The Roundel

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ROYAL CANADIAN AIR FORCE

The Roundel

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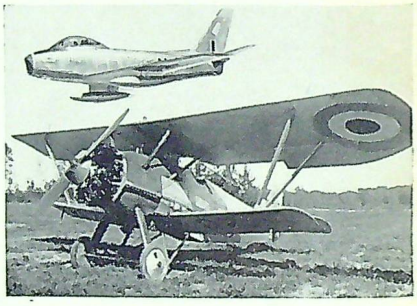


The earliest and the most recent single-seat fighters of the R.C.A.F. – the Siskin (1927) and the Sabre 2 (1951).

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

Sgt. Shatterproof is Relieved

Claudette came twinkling into the office on incarnidined toes, bearing the mid-morning cup of tea and looking even more than usually suggestive of situations in which elderly editors seldom find themselves. I pushed aside the manuscript I was reading. The hiatuses in Claudette's ensemble offered much more interesting revelations than Wing Commander Daggerman's "Peep-Holes in the Iron Curtain." I noted them with care; then, struck by a saddening thought, I sighed.

Claudette paused in the act of setting down the cup. Her dark eyes slid sideways at me from beneath their long lashes.

"Gee, butcha sound blue! Mustabinna tough night."

I winced. Claudette is at her best when she is silent.

"No," I assured her, "the night was not tough. Nor, on the other hand, was it tender. I sigh for the summer's passing, that's all. Soon the leaves will begin to fall. Cottages will stand empty. Beaches will be bare — and their erstwhile occupants won't."

Claudette chewed thoughtfully on her gum, her brow furrowed. Then her eyes widened and she gave utterance to another "Gee!" Her gaze dropped in swift self-inspection and she hitched her peasant blouse another sixteenth of an inch in the general direction of decorum.

"Gee, you're an awful man!" she exclaimed without heat. "You sure gotta one-track mind. My boy-friend always says a girl's a lot better not wearing too much in the hot weather, and he oughta know, seeing he's just got his corporal in the Meterlogical Section."

It was at this point that I became aware of a figure in the doorway behind her. Monumental and forbidding, Sgt. Shatterproof stood there contemplating us with the expression of a Pilgrim Father in a nudist colony. When he saw that he had been observed, he advanced slowly into the room. Claudette turned, gave a single startled squeak, and scuttled off.

Having reached my desk, Shatterproof removed his pipe from his lips and saluted with ominous dignity.

"Hello, Sergeant," I said. "Nice to see you again. Have a chair."

He remained as immobile as Gibraltar.

"For nearly four years, Sir," he began, "I have held a watching-brief over 'The Roundel.' I have pounced on pornography, I have crossed steel with some of the best swordsmen among the Brass. Thanks to my vigilance, 'The Roundel' has at least not yet succeeded in destroying the last vestiges of our airmen's morale. What I have just witnessed, however, warns me that the long struggle may prove to have been in vain."

He paused, eyeing me fixedly and breathing hard.

"What on earth do you mean?" I asked in amazement.

"I mean, Sir, that even I cannot save 'The Roundel' if its editor spends his time wallowing amid the flesh-pots of the Philistines. This" (he made a gesture that embraced the office) "should be a temple of learning. Let us not turn it into a den of dalliance, a house of assignation, a Venusberg."

"A den of — ?" Suddenly I comprehended. "You mean Claudette? Good Lord, Sergeant, you can't think — "

"Unfortunately, Sir, I can. I can reflect that if a woman's face was capable of launching a thousand ships, it would not be very hard for that young lady, who uses rather more than her face, to sink so frail a pinnace as 'The Roundel.' Perhaps Sir, if we adopted a healthy hobby, if we took more exercise — "

I seized the opportunity to change the subject.

"Speaking of exercise, what about your canoe-trip with LAC Bladder? Was it a success?"

Shatterproof tapped the dottle from his pipe into my ash-tray and proceeded to wrestle for his tobacco-pouch with the lining of a trouser-pocket...

"On the whole, Sir, yes," he said at length. "Its purpose, as you may recall, was to harden LAC Bladder by exposing him to nature in the raw. Whether or not that object has been achieved I shall know better when he is released from the Station hospital. Although he benefitted greatly from the physical exertion, the rigours of the trip were a little too much for the delicate balance of the boy's mind. He is at present being kept under sedatives and gradually weaned away from the curious conviction that he spent his leave paddling a tub of lard up the Amazon. I blame myself for not having taken him home when the first signs of his disorder made their appearance. He would wake up in the night, screaming about a stuffed hippopotamus that was smoking a pipe in the stern of the canoe. I managed to calm him on such occasions by reading him selections from Q.R. (Air), but I fear that the treatment was merely a palliative."

"I'm certainly sorry to hear that," I said. "Where did you go, by the way?"

He gazed off through the window, as though recalling far forests and sparkling waters unknown to debauchees like myself. Then:

"We went up the Skunk, Sir."

"Up the what?"

"The Skunk — the river that flows past the Station. I intended to make our way up to its source about a hundred miles to the north, cross the height of land, and venture on into the uncharted regions beyond. Some thousand miles, all told."

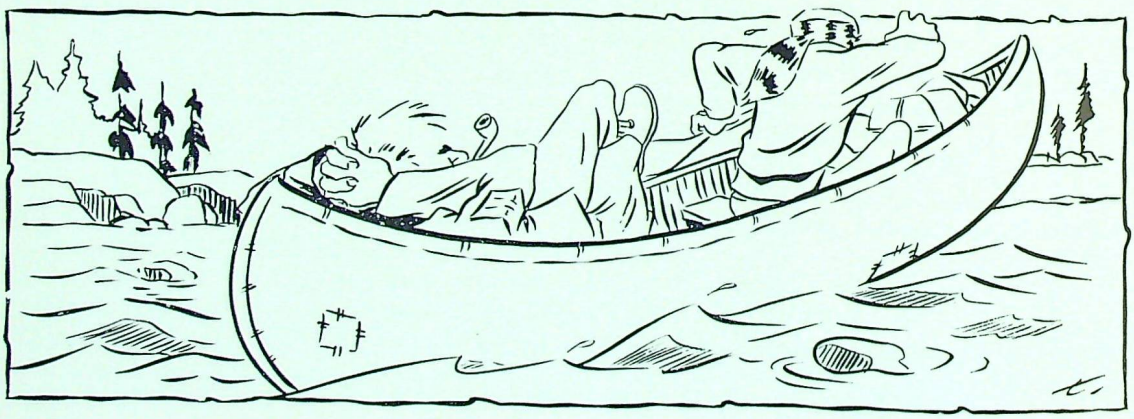
"A fairly ambitious project," I commented.

He smiled tolerantly.

"For the average man — perhaps. But for one in whose veins the pioneering blood still pounds — a mere bagatelle."

"Did you run into many difficulties?"

"None that I was unable to handle. LAC Bladder's lack of condition, of course, tended to slow us up somewhat. Each portage necessitated eight trips for the boy — despite the fact that I remained behind at the water's edge to load him up each time. The weather, too, was not perfect. On the second day out we were caught in torrential rains that saturated our matches. Even I might have been perturbed had I not been conversant



with the technique of making fire with a fire-bow. However, since there are numerous auto-camps all along the highway that parallels the river, my skill was not called into play. We roughed it in the 'Kosy Kabins' for nearly a week, refitting and waiting for the radio to forecast a fair spell. We were saved from getting bushed by the fact that a number of American fishermen were also staying there. My experienced eye discerned immediately, from their dress and their conversation, that they were all seasoned woodsmen. I think LAC Bladder learned a lot from listening to our talk."

I agreed that he must have. "But," I went on to ask, "were you never concerned about getting lost?"

"Lost, Sir?" He gave a scornful laugh. "As long as there is moss growing on the trees, only a tenderfoot need ever get lost. The seasoned bushman always knows the direction of the prevailing wind, so that it's just a matter of dividing the angle between the figure twelve and the hour-hand of your watch, and then consulting your map and your compass. Lost!" He laughed again.

When his mirth had abated, I enquired:

"How far did you get?"

"Not quite as far as I had hoped, Sir," he admitted. "In all, about forty-one miles. But, of course, we only had thirty days' leave. Next year I propose — "

At that moment Claudette, who had apparently recovered her poise, re-entered to collect my empty cup. As she brushed by Shatterproof on her way out, I could have sworn she winked at him, and I heard her murmur something very like "Hi there, muscle-bound!"

The old wardog started like an elephant that feels the goad for the first time in years. For a few horrified seconds I could have sworn he was going to trumpet, but he controlled himself. As soon as Claudette had disappeared, however, he turned to me, expanded himself like an embattled bullfrog, and let his eyes dwell rather pointedly on the editorial physique and bald spot.

"On second thoughts, Sir," he said, "I do not think that any immediate danger threatens either you or 'The Roundel'. That young lady possesses powers of discernment far beyond her years."

With that he saluted and marched purposefully forth. The increasing tempo of his footsteps as their sound died away told me that he was as close to prancing as anyone with all that muscle could ever hope to come.

R.C.A.F. Sport Panorama

Swimming and Diving

By Flt. Lt. A. P. Heathcote

"And who, 'mid e'en the fools, but feels that half the joy is in the race."
SIR RICHARD BURTON: "KASIDAH."

NOWADAYS THE prerequisite for most athletic pursuits is expensive paraphernalia, without which, say the advertisements, the aspiring athlete will never escape the beginner's category. On the other hand, one of the less complicated and therefore cheaper forms of exercise is swimming. Its obvious requirements are (1) water, a commodity which is available either free or at moderate cost, and (2) a bathing suit, if circumstances necessitate one. Practically the same can be said for diving. Both sports are excellent conditioners.

If, however, the swimmer aspires to great things in the aquatic world, then arduous training is a must. This applies especially to the long-distance hopefuls. One can imagine, for instance, the endless hours of training put in by an American named Sigmund, who, in 1940, set a world's record for long-distance swimming and for time in the water by splashing through 292 miles of Mississippi, non-stop, in 89 hours and 42 minutes. We'll take the river-boat, any time.

Dominion and Provincial Champions

To get the ball rolling on our R.C.A.F. swimmers of note, we must about-turn to 1912. In an international meet that year, Frank McGill,[1] a young member of the Montreal Amateur Athletic Association who was barely in his middle 'teens, found himself in competition with some of the top senior Canadian and American swimming talent of that era. In the 100-yd. outdoor free-style event, the youngster was forced to such an extent by one of the Americans, whose name was Ritter, that he simply had to break the Canadian record to win, which he did. Later, in the indoor Olympic Trials, he tied the existing Canadian record for the same distance. Came the Olympics, and the Montreal youngster, who had qualified with ease, was conspicuous by his absence. Paternal decree had kept him at home because of his tender years.

As a water-poloist he played with the Montreal A.A.A. team, which held the Canadian championship prior to the First World War. In that connection, Air Vice-Marshal McGill somehow suspects that his team's impish underwater tactics prompted the adoption of international rules by the governing body. (Water polo, with its submarine wrestling and general roughhouse shenanigans, was just another form of murder.) But rules or no rules, the Montreal team, sparked by McGill, came back after the war to reclaim the title.

In that same year, 1919, Frank copped Canadian honours in the 50, 100, and 220-yd. free-style events.

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[1]All footnotes are given at end of article.

Group Captain F. S. McGill.

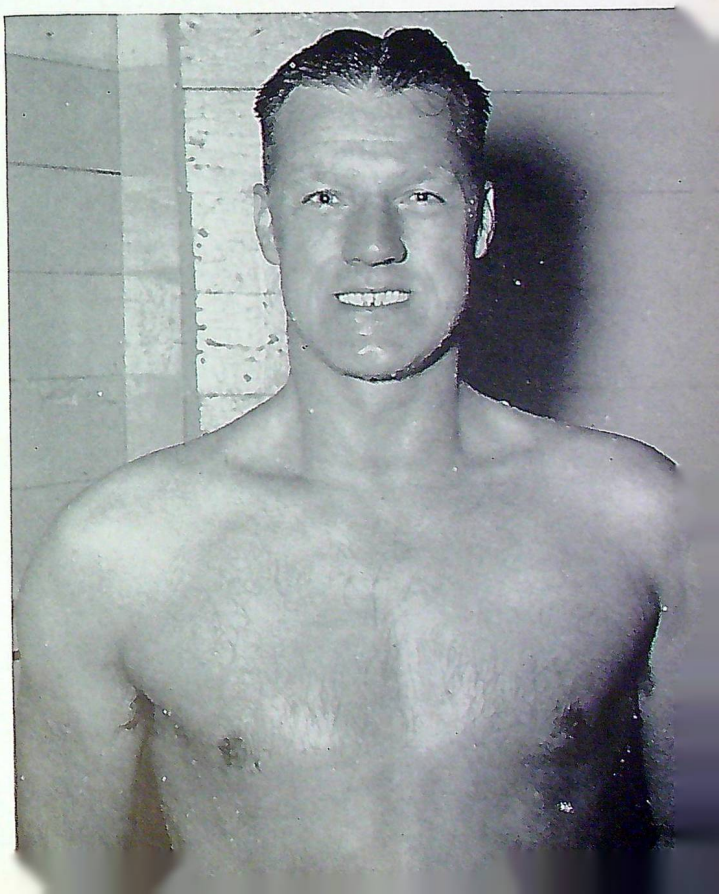
As late as 1942, Group Captain McGill was still no less at home in the water than out. He was perhaps the only C.O. in R.C.A.F. history to give swimming lessons personally to his officers. At the same time he kept himself "in the pink." When Station Trenton was challenged to a swimming meet that year with Station Mountain View, 6 R.D., 5 I.T.S. and Station Picton, a prepared McGill led his team into action. In his speciality, the 50-yd. free-style, he won, swimming against talented athletes half his age. It was, as far as is known, his last competitive swim; but he made it a winning one.

In 1924, Tommy Walker[2] began to rewrite the record book of Canadian swimming. For the next eight years he was to hold championships in free-style events ranging from 100 yds. to 2 miles, and in the back-stroke at the 100 and 200 yd. distances. At the 1926 North American Pentathlon, a competition held in Buffalo, N.Y., which included a wide range of both swimming and diving events, Walker was top dog. Shortly after, he won a 1½-mile international swim at Crystal Beach, Ontario. He also represented Canada at the Olympic Games of 1928 and 1932.

After 1932, except for an occasional Service meet during the War years, Tommy concentrated on coaching and instructing. He was, for instance, coach of the Jamaican team at the 1934 British Empire Games and manager-coach of the Canadian team in 1938. Over the years, in addition to team coaching, he gave "the word" to a few thousand-odd individual pupils. (Included among them was Air Vice-Marshal J. A. Sully, C.B., A.F.C., retired.)

But, as was to be expected, every now and then there came an irrepressible urge to get in there and plough through the wet with the rest of the mermen. During his years in the R.C.A.F. he participated in Service swimming meets both in Canada and abroad. In 1941, his team, representing Station Trenton, won the R.C.A.F. championship of Ontario. Two of his team-mates there were Flt. Lt. Ron Turner,[3] a former 100-yd.

Sqn. Ldr. Tommy Walker.



Poetry in motion, by Pirie.

back-stroke champion of the University of Manitoba and the province of Manitoba, and Sqn. Ldr. Ken MacLure,[4] one of the faster men in the free-style sprints. Later meets won by his teams included an inter-Service splash at Calgary in 1942, and a meet at Bournemouth, England, in 1944, for the overseas championship. In the latter affair, which was taken by a team recruited from 6 Group, were such swimmers as Cpl. Jack McCormack,[5] a former Canadian back-stroke titlist at 100 yds., and Flying Officer Lloyd Larson,[6] who had once held Dominion titles in both free-style and breast-stroke at the same distance.

Thus far in his coaching career Tommy has guided eleven Canadian title-holders. Strangely enough, however, coaching champions holds less fascination for him than teaching swimming fundamentals to the small fry.

Pilot Officer Bob Pirie.

Of those eleven Walker-coached champions, five are known to have eventually joined the R.C.A.F. Undoubtedly the star pupil was Bob Pirie,[7] still considered by his former coach to have been the finest Canadian swimmer of all time.

Even as a junior, streamlined Bob was earmarked for big things. (It was then commonplace for him to dominate meets against senior swimmers). Originally taught to swim by an Iroquois chieftain, he was still very much a junior when his first major victory was recorded. That was in the 1934 British Empire Games at Wembley, England, as a member of the winning Canadian team in the 800-yd. relay. He followed this up with a second in the 1500-yd. free-style. In 1936 he cleaned up every Dominion Championship event from 100 to 1500 yds. free-style, and was on two winning relay teams. (Later on he extended this championship monopoly to include the one-mile and two-mile distances.) At a national meet in the United States he placed second in the 1500-yd. event; and then, nicely tuned up for the Olympic Trials, he came within six seconds of breaking the world's record for a mile. For his efforts that year he was presented with the Sir Edward Beatty Trophy as Canada's outstanding swimmer.

Unfortunately the long trip to Berlin adversely affected his performance at the Olympics, where he failed to place. But he came through with a more typical performance at the 1938 B.E. Games in Sydney, Australia. There he walked away with the free-style events at 110 and 440 yds., and earned a second at 1500 yds. Two additional seconds in relay events made him the high male point-winner for the Games.

World fame came his way in 1939, when, swimming in Honolulu against the best that America and Japan could muster, he cut the water like a hungry shark to set a new world's record while winning the 200-metres. (The old mark had been set by Johnny "Tarzan" Weissmuller.) This alone earned him the title of Canada's outstanding athlete for 1939.

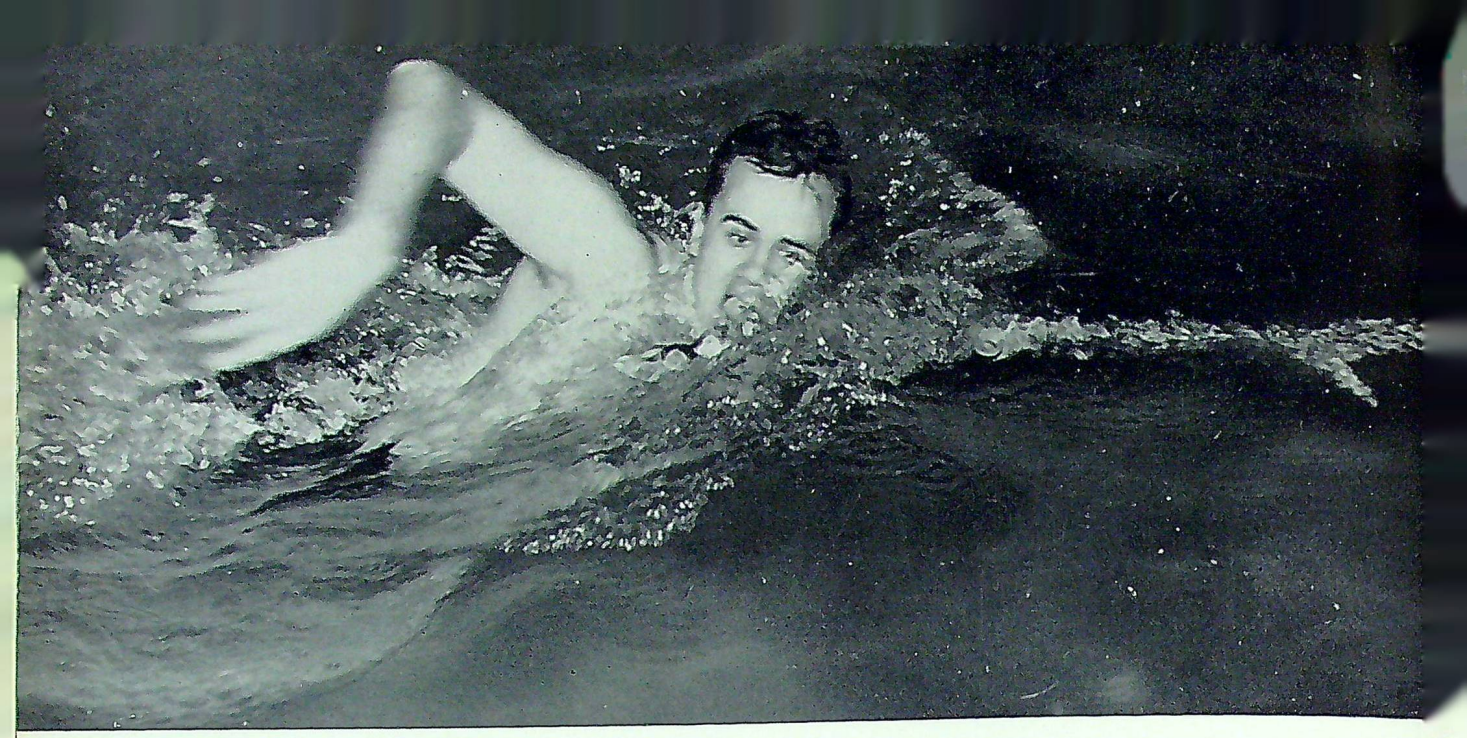
Shortly after war broke out, Mr. Free-style became a civilian swimming instructor at No. 1 I.T.S., Toronto. The prevalence among his airmen-pupils of that "happy-in-the-Service" atmosphere appealed so much to him that in 1941 he became one of them. During the ensuing period of pilot-training and operational duty, two opportunities for competitive swimming presented themselves.

Flying Officer Bob Hooper.

In 1942, a team recruited from his flight at No. 3 S.F.T.S., Calgary, virtually outclassed the opposition in an Alberta provincial meet in open competition, after scorning to enter a "special Service meet." In 1945, when stationed in Cyprus with No. 603 (City of Edinburgh) squadron, with which he had completed a tour of operations, he swam in an R.A.F./British Army meet, won by the R.A.F.

A civilian again in 1946, he entered his last big race — the Canadian National Exhibition's 10-mile grind — and finished fourth. At present the director of physical education for the Toronto Y.M.H.A., he confines his swimming activity chiefly to instructional ends.

Pirie's toughest opposition for several years in various national events was Vancouver's Bob Hooper.[8] The West Coast flash, tops in British Columbia at anywhere from 100 yds. to a mile, always extended the Eastern star to the limit. But, try as he might, he could do everything but beat the other Bob. At one time, however, he did hold Dominion records for the 440, 880, and 1-mile



The Gazel version of the crawl.

free-style. The pair were team-mates at the 1934 B.E. Games and at the 1936 Olympics.

One of Pirie's relay team-mates at the B.E. Games in '34 was Ben Gazel,[9] who had first competed at the Games four years before. Big Ben, whose initials, appropriately enough, spell out "B-E-E-G," was Canadian free-style champ at 100 yds. in 1931 and '33. He tacked on the Empire back-stroke championship at the same distance in 1934, besides setting an Empire record for 100 yds. of 1 min. 4 secs. in the backstroke portion of the medley relay. In 1936, he swam for Canada at the Olympics, still specializing in the sprints. The following year the lure of prize-money made him vacate the amateur ranks to enter the men's 10-mile swim at the C.N.E. In this, his first try at the long distance, he finished a creditable fourth. (The winner was the Italian eel, Gambi.)

Sgt. Gazel, of R.C.A.F. Service Police, was the feature attraction in a rather unscheduled event in 1943. The preliminaries started when, on some pretext or other, he was taken for a flip in a Service aircraft. A few minutes after take-off, the sergeant, who was plugged in on inter-com, mistakenly thought he heard the pilot mention something about not being able to make it back to base. Wasting no time on confirmation, he unceremoniously bailed out. Followed a gentle drop of several thousand feet into a body of his favourite medium known as Lake Huron. Then, mindful only of the wrath which would descend were he to lose the parachute, the imperturbable sergeant casually free-styled it several hundred yards to the finish line, which was the shore, dragging the sodden silk behind him. (We shudder to think of the combined weight he was pulling.) Meanwhile the "stricken" aircraft and one amazed pilot made a perfectly normal landing at base nearby.

After the war Gazel once again made swimming his main avocation. It turned out to be a very lucrative one when, in the C.N.E. marathon, he churned to victory in 1947, placed second in 1948 and '49, and third in 1950. (In the '49 swim, a gruelling 15-mile endurance test, the water was so bitterly cold that only three finished.) As regards serious competition, the 1950 event wound it up for the long-distance ace, and he too is now instructing.

Another winning sea-horse from the Walker stable was John Tett.[10] During the mid-thirties, he was a member of the Canadian championship team in the senior 440-yd. relay, which meant that he had to swim 100 yds. in at least 55 seconds.

Flt. Sergeant Ben Gazel.

Shortly after joining the R.C.A.F. in 1940, A.C.2 Tett had the unique experience of breaking the existing Canadian record for the 50 yds. breast-stroke while placing second in the event. The occasion was the first inter-Station swimming meet ever staged by No. 1 Training Command, and the young aircraftman, besides competing in the meet, was largely responsible for its organization. The winner of the breast-stroke event was the former coach of the runner-up, Flying Officer T. Walker. No. 1 Manning Depot, the winning Station (by one point), was host for the affair.

John, who rather fancied himself as a water-poloist some ten years ago, grimaces when recalling a game in Nottingham, England, in 1942. His check was a rotund Britisher who must have weighed close to 300 pounds. (John weighed 150). Noticing the bulk of the man and his apparent lack of condition, he congratulated himself on having such a soft touch as a check. The game started, and the soft touch turned out to be a whirlwind in every department of the game. (In John's own words — "he climbed all over my back.") A thoroughly exhausted young Canadian learned too late that the fat man's name was Temmey, whereupon a bell rang in the tired Tett brain. This deceivingly ponderous-looking fellow, he now remembered, was acknowledged to be one of the world's greatest water-polo players. He had also won fame as a Channel swimmer. John has seldom, if ever, played since.

Posted back to Canada after an operational tour with No. 103 (R.A.F.) Squadron, Flt. Lt. Tett arrived in time to participate in an inter-Station swimming-meet at Trenton. In the 50-yd. free-style he was one of several excellent swimmers defeated by Group Capt. McGill.

Tett excelled perhaps more as a diver. He first became interested in diving through his air-borne antics with a tumbling squad. The advantage of performing somersaults over water rather than over a hard gymnasium floor was one day made painfully clear to him, and from then on he was a diver, first and foremost. He entered Ontario competitions as a 13-year-old, and eventually held

Mr. John Tett.

Flt. Lt. Al. Marshall.

provincial junior and senior championships in both high and low-board diving. His speciality was the double-twisting-layout-front-somersault, an intricate manoeuver which, for proper execution, would seem to require a built-in artificial horizon. At any rate it must have been particularly trying on the sacro-iliac. He first stumbled through this tricky combination dive purely by accident, but thereafter did it automatically. To do it correctly he all but had to tie himself in knots (at least mental ones) before even leaving the board. Such a dive has never, to his knowledge, been duplicated by anyone else.

While stationed at No. 1 Manning Depot in the summer of 1940, A.C.2 Tett spent much of his spare time teaching the intricacies of diving to one of his fellow airmen, A.C.2 Pett Ettinger.[11] His pupil caught on so well that before the end of the summer the pair were featured daily as tandem divers in the C.N.E.'s nearby lakefront aquatic display.

Now Director of the Province of Ontario Services in Recreation, Adult Education, and Citizenship, Mr. Tett recently took part in the R.C.A.F.'s Mobilization Assigment Training Plan.

In Dominion and Provincial junior swimming competition during the late thirties, one of the standouts was Cliff Foderingham.[12] Then Ontario and Dominion free-style champion at 200 and 220 yds., he held long-standing Canadian records for both distances, having chopped fully 13 seconds off the old mark for the longer distance. He was also a member of the winning team in the Canadian championship 880-yd. relay race at the C.N.E. in 1948.

Although a junior in age, Cliff's performances were of senior calibre. In the sprints he often swam in winning races against seniors of proven ability. After becoming an airman in 1941, he never missed an opportunity to compete in his favourite sport, and of several inter-Service meets which he entered, he was top man in practically every one. A pilot with No. 101 (R.A.F.) Squadron, Flying Officer Foderingham was killed on operations in September 1943.

One of Walker's first protégés to gain national prominence in breast-stroke events was Winston McCatty.[13] He earned points for Canada by placing second in his speciality at the 1934 British Empire Games. It was his second experience at the Games; he had also participated in 1930. Among his other achievements were the winning of the North American (junior) 220-yd.

Flying Officer Cliff Foderingham.

free-style and (senior) breast-stroke championships, and 150-yd. medley championships. He attained national prominence in 1935 by becoming the Canadian breast-stroke title-holder. At the same time, as captain of the University of Toronto team, he was Canadian inter-collegiate champion and record holder in both free-style and breast-stroke. LAC McCatty was killed in training in 1943, shortly before he was to have received his pilot wings.

One of McCatty's principal rivals in meets which had pitted U. of T. against, *inter ailia*, McGill University, was Bill Sprenger.[14] He represented McGill in swimming from 1928 to 1934, and captained his team for two seasons. Participating in meets which brought together the best swimmers from McGill, Toronto, Harvard, Amherst, and Brown universities, Montreal and Toronto Y.M.C.A.'s, and the Montreal A.A.A., Bill piled up one winning effort after another. He won the 50-yd. free-style in 1930 and '31, and again in 1933, when he set a record for the province of Quebec with a time of 25 1/5 seconds. Over the 100-yd. distance he was a winner in 1931 and '32. The latter year he was also provincial champion. One of his many triumphs in the 100 yds. back-stroke was in 1933, when he established another provincial record of one minute, fifteen seconds.

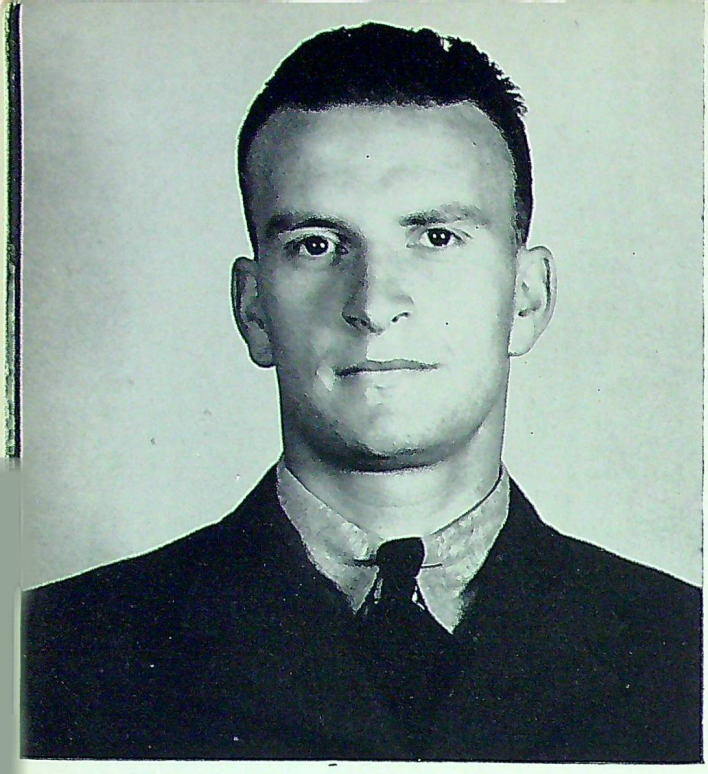
Winston McCatty.

Flying Officer W. P. Sprenger.

In 1931, competing against teams from the Montreal A.A.A. and Toronto's West End Y.M.C.A., McGill's crack relay quartet, with Bill showing the way, set a Dominion record for 400 yds. with a time of 3 mins. 52 1/5 secs. The same McGill team monopolized the 200-yd. relay from 1929 to 1934, against Toronto Varsity.

Flying Officer Sprenger was killed while serving overseas with the R.C.A.F. in 1940.

In the late 'thirties a new national breast-stroke champion appeared in the person of Jim Prentice,[15] a team-mate of Pirie's at the '36 Olympics. Jim started to break Canadian records in 1937, when he established a new mark of 1 min. 5½ secs. for 100 yds. It stood until July 1952, when it was bettered by two seconds by Peter Salmon, an Olympic swimmer from Victoria, B.C. In the 1938 B.E. Games, Prentice placed second in the



A.C.2 Jim Prentice.

100 yds., besides contributing his speciality to Canada's winning effort in the medley relay. The following year he set another Canadian mark of 2 mins. 51 2/5 secs. for 220 yds. It still stands.

Flying Officer Prentice was officially presumed dead in December 1944. He was a pilot with No. 613 (R.A.F.) Squadron.

The latest known R.C.A.F. breast-stroke expert was the Peterborough flash, Al Marshall.[16] Not the least bit superstitious, he chose July 13, 1940, as the day on which to set a new Dominion record for 200 yds., eclipsing the old mark by 1 1/5 seconds. He already held Ontario and Quebec titles for the same distance.

During his early days as an airman, A.C.2 Marshall never failed to take advantage of that highly beneficial institution known as "sports afternoon"[17] by splashing around in the nearest pool. Thereby he maintained sufficient muscular suppleness and co-ordination to acquit himself well in various meets throughout Southern Ontario. Then the more serious business of flying gradually took precedence over everything else, and he was not to race again for almost two years.

Given a day off from his Spitfire-flying duties with the City of Windsor Squadron, Flying Officer Marshall entered an Allied Forces swimming meet at Cairo on Dominion Day, 1944. A last-minute entrant, he was the dark horse of the tournament. Nevertheless the old touch was there. He dominated the show by winning all six events on the programme, at ranges from 100 to 440 yds. In one particular race, a side-stroke affair, he had to improvise in a hurry, never before having tried such a style. Sweeping six gruelling events within sixty minutes was a fair showing for an athlete long out of practice.

A civilian again in 1945, Al began sharpening up to defend his breast-stroke laurels. The following spring in an annual provincial meet at Hamilton he again won his speciality at 200 yds. He wound up his swimming career on a successful note with the Toronto Varsity team in 1948. Shortly thereafter he rejoined the R.C.A.F.

Other swimming and diving stars of the R.C.A.F.: Russ Dilworth,[18] an ex-champion of Ontario in the backstroke; Terry Evans,[19] a standout in any aquatic sport you can name; and A. Jones,[20] who was manager-coach for Canada's 1950 British Empire Games team.

It is an interesting fact that no less than eight of the above champions — namely Walker, Pirie, Gazel, Tett, Foderingham, McCatty, Prentice, and Dilworth — once swam under the banner of Toronto Y.M.C.A.

FOOTNOTES

[1]Air Vice-Marshal Frank S. McGill, C.B., (ret.).
[2]Sqn. Ldr. Thomas R. Walker (released).
[3]Wing Cdr. W. R. D. Turner, A.F.C., (released).
[4]Wing Cdr. Kenneth C. MacLure, A.F.C. (R.C.A.F. Stn. Trenton).
[5] Sgt. J. McCormack (released).
[6]Flying Officer Lloyd L. Larson (released).
[7]Flt. Lt. Robert C. Pirie (released).
[8]Flt. Lt. Robert J. Hooper (released).
[9]Flt. Sgt. B. E. E. Gazel (released).
[10]Sqn. Ldr. John K. Tett, D.F.C., (released).
[11]Flt. Lt. Everett E. Ettinger (deceased).
[12]Flying Officer Clifford Foderingham, D.F.C., (deceased).
[13]LAC Winston A. McCatty (deceased).
[14]Flying Officer William P. Sprenger (deceased).
[15]Flying Officer James M. Prentice (deceased).
[16]Flt. Lt. S. A. Marshall (C.J.S., London).
[17]A designated period allegedly devoted to the pursuit of athletics by unit personnel for the purpose of developing a high degree of physical fitness and morale.
[18]Flt. Lt. Russell N. Dilworth (released).
[19]Sqn. Ldr. Terence J. Evans (A.F.H.Q.).
[20]Sgt. A. Jones (R.C.A.F. Station Camp Borden).

The next article in this series will appear in our November issue.

It's in the Wind

2. Hurricanes

By R. A. Hornstein, Meteorological Division, Dept. of Transport

(*Reprinted by courtesy of the Dept. of Transport*)

Blow the wind never so fast
It will fall at last.
T. FULLER

EACH AUTUMN, residents of Canada's four easternmost provinces await with uneasiness the special warning messages which the Dominion Public Weather Offices at Halifax, N.S., and Gander, Nfld., may have occasion to issue. Those messages warn of the impending arrival of a member of a vicious breed of storms — the hurricane.

At the outset, we might recognize the fact that hurricanes are given other names in other parts of the world. In the North Atlantic Ocean we, of course, call them hurricanes. In the western North Pacific Ocean similar storms are known as typhoons, and both the Philippines and Japan are frequently visited by them. In the Bay of Bengal and in the northern Indian Ocean they are called cyclones. (Incidentally, any weather system which has a region of low atmospheric pressure at its centre is defined as a cyclone; however, many of these give nothing stronger in the way of winds than gentle zephyrs. Therefore, there is, at times, confusion between "cyclones" as a general family name and the cyclones of India, which are, in reality, hurricanes.) In Australia hurricanes are sometimes called "willy-willies."

Although weather charts may be considered to date back to 1819, they were very crude until after the invention of the telegraph, and the construction of telegraph lines, in 1844. With these improved communication facilities, daily weather charts could be drawn and storms could be tracked. Hurricanes develop at sea, though, and it was not until 1909 that the first radio report of a hurricane was received from a ship at sea.

Despite the fact that the weather map is a relatively modern development, the history of hurricanes in the Atlantic, the Gulf of Mexico and the Caribbean Sea extends back more than 400 years. Of course, much of that history is incomplete. In that period there were many tropical storms of great intensity. Some of them caused a frightful loss of human life and a widespread devastation in cities, towns and agricultural regions. They also sank or wrecked fishing boats, merchant ships and men-of-war.

Of those which affected eastern Canada, one of the earliest to be found in meteorological writings occurred on Nov. 19th, 1813. From that time on they appear in the literature with greater frequency, and the first extremely severe one which has been well written up is that of August, 1873. It did damage in Nova Scotia, New Brunswick, Prince Edward Island, Newfoundland and Labrador. All told, more than 1,200 vessels were lost in that hurricane, which is famous in hurricane history because it was traced over a longer path than any previous storm. It was first observed near the Cape Verde Islands, off Africa; it moved westward to the eastern West Indies, then northward between Bermuda and the United States east coast, then finally along the Nova Scotian coast and through Newfoundland.

Hurricanes are born in tropical regions, and in the north Atlantic their season is from May to

December. The records of the past 60 years show that September is their favourite month, with October a fairly close second.

When they are fully developed, they are the most destructive of all storms. This is because of their great size and savage intensity. Actually, the winds of the tornado blow with greater force. However, the width of a tornado is quite small; on the average, one would be confined to a path a little less than a quarter of a mile wide. On the other hand, it is not unusual for the violent winds of the hurricane to cover thousands of square miles.

At sea these storms are accompanied by mountainous waves; along the shorelines they cause high tides which flood coastal regions. In some cases storm waves break on the shore like a wall of water and have wiped out whole cities and towns. One of the most severe of these storms caused the loss of more than 50,000 lives and property damage totalling millions of dollars.

Here is a brief description of the characteristics of a hurricane. At the outer fringe of the storm area, the winds are gusty, but less than 20 m.p.h. As they move inward the speed increases gradually. Squalls are followed by furious gales and, finally, if the hurricane is a severe one, the winds immediately surrounding the centre whirl at tremendous speeds. These winds create huge seas; the tops of the giant waves are blown away in sheets and spray, so that the sailor can scarcely tell where the ocean ends and the atmosphere begins. Ships are frequently carried to the ocean bottom, resulting in the loss of many human lives. If the hurricane moves on to the land, the crops in the fields and the orchards are destroyed, buildings are wrecked, trees are uprooted, and the wreckage is carried along with the wind.

It is not easy to measure, even approximately, the speed of hurricane winds. Without instruments it becomes extremely hard to estimate winds which surpass 100 m.p.h. Instruments which will be strong enough to withstand the force of hurricane winds, and yet be sensitive enough for average winds, are not easy to manufacture. In many violent hurricanes, the wind instruments have been damaged or blown away before the highest storm winds were experienced. In some cases the steel towers which supported the instruments were wrecked. In other instances the buildings on which the instruments were exposed have been destroyed or unroofed. However, from those records which are available, it is quite certain that, over a sustained period of several minutes, the winds of the hurricane sometimes blow at an average rate of more than 150 miles an hour. Furthermore, weathermen are confident that the gusts of the hurricane create air movements for brief intervals that may reach as high as 250 m.p.h. in the most violent storms. For example, in Massachusetts, during the famous destructive New England hurricane of 1938, instruments actually recorded an average speed over a 5-minute period of 121 miles an hour with shorter-period measurements of 186 miles an hour.

One term often encountered in descriptions of hurricanes is: "the eye of the storm." This so-called "eye of the storm" is the calm centre around which blow the highest winds. If you should happen to be in the direct path of the centre of the storm, you would experience terrific winds as the centre approached, then, at the "eye" there would be a sudden calm, but soon the winds would abruptly begin again, blowing with great violence from the opposite quarter. On the average the "eye" is about 14 miles across, but, of course, there are great variations from storm to storm.

As hurricanes occur only during certain seasons of the year, it might be thought that we would know exactly how they form. This is not the case. There are certain theories of course, but they are not definitely proven. One difficulty is that hurricanes develop over the tropical oceans where there is a scarcity of reliable weather information. The very fact that they do develop in certain restricted regions does give us a clue. As they are born over the sea and usually disintegrate rapidly after moving inland, it would appear that they must have a large supply of water vapour available if they are going to amount to anything.

The task of forecasting the path and the speed of hurricanes is one of the most exasperating problems facing a weather forecaster. Hurricanes tend to be rugged individualists in their actions, and seem to refuse to abide by any set of rules.

There is a certain broad pattern which many of them follow, but the forecaster can never be certain that any given storm will follow that pattern. Because a difference of position of only 50 miles can make the difference between terrific destruction and only a heavy gale with minor damage, the importance of forecasting their future course as exactly as possible is readily apparent. It is little wonder, then, that each new hurricane adds a few more gray hairs on the forecaster's worried head. For example, a hurricane may behave admirably for two or three days, moving at a uniform 10 m.p.h. along a straight path; it may then gradually alter course, but still keep up its steady 10 mile-an-hour gait. However, when it begins to shift course every few hours, and changes its speed hourly, as has been the case all too often, well, some forecasters wish then that they had chosen a nice quiet profession like lion-taming!

Still, the Weather Services of the United States and Canada have been able to save many lives by providing advance warning of a hurricane's arrival. Statistics are available to prove that fact most conclusively!

During World War II, the Americans introduced the method of christening the typhoons in the Pacific. Army and Navy meteorologists, who were stationed there, often referred to "60-mile-an-hour Mary" as approaching the Philippines at 11 knots, while "Pauline," a more violent member of the high wind family, was tearing along the typhoon track, working up winds of 90-mile-an-hour speed near the central "eye" of the storm. This christening was a convenience introduced by the co-ordinated Army-Navy typhoon warning service, which made great strides in that part of the world during and since the War.

The meteorologists name hurricanes so that they may more readily keep track of several storms at one time. Lists of ladies' names, which might range from Agnes to Wilhelmina, are prepared in advance. When they run out of names, they prepare some more. If a typhoon originates west of the 180th meridian, the weathermen name it from a column which runs alphabetically from A to R, inclusive. They skip Q, partly because there are not too many names beginning with that letter, and also for some other technical reasons. If the storm starts on the North American side of the 180th meridian, it is christened from the list of names beginning S, T, V or W. Therefore, if a storm is named Victoria it started on this side of the International Date Line.

South of the Equator, the weathermen have another list — boys' names, this time: Alan, Bill, and the like. Due to the rotation of the earth the sexes never get together, since the females spin northwest away from the Equator; the Arthurs, the Dicks and the Harrys travel away from the Equator, too, but to the southward. Therefore, Typhoon Tessy and Hurricane Harry will never meet.

AN APOLOGY

"The Roundel" wishes to apologize to Air Commodore A. K. Tylee, the first Director of the Canadian Air Force, for the misspelling of his name that occurred in our July-August issue's "What's the Score?" As some of our readers may recall, a brief biographical sketch of Air Commodore Tylee was given last March in the article entitled "Canada's Air Force Chiefs."

Personnel Movements

OFFICERS: MAY

S/L W. W. Abra — A.F.H.Q. to A.M.C.H.Q., Ottawa.
S/L A. M. Beach, D.F.C.— R.C.A.F. Stn. Lachine to 14 T.G.H.Q., Winnipeg.
W/C V. L. Berg — R.C.A.F. Stn. Centralia to T.C.H.Q., Trenton.
W/C E. C. Briese — A.F.H.Q. to A.D.C.H.Q., St. Hubert.
W/C J. A. N. Buchan — 1 F.W.H.Q., U.K., to 30 A.M.B., U.K.
S/L F. L Campbell-Rogers — A.F.H.Q. to R.C.A.F. Stn. Gimli.
S/L G. Clayton — T.A.G.H.Q., Edmonton, to R.C.A.F. Stn. Camp Borden.
S/L G. T. Durrell — A.F.H.Q. to A.M.C.H.Q., Ottawa.
S/L S. H. Foye — A.M.C.H.Q., Ottawa, to R.C.A.F. Stn. Lachine.
S/L G. H. Fulford — 5 S.D., Moncton, to 1 S.D., Weston.
S/L K. B. Handley — Staff Coll., Toronto, to 12 A.D.G.H.Q., Vancouver.
S/L L. W. C. Limpert — R.C.A.F. Stn. Claresholm to R.C.A.F. Stn. Penhold.
W/C W. Michalski — 1 I.F.S., Centralia, to R.C.A.F. Stn. Centralia.
S/L E. F. Nelles, D.F.C.— 426 (T.) Sqn., Dorval, to R.U., Hamilton.
W/C F. H. Nichols — A.F.H.Q. to A.M.C.H.Q., Ottawa.
S/L F. H. Nielsen — A.M.C.H.Q., Ottawa, to R.C.A.F. Stn. Penhold.
S/L A. E. Smith — C.J.S. London to R.C.A.F. Stn. Greenwood.
S/L W. Trischuk — A.F.H.Q. to A.M.C.H.Q., Ottawa.
S/L H. F. Webb — R.C.A.F. Stn. Gimli to R.C.A.F. Stn. Penhold.
W/C D. A. Willis, D.F.C. — C.J.S. London to A.F.H.Q.
S/L R. Wood — A.F.H.Q. to T.C.H.Q., Trenton.
S/L V. T. Woods, D.F.C.— C.J.A.T.C., Rivers, to R.C.A.F. Stn. Edmonton.

OFFICERS: JUNE

S/L A. W. Bishop — Staff Coll., Toronto, to A.D.C.H.Q., St. Hubert.
S/L S. F. Cowan — 412 (T.) Sqn., Rockcliffe, to A.F.H.Q.
W/C D. D. M. Cunningham — R.C.A.F. Stn. Macdonald to 6 R.D., Trenton.
S/L L. A. Draper, D.F.C.— Staff Coll., Toronto, to 1 (F.) O.T.U., Chatham.
W/C D. L. Forbes — T.C.H.Q., Trenton, to 14 T.G.H.Q., Winnipeg.
S/L R. D. Forbes-Roberts — Staff Coll., Toronto, to 2 A.C.W.U., Chatham.
S/L C. V. Gervais — Staff Coll., Toronto, to A.D.C.H.Q., St. Hubert.
W/C V. R. Hill — T.C.H.Q., Trenton, to R.C.A.F. Stn. Centralia.
W/C A. R. Holmes — R.C.A.F. Stn. London to A.F.H.Q.
S/L G. R. M. Hunt — Staff Coll., Toronto, to A.F.H.Q.
S/L W. Loynes — R.C.A.F. Stn. Rockcliffe to A.M.C.H.Q., Ottawa.
W/C H. W. Lupton, A.F.C.— T.C.H.Q., Trenton, to A.T.C.H.Q., Lachine.
S/L J. C. McGibbon — 1 I.F.S., Centralia, to A.F.H.Q.
W/C W. B. M. Millar — 1 F.T.S., Centralia, to A.F.H.Q.
S/L H. R. Norris, A.F.C.— Staff Coll., Toronto, to 412 (T.) Sqn., Rockcliffe.
S/L A. B. Stuart — A.T.C.H.Q., Lachine, to A.D.C.H.Q., St. Hubert.
S/L P. V. K. Tripe, D.F.C.— 1 A.C.W.U., St. Hubert, to 202 R.S., Lac St. Denis.
W/C R. M. Trites, M.B.E.— A.F.H.Q. to A.M.C.H.Q., Ottawa.
S/L S. H. Yearron — C.J.S. Washington to A.M.C.H.Q., Ottawa.

WARRANT OFFICERS: MAY

WO1 W. Allan — 11 T.S.U., Montreal, to 1 M.M.U., Montreal.
WO1 T. L. Cranwell — R.C.A.F. Stn. Claresholm to R.C.A.F. Stn. St. Johns.
WO2 C. D. Cunningham — R.C.A.F. Stn. Sea Island to 121 C. Flt., Sea Island.
WO2 J. L. A. Ladouceur — 11 E.U., Aylmer, to R.C.A.F. Stn. Camp Borden.
WO2 N. J. Matthews — 1 F.W.H.Q., U.K., to 438 (F.) Sqn., U.K.
WO2 J. M. Rogers — A.F.H.Q. to A.M.C.H.Q., Ottawa.
WO2 J. H. Simmonds — R.C.A.F. Stn. Rockcliffe to 202 R.S., Lac St. Denis.

WARRANT OFFICERS: JUNE

WO1 R. G. Abbott—A.A.S., Trenton, to 2 A.N.S., Winnipeg.
WO2 R. A. Barry — R.C.A.F. Stn. Rockcliffe to R.C.A.F. Stn. Goose Bay.
WO2 J. R. Belanger — S. of E., St. Johns, to 2 M.D., St. Johns.
WO1 L. A. Cheek — A.D.C.H.Q., St. Hubert, to T.C.H.Q., Trenton.
WO1 A. J. Dale — 1 A.M.B., Weston, to 12 T.S.U., Weston.
WO1 W. Greenhalgh — R.C.A.F. Stn. Trenton to 6 R.D., Trenton.
WO2 H. E. A. Legris — R.C.A.F. Stn. Rockcliffe to R.C.A.F. Stn. Lachine.
WO2 G. D. Philpott — 2 T.T.S., Camp Borden, to R.C.A.F. Stn. Winnipeg.
WO2 W. J. Robins — 2 C.M.U., Calgary, to R.C.A.F. Stn. Comox.
WO2 G. P. Simboli — R.O.S., Kingston, to T.C.H.Q., Trenton.
WO2 E. K. Sollows — R.C.A.F. Stn. Toronto to 434 (F.) Sqn., Uplands.
WO1 L. Wentzloff — 6 R.D., Trenton, to R.C.A.F. Stn. Trenton.

KEY TO ABBREVIATIONS

A.A.S.	— Air Armament School.
A.C.W.U.	— Aircraft Control & Warning Unit.
A.D.C.H.Q.	— Air Defence Command Headquarters.
A.D.G.H.Q.	— Air Defence Group Headquarters.
A.M.B.	— Air Materiel Base.
A.M.C.H.Q.	— Air Materiel Command Headquarters.
A.N.S.	— Air Navigation School.
A.T.C.H.Q.	— Air Transport Command Headquarters.
C.	— Communication.
C.J.A.T.C.	— Canadian Joint Air Training Centre.
C.J.S.	— Canadian Joint Staff.
C.M.U.	— Construction & Maintenance Unit.
E.U.	— Exam. Unit.
(F.)	— Fighter.
Flt.	— Flight.
F.T.S.	— Flying Training School.
F.W.H.Q.	— Fighter Wing Headquarters.
I.F.S.	— Instrument Flying School.
M.D.	— Manning Depot.
M.M.U.	— Materiel Movements Unit.
O.T.U.	— Operational Training Unit.
R.D.	— Repair Depot.
R.O.S.	— Reserve Officers' School.
R.S.	— Radio Station.
R.U.	— Recruiting Unit.
S.D.	— Supply Depot.
S. of E.	— School of English.
(T.)	— Transport.
T.A.G.H.Q.	— Tactical Air Group Headquarters.
T.C.H.Q.	— Training Command Headquarters.
T.G.H.Q.	— Training Group Headquarters.
T.S.U.	— Technical Services Unit.
T.T.S.	— Technical Training School.

Heritage of the Radio Officer

By Squadron Leader R. McKee

(The author of this article joined the R.C.A.F. in September, 1939. In 1942, while serving as Chief Instructor of the disciplinarian training course, he reverted from the rank of Warrant Officer in order to become aircrew. After eighteen months on operations overseas as a bomb-aimer with No. 38 Group, R.A.F., he returned to Canada and was eventually retrained as a Radio Officer. He then spent two years as an R.O. with No. 412 (T.) Squadron, and now holds the position of Chief Flying Instructor in the Air Radio Officers' School at Clinton.—EDITOR.)

THE EARLY DAYS

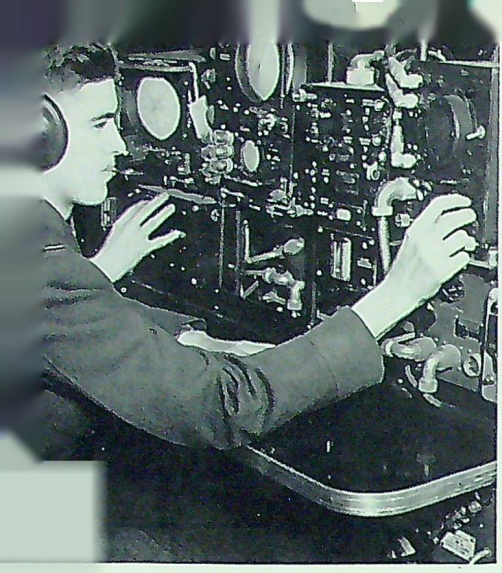
THE HISTORY of radio almost parallels the history of aviation. Radio and aviation were born together at the turn of the century, and the progress of one has matched the progress of the other throughout the years. A great deal has been written concerning the technical history of airborne radio equipment, but unfortunately all too little has been recorded about the people who have operated that equipment. What follows on these pages is a general history of the flying personnel who established the heritage of to-day's Radio Officer.

* * *

Both the U.S. and British Armies were experimenting with air-to-ground communications early in the 20th century. The British efforts in this connection date back to at least 1907, when Capt. Llewelyn Evans, who commanded the first wireless company at Aldershot, assisted Colonel Capper of the Army Balloon School (which was the nucleus of the Royal Flying Corps, the predecessor of the Royal Air Force) in devising wireless communications to permit air/ground communications employing extemporized equipment. Lt. C. J. Aston (R.E.) made the first experiments from a captive balloon, and, in May 1908, the first free balloon run was made by the balloon "Pegasus," in which an airborne wireless receiver was installed. A temporary lull in experiments followed, and later the Army airship "Beta" was radio-equipped and carried out successful airborne transmissions up to a range of thirty miles. Satisfactory airborne reception at that time, however, required that the airship's engines be stopped.

The British Royal Navy effected air/ground communications from a Short biplane in June, 1912 and, in August of the same year, Lt. Raymond Fitzmaurice (R.N.) and Capt. H. P. T. Lefroy (R.E.) provided air/ground communications in the airships "Gamma" and "Delta", respectively, in British Army manoeuvres. In 1913 Capt. Lefroy reported air-to-air ranges of 100

Flt. Lt. R. Carey explains the Course Progression Chart to A.R.O.S. trainees.



A. Howard (left) and R. Murphy in Dakota Radio Trainer at Clinton.

air /ground ranges of 130 miles as having
ved by the British airships "Delta"
"

subsequent British manoeuvres, in
wireless-equipped airship "Gamma"
yed by the attacking troops to report
of the defending forces, General Grier-
commanded the defending force, stated:
of airborne wireless has revolutionized
war. So long as hostile aircraft have the
see and report movements, the first steps
be to get rid of hostile aircraft. He who
first, or who keeps the last aeroplane
win."

the same period the U.S. Signals Corps,
ded that great pioneer of air power,
al Billy Mitchell, was also active in
air /ground communications. His
ation conceived the immense ad-
would go to the army which had
nication with aircraft flying over
held by the enemy. With this in view, a
orgne of the Signal Corps worked during
ner of 1912 on the construction of an
radio transmitter.

y fall the transmitter was ready for air
and Lt. Henry H. Arnold, who later
famous General "Hap" Arnold of the
orld War, was detailed to pilot the
Force aircraft in the first experiments of
nd communication. The site selected for the tests was Fort Riley, Kansas; and the officer selected to operate the transmitter in the air was Lt. Follett Bradley, who had had previous experience as a wireless officer in the United States Navy. On 2 November 1912, Lt. Arnold took off from the flying-field at Fort Riley, with Lt. Bradley beside him handling the wireless set and Lt. Mauborgne manning the ground station. The experiment was highly successful and Lt. Bradley became the first "Radio Officer" in the history of aviation.

The first two years of experiment saw only "blind" transmissions from the aircraft to a ground receiving-station. However, in 1914, under Lt. Mauborgne's direction, the first two-way air-ground communication was established and a whole new field of aviation was opened. All these junior officers participating in the early experiments were later to become Generals in the U.S. Army.

In the early days the aircraft radio had a range of about thirty miles with one-eighth kilowatt output, using a trailing wire antenna. Military necessity in the First World War speeded up the development of the airborne radio and with it the importance of the airborne radio operator. By the fall of 1917, two-kilowatt installations were being made in the larger British 'planes, not only for signalling, but to interfere with enemy radio stations. This was the beginning of electronic counter-measures. It is interesting to note that communications in the U.S. Army Air Corps were controlled by the U.S. Army Signal Corps until the Air Corps was made a separate branch of the army after the First World War.

During the First World War the observer officers of the R.F.C. and the R.N.A.S. were the first "Radio Officers" to operate in combat. The observation aircraft were equipped with a radio transmitter, and the observer transmitted the movements of the enemy or the results of artillery firing to the ground. The work of these early radio operators became increasingly important as the war progressed, and, at the end of the war, ground commanders became more and more dependent on the intelligence transmitted from observation aircraft by radio.

The history of air war from 1914 to 1918 depicts the many heroic actions fought by observation aircraft against attacks by enemy fighters. In these actions the observer manned the machine gun in the rear cockpit and accounted for many of the enemy aircraft shot down in combat. The first confirmed victory in air combat achieved by a Canadian airman was credited to Flight Sub-Lieutenant A. S. Ince who, while flying as the observer in a Nieuport, shot down a German aircraft off the Belgian coast. This victory won for him the Distinguished Service Cross. The official records list numerous other observers decorated for gallantry on air operations. In reading the citations to these awards, one sees the beginning of the tradition of gallantry and high purpose that has since marked the combat record of the flying operator.

BETWEEN WORLD WARS

Although Canada's record in military aviation during the First World War was outstanding, the ensuing peace saw Canadian aviation enter into a period of comparative lethargy, and it was not until 1924 that the R.C.A.F. was formed as one of the defence services of Canada. On the formation of the Permanent Air Force the total strength was 63 officers and 307 airmen, and it is understandable that an air force of that size could not devote a great deal of its effort to airborne radio development. In addition, the R.C.A.F. was responsible to the Chief of General Staff, Canadian Army, and the military rôle assigned to the air force was that of army co-operation. All electronic functions of the air force were made the responsibility of the Royal Canadian Corps of Signals. During the period from 1924-34 the R.C.A.F. began by utilizing one-way air-to-ground communication, progressing later to two-way communication with the pilot operating the radio.

On 1 October 1934 the Signals Branch of the R.C.A.F. was constituted. Initially the branch consisted of two officers and some twenty-five airmen. Four of the officers who pioneered the early Signals Branch are still serving to-day. They are Air Vice-Marshal H. B. Godwin, C.B.E., Air Vice-Marshal R. E. McBurney, C.B.E., Air Commodore W. A. Orr, C.B.E., and Air Commodore M. M. Hendrick, O.B.E. Among the airmen of this era were such officers as Group Captain E. A. D. Hutton and Group Captain S. R. Burbank, M.B.E., who are also still serving. The purpose of the embryo Signals Branch was to train a number of the airmen to maintain and operate whatever radio equipment was available at that time. These wireless operator mechanics, or "W.O.M.'s" as they were then known, were the first personnel to fly in the R.C.A.F. for the sole purpose of operating radio equipment during flight. They were later renamed Wireless Electrical Mechanics ("W.E.M.'s") and as such were required to perform all the electrical maintenance on aircraft other than that connected with the engine.

The problems that confronted these forerunners of to-day's Radio Officer were not simple. In addition to being proficient radio operators on the ground or in the air, it was often necessary (in view of budget limitations) for the W.O.M. to build, install, and service his own radio equipment. It is worthy of note that the efficient maintenance service which lightens the burden of the modern Radio Officer has been designed and is being directed by these original airborne "brass-pounders" whose varied experience included anything from

Air Cdre. H. B. Godwin, accompanied by the author, inspects Flight Cadet Guard of Honour at Clinton. Behind them are (left) Group Capt. E. A. D. Hutton and Flt. Lt. R. A. Thompson.

photographic survey operations to anti-smuggling patrols.

It was not until 1936 that the first wireless school was formed at Trenton to meet the increasing demands for W/T operators. In 1937, with the rising threat of war in Europe, the annual defence budget was increased and the Signals Branch was able to expand considerably. It was during this year that the R.C.A.F. purchased its first direction-finding equipment. The following year saw the decision to develop Canadian sources of supply, and aircraft wireless sets of Canadian design and manufacture were ordered. Thus, at the outbreak of war, the R.C.A.F. Signals Branch, although small, had laid the groundwork for an organization which, under the British Commonwealth Air Training Plan, was to train approximately twenty thousand personnel as aircrew and groundcrew for the R.C.A.F., and many additional thousands of aircrew radio operators for the R.A.F., the R.A.A.F., and the R.N.Z.A.F.

SECOND WORLD WAR

The record of the R.C.A.F. airborne radio operators during the Second World War forms a proud chapter in the annals of Canada's fighting Services. The first operational flying consisted of anti-submarine patrols off the east coast, and to the W.E.M.'s fell the distinction of being the first operational radio operators in the R.C.A.F. The W.E.M.'s continued to fly on these long anti-submarine patrols until the fall of 1940, when the first trained Wireless Air Gunners of the B.C.A.T.P. relieved them from flying duties.

Meanwhile, Canadians who had joined the R.A.F. in pre-war years were serving as wireless air gunners in the campaign in France and in the Battle of Britain. During the battle of France it was a wireless air gunner who became the first decorated Canadian in the Second World War. In the attempts to stem the tide of the German advance, many R.A.F. aircraft were sent on almost suicidal missions. On one of these flights LAC G. N. Patterson, a wireless air gunner of a Fairey Battle aircraft, was awarded the D.F.M. After being held prisoner for almost five years, Patterson returned to Canada and is at present serving as an officer in the R.C.A.F. Telecommunications Branch.

In November 1941, LAC K. M. Gravell, a wireless operator air gunner under training at No. 2 Wireless School, Calgary, although suffering fatal injuries, endeavoured to rescue the pilot from the blazing wreckage of their crashed aircraft. For his gallantry and self-sacrifice, LAC Gravell was posthumously awarded the George Cross, the first in the history of the R.C.A.F.

During April 1942, in another theatre of war, the efficient work of an aircrew wireless operator gave Ceylon the warning of an impending Japanese attack on that Island. The Canso aircraft piloted by Sqn. Ldr. (now Group Capt.) L. J. Birchall was on patrol in the Indian Ocean when a large Japanese naval task force was seen approaching the Island. This information was radioed back despite the fact that the aircraft came under immediate attack from the carrier-based Jap fighters. The island defences were made ready and, when the attack came, the defenders beat it off with heavy losses to the Japanese forces. Thus, an airborne radio operator of a Canadian squadron was a key participant in a vital piece of air reconnaissance.

The foregoing incidents concern outstanding work of the aircrew radio operator during air operations. But it is not so much the isolated incidents of outstanding bravery or devotion to duty that decide the course of wars as it is the sum total of the efforts of all concerned. The thousands of radio operators flying in every theatre of war, in every command and in nearly every type of aircraft, whether on routine flights or spectacular operations, all contributed to the final Victory.

THE POST-WAR YEARS

A post-war analysis of the work of the W.A.G. showed his increasing importance. Radio was becoming more and more a basic weapon and tool of war. At the end of the war the jobs being done by the radio personnel of aircrew were numerous and diverse. In Coastal Command they manned the search and navigation radar; in Bomber Command, the blind-bombing equipment; and in

special radio counter-measure aircraft, the equipment which protected the bomber stream from radio-controlled enemy interception. The results of this post-war assessment showed a need for all aircrew to have some knowledge of radio, and an especial need for specific members of the crew to be radio specialists.

On the cessation of hostilities the plans for a post-war R.C.A.F. were formed in the light of the optimistic international outlook then prevalent. From an all-time high of over two hundred thousand personnel, the establishment of the R.C.A.F. was reduced to approximately twelve thousand. With an air force of this size it can readily be seen that the number of aircrew would be limited. To give the R.C.A.F. full functional aircrew in any field of aviation, all non-pilot aircrew were to be "paragon aircrew," i.e. specialists in both radio and navigation. With this in mind, the training of the first radio navigators began at Clinton in September 1946. The second course, composed of veteran officers remustered from aircrew trades declared redundant at the war's end, began training a year later. The graduation parade for this course, in May 1948, saw an event unique in the history of the R.C.A.F. and Commonwealth Air Forces, for it was on this parade that the graduating radio officers received the first double wings to be worn by aircrew other than pilots.

World events during the next two years dictated the need for an expanded R.C.A.F. and precluded the possibility of training all non-pilot aircrew as radio navigators. The need for increasing numbers of aircrew radio specialists caused the establishment of a separate branch of aircrew known as Radio Officers. The school for training them has been set up as a separate training establishment: No. 1 Air Radio Officers' School, at Clinton, Ontario. The school is to-day turning out more and more Radio Officers to fill the ever-expanding needs of the R.C.A.F.

Flying Officer J. L. Merryfield at the key in one of No. 408 (P.) Squadron's Lancasters.

THE PRESENT AND THE FUTURE

R.O.'s are now being employed on many types of flying operations and in staff positions directing those operations. One finds R.O.'s performing their aircrew duties on the Korean airlift, trans-Atlantic routes, search and rescue operations, supply missions in the Canadian Arctic, photographic survey operations, and routine transport flights. In coastal defence squadrons, Radio Officers are required to qualify in the operation of the all-important search radar used in anti-submarine operations.

At the Air Radio Officers' School the training goes on, ever changing, to fit to-day's Radio Officer for the job of the future. While new graduates go forth to assume their operational rôles in Canada's squadrons, older and more experienced graduates return for further training. The advent of the year 1951 saw a new concept of the rôle of the Radio Officer in the R.C.A.F., and to realize this concept the Staff Radio Officer Instructors' Course has been designed. On this course, Radio Officers with wide experience on operations return to the Air Radio Officers' School for training which

fits them for positions on headquarters staffs, in operational training formations, and to assist in the planning and direction of R.C.A.F. operations.

The present of the Radio Officer is a busy and useful one. What of his future?

As developments in military aviation show the need for more and more electronic equipment of all kinds, aircrew specializing in radio are presented with an ever-expanding horizon for achievement and service. The defence of Canada will depend to a considerable degree on a force of long-range all-weather fighters which, owing to their high speeds, will be largely radar- and radio-controlled. The crew of such fighters will consist of one pilot and one skilled radio man and navigator, and we are probably already justified in foreseeing in the latter the next stage in the evolutionary process that began, as far as the R.C.A.F. is concerned, with the W.O.M. of almost twenty years ago.

Looking still further into the future is, of course, rather difficult. But it seems not unreasonable to believe that, when the first extra-terrestial vessel leaves on its plunge into the void, a direct descendant of our present-day Radio Officers will be among its crew. Perhaps, from some remote star on which the Valhalla of all good airmen is located, Lieutenant Aston and General Arnold will be watching his approach and silently toasting him in a bumper of astral mead.

The Suggestion Box

The airmen whose photographs appear on this page have each received a letter from the Chief of the Air Staff thanking them for original suggestions that have been officially adopted by the R.C.A.F.

Flt. Sgt. J. H. Kirby, of R.C.A.F. Station Winnipeg, suggested that the baggage tags used on all R.C.A.F. regular scheduled flights should be of various colours, according to the destination point — blue for Dorval, red for Rockcliffe, green for Winnipeg, etc. Baggage is thus identifiable at a glance and misplacement will (it is hoped) be eliminated. Also, much time is saved for those engaged in checking what items should be unloaded from an aircraft on its arrival at a Unit.

Flt. Sgt. R. J. Bowes, of R.C.A.F. Station St. Hubert, designed a stand and target board for use in harmonizing the guns of Sabre aircraft. His designs are to be further adapted for Mustangs, Vampires, and Mitchells.

Flt. Sgt. J. H. Kirby.

Flt. Sgt. R. J. Bowes.

The R.C.A.F.'s New Trades Structure

(A new trades structure became effective throughout the Service on July 1st of this year. The present article, which has been prepared by the R.C.A.F. Trades Structure Committee, gives a general picture of the reasons for its development and the changes effected by it, and should be of interest to all our Service readers.—EDITOR.)

Introduction

AFTER THE SECOND WORLD WAR there was a growing feeling throughout the Air Force that something should be done to improve the existing trade specifications for the Regular, Reserve, and Wartime Forces. It was felt that they should show exactly what is required of tradesmen at each group level, giving a complete picture of the duties of the trade, and also providing a sound guide for personnel selection, training, trade examining, and employment.

The Canadian Navy and Army had similar requirements, so it was decided that the three Services, with the assistance of the Defence Research Board, would work together on this programme in the interests of tri-Service uniformity. A special committee was formed, which came to the conclusion that the best way to obtain the necessary information about Service occupations was through Job Analysis. Job analysis is best described as a special technique for discovering and recording the vital facts about a job by going right to the man who is actually doing it.

The R.C.A.F. Trades Structure Committee, with the aid of specialist officers and N.C.O.'s from the field, took the information received from over 4,000 tradesmen whose jobs had been analyzed, and consolidated it into master summaries for each trade group. These summaries were carefully studied, checked and rechecked for accuracy, and used as a basis for the development of the new trades structure and trade specifications.

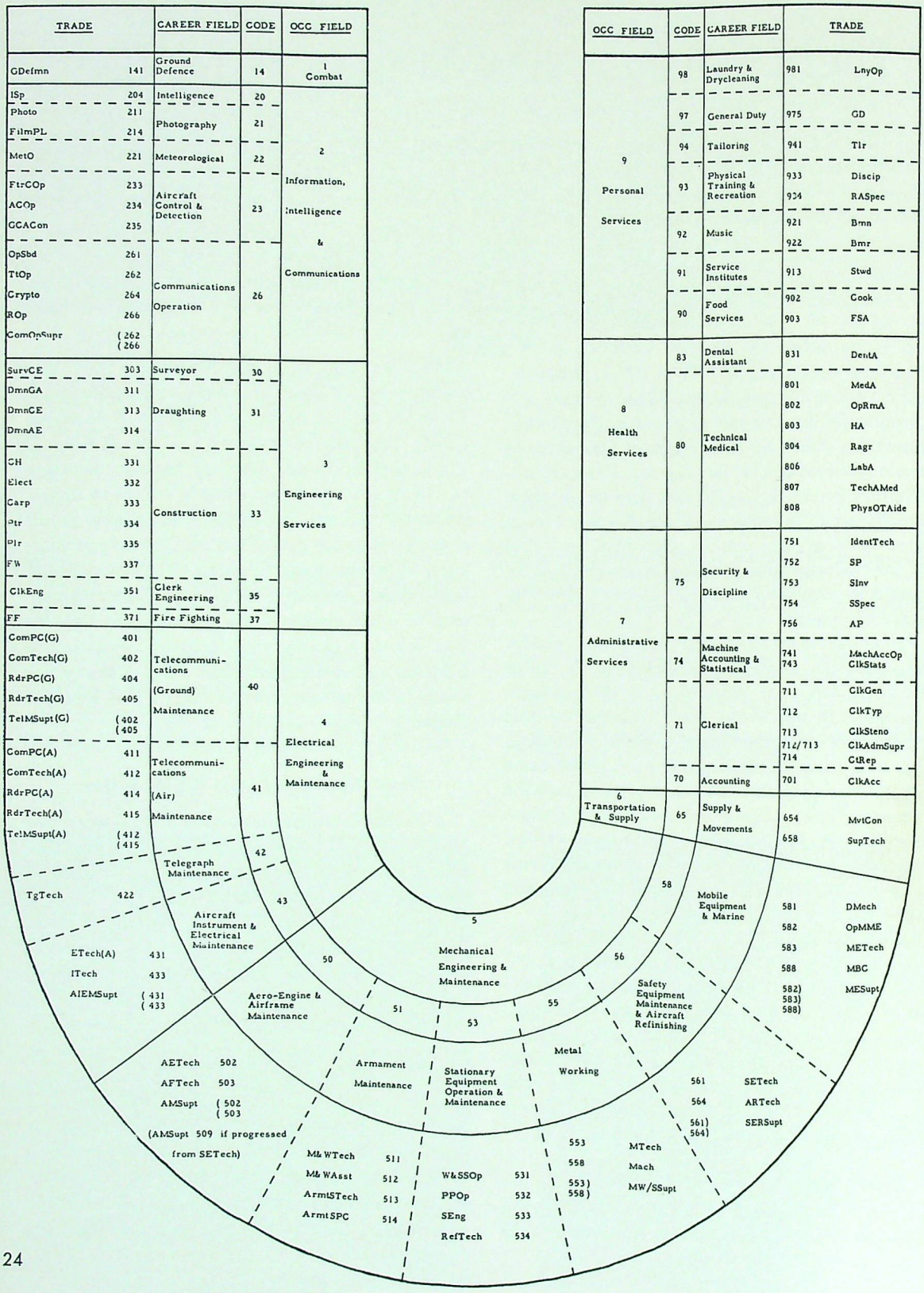
C.A.P. 471: R.C.A.F. Trade Specifications

From the information obtained through job analysis, new specifications were written for each trade and circulated to the "users" for their concurrence before final approval and publication. These are now contained in 9 separate volumes of C.A.P. 471, which replaces the old C.A.P. 7, Trade Qualifications. Each of the nine volumes of C.A.P. 471 represents what is known in Industry as an "Occupational Field," i.e. a large group of trades that are associated on the basis of similarity in their primary function. The occupational fields, in turn, are sub-divided into "Career Fields," each of which contains one or more actual trades that are very closely associated by fundamental purpose, knowledge, and skill. Fig. 1 shows the whole trades structure according to this arrangement.

Trade Classification and Coding System

A Trades Classification and Coding System has been developed as an integral part of the new trades structure, to be used in conjunction with the new specifications in C.A.P. 471. The Air Force Trade Code (A.F.T.C.) consists of seven digits which identify each airman's trade, trade group, primary trade specialty, rank, secondary trade specialty, and other special qualifications. The advantages of such a coding system are many, and though it may appear rather involved at first, it is really quite simple. Fig. 2 shows how it works for an Aero-Engine Technician Group 3 who is currently employed on gas turbine engines, has the rank of Corporal, and is also proficient on liquid-cooled engines. The actual figures shown in the seven digits will vary for each trade, but the principles of the code are the same for all trades.

FIG. 1: THE R.C.A.F. TRADES STRUCTURE "U" CHART



OCCUPATIONAL FIELD — A grouping of career fields on the basis of functional and occupational relationship.

CAREER FIELD — The field of opportunity for airmen to progress in trade group and rank within a trade or a family of trades related by function or similarity in basic knowledge and skills.

TRADE — A service occupation embracing particular spheres of duties and tasks requiring basically similar knowledge and skills, as defined by current trade specifications.

Trade Specifications Format

Trade specifications for each of the career fields in the 9 volumes of C.A.P. 471 are preceded by an introduction. This shows the application to the Regular, Reserve, and Wartime Forces; a career field chart indicating career opportunities and inter-relationship at different levels; tables showing the applicable coding; related Navy, Army, and civilian trades and occupations; and other factors which are common to all trades in that particular career field.

Following the introduction to each career field are separate trade specifications for each trade group of all the trades contained in the career field. There is usually a separate specification for the senior N.C.O. Gp.3 level, and when the trade progresses to Gp.4 or combines with another trade, there is a separate specification for that level also. The A.F.T.C. at the upper outside corner of each page of the specifications shows the trade, group and rank to which the specifications apply.

Trade Specialties

Job analysis has shown that most tradesmen specialize to a certain extent at the early stages of their career, thereby gaining more experience on one particular type of employment than on another. In recognition of this fact, trades which are very broad in scope have been classified by trade specialties usually up to and including the Cpl. Gp.3 level. This makes it possible to identify each airman's primary trade specialty (i.e. the particular type of equipment or function on which he is currently employed and best qualified) by placing the appropriate figure in the fifth digit of his A.F.T.C. When a trade is converted to the new trades structure, a unit board of officers and senior N.C.O.'s will study the airman's particular qualifications in order to decide upon the proper coding and on the primary specialty, when applicable. Trade examinations will consist of general questions applicable to the whole trade, and of detailed questions applicable to the primary specialty. If a change in employment necessitates a change in the primary specialty, a unit board of officers will decide when the airman is qualified in the new specialty up to his present trade group level and will authorize the appropriate change in the A.F.T.C. The new specialty will then become his primary trade specialty, identified by the fifth code digit, and the old one will be shown as a secondary specialty, identified by the seventh code digit. Special training is normally not required for conversion from one trade specialty to another, since the fundamental knowledge and skills are common to all the specialties in a trade, and qualification in a particular specialty of that trade is gained through experience.

Section 1 of the trade specifications (C.A.P. 471) shows the specialties by which the trade has been classified (if any), and how each one is cross-referenced to the items to which they apply by an "x" in the right hand specialty column(s). When an item applies to more than one specialty in a similar manner, the "x's" are shown horizontally opposite the item concerned. When the item applies to more than one specialty but differs slightly in its application (e.g. doing daily inspections on different types of aircraft), the "x's" are shown diagonally opposite that item. If an item does not apply at all to a particular specialty, the applicable specialty column is left blank.

Distribution of C.A.P. 471

In addition to having a number of complete sets of all the volumes of C.A.P. 471, each unit can obtain extra copies of the various career fields they contain on the basis of one career field pamphlet per six airmen in the trades concerned. These will be available for perusal by all airmen and will serve as a guide to their future in the Air Force, particularly with respect to training and preparation for advancement in trade grouping.

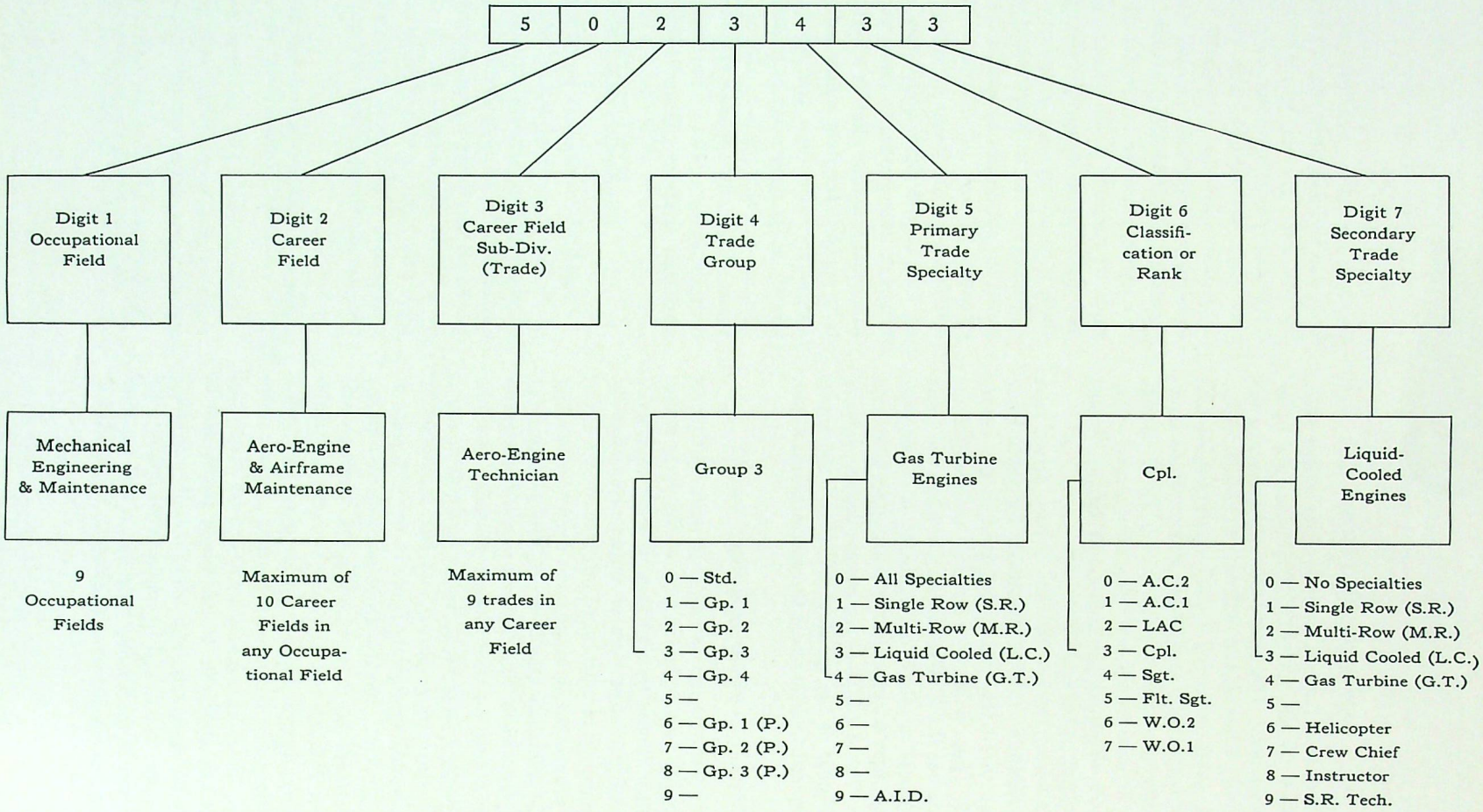
Major Developments and Advantages of New Trades Structure

Some of the major developments and advantages of the new trades structure and trade specifications can be summarized as follows:

- Two trades structures have been developed, one applicable to the Regular Force in peacetime and the other to the Reserve and Wartime Forces. The two are closely

FIG. 2: EXAMPLE OF TRADE CLASSIFICATION AND CODING SYSTEM

AERO-ENGINE TECHNICIAN



related, and transition to the latter on mobilization would be a simple and straightforward matter.

- Some changes have been made to individual trades in order to conform with the actual requirements shown by job analysis. A few have been deleted, some new ones introduced, and changes in trade content have been made for many.
- Trades have been associated with one another on a functional basis by occupational fields and career fields, which clarifies their relationship for personnel selection and career progression, and provides a sound framework which can be readily expanded or contracted in the event of changes in trade requirements or scope.
- Those trades which are sufficiently broad in scope have been classified by trade specialties making it possible to specify requirements more exactly for trade training, employment, and examining on the actual type of work with which the tradesman is most familiar.
- The detailed information in the trade specifications provides a complete picture of the requirements at each trade group level, so that the tradesman knows exactly what he has to do and learn in order to get ahead.
- The trades classification and coding system makes it possible to identify each tradesman's qualifications by machine record cards, and to show trade requirements by position in personnel establishments, thereby facilitating selection and placement of tradesmen in the position for which they are best qualified.
- In conformity with the requirements shown by job analysis, a new concept of training has developed, *viz* that basic trade training should be as realistic and practical as possible, theory being taught simultaneously with the practical side and limited to that which is essential to understand the process being learned. Advanced theory formerly included on the basic trade course will be taught at a later stage when it is actually required.
- Trade examinations will be set and marked by a centralized organization, and will consist of written objective-type questions supplemented by practical proficiency assessments by the unit. This system will make it possible to conduct trade examinations simultaneously at all units, and more frequently as required. With the current expansion of the Air Force, this system will be more efficient, economical and impartial than the previous system.
- Related occupations in the other Services and in civilian life have been shown for each trade group as a guide to recruiting and to Selective Services in time of mobilization. It will also assist airmen to re-establish themselves in a civilian occupation on demobilization.

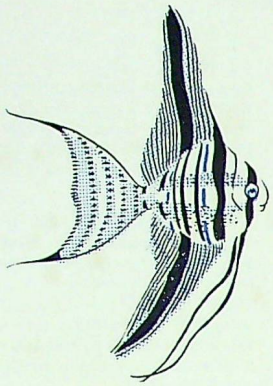
Conclusion

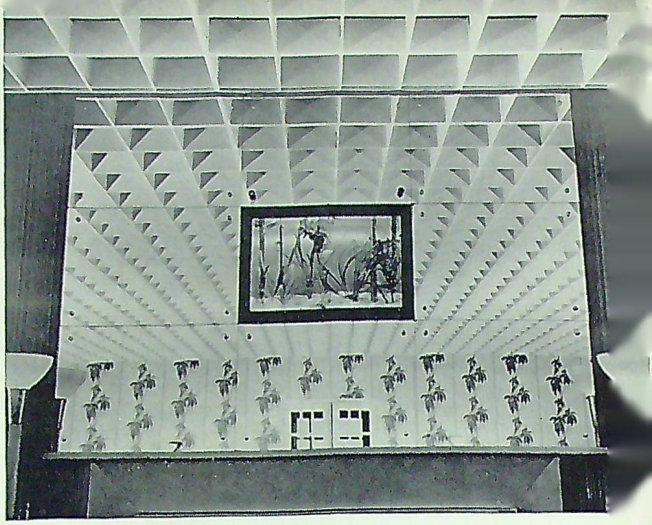
When the change-over to the new structure is complete, full details on the application of the new trade specifications, and the classification and coding system, will be published in volume 10 of C.A.P. 471.

BE STILL, MY HEART

AW Dorothy Tarrant (left) and Cpl. Ruth Martinsen enjoy a few minutes' chat with Mr. Joseph Cotten, moving-picture star, during his visit to Niagara Falls, Ont.

The Fish





A three-dimensional picture.

By Squadron Leader R. H. Blackmore (R.A.F.), R.C.A.F. Station Summerside.

FISH CAN BE interesting pets. There's no doubt about that. Many famous leaders have kept them; and more than one king, during the world's younger and more virile days, was so solicitous of their welfare that he fed them on a diet of superfluous slaves. To-day the average fish-fancier usually limits himself to the less formidable varieties of fish, which he keeps in ponds, in glass bowls, or in the more modern illuminated aquaria sunk into the wall so that they look like three-dimensional pictures. It is in one of the last-mentioned type of dwellings that the tropical fish of R.C.A.F. Station Summerside are housed.

I say "it *is*." But, however, for the hitherto unsuspected piscicultural knowledge and experience of a Very Senior Officer in a sister service of the R.C.A.F., I would probably have to say "*it was*." For the Summerside fish were in sorry case when Destiny and a Transport Command aircraft brought him on a visit to the Station.

The Guard of Honour had been inspected, and a large and polished car had borne our distinguished visitor first to his quarters, then on to the Mess for afternoon coffee. Hands were shaken, courteous things were said, and everyone was standing around in the traditional manner — when suddenly the V.S.O.'s kindly eyes widened and he cried out in a horrified voice:

"Just LOOK at that aquarium!"

We all looked at the aquarium. There, in a muddy solution which half-filled the tank, swam some two dozen fish. They swam with hopeless resignation. They swam slowly, mournfully, lethargically. They were, quite obviously, fish without incentive.

"Who," demanded the V.S.O., "is in charge of THAT? Surely somebody is in CHARGE of the fish. The aquarium is in a FRIGHTFUL state!"

We all glanced accusingly at one another, hoping that someone would own up to the responsibility. But no one spoke. It became apparent that the fish were orphans. They had no guardian. They were alone in an indifferent world.

The guilty silence was broken at last by the V.S.O. With a polite "Excuse me" to the Station Commander, he began to issue orders:

"Someone get a chair."

"Now someone get a table."

"Now put the chair on the table."

"Fine!"

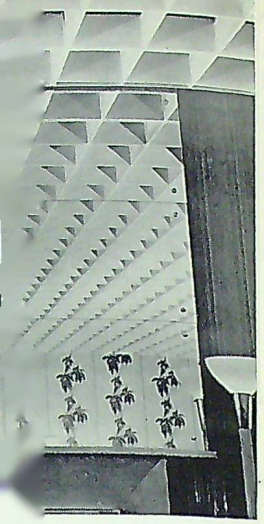
Taking off his tunic, he climbed on to the table, and then on to the chair. He was now level with the tank. A V.S. hand dipped into its murky depths.

"The temperature of the water is wrong. The plants need rearranging. The tank glass needs cleaning. Fresh water is required. Someone get me a cloth."

The cloth was brought.

"Now get some warm water — about 70°. Just luke-warm to the hand."

The cooks were in the kitchen preparing the ceremonial dinner that was to follow later. They



were surrounded by French fried still not fried and chickens waiting to be "southern styled." The invasion by a posse of officers clamouring for warm water took them completely by surprise. Chickens and potatoes were abandoned, and Operation Water commenced.

The object of the exercise was to get a large quantity of water at the right temperature from the kitchen, via the corridors, into the ante-room. The cooks had plenty of scalding water and plenty of cold water. These had to be mixed in order to produce water of the correct temperature. Then came the problem of transport. The cooks had small glass water-jugs for table use. They also had large aluminum vats for kitchen use. Two strong men filled and carried one of the vats in to the V.S.O.

"Too hot — far too hot."

They tried again.

"Too cold — much too cold."

So back to the kitchen with the vat once more.

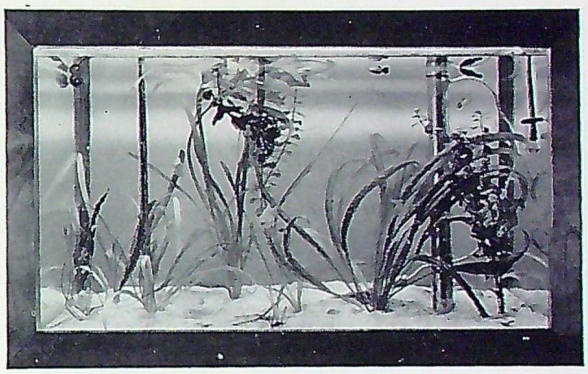
Slowly the scene unfolded. The V.S.O. stood on the chair which stood on the table, and cleaned the inside of the glass tank with a rag. The Station Commander held the chair. The Chief Administration Officer steadied the table. The Station Accountant organized the water-chain from kitchen, via corridors, to the ante room — a long human chain providing a continuous supply of water at 70° Fahrenheit. The Station Supply Officer kept his eye on the furniture. Coffee and cookies were left untouched. The Station outside began to seem remote and unreal. Only one concern occupied the minds of the assembled officers — the restoration of the aquarium to its pristine purity.

Plants were rearranged. A V.S. hand swished about in the liquid, cleaning, sorting, replacing. The fish, frightened by the sudden activity, hid under the stones at the bottom of the tank. The water was poured in. The thermostat was set.

"Now," said the V.S.O. as he climbed down from the chair, down from the table — "Now, when the mud has settled, you'll see the difference."

Gradually the water became clear. The plants, bright green, had been rearranged to form a picturesque background. The fish came out from under the rocks where they had been hiding and started to play vigorously. Whether this was due to the new cleanliness of their home or whether it was due to the increased supply of oxygen contained in the fresh water, I don't know. But they certainly played!

Never was seen so much chasing, and frisking, and fervent love-making! Never were seen so many flashing scales and fins. The Angel Fish sported together, and the Guppies romped like puppies. The Sword Tails whisked their tails, and



Paradise.

the Paradise Fish looked as though they'd at last found paradise. As we watched them, the V.S.O. told us about the ways and habits of these small creatures. Of Mollies, he spoke, of Gouramis and Climbing Perch. He initiated us into the mysteries of Tetras, Platys, and Campodia Bettas . . .

Everybody, of course, was mighty pleased. For quite a while afterwards, senior officers beamed whenever their eyes lighted on the aquarium; and young officers hopefully brought their girl-friends to view the amorous fish. In other words, the fish of Summerside had come into their own. Their stay in Purgatory was over.

But though we have since tried hard to keep the fish happy, we do not seem to be blessed with "aquarium fingers." The tank is no longer spic and span. No longer do the fish play with such careless — or, as one lady described it, "wanton" — abandon. All we can do, I suppose, is wait patiently for another visit by the V.S.O.

★ What's the Score?

WE LEARN from the grapevine that Sgt. Shatterproof has recently been seen in the Station library for several consecutive evenings before the appearance of each issue of "The Roundel", with his nose buried in the various Air Force canons — the National Defence Act, Q.R. (Air), Equipment Instructions, the Manual of Administration, etc., etc. This phenomenon is, of course, simply the result of the old wardog's burning desire for knowledge. It has nothing to do with the fact that W.O.1 Gallstone has adopted the unmanly practice of summoning Sgt. Shatterproof and testing him with these questionnaires before the latter has had a chance to look up the answers and pronounce them elementary. The correct answers to this month's questions will be found on page 48.

1. A flight commander who has immediate need of an essential item of equipment costing $65 and not readily obtainable through the normal channels, should:
   (*a*) Signal Command H.Q.
   (*b*) Send an E42 to the Station Supply Officer with a memorandum requesting local purchase action.
   (*c*) 'Phone the C.O.
   (*d*) Buy it himself and submit a claim to the Station Accounts Officer.

2. An airman who discovers holes in the outsoles of his shoes should:
   (*a*) Attend clothing parade and demand a new pair.
   (*b*) Wait until the insoles are worn through too.
   (*c*) Turn them in to the Supply Section for repair.
   (*d*) Give them to a friend who takes a size larger, so that the latter can trade them for a new pair on the pretext that he has outgrown them.

3. The aspect ratio of an aircraft is:
   (*a*) The length of the fuselage divided by the frontal area.
   (*b*) The wing span squared divided by the wing area.
   (*c*) The weight of the aircraft (unloaded) divided by the brake horsepower.
   (*d*) Determined by the formula $E = MC^2$.

4. One pound of thrust delivered by a jet engine in an aircraft is equal to one horsepower when the speed of the aircraft is:
   (*a*) 500 m.p.h.
   (*b*) 320 m.p.h.
   (*c*) 375 m.p.h.
   (*d*) Mach 1.

5. The term "G.C.I." is an abbreviation for:
   (*a*) Ground-Controlled Interference.
   (*b*) General Conservation Instructions.
   (*c*) Ground Counter-Intelligence.
   (*d*) Ground Control Interception.

6. A paratrooper's main parachute is opened:
   (*a*) By the despatcher using remote control.
   (*b*) By the paratrooper, after counting up to ten.
   (*c*) Automatically, by a line attached to the aircraft.
   (*d*) Automatically, when the paratrooper reaches a vertical speed of 110 m.p.h.

7. A radio wave travels approximately at:
   (*a*) The speed of light.
   (*b*) Ten times the speed of a .303 bullet.
   (*c*) Four times the speed of sound.
   (*d*) Mach 15.

8. The physiological effect of red-out (a phenomenon induced by g) is:
   (*a*) Temporary stoppage of the heart.
   (*b*) A rush of blood to the brain.
   (*c*) Decelerated rate of breathing.
   (*d*) A falling forward of the head.

9. The much-publicized Orenda engine is:
   (*a*) An axial flow engine.
   (*b*) A centrifugal flow engine.
   (*c*) A Whittle jet engine.
   (*d*) A turbo-prop engine.

10. *Not* used as a nickname for some types of bomb is the word:
    (*a*) Tiny Tim.
    (*b*) Cookie.
    (*c*) Tallboy.
    (*d*) Grand Slam.

11. Of the total strength of the R.C.A.F., airmen employed on the maintenance of aeroplanes and associated technical equipment represent:
    (*a*) 25%.
    (*b*) 75%.
    (*c*) 42%.
    (*d*) 50%.

12. The 1st Guided Missile Squadron of the U.S.A.F. is equipped with a guided missile known as the:
    (*a*) Loon.
    (*b*) Matador.
    (*c*) Gorgon.
    (*d*) Wardog.

13. An R.C.A.F. sergeant's daily Foreign Allowance is:
    (*a*) $9.50.
    (*b*) $15.00.
    (*c*) $7.80
    (*d*) $12.00.

14. A groundcrew recruit for the R.C.A.F. must be between the ages of:
    (*a*) 15 and 50.
    (*b*) 17 and 60.
    (*c*) 18 and 35
    (*d*) 17 and 40.

15. An airwoman's pay is:
    (*a*) Ten per cent less than an airman's.
    (*b*) Three quarters of an airman's.
    (*c*) Ten per cent more than an airman's.
    (*d*) The same as an airman's.

16. When a flying accident has been investigated by a board of enquiry that does not include a representative of A.I.B., the log books may be released by:
    (*a*) The C.O.
    (*b*) The Chief Technical Officer.
    (*c*) The President of the board.
    (*d*) The Station Administrative Officer.

17. Grivation is:
    (*a*) A phallic dance performed by flight cadets on graduation.
    (*b*) The number of degrees to be added to True Heading to allow for magnetic variation and map convergency (in the calculation of Grid Heading).
    (*c*) The number of degrees to be deducted from Grid Heading to obtain True Heading when flying over the North Pole.
    (*d*) The ovation given to a grid gladiator.

18. The factor which is generally considered of minor importance in the basic selection of a strategic target is:
    (*a*) Its direct importance to the enemy's war machine.
    (*b*) The means of distribution of materiel.
    (*c*) The year-round weather conditions in the target area.
    (*d*) Its productive capability.

19. The method most commonly used by photograph-interpreters to extract information from photographs is:
    (*a*) Direct study.
    (*b*) Comparative study.
    (*c*) Study by polarized light.
    (*d*) Exploratory study.

20. The trade of Intelligence Specialist:
    (*a*) Embraces airmen of all ranks, usually remustered from the trades of clerk admin. or clerk typist, who are employed on intelligence duties.
    (*b*) Is limited to airmen who are proficient in foreign languages.
    (*c*) Is restricted to senior N.C.O.'s.
    (*d*) Includes airmen of all ranks whose primary duty is the protection of R.C.A.F. formations against sabotage.

ROYAL CANADIAN AIR FORCE Association

ROYAL PATRONAGE

Her Majesty Queen Elizabeth II has graciously granted the Association's petition that she continue the patronage she first extended as the Princess Elizabeth.

THIRD NATIONAL CONVENTION

The Third National Convention, postponed from last May because of unforeseen circumstances, will now be held in the spring of 1953. While consideration was given to the suggestion that the convention be held in Windsor at the same time the Air Force Association of the U.S.A. was convening in Detroit, difficulties in detail made a later date appear more advisable. It has been suggested that the convention should include the May 24th holiday. The National Executive Council, however, will decide place and dates during a meeting in the fall.

CHANGES IN NATIONAL H.Q. STAFF

Robert S. McCartney, assistant general secretary since September 1948, has rejoined the R.C.A.F. with a commission in the permanent force. Jack C. Gray, a member of No. 413 (Air Force City) Wing, Trenton, Ontario, has been appointed to succeed him.

Joseph C. Emery, a member of No. 250 (Saint John) Wing has been selected to fill the new position of field organizer.

Mr. Gray, a native of London, Ontario, served as an administration officer in the R.C.A.F. from 1940 to 1946. He is married and has three children.

Portraits of Queen Elizabeth II and the Duke of Edinburgh were presented by No. 303 (Sherbrooke) Wing to the airmen's mess of No. 2450 A.C.W.U. (Aux.). L. to r.: L. Gingras, E. Marshall, Flt. Lt. G. O'Boyle, F. Edwards (Vice-pres. of No. 303), W. Petts (pres. of airmen's mess), E. Martin, S. Hart, W. Richardson (past-pres. of Wing).

Mr. Emery served with the R.C.A.F. from June 1940 to July 1945, and received the D.F.C. as a Flight Lieutenant bomb-aimer early in 1943. In June of the same year he was shot down, and remained as a P.O.W. in Germany until the end of the war. He is married and has one child.

The position of field organizer was advertised to all members. Well over 100 applications were received, and both the above appointments were made on the basis of these applications.

R. S. McCartney (left) and J. C. Gray.

OPERATION LIBRARY

During the coming year, the Association will have commitments to provide basic books for a library for R.C.A.F. formations overseas once every four months. No. 1 Fighter Wing's normal needs have now been met, and a sufficient reserve exists to meet the requirements of the next two formations, one immediate and one in September. Additional books, particularly hard-covered, are not only invited, but will be necessary if the Association is to meet its full commitment.

Recent large contributions were 25,000 pocket books from No. 700 (Edmonton) Wing and 1,200 hard-covered books of high standard (many purchased new) from No. 306 (Maple Leaf) Wing, Montreal. No. 413 (Air Force City) Wing, Trenton, also sent in several crates of mixed pocket novels and hard-covered books.

These donations, on top of a reserve stock, created a storage problem for the R.C.A.F., and arrangements were made with D.V.A. for storage at the Canadian Legion's book depot in Ottawa.

REQUESTS FOR R.C.A.F. BANDS

Arrangements were made with A.F.H.Q. that all requests from Association Wings for services of R.C.A.F. bands would in future be cleared through National H.Q. It was also decided that A.F.H.Q. and National H.Q. would try to plan so that engagements could be met during tours of particular areas.

National H.Q. will advise Groups of the approximate dates on which a band plans to be in the Group area, and the Group will then advise the Wings and draw up a schedule, on the basis of Wing requests, for approval of National H.Q. and A.F.H.Q. This should cut down on erratic travelling by bands, permit Wings to plan events to coincide with band tours, and result in R.C.A.F. bands being available more often for Association local sponsorship.

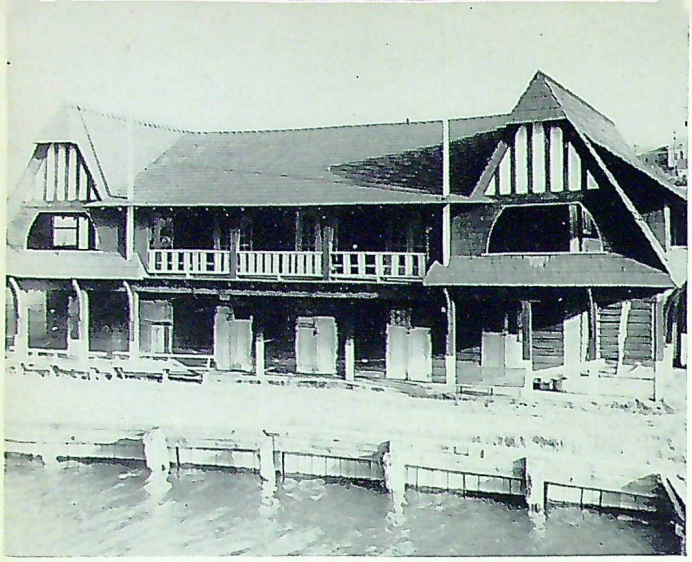
PUBLIC RELATIONS AWARD

The current award has been won by No. 700 (City of Edmonton) Wing. Edmonton has shown marked improvement recently in many respects and appears to be determined to be one of the most active and largest Wings in the Association.

In one month the Wing successfully staged two ventures, thereby receiving very favourable public notice. In four theatres, a special show for children (to which admission was pocket books, and at which special prizes were given for the largest single contributions) brought in 25,000 books. The event which received nation-wide attention, however, was sponsorship of the Pioneer Train, for which the award was specifically made.

"The Edmonton, Yukon, and Pacific" was the high-sounding name for a 10-mile railroad which originally connected Strathcona (now South Edmonton) with (North) Edmonton across the river. When it was learned that the affairs of the railway were to be wound up by the C.N.R., the Wing adopted the idea of a last passenger run as a publicity and money-raising project. The circumstances were sufficiently unusual to warrant the publication of pictures in newspapers across the continent of Wing members in pioneer garb. Copies of the souvenir programme were sent to the executive of all Wings.

Harold F. MacNaughten, Wing publicity chairman, reported: "Everyone seemed to have fun and the train was crowded to capacity. There was music and square dances, and all kinds of old-time costumes. There were prizes galore, and lots to eat for the little ones. After all expenses were paid, we still had enough for the Air Cadet scholarship which was our objective."



No. 601's new club-house, before alterations were begun.

MOOSE JAW ON THE MARCH

The reactivated No. 601 (Moose Jaw) Wing has been making marked progress and has obtained fine clubrooms by taking over the former Aquatic Club. The official opening took place on Air Force Day. Mayor L. H. Lowry made a dive into the river to mark the official opening of the new club. (He took out a special insurance policy to cover him against injury or loss of his swimming trunks). Before taking the much-publicized header into the water, the Mayor congratulated the Wing on its work and promised future co-operation. Sqn. Ldr. J. C. Anstead, senior officer of the Moose Jaw R.C.A.F. training school, also spoke, referring to the excellent liaison work of the Wing between the airport and the citizens of Moose Jaw. The newly-formed Moose Jaw Junior Band was also present. Hundreds of adults and children attended the ceremony and enjoyed the programme of aquatic sports which followed. The evening was completed by a dance which 300 persons attended.

Association members from other points in Saskatchewan, included Jack Park (president) and Miss Rhoda Farthing (secretary) of the Saskatchewan Group, and President Jack Turnbull and 20 members of the Regina Wing.

Most of the redecoration and alterations to the new premises were carried out by volunteer workers of the Wing. Through courtesy of the now defunct War Services Committee, a grant of $700.00 was obtained.

Moose Jaw has formed a Ladies' Auxiliary. Officers elected were: Mrs. F. Barnes, president; Mrs. G. Harrison, vice-president; and Mrs. J. Sloman, secretary-treasurer.

GIFTS OF SEWING-MACHINES

No. 410 (Ottawa) Wing Ladies' Service Committee was formed by a number of interested members on the distaff side and lost no time in being of service to the R.C.A.F. Sewing-machines were donated and presented to the airwomen of nearby R.C.A.F. Stations Rockcliffe and Uplands.

ANNUAL GOLF TOURNAMENT

Over 90 persons competed in the annual golf tournament staged by No. 306 (Maple Leaf) Wing, Montreal, at the Alpine Inn, Ste. Marguerite, Que. The Calvert trophy, open for competition by all Wings in the province, was won by the host club. The team comprised Mel Lowson, Jim

Flt. Lt. Irene Knowlton and Airwoman Beryl Bright admire one of the sewing-machines presented by No. 410 Wing.

Hale, Leo Kendall and Buck Feldman. The Buck Feldman cup for low gross by a Maple Leaf Wing member was won by Mel Lowson. A supper, with entertainment, was given at the Inn after the tournament.

This is the third tournament staged by No. 306, and it has grown from 12 competitors the first year to nearly 100. Maple Leaf has expressed its willingness to open the competition for the Calvert trophy to the nation, in a sort of R.C.A.F. Association "Canadian Open."

20,000 CUSTOMERS

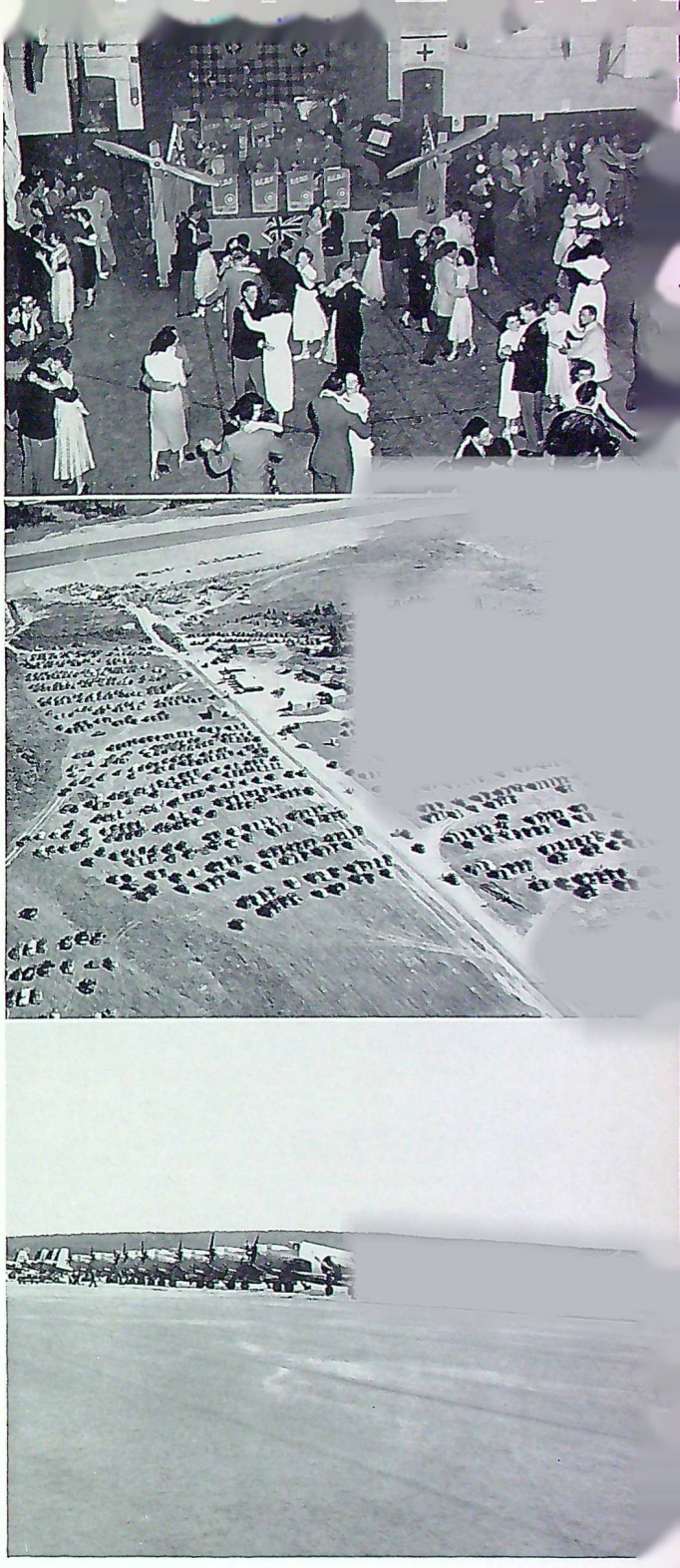
The General Council of Montreal Wings operated the canteens for Air Force Day at R.C.A.F. Station Dorval. Twenty thousand persons attended. About 85 volunteer workers from the various Wings were assisted by air cadets of No. 1 (Westmount) Squadron. The total sales amounted to $1,700, of which $650 represented a profit to be split proportionately among the Wings.

SAINT JOHN AIR SHOW

Thousands of persons (according to the Saint John "Times-Globe," "nobody knows how many thousands") attended the gigantic air show staged by No. 250 (Saint John) Wing to commemorate the opening of the city municipal airport. The show was opened by Lieutenant-Governor D. L. MacLaren, who was introduced by P. F. Connell, Wing president. Among those attending was Air Vice-Marshal A. L. Morfee, C.B., C.B.E., Association national president. In addition to aircraft provided by the R.C.A.F. and the Royal Canadian Navy, the R.C.A.F. Central Band was in attendance.

Bruce C. Carter, chairman of the public relations committee of the Wing. summarized activities from the Wing's point of view as follows:

"We had a wonderful day. The temperature was 86° F. with about a 10-m.p.h. wind. and everyone got soundly sunburned. The Navy started off the show with stream take-offs, carrier landings, shoot-ups, and mock attacks, and then later on a flight of four T-33's from Chatham did some beautiful flying, followed by a solo aerobatic display by a fifth T-33. Then four Sabres did their stuff, and all of them passed the speed of sound while passing over the airport. People are still talking about the jet planes here in Saint John ten days after the show.



Three shots taken at the air show staged by No. 250 (Saint John) Wing.

"Hundreds of people took advantage of the opportunity of a flight over the city — most of them first-flighters — and those flights did more than anything to make the people of Saint John air-minded. Many came back trying to buy a ticket for a second flight, but we were really snowed-in by requests which we were unable to meet because of the lack of licensed passenger-carrying aircraft, and lots of people had to be turned away. As it was, the last flight didn't get away until 8.05 p.m.

"Practically every member of the Wing was working at one project or another. The busiest man was Ed. Fitzgerald who, with the help of Bob Bardsley and Bill Arrowsmith (airport manager and member of No. 250 Wing), organized the show from the start; and all three put in a great amount of time to ensure the success of the show. Norm Jackson, as chairman of the grounds committee, did a wonderful job, and the fact that there were no traffic jams at all is no small tribute to the way that Norm and his workers cleared the cars away to parking areas as soon as they had passed the ticket-sellers. Everyone who attended the dance which followed enjoyed themselves immensely, and this brought the Air Show Day to a successful conclusion.

"From the proceeds we are planning to reactivate the Fundy Flying Club. The club has been inactive for two years now and is quite heavily in debt. No. 250 Wing will probably take over the charter and operate the club to train civilian pilots and air cadet pilot trainees, and to keep the 'old pilot' types in trim in case we have a third 'do'. We already have several people signed up as potential student pilots, and we haven't even advertised it yet."

No. 547 Squadron of the R.C.A.C. (sponsored by No. 406 Wing, North Bay) is inspected by Wing Cdr. W. M. Foster, D.F.C., C.O. of R.C.A.F. Station North Bay.

S. Soble, of No. 408 (Toronto) Wing, stirs his audience with an impersonation of Gypsy Rose Lee during a recent social evening.

HERE AND THERE

Copies of all **General Bulletins** issued by National H.Q. were put in permanent binders and sent out to the secretaries of all Wings. Attached to each copy were the printed Constitution and the By-Laws of the Association. This is to be the Wing's permanent record, to which General Bulletins will be added as issued, and secretaries have been requested to hand their copies to their successors in office.

Arrangements were made with the Odeon Theatre, Ottawa, which regularly has art displays, to exhibit entries in the competition for a painting of a **Canadian scene to be presented to the Queen.** Final judging was scheduled for the end of August. After initial viewing of the exhibit, the selection committee, which includes representatives of the National Art Gallery, expressed approval of the general quality of the entries.

P. A. MacLellan was elected to succeed G. M. Gillespie as president of **No. 102 (Colchester) Wing.** Mr. Gillespie, who has rejoined the R.C.A.F., has been very active with the Wing since its inception in May 1949.

No. 501 (Lakehead) Wing's executive council. Seated (l. to r.): G. J. Gough, past pres.; Mrs. J. Moore, Ft. William membership; M. J. Rothschild, pres.; Miss E. B. Halliday, recording sec'y. Standing (l. to r.): B. T. Lod, 2nd. vice-pres.: E. L. Gatien, entertainment; J. McMullin, Air Cadet and R.C.A.F. liaison; D. H. Groombridge, ways and means; F. P. Groulx, pub. rel.; R. W. Bissonette, property and housing; A. E. McQuarrie, treas.; C. H. H. Moss, 1st. vice-pres.; J. G. Mackay, Port Arthur membership; J. E. Nelson, special events and sports; A. R. Thomson, corresp. sec'y.

No. 501 (Lakehead) Wing maintained summer interest by sponsoring a model aircraft show and a Wing picnic.

National H.Q. asked **Avro Canada** to consider a special day for the R.C.A.F. Association to attend the official opening ceremonies in September for the new Orenda engine plant.

Farewell party given by No. 302 (Quebec) Wing for R.C.A.F. personnel proceeding overseas. Kneeling members (l. to r.): L. Dorion, J. C. Mercier. Standing members (l. to r.): Miss F. Morin, P. J. Haberlin, M. Manuel, W. N. LeGallais.

Details of arranging for an inter-Wing meeting in Toronto at that time were passed to the Ontario Group to work out.

Wings at Saint John, Halifax, Quebec City, and Montreal continued to stage farewell parties for groups of R.C.A.F. personnel proceeding overseas.

Saint John Wing has moved from the Navy League building back to its former quarters at 304 Main Street.

A request by **No. 252 (Fredericton) Wing** to bring in American flyers to stage an air show was finally cleared through the numerous government departments concerned.

The W.R.A.F. Central Band

Formed less than three years ago, the Central Band of the Women's Royal Air Force has already become one of the most popular Service bands in the United Kingdom. Their engagements average more than one a week, and during the past year they have travelled about 9,000 miles — no small distance in Britain. LAW Ibbotson, shown with her euphonium in one of the accompanying photographs, doubtless contributes notably to the band's popularity.

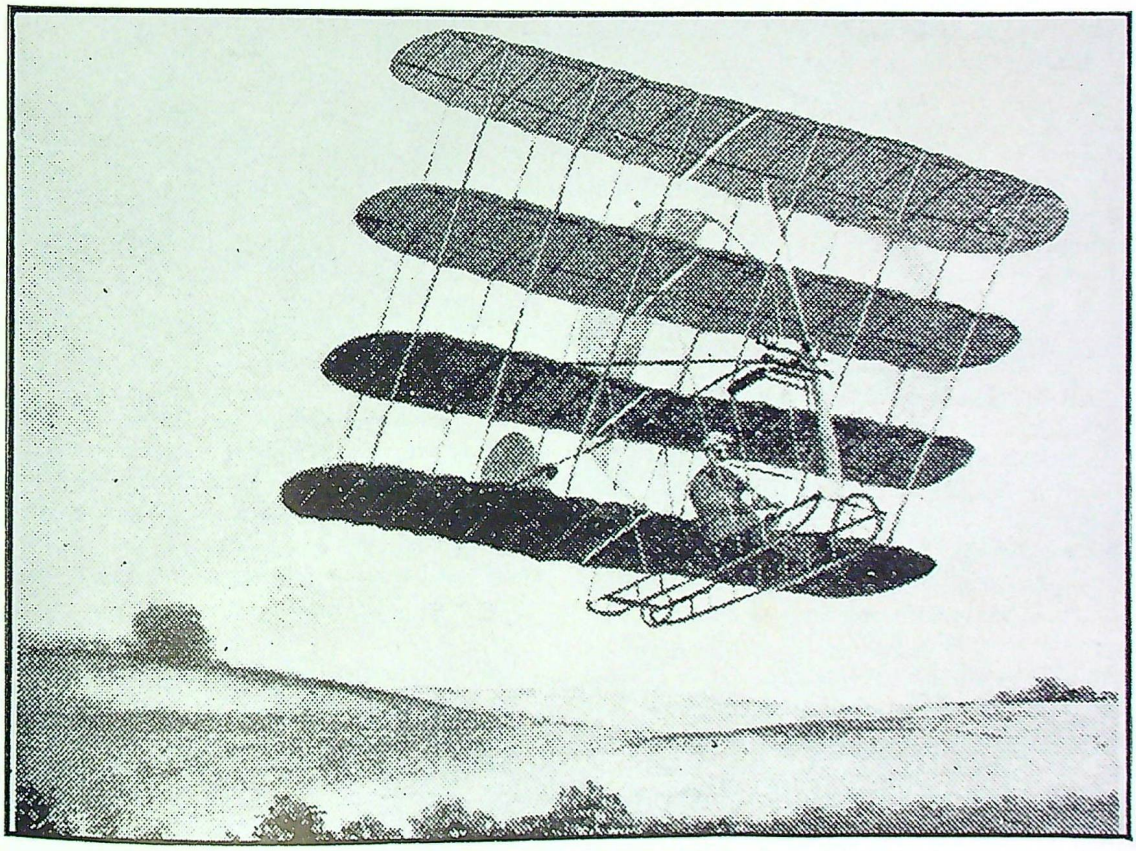
"Come, Josephine . . ."

(Not long ago we received from Flt. Lt. J. H. Hughes, C.O. of No. 314 Squadron of the Royal Canadian Air Cadets, a copy of the March 1911 issue of "Popular Mechanics." On leafing through it, we were amazed to discover how air-minded the world was in those far-off days when Josephine used to go dicing in her boy-friend's flying-machine. With the kind permission of Mr. W. H. Fetridge, the vice-president of "Popular Mechanics," we are reprinting here a few of the items that interested us most.—EDITOR.)

QUADRUPLANE MAKES MANY SHORT FLIGHTS

SEVERAL HUNDRED short flights, none of which have been more than a mile in length, have been made with this curious quadruplane among the mountains of Carter County, Kentucky. The inventor is M. B. Sellers, who has been experimenting with this type of machine for several years.

The four supporting planes are placed one above the other in step formation, the upper plane being in advance. It is claimed to be one of the largest



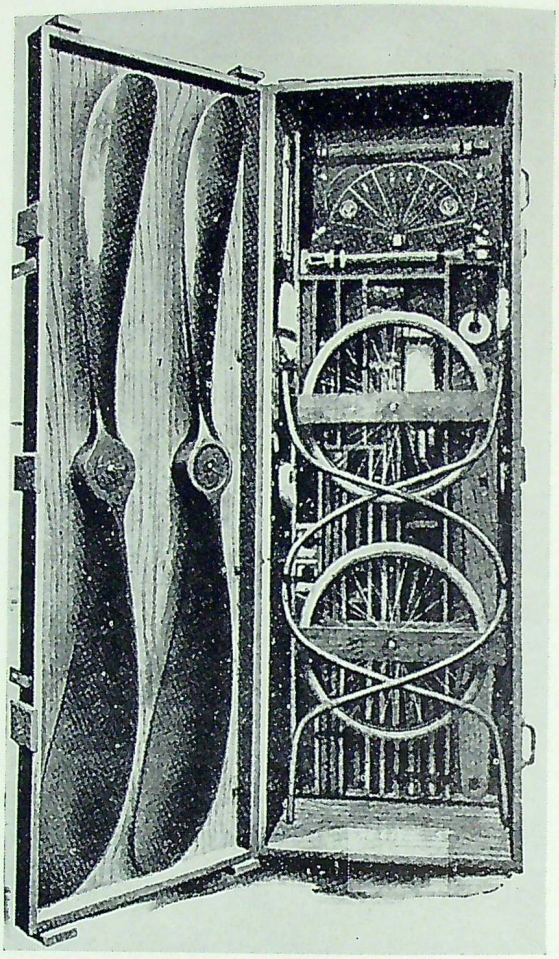
aeroplanes in the world and the total weight, including the operator, is only 250 lbs. The first model, complete with engine, propeller, etc., only weighed 78 lbs., but the weight of the later models has been increased. The planes have a spread of 20 ft., and the total sustaining surface is 250 sq. ft. The speed attained in the short flights, with a 5-h.p. 2-cylinder French motor, direct-connected to the propeller, has been about 26 miles an hour.

DEATH SPREAD OVER WIDE RADIUS BY AERO BOMB

Practical experiments in bomb-dropping and scouting with aeroplanes were carried on in connection with the aviation meeting at San Francisco recently. Lieut. M. S. Crissy of the Coast Artillery Corps, as a passenger in Parmalee's Wright machine, dropped a shrapnel shell from a height of 475 ft. Examination of the spot after the explosion of the shell showed it to have a destructive radius of 70 yds. Later on the same day Lieut. John C. Walker, 8th U.S. Infantry, made a flight with Walter Brookins and from an elevation of 1,000 ft. took photographs of the aviation field and army camp connected therewith, which, when developed, showed the camp and its surroundings in a manner that would have been valuable in time of war.

SPARE-PART OUTFIT FOR AEROPLANES

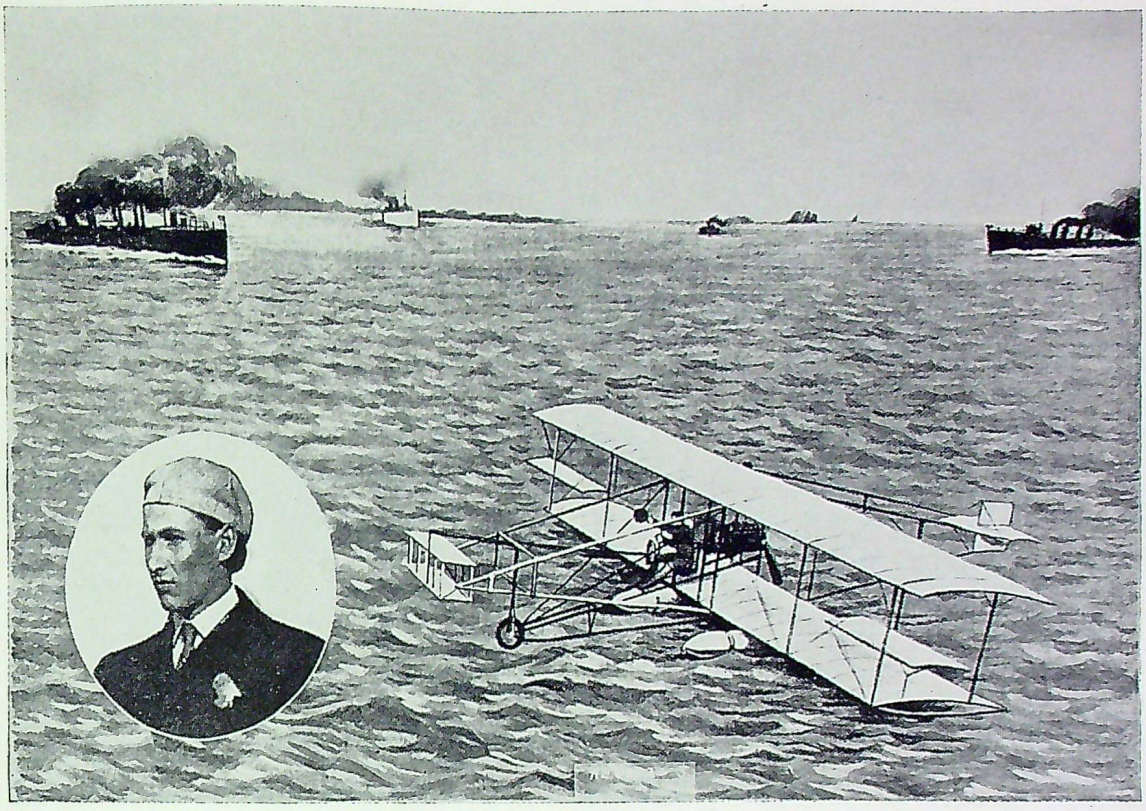
Just as the automobilist carries spare tires, spark-plugs, bolts and nuts, split pins, and other parts to make replacements when breakages occur in the use of the machine, so the airman to-day provides himself with an assortment of "spares." He does not carry these on his aeroplane, however, although the time may come when it will be possible to reduce their number to such an extent that they will not be a prohibitive burden even for heavier-than-air flying-machines. The French manufacturers of the Blériot monoplanes now supply spare parts for their machines put up in neat arrangement in a wooden chest, with locks and suitable handles to facilitate handling in shipping by rail and boat. As exhibited at the



recent French aerial exhibition in Paris, the case contains two extra propellers, a pair of landing wheels and two pieces of bent bamboo used to support the tail, finished parts for the frame, stranded steel cable in coils, and a multiplicity of small metal parts for different parts of the framework.

McCURDY MAKES RECORD OVERSEA FLIGHT

A leak in the lubricating mechanism of his Curtiss biplane marred the attempted oversea flight of J. A. D. McCurdy from Key West, Florida, to Havana, Cuba, on Jan. 30. After beating the world's record for flying over the



Torpedo boats coming to McCurdy's rescue.

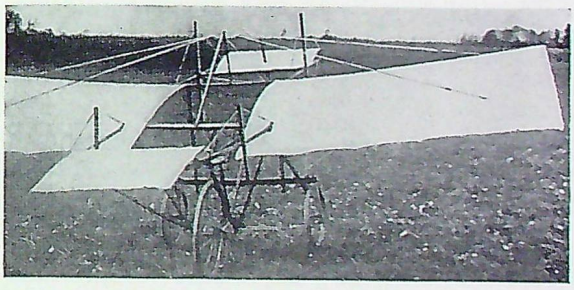
ocean and making 96 miles at the rate of 50 miles an hour, McCurdy was forced to descend into the sea within 10 miles of Havana.

BOYS FLY 250 FEET WITH A HOME-MADE GLIDER

Flying 250 ft. from a 28-ft. embankment in a glider of their own make is the feat recently accomplished by James M. Fitzwilliams and Edgar A. Clark, two 16-years-old boys of Buffalo, N.Y.

The machine is the result of much experimentation and study, and was built only after several smaller models had been made and tried out.

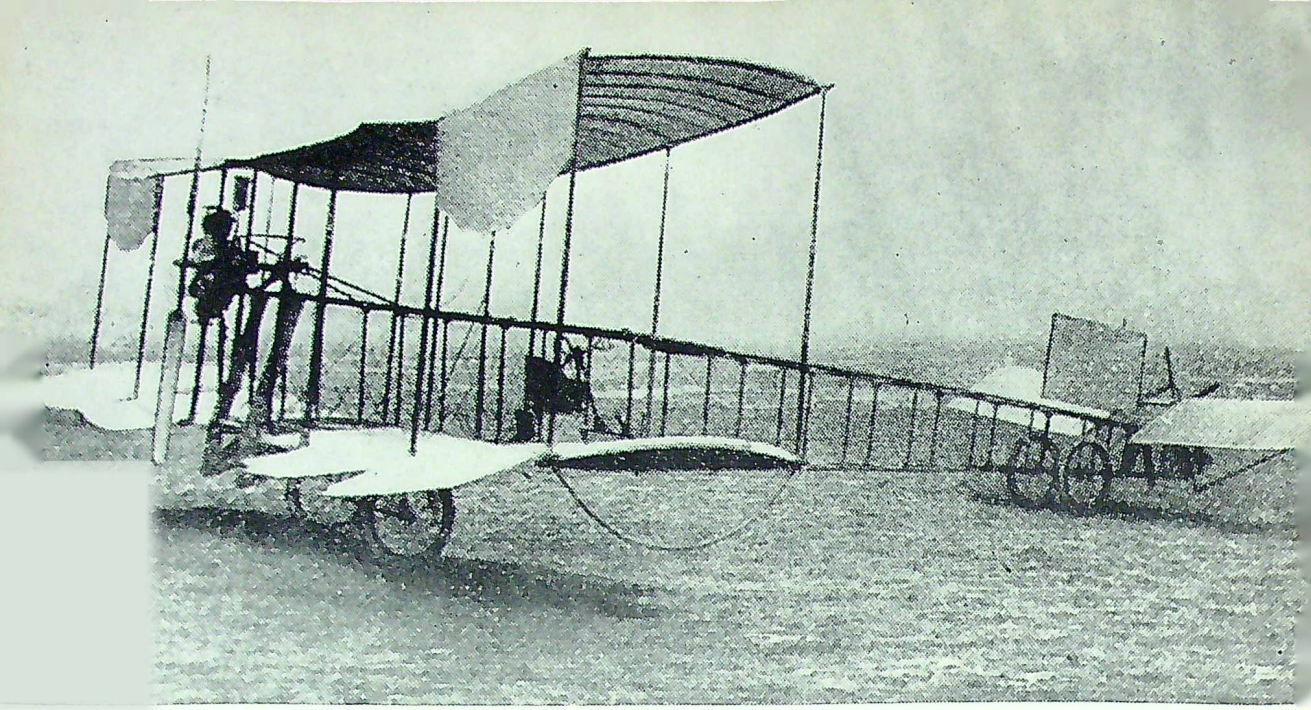
The glider weighs about 55 lbs., and the wings, which are curved and slant upward a little from the centre to the tip, measure 16 ft. by 4 ft. 8 in.



A rear plane or tail is intended to steady the machine in flight and to do the lateral steering.

VOISIN'S NEW TAILLESS BIPLANE

The horizontal and vertical rudders are placed about 32 ft. in front of the two main planes, and



the operator's seat is 6½ ft. in front of the planes. The rotary motor is placed at the rear, half-way between the planes.

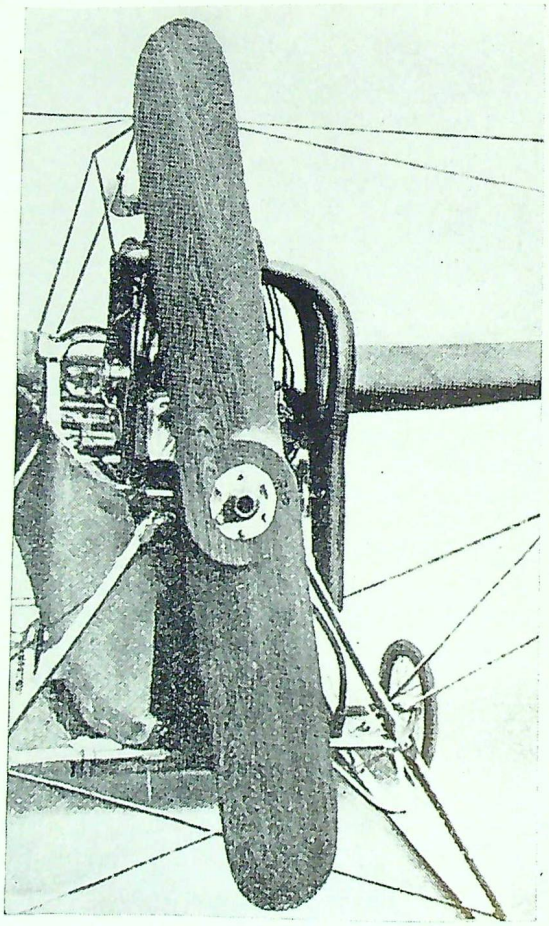
A NEW FORM OF PROPELLER

The air is attacked at the center instead of at the ends of the blade, as in the usual design. Though it is only 6½ ft. long, it has given as good results as an 8-ft. propeller of the ordinary type. It was made in France and is known as the "Rip."

WOMEN COMPETING FOR AERIAL HONOURS

France has a number of aviation enthusiasts among the fair sex, and recently several records were established by feminine operators. Mlle. Marvingt set the pace for her sisters in aeroplaning by remaining in the air 53 minutes in her Antoinette monoplane at Mourmelon during a heavy gale and while the weather was intensely cold. It was thought she had won the duration prize offered women by a French women's journal, but her feat simply served to inspire others to similar attempts. A day or two later Mlle. Dutrieu, in a Farman biplane, remained in the air 1 hr. 9 min., covering 60.8 kilometers (37¾ miles).

America has its airwomen also. Only recently the Aeronautic Society awarded a medal to Mrs.



Mlle. Dutrieu.

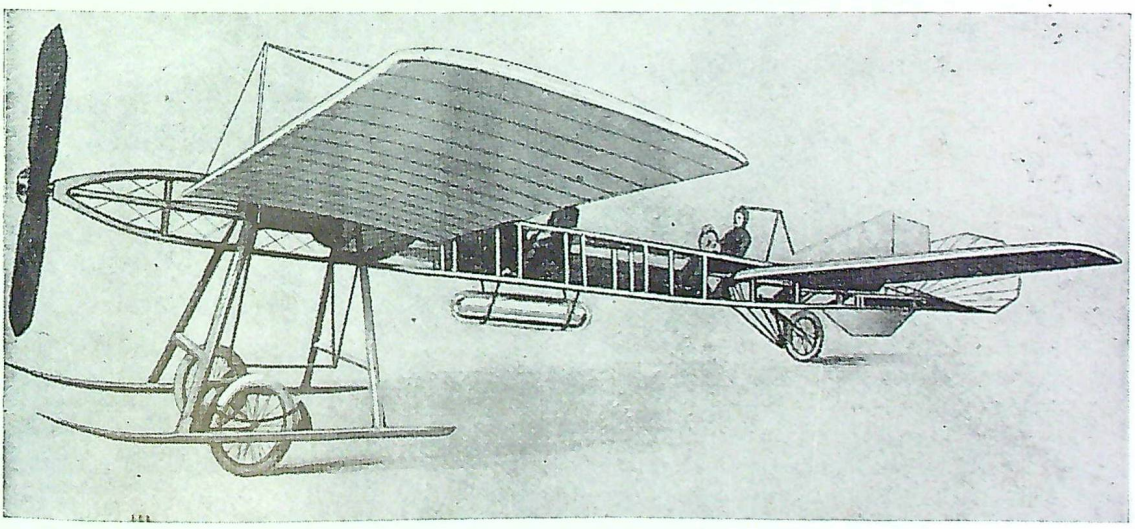
Miss Bessica Raiche.

Bessica Raiche, the first woman aeroplane pilot in America.

FRENCH MILITARY TANDEM MONOPLANE

The tandem monoplane designed by M. Clerget, presumably for the French army, weighs 1,430 lb. and is to carry three men. The forward seat is for the mechanic in charge of the motor, the middle one for the officer making observations, and the rear seat for the airman operating the machine.

The machine is provided with a 200-hp. motor. The forward wings have a span of 32 ft., and the



rear wings a span of 22 ft. The elevating plane and rudder are disposed at the rear end of the frame. The frame-work is of wood, rectangular in shape and tapering toward each end. The fuel and oil tank, suspended underneath, has a capacity of 66 gals.

WOODEN AEROPLANE WITH SUCTION TURBINE

The Coanda aeroplane, exhibited at the last aero show in Paris, has several radically new features, chief among them being the method of propulsion and material used in its construction.

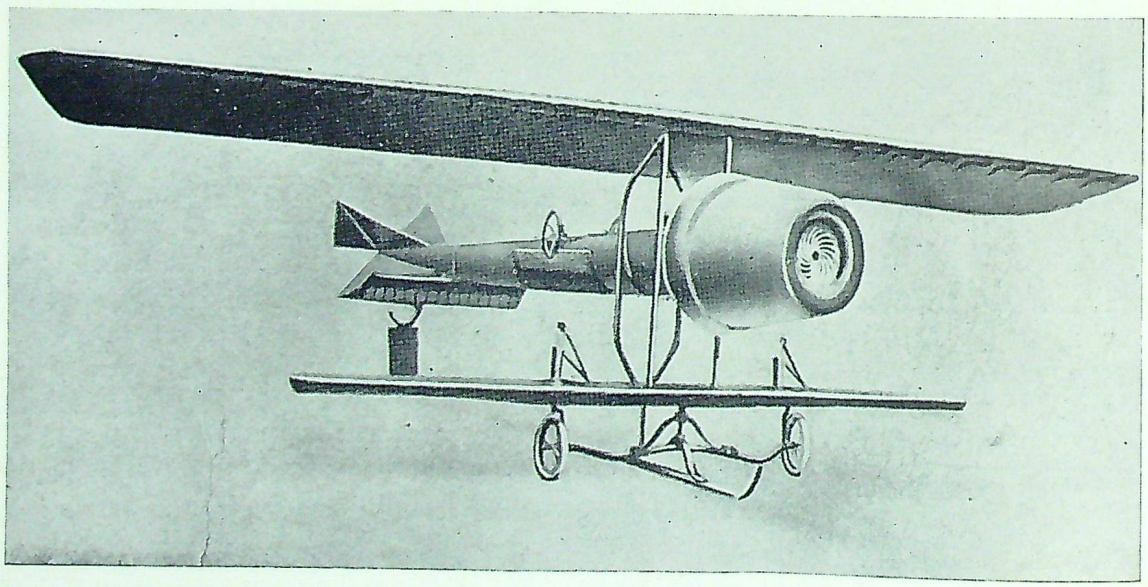
Aside from the ribs, and the uprights between the planes, this aeroplane is made entirely of wood. The body is long and fish-like, and the cone mounted on the forward end incloses a suction turbine, which takes the place of the ordinary aeroplane propeller, and forces the machine forward by drawing in and forcing back the air.

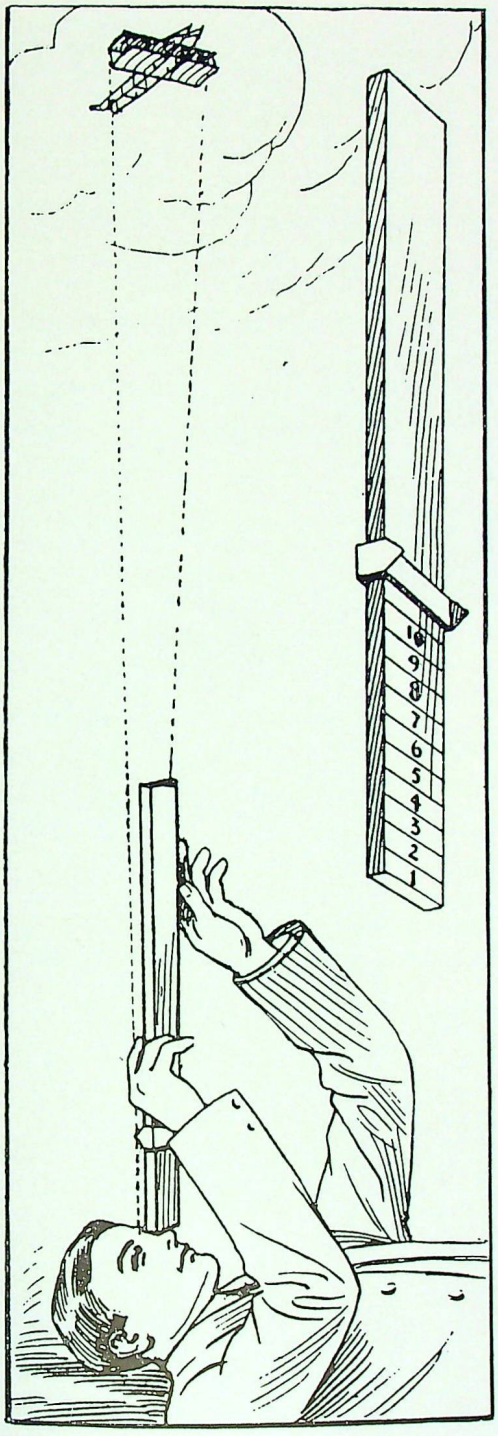
MOTOR SLEIGH PROPELLED BY SUCTION TURBINE

The motor sleigh for the Grand Duke Cyril of Russia is provided with a power plant of the same type used by M. Coanda in his wooden aeroplane. It has a cigar-shaped hull carried on four runners. The suction turbine, which is mounted in front and driven by a 40-hp. motor, is expected to give the sleigh a speed of 50 miles an hour. Steering is accomplished by causing either end of a curved bar to bear on the ice or snow, the sleigh turning on this as a pivot. The sleigh was baptized by priests of the Russian Church.

ALTITUDE RULE AND AEROPLANE RAG LEVEL

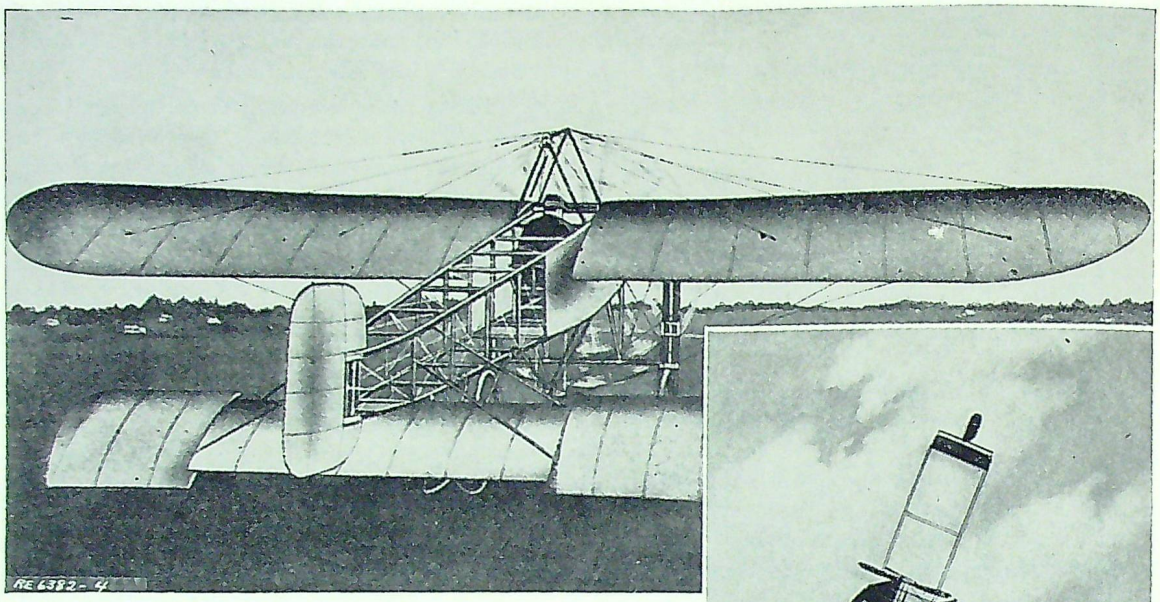
Two interesting devices used by the Wrights, one on the ground and the other on the machine, are a simple altitude rule and an ordinary rag. The altitude rule, which, while not absolutely accurate, is close enough for ordinary purposes, consists of an ordinary yardstick on which is a slide having two raised points exactly 1 in. apart. By placing the end of the rule to the eye when one of the Wright machines is directly overhead, and moving the slide until the ends of the wings are sighted just between the two points, the user can determine the approximate altitude. The planes of the standard Wright machine are about 40 ft. wide, and multiplying this number by the number of inches the pointer is away from the eye gives the altitude. The accuracy of the device depends upon sighting properly and having the





aeroplane directly overhead. For very high altitudes, the pointers are set ½ in. apart, and the number of inches multiplied by 80.

The rag spoken of hangs from the front frame, and, although hardly more than a strip of tape, fulfills the purpose desired as well as the most expensive instrument that could be designed. If the rag points up, the operator knows his machine is going down, and if it points down, he knows it is going up. If it flutters out straight behind, the machine is keeping an even keel, but if it points to the side, the operator knows he is "skidding," and the machine must be brought back to balance by the use of the wing tips.



Plans, instructions, etc.,— $25.00. Material shaped ready to be fitted, including plans, etc.,— $500.00. We can also furnish at proportionately low prices material in the K.D. accurately fitted ready to assemble, including plans, etc.; completed monoplanes ready for the engine, and completed monoplanes, equipped with power plant including 50 h.p. motor, ready for flight.

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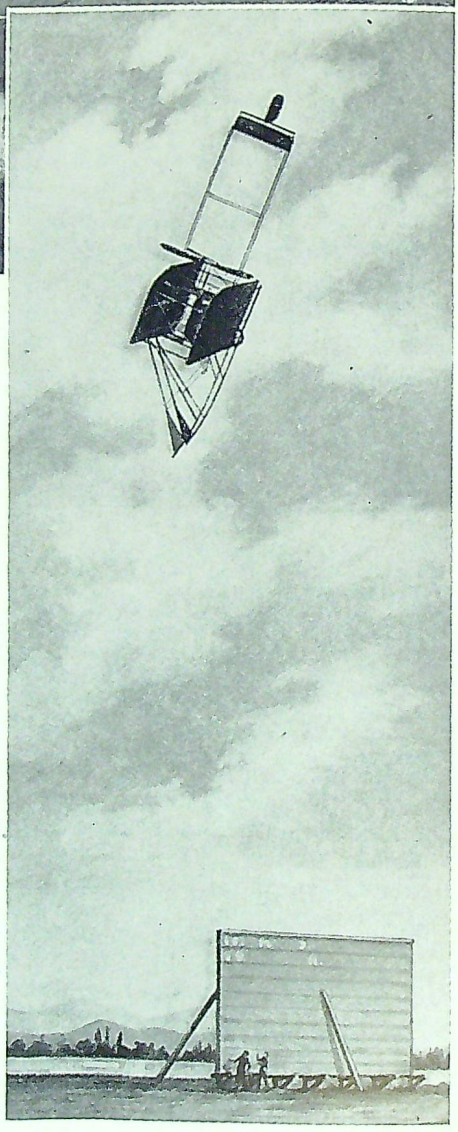
703 Rust Ave., Saginaw, Mich.



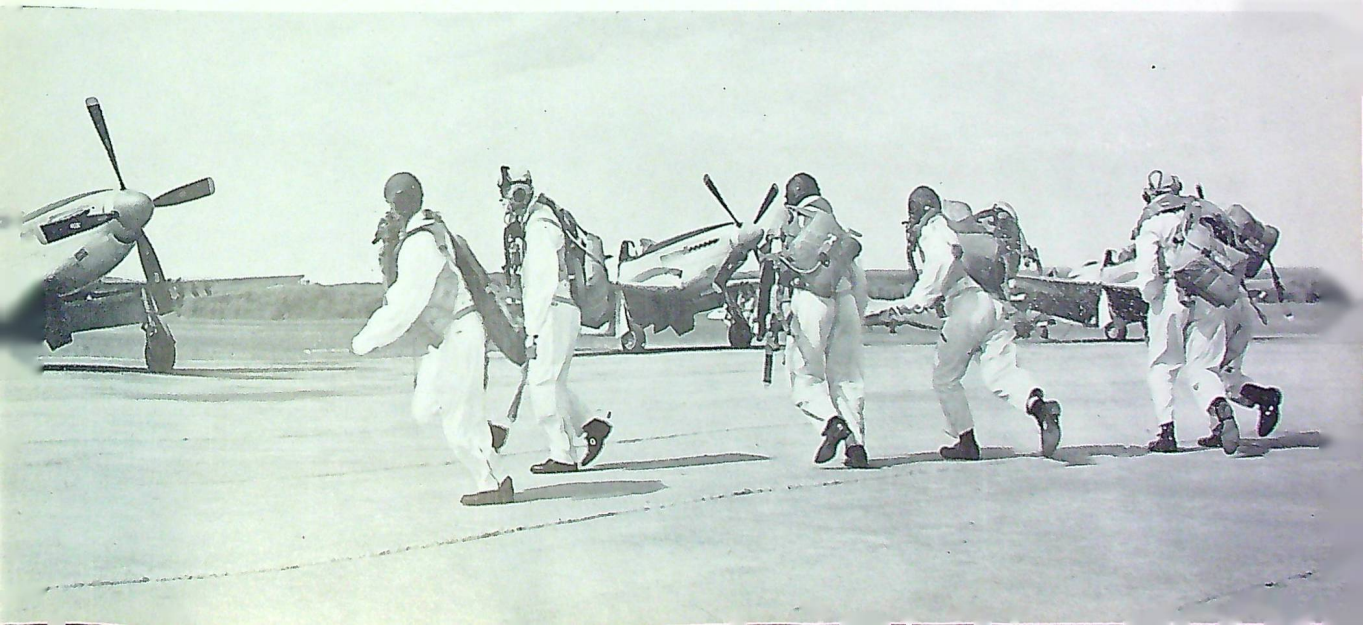
The fall that killed Hoxsey. When Arch. Hoxsey was killed at Los Angeles, his plunge was in plain sight of thousands of spectators. The machine came down at incredible speed.

FIRST R.C.A.F. WOMAN OVERSEAS

Flying Officer L. G. Mann, who was recently posted as messing officer to No. 30 Air Materiel Base in the U.K., was the first woman of the R.C.A.F. (other than a nursing sister) to be sent overseas since the end of the Second World War. She is a graduate in Household Science of the University of Saskatchewan.

"SIGNPOST"

Pilots of No. 420 (City of London) Squadron (Aux.) scramble for their Mustangs during R.C.A.F./U.S.A.F. Exercise Signpost. This exercise, which ended on July 27th, was jointly planned and controlled by the Air Defence Commands of the two Services, and included regular and reserve squadrons of both air forces. The interceptor squadrons in Eastern Canada were based at Uplands, Rockliffe, St. Hubert, and Bagotville. The bombing force consisted of Lancasters from Greenwood and U.S.A.F. super-bombers.



Letters to the Editor

NO. 164 (T.) SQN. ASSOCIATION

Dear Sir:

An association has been formed for all ex-members of No. 164 Transport Squadron. Its purpose is to carry on the friendships made during their life together in the squadron.

A grand Reunion is planned for November 1952, in Toronto; and all ex-members of No. 164 are heartily invited to attend. Full particulars can be obtained by writing to: J. P. Martin, Montreal Secretary, 8841 Chateaubriand Avenue, Montreal, P.Q. (or by telephoning Vendome 2297, Montreal).

J. P. Martin.

YORK MINSTER MEMORIAL

Dear Sir:

I have recently been informed that it is proposed to erect a memorial in York Minster, York, England, to the memory of the 20,000 airmen who gave their lives while serving in the north-east of England. This memorial is to take the form of an astronomical clock, and standing underneath it will be a lectern on which will lie the Book of Remembrance, containing the names of the fallen.

As the Book of Remembrance will have many names from Nos. 4 and 6 Groups of Bomber Command, there may be some ex-members of these Groups who would wish to associate themselves with the memorial by contributing a small amount towards its cost.

Donations, however small, will be gratefully acknowledged by the treasurer of the fund, Lord Deramore, Heslington Hall, York, Yorkshire, England.

F. Wightman,
No. 416 (Kingston) Wing, R.C.A.F.A.

PETER THE HERMIT

Dear Sir:

I do not know whether Mr. Rourke was being funny or whether a printer's error has crept in.

According to the Encyclopedia Britannica, Peter the Hermit died in 1151. There may have been another Peter the Hermit, but I have never heard of him.

The alleged statement is, if true, very interesting and compares with the well-worn saying that "The country is going to the dogs." This has been said countless times in history and is about as true to-day as it was when it was first uttered.

Lt. Col. E. Whitfeld,
Librarian, Joint Services Staff College,
Amersham, England.

(This item referred to by Lt. Col. Whitfeld appeared on page 17 of our June issue, and implied that Peter was still vocal in 1274 A.D.— EDITOR).

MEAD FOR THE MARTIANS

Dear Sir:

Ref. Shatterproof's report on Sgt. Highball's alleged encounter with the thirsty bugs from Mars, I bet you a beaker of D_2O against several slugs of Duggan's Dew that Highball really did meet those saucer-boys, just where he said he did.

My conviction is based on a new publication I have been reading — "The Stars," by H. A. Rey — which states authoritatively: "One melancholic fact stands out: life on Mars is going downhill. The planet is slowly losing its atmosphere and is drying up."

You see? With their homeland dehydrated, no wonder Martian bugs are saucering off to our sergeants' messes. They may even get desperate enough to tackle officers' bars, so the Brass better not try to "ha-ha" this off too lightly.

It is, of course, ironic and pathetic to think of platefuls of parched pilgrims looking to this hard-bitten old planet for a cup of kindness. But, by jing! I think we ought to stretch out a brimming dipper to these poor bugs, no matter what mess they land beside or into.

I think we got a problem coming up. Couldn't the Benevolent Fund establish a Martial Plan or something?

Miss Mary Mark (R.C.A.F.A.)

★

ERRATUM

On page 46 of our June issue we listed the Avon turbo-jet as being manufactured in Canada under licence from the U.K. This statement is incorrect. No British jet engine is yet being made in this country.

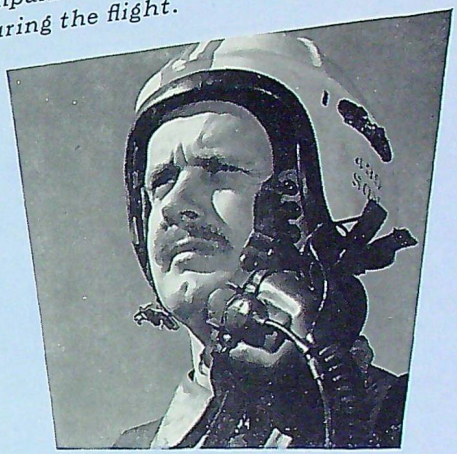
★

Answers to "What's the Score?"

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

Leap-Frog

Operation Leap-Frog, which took place at the end of May, marked one more R.C.A.F. contribution to NATO strength. No. 439 Squadron, composed of Canadian-manufactured Sabre jet fighters, hopped across the Atlantic and joined the R.C.A.F.'s No. 1 Fighter Wing at North Luffenham, England, where two other R.C.A.F. jet squadrons have already been operating for some time. Four North Stars accompanied the squadron, carrying groundcrew and servicing-equipment to look after the jets during the flight.



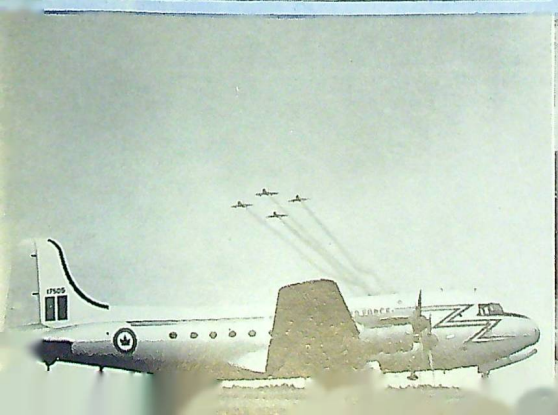
Sqn. Ldr. C. D. Bricker, D.F.C., officer commanding No. 439.

Cpl. B. G. Lapier (left) and AC G. J. Nicholson charge aircraft oxygen tanks at Kinloss, Scotland.

The Hon. Brooke Claxton, Air Marshal W. A. Curtis, Air Vice-Marshal A. L. James, and Air Cdre. R. C. Ripley bid the squadron "bon voyage" at the departure ceremonies at R.C.A.F. Station Uplands.

The last flight to take off from Upland circles above one of the North Stars that accompanied the squadron.

Flying Officer H. T. Wilson, on arrival at N. Luffenham, greets (l. to r.) Sgt. R. Parent, LAC C. Empey, Cpl. L. G. Graveline, Cpl. F. A. Bunston, and LAC L. C. Boswell.




The
ROUNDEL