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## Editorial . . .

On August 14, 2 ANS will graduate its one thousandth cadet. Two years and one day prior to this date the school received its first course of cadets—thirteen RCAF and thirteen RAF personnel. Graduations commenced in April 52 and have continued without interruption every three weeks since then. The unit became the biggest and remains today the biggest aircrew school in Canada.

The unit has set up a record of which it can be justly proud. All courses have graduated having completed all the academic, officer training, and flying exercises required by the syllabus. The CT rate is very low; less than 16% at the time of writing and although this percentage is gradually increasing it is still well below the planned attrition rate. Using some 80 odd Beechcraft Expeditor aircraft, monthly flying average has been some 6,000 hours and is increasing under an extensive new program to somewhere in the neighborhood of 7,500 hours. Two fatal accidents have occurred, which by coincidence came exactly one year apart. The unit's accident record is currently as low as on any other unit on Training Command.

In the beginning, the ANS had, in the words of one officer, "nothing but students." The enthusiasm of the instructors was remarkable and still is. Any night of the week they could be found in the GIS coaching

their classes and helping weak students with their problems. The 40-hour week was a laugh—it was closer to fifty and sometimes went as high as sixty.

The pilot staff consisted chiefly of "re-treads," i.e., those officers who had been drawn back from civilian life to meet the requirements of an enormously expanding Air Force NATO commitment. After only 25-35 hours on Harvards at Pilot Refresher Training School these officers were introduced to Beechcraft and many of them had never flown twin-engine aircraft before an extensive conversion training program was set up. At first only fifteen hours were given but this number soon proved to be hopelessly inadequate and the conversion course was extended to fifty hours. This course included considerable instrument work, but for almost eight months the unit was restricted to flying only in VFR conditions because of the limited experience our personnel had. 99% of the pilots who came to 2 ANS had to be converted and trained to ANS standards within unit resources so that in effect the school ran on AFS. Gradually, improvement was made and now all our pilots are capable of flying under Special VFR conditions. In addition, 50% of the staff pilots—130 of them, have instrument ratings, many of them obtained solely through personal effort.

The Beechcraft was found to be new in many respects and there were many unserviceabilities for a time. The electrical system was not understood and was found to be weak, generators were not adequate, voltage control regulators misbehaved to the extent that many instruments burned out. Oil breather tubes became plugged and many modifications were necessary. Our problems were solved, and in spite of lack of spare parts, serviceability rose to an acceptable figure. TCA who are now taking over the servicing of ANS aircraft, will be hard pushed to do as well.

There were the many problems of re-opening a wartime station. With a huge strength of personnel, accommodation was stretched to the limit. Barrack blocks were converted to offices and lounges and personnel were doubled up in crowded rooms which were of low standard. New roads had to be laid, recreational facilities improved, and some buildings needing extensive repairs were out of use for months. Always there were problems to be solved but the station personnel measured up to the requirement. Strangely, with the building of our new twenty million dollar site we are facing similar problems even now.

Many instructors, when they first arrive, do not look on their jobs with favour but after they have been at 2 ANS for a while they suddenly realize what teachers the world over know—building the mind, or building anything for that matter, gives one the finest feeling of accomplishment. Jesus Christ was a builder, carpenter, and a teacher. No finer profession exists.

Yes, we all at Winnipeg, every officer, airman, and civilian, male and female, who have been here from the beginning and those who are here now can look to themselves with pride and say without boasting that we have lived up to the RCAF motto in the best manner: "Per Ardua ad Astra—Through difficulties to the stars."

## Peg Personality

THIS ISSUE we strike a new NATO note as we introduce our first American exchange officer, Captain F. W. Fred Miller, USAF, of Berkeley, California. Captain Miller, although claiming Berkeley as his home town, admits to being born way down on the California 'panhandle', at Monterey, California. Soldiering runs in the Captain's family, his father being attached, for many years, to the US Army with the 14th Cavalry.

Fred joined the Air Force in April 1942, signing on in San Francisco. His subsequent transfers during his training period reads like a Cook's Tour of the 49 States. First, as a cadet officer of the USAAF, he journeyed to the classification center at Nashville, Tennessee. Here, after the familiar, "written and oral examinations", he was stamped a 'u/t navigator' and shipped off to Maxwell Field at Montgomery, Alabama, for pre-flight training. This included all the well-known I.T.S. subjects; theory of flight, morse code and plenty of officer training. Next followed two months of gunnery training at Fort Myers, Florida, and then, at last, on to navigation training at Selman Field, Monroe, Louisiana. Operational training at Wendover, Utah, completed Fred's Stateside training for the time being and presaged his posting to England in early 1944.

Captain Miller completed eight missions of daylight heavy bombardment before transferring to night operations; dropping agents and supplies over France, both to guerrilla forces of the Macchi and to underground formations near the built up areas. Completing his 35 missions and thus his operational tour, Captain Miller returned to the States where he took an instructional course and wound up as a navigation instructor at Hondo, Texas. At Hondo, Fred taught navigation for a time and later, cruise control of B24 and B29 aircraft to flight engineer cadets. When the field closed at the end of 1945, Fred shipped off to Japan where he flew with the 5th Air Force.

Later, he was seconded to the 8th Army and remained with them for the rest of his three year stay in Japan. During his last year in the East, Captain Miller became navigation officer for 8th Army Commanding Generals, Lt. General Robert L. Eichelberger and his successor, Lt. General Walton Walker.

Captain Miller returned to the US in 1949, reporting to Mather Field, California, in July of that year. Here, he



again assumed the status of pupil, and trained as a bombardier and radar observer. Completing this training in March 1950, he returned to his former role of instructor. In September of 1950 the navigation school departed from Mather, and Fred found himself one of a group of fifteen specialists doing research into high speed jet navigation training methods. Captain Miller concentrated on the astro, or, as the Americans call it, the 'celestial' aspect of the research project.

In the late spring of 1951, Captain Miller added to his technical background by taking a course as a radar operator, using the latest radar equipment then available, the highly hush-hush "K-type" radar. At the completion of the course Fred returned to his now familiar job of instructing, only this time he filled a dual role, as instructor in both K-type radar operation and high speed navigation.

About the end of 1951, Captain Miller's working moments were taken up with instruction in high speed navigation and the administrative duties accompanying his position as senior instructor and Assistant Branch Supervisor at the school. In his capacity as Assistant Branch Supervisor, Captain Miller was responsible for the administration of the instruction in both the navigation training for high speed B-47 type aircraft and the Aerial Observer Reconnaissance (Radar Observer) training. The high speed navigation training encompassed two programs, one for experienced navigators

Continued on page 18 •



### COVER STORY

Corporal Ed Hilchar of the Station Airmen's Mess Staff, resplendent in "best bib and tucker," offers a tray of Station Winnipeg's "Blue Plate Special."

Photo by Cpl. Larry Norton

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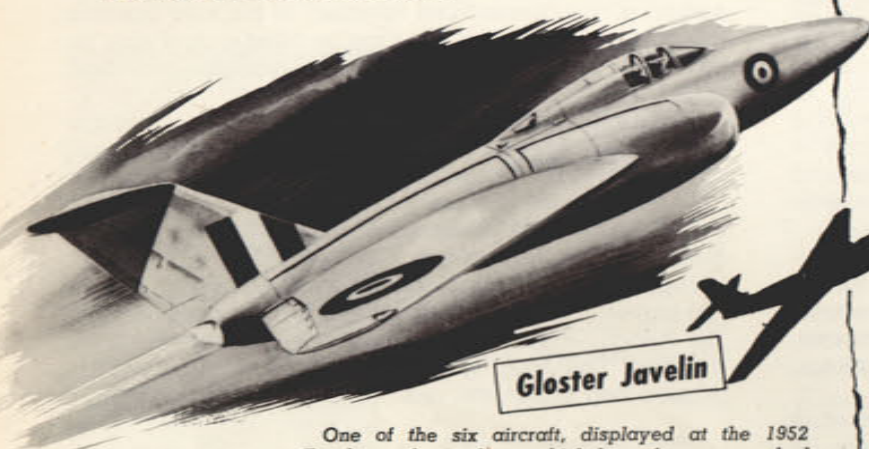
WINNIPEG, MANITOBA



SOME of the world's most advanced military and civil aircraft were on show to the public for the first time at the 1952 Society of British Aircraft Constructors annual flying display and exhibition at Farnborough.

Visitors from all parts of the world were able to see the achievements made by the British aircraft industry in the past year.

The picture above shows a general view of the various aircraft at the show.



Gloster Javelin

One of the six aircraft, displayed at the 1952 Farnborough air show, which have been earmarked for immediate production with a "super-priority" construction rating.

The British aircraft industry makes an impressive showing of its achievements during the past year, each summer at the Society of British Aircraft Constructors' flying display and exhibition at Farnborough.

The time is fast approaching when British companies will organize their 1953 show. Here shown pictorially are some of the major advances in aircraft design and construction which were displayed at the Farnborough Air Show last year.

New types of jet fighter aircraft, airliners and bombers were seen by the general public for the first time. A feature of the 1952 show was the appearance of the world's first delta-wing jet bomber, the Avro 698.

Over thirty aircraft took part in the flying display which included many making their first appearance, a number of which attained speeds greater than the speed of sound.

All six of the aircraft on the "super-priority" list for the RAF were seen in flight. These were the Hawker "Hunter", the Gloster "Javelin", the English-Electric "Canberra", the Vickers "Valiant" and the Fairey "Gannet" sub-killer.

During the flying display, the de Havilland DH 110, the Hawker Hunter, the Supermarine Swift and the Supermarine 508 naval fighter flashed across the airfield at speeds approaching 700 miles an hour. The civil Bristol "Britannia" airliner and the Bristol "173" the first British twin engined helicopter were seen in flight and the world's largest flying boat, the massive but graceful 140 ton Saunders-Roe "Princess" flew over the exhibition.

Demonstrations in the use of re-heat (after-burning), a method of increasing thrust by injecting additional fuel into the jet pipe of the engine, was given by a Ghost powered "Venom" and an Avon engined Canberra, while a de Havilland "Comet" demonstrated the use of rockets to assist take-off.

In the static exhibition a projected inter-continental jet airliner which will be capable of carrying 150 people over long distances at sonic speeds, was shown in model form. Also forming part of the "ground show" were newly developed jet and piston engines as well as new types of rocket motors for rocket assisted take-off and guided missile research.



Bristol Britannia

The Supermarine Type 508 naval fighter which has been especially designed for carrier operations. It is powered by two Rolls-Royce Avon turbo jet engines and at the Farnborough show flew at a speed of more than 700 miles per hour. A notable feature of the aircraft is the "butterfly" tail unit.



SARO Princess



Supermarine Type 508

The first Princess; one of three under construction, is powered by Bristol Proteus II propeller turbines. The two yet to be completed will be powered by the more powerful Proteus III engines. The still air range of the flying boat is 5,500 miles and if used as military transport, it will carry 200 troops on a non-stop flight of 3,550 miles.

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de Havilland 110



The de Havilland 110 day and night fighter, which has frequently flown faster than the speed of sound, on view at Britain's latest aircraft show at Farnborough.

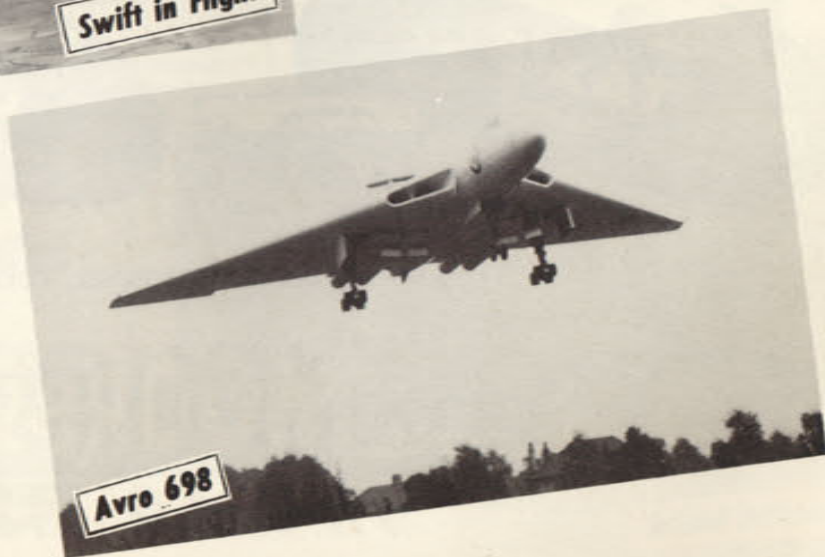


Swift in Flight

The "Swift", first swept wing jet fighter to go into production for the RAF, carries on the close association of Rolls Royce and Supermarine companies. The famous Spitfire was powered by a Rolls Royce piston engine and in like manner the "Swift" is driven by the Rolls Royce Avon jet engine. The Rolls Royce, Supermarine combination won for Britain the Schneider Trophy with the S6B.



Britain's first delta-wing bomber, the four jet Avro 698, which has been under secret development since 1947, made its maiden flight shortly before the opening of the 1952 Farnborough air show. The maiden flight of this new bomber was described by the Minister of Supply, Mr. Sandys, as "a dramatic leap in the progress of British Aviation." An appreciable number of these aircraft are on order for the RAF. The new bomber is powered by four Rolls-Royce Avon axial flow turbo-jets. Performance details are still on the secret list



Avro 698

## On Course - - - Or Off

By F/L PAUL GORIEU, R.C. Chaplain

A RECENT ARTICLE published in "Family Life" magazine stated how it was refreshing to note that an increasing number of people from all walks of life were picking up the practice of daily prayer. Individuals are learning once more the value of things spiritual in a world which places the accent almost exclusively on material things. More refreshing still, families, the one group who should never have ceased to pray together, are discovering the powerful force of prayer and praying together more than has been done in decades.

Recently, the management of a large chain of restaurants in the U.S.A., decided to make an experiment by placing a card with prayers before meals on each one of its menus. Three prayers were printed: one for Protestants, one for Catholics and one for Jews. The response was beyond all expectations and the experiment has now become a standard practice. Those responsible for launching it now hope that their patrons will take the idea home with them and keep thanking God for the blessings they enjoy as well as pray for the hungry and famished of the world.

Even though it is heartening to know that some of the indifference and irreligion of former days is giving way to an increasing God-consciousness, there is still a long way to go. It is one thing to have the idea of God, to believe that he exists, and another to consider Him as a reality and to organize one's life accordingly. Nothing can do more to develop this attitude than the constant and humble prayer offered daily to God.

Those who pray recognize the value of prayer and need not be given the reasons for it. But what can be said to persuade the person who doesn't see any point at all?

Plenty can be said.

Human beings are not mere mortal animals, as the Communists claim. They are not made for thus-and-so many years on earth. They are made for life everlasting with God.

You can say that on a certain day, we are born. But nobody can really say, after our death, that on a certain day, we died. Well, people can say it, but

it is only a partial truth. The whole truth is that you and I can't die.

Our bodies can die, but we can't. Nobody can. There is absolutely no way in which a human being can cease to exist. We weren't made for that. We were made for life without end, and we can't get out of it. Either we use this life to go back to God when we die or to turn our back upon Him forever when it is over.

If somebody offered you a million dollars, you'd break your arm grabbing it. But suppose somebody offered you a million dollars which would be yours for one second—and then vanish?

You wouldn't bother. You'd give your benefactor the horse laugh. But one minute or 70 years, it's all the same in the end. Your body will die and there you'll be an eternity, destitute except for the spiritual goods you have amassed.

If you prayed while alive, and if you allowed prayer and the grace of God to make you into what you are intended to be, then you'll be richer than the Rockefeller Foundation. Richer? That's a poor comparison and a weak word. You have God and everything that God can give you.

The pilot who carelessly wanders off course, unconcerned about where he is going to land, is more than likely to end up tragically. Why? Simply because he failed to keep contact with his point of destination and to make sure he was travelling towards it.

Analogies or comparisons are always imperfect, yet here you have a picture of the man who doesn't pray. He fails to keep in contact with God, the base he must reach. However successful in the eyes of the world, the human being who shows total unconcern for his spiritual interests is wandering off course and inviting tragedy. Didn't Our Lord specifically brief us for the journey of life on this point when He declared: "Watch ye, therefore, praying at all times." (Luke 21:36.) Moreover, He has guaranteed the efficacy of prayer as this text from St. Mathew attests: "Ask, and it shall be given you, seek, and you shall find: knock and it shall be opened to you."

We have got our values mixed. The excessive materialism in our civilization has taught us to look up to the chap who makes a lot of money, and can set his family up on an estate and to look down upon the poor who are God-conscious and Christians in the

Continued on page 29 •



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## The Corpulent Character's Guide to Health

By F/O E. F. Eaton

IT IS SAID that a reformed sinner makes the most austere saint, and that most reformers become pests because of their desire to share their blessings with the unenlightened remainder of mankind, hence this article.

Fat people fall into several categories; first we have those who are fat because their parents were fat—their tubbiness is hereditary and they can do nothing about it. The only thing hereditary about these people is their appetite. Their forefathers were fat because they ate too much and their forefathers' descendants are fat for the same reason.

Then we have the "pleasingly plump" type of HMS Pinafore—thinness doesn't suit them, and they believe that their marriage partners prefer the healthy, bouncing type. Perhaps their plumpness IS cute. Certainly they look very nice and lifelike in their coffins.

Consider too the character who doesn't really think that an extra 20 lbs here and there means very much. Of course, the Life Insurance Companies have said that every extra pound of grease lowers the life expectancy but he figures they're just trying to scare him. After all

they only bet money on these things, so how can they know—"Now my great grandfather Messeltwistle lived to be 93 and he weighed—" etc, etc. Probably in great grandfather's day they didn't even have scales in the joint!

Finally we have the dimwits who know they're too fat, know that they should reduce, but don't do anything about it. These guys, or gals often go on stringent diets—two lettuce leaves and a lifesaver for lunch, etc. Trouble is that they fall off the straight and narrow path almost as soon as they get on it and their last state is worse than their first. These people are self-deceivers, lacking in moral stability, etc., and generally poor types.

I will now gaze into my brightly gleaming crystal ball and enlighten you as to the cause of obesity—fatness to you—if you're fat, **YOU EAT TOO DAMN MUCH!**

Now for the guide to Health, first of all go and see the MO. Most MO's are kindly people who would much sooner give you a reducing diet and a few pills now than help conduct an autopsy on your overfed carcass in ten years time.

It's unfortunate that many of us only come into contact with the Doc at the annual pigsticking festival when our local Aesculapius bares his pointed teeth in a wicked grin as he drives his needle deep into the marrow of our bones and shoots in a quart and a half of some vile concoction having all sorts of unpleasant effects.

But I assure you, my barrel-like brethren that nothing like this will happen to you in a simple case of overweight.

Having been to see the MO—do as he tells you! After all, he's probably spent twenty years learning his trade and practising it, so it's just possible that he knows more about human dietary needs than the local newspapers. At least give the guy a chance.

Now comes the big commercial. I myself have removed twenty-one pounds of excess blubber under the guidance of our worthy medics in just five weeks. What I can do, my adipose acquaintances, you can do too! You'll feel better, your clothes will fit better, and besides, think of the moral ascendancy you'll achieve over the rest of these weak-kneed mammoths who can't face it.

Finest of them all

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## And After A.N.S. What Then?

NO DOUBT many of the A/P/O's at Winnipeg will wonder, as I did, what will become of them when they leave Canada. This will tell of what befell most of the courses up to, and including, 35 course.

Normally, after A.N.S., a navigator gets roughly six weeks' leave. "A bit of alright," some of you will doubtless remark, but should you travel back across the Atlantic by primitive ocean liner, or should you reside for a while in Montreal, while awaiting a 'plane (or ship, come to that!) the amount of time taken up by such occurrences is deducted from your six weeks!

One can reckon, therefore, that six weeks will elapse between graduating from A.N.S. and the time you report for duty at your first station back in England.

It should be quite obvious that, coming back home after completing a Canadian Navigation Officer Course, a little bit of further training is necessary before one gets on a squadron. The first part of this training is termed "Acclimatisation Training," and is a course lasting nine weeks, and the location—R.A.F. Lichfield, Staffordshire. This is not like the acclimatisation course we Canadian trainees went through at London, Ontario, where we became accustomed to the Canadian way of life, this course is to get one used to the English way of navigation!

In this basic navigation there is very little difference, although one has to be on one's toes all the time, owing to the masses of airways and prohibited areas that practically cover the British Isles! Primarily, the course is to get you used to Gee fixing, but other radar aids, such as Rebecca-Eureka and Rebecca-Babs, are also widely used. In all, the flying time amounts to some 55 to 60 hours, day and night, on Anson and Valetta aircraft—types that give considerably more elbow room than did the old "Exploders!" Sixty hours in nine weeks, you may say, is likely to be a bit tedious—believe me, it is, especially when one comes off a night trip only to find another exercise to be flown early next morning!

Still, life isn't quite as bad after a week or two, as it was at first sights, and things begin to settle down a bit. One final word of warning—make sure you keep track of all the stuff you've learnt out there in Canada, you'll be examined on it soon after arrival here, and over here they seem keen to C/T anyone at the slightest provocation! Aim for a high average and you'll find this course a piece of the old proverbial!

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## U.S. Air Cadets here on Exchange Tour

Photo by Cpl. Ken Gregg



This group of American air cadets arrived at Stevenson field Monday. Officers and civilians at extreme right are (left to right) Edward Vopni, chairman of the Manitoba branch of the Air Cadet League of Canada; Major Jesse Klein, Civil Air Patrol, Corydon, Iowa, accompanying officer; FL F. J. Armstrong, RCAF accompanying officer; Group Capt. E. M. Mitchell; Gilbert Eaton, honorary chairman, air cadet league, and Group Capt. Ross Ingalls. GC. Mitchell is officer commanding the 14th RCAF group at Stevenson field and GC. Ingalls is commanding officer of the local RCAF station.

IN AN EXPERIMENT in teen-age internationalism, 25 United States air cadets arrived by RCAF transport at Stevenson Field Monday to begin a two-day tour of Winnipeg.

The flight that brought the U.S. cadets here was an hour late when it arrived from the Lakehead at 1 p.m., and delayed the program planned by local officials of the Air Cadet League of Canada.

But by 1:30, the cadets were off on a tour that took them to the seats of civic and provincial government, to the grain exchange and on an automobile survey of the city.

The visit of the U.S. cadets to Winnipeg is part of an international exchange that sends Canadian air cadets to the U.S. and Europe, brings U.S. and European cadets to Canada.

While this group tours western Canada, a European group tours the east and Canadian groups visit in the U.S. and in Europe.

The group was greeted at the airport by Edward Vopni, chairman, and Gilbert Eaton, honorary chairman, of the Manitoba branch of the air cadet league.

Their Monday afternoon itinerary began with a luncheon at the Hudson's Bay Co. store, where they were officially welcomed by Hon. R. F. McWilliams, retiring lieutenant governor of Manitoba.

Then, after a swift visit to the Hudson's Bay Co. museum, they moved on to a tour of the legislative buildings and a greeting by Hon. R. D. Turner, provincial treasurer. Their evening was spent in an automobile tour of the city.

Tuesday morning, they visited the city hall, where they were welcomed by Mayor Garnet Coulter, and the Winnipeg Grain Exchange. A luncheon at the T. Eaton Co. store was followed by an afternoon and evening cruise of the Red river in private yachts.

They left Winnipeg Wednesday.

Officers accompanying the cadet contingent are: Maj. Jesse Klein, Civil Air Patrol, Corydon, Iowa; Maj. Burr S. Watters, Jr., USAF, Maryland; and FL F. J. Armstrong, RCAF accompanying officer, Vancouver.

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## Para-Rescue Training In and Out of Canada

By CORPORALS WALL AND DECORBY  
AS TOLD TO THE EDITOR.

CANADA, by ICAO ruling, was, some years ago, given the responsibility of carrying out search and rescue work throughout the territorial bounds of the country and off each coast. Not only must she maintain such an organization to look for lost military aircraft but also to direct the search for missing civilian aircraft, fishing or pleasure boats, hunting parties and the like.

The RCAF, already prepared to search for its own missing aircraft was given the additional responsibility of directing all other search activities within the bounds of the ICAO agreement. Thus in any large scale search, the efforts of police, civilians, military and naval units are all co-ordinated by an RCAF Search Master.

An important phase of this work is that of the Para-rescue team. These specially trained men are always ready to take part in a search and will, if required, parachute into lake, swamp or forest to give aid to injured fliers or lost fishing parties.

The Para-rescue training period is long and hard, but it is one which has many interesting compensations. Candidates for the course must pass an air-crew medical, be between the ages of 20 and 32 and weigh not more than 190 pounds nor less than 135 pounds. As so much of their work is in the rendering of first aid and also, is so intimately connected with parachutes, candidates are chosen from volunteers from the Safety Equipment or Medical Assistant trades.

The first portion of the course, which is given at Edmonton, consists of physical training, medical and wireless training, parachute packing (each man packs his own 'chute), parachute jumping procedures, preparation of supplies for dropping, theory of bush navigation, desert, bush, arctic and other types of survival techniques and the do's and Don'ts of mountain climbing. This part of the course takes about two months and includes classroom direction in the administering of drugs and blood plasma.

The practical side of the course is given at Henry House Field, near Jasper in Jasper National Park. Before the student leaves Edmonton for this second phase of his training, he must write, and pass, a comprehensive set of exams covering all subjects taken while at Edmonton. The average mark attained must exceed 80 per cent or that's the end of training for that particular student.

At Henry House Field, students live either in town, or in tents out at the field, dependent upon the tourist population at the time. Here students carry out their parachute jumping training from Norseman aircraft: six jumps into open ground and four jumps into timber. The jump techniques used by Para-rescue personnel have been especially developed over the years. The main chute, which is opened by a static line attached to the aircraft, is a Derry-slotted chute with a 28 foot diameter canopy. This type of chute was introduced by the American "Smoke-jumpers" and fast found favour with our own para-rescue men because of its

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controllability. This feature is extremely important because jumpers must often gauge their descent so as to hit a very small clearing or one particular part of a forested area. The slots, which can be opened or closed by the jumper during his descent, control the direction of travel to a marked degree and assist materially in getting the jumper to the right spot. A reserve chute of 24 foot diameter is carried on the chest in case the main chute doesn't open.

Para-jumpers wear special gear for their hazardous job. Much of this equipment has been adopted and modified from that used by the Smoke-jumpers. In addition to the traditional calf-length "paratroopers" boots the men wear a heavy canvas jump suit, a football type helmet complete with wire face guard and a pair of heavy gloves. The helmet and face guard are necessary when the jump terminates in trees or brush, protecting the head and face as the suit does the rest of the body. Medical supplies, food and clothing are usually dropped separately to the jump team after they have sized up the situation and requested these or other items by visual signal or radio after their descent. The jumper can carry a considerable amount of gear with him when he jumps, if this is considered necessary. He can carry it in his suit, strapped to his person or contained in a duffel bag which hangs below the jumper on a length of stout cord. Normally however, para jumpers limit the gear they carry with them to a knife, a compass, handie-talkie radio set, first aid kit and a length of rope with which they can let themselves down out of trees if they happen to get "hung-up" on their arrival.

Not all of the training at Jasper is aerial, much time being spent on bush lore, mountain climbing and evacuation of injured persons over rough or mountainous terrain. Practise jumps are not usually carried out when the surface wind is over 15 miles per hour. During periods of high winds or when the weather is 'duff', students are given practical instruction in mountain climbing, bush lore and evacuation training.

The mountain climbing sessions include cliff scaling with and without the use of ropes, ice work on nearby glaciers, using 'crampons': metal spike affairs which can be strapped to the ordinary climbing boot when icy conditions are encountered. Here it is too that the student learns the full use of that very important tool, the ice axe



He finds that it can be used to cut steps, as a staff, as a probe, as a hand bridge and just about a hundred other uses.

Evacuation instruction covers all aspects of this essential part of Para-rescue work, from the preparation of the injured person for moving, without increasing his injuries, to the actual evacuation of an 'injured' man across crevices and up and down a sheer cliff face.

Just to make sure that the men don't get soft during their training period, a five day bush navigation trip is arranged. The course is divided into groups of eight. Each group is given a rough sketch of the area they are expected to travel through. In addition they are provided with enough food for half the time they expect to be away. The remainder of the food is dropped by air at a pre-determined spot at a set time. Naturally, it's pretty important for the bush crew that they arrive at the right spot at the right time, or they will travel the rest of the way on empty stomachs. The trek through the bush includes mountain climbing, crossing rivers and so on. Few of the groups ever miss their rendezvous with the dropping aircraft, which is either a tribute to the training or an indication of what a driving force is the hunger of eight healthy young Canadians.

Comes the end of the course and successful candidates are presented with the coveted Para-rescue Badge and sent off to one of the nine spots across Canada where Para-rescue units are maintained; Tor Bay, Newfoundland; Goose Bay, Labrador; Greenwood, Nova Scotia; Trenton, Ontario; Winnipeg and Churchill, Manitoba; Edmonton, Alberta; Whitehorse; Yukon Territories; and Vancouver, British Columbia.

There are five men and a girl associated with the Para-rescue section at RCAF Station Winnipeg, three of whom are para-medics. These three men, and one girl, carry on with their normal duties in the station hospital until they are called upon to don their 'other hat' and become Para-rescue men. The Para-medics are: Corporal 'Tony' Chorney, LAC 'Ken' White, and LAC 'Charlie' Cooney. The girl Para-rescuer is N/S Mary MacDonald. The other two men are full time Para-rescue personnel, Corporal Alex Wall and Corporal Henry Decorby.

In addition to the normal training in para rescue work given in Canada, there is the occasional 'jammy' posting to a post-graduate course down south. Corporal Wall was fortunate enough to fall heir to such an opportunity in March 1951 when he departed from Winnipeg, by train, for Tampa, Florida, and as he says:

"There were fourteen people on the course I attended, with seven of them being from Canada. The first six weeks we spent in basic training, which was very



*Over the Edge*

similar to the ground work we had done previously at Edmonton. Near the end of the first two months at Tampa, we each did four jumps at Brooksville, Florida; two in the open, one in the bush and one in the water of Tampa Bay. We did the water jumps from a Navy SA16 which is very much like a Grumman Mallard amphibian. The other three jumps were from a Fairchild Packet. The Packet makes an ideal aircraft for jumping as the fuselage shields you from the airstream until you are well away from the aircraft. In the case of other aircraft, the Dakota and Norseman for instance, you are hit by the slip-stream just as soon as you poke your head out the door.

"Something new for me was the jungle training we did while on course in Florida. We did it in the famous Everglades. With the exception of one emergency ration per day per man we 'scrounged' our own food. We caught and roasted small alligators and turtles, found shellfish and boiled and ate them and had wild tangerines for dessert. We spent seven days in the 'jungle' and at night, slept in hammocks well up off the ground and well screened against the thousands of insects which infest that part of Florida. The hammocks make ideal sleeping quarters once you have mastered the art of getting in and out of them and as long as you use plenty of caution turning over in them.

"After this experience we were considered hardened jungle-jims and we were dumped out of an aircraft into



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a clearing in a mangrove swamp in the thick of the Everglades. From here we had to evacuate our 'injured' to a nearby river and carry on down it in rubber life-rafts dropped to us by the aircraft. Our timing was a bit out however and we ended up spending an un-scheduled night on the river. Although we weren't prepared for a night outdoors it wasn't too bad as the night was warm and we did have enough netting to keep the bugs off.

"Our worst bout with the bugs was during the island survival part of the course. After our trip down the river we were hustled off to Boca Chico the last island in the Key West chain. We remained here for four days. The days weren't so bad but the nights! We had to live off the land here too, if you could call it that—turned out to be living off the sea. The island is entirely composed of coral and our main bill of fair consisted of shellfish found along the shore and fish which we caught with little trouble, using the fishing gear found in the emergency packs. There is a sort of tidal bore which tears past the island during the change of the tides and in the clear



*Look out below*

water you could see thousands of fish of all sizes racing about, each feeding on the other. The bugs were so bad here that we couldn't sleep at night, just sat around our camp fires making smoke to ward off the bugs, which were mainly thousands of tiny no-see-ums about the size of the head of a pin but with the bite of a wounded tiger. Some of the fellows bedded down in their life-rafts and floated out off the island on the end of a length of parachute cord to try and get away from the gnats. We stayed there for four days altogether, which was plenty believe me.

"At the end of the fourth day we returned to Tampa and set off for Goose Bay Labrador for the winter part of the training. As it was the middle of May, Goose Bay couldn't oblige us with snow, so we scrubbed round



*Jump from a Norseman*

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that part of the course. On the return flight to Tampa we were forced down by weather at Boston where we had a couple of days on our own.

"The next step in our training was taken in the Mojave Desert. This practical demonstration of desert survival included a 45 mile hike across a dry range of mountains. The three water stops along the route consisted of two water caches and an oasis. We started out in groups of four or five with an instructor in each group. We had canteens and plastic bags full of water and very little else to carry with us. Our group had only gotten started when our instructor flaked out so we made a shelter out of a tarpaulin and waited until it cooled off a bit before moving on. Some of the fellows drank the water a little

*Continued on page 19 •*



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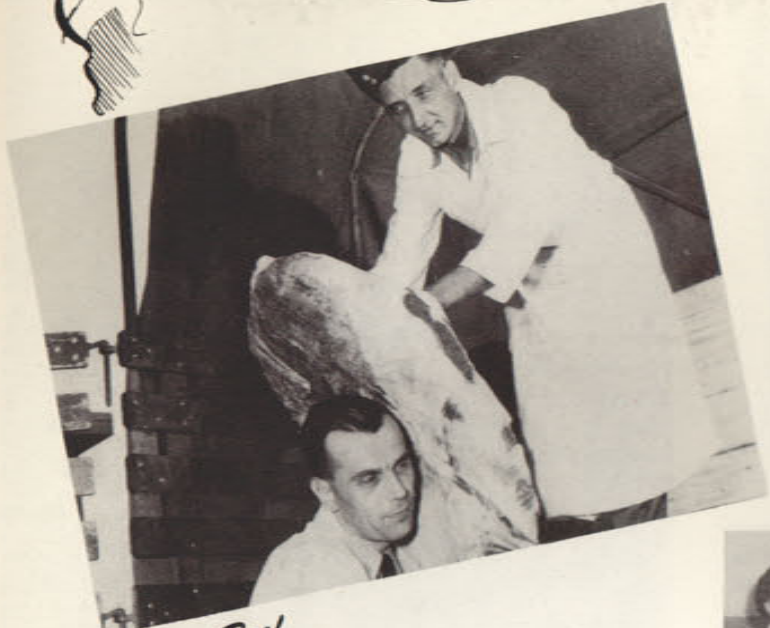
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*Airmen's Mess Staff*



*Cut-Up*



*Sizzling Steaks*



*Come an' get it!*



*Got it!*

Photo by Cpl. Larry Norton

### AIRMEN'S MESS STAFF

Staff of the airmen's Mess line up en masse to pose for their photo. Warrant Officer 1st Class E. G. Munro, NCO in charge of the airmen's mess was on leave at the time and consequently is missing from the picture.

### BIG BEEF

LAC J. Park, driver of the Station's ration truck, lends a hand to Corporal R. Barkhouse, left, as the Corporal prepares to heft a quarter of beef into the Airmen's Mess kitchen.

### BURLY BUTCHER

Mr. H. Sorenson, butcher in the airmen's mess, proudly poses with an array of "cold cuts" in the airmen's mess walk-in freezer.

### CUT-UP

LAC S. Mills weilds a wicked looking knife as he slices off inch-thick steaks in preparation for the evening meal.

### SIZZLING STEAKS

Chef J. Luxa, smiles broadly as he gives a professional dig to a row of steaks turning a delectable brown on one of the mass ranges.

### COME AND GET IT!

Fred Young, LAC H. Olak, Mrs. E. Falloon, Corporal P. Boyle, Mrs. Montgomery and Mrs. Johnson line up and wait with poised spoons as the time approaches for the dinner gong to ring.

### GOT IT!

Photographer Cpl. Larry Norton smiles appreciatively as he prepares to sink his choppers into the steak he followed from "truck to table."

### Peg Personality

Cont. from page 3.

bound for B-47 type aircraft and the other for pilots who were also destined to fly the new jet bombers.

Captain Miller's transfer from Mather Field to Winnipeg made him the first American exchange officer to pass our portals. With his extensive and varied background in navigation instruction it is only too evident that Captain Miller will become an invaluable addition to the staff of Number 2 Air Navigation School.

Captain Miller is married to the former Claire L. Legaitte, of Jackson, Mississippi. Captain and Mrs. Miller have two children, Bill 6½ and one year old Diana, Bill first saw the light of day in Japan, while Diana is a native Californian.

Welcome to RCAF Station Winnipeg, Captain Miller. May your stay here be a happy one.

## Canada's Pride!



# DREWRY'S

(Continued from page 15)



too fast and as a result they became ill at first and then later on started to get ill again because they didn't have enough water left to see them through. We were late getting to the first water cache because of our delay with our instructor. We travelled from three in the morning until about 10:30 when we would 'hole-up' until around five in the afternoon when we would start out again. We would quit around midnight and rest for two or three hours before carrying on again. The trek took us four days to complete and I certainly can't recommend it as a sight seeing jaunt, unless you want to lose a lot of weight in a hurry and you are very interested in cactus

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sand and sagebrush in the way of scenery. The only solid food I wanted and the only solid food that I ate during the whole four days was two cans of fruit. The temperature ranged between 100-120 all the time we were there.

"After completing the desert crossing we did a jump right near 29 Palms. While there we visited Sam's Character Room wherein hangs a picture of the Lady from—.

"We left 29 Palms for a four day trip to the Sierra Madiera range where we did our mountain climbing. As we went up, the temperature went down and we all started eating again. We did a lot of rock work, very similar



The way of the helicopter rescue.

to the training we had taken at Jasper. When we had finished the mountain climbing episode, we got two days off and we all spent part of our holiday at El Paso, Texas, and across the border in Juarez, Mexico.

"This was really the end of our stay in the States because we no sooner got back to Tampa than we were on our way to Canada, a thoroughly tired but much enlightened crew of Para-rescuers."



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Voxair Vixen

*Vera Miles*

Photo courtesy of  
Warner Brothers Studio





**BREAK PERIOD**  
 Left to Right:  
 F/C Vic Warrior  
 Course Director F/O Nutter  
 F/C Le Rohellec  
 A/P/O Jock Grange  
 F/C Bob Higgins.

**NOT ACCORDING TO HOYLE**

Left to Right:  
 A/P/O David Rolph  
 A/P/O Dan Dockar  
 A/P/O Derrick Cooper  
 A/P/O Derrick Thomas.



Photos by LAC Lou Gratton



**EVENING RELAXATION**  
 Front to Rear:  
 F/C Vic Warrior  
 F/C Foulgoc  
 Mess Manager Mr. Johnson  
 A/P/O Stan Ward  
 F/C Bob Higgins.  
 Behind Bar:  
 Barman Mr. Quinsey.



**FRUSTRATED GENII**

Foreground:  
 F/C Sergeant  
 F/C Doug Stratton.  
 Background:  
 A/P/O Gordon Elliot  
 A/P/O Terry Lovatt.

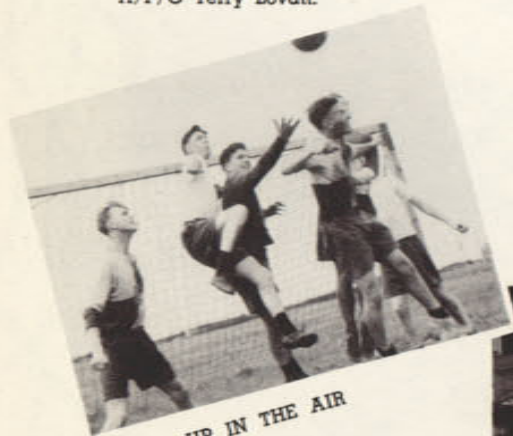


**COURSE DIRECTOR**  
 F/O Nutter.



**PRE FLIGHT BRIEFING**

Front Row, L - R:  
 A/P/O Mike Feather  
 F/C Bill Cheviere  
 F/C Fevre  
 Back Row, L - R:  
 A/P/O Stan Ward  
 F/C Doug Stratton  
 F/C Le Rohellec.



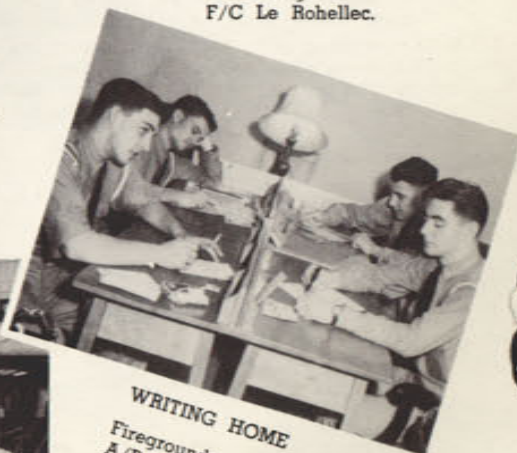
**UP IN THE AIR**

Left to Right:  
 A/P/O Jock Grange  
 A/P/O Bill Heighet  
 A/P/O Alec Pirrie  
 A/P/O Mike Feather.  
 In Background:  
 A/P/O Stan Ward  
 A/P/O Derrick Cooper.



**BARRACK ROOM DEBRIEFING**

Top Bunks, L - R:  
 F/C Pat Starr and F/C Foulgoc.  
 Bottom, L - R:  
 A/P/O Alec Pirrie  
 A/P/O Bill Heighet  
 A/P/O Gordon Elliott  
 F/C Bill Cheviere.



**WRITING HOME**  
 Fireground, L - R:  
 A/P/O Terry Lovatt  
 F/C Sergeant  
 Background, L - R:  
 F/C Fevre  
 A/P/O Derrick Cooper.

**40-WA**

**COOPER**—Deryck spent most of his time in bed, otherwise he was at the Roller Rink—picking up fallen women—literally, of course. He is the envy of our N.S.A. types—he leaves the R.A.F. first. His chief ambition is either to be, or, to meet after dark, an OD. Officer. When asked what he'd like to do for Voxair, he replied, "Well, I'll buy one."

**DOCKAR**—Since last December, Brian claims he has grown two inches—the question is, where? Although sometimes taken for a ride at the roller-rink, he was rarely more than half-tight on Saturday evenings except when he mixed his orange and coke. He has the distinction of using the Astro-Compass for the first time on D.26.

**ELLIOTT**—Nicknames were "Flash," and "Hank." Gordon was the first man known to be air-sick in a synthetic plot. His ambition is to live at 180°W so that he can make up for lost time. Gordon spent most of his time arguing, and cursing Jock's driving ability (?)

**FEATHER**—We didn't find out much about Mike—he was never on camp long enough—we'll leave it to the reader to imagine Mike spending a whole weekend studying the flora in East Kildonan Park. When he was around he'd talk of nothing but Gordon Smith and Doris Day.

**GRAINGE**—Hailing from Auchtermuchty, sometimes erroneously thought to be a seamy section of Singapore, Jock and his expansive display of molars were well known throughout the A.N.S. In the thirty second week, he achieved a life-long ambition, when he took charge of a Radar Class with a "Superior." Perhaps I can explain it better, Sir." Since last December, he has been a source of constant comfort to numerous pining females.

**HIGHET** Another of our trusty Scotsmen, Bill spent the greater part of his time in finding golf-clubs after Cooper. Dockar and Ward had been practising. Usually found near the jazz band on a Saturday night. His main ambition is trying to get a snap-pack that was better than Terry Lovatt's.

**LOVATT**—Terry is from the mystic Midlands of England—he spent most of the time swimming and playing Pontoon—said he gained pounds. He took a violent interest in photography and charged around snapping everyone—his sole ambition was to get a snap-pack that was better than Bill Highet's.

**PIRRIE**—Alex, another Scotsman, who's favourite expression was, "Drop Dead"—in broad Scots. His endeavour was to pay an Instructor for exam questions—before the exam—to no avail. He looked the most probable marriage prospect, but discarded our pleas and went his carefree way in the gay abandon of bachelorhood.

**ROLPH**—Davie's hobby was borrowing the first shav's pencil—and keeping it. Dave was the only man to study the aviation of morning twilight and although his heart pined for England, he has often been seen among the pines of the Assiniboine Park. Best of luck Dave, hope the RAF likes you as much as you'll like the RAF.

**THOMAS**—Derrick complained that everything had "gone to pot" since he came to Canada. He wanted to be the first bearded navigator, but lost his hair when the M.O. vetoed it. Derick was the only Welshman to "leek" onto the course. "Cumry Am Byth."

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Back row, L.R.: A/P/O Johnston, J.N.; A/P/O Robinson, D.; A/P/O Sutherland, J.C.A.; A/P/O Shallock, W.; A/P/O Oraler, T.B.; A/P/O Thomas, P.E.; A/P/O Grange, E.B.

Centre row, L.R.: F/C Loustau, C.A.; F/C Revelle, A.L.; F/C Fabre, J.; F/C Conrie, J.C.P.; F/C Meyer, M.J.A.; F/C Le Leuch, H.P.; F/C de Bouclaus, J.M.

Front row, L.R.: A/P/O Hutchison, A.G.L.; F/C Woods, W.F.; F/C Morrow, G.F.; F/L De Gruyancere, P.M.; (Course Director): F/C Yarr, A.D.; F/C Hooper, D.H.; A/P/O Bullock, A.B.

40-WB

BR. BULLOCK

Ambition: To shave in less than half an hour.  
Occupation: Pressing trousers, polishing shoes and imitating Mario Lanza.

N.N.: Gopher

Favourite Exp.: What a voice!  
Probable Dest.: Metropolitan Opera House.

JEAN COWRIE

Ambition: To have a harem.  
Occupation: Trying to get a harem.  
Interest: Harems.  
Probable Dest.: La cuisine.

Jacques de Bouclaus

Ambition: To speak English.  
Occupation: Reading letters.  
N.N.: "Debby".  
Favourite Exp.: "How many letters for me today?"

JEAN FABRE

Occupation: Buying electric razors.  
Ambition: To be able to use one.  
Favourite Exp.: "Oh, ma chérie!"  
Probable Dest.: The Barber Shop.

ERNE GRANGE

Ambition: DT's.  
Occupation: Drinking.  
Favourite Exp.: "Let's go to the 'Assiniboine'."  
(not the river)  
Probable Dest.: Alcoholics Anonymous.

JEAN HAMON

Ambition: To invent a non-leaking Honk Bag.  
Occupation: Trying to dodge C.B's.  
Favourite Exp.: "Watch it, Jack."  
Probable Dest.: St. Boniface.

DOUG HOOPER

Ambition: To win the Daily Double.  
Occupation: Bitching.  
Favourite Exp.: "I was winning up to the fourth race."

AL HUTCHINSON

Ambition: To play the drums sober.  
Occupation: Reading illicit literature.  
Favourite Exp.: "Who put me to bed last night?"  
Probable Dest.: Nobody knows!

JOE JOHNSTON

Ambition: Home Rule for Scotland.  
Occupation: Making plans to steal the Stone of Scone.  
Favourite Exp.: "Ach away!!"  
Probable Dest.: Westminster Abbey, again.

LE LENSCH

Ambition: To find an electric computer.  
Occupation: Pruning his moustache.  
Favourite Exp.: "Grow a moustache like mine."  
Probable Dest.: French Navy.

CLAUDE LOUSTEAU

Ambition: To be nobody's friend.  
Occupation: Trying to find a second navigator he won't have to swear at  
Favourite Exp.: "Les filles Canadiennes sont frigide!!"  
Probable Dest.: Hondo Air Base, Texas.

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## 40-WA—Continued

**WARD**—Stan, who hails from London, was considered early in the Course to be one of the quieter of us until after the commencement of the soccer season. He considered the red-tape round his arm good practice for his civilian occupation—the Civil Service.

### OUR FRENCH FOUR (By Themselves)—

**FEVRE**—"Canada;—too warm—too cold—and no mayonnaise," he says, and describes these as his three reasons for preferring Dôle, his home-town, where everything is "above smart average." His one ambition:—As gentlemen prefer blondes, Fèvre wants to marry Martini Carol.

**FOULGOC**—He was the youngest, was he the wisest? Fair chatterbox, he shows nothing of the typical Breton, "But sir, why zis, why zat, I don' understand!" His ambition is to grow a beard so that he may begin to shave. He has great pride in a pilot report which read, "Come back to base by the grace of God, and a full moon."

**LEROHELLEC**—Hobbies—love, women, champagne and more love. He came to Canada to spend weekends at Winnipeg Beach. He has midterm souvenirs of toilet soap from each hotel he visited. His ambition is to buy a yellow shirt with green butterflies.

**SERGEANT**—Claude is from "Turg en Vallois"—not Paris, but not so far after all. He has his own library (under his pillow)—précis, magazines, racey novels and books on dancing instructions. His ambition is to become a dancing teacher so that he can teach himself to dance.

**CHEVERIE**—Chev is best remembered for his early rising, particularly one morning last winter when he was observed going on parade at 7 a.m. G.M.T. Alex Gillis when awakened by him exclaimed sleepily, "Holly Jesus! It feels as though I've just gone to sleep"—he had. Doesn't smoke, doesn't drink, and doesn't play pinochle.

**MYROS**—"Mike" is noted for his absent-mindedness—e.g., Flying a night trip without sextant or harness—and his ill-luck in having received more petty charges than all the rest of the course put together. His identifying feature is the bald patch which he puts down to D.R., terming it "heap bad medicine."

**STERR**—Generally called Pop, it was some time before we discovered that his christian name was Marinus. He has kept us entertained with an inexhaustible supply of bedtime stories, mainly about the "Wild West." The only member of the course scheduled for marriage, we wish him a future smoother than his Dafee Bulyea runs.

**STRATTON**—Doug was often complimented by the R.A.F. members as being the most "English" of the Canadians, for some reason he always considered this a dubious compliment. He further proved his eccentricity by his going fishing at 2 a.m. on a Sunday morning in a muddy ditch, after a small but hectic celebration. There is growing concern in the course over his continued bachelorhood.

### Heard in B. & A.

#### Student

"Sir, may I—"  
 "But, sir, I only—"  
 "Would you—"  
 "If you'd only—"  
 "Sir, I wouldn't bother—"  
 "Oh to hell with it!"  
 "Well, I only wanted to tell you that your leave started this morning."  
 "Tough!"

#### B. & A Type

"Tough, minus three."  
 "Sad!"  
 "Nope."  
 "I'm weeping!"  
 "So what?"  
 "What's that?"  
 "But I didn't realize—"

### MICHEL MEYER

Ambition: Family Allowance.  
 Occupation: Travelling the Ness Bus to St. James.  
 Favourite Exp.: "Will you marry me?"  
 Probable Dest.: St. James Church.

### TOM ORSLER

Ambition: Commander-in-Chief, I.R.A.  
 Occupation: Swotting.  
 Interest: Women who can hold their liquor.  
 Favourite Exp.: "Now chaps, let's get some sleep."

### ANDRE FEVELLE

Ambition: To save some money.  
 Occupation: Wearing yellow socks.  
 Probable Dest.: Bank of France.

### GUY REYRAND

Ambition: More flying time.  
 Occupation: Looking for "Debby".  
 Interest: The Station Band.  
 Probable Dest.: The M.I.R.

### DOUG ROBINSON

Ambition: To play for Yorkshire Country Cricket Club.  
 Interest: Yorkshire Country Cricket Club.  
 Occupation: Arguing with B & A.

### BILL SHALLCROSS

Ambition: To sleep 24 hours a day.  
 Occupation: Sleeping.  
 N.N.: "Beaurry."  
 Favourite Exp.: "Yeah."  
 Probable Dest.: His pit.

### "WHACK" SUTHERING

Ambition: To get over 40% in a Control Plot.  
 Occupation: Gambling.  
 Favourite Exp.: "But Sir . . .!"  
 Probable Dest.: Definitely not Canada.

### PETE THOMAS

Ambition: To get into bed with out making so much noise.  
 Occupation: Correct people's faults.  
 Interest: Cambridge University.  
 Probable Dest.: Oxford University.

### BILL WOODS

Ambition: Another 6 inches.  
 Occupation: Fighting.  
 Favourite Exp.: "If you were my size I'd kill you."  
 Probable Dest.: Madison Square Garden.

### YARR

Ambition: To get to Flin Flon.  
 Occupation: Hunting!  
 N.N.: Stretch.  
 Probable Dest.: Flin Flon.

### FT/LV. DECRUYNAERE

Ambition: To stay awake on a night trip.  
 Occupation: Dreaming D.R.  
 Favourite Exp.: "Hey, you, where's your card?"  
 Probable Dest.: B & A once more (40WB: Gravel).

### OUR THANKS

To the man who burns the light at Doghole Bay.  
 To the Met. man who gave us good winds that day in June.  
 To the pilot who didn't want his lunch in the middle of an Astro sight.  
 To the pilot who altered 20s without toppling the gyro.  
 To Clear Lake, the Radio compass and Vega.  
 To Cooper (by special request of Flt/Lt Davies).  
 To the two mosquitoes who stayed in Africa.  
 To the man in the back row who proposed the mess meeting should adjourn.  
 To the orderly room Sgt. who got our mail so promptly.  
 To the Americenne who mistook us for cab-drivers.  
 To the "man with the axe."  
 To N.O.C. 38 for passing on the wheel.  
 To 42 W"A".  
 Very much—to "Dutch".  
 To Sydney, for looking after his boys.  
 To Stew for being Stew.  
 To CANADA — FOR HAVING US.

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## Navigation Through the Ages

By A/P/O COFFEY

OURS, we think, is a very modern trade. Air navigation is younger than flying by several years, dating at the earliest from obscure moment in the first decade of this century when some pilot found that by aiming his perilous contraption about sixty degrees to port of the direction in which he wanted to go, he could get the wind to blow him there. Represented a considerable advance on the hitherto standard procedure of merely going where the wind wanted to go. From that point, we think, all our troubles began.

This, when we consider the matter more closely, is not the case. From the earliest times the more intelligent and adventurous of our ancestors, like us, too bold-spirited or too thick-headed to stay safely where they were, have been worried into wrinkles by such familiar matters as drifts, E.T.A.'s, fuel consumption, and so on. Techniques may vary—in Elizabethan times, for instance, the approved method for taking a groundspeed or waterspeed, rather, was to get the bos'n—a primitive form of second navigator—to stand in the bows and spit into the sea. The Navigator, at the other end of the ship, would then count the number of his own pulse beats until the speck drifted past. While it is not recommended that the technique be applied to Beechcraft flying, except in cases of extreme desperation, the principle, you can see, is the same. (It would, perhaps, be a good idea to have a look at the logs of some of our predecessors; it might give us a

stronger sense of the dignity and antiquity of the profession.)

The first navigators of whose trip we have a complete record was Noah. His problems, it is true, were relatively simple. Apart from the care of a rather unusual passenger list, his work consisted mainly of circling until he could get a runway clearance; he was not harassed by the need for a message to base every hour, and the Met. forecast was remarkably accurate. A fairly straightforward trip. Next came Ulysses, who since he took several years to complete a journey of a few hundred miles and lost his entire crew on the way, must be considered a bit of a bungler. But we must remember the peculiar nature of some of his difficulties. The crew at several of the stopping points got so browned-off with the trip that they refused to continue. There is a direct reference to the troubles of the sextant operators—

"... There eyes grown dim with gazing at the pilot stars" ... They had evidently been trying to get Spica. The hospitality at some of these stopping points, too, was very unreliable; one canteen manageress, by the name of Circe, turned the whole crew into pigs. Navigation aids were few and of doubtful value. The Syrens, an early form of G.C.A., did indeed talk navigators in with pinpoint accuracy in all weathers, but rather spoiled things after landing by eating them. The many references in the log to the intervention of various gods and goddesses, however, should not be taken too seriously; like the gremlins of the last war, these were probably only convenient excuses for incompetence. Ulysses must be docked many marks for ineffectiveness, but like all our not-so-good trips, his was

far more interesting than if he had been dully competent and gone straight from Point A to Point B.

Things were fairly quiet in the profession for a long time after this. The best navigation manuals were agreed that if you went too far in any given direction you'd fall off the edge of the world, and any instructor who stubbornly held to a contrary opinion stood a good chance of being burned at the stake, thereby providing the trade with authentic martyrs. Life is easier for instructors nowadays. Navigation really got going again with the arrival of Christopher Columbus, who had had doubts all along about this edge-of-the-world business. He decided to take a chance, anyway; managed to find crew in the local jails, and set course for India in what was generally considered to be the opposite direction to the right one. He got his turning-point wrong by one whole continent, and his E.T.A. was a month or so out, so he would certainly have had a rough time of it in B.&A. However, like many of us here at Winnipeg after him, he discovered America while he was at it.

The trip was also very valuable that it stimulated recruiting. From that time on there was no lack of navigators or extra crew-members, although the latter, not entirely convinced by what they read on the recruiting posters, had frequently to be conveyed on board in a state of unconsciousness when things were slack, at the jails. Conditions of service have steadily improved since then. With more people finding their way into the service and travelling about the globe—it turned out to be a globe after all—we got the first batch of tall stories; examples of the same sort of thing as we hear nowadays in the familiar form of "there I was 40,000 feet in a ball of fire, with nothing on the clock." Navigators complained bitterly of magnetic mountains which drew the nails out of their ships and played havoc with the compasses; as truthful a man as Othello was willing to go on record as having seen men with heads growing out of their chests, among other phenomena. The general remarks column of the log got wilder and wilder. Here is a contemporary account of messing conditions on the average trip—

"Those that escape to bring news tell of nothing but eating tallow and young blackmoors, . . . and cutting a greasy buff jerkin in tripes and broiling it for their dinners." The origin of the flight lunch? Some of the observations, however, might bear further looking into; experience with the pioneer compass has led several of us to believe that there may be something in that story of the magnetic mountain, for instance.

After this, things became steadily safer, duller and more technical. It no longer was cause for comment when a navigator got to the place he had intended at about the right time. Navigation fell into a decline from which it was only rescued by the invention of the aircraft at the beginning of this century. But even during this humdrum period, when almost everything went right, there were still a few fresh and youthful spirits who preserved the free spirit of pioneers. Very few records of their adventures are preserved, as they mostly did not return from their first trip, but their attitude to the craft is summed up rather well in Lewis Carroll's "Hunting of the Snark."

"What's the good of Mercator's North Poles and Equator, Tropic Zones and Meridian lines?" So the Bellman would cry, and the crew would reply,

"They are merely conventional signs!"

"Our maps are such shapes with their islands and capes, but we've got our brave captain to thank, (So the crew would protest.) "For he's bought us the best—a perfect and absolute blank."

Even the best of us must have a soft spot for the Bellman at times.

And then, just when Navigation seems doomed to a dull efficiency, the Wright brothers and a few others invented the aeroplane, and we were back where we started. Things look like being fairly lively for some time yet.

### On Course or Off *Cont. from page 7.*

full sense of the word. And so, we have a tendency to forget about the spiritual goods we could acquire through prayer and to concentrate on the ones we can touch and see. And a lot of things which have gone wrong can be traced right back to that fact.

People who never pray would perhaps do well to pause and take stock; on course or off? People who pray some would do well to pray more. Prayer is the air a soul breathes; don't ration it any more than you would the air your lungs absorb each day. Prayer is the golden thread which unites us to God and makes us spiritually strong, and there is nothing the world needs more today than people who are morally and spiritually unshakable in their faith and immovable in their resolve to live the principles of the Gospel in their daily lives.

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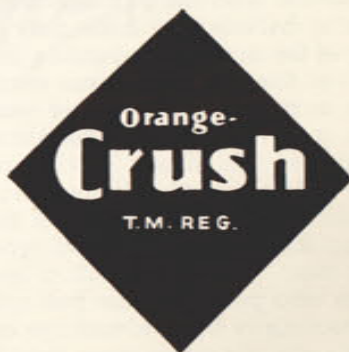
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S/L KEITH GREENAWAY

**Arctic  
Flying Weather**

The article which follows was originally presented by S/L Greenaway to the students and staff of the Specialist Navigation Course at the Central Navigation School located at RCAF Station Summerside, P.E.I.

S/L Greenaway had this to say as a prelude to his talk:

"What I am going to say to you tonight is not of a technical nature. It is an account of arctic and polar flying weather as I have experienced it . . . I was first introduced to high latitude weather when participating in long range research flights in B-29 Super Fortress aircraft. Since these flights, which continued for about three years, I have flown in the Arctic in many types of aircraft of varying range and operating ceiling and with often limited navigational aids. It is my opinion that an efficient navigator must have a working knowledge of meteorology and maintain a day to day interest in it. For myself, meteorology has such a fascination for me that it has become almost a hobby."

**General Characteristics of  
Arctic Weather**

SPRING, particularly the month of April, provides the best flying weather in the polar regions of this continent. At this time the centre of the arctic anti-cyclone is north of Alaska, with the arctic front lying across Alaska, veering southeast along the Mackenzie Valley, and then east in the general direction of Great Slave

Squadron Leader Keith R. Greenaway author of the following article, one of the world's leading authorities on northern navigation, has been named the winner of the McKee Trans-Canada Trophy for 1952.

S/L Greenaway, 37, received the award for work in his chosen field, Arctic aerial navigation. Last year he perfected, along with James Cox of the Defense Research Board, the High Altitude Twilight-light computer a navigation aid adopted by both the RAF and the RCAF for northern flying operations.

The McKee Trophy is not the first honor to come to S/L Greenaway. Last year he was awarded the Thurloew award for an outstanding contribution to the science of navigation.

In addition, he received an award from the Royal Meteorological Society for his paper on Arctic weather conditions, which was acclaimed as outstanding in its treatment of a complex subject. He is also the author of "Arctic Air Navigation" which is recognized as a standard and authoritative work by both the RCAF and the USAF.

S/L Greenaway is now attached to the Defense Research Board specializing in his pet subject, Arctic aerial navigation.

Lake. In this "high" flying conditions are good, visibility is generally unlimited except for a small amount of haze in the centre or on the west side. Northwesterly winds prevail over the Beaufort Sea and the Arctic Ocean and temperatures are well below zero. Often when flying over the Arctic Ocean near the Alaskan coast, cirrus and alto-stratus can be seen to the south and west, indicating over-running by warm air. North-bound flights, originating in Alaska, and along the northwest staging route will frequently pass through the arctic front. Once beyond this, CAVU conditions generally prevail except for patches of low stratus and haze. Farther to the east, flying conditions are sometimes poor, owing to low pressure systems that move into Baffin Bay. When a "cold low," circular in shape, moves into the top of Baffin Bay, extensive cloud prevails over most of Ellesmere Island, Axel Heiberg and as far west as Bathurst and Ellef Ringnes. This condition may last for one or two weeks, as it did for example throughout the latter part of April last year. When a "low" moves from north of Iceland into the polar regions, cirrus and cirrostratus is generally encountered north of Ellesmere Island and extends over the Pole.

In summer, the arctic anti-cyclone has moved a little further east, but is very weak. The arctic front has moved northward and is generally located over the Arctic Ocean, Beaufort Sea and the

Archipelago. It is however poorly defined. Pressure gradients are weak over the entire arctic and the winds variable and less strong. Cloud is extensive and stratus is frequent over the polar pack and the Archipelago. Cirrus and cirrostratus cloud is often found over the arctic whenever tongues of warm air penetrate into the north. Alto-stratus may be encountered at any time and strato-cumulus forms over the snow-free islands, especially those surrounded by ice. Severe icing conditions are common, and are important in flight planning, as the freezing level is little more than a few thousand feet above the surface.

In the fall, the anti-cyclone is still weak and its centre begins to move towards the Siberian coast. Storms are more frequent along the arctic front, and wind velocities increase, frequently bringing extensive cloud conditions, often to considerable altitudes. This season provides the worst flying weather of the year, both in-flight and at terminals where the snow-covered terrain and surrounding water combine to produce fog and low ceilings.

By January the centre of the arctic anti-cyclone is at approximately 80N 165E. A succession of storms move along the arctic front, causing high winds and snow. With the exception of these storm periods, the flying weather in the western arctic is good. To the east, however, when warm moist air from the Atlantic moves into high latitudes, extensive cloud forms over the eastern part of the Archipelago and the polar region. As a result flying conditions in the Baffin Island, Devon, Greenland coastal areas and the region north and east of Greenland are often poor.

**Wind Velocities**

The prevailing wind at flight altitudes over the western part of the North American arctic and polar regions is generally from the west and north and occasionally from the southwest when the arctic front lies north of the mainland. In the eastern Canadian arctic winds are generally from the north and north-west and occasionally east while the northwestern section of the

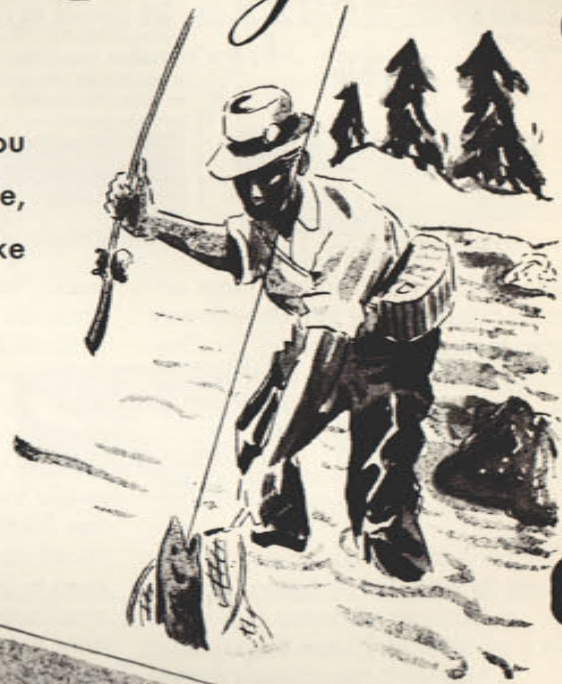
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### Bell X-5

THE BELL X-5, first aircraft to feature wings whose degree of sweepback may be varied in flight, is being flown at Edwards Air Force Base, Edwards (Muroc), California.

Unlike the rocket powered X-1, also built by Bell, the X-5 is jet-propelled and is capable of sustained flights over longer periods of time. It takes off from the ground under its own power instead of being launched from a "mother" aircraft of the B-29 or B-50 type, as was the X-1.

The X-5 is being used as a flying laboratory by the National Advisory Committee for Aeronautics to investigate aerodynamic effects of changing the degree of sweepback during flight. The sweptback X-5 has all the advantages of conventional wing aircraft in take-off and climb, maneuvering and endurance and is capable of very high speeds.

Viewed in profile, the X-5 has a "flying guppy" configuration which results from mounting its Allison J-35-A-17 turbo-jet engine under the cockpit rather than behind the pilot. The X-5's power-plant extends through the 2nd and 3rd quarter of the ship's length, the tail-pipe protruding beneath the fuselage and not from the rear of the plane.

The X-5 is the product of three years of research and development by the Air Force, the National Advisory Committee for Aeronautics and Bell Aircraft engineers. It is 33 feet four inches long and measures 12 feet in height from ground to fin tip. Wing span is 32 feet nine inches and weight is approximately 100,000 pounds. A slender, pear-like boom, extending an additional eight feet from the nose, houses yaw-measuring devices and a pilot tube used in registering indicated air speed.

The needle-nosed X-5 is enameled white, in contrast with the orange-tinted "international yellow" of the revolutionary Bell X-1, now enshrined in the Smithsonian Institution. It is felt that white affords the greatest visibility when the plane is visually tracked through cloudless skies high above the Muroc dry-lake bed. Tracking by radar, which is also done, is not affected by the ship's color.

A major development in designing the X-5 was the achievement by Bell engineers of a mechanism for

changing wing sweep-back in flight, while simultaneously compensating for the resulting shift of the center of gravity.

Each wing has a specially designed fairing to insure that its leading edge presents a smooth airfoil regardless of sweep-back angle. The leading edge of the wings are fitted with slats which comprise an integral part of their upper surface when not extended. When extended they increase aerodynamic lift, appreciably reducing stalling speed.

Two dive brakes are located in the sides of the fuselage forward of the cockpit. They are metal "doors" which can be opened hydraulically until they are at nearly right angles to the fuselage. Protruding, they provide rapid deceleration.

The axial flow turbo-jet engine develops a 4,900-pound thrust, and the X-5 is designed to yield valuable data in the still little-known transonic study.

The X-5's air inlet duct extends straight from the nose to the front of the engine. This design holds air-duct loss to a minimum, scooping greater quantities of air at high altitudes where the decreased oxygen content of the atmosphere lowers jet engine performance.

The cockpit of the X-5 is located a few feet behind the plane's nose. Its sliding plexiglas canopy, with only a slight blister, conforms almost perfectly with the smooth contour of the fuselage. Visibility is excellent.

The cockpit is pressurized and air-conditioned to maintain safe and comfortable conditions for the pilot at high altitudes.

Both the cockpit canopy and the seat are jettisonable for emergency escape. Ejection is accomplished by exploding a cartridge, hurling the pilot 50 feet above the ship and clear of the tail-fin for parachute descent.

The concept of variable wing sweep-back to reduce compressibility at sonic speeds has been considered by aeronautical engineers for the past ten years.

Of five Air Force assignments to construct experimental aircraft capable of transonic or supersonic speeds, three have been awarded to Bell Aircraft. The company designed and built the X-1, first supersonic plane, and is building the X-2. No details of the latter have been made public recently but the X-2 will have swept-back wings, be rocket powered and some parts will be made of stainless steel. Bell is also building two X1 variations, the X-1A and X-1B.

See page 30 for further photo •