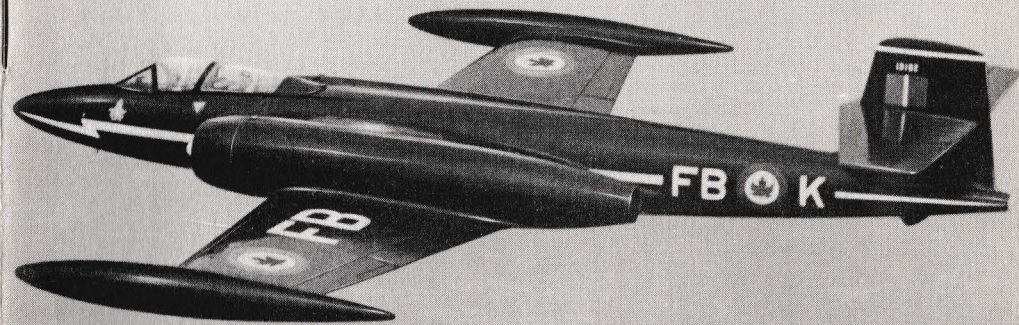
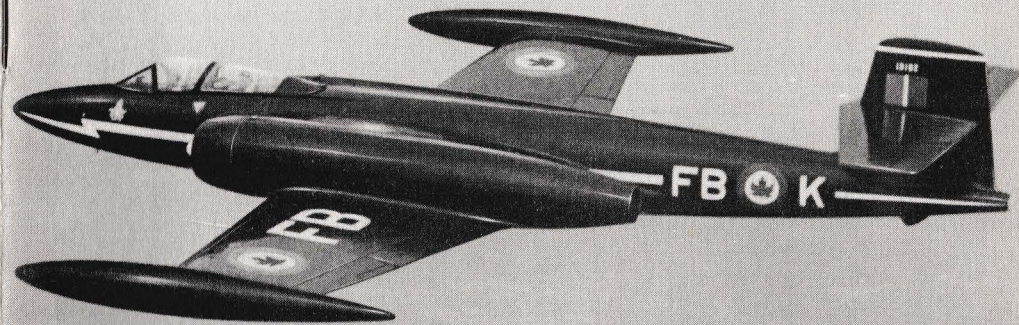


AVRO CANADA

N*ews*

MARCH 1951



THE NEW AVRO CANADA JET ENGINE PLANT

News

PRINTED AND PUBLISHED
MONTHLY BY
A. V. ROE CANADA LIMITED
MALTON, ONTARIO

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AVRO VIEWS

This month we start a special staff news section in which we intend to cover personal news about our expanding personnel more fully than in the past. All such items will be welcome. Non-plant personnel may receive this section on request.

Last month we had a couple of letters about our magazine. George Hambleton, one-time director of the Canadian Press, described it as "a very nice production indeed, neat, easy to read and of a very handy format." Howard Gamble, editor of "Canadian Business," wrote "I read it every month and always seem to find something new in it."

We have awarded our prize this month to Shirley Munshaw for her indefatigable reportorial efforts.

COVER

The Avro Canada CF-100, here photographed for the first time with wing-tip tanks.

SYMBOL OF AIR-MINDED CANADA

Canada's first jet airliner, which has just swished through the skies from Malton, Ont., to Quebec City and return, on a swift test flight, is perhaps the outstanding symbol of this country's transformation from a laggard to a leader in aircraft development during the last decade.

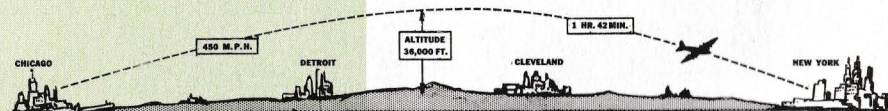
Before the Second World War, Canada's aircraft industry was very much in its infancy. In terms of volume production, it is not yet grown up by any means. But today, in a sense, it is something like a child prodigy -- like one of those rare youngsters who startle adults by being able to solve mathematical problems that baffle their elders.

Canadian aviation has concentrated on research to produce some aeroplanes which are years ahead of those in general commercial use in the world. The Jetliner -- the only aircraft of its type in North America -- is an outstanding example of this. It makes new records every time it soars aloft.

Perhaps we do not yet fully appreciate, in Canada, what a spectacular innovation the Jetliner has become on the international aviation scene, nor the widespread attention it is attracting. The Christian Science Monitor, of Boston, for instance devotes a large spread in its columns to a picture and story about the record-smashing flight of "Canada's air queen" from Chicago to New York.

Flights such as this are doing much to publicize the progress of Canada's aggressive aircraft industry.

Editorial from the St. John, N.B., "Evening Times Globe", of January 18, 1951, typical perhaps of recent press reaction to the Jetliner.



CHICAGO TO NEW YORK IN 1 hr. 42 mins. VIA JETLINER

FRONT-PAGE HEADLINE FROM CHICAGO "NEWS" OF JANUARY 10, 1951

ATOMIC POWER WHEN?

by Bill Cameron

While Avro Canada's jets are slashing America's travel time-schedules it is curious to reflect that a century ago most people lived and died within ten miles of where they were born.

Avro Canada has demonstrated a unique genius in making gas molecules supply recoil impulses to carry the Jetliner at over 500 miles an hour. Every trip this wonder ship has made has sliced other aircraft time schedules in two. Among the latest exploits was a trip from Malton, Ontario, to Tampa, Florida, in two hours and 52 minutes. The CF-100 jet fighter, flying from Toronto, managed to slow down in time to land in Montreal 32 minutes later. What will the record be when Avro Canada finds atomic recoil within reach? Here is a brief resume of the atomic outlook to date.

When the first atomic bomb exploded at Alamogordo, New Mexico, at 5.30 am July 16th, 1945, a new tool was added to man's workshop. We weren't ready for it. It was like installing a multiple-turret, electrically-driven, automatic lathe in grandfather's workshop beside the foot-operated wood lathe, current hand tools and contemporary ideas on matter and power. The work done by this new tool in a split second was on a scale that left the ob-

servers gasping. A section of ground ten miles in diameter was pressed down so hard and uniform that underground watercourses squirted out in geysers all around the perimeter. Several square miles of sand became glass all in the same split second. Accompanying the miraculous heat and pressure was the unearthly light - a light that made even distant objects cast shadows TOWARD the rising sun.

Less than a month later, Hiroshima and Nagasaki advertised to the world that disparity in racial numbers or in man-power no longer carried the same authority it did in BA (Before Atom). Small nations with the "know-how" moved up several degrees in importance overnight. Such countries could become possessed of means to cut enemies down to size, or else wipe them out, with a dispatch that would have won praise from Nero or Rameses of old. Conditions in Korea just now would indicate the need for some such capacity to be added to our equipment.

Prior to Alamogordo our experience with power had inured us to terrific write-offs. Despite having advanced from 500 pounds per horse-power down to half a pound per horse-power we still watch gauges failing to register up to 50 per-

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cent efficiency. Motor cars give us scarcely 25 percent of the fuel's power potential at the contact of pavement with rubber. In the atomic pile at Hanford, on the other hand, it is stated that enough heat is generated in one day to equal the electrical power requirements of the United States for a year.

Space for this article precludes historical details of efforts to date to capture atomic power. A short cut to bring the scene into focus is to note that of the 12 elements comprising 99 percent of this planet (rock, land, water and air, from the earth's core to stratosphere limits) only one has an atomic weight over 40. It is iron, weighing in on the atomic scale at 56. It is significant that our only source of atomic energy at present, as supplied by nature, is uranium. This giant hits the atomic weight scale at 238. We get energy from it through the process of 'fissioning' or splitting apart. At the other end of the scale is hydrogen, weighing one, and just now we are expecting to secure energy from it by 'fusion' or building up. It is believed that if a cube of uranium 20 feet to the side should ever be assembled in one chunk it would constitute

TWO RECORD-BREAKING AIRCRAFT THE F-86 AND THE CF-100; BACKBONE OF THE R.C.A.F. ARE PICTURED TOGETHER FOR THE FIRST TIME. THIS PARTICULAR F-86 HOLDS THE WORLD'S SPEED RECORD OF 670 M.P.H. WHILE THE CF-100 FLEW THE FASTEST IN CANADA, 632 M.P.H.



the 'critical size' at which its 'wild' atoms would let go in a blast that would take the planet with it. Fortunately its occurrence in nature has never been in any more massive chunks than stringers up to an inch or so in width and well distributed in the carrying rock.

Uranium seems to be about as far as nature could go in putting on weight while hydrogen, at the other end of the atomic scale, represents the limit in reducing. In between are 90 elements that seem to have been sufficiently stable in their respective atomic structures to withstand the march of time. Considerable quantities of radio-activated materials have been manufactured from the world's atomic piles in the 'fissioning' process of uranium. Enquiring eyes are surveying hydrogen to see what will happen when we start adding to its atomic particles to build up heavier atoms. The universe, it seems, may have started that way so perhaps herein lies the key to a new science wherein we may design and manufacture materials to meet special requirements - such as special metals for atomic engines, metals with atomic and molecular structures not now found in nature.

For centuries we have been tearing molecules apart and subjecting them to every conceivable stress. But never once did we crack an atom's nucleus. Obviously the atom was held together with energy beyond the scale of our measur-

ing sticks. Uranium's radioactivity seemed to beckon us as the first step in the quest of the secret. Its atom is a wonderful structure, resembling a miniature solar system. It has 92 planets or electrons, negatively-charged, revolving in many different planes around a nucleus. The nucleus is a compact parcel made up of 92 protons and 146 neutrons. The protons are positively-charged particles and the neutrons are neutral. It is believed, now, that a neutron is really a proton with an electron stuck in it. When released from a nucleus without hitting a target it seems to break up somewhere within half an hour into an electron and a proton. However, when they are stuck together by some chemistry as yet unknown the resultant particle has neither a positive nor a negative charge. In this state the neutron performs the job of cementing the like-charged protons together and defying the law which states that like-charged particles repel each other.

The atomic weight of an atom is the sum of the number of its protons and the number of its neutrons. Uranium with 92 protons and 146 neutrons is given an atomic weight of 238. Something happened to uranium in the unknown past. Being the heaviest of the earth's elements it naturally gravitated towards the core. Subjected to immense heat and pressure some of its atoms were cracked - about one in every 140. In the cracked atom we find that three of the

neutrons are missing. It has 92 protons and 143 neutrons - hence U 235. The U 235 atom, therefore, is something like a bag of wheat with a hole in the bottom through which the kernels rapidly escape. The missing neutrons are like the broken links in a chain and only the densely-packed surrounding atoms of U 238 prevent a catastrophe.

Still the struggle to get out of the 238 mass is ceaseless. Each time one escapes it releases an atom of helium (atomic weight of four) and when enough get out to reduce the atomic weight to 226.1 we have radium. In this form it requires the passage of about 1600 years for half the U 235's to be dissipated. From then on the remaining 235's have to work harder to get out and it is estimated that somewhere around 1500 million years later they will be all out. Only lead then remains. Its atomic weight is 207. It is the tombstone of uranium and, incidentally, about the only safe container for radio-active substances.

When an escaping neutron of U 235 happens to hit the nucleus of another U 235 it produces artificially-radio-active barium

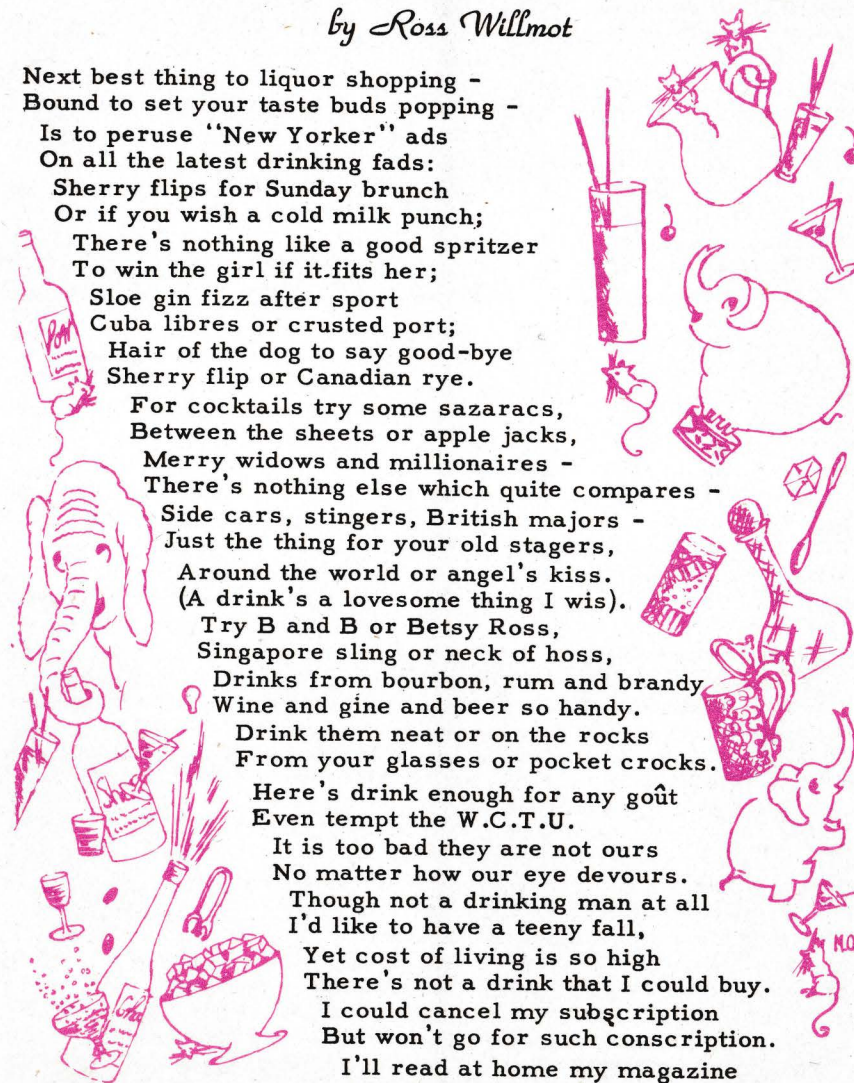
MAJOR RICHARD L. JOHNSON, SILVER STAR, D.F.C. AND THREE CLUSTERS, AIR MEDAL AND 12 CLUSTERS, RECENTLY BROUGHT TO AVRO CANADA THE SABRE IN WHICH HE ESTABLISHED THE WORLD'S SPEED RECORD OF 670 M.P.H. HERE HE IS WITH THE SAME SABRE, BRUCE WARREN AND MICHAEL COOPER-SLIPPER, AVRO CANADA TEST PILOTS, AND S/L E.L. "SHAN" BAUDOUX, CHIEF TEST PILOT FOR THE R.C.A.F.



We shall only describe, here, one method of collecting U 235's in quantities from out of the parent U 238. It cost Uncle Sam \$2 billion to find it out. When U 238 is dissolved in a suitable acid the acid-molecules holding U 238 atoms are slower getting through a filter than are the molecules carrying a U 235. In about eleven miles of pipes studded with filters and boosters the U 235's got so far ahead that the end of the line fairly sizzled with them. The bomb which flattened Hiroshima carried a small amount of this matter at one end of a cylinder and a chunk of uranium at the other end. When the bomb was dropped by parachute a clock-device held the trigger until the plane got away and let the U 235's drop into the uranium. The chain reaction from so many neutrons, all (or nearly all) hitting their targets at once,

The Hanford pile (and Canada's Chalk River pile) is daily demonstrating an energy profit that, viewed from the angle of molecular mechanics, is quite fantastic. The promise implied therein warrants unlimited expenditures in research work. Einstein said that the mass of anything travelling at the speed of light is inconceivable. Gamma rays travel at that rate. The energy in a pound of matter, no matter whether it is kerosene or horse feathers, is the product of its mass multiplied by the square of the speed of light. When we find ways and means to make neutrons hit targets when we want them to be hit, the disintegration of a pound of matter might conceivably propel a ship right out of the solar system. We wonder if that ship might have the name Avro Canada on it?

I'll read at home my magazine
And dream of what might well have been.



Avro Canada Types



OLD SHAVER
H. CHADWICK



FLY BOY
M. COOPER-SLIPPER



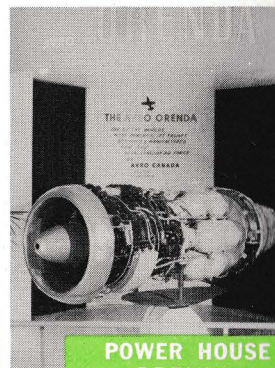
TRANSPORT THREAT
JETLINER



SLIP STICKER
JOHN MCKILLOP



GREASE MONKEY
K. ARMSTRONG



POWER HOUSE
ORENDA



GAY BLADESTER
RAY BURTON



MR. ROSIE
KIRK PAYNE



HOT RODDER
LEN POOLE

AVRO CANADA EMPLOYEES' NEWS



THE RECREATION CLUB

HERE IS OUR RECREATION CLUB'S HOCKEY TEAM IN THE WESTERN INDUSTRIAL LEAGUE
FRONT ROW-L. TO R. BLAKE EATOUGH, MURRAY NEILSON, STEPHEN POSIVY, PHIL FILLION, JOE CHAMPAGNE, TOM BRASSARD, JOHN "WALDO" WATSON BACK ROW - GEORGE WRIGHT, DOUG. CHAPMAN, BENNY HARRIS (COACH), JOE SOUTHERN, BILL JENNINGS, REDGE SPRAGGE AND HUGH GILMOUR (MANAGER)
ABSENT - ROSS JOHNSTON, HERB ANDERSON, JACK BIONDA, CARMEN MCCREADY, RON WEBSTER (TRAINER)

by Ted Colville

At present the Avro Canada Recreation Club has approximately 3,000 members and this number should increase during the coming year as many more new employees are hired.

The Club now presents a varied programme. On the sporting side, the Club sponsors bowling, softball, hockey, basketball and soccer for house league competition. There is also softball, hockey, basketball and soccer representation in the Industrial League in the Toronto and Weston districts. Gym classes, softball and hockey are available for the girls as well. On the social side, the club holds dances, a grand picnic and a Christmas party for the kids, sponsors a Model Club, Dart Club, Art and Drama Club, Choral Club, Skeet Club, Fishing and Boating Club.

The Recreation Club has been an active organization for over two years. It started during the winter of 1947-48 when Stan Aikin of the Aircraft Design Office organized a Mixed Bowling League in the Toronto

district. After the success of this venture, W.N. Deisher asked Stan to organize a Men's House Softball League to operate during the summer of 1948.

The first year, 1949, was a successful one. With an executive headed by Hazy Iron as President and starting with a few hundred members, the club activities expanded tremendously. During the first year most of the activities were of an athletic nature mainly because athletics are usually easier to organize on short notice and also many of the executive had prior experience in organizing sports. A picnic and a Christmas party were also successful events held during the first year.

At the start of the second year, 1950, the executive now headed by Jack Reilly as President, were relieved of a great majority of the routine work of the club when a full time Recreation Director, Don Lingwood, was hired by the Club and the Company.

If any member of the Recreation Club has any ideas about organizing a new athletic endeavour or a social-type club, write down a few names of other interested members and pass the list along to your local club representative. Most of the present activities were started in this manner. If you want to get full enjoyment out of the club, get interested in it. Don't sit back and complain, join the Bowling League or play softball, attend the dances, join the Dart Club, the Choral Club or the Fishing and Boating Club. There is something in the Recreation Club to suit everybody.

News from Korea

Johnny Miles who worked in Tabulating and joined the Korean Forces sent Doreen Abbott a letter. It says that after 23 days amid very rough seas (most of the crew was seasick) they landed in Japan - only to go on a route march through Yokohama and Kobe. After all that sailing-they sure must be tough. He tells us he was very impressed with the places and people he saw here. The women dress in gay coloured kimonos and carry their children on their backs. In Pusan he



UNDER PROTEST FIVE-DAY-OLD ANDREW FERGUSON SON OF JOHN FERGUSON, OF AIRCRAFT PRODUCTION ENGINEERING SHOWS HIS TWO FULLY DEVELOPED TEETH TO THE PHOTOGRAPHER. THEY WERE LATER REMOVED

found the city extremely crowded. Streets were narrow and filthy, homes mere unpainted shacks. Since there was little electricity the people used gas lights or candles. In the villages homes were made of stone and clay with straw-thatched roofs. Johnny described the people as being very quiet and hard-working and the little children as "really cute".

PAYROLL

There's an office at A.V. Roe,
That handles all the pay,
Tab makes all the envelopes,
And we have all the say.

Blue Monday morn and here we are,
Back at the good old grind.
We start by pulling out our drawers,
Some handy work to find.
The day wears on and we all look tired,
Another slow day and we'll all get fired.

Tuesday morn is brighter than fires,
Our day is all planned so,
Yesterday they had new hires,
So back to work we go.

At 9 o'clock on Wednesday morn,
We start to take the tapes,
We double check them every time,
Being sure there's no mistakes:

By four o'clock with lots of luck,
We're bound to get it done,
Another day, another pay,
Another battle won.

Thursday is a clean-up day,
We find a lot to do,
As Friday morn we get our pay,
We've earned the whole week through.

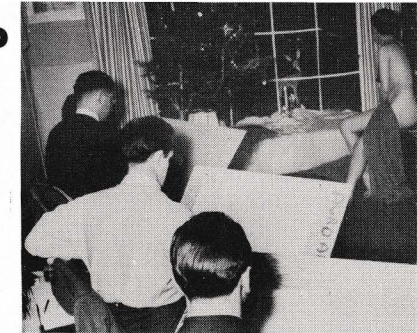
Friday is red-letter day,
For then the Brinks men come,
Loaded down with all our pay,
There's some for everyone.
Our faces now are cheery bright,
For it will soon be Friday night,
Here is weekend, have a good time,
And don't let work enter your mind.

P. E.

THE AVRO

Art Club

OIL PAINTING BY
HOWARD SMITH
WHICH WON A PRIZE
FROM THE LAKEVIEW
ASSOCIATION OF ARTISTS



by Tom Batchelor

Do you like to paint or sketch or just doodle? If so, did you know that Avro Canada has a sketch club with more than 20 members who have been doing just that for over a year. You don't have to be a master such as Rembrandt for even a beginner is welcome at our club. The club was formed not to give us a chance to compare our work with that of experts, but to enable us to express ourselves in an artistic form of relaxation. All members need are pencil and paper to get them started.

It all started back in 1949 when Bryan Wood, Howard Smith and I decided that there was enough interest in the plant to form a club. We set a date and invited everyone we knew who would be interested to attend. The meeting was a tremendous success and we learned that there were more interested than we had thought.

We have found that, in an evening, one can do two or three very interesting sketches with nothing more than pencil and paper and a capable instructor. We have engaged the

services of Don Fraser to help instruct us. Don is an instructor at the Ontario College of Art and Northern Vocational School.

We plan to hold an exhibition of our work sometime in the spring (date to be announced later) and show some of these sketches as well as paintings that some of us might attempt. This will be a social affair that may create more interest among those who do not wish to take an active part themselves.

Because of the aid of the Recreation Club, the membership fee has been reduced to three dollars annually which includes all privileges of the club such as the use of drawing boards and equipment.

Those who would like to join our club should contact the writer at local 83 or Bryan Wood at local 231. The course includes painting instruction, life drawing, still life, landscapes and also art appreciation. The membership is open to those in the Recreation Club and their immediate families and in addition gives full membership privileges in the Arts Club of Toronto.

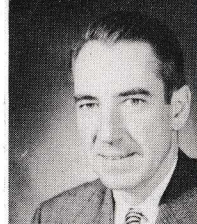
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AVRO

LONG SERVICE

AVRO CANADA

Awards

TO BE CONTINUED



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Aircraft Engineering



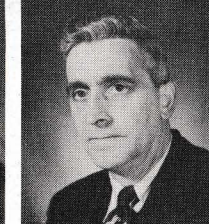
Albert McGaffrey
Supply



Reuben E. Welts
Aircraft Engineering



Thomas W. Shaw
Aircraft Engineering



George J. Spicer
Aircraft Production



Jean F. Cronie
Gas Turbine Production



Eileen O'Donnell
Secretary's Division



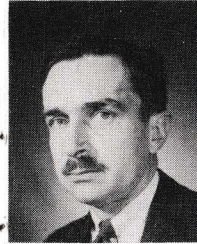
Eldene Pipher
Secretary's Division



Maud Rowntree
Plant Engineering



Betty Nedelcoff
Aircraft Engineering



Kenneth M. Molson
Aircraft Engineering



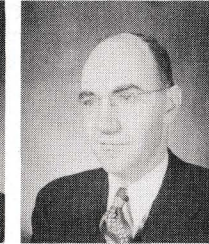
John O. Creech
Gas Turbine Production



Haswell R. Iron
Gas Turbine Production



Matthew Wotherspoon
Aircraft Production



Arthur M. Cowie
Gas Turbine Production



Joan Whalen
Standards



Edith Harvey
Aircraft Engineering



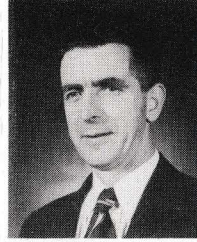
Doreen Black
Aircraft Inspection



B. Moore
Secretary to Mr. Smye



Ethel Hepton
Aircraft Engineering



Joe Sheppard
Supply



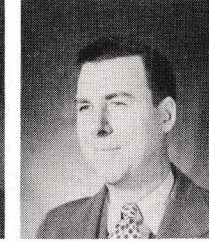
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Treasury Division



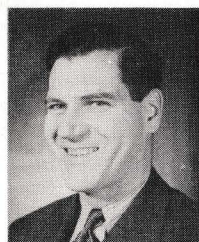
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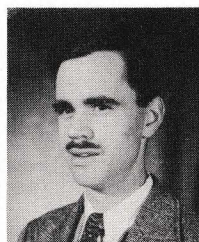
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Plant Engineering



Leo P. Clark
Plant Engineering



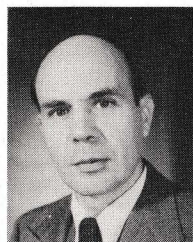
Jack Millie
Aircraft Engineering



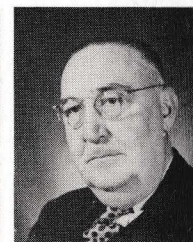
Kenneth J. Barnes
Aircraft Engineering



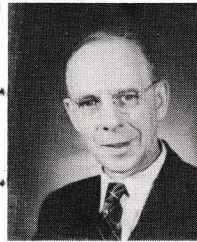
Elsie Boston
Aircraft Engineering



Roman J. Malanczak
Aircraft Engineering



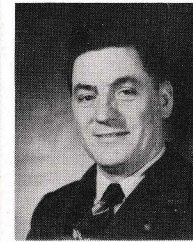
Fred W. Kischel
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George A. Highstead
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Thomas J. Tovey
Treasury Division



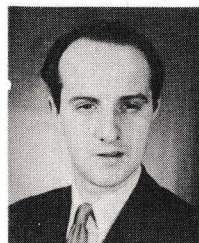
Geo. H. Cross
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Emmett A. Carrigan
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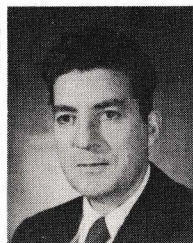
Murray Moulton
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J. Moore
Aircraft Production



Nick T. Nedelcoff
Aircraft Engineering



Reginald Whittington
Aircraft Production



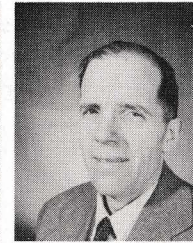
Leslie Harris
Aircraft Production



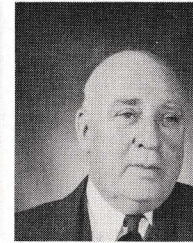
J. Boyd
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John Ferguson
Aircraft Production



Alexander Adamson
Aircraft Production



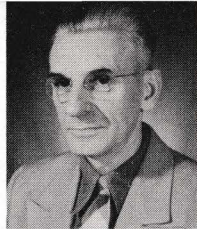
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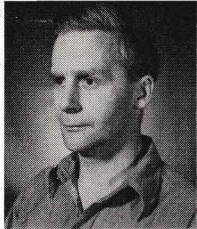
Donald W. T. Welsh
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Gordon W. Smith
Aircraft Production



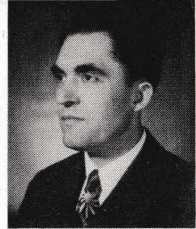
Hugh C. McCreath
Aircraft Production



Oval J. Akins
Aircraft Production



Bert E. Small
Aircraft Production



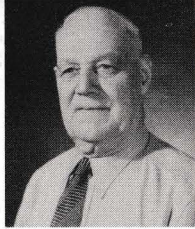
Grahame Wishart
Aircraft Production



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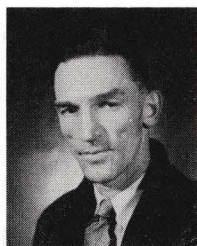
Elmer Allen
Plant Engineering



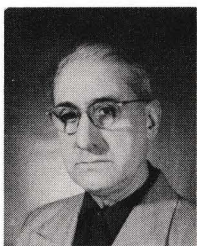
Harry Asquith
Supply



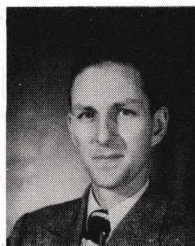
Phil Pileski
Aircraft Inspection



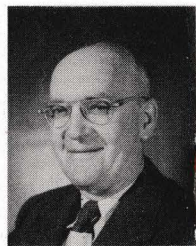
Fraser Lockhurst
Supply



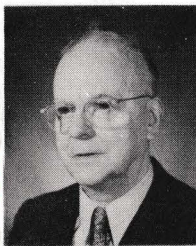
Frank Demois
Aircraft Production



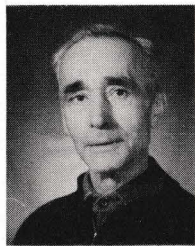
Gerald Saunders
Aircraft Engineering



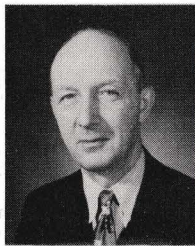
Clayton J. Lynch
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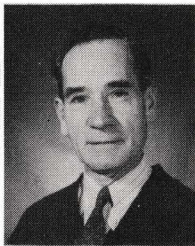
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Plant Engineering



Amedee Thibeault
Aircraft Production



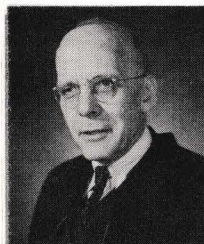
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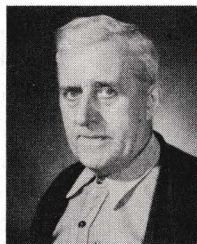
Robert T. Wood
Plant Engineering



Walter W. Smart
Supply



Thos. J. Holley
Plant Engineering



John Currin
Plant Engineering



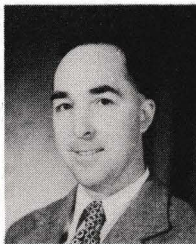
Alfred J. Perrier
Plant Engineering



James S. Graham
Aircraft Production



Stanley R. Aikin
Aircraft Engineering



Bruce Northmore
Aircraft Engineering



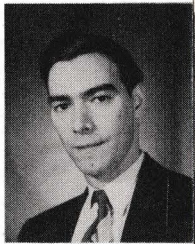
Bertram C. Beasley
Aircraft Engineering



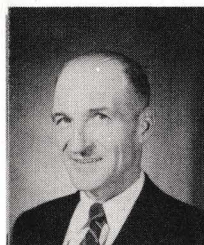
James Cleminson
Aircraft Engineering



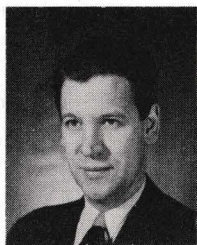
Winston Kennedy
Supply



S. H. E. Garside
Aircraft Experimental



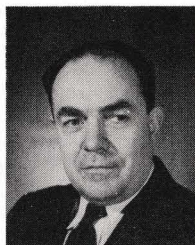
Frederick R. Davey
Aircraft Production



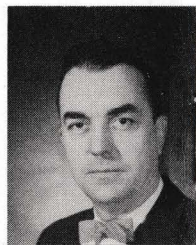
John W. Wright
Aircraft Production



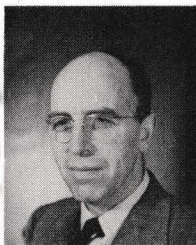
Charles H. Watts
Aircraft Production



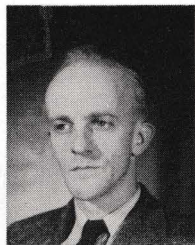
John W. Reid
Aircraft Production



R. Adey
Management Control



Cecil J. Dowling
Aircraft Production



Clifton A. Cowieson
Aircraft Engineering



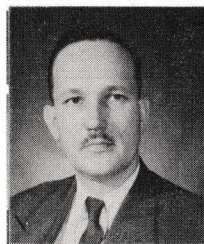
Thomas Lennie
Aircraft Engineering



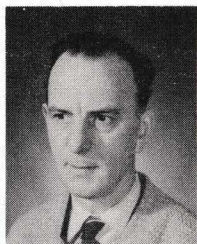
Ernest L. Cooper
Aircraft Engineering



Len Theobald
Plant Protection



Douglas W. James
Plant Engineering



William M. Benzie
Gas Turbine Production



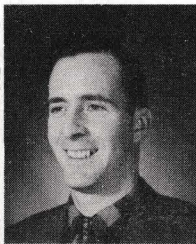
Wallace E. Smith
Plant Engineering



William Mollison
Gas Turbine Production



Douglas K. McGuire
Gas Turbine Production



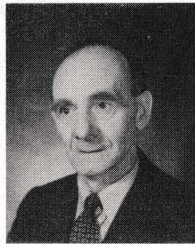
Gordon M. Stewart
Gas Turbine Production



James W. Storr
Gas Turbine Production



Eugene Moran
Gas Turbine Production



E. C. Wilkinson
Gas Turbine Production



Robert W. Watson
Gas Turbine Production



Russell W. Dickin
Aircraft Production



Lloyd C. Godfrey
Aircraft Engineering



Eric Bright
Aircraft Production



J. Leslie MacPherson
Aircraft Production



Christopher Wilson
Aircraft Production



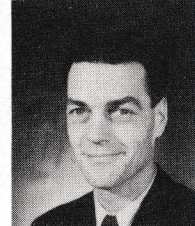
Gordon MacPherson
Supply



Clifford Bird
Supply



George Levitt
Supply



Cyril Buckley
Treasury Division



Augustus R. Hendricks
Treasury Division



George McDonald
Aircraft Production



Donald R. Glosston
Aircraft Engineering



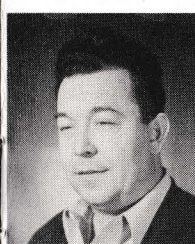
James Christie
Aircraft Production



Leith E. Balfour
Aircraft Engineering



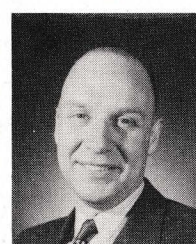
Francis W. Wood
Aircraft Engineering



M. E. Hallman
Aircraft Production



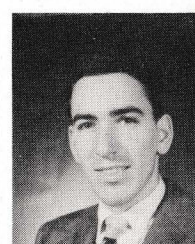
Wm. L. Connell
Aircraft Production



Jack L. Proctor
Supply



Edward W. McCrea
Supply



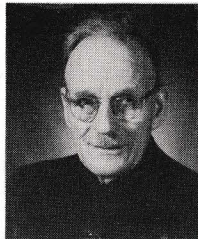
Ronald J. Stoneman
Treasury Division



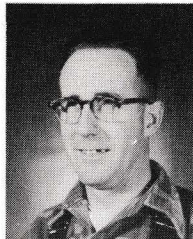
A. Bedford
Aircraft Production



Armour B. Henderson
Aircraft Production



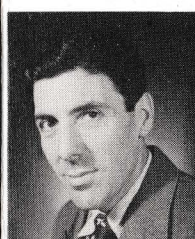
Archibald Leslie
Aircraft Production



William Somerville Jr.
Supply



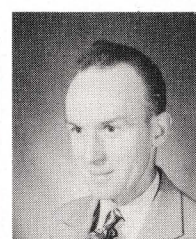
John Hughes
Treasury Division



George E. Francis
Treasury Division



Walter J. Coram
Supply



Thomas Hore
Plant Engineering



Earnest S. Kennedy
Plant Engineering



Fred Philpott
Plant Engineering



John V. Hogg
Plant Engineering



Cuthbert Daniels
Supply



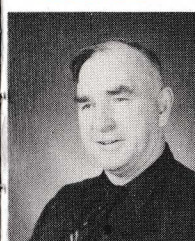
Charles C. Jones
Aircraft Production



David R. Wagner
Aircraft Production



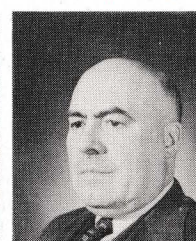
Robert Manning
Aircraft Inspection



William Moodie
Plant Engineering



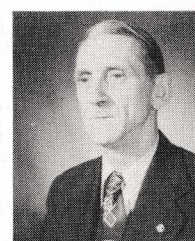
Percy H. McConnell
Supply



Oscar S. Goudy
Supply



James C. Singer
Supply



Art France
Plant Engineering



Leslie Garth
as Turbine Production



Robert A. Johnson
Aircraft Production



John D. McGeachy
Aircraft Engineering



George Funston
Aircraft Engineering



Blake G. Wheeler
Aircraft Production



F. W. Graham
Plant Engineering



Everett A. Taylor
Plant Engineering



Edward T. Wicks
Plant Engineering



Michael Rose
Plant Engineering



John T. Spencer
Plant Engineering

OVER THE FENCE

Allan North, Rotax Liaison Representative, arrived here from Montreal during January and now occupies a corner of the Material Records office.

You might think you do a lot of driving to get to work but Art Sawyer, the company limousine driver, occasionally goes the 20-odd miles to Toronto five or six times a day. His daily average mileage ranges from 100 to 200 miles and he has driven more than 140,000 miles for the company; its predecessor, Victory Aircraft, and The National Steel Car before that.

Harry Halstead, popular Rolls Royce representative here, is leaving us soon for another company posting.

Are you still wondering what the "THING" is???? Material Records think they may have the answer. Have you looked in the parking lot beside the Spares Depot lately? If you have, undoubtedly you have noticed something that is vermillion red, has a black top, black upholstery and whitewall tires. That is their latest answer to the "THING". We heard that one of the owners was asked when delivery was expected on a "Swift's Premium" sign for the side of the "THING".

AUBREY FORBES HELPS THE ORENDA BAY CAT BRING BACK ONE OF ITS WANDERING KITTENS TO ITS PACKING CASE HOME

Spring and summer seasons are going to bring on a mad rush for marriage licenses as far as Material Records Section is concerned. So far Geraldine Kendall, Lucy Attard, Doreen Barton and Larry Chapin are prospectives, and there may well be more by that time.

Material Records Section last month bid farewell to an established member, Larry Boldt. Larry who was with them for about three years, transferred to the Sales and Service Department.

Harold Cochrane, of Mill Supply Stores, had to undergo an operation to correct some difficulty he was having with one of his knees. He came through the operation A-1 and arrived home the end of January.

Geoffrey Arnold has become Dunlop service representative at Avro Canada. For some years he was employed by Dowty Equipment.



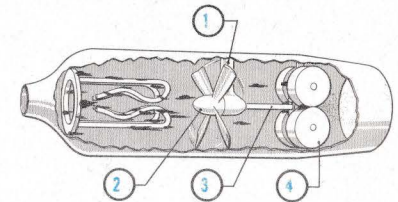
Speaking of hobbies - Fred de Jersey, of the Sales and Service Illustrating Section, and his wife Betty, Gas Turbine Design Office, have a very worthwhile one. Fred took a course in furniture designing, and he and Betty are busy designing and making furniture for their home. At this point of the proceedings they have just finished TWO bedroom suites - such ambition!

Many of the products in which Germany excelled prior to the War are now becoming available, including drawing accessories, slide rules, planimeters, drawing instruments and surveying equipment for which there are no Canadian manufacturers. Some of these slide rules are made of a material called 'Aristo' which gives a rule of equivalent strength to the usual reinforced wooden construction. It has wear-resisting properties equal to celluloid or synthetic horn, does not discolour with age and is impervious to water. The colour is bluish white and forms an ideal background for graduations. R.S. Willis can supply this equipment to Avro Canada employees at a large discount.

"Luke McGlue"
sends in a verse:

Things are humming at
Malton, / With orders that war
scares bring, / But for all-out
effort you should see / North
York tow trucks in the spring.

NEW INVENTION



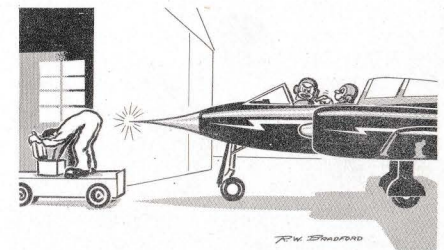
Be it known to all and sundry that ye group hereinafter called "Ye Combustion Boys", having made an ingenious device hereinafter called "Ye Carbon Grinder Upper", do lay claim to all patent rights - royalties - honour - fame and glory that may accrue to their credit.

"Ye Carbon Grinder Upper" doth consist in detail of parts 1-2-3-4.

1. Being ye suspension bracket
2. Ye windmill
3. Ye drive shaft
4. Ye rollers

As in ye combustion of inflammable liquids (A La Avro), large masses of soot doth form on ye tubes of ye vapouriser, and being shaken loose by extensive vibration peculiar to ye Avro "squirr", doth nip smartly down ye jet pipe, hotly pursued by ye expanding gases - which - together with ye odd turbine blade - doth constitute a menace to ye tester, and ye "intrepid aviator" alike, - these many hazards, however, will fade into ye past with ye advent of "Ye Carbon Grinder Upper".

This simple device when placed in ye "can", doth operate in ye following fashion, ye hot wind "passing with difficulty down ye soot choked chamber" doth turn ye windmill - which in turn doth turn ye rollers - whereupon ye large lumps of soot are crushed into fine powder - these fine particles though blacking ye testers face do no longer present a lethal hazard.



I'M QUITE AWARE OF THE TEMPTATION STIPLEY!

IN THIS CORNER

JACK "RED" KELLY
HEIGHT - 5FT. 4IN.
WEIGHT - 126
FEATHER WEIGHT
AGE - 20

JOHNNY VEITCH
HEIGHT - 5FT. 2IN.
WEIGHT - 112
FLY WEIGHT
AGE - 26

by Shirley Munshaw

Jack or "Red" Kelly is proof that you should never judge a person by his appearance, for who would think to look at him that his hobby is pugilism.

During the day, Jack works in the Accounting Department, keeping tab on Travelling Expense Claims, etc., but, in the evening, his other self takes over and he is a boxer at the Oakwood Boxing Club. When not boxing he trains at home, by running five miles a week and doing a few nightly calisthenics. Boxing has been Jack's main interest for about five years, but because of parental influence, he was not able to become too active in the ring until about six months ago, when his mother went on a vacation. Since then he has had five matches and won every one, except a fight with a former featherweight champion, which was a draw. Jack grinningly told us about the bout between him and Billy MacDonald (the favourite), which the papers acclaimed as the best fight of the night, but they didn't like the fact that Kelly had won. He said he really fought against heavy odds that night.

Another expert in the art of pugilism is Johnny Veitch, an Englishman, who works in the Turbo Sheet Metal Department. Johnny, who started his hobby while with the English army, has been boxing for nine years and out of about 50 matches has only lost one. He holds two golden gloves over a bantam and a featherweight champion.

Since coming to Canada two years ago, Johnny has had about 20 fights. He is currently boxing at the Lambert Lodge Boxing Club (Christie Street Hospital), except for out-of-town matches, which are held at the Oakwood Club (where he met Jack Kelly).

Comparing Canadian boxing to English, Johnny says that in Canada, boxers must fight to please the audience, who are all out for blood. In England, during the fighting, the audience is quiet, sustaining their yells until between rounds, but in Canada, all you hear throughout the fight is "Bash him." "Murder him.", and other blatant shouts. Johnny feels that the English boxing matches are better controlled and are appreciated more from the scientific angle than the brutal.

Avro Canada Types



DEFENSE SPEARHEAD
CF-100 FIGHTER



FIGURE UPPER
B. LITTLEFORD



SIGNER UPPER
MARTY ADAMS



DESIGN DREAMER
B. TOWLER



CABLE STITCHER
IRENE YOUNG



FACE LIFTER
LORNE COX



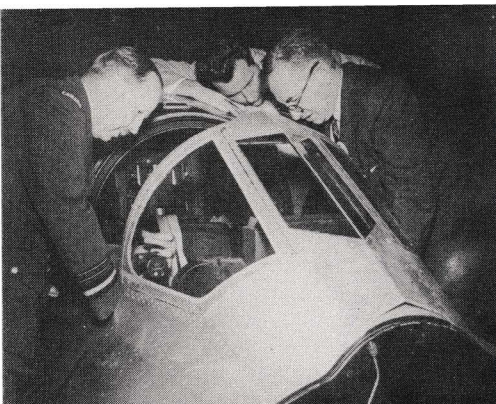
BUG REMOVER
J. SCOULAR



WIRE PULLER
FLORENA BROWN



GATES GUARDIAN
MIKE SYRON



CHIEF OF THE AIR STAFF CURTIS AND DEFENCE MINISTER CLAXTON EXAMINE THE OREDA-POWERED SABRE AT NORTH AMERICA IN CALIFORNIA ON A RECENT VISIT THERE

defense is big business

by Brooke Claxton

MINISTER OF NATIONAL DEFENCE

Defence has become today the biggest single business in Canada.

This is shown in the marked increase in defence expenditures. The expenditures four years ago were \$194,000,000. This year we have appropriated \$567,000,000 for our own defence, plus \$300,000,000 for mutual aid, and in addition other government departments are spending well over \$100,000,000 on matters related to defence, such as married quarters.

During this same period the fulltime personnel, service and civilian, engaged on defence has been increased from 50,000 to 85,000.

We are going to need more men and more money. We have speeded the programme and we shall speed it up again so that in peacetime we shall approximate more and more the situation in war when the only limitations on our defence effort were the physical limit-

ations on our productive capacity.

The objectives of our defence policy are obvious.

They are:-

First, defence of Canadian territory against direct attack, Second, discharge of undertakings by Canada under the United Nations Charter and the North Atlantic Treaty, Third, building up forces to take our part should we become involved in a world war.

All our forces must be used for one or other of the three objectives of defending Canada, building up our maximum potential or working with others in the United Nations or NATO.

In the past Defence Ministers and defence services have been mainly concerned in peacetime with making plans and organizing skeletons of forces to win a war - if a war should come.

But in the North Atlantic Treaty Organization we are

planning our defences for an additional purpose. Our design is to build sufficient strength to prevent a war. It has to be the same kind of strength we would need if the worst happened but not, of course, to the same degree.

Defence policy is not determined by the Defence Minister alone: it is government policy. Defence expenditures are Canada's premiums for peace insurance and because the risks are greater, we are having to pay a higher premium.

Our defence planning more than ever envisages the fact that we shall never fight alone. For the defence of this continent we have worked out arrangements with our United States neighbours. We are adopting U.S.-types of equipment as a practical step in standardization, about which there has been too much talk and much too little done. The gift of U.K.-type equipment for a Netherlands division to be replaced by equipment of U.S.-type, to be purchased from the United States or made in Canada, will be followed by other similar arrangements.

Our defence relations with the United Kingdom are closer than ever before. A year ago we offered to train Army officers and aircrew for the North Atlantic Treaty nations and today we have young men from Britain, Italy, Norway, France, Belgium and The Netherlands training in Canada. They know it is a good place to

come to get the job done. We are offering to enlarge this plan greatly.

Similarly we shall be making some equipment of Canadian design for all the North Atlantic Treaty Nations - another major step in standardization.

Static and territorial defences, while essential, are not what is going to prevent aggression. What will prevent aggression are the mobile forces in being which can be employed outside the continent. Once we have seen to the defence of our own territory, the place to defeat the enemy is as far away as possible.

There is also the problem of arriving at the right proportion as between the Navy, the Army and the Air Force and that balance must be related to manpower as well as materials and money. No country can ever have as much defence as it would wish and defence planning is, therefore, a question of establishing priorities and that necessarily means taking calculated risks.

Defence planning must be carried out so that we make the best use of our resources as regards manpower, materials and money.

MEMBERS OF THE CIVIL AERONAUTICS ADMINISTRATION AT WASHINGTON ARE PHOTOGRAPHED BEFORE GOING FOR A RIDE IN THE JETLINER.



In this connection it is well for us to remember that we have in Canada an immense productive capacity. During the war we had two men or women engaged in direct defence industry for every man or woman in the armed forces. During the war 70% of everything we made was used by other nations. Today we are using our skills and our capacity to make munitions and training facilities available to nations which need them in the most urgent way.

But even in Canadian defence more money is spent on manpower than on any other single element - 57%. Every man we take into the armed forces costs \$2900 a year for pay, allowances, food, clothing and other things which are the equivalent of a single wage. Since accommodation in the places where we want it is already crowded, each new man taken on requires immediately \$1,000 of new construction. The cost of his share of the equipment on himself and his unit is \$3,450 if he is in an infantry division; \$6,800 if he is in an anti-aircraft regiment; \$7,325 if he is in armour; \$10,000 if he is in the Navy; and \$16,000 if he is in the Air Force.

The cost of modern equipment is staggering.

A new anti-submarine vessel costs over \$8,000,000; a two-engine fighter, \$750,000; a single engine jet interceptor over \$400,000; an anti-aircraft gun with fire control equipment over half a million; a new air-

field with runways, buildings and equipment, \$20,000,000; a radar station with buildings and equipment, \$3,000,000.

This will have a big effect on the civilian economy.

Perhaps I can bring this home with one or two figures.

Since the beginning of the current fiscal year on April 1, 1950, the Department of National Defence has placed orders for equipment and construction totalling \$701,177,720.

Now observe that in the year before the Second World War the Department spent \$34,432,839, and during the first year of the war we spent \$125 millions.

What this means for Canadian business from coast to coast is shown in the lists of contracts now being published each week by Canadian Commercial Corporation. Eighty thousand contracts have been let in nine months.

The impact of these additional demands was not immediately felt in the Canadian economy, for in many cases preparatory planning and tooling require some months before actual production gets under way. Defence expenditures are not spread evenly over the whole economy but tend to concentrate on industries that make use of such basic materials as steel, aluminum, nickel and other non-ferrous metals, creating shortages of materials and services essential to civilian production as well as to defence requirements.

The figures given above totalling \$701,177,720 for equipment and construction in the first nine months of the fiscal year do not include anything for other countries.

Nor does the total of \$701,177,720 include anything to be met out of the \$300,000,000 appropriated by Parliament last Session for assistance to other countries. First big cut out of this is some \$60,000,000 to be spent on U.S.-type equipment, made in the United States or Canada, to replace the division's equipment shipped in November to The Netherlands.

The equipment for another division is being offered to the North Atlantic Treaty countries and will be delivered when the government receives advice from the NATO Council Deputies and Standing Group as to whom it should go.

Proposals made by Canada

GROUP NEWS AND VIEWS

by Ian Scott-Buccleuch

Air Service Training is carrying out the basic training of RAF navigators. The first course, which includes day and night operations, began early in February.

A.S.T. are presently working on the following flying test bed installations:- a Python-Lincoln; a Derwent with afterburner-Lincoln; and a Swedish

of things that we could best manufacture for other countries, as well as ourselves, including radar and wireless sets, medium guns and aircraft, will cover all the \$300,000,000 already voted. So that these orders will further cut into supply.

The programme I shall put before this present Session of Parliament will leave no doubt in the minds of anyone that business as usual is over. We are going to have far more business than usual and it is going to put pressures on the resources of manpower and raw materials and productive capacity of this country. Just what this will amount to can be guessed from the contrast between the orders placed of \$700,000,000 in the last nine months and the expenditures of \$125,000,000 during the first year of the Second World War.



HERE SIR FRANK SPRIGGS, MANAGING DIRECTOR OF THE HAWKER-SIDDELEY GROUP AND CHAIRMAN OF ARMSTRONG SIDDELEY MOTORS, OUR ASSOCIATE, SIGNS THE AGREEMENT PERMITTING CURTISS WRIGHT TO MANUFACTURE UNDER LICENSE THE SAPPHIRE, PYTHON, MAMBA AND DOUBLE MAMBA ENGINES, ON HIS RIGHT IS H. T. CHAPMAN, MANAGING DIRECTOR OF ARMSTRONG-SIDDELEY, AND ON HIS LEFT, W. T. JOHNSTON, DIRECTOR AND SECRETARY

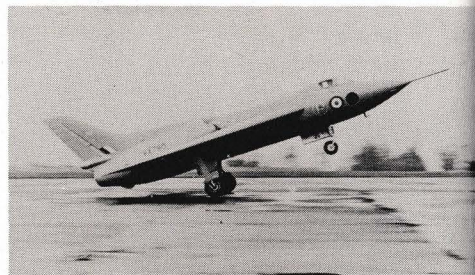
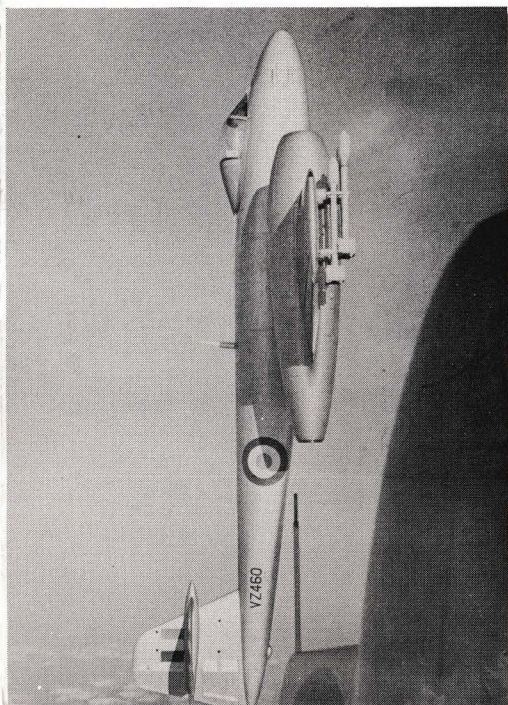
jet engine in a Lancaster. They were also responsible for the famous Sapphire-Meteor.

Hawksley Construction, originally A.W. Hawksley Ltd., is said to be turning over part of its production facilities to the construction of jet engines.

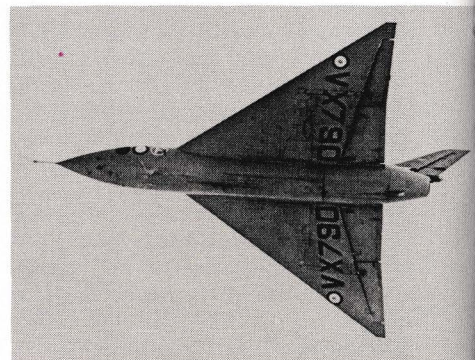
An aircraft such as the Avro Shackleton G.R.1 whose role it is to guard the Atlantic sea routes is one of the most important weapons of the Atlantic Pact nations.

As it is known that the Soviet submarine fleet is the largest in the world, larger than that of the Germans in World War II, let us hope there are many Shackletons being built.

GROUP PHOTOGRAPHER CYRIL PECKHAM TOOK THIS SUPERB SHOT OF THE GLOSTER METEOR



THE AVRO MANCHESTER 707B HAS NOW MADE MORE THAN 100 RESEARCH FLIGHTS



A FLIGHT VIEW OF THE 707B, BRITAIN'S FIRST DELTA-WING AIRCRAFT



THE AVRO MANCHESTER SHACKLETON

Well-Travelled Dog

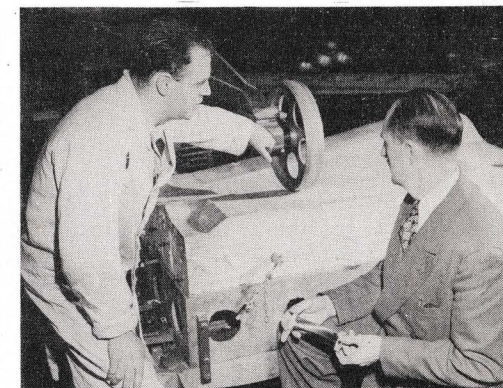
Jock o'Hilltop, scottie owned by J.E. de Lengerke, Avro Canada's representative for Switzerland and Italy, is an extremely well-travelled dog. An excellent sailor, he crossed the Atlantic on a Spanish liner and has been on many pleasure cruises up the Saguenay. He has travelled throughout the United States, Spain, Portugal, France, Switzerland, Austria and the Principality of Liechtenstein. He has been to Italy many times, but does not like it there because he has to wear a muzzle which he considers beneath his dignity. But he loves Italian spaghetti. He has travelled by automobile, train and boat and runs after his master when he goes skiing. He now lives in Switzerland and is hoping the Jetliner may soon come to Europe and give him a new experience by a flight in the stratosphere. Jock also wants to renew acquaintances with Canadians. He was born in Guelph over ten years ago but is looking forward to years of travel yet.



AVRO CANADA INVENTIONS



MORE THAN 200 INVENTIONS BY AVRO CANADA PERSONNEL HAVE PASSED THROUGH THE HANDS OF CHARLES LUTZMAN, OUR PATENTS OFFICER. HERE HE POINTS TO THE JETLINER'S UNDERWING REFUELLING VALVE, WHILE ITS INVENTOR K. KJESKI LOOKS ON



J.O. CREEK EXAMINES HIS BRAIN-CHILD, THE PANTOGRAPH TURBINE-BLADE COPIER, WHILE OPERATOR RAYMOND HEPBURN LOOKS ON. AN ARTICLE ON OUR INVENTIONS APPEARS IN THIS MONTH'S "CANADIAN AVIATION"



INVENTOR GEORGE KELK SUBMITS ANOTHER INVENTION TO BOYD FERRIS OF THE PATENTS SECTION. BOYD, INCIDENTALLY, IS ASSOCIATE EDITOR OF "AVRO NEWS"