and its 13-man crew made the nearly 4,000-mile, 15-hour and 55-minute flight as a part of a routine weather observation service which has been operating since 1947.

The North Pole round-trips, operated from the base 26 miles southeast of Fairbanks, have been flown every other day for the past three years. They serve primarily as weather observer flights to record atmosphere conditions between the base just out of Fairbanks and the North Pole.

("Army Navy Air Force Journal": U. S.A.)

February Transfers

OFFICERS

- G/C L. G. G. J. Archambault, A.F.C. (G.L.) — R.C.A.F. Stn. St. Hubert to Res. Gr. H. Q., Montreal.
- S/L A. F. Avant, D.S.O., D.F.C. (G.L.) — No. 412 Sqn., Rockcliffe, to A.F.H.Q.
- W/C H. E. Bishop (T.L.) — R.C.A.F. Stn. Gimli to No. 2 Tech. Trng. School, Camp Borden.
- S/L W. A. Bothwell (Acc.) — A.F.H.Q. to R.C.A.F. Stn. Rockcliffe.
- S/L L. O. H. Boucher (G.L.) — No. 11 Supply Depot, Calgary, to Air Defence Gr. H.Q., St. Hubert.
- W/C S. R. Burbank, M.B.E. (T.L.) — No. 1 Radar & Comm. School, Clinton, to A.F.H.Q.
- S/L H. E. C. Deane-Freeman (G.L.) — No. 10 Repair Depot, Calgary, to Admin. Wing H.Q., Montreal.
- S/L P. J. Grant (G.L.) — No. 111 Comm. & Rescue Flight, Winnipeg, to Cdn. Joint Air Trng. Centre, Rivers.
- S/L H. H. Hallett (G.L.) — No. 1 Flying Trng. School, Centralia, to R.C.A.F. Stn. Toronto.
- S/L A. N. Harris (Sup.) — No. 11 Supply Depot, Calgary, to Air Materiel Command H.Q., Ottawa.
- S/L R. F. Hatton, D.F.C. (G.L.) — R.C.A.F. Stn. Aylmer to Admin. Wing H.Q., Montreal.
- S/L P. W. Holloway, A.F.C. (G.L.) — A.F.H.Q. to Cdn. Joint Staff, Washington.
- S/L J. A. King, D.F.C. (G.L.) — Recruiting Unit, North Bay, to Recruiting Unit, Toronto.
- S/L R. J. Lawlor, D.F.C. (G.L.) — Trng. Command H.Q., Trenton, to Cdn. Joint Staff, London.
- S/L B. D. McArthur (A.E.) — R.C.A.F. Stn. Centralia to Admin. Wing H.Q., Montreal.
- S/L C. N. McVeigh (G.L.) — Cdn. Joint Air Trng. Centre, Rivers, to A.F.H.Q.
- S/L R. H. Morris (G.L.) — Recruiting Unit, Toronto, to Trng. Command H.Q., Trenton.
- S/L W. H. Nickel, D.F.C. (G.L.) — No. 1 Flying Trng. School, Centralia, to Maritime Gr. H. Q., Halifax.
- S/L G. F. Ockenden, D.F.C. (G.L.) — No. 1 Aircraft Control & Warning Unit, St. Hubert, to Air Defence Gr. H.Q., St. Hubert.

- S/L R. M. Porter (G.L.) — No. 123 Rescue Unit, Sea Island, to A.F.H.Q.
- W/C J. M. Sutherland (G.L.) — R.C.A.F. Station Whitehorse to A.F.H.Q.
- S/L W. R. Tew, D.F.C. (G.L.) — Cdn. Joint Staff, Washington, to No. 1 Aircraft Control & Warning Unit, St. Hubert.
- S/L H. C. Upton, D.F.C. (G.L.) — Trng. Command H.Q., Trenton, to No. 10 Repair Depot, Calgary.
- S/L A. B. C. Weatherwax (G.L.) — No. 408 Sqn., Rockcliffe, to A.F.H.Q.
- S/L H. N. Winter (A.E.) — No. 9403 Unit, Calgary, to R.C.A.F. Station Gimli.

WARRANT OFFICERS

- W.O.1 J. H. Blundell (P.R.T.I.) — Cdn. Joint Air Trng. Centre, Rivers, to A.F.H.Q.
- W.O.1 J. R. Burdes (M.A. Tech.) — No. 442 (F) Sqn. (Res.), Sea Island, to R.C.A.F. Station Saskatoon.
- W.O.2 L. A. Daws (M. Photo.) — R.C.A.F. Station Trenton to Trng. Command H.Q., Trenton.
- W.O.2 F. Fanjoy (Sup. Tech.) — R.C.A.F. Station Rockcliffe to A.F.H.Q.
- W.O.2 B. E. Gooding (Sup. Tech.) — R.C.A.F. Station Goose Bay to No. 11 Supply Depot, Calgary.
- W.O.1 G. H. F. Irving (Arm. Tech.) — R.C.A.F. Station Toronto to Air Armament School, Trenton.

A KEY TO TRADE DESIGNATIONS

A.E.	— Aeronautical Engineer
Acc.	— Accounts
Arm. Tech.	— Armament Technician
G.L.	— General List
M.A. Tech.	— Master Armament Technician
M. Photo.	— Master Photographer
P.R.T.I.	— Physical Recreation & Training Instructor
Sup.	— Supply
Sup. Tech.	— Supply Technician
T.L.	— Technical List

From the Suggestion Box

The Chief of the Air Staff recently sent a letter of thanks to Sgt. J. M. Ketcheson, of R.C.A.F. Station Trenton, for his ingenious scheme for the repair of Expeditor control pedestals. Sgt. Ketcheson's plan, which has been officially adopted, makes possible the repair of control pedestals without removal from the aircraft, thus reducing the total repair-time from 165 to 40 man-hours. His suggestions are particularly valuable in view of the fact that it is no longer possible to obtain new pedestals, and replacements must therefore be manufactured by contractors at considerable expense.

Sgt. J. M. Ketcheson.



★ What's the Score?

It is well known to all students of leadership that Sgt. Shatterproof first began to formulate his theories on the subject during his early high-school days, while he was serving as hatchet-man for the Boilerhouse Thugs, a prominent youth organization in his home town (see "The Roundel", March 1950). "What the Thugs did for me," he was recently heard to remark, "the Air Cadets can do for the young men of to-day. Let us look to the Air Cadets!"

In this month's questionnaire, therefore, we are looking to the Air Cadets. Mr. Arthur Macdonald, to whom we are indebted for its compilation, assures us that the answers to all twenty questions have already appeared in previous issues of "The Roundel". Correct answers are shown on page 48.

1. The Air Cadet League of Canada was formed in:
 - (a) 1939
 - (b) 1941
 - (c) 1942
 - (d) 1945
2. Maximum authorized strength of the Royal Canadian Air Cadets across Canada is:
 - (a) 10,000 cadets
 - (b) 15,000 cadets
 - (c) 22,500 cadets
 - (d) 25,000 cadets
3. The annual International Drill Competition brings together Air Cadet teams from Canada and the United States in competition for:
 - (a) The Beau Trophy
 - (b) The Tudhope Trophy
 - (c) The Webster Trophy
 - (d) The Guthrie Trophy
4. The number of Air Cadet squadrons in Canada is approximately:
 - (a) 100
 - (b) 200
 - (c) 300
 - (d) 400
5. President of the Air Cadet League of Canada for 1951 is:
 - (a) C. Douglas Taylor, Montreal, P.Q.
 - (b) M. Banker Bates, Hamilton, Ont.
 - (c) H. L. Garner, Peterborough, Ont.
 - (d) G. M. Ross, Ottawa, Ont.
6. R.C.A.F. Flying Training Courses, awarded each year to a maximum of 225 Air Cadets, are conducted at:
 - (a) Air Cadet summer camps
 - (b) Commercial Flying schools
 - (c) R.C.A.F. Training stations
 - (d) Civilian flying clubs
7. Age limits for Royal Canadian Air Cadets are:
 - (a) 14 to 18 yrs.
 - (b) 12 to 16 yrs.
 - (c) 12 to 18 yrs.
 - (d) 14 to 16 yrs.
8. The \$500 scholarship, under which one Air Cadet each year enters the University of Toronto for an aeronautical engineering-course, is known as:
 - (a) The McBain Scholarship
 - (b) The McEwen Scholarship
 - (c) The MacBrien Scholarship
 - (d) The MacGregor Scholarship
9. *Not* an honorary president of the Air Cadet League of Canada is:
 - (a) C. Douglas Taylor
 - (b) Air Marshal R. Leckie
 - (c) Air Marshal W. A. Bishop
10. The International Drill Competition was first held in 1948. The competition was won by Canada in:
 - (a) 1948
 - (b) 1949
 - (c) 1950
11. The ten provincial organizations of the Air Cadet League are known as:
 - (a) Branches
 - (b) Commands
 - (c) Wings
 - (d) Provincial Committees

12. In connection with the organization and training of the Royal Canadian Air Cadets, the R.C.A.F. is responsible for:

- (a) Training of Cadets
- (b) Administration of Squadrons
- (c) Supply of training equipment
- (d) Public relations

13. Each year, groups of carefully selected cadets make "exchange visit" trips to Great Britain and the United States. The approximate number of cadets chosen annually for external tours is:

- (a) 25
- (b) 50
- (c) 75
- (d) 150

14. The General Manager of the Air Cadet League of Canada is:

- (a) A. D. Ross
- (b) G. M. Ross
- (c) D. A. Ross
- (d) P. D. Ross

15. Summer camps for Air Cadets are held annually at R.C.A.F. Stations throughout Canada. Last year, these camps were attended by approximately:

- (a) 3,000 cadets
- (b) 4,000 cadets
- (c) 5,000 cadets
- (d) 6,000 cadets

16. Air Cadet uniforms are:

- (a) Purchased by the squadron and loaned to the cadets
- (b) Supplied to squadrons by the R.C.A.F. at half price and loaned to the cadets
- (c) Purchased by the cadets at cost
- (d) Supplied to squadrons without charge by the R.C.A.F. and loaned to the cadets



17. Successful graduates of R.C.A.F. scholarship flying courses are permitted to wear the Air Cadet Flying Badge. In describing this badge, it would be *incorrect* to say that it is:

- (a) Smaller than the R.C.A.F. flying badge
- (b) Same size as the R.C.A.F. flying badge
- (c) Similar in pattern to the regular R.C.A.F. badge
- (d) Completely different from the regular R.C.A.F. badge



18. The Air Cadet Flying Badge is worn:

- (a) On the right lower sleeve
- (b) On the left lower sleeve
- (c) On the right breast of the Air Cadet uniform
- (d) On the left breast of the Air Cadet uniform

19. The American counterpart of the Air Cadet League of Canada is known as:

- (a) Air League of the U.S.A.
- (b) U.S. Air Training Corps
- (c) U.S. Civil Air Patrol
- (d) Air Scouts of America

20. Every spring the Air Cadet League conducts a National campaign to publicize the Royal Canadian Air Cadets. The Campaign is known as:

- (a) Air Cadet Week
- (b) Air Cadet Sunday
- (c) Air Cadet Day

A Literary Adventure

By Sqn. Ldr. G. R. Truemner, A.F.C.

(Sqn. Ldr. Truemner, whose article on leadership appeared in our March issue, now offers to all future Staff College students the benefit of his own experiences as an essayist on the 15th Course — which by the way, is not yet ended. Along with the rest of his fellow-students, he was required to produce a 1500-2000 word essay on the subject of logistics. The Course had been told by the Directing Staff that any approach to the problem was permissible. Sqn. Ldr. Truemner's approach appears below.— EDITOR)

Wing Cdr. W. M. Furray
A.F.H.Q.,
Ottawa, Ont.

R.C.A.F. Staff College,
Armour Heights,
Toronto, Ontario,
4 Dec. '50.

Dear Wing Commander Furray:

You will remember me, Sir, I hope. We attended the Service Management Course together three years ago. Well, I am on Course 15 at the Staff College now and the Chief Instructor has given us a rather nasty exercise to carry out. We are required to produce a short essay on logistics.

Everyone knows that you are the foremost authority in the Service on this subject. As I am very green on the matter, I am taking the liberty of asking you for some suggestions for my essay. I hope, Sir, that you can spare the time to forward a few ideas which I might employ to advantage.

Instructions say that the article is to be non-technical and easily understood. Moreover, we have to submit our answer in about ten days, so you can see that I am really pressed for time.

Many thanks, Sir.

G. R. Truemner.

* * *

COLLECT
SQN.LDR. R. TRUEMNER
RCAF STAFF COLLEGE
TORONTO

CHGS 1.40

COLLECT LOGISTICS PROCESS IS MEANS WHEREBY
THE RAW WARMMAKING CAPACITY OF COUNTRY
IS TRANSLATED INTO INSTRUMENTS OF FORCE

READY TO BE EMPLOYED IN PURSUIT OF
STRATEGICAL OR TACTICAL OBJECTIVES(.)
CONSTITUENT ELEMENTS OF THIS CAPACITY ARE
PERSONNEL AND MATERIEL (.) ORGANIZATION IS
CATALYTIC AGENT (.) PROBLEM VERY SIMPLE

1950 6 DECEMBER PM 555

FURRAY OTTAWA

* * *

Sqn.Ldr. M. W. Dickinson
6 Repair Depot,
Trenton, Ontario.

R.C.A.F. Staff College,
Armour Heights,
Toronto, Ontario
6 Dec. '50.
2359 hrs.

Dear Dick:

As you know, I am at the Staff College this year, battling with the tasks of writing book reviews, essays, appreciations, and the like.

Our very latest exercise has to do with the production of an essay on logistics — something appropriate for junior officers and N.C.O.'s to read. So far, I have been able to find out that the topic concerns personnel and materiels. Since you work in the Supply Branch, I thought you might be able to throw a little light on the subject. I have already written to your old boss, Wing Cdr. W. M. F. in A.F.H.Q., for help, but I haven't been able to decipher the answer he sent to me.

Inasmuch as I must complete this effort by December 15th, I would appreciate your comments as soon as possible. Regards and many thanks.

G. R. Truemner.

* * *

The Roundel

Note to my wife:

Patsy, you know that letter to Dickinson that you typed for me? Would you please work up a similar one to Wing Cdr. Harriott? He is Staff Officer for Postings and Careers out at North-West Air Command. He might have some ideas on logistics, because he was here on course last year. Furthermore, he owes me some help for all the research I did on that training story he turned in for his thesis . . . You might call my brother, Morley, over at Cansfield Electric too. He ought to have the industrial slant to this project.

P.S. I'm duty officer to-night.

* * *

Sqn.Ldr. R. Truemner,
R.C.A.F. Staff College,
Armour Heights,
Toronto, Ontario.

11239-93 St.,
Edmonton, Alta.,
12 Dec. '50.

Dear Truemner:

Marge and I were very pleased to hear from your wife. We can see that she is not only conducting your correspondence but also writing most of your S.C. exercises too.

I could not find my submission to the logistics exercise of last year. I think it was so well written that the College kept it. As far as the personnel factor is concerned, however, logistics comprises the planning of personnel requirements, the acquisition of the people, and the training, posting, and continuous maintenance of these bodies. That maintenance includes the housing, feeding, doctoring, and so on. Of course, one can always figure in the transportation of personnel, and, in time of war, that includes not just movement to the theatre of conflict but also the evacuation when required. I noticed in an Edmonton paper this week that the U.S. Far East Air Force combat cargo command had successfully evacuated 14,138 wounded boys from Korea in eight days. You investigate the behind-the-scenes effort that went into that operation and you will discover solid logistics support.

In any case, you should be able to work up a story along that line.

Season's greetings and Merry Logistics! Ha ha!
H. G. Harriott.

* * *

MILITARY AIR TRANSPORT COMMAND U S A F

Sqn. Ldr. G. R. Truemner,
R.C.A.F. Staff College,
Armour Heights,
Toronto, Ontario.

McChord AFB.,
Tacoma, Wash.,
13 Dec. 50.

Dear GRT:

I am truly sorry to be so late in answering your letter but, as you can see, I have a good reason for appearing so tardy. Instead of being at 6 R.D. in Trenton, I am with 426 Sqn. at McChord. I was sent down to Tacoma last August to be the supply officer for the squadron.

Although I haven't had the time to think up a fancy answer to your problem, I could suggest that you spend a day or two with me here. You would soon see for yourself what real logistics means.

The most elementary explanation of the term is: "Getting the right item, in the right place, at the right time, with the utmost economy." Believe me, that is what we are trying to do with our airlift to Tokyo. This whole business might well be named, "Operation Logistic." Up to the 8th December our North Stars had flown over one million miles, carrying such "items" as mail, food, spare-parts, medical equipment, clothing, and even personnel. This long haul from here to Tokyo through the Aleutians is not just a one way trip, either; you should see the materiel that is brought back to be salvaged. We have nearly 300 R.C.A.F. lads backing up our eight aircraft. We have our own supply run between Tacoma and Dorval just to keep the squadron going. We have Rolls-Royce in England turning out 50 new Merlin 620 engines to keep the North Stars fit. Multiply our small undertaking about 200 times to allow for the American counterpart in aircraft and ships employed on the same work and you will begin to see that the success of the Korean fight depends on the

battle of supplies. Now, who wouldn't like to be a supply type and do the work that really wins the war?

I still have the two books of yours that I borrowed about a year ago. I will return the one, "Through the Overcast," as there is no fog in the Supply Branch these days. Please say "hello" to Geo. Foley for me if you see him.

Sincerely,
Dickinson.

* * *

CANSFIELD ELECTRIC MFG. CO. LTD.

Inter Office Memo . . . 12/13

Truemner to Truemner

Dear Brother: Yes, I took some logistics in Engineering Economics last year at the U. of T. I suppose the subject of military logistics would include all the activities essential to plan, build, maintain, and support fighting forces. It would be a single broad effort, springing from the productive economy of the country and extending through successive phases of procuring, organizing, and distributing men and material to the war front. In other words, logistics would represent everything behind the man who actually fights. It is obvious that if this support breaks down, the whole fighting machine goes too. In fact, the

whole business is so darn simple that I cannot imagine the principle of logistics giving you any trouble. Surely they can find tougher projects for you to work on at that institution.

Morley.

P.S. I'll be over on Wednesday night after bowling, so get out the cribbage board.

* * *

MEMORANDUM

12-9-1 (CI)
18 Dec. 50.

Cdt.
D.S.
Students

Amendment to Programme: 15th Week
R.C.A.F. Staff College

-
1. It has been brought to the attention of the C.I. that students of Course 15 are resorting to insidious methods in the preparation of the essay on logistics.
 2. The programme of work for the 15th week is, therefore, to be amended as follows:

Delete: Submit essay on logistics
- 18 Dec.
Insert: Submit essay on the atom
bomb as a catalyst. - 19 Dec.

(E.M. Rainbow) G/C
Chief Instructor

Ideological War

"We are in a war of a peculiar nature. It is not with an ordinary community . . . We are at war with a system which by its essence is inimical to all other governments; and which makes peace or war as peace and war may best contribute to their subversion. It is with an armed doctrine that we are at war."

(Edmund Burke: 1729-1797. Quoted in "Air Clues": R.A.F.)

The ROYAL CANADIAN AIR CADETS



By Arthur Macdonald, Air Cadet League of Canada

CHARTING THE FUTURE

EXPANSION KEYNOTED the tenth Annual Meeting of the Air Cadet League of Canada held at the Seigniory Club, P.Q., on March 13th and 14th. During the two-day session, League and R.C.A.F. delegates from all parts of Canada studied plans for boosting the number of cadets under training to 22,500 — an increase of 50% over the previous ceiling of 15,000. In several prolonged and fruitful sessions, they hammered away at problems posed by the current expansion campaign and also took a good close look at the League's responsibilities in view of the present world situation.

As a result of their deliberations, the following important policy decisions were made:

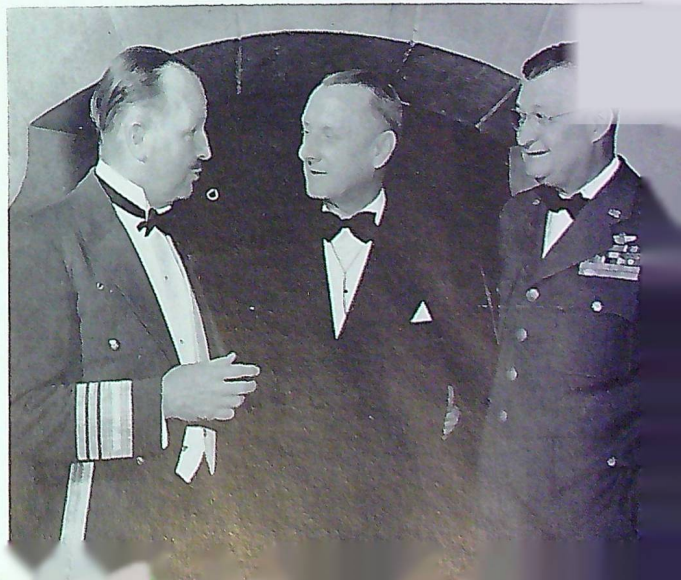
- During the coming year the League will campaign vigorously for new squadrons and increased enrolments.
- Efforts will be made to increase the flow of graduate Air Cadets into the R.C.A.F., with particular emphasis on the ground-crew trades.
- The League will continue to study the operation of girl "Air Cadette" units so as to be in a position to enter this field officially when requested by the R.C.A.F. to do so.

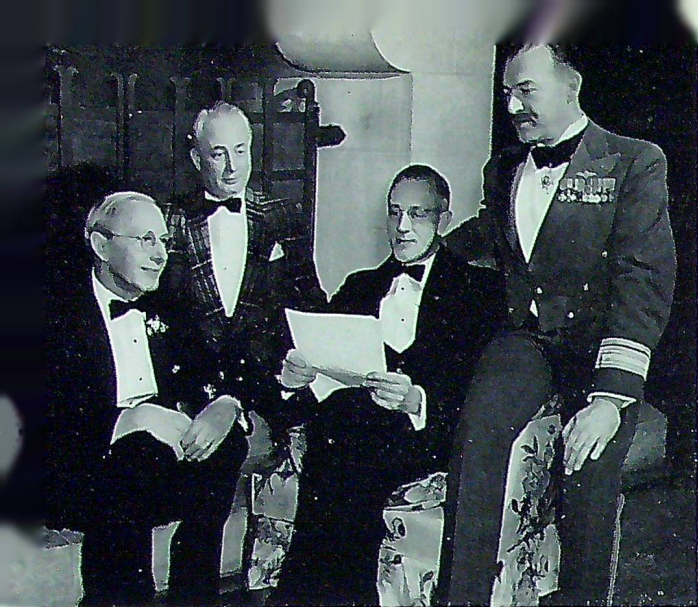
These conclusions were reached by some seventy League delegates representing all ten provinces. R.C.A.F. officers in attendance included Air Vice-Marshal C. R. Slemon, C.B., C.B.E., A.O.C.

Training Command; Air Vice-Marshal J. L. Plant, C.B., A.F.C., Air Member for Personnel; Air Vice-Marshal A. L. James, C.B.E., Air Member for Air Plans; as well as Air Cadet Liaison Officers from across the country. An international touch was added by the presence of an American delegation headed by Major-General Lucas V. Beau, national commander of U.S. Civil Air Patrol. The R.A.F. viewpoint was expressed by Air Commodore A. P. Revington, C.B., C.B.E., Head of the U.K. Air Liaison Mission in Ottawa.

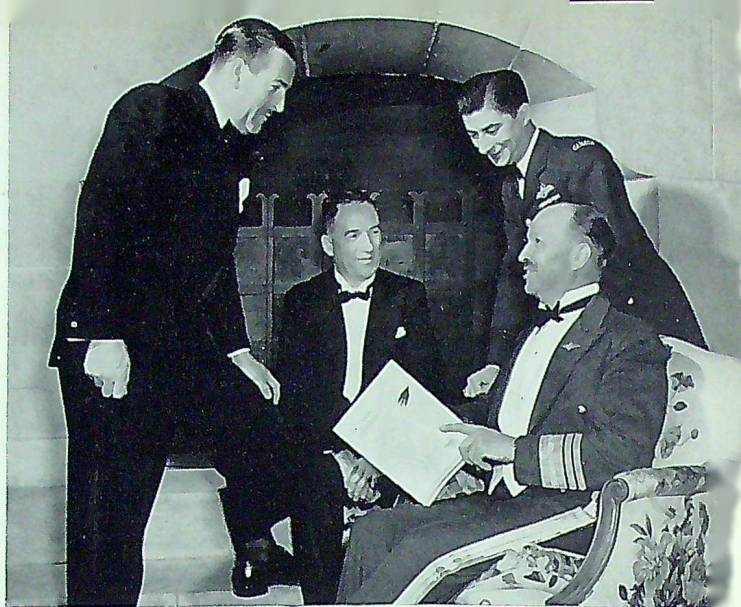
Climax of the meeting came with the election of new officers for 1951. Elevated to the presidency of the League for the coming year was H. L. Garner, Peterborough, Ont. An Air Cadet enthusiast of many years' standing, Mr. Garner has served as chairman of the Ontario Provincial

Left to right: Air Marshal W. A. Curtis, C.B., C.B.E., D.S.C., Mr. H. L. Garner, Maj.-Gen. Lucas V. Beau.





Left to right: Messrs. Dudley Roden, Norman S. MacGregor, Air Vice-Marshal E. E. Middleton, C.B.E., Air Vice-Marshal C. R. Slemmon, C.B., C.B.E.



Left to right: Messrs. C. Douglas Taylor, A. Ross Grafton, Air Marshal W. A. Curtis, and Flt. Lt. Marcel Belleau.

Committee and, more recently, as a vice-president of the League and a member of the national executive. He succeeds M. Banker Bates of Hamilton who served as chairman of the Seigniori Club discussions.

Vice-presidents for the coming year are G. M. Eaton, Winnipeg, and H. W. Aslin, Halifax. Other members of the executive committee are: Hon. President C. Douglas Taylor, Hon. Treasurer R. Scott Misener, Hon. Secretary D. A. Ross, L. S. Marsh, G. A. D. Will, and H. D. Macgillivray.

Air Marshal Robert Leckie, C.B., D.S.O., D.S.C., D.F.C. (ret'd), whose sound counsel has been invaluable to the League, continues as special consultant.

An unusual and inspiring feature was a special Tenth Anniversary luncheon held on March 13th. Places of honour at the head table were occupied by eight former Air Cadets representing the various youth training activities undertaken by the League. As a group, they have qualified for just about every special award open to Air Cadets. The eight: Alan D. Wallis, presently attending R.M.C. on a League scholarship; Flying Officer C. R. Longmuir, an R.C.A.F. fighter pilot; Gerald E. Gilroy, who is attending the University of Toronto on a League scholarship; Flying Officer R. H. Rivest, a jet pilot of the Reserve Air Force; Cpls. R. A. Lee and J. L. Hackman, and A.C. 1

J. B. Aspinall, all R.C.A.F. groundcrew; and Flt. Lt. Bayliss, R.C.A.F. navigator.

Guest speaker at the luncheon was the well-known Canadian commentator, John Fisher, who later told the Air Cadet story to the people of Canada on his regular Sunday night C.B.C. broadcast.

* * *

At the close of the business sessions, the League was able to announce a number of developments, all designed to bolster and advance the Air Cadet training programme.

The immensely popular Air Cadet exchange visit scheme will continue this summer, with approximately fifty Air Cadets visiting the United Kingdom and U.S.A. while return parties are entertained by the League and the R.C.A.F. in Canada. The meeting authorized Honorary President C. Douglas Taylor and General Manager G. M. Ross to attend a planning-conference in London on April 10th to make top-level arrangements for the exchanges. They will be accompanied by Air Marshal Robert Leckie and Wing Commander R. M. Cox, D.F.C., A.F.C., Senior Air Cadet Liaison Officer. Mr. Taylor was also empowered to visit several additional European countries, four of which will be invited to send cadet representatives to Canada this summer.

The Roundel

Selection of the following League representatives on the external tours was unanimously approved: D. R. MacLaren, Vancouver, for the U.K. tour, and Dr. W. W. McBain, Port Colborne, for the U.S. tour.

The League will again award up to 20 scholarships to permit graduate Air Cadets to attend the Canadian Services Colleges at Royal Roads, B.C. and R.M.C., Kingston. In the past four years no less than 58 scholarships, valued at \$34,800 have been granted through the League.

A special grant — the \$500 Sir James MacBrien Scholarship — will permit another graduate cadet to enroll as an aeronautical engineering student at the University of Toronto.

Summer camps for up to 6,000 Air Cadets will be held at Greenwood, N.S., Aylmer, Ont., and Abbotsford, B.C. Of two weeks' duration, the camps will be highlighted by familiarization flights in Service aircraft.

The International Drill Competition will be held on August 28th at the Canadian National Exhibition. A special meeting of the I.D.C. Committee was called by Chairman L. S. Marsh to review plans for this colourful event. An invitation has been extended to a British team to compete with the U.S. and Canada for the Beau Trophy.

Up to 225 senior cadets will be able to qualify for R.C.A.F. flying scholarships, which offer 17½ hours of air instruction. Little difficulty is expected in filling the full scholarship quota this year, as all candidates have been required to undergo medical screening prior to writing the qualifying examinations. Every attempt will be made to have scholarship cadets continue on to private pilot's license standard, and it was announced that, through arrangement with the Department of Transport, the final written exam. will also meet the requirements for the private ticket.

The meeting received notification of several new trophies to be awarded for the first time in 1951:

The A.T.C. "Token of Friendship" Trophy. Goes to the Province whose cadets achieve the highest average rating on the R.C.A.F. flying training scholarship course. This trophy was

presented to the League by the Air Training Corps of Great Britain, and every British cadet subscribed one penny towards the cost.

The Air Cadet League Flying Training Trophy. Presented by Past-President M. Banker Bates for award to the cadet achieving the best average score on R.C.A.F. scholarship flying training each summer.

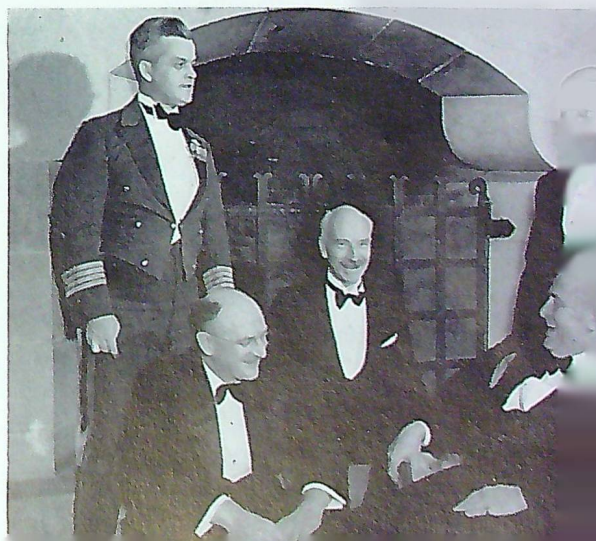
The R.C.A.F.A. Proficiency Trophy. Presented by the R.C.A.F. Association for annual award to the most proficient squadron in Canada. The basis of award will be similar to that presently used in the Guthrie Trophy competition.

* * *

Chief speaker at the Tenth Annual Dinner was the Hon. Brooke Claxton, Minister of National Defence, who referred to the League as "one of the most important contributions to national defence and citizenship in Canada."

In reviewing the past accomplishments of the League, Mr. Claxton lauded the work of such pioneers as Hon. G. B. Foster, Walter Merrill, and H. P. Illsley, who spearheaded formation of the League in 1941. He also paid tribute to A. W. "Nick" Carter of Vancouver for forming the pioneer Air Cadet unit on the West Coast in 1939.

Left to right: Group Capt. J. A. Easton, O.B.E., Messrs. D. Alex Ross, V. R. Clerihue, R. O. Campney, and D. R. MacLaren.





Left to right: Messrs. M. Banker Bates, L. S. Marsh, G. M. Ross, and C. Douglas Taylor.

"It is an encouraging fact," he said, "that 22.6% of the aircrew candidates joining the Air Force over the past three years have come up through the Air Cadet movement. This is a fine contribution," he said, "but we would like to see it become even better."

Stressing the R.C.A.F.'s urgent manpower requirements, Mr. Claxton urged the League to put just as much emphasis on opportunity in groundcrew trades as they now place on flying positions. "You can do a very big job in making it known to

young Canadians that here is a field of activity in which their services are necessary to the safety of the nation," he said.

Turning to a large aerial map of the northern hemisphere, the Minister reviewed current Defence Department thinking on the problem of defending Canada from air attack, and reviewed the steps being taken to place the armed forces in a state of readiness.

"In terms of our national defence, there is only one front to-day, and that is wherever the Communists make an active aggression. Together with our allies in the North Atlantic Treaty countries, we are building bulwarks of peace against the Communist menace," he concluded.

Other speakers included Air Marshal W. A. Curtis, C.B., C.B.E., D.S.C.; C. Douglas Taylor; Major-General Lucas V. Beau; H. L. Garner and M. B. Bates.

After leaving the Seigniory Club, the League delegates travelled to Ottawa, where they were guests of Air Marshal A. W. Curtis, Chief of the Air Staff, at a Mess Dinner in the R.C.A.F. Officers' Mess. The C.A.S. spoke briefly during the evening and presented official scrolls of appreciation to League Directors H. W. Aslin, Halifax, and Eric M. Duggan, Edmonton.

A Shape of Things to Come

This photograph (sent to us by Flying Officer G. E. Kercher of R.C.A.F. Station Centralia) was taken at Croft, England, late in the last war. A Lancaster, loaded with a "cookie" and incendiaries, crashed on take-off. Oddly enough, no one was hurt.

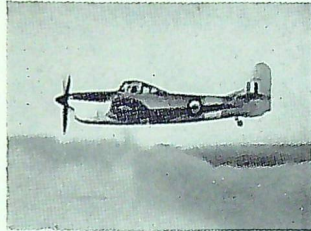
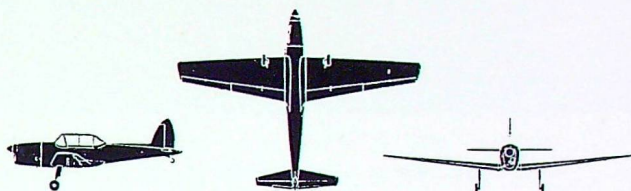


Aircraft in the News...

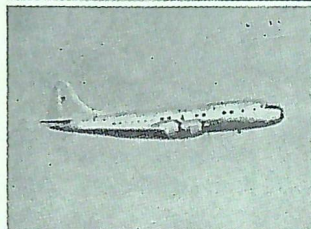
(The photographs and silhouettes appearing below, together with those that appeared in our April issue, are reprinted from the "Inter-Services Aircraft Recognition Journal" by permission of the Controller, H.M. Stationery Office. — EDITOR)



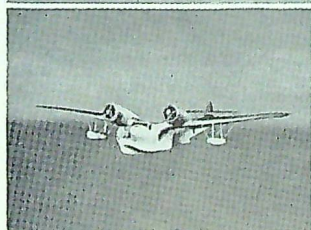
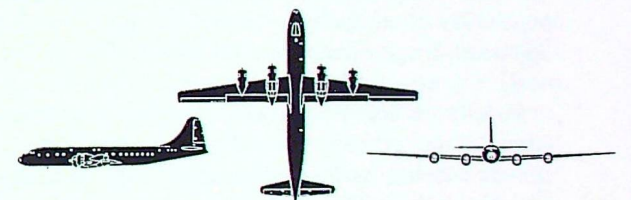
De Havilland
CHIPMUNK T Mk. 10
(One Gipsy Major 10 engine)
Span 34' 4" Length 25' 8"



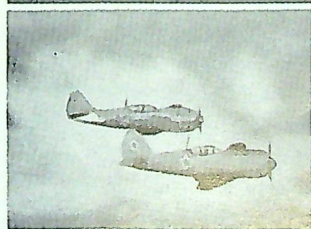
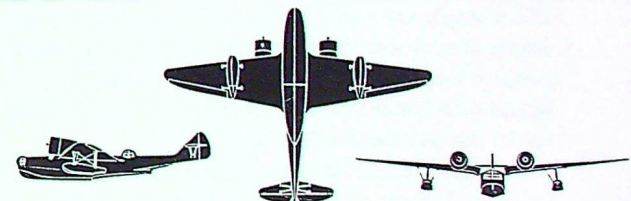
Avro
ATHENA T Mk. 2
(One Merlin 35 engine)
Span 40' 0" Length 37' 6"



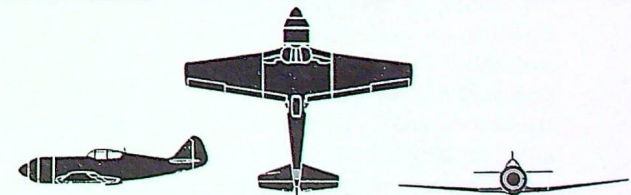
TU-70 (Transport)
(Four Russian built Wright W. Cyclone engines)
Span 141' 3" Length 119' 0"



MDR-6 (Patrol)
(Two M.62 engines)
Span 66' 0" Length 49' 3"



LA-9 (Fighter)
(One M.71 engine)
Span 34' 9" Length 30' 0"



Supply in the R.C.A.F.

By Group Capt. S. G. Cowan, O.B.E.

(The author of this article, the second in our series on logistics, joined the R.C.A.F. sixteen years ago, and shortly afterwards became Senior Supply Officer at R.C.A.F. Station Trenton. He was awarded the O.B.E. for his administration of Supply in No. 4 Training Command during the war. Subsequently he served as C.O. of No. 1 Supply Depot; and, after graduating from R.C.A.F. Staff College, in July 1948 was appointed Director of Supply Services at A.F.H.Q.—EDITOR)

INTRODUCTION

IF YOU WERE TOLD suddenly that 48% of your personal income was to be invested for you, you would probably display a lively interest in the soundness of the venture. Roughly, that proportion of your Royal Canadian Air Force's "income" was invested for you by Supply Branch purchases of materiel in 1950/51 — and it's going up, according to estimates for 1951/52, more than 60%.

Supply is big business. It is obvious that the efficient use of Supply funds has a vital effect on the well-being and effectiveness of the R.C.A.F. It is hoped to show in this article some of the effort made by the Supply organization to provide adequate logistic support. The writer believes that a knowledge of the capabilities and limitations of Supply will assist every member of the R.C.A.F. to do his particular job better.

Essentially, the Supply organization exists only to provide the materiel for the maintenance and well-being of personnel, and for the support of training and operational activities. This demands a steady flow of equipment and supplies from industry to the user. But purchasing alone is not the whole story, as the 1200 Supply Technicians and 200 Supply Officers of the R.C.A.F. can tell you. The technique of Supply starts long before a contractor receives an order, and involves many personnel outside the Supply organization.

PLANNING

The A.F.H.Q. planners must keep looking four to five years ahead with a definite target in view for the R.C.A.F. in terms of men, squadrons, bases, aircraft, and money. Months before the beginning of the governmental fiscal year, every effort is made to provide each A.O.C. (particularly the A.O.C. of Air Materiel Command) with a Plan of Activities outlining the tasks and changes for the year ahead. Air Materiel Command then has the difficult task of translating the plans regarding activities, changes, new units, personnel, flying hours, and other data, into forms of equipment, supplies, and services needed to support the R.C.A.F. for another year. This task requires detailed calculations by a large staff for several months. Costed, and tabulated as "Projects" for each general range of goods or services, A.M.C.'s proposed programme is then returned to A.F.H.Q. for amalgamation with other financial estimates for the coming fiscal year.

Major changes of plan made after this stage cannot fail to disrupt the entire Supply programme. Similarly, failure on the part of Commands and Groups to advise A.M.C. of details of their own internal programme that may require abnormal support prevents proper fiscal arrangements from being made. And so it goes, all the way down the line to the Unit Section Commander who needs a replacement lathe or an

additional one. The user must state what he wants, and state it early.

There is an inherent weakness in this process — a weakness that it is beyond the power of the R.C.A.F. to correct. Procurement for the Plan of Activities cannot commence for that year until about April 1st. Since it takes 6 to 12 months, or even longer, to secure deliveries of most ranges of technical goods, it follows that the R.C.A.F. is always operating with the materiel intended for the previous year! So long as the programmes are roughly equal, no particular harm results. But where the new programme plans for greatly increased activity, shortages are bound to occur.

REQUIREMENTS

In the time between receipt of the Plan of Activities and provisional release of funds, A.M.C. must convert the Plan, plus the Command's programmes, into accurate and detailed requirements by items. The chief tools needed to do this are:

- Scales of Issue, or Authorizations, of the kind and quantity of items necessary for specific types of units or activities.
- Checks on existing stock levels in the Supply Depots and orders due in and out.
- Records of past consumption experience.

Application of Scales of Issue, in general, settles the requirements for new or expanded activities demanding items of a capital nature. Past consumption figures provide a lead to requirements for purposes of maintenance. Factors are developed from the inter-relation of total personnel, flying-hours, aircraft, etc., supported in the previous year to those proposed for the new year. These permit probable consumption for the coming period to be forecast for wide ranges of items.

The study of consumption is a story in itself. A.M.C. is furnished (by mechanical accounting methods) with regular reports of Depot stock levels, orders due in and out, and consumption. These figures may be relied on for many items, but, on account of the high rate of obsolescence and the high cost of many technical items, actual consumption must be checked at typical units by

survey. Surveys are particularly necessary for aircraft and engine spares.

Where no consumption data are available, field teams must be sent out to the manufacturers' plants. The equipment and its many drawings are studied, the manufacturers' recommendations considered, and decisions arrived at as to what spares and how many should be bought. A study of a new type of aircraft involves the review of about 10,000 separate items. Those items already used in the R.C.A.F. must be recognized in order to preclude duplication, and all new items must be identified. All of this information must be transferred to the provisioning cards — and there is one card for each of more than 200,000 items in use. Added to this, there are other complications, such as superseded items, alternatives, modifications and sized items all of which require careful consideration.

A great deal of requirements work is tedious, unheralded, and unrecognized. But its faithful and accurate accomplishment forms the basis of efficient Supply support. It demands good teamwork from both Supply and technical personnel at A.M.C.H.Q.

One word more on Scales of Issue. They are just as essential for materiel as are Establishments for personnel. No better method has yet been devised by which to plan and allocate equipment. It is readily apparent why the Supply "types" become so concerned over neglect by the user of his Scale of Issue or Authorization, and over the hoarding of equipment surplus to needs. The former perpetuates purchase of the wrong items, or of purchase in *insufficient* quantities; the latter causes purchase in *excessive* quantities. It is up to the user to initiate corrections to the Scales of Issue. No one can, or will, do it better.

PROCUREMENT

Most procurement is by means of bulk annual orders, originating at A.M.C.H.Q. and purchased by the Canadian Commercial Corporation in Ottawa. Gaps are covered by various emergency measures, including local purchases by Depots or units. Approval of the R.C.A.F. estimate by the Treasury Board normally constitutes authority for

The Roundel

A.M.C. to commence procurement. First, however, the total funds approved must be allocated to the different projects and thence to the item requirements. Here it nearly always develops that, with the very best of intentions, the R.C.A.F. is attempting more than funds permit. Efforts must therefore be made to ensure that essentials are procured first. Hence it sometimes happens that no replacement for that worn-out staff car or for the dilapidated mess furniture can be ordered, because, let us say, fighter aircraft must have new sunsights.

Taking the existing stock quantities into account, the annual order on each item is calculated to meet forecast and known needs until deliveries can be expected from the next annual order. In addition, a three-month reserve level is authorized in Depot stocks. The quantities of each item are listed on Contract Demands, which, after many signatures (and several weeks' delay if queries arise — and they often do), finally reach the Canadian Commercial Corporation. The pro-

cedure is painful to describe; but it should be remembered that the Government must make the closest scrutiny of the expenditure of public funds. In war, procedures can be, and are, streamlined.

A Progress and Hastening Section at A.M.C. maintains a follow-up on each Contract Demand until the items are delivered. To ensure that quality goods are bought, specifications are necessary — and inspection is needed to ensure that specifications are fulfilled. At the present time few specifications exist, and an enormous task remains to be accomplished in this field.

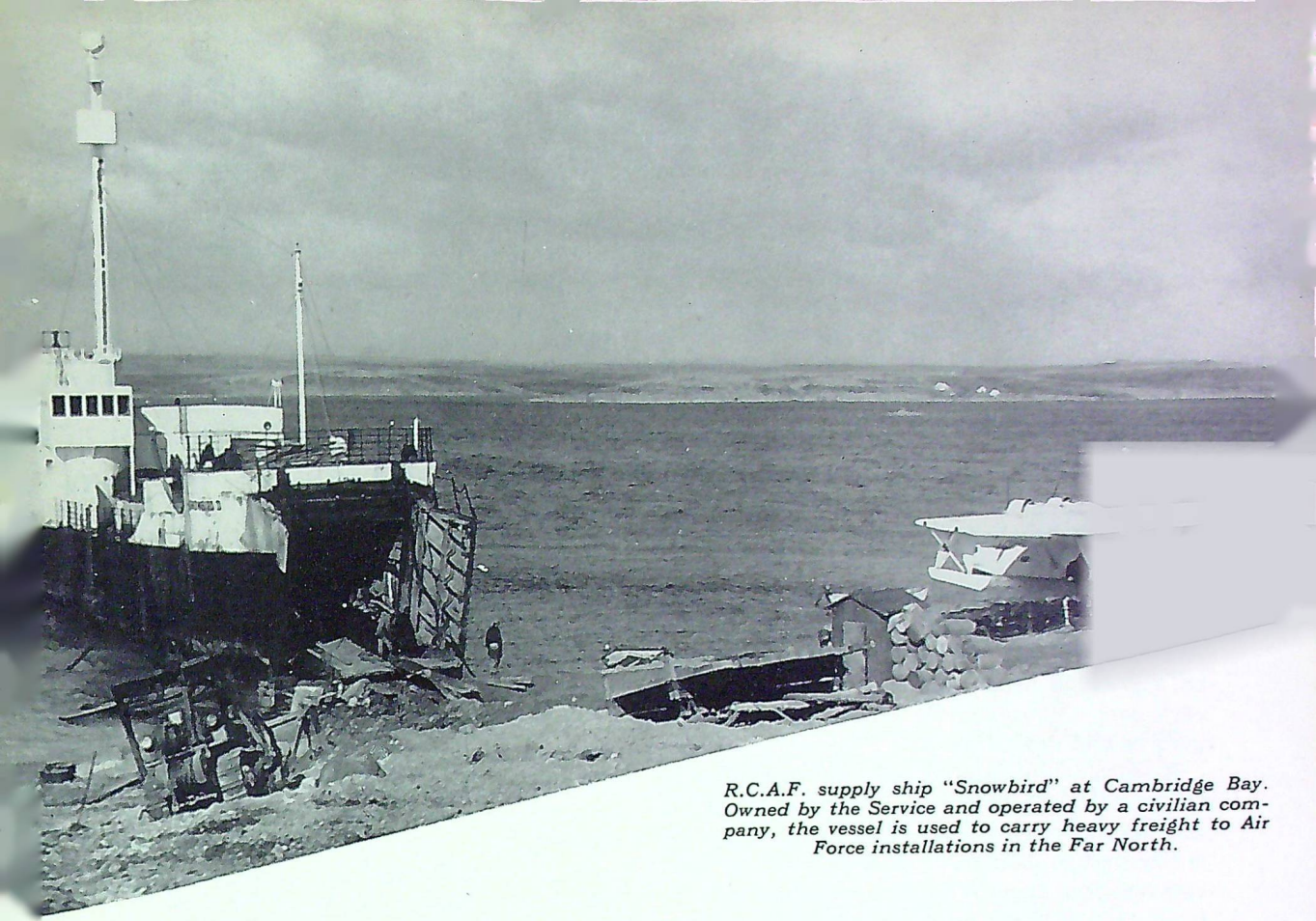
Procurement is the priority task during these days of expansion. Calculating and writing the Contract Demands for a Supply Vote many times as great as that of last year requires augmented staffs at A.M.C., and these have had to be provided at the expense of Commands and units.

CATALOGUING

An essential feature of any Supply system is a common language for the identification of materiel.

R.C.A.F. North Star engaged in Korean airlift.





R.C.A.F. supply ship "Snowbird" at Cambridge Bay. Owned by the Service and operated by a civilian company, the vessel is used to carry heavy freight to Air Force installations in the Far North.

The user at Resolute Bay must ask for the item he needs by the same description as that used in recording its location in the warehouse at No. 1 S.D., Weston. The R.C.A.F. Catalogue, C.A.P. 10, provides that common language. The Catalogue has been undergoing complete revision of content and presentation over the last few years, and the programme has recently been accelerated. The principles on which it is being revised have been developed after study of the best features of R.A.F. and U.S.A.F. systems.

"Tri-Service" standardization between the Canadian Armed Services is proceeding on Scales of Issue, nomenclatures, and specifications for "common-user" items—mostly of clothing and housekeeping equipment. "Tripartite" standardization between the R.C.A.F., R.A.F., and U.S.A.F. has proven more difficult. The best compromise seems to be the provision of a cross-reference index to the equivalent equipments, as well as the provision of ground facilities and fuels

that will meet the needs of the aircraft of all three countries.

To avoid the enormous expense of cataloguing every single item procured, manufacturers' parts lists and numbers are utilized where feasible. Obsolescence is fast, and a great deal of careful research is required to attain and maintain accuracy and completeness. That is one reason why all users of C.A.P. 10 must keep up to date on the amendments if they expect to receive the items they order.

STOCK CONTROL

Two chief methods of delivering goods are adopted. Contracts must be arranged for direct delivery to user units—normally on an "as and when required" basis. These standing contracts are normally for supplies such as fuels or perishable goods, which the contractor can store or deliver on short notice. The other method is for

delivery in bulk to the R.C.A.F.'s Supply or Explosives Depots, for retail distribution to the user units. This arrangement permits advantage to be taken of mass production prices and a few large orders instead of many small ones. It smooths out the "feasts and famines" which would otherwise result from the delays between large production runs.

To enable A.M.C. to effect procurement and properly to distribute equipment between the Depots, a mechanical accounting system is used. Machine-punched cards from each Depot, when run through machines at A.M.C., enable the stock, consumption, orders due in and out, and other data on any item to be reviewed at regular intervals. As R.C.A.F. activities increase, there will be a growing need for similar information from each user unit to provide a closer control of expensive and critical items.

At each self-accounting unit, the Senior Supply Officer has the task of co-ordinating and ordering the materiel requirements of the user sections. He is required to maintain unit stock levels between two and four months' normal consumption, and, to do this, he must order the users' future needs from the Depots in advance. Each and every section head can assist the S.S.O. by forecasting his needs accurately and in plenty of time — to their mutual benefit.

WAREHOUSING

At R.C.A.F. Depots, the equipment delivered from contractors is unpacked where necessary, inspected, identified, stored, and finally shipped to user units. Bulk deliveries may be repacked in retail quantities ready for issue to units. However, wherever possible at the present time, the Contract Demands specify delivery by the contractors of packages which will suit both Depot storage requirements and retail issue.

Depot stock requires a great deal of attention to ensure that it is in good condition when issued. It must be preserved and packaged to prevent deterioration, stored under suitable conditions, inspected at regular intervals, and modified when necessary. Items lost in Depot storage are worse

than useless: they waste time and funds in investigation and in duplication of purchase, and hamper the user who requires the item. That is why the three-dimensional location of each item in the warehouse is recorded. Similarly, items reaching the user in a damaged condition might better never have been sent. This is particularly true of shipments to isolated areas where the cost of transportation may be much more than the value of the article. A great deal of attention is, therefore, given to preservation and to packing in a manner capable of withstanding exposure and rough and frequent handling.

The modern concept of warehousing is one of flow or movement, as opposed to dead storage. The design of the new Supply Depot buildings, now being planned and built for the R.C.A.F., will exploit this concept to the full. Packages will be placed on pallets readily movable to the storage area, or from the storage area to the shipping area, by fork-lift tractors. An overhead dragline will be provided for the smaller items, and a travelling crane for the very heavy. The "paper" which is essential to deliveries, custody of materiel, and scheduling of its despatch to users, will be routed through a pneumatic tube system. Warehousing is an active art, and the supply organization intends to keep pace with the best practices that can be adapted to R.C.A.F. needs.

TRANSPORTATION

The task of Supply is not accomplished until materiel reaches the hands of the user. Transportation methods, their possibilities and limitations, must therefore be recognized as a fundamental aspect of supply. Distribution of materiel from Depots to user units is accomplished by the transportation methods considered most economical as regards total cost and time. Commercial carriers can usually do the job more cheaply than military transport.

- ✓ The cheapest of such carriers are still ships, and they are indispensable for moving bulk freight to the uninhabited or sparsely settled coastal areas of Canada, the areas

served by the Mackenzie River system, the far north, and across the Atlantic.

- ✓ On land, the railways remain the best heavy freight-carrier, except that highway transports can compete on shorter hauls by eliminating much of the packing and handling, as well as by providing door-to-door service.
- ✓ Airlift is expensive, but becomes the best means when the goods are urgently needed, or are perishable or very fragile. It is the only method of serving Goose Bay or the far north during most of the year.

The essential feature is, then, the selection of the best means of transport to ensure the arrival of the needed goods in usable condition and in good time. The problem is relatively simple in the settled areas of Canada, but it poses very great difficulties when we are dealing with sparsely settled areas and the far north. It is worth emphasizing that, unless airlift is to be utilized, requirements for the far north must be stated a full year in advance of the desired delivery date in order to permit procurement, marshalling, loading, and transit during the very short summer periods of water navigation.

REPAIRABLE EQUIPMENT CONTROL

One of the most important sources of materiel in the R.C.A.F. is the overhaul and repair of worn and damaged equipment that has been withdrawn from use. The control of the overhaul and repair programme is centralized at A.M.C. so that the procurement programme can be correlated. Items which may be in plentiful supply are given a lower priority of repair; surplus, obsolete and obsolescent items are not normally repaired. Repair and overhaul programmes are allocated by A.M.C. either to civilian contract or to R.C.A.F. Repair Depots.

It is important to realize that items which are normally capable of repair and return to service are procured by A.M.C., not on a hundred per cent issue basis, but less the estimated annual repairable arisings. Therefore, every day lost in returning repairable items to the unit Supply

Section contributes to the possibility of later shortages of those items.

DISPOSAL

When it has been decided that equipment is beyond economical repair, or is surplus to any known R.C.A.F. purpose, it is reported by the unit Supply Section to the Crown Assets Disposal Corporation. It is dealt with by the weight of scrap materiel content or (if it is worth more in such form) as a complete item. The C.A.D.C. makes all arrangements to find or select buyers, who pick up the material on an "as and where is" basis. One advantage of such a procedure is that R.C.A.F. personnel are relieved of any possible charges of favouritism.

Occasionally, equipment surplus to R.C.A.F. needs is useful to other Government Departments, and is transferred without charge. Donations are also sometimes made to the Red Cross, or other non-profit organizations.

ADMINISTRATIVE CONTROL

The principles and procedures governing Supply are outlined in Supply Instructions, C.A.P. 16. These have now been streamlined to the limit permitted by the Government in order that Commanding Officers and unit Senior Supply Officers may exercise the maximum authority in overcoming their local Supply problems. A certain amount of "paper" is essential to any system, if chaos is to be avoided. The paper-work now demanded, since it has been greatly reduced, must be proportionately accurate and up to date, or the fundamentals of timely procurement of materiel and steady flow to the user cannot work efficiently. This applies equally to the various services provided by the Supply organizations, from laundry and boot repair to the chartering of cargo vessels and the overhaul of aircraft.

Materiel in stock is the problem of the Supply Officer, but materiel in use is the problem of everyone — not just of the inventory-holder, but of everyone from the C.O. down to the recruit. R.C.A.F. materiel is paid for from taxes, and we

are all taxpayers. Misuse, neglect, carelessness, or waste of materiel should not occur on a well-run unit. If it does occur, remedial action should follow quickly. Modern air forces demand increasingly wide and expensive ranges of technical equipment, and we have already seen how procurement is limited to reasonable replacement purchases. Waste therefore means that everyone goes short, and that the R.C.A.F.'s operational ability is impaired.

CONCLUSION

The mission of the R.C.A.F. supply organization is to provide, efficiently and on time, all the materiel necessary for the R.C.A.F. A great deal of attention has been and is being given to developing a supply system which suits the particular needs of the R.C.A.F., and which incorporates the best features of the supply systems in use in other

air forces. Every effort must now be made to make the system work and to keep it working.

These objectives cannot be attained without the active assistance of the users of materiel. The year 1951 is going to be one of the most difficult in the history of R.C.A.F. Supply, because, while the R.C.A.F. is undergoing considerable and rapid expansion, industry as a whole is not under the same pressure and cannot be accelerated to the same extent — and this will inevitably lead to shortages in certain items. It is now more than ever necessary that new requirements be stated at the earliest possible moment, and that every member of the R.C.A.F. sees to it that the Service gets the maximum possible use from all the materiel that it at present possesses.

Oldest Jet Pilot

AS FAR AS WE KNOW, the oldest jet pilot in the world is Air Vice-Marshal A. T. N. Cowley, C.B.E., (ret'd), who, after a 15-minute cockpit check, recently added the Vampire to the list of the 170 types of aircraft he has flown during his long career in aviation. He was 62 last December.

Air Vice-Marshal Cowley was born in 1888 and received his B.Sc. at McGill in 1910. He flew with the R.N.A.S. in the First World War until taken prisoner, and joined the Canadian Air Force in 1922. He was appointed Flight Lieutenant when the R.C.A.F. was formed on 1 April 1924, during which year he served as Controller of Civil Aviation. He held the position of Superintendent of Air Regulations from 1927 until the outbreak of the Second World War. He then served successively as Director of Air Force Manning, Commanding Officer at Camp Borden, A.O.C. No. 4 Training Command (Calgary), Air Member for Organization, and finally A.O.C. No. 1 Training Command (Toronto). He left the R.C.A.F. in

July 1945, and a little more than a year later took up his present duties as Director of Air Services for the Department of Transport.



High Latitude Performance

FIVE HUNDRED MILES above the Arctic Circle, one of the two Lancasters belonging to No.7 Detachment of No. 408 (Photographic) Squadron stood unserviceable in the chill sunlight of a mid-summer night. The Detachment's assignment was a peculiarly important one, and any delays during the short photographic season were more than ordinarily serious. When, therefore, a North Star landed at 2000 hours bringing with it the necessary replacement engine, the maintenance crew leapt into instant action.

Hoists and special tackle not being readily available in those latitudes, help was sought from some of the Construction & Maintenance Unit men who were working at the Base. What ensued may be gathered from the following extracts from No. 7 Detachment's Daily Diary:

"Considerable difficulty was experienced in unloading the engine, but the maintenance personnel lost no time thereafter. Sgt. Isaac, of 2 C.M.U., operated the drag-line for installing the engine, and it was mounted by 2330 hours . . . In spite of a 15-mile per hour wind and a tempera-

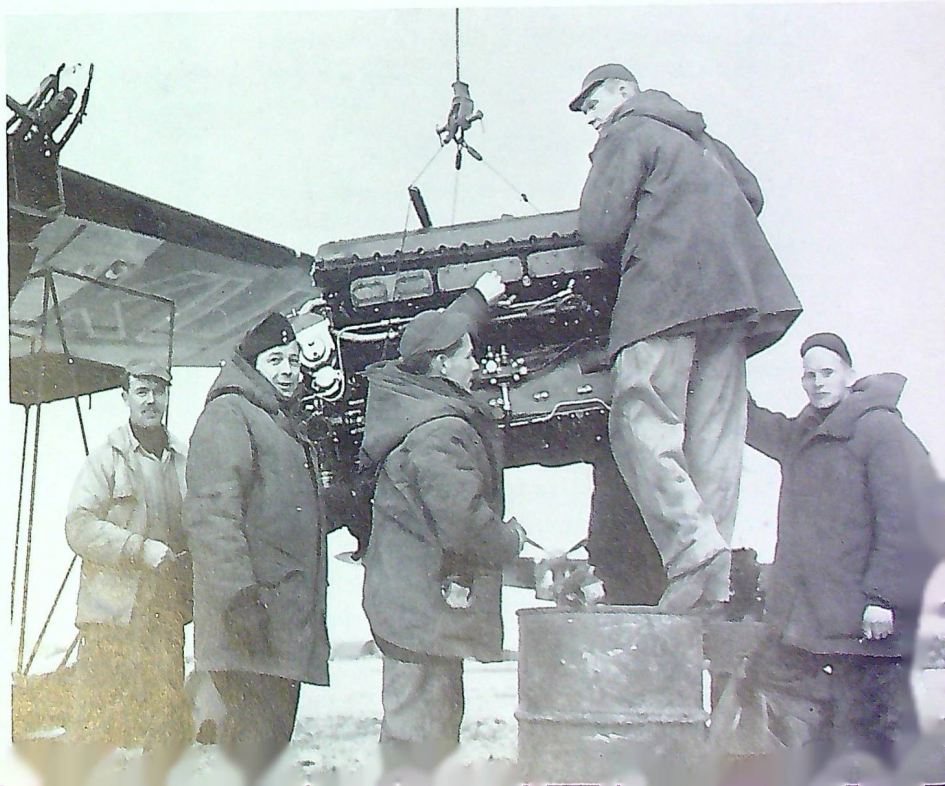
ture of 34°, the boys worked throughout the night . . .

"By 0615 hours the new engine was ready for run-up. Run-up and adjustments were completed by 0730 and the aircraft was ready for test. This must set a record for the installation of an engine. Less than twelve hours elapsed from the time the engine arrived until the aircraft was ready to fly . . ."

One of our most experienced senior officers, commenting on the performance just described, remarks in a note to "The Roundel":

"Some weeks ago, during an inspection visit to certain units, I was told how difficult it was to change engines in a Lancaster. I must admit that, even under civilized conditions — with hangars, fancy equipment, etc.— it is a long and weary task. Four to fourteen days may be required to complete it. The time taken to complete the job described above would be well-nigh incredible even if it had been done under more favourable circumstances. No. 7 Detachment has put up a very fine show."

Left to right: LAC Ross, LAC Mann, Cpl. Robinson, LAC Brunton, LAC Webber.



The French Air Force

By General L. M. Chassin

(Since some 25 pilots and 27 navigators from the French Air Force have just completed N.A.T.O. training at R.C.A.F. Stations Centralia and Summerside, respectively, it may interest our readers to learn something about the Service to which they belong. It should never be forgotten that France's contribution to man's conquest of the air — particularly in its earlier stages — has been, quite literally, second to none.— EDITOR)

(Reprinted by courtesy of the "Royal Air Force Quarterly")

THE 1949 WAR

IN 1940 the French Air Force engaged in battle the vastly superior numbers of the German Luftwaffe. They possessed but 600 fighters and 100 bombers with which to withstand the onslaught of 3,000 enemy aircraft. Despite their numerical inferiority they inflicted very heavy losses upon the Luftwaffe, destroying no less than 919 enemy aircraft, with a loss of 406. When hostilities ceased in France, General Vuillemin decided to send all available military aircraft to North Africa. Six hundred crossed the Mediterranean between 17th and 29th June, hoping to continue the struggle.

THE ARMISTICE PERIOD

During the armistice the French Air Force, three-quarters of which was stationed in North Africa and French Occidental Africa, had a relatively important number of squadrons (sixteen fighter, thirteen bomber, six reconnaissance and three transport), comprising approximately some 600 aeroplanes and the means of carrying on with the training of 1,250 pilots: which training made it possible, when the great moment came, to rejoin the battle without undue delay.

Meanwhile, General de Gaulle and General Valin had raised and organized a Free French Air Force in the Empire which, by the end of 1942, comprised "The Alsace," "The Isle de France" and "Normandy" fighter squadrons, and "The



Charles Lechères, *Chef d'Etat Major, Général de l'Armée de l'Air.*

Artois" and "Picardy" coastal squadrons, approximately 130 military aircraft. In addition, there were many French airmen serving individually with squadrons of the Royal Air Force. Having fought alongside their French allies throughout the hardest period of the war, the British know how gallantly these representatives of France acquitted themselves in battle.

REARMING THE FRENCH AIR FORCE

In 1942, when the French Forces in North Africa re-entered the war, our old Liore 45, our Douglas, our Glen and our Bloch 174, which our mechanics had miraculously succeeded in keeping serviceable, were immediately sent into action in the Tunisian Campaign. In a symbolic gesture, in December, 1942, the Americans rearmed "The Lafayette" Squadron with the Curtiss P.40, which then joined in the operations at Souk-el-Arba.

After the A.N.F.A. Conference, at the end of January, 1943, a rearmament plan for the French Air Force was agreed to by the Allies. The Americans undertook the majority of the programme: two medium bomber wings of three squadrons each, nine fighter squadrons and two reconnaissance squadrons. The British offered us two squadrons of Halifax (four-engined) heavy bombers, and three Spitfire fighter squadrons. From her own resources France was to undertake the basic training of her old pilots, young recruits being sent to the U.S.A. and Canada.

From then on progress was rapid. Ten fighter squadrons (260 aircraft), armed with the Airacobra P.39, the Curtiss P.40 and the Thunderbolt P.47, were equipped in Africa during 1943. At first, these squadrons were used for the protection of Allied shipping in the Mediterranean, then gradually engaged in tactical support of ground operations with our armies, first, in Corsica and Italy, and later in France. In 1944, squadrons of medium bombers, composed of about 100 twin-engined Marauders B.26, operated with the Mediterranean Tactical Air Force. They quickly became noted for the precision of their bombing, and after the French landing they formed an independent bomber group.

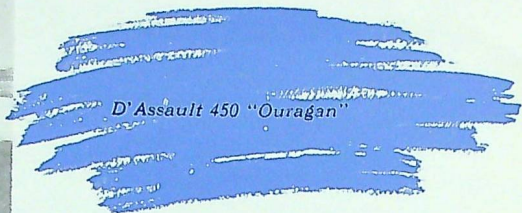
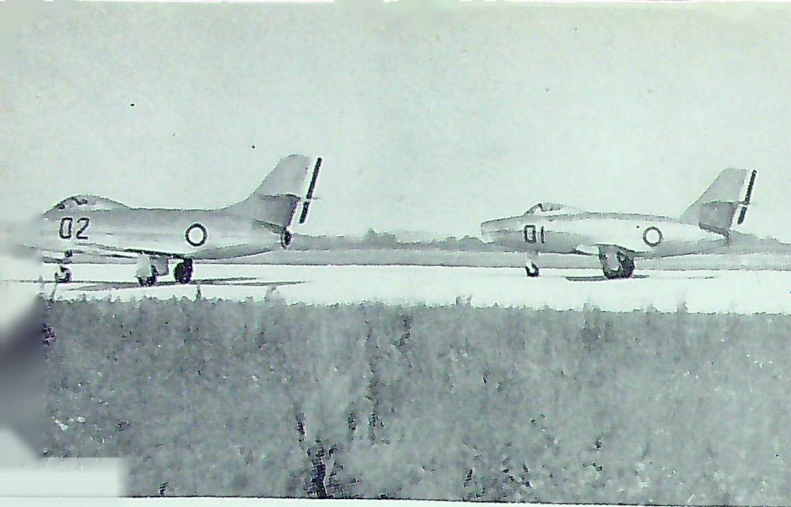
After a long period of training in England, the two heavy-bomber squadrons went into action and played their part in the "flattening" of Germany, as well as giving support to the ground operations in Normandy. Armed with the Lightning P.38, a high-altitude photographic squadron streaked through the French skies for more than a year preparing for the liberation of our country. These were members of 2/33 Squadron, in which Major de Saint-Exupéry was serving, until posted as missing on 31st July, 1944, in a mission over Grenoble. Meanwhile their comrades, armed with Spitfires, were operating over the battlefields of Italy and France on tactical reconnaissance. In addition to these activities, a legion of small observation aircraft (the Piper Cub) were extremely useful to our artillery throughout the Italian Campaign, directing their fire on to enemy objectives.

When the French Air Force returned to France it consisted of fourteen fighter squadrons, ten bomber squadrons, two reconnaissance squadrons and two transport squadrons, as well as six anti-aircraft groups (200 guns) for the defence of our airfields; and three Parachute regiments, one formed in Algeria, the others in England.

Step by step, our Air Force regained its independence. At first our squadrons were used in Allied organizations, our personnel in squadrons under the command of American or British officers; but gradually, as soon as we were capable of maintaining our own equipment and supplies and able to form the necessary staffs, there were French bomber and fighter squadrons grouped in their own organizations, under Allied command.

After landing in our own country we made further progress towards unification of the French Air Force, as the bulk of the squadrons went to form the 1st French Air Command, under General Gerardot, and with the 12th American Tactical Air Force constituted the First Tactical Air Force, which was entrusted with the support of the American Seventh Army and the French First Army operations which were under the command of General Devers.

After the liberation, new squadrons were formed in France with equipment captured from the



Germans or that supplied by the Allies. The Commander of the Atlantic Air Forces built up, during the course of the operations of Royan and Verdon, five new fighter squadrons, two bomber squadrons and one reconnaissance squadron.

Until the end of the war our Air Force was continuously engaged in operations with remarkable success. Between 1940 and 1945 our fighter squadrons destroyed in combat 659 enemy aircraft. Our bomber squadrons dropped 26,000 tons of bombs.

POST-WAR

After the war our first task was to "tidy up our devastated home," to assess the damage, to reoccupy our Air Force establishments and to rebuild again our aircraft factories; at the same time it was necessary to formulate a programme for the development of the French Air Force.

It was soon apparent that the economic reconstruction of France had an incontestable priority. National Defence and, in particular, aviation had to take second place. It was necessary, therefore, to make severe cuts in our military expenditure. At that time the Government considered there was no danger of another war, and made the primary responsibility of the Air Force the security of the French Empire and her communications. In consequence, the retention of bombing squadrons was considered superfluous, and the *Marauders* and *Halifaxes* were converted for use as transports. Precedence was given to transportation and other squadrons for "police and security."

During this time aircraft construction was restarted and an ambitious programme was announced. Responsible authorities estimated

that in about three years, that is to say, about the end of 1948, the fighter aircraft in our squadrons would be replaced, to some extent, by French jet aircraft similar to those of the British and Americans. In order to fill the gap during those three years, it was agreed with the Royal Air Force (the Hartemann-Dickson Agreement) that the British would let us have a sufficient number of aircraft, engines and spares, until such time as the French types were available.

If, in 1945, the immediate need was for transport aircraft, by 1946 events in Indo-China obliged us to consider more and more urgently the need for an Air Force for the Far East. However, the danger of another war having rapidly arisen, the French Air Force, reduced by 90 per cent., had to proceed with the costly reconstruction of its destroyed bases, and the radio equipment of the French operational area.

The Government now made priority number one the air defence of France and realized the need for an air force capable of maintaining command of the air and providing tactical support to ground forces. By an arrangement with the British, the *de Havilland Vampire* was selected for the initial re-equipment of French fighter squadrons, while waiting for the first French fighter aircraft, of which the *Marcel Dassault Ouragan* has proved to be the best.

PRESENT ORGANIZATION

At the present moment the organization of the French Air Force is as follows:

Mr. Maroselli (the Secretary of State for Air) is responsible for the Air Force and at the same time for all aeronautical construction (military and civil). This Minister has directly

under him the Etat-Major Général (Armée de l'Air), the Directors of Technical Design and Supply, Personnel, Equipment and Medical Services. The "Etat-Major Général" is under the command of Général d'Armée Aérienne Charles Lechères, assisted by Général de Division Aérienne Pierre Fay, who is given the title of Major Général de l'Armée de l'Air.

The Air Force comprises a certain number of Territorial Commands and Reserve Commands.

From the Territorial point of view, France is divided into four Air Force regions (Dijon, Paris, Bordeaux and Aix-en-Provence). North Africa forms the fifth region. French Occidental Africa, Equatorial Africa, Oriental (Madagascar) Africa and Indo-China are independent Air Force commands.

From an operational point of view the main commands are as follows:

The 1st Air Force Division (Général Bodet), comprising most of our Tactical Air Force.

The Air Defence of the Country (Général Bailly), which corresponds roughly to the Fighter Command of the Royal Air Force.

The G.M.M.T.A. (Groupement des Moyens Militaires de Transports Aériens: Colonel Dechaux), which corresponds to the Transport Command of the Royal Air Force.

The Commandement Supérieur des Ecoles de l'Air (Général L. M. Chassin), which combines the Technical Training and Flying Training Commands.

Although the effective strength of the French Air Force has been reduced since the liberation from 140,000 in war time to 65,000 in 1950, the recent vote in Parliament known as the "Plan Quinquennal," has opened up prospects of considerable development.

The "Plan Quinquennal" (which, under the urgency of the moment, may be completed in

three years instead of five) should give the French Air Force, by 1955 at latest, a strength of 2,500 military aircraft, of the latest types, most of them jet fighters, a suitable number of airfields and the requisite chain of radar stations for the operation of this force. This plan provides for an air force in the region of 130,000 men. Its cost will require a budget of about 150 milliards per annum during five years.

Already all our fighter pilots have been through a jet-conversion course at Mont-de-Marsan. Our personnel have already taken part several times, together with their allies of the Brussels Treaty, in combined exercises, where they have shown that they will do their utmost to maintain the high standard of their glorious Royal Air Force comrades. It is hardly necessary to add that sport plays an important part in the training of our pilots, and every year in international competitions they compete in boxing, football, rugby and fencing with their British and Belgian comrades. Thus, a fine relationship of "camaraderie" has been established and maintained since 1945, between men who have together victoriously defended their freedom against the aggressor, and would be ready, if necessary, to do so again tomorrow, a united band of brothers, with the same ardour, the same forcefulness of purpose and, we hope, the same success.

Avro Drain Wick

A WICK for draining moisture from the cabin of a pressurized aircraft has been recently developed by Avro Canada Limited.

The air present in the cabin of an aircraft contains moisture which condenses when its temperature is lowered. In a pressurized aircraft, disposal of this moisture creates a problem, since the conventional drain holes, which would also permit the pressurized air to escape, are clearly unsuitable unless they are so small as to be easily obstructed by dust, etc. Consequently, a porous wick has

been developed which will absorb any moisture collecting in the structure and transmit it to the exterior of the aircraft for evaporation.

The wick has a short stem terminating in an absorption pad at one end and an evaporating pad at the other. It is made of felt or some similar material which resists the passage of air but will transmit moisture by capillary action. The stem fits snugly in a drain hole, its ends contacting the pads which are attached to the inner and outer surfaces of the pressurized compartment.

A.F.A.R.S. Convention

ON SUNDAY, February 11th, R.C.A.F. Station Greenwood acted as host to 150 "hams" of the Air Force Amateur Radio System, during a one-day convention. Present were amateur radio operators from the Halifax and Cabot (Cape Breton) Squadrons, the New Brunswick-Prince Edward Island Flight, and the Annapolis Valley Flight, but, on account of unfavourable weather conditions, there were no representatives from the Newfoundland-Labrador Flight. Highlights of the convention included the inspection tour made by the members of the group to some of the most important sections of the Station, addresses by R.C.A.F. officers, demonstrations by various departments, and a highly successful banquet and entertainment.

Ever since the Johnstown flood, it has frequently been proved that amateur radio can get through where normal methods of communications fail. A.F.A.R.S., therefore, continually promotes amateur radio net activities to foster emergency communication by radio, and the purpose of the gathering on February 12th was to hear plans for future activity and development, as well as for the co-ordination of effort on a major scale for the purpose of military or civil defence.

After dinner the delegates returned to meeting-headquarters in the O.T.U. Briefing Room to witness an interesting film, "Arctic Survival"; and the evening's programme opened. An address was given by Flt. Lt. A. C. W. Barrett, representative of A.F.A.R.S.'s Chief Controller, Group Capt. E. A. D. Hutton, who was unable to attend the convention. The speaker told his hearers of the R.C.A.F. policy with respect to the A.F.A.R.S.

This policy, he said, is one of continued support, as stated by the Chief of the Air Staff in his Christmas message to the members: "The Royal Canadian Air Force will continue to work with you in furthering the interests of amateur radio in Canada."

During the coming month, the speaker continued, a complete new brochure would be published

by the Chief Controller, in which would be outlined the terms of membership in A.F.A.R.S. He also informed the operators that the organization was to have a journal of its own — a publication which would cover the doings of the members from coast to coast, and which would be forwarded to them free of charge.

He mentioned the advancement of the Annapolis Valley Flight to full squadron status, with a newly-appointed controller in the person of Mr. H. Bath, who was called upon to accept a certificate in recognition of his appointment. He announced, too, the appointment of Mr. Owen Morris as Flight Leader for the independent flight comprising the New Brunswick and Prince Edward Island area.

In concluding his address, he recalled how invaluable such an efficient emergency communication system as the A.F.A.R.S. has shown itself to be over and over again, referring specifically to the Winnipeg flood and the Cabano and Rimouski fires as being only three of many typical examples.

Brief remarks were made by Mr. John Paddon, Controller of the Halifax Squadron and Area Co-ordinator for the Atlantic net, who related details of particular interest to the group mem-

Mr. Harold Green, the youngest member, draws for door prizes. Holding basket is Flt. Lt. A. C. W. Barrett.





Delegates assembled in the O.T.U. Building.

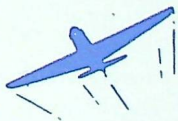
bers. In his remarks, he urged that the System be enlarged, and also gave details and advice about some of the latest equipment available for the work.

Flt. Lt. Barrett then turned the meeting over to Flt. Lt. J. W. Murphy, who, he said, had done a great deal of the planning and the work entailed by the convention.

Members of the A.F.A.R.S. present at the gathering, as well as others who had been unable to attend, were provided with an opportunity on Sunday night to carry out a little bit of "emergency work," when the Cape Breton Squadron members contacted fellow-hams along the airways of the Maritimes to ask them to notify (via Cape Breton operators) the families of those who were forced by bad flying weather to remain on the

Station overnight. Flight Leader Merritt, of the Cabot Squadron, who was unable to make clear call contacts with Flight Leader Roy MacEachern at North Sydney, received splendid co-operation from a member in Moncton, N.B., who relayed messages to North Sydney, whence they were forwarded to other sections of Cape Breton.

For everyone at the convention it was a day to be long remembered. Quite apart from the intrinsic interest of the visit to R.C.A.F. Station Greenwood, it was also the first occasion on which practically all the operators present had met each other personally. Hitherto they had known each other only as cheery voices on the air waves. It is hoped that it will not be too long before similar get-togethers are held on R.C.A.F. Stations in various other parts of Canada.



Letters to the Editor ★ ★ ★

UNSUNG DRAMAS OF THE SERVICE

Dear Sir:

Interesting though "The Roundel" is, none the less I sometimes feel that perhaps it caters too much to the interests of pilots, navigators, and ground crews. It tends, I think, to overlook those little dramas and tragedies that are daily enacted in the world of Air Force paper-work. Yet, for the man of sensitive spirit and discriminating mind, they have a poignancy that can move him more deeply than any saga of the air that has yet been sung. Take, as a case in point, a General Allowance Claim — the unassuming little form which we meet everytime we transport our wives, progeny, furniture and domestic livestock to a new sphere of Service activity. Compared with the passions that a G.A. Claim can stir up in an Air Force breast, small indeed are the emotions aroused by the prophetic roar of atom bombs, the contemplation of far-fung island universes, or the sombre majesty of an R.C.A.F.A. Convention . . .

When first launched upon the sea of life, a G.A. Claim has all the purity of a Carmelite nun. Its blank white expression reflects its profound faith in human nature, its love of all paymasters in general and of the deities at Command Headquarters in particular. Stamped indelibly on its fair countenance is the hope of finding a final resting-place on the polished desk of the Treasurer. But only disillusionment awaits it.

Before long all evidence of the G.A. Claim's original character has been obliterated. Its face has been mutilated beyond recognition. Its very soul has been ravished by the jaundiced eyes and spluttering pens of claims clerks, N.C.O.'s, and adjutants. The virginal vestments have been torn asunder, the delicate flesh has been bruised and battered. Dragged brutally from the bottom of a basket (where it has lain for months close to death), it is skewered to an assortment of invoices and receipts and thrust rudely into a large envelope with other victims destined for the Avenging Furies at Command Headquarters.

There, its innocent little lipings about the price of orange juice on the train are compared with the average price of orange juice during the past ten pre-inflation years — and further snarling desecrations are promptly inflicted on it. Then, after being X-rayed for any stray coppers it may have attempted to conceal, the poor tortured thing is sent back to its place of origin for adjustment. Finally, after further wanderings, it is tossed by the ever-raging storms of Procedure upon the bleak shores of the Treasury Office, where merciful oblivion at last engulfs it . . .

The foregoing drama is only one of the many that are taking place, unnoticed, all around us. Let us not forget them. Whenever we feel ourselves being seduced by the siren-song of jet and propeller, let us keep our perspective true by recalling to mind the wealth of romance and tragedy that lies buried in forgotten files throughout our Service.

The Recording Angel

NO. 1 R. & C. WING

Dear Sir:

May I make two slight corrections to my article on No. 1 Radar and Communications Wing as it appeared in your March issue. First, your credit line states that I am Wing Adjutant, though in point of fact this position has been vacant for the past year — during which time the work has been done by Flt. Lt. Rocheleau and Flying Officer Patterson of the Support Unit. My own job is that of Adjutant to No. 2401 Aircraft Control and Warning Unit. Second, you mention in your third paragraph that functional and administrative control of the Wing passed from training Command to Air Defence Group in Nov. 1950, whereas this transfer took place in Nov. 1949.

Flying Officer H. B. Ripstein

(Both mistakes were ours, and we extend our apologies to Flying Officer Ripstein. — EDITOR)

CANSO DIVE-BOMBERS

Dear Sir:

A rumour has it that Catalinas and Cansoes were actually used as dive-bombers against the Japanese in the Aleutians. This seems pretty incredible to me — particularly as I have heard that the P.B.Y. is only tested for 2½G.

J. G. MacDonald (R.C.A.F.A.)

(The pundits assure us that Catalinas, although they were required to make rapid descents in bombing-runs against submarines, were never used in a pure dive-bombing role. The P.B.Y. has successfully survived static tests for a load factor of 3.9. — EDITOR)



Answers to "What's the Score?"

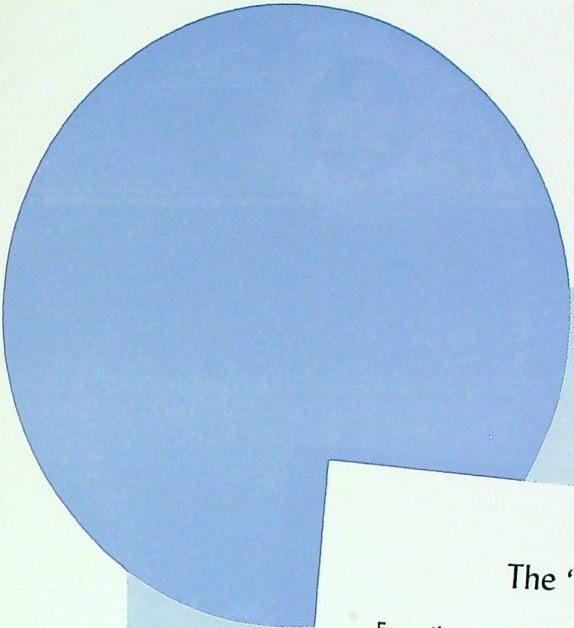
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Leaflet Warfare

It takes a heap of leaflets to fight a modern war. Between 28 June and the end of October, the Psychological Warfare Branch of the Far East Command disseminated 100 million leaflets in Korea.

Most of the leaflets were dropped by airplanes — 90 million being delivered by B-29's and C-47's. Another 10 million were delivered by Eighth Army and X Corps by means of Fifth Air Force aircraft, observation planes and artillery and howitzer shells.

("Army Navy Air Force Journal": U.S.A.)



The "R.A.F. Quarterly"

From time to time we receive enquiries as to names and prices of publications that deal authoritatively with the problems of air warfare and the subjects connected with it. May we therefore once again direct our readers' attention to the "Royal Air Force Quarterly and Commonwealth Air Forces Journal." This is a publication that cannot be too highly recommended to all students of military aviation in its relationship to present-day world affairs. In these tumultuous days of loose utterance, it is encouraging to realize that there are still people who restrain their pens until they have something to impart.

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