

O DEATH

WHERE IS THY THING?

This silly song's been going strong
Since eighteen ninety-three.
For years and years it's plagued our ears
And I'm sure that you'll agree
It's time to try and find the guy
Who started all this rot,
Who wrote a tune with a "boom, boom, boom,"
And never told us what;
Who wrote a tune with a "boom, boom, boom,"
And never told us what.

We searched for him through thick and thin
We looked most every place
In Parliament and tenement
We sought his stupid face.
When hope was past we came at last
Up to a mental home:
In a padded room shouting "boom, boom, boom,"
Was the author of the poem;
In a padded room shouting "boom, boom, boom,"
Was the author of the poem

We beat his head until he said
"Now fellas let me go.
You've never guessed what's in that chest
But now you're going to know."
He raised the lid to show what's hid
Beneath those massive locks.
"You silly ass, it's a looking glass
In the bottom of the box.
You silly ass, it's a looking glass
In the bottom of the box."

C.A. Hains

AVRO CANADA
News

FEBRUARY 1951



News

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HAWKER SIDDELEY GROUP

ALL MATERIAL IN THIS MAGAZINE MAY BE
REPRODUCED. ACKNOWLEDGEMENT OF
THE SOURCE WOULD BE APPRECIATED.

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AVRO VIEWS

We had a letter from Eldon Frye, manager of Convair employee activities, which we think lays it on a bit too thick. As editor of a magazine of similar size, he says he appreciates our problems. The Staff is said to be doing a fine job and the magazine to be getting better all the time. "A special hooray for Len Thornquist's art," he writes. "I like the way you salt the whole package with humor, too. I'll wager the 'News' is doing a big job of welding the Avro unit into a hard-fighting, cheerful unit."

William Courtenay, air correspondent of the London "Daily Graphic," used our story on men of the iron ring.

Rid Dowding's "Tints and Hips on How to Jeta Make Engine," which first appeared in Avro News, is tickling everyone's fancy from diplomat to engineer. It was recently copied in the Newsletter of the U.K. Air Attache at Washington and by "Bucket Bitchings," organ of Austenal Laboratories. Our verse, "To the Ladies," was also copied by the latter.

A new contributor, C.A. Hains, won the prize last month for his humorous verse.

COVER

Our Jetliner continues to break records. Last month it slashed Toronto-Chicago, Chicago-New York and Toronto-Winnipeg flight times by about half; set a new U.S. transport ground speed record; reached a record height for transports in the U.S.A.; and made a new transport rate-of-climb record.

2

С ПРАЗДНИКОМ!

Dear Uncle Joe:

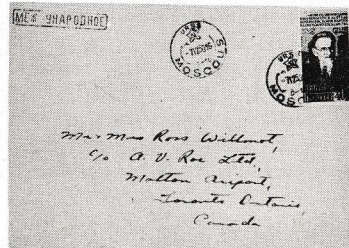
Thanks for not opening the greeting card sent to one of us at Avro Canada by ordinary mail from friends in Moscow. We were agreeably surprised, particularly because the communist "Canadian Tribune" says we are making Orenda-powered CF-100 fighters in preparation for war. Believe us, we are only making them for our own defence because we are afraid of you.

Another letter recently crossed our desk from a country formerly behind the Iron Curtain you have put around your territory. It was from a last-war Yugoslav guerrilla who wanted a "weather-coat." It seemed particularly fitting that one of our Battle of Britain fighter pilots should send him his RAF greatcoat.

If it wasn't for your Iron Curtain we at Avro Canada would probably be sending your people similar presents. Some of us met your people as allies during our common fight against the Nazis and we liked you. Many of our ideas are completely at odds but we think there still is a basis for friendship between us.

We hope our unopened letter is only the beginning of a long series of uncensored relationships between our people and yours. We think you no more want war than we do. You must realize that we are economically much stronger than you are and that we are willing to fight to the last for our democratic rights.

May we send back to you the Russian greeting on our card from Moscow meaning "happy holiday."



UNOPENED
LETTER
RECEIVED
THROUGH THE
RUSSIAN MAIL
SERVICES
FROM MOSCOW

NATO

More than 100 young aircrew students from five European nations are working towards their wings at RCAF flying stations, evidence of one of Canada's contributions towards collective security under the North Atlantic Treaty Organization (NATO).

These fledgling pilots and navigators from Norway, the Netherlands, Belgium, France and Italy and are scheduled to receive their wings this spring.

The pilots, who slightly outnumber the navigators, are taking the regular basic flying training given by the RCAF at its No. 1 Flying Training School at Centralia, Ontario. Instruction is given on single engine Harvard trainers, used during the war as an advanced trainer by the RCAF, and which for the last several years has served as an ab initio trainer. RCAF students, instead of learning to fly on a light aircraft and then graduating to a more advanced plane such as the Harvard, start on Harvards. This system was tried briefly towards the end of the Second World War and was adopted for the regular postwar training program. The RCAF finds that it pays off in many ways.

Pilot instruction is not limited to actual flying, and includes sessions in the link

trainer, which simulates flying conditions without leaving the ground, and courses in airman-ship, meteorology, navigation, and communications.

Navigation training is given at the Air Navigation School at Summerside, on Prince Edward Island. The student navigators go through an arduous and complex course qualifying them to guide an aircraft supplementing their ground classroom work by airborne training in specially-fitted Dakota aircraft.

Before going to Centralia or Summerside the students take a six-week pre-flight course at London, Ontario. Purpose of the pre-flight training is to minimize handicaps which might result from sudden entry into the intensive aircrew training courses under conditions unfamiliar to the students from abroad. Included in this training is a short technical vocabulary training, for misunderstandings in the air



NORWEGIAN, FRENCH, BELGIAN AND ITALIAN
STUDENT PILOTS ON THE CURRENT NATO
COURSE AT LONDON SHOW EACH OTHER
THEIR HOME TOWNS ON A GLOBE

AC. 1999.1.10

concerning the instructor's directions could prove dangerous.

RCAF officers connected with the NATO training, as its called, point to values over and above the obvious assistance that Canada is giving by contributing aircrew training facilities. The training scheme is on a small scale but it represents a big idea. The students are not only learning about Canada, but in most cases are learning first-hand about one another.

For most of them it is their first opportunity to get to know young men of their own age from those nations which would likely be allied with theirs in event of war. The leaders of the NATO nations have pointed out the obvious necessity for the member nations learning to act as a team in the over-all defence setup. The aircrew boys being trained in Canada

are doing just that. Once actual training begins, there are no varying nationalities at Centralia or Summerside; there are merely student pilots or navigators, all treated alike.

When the young men from the five nations represented return home they'll take more with them than a set of gleaming new wings and an understanding of Canada and its people. They'll take with them an understanding of their comrades from other European nations. It will be an understanding of the sort that all the NATO nations will be counting on if war comes.

Some day perhaps if the CF-100 is accepted by NATO nations as a standard all-weather fighter, these young men also will be flying an all-Canadian aircraft painted with the national markings of their own country, another example of NATO co-operation.



ART CANNELL

Gets the Bird

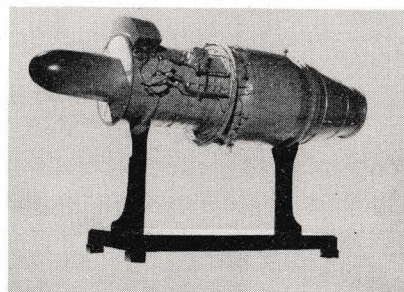
Several weeks before Christmas, Jack Fletcher along with Bill Hancock and Charlie Bannister, all of loft inspection, designed a very tricky puzzle. The idea was to guess the last names of various Avro Canada personalities from various given clues. A turkey was offered as a prize and the Lofting Department took up the challenge in a big way. The puzzle was tough and the boys were given two weeks to work out the solutions. A lot of thought was expended, enthusiasm ran high and very high scores were made by most. However, Art Cannell and Earl Read tied with perfect scores and a play-off was arranged, which was finally won by Art Cannell. Was the turkey dressed? It certainly was if nail polish and red ribbon count for anything.

Why not try the puzzle yourself? The answers will be found on page 14.

1. He hammers for a living.
2. Playwriter.
3. The call of a Scotch crow.
4. Tool or instrument used for trimming.
5. A pastoral pipe.
6. A water pass.
7. Assist to ascend.
8. He was once a king.
9. A matrimonial ceremony.
10. A worker in the fields.
11. A Canadian Prime Minister.
12. A race of people.
13. A make of bed.
14. A place of meeting.
15. A tonsorial craftsman.
16. The first name of a famous aircraft firm.
17. Without the last letter can be found on a farm.
18. Something you do in the garden.
19. A confederate general.
20. This fellow handles bolts but he's far from nuts.
21. A Cardinal in England from 1801 to 1890.
22. Hod rag and let us dance.



NOW WHAT EXPERIENCE
HAVE YOU HAD IN WINDTUNNEL WORK?



SHOWN HERE FOR THE FIRST TIME IS THE NEW ARMSTRONG SIDDELEY VIPER JET ENGINE WHICH IS BEING USED TO POWER THE AUSTRALIAN RADIO-CONTROLLED PILOTLESS AIRCRAFT. WITH AN OVERALL DIAMETER OF ONLY 20 INCHES AND A WEIGHT OF 400 POUNDS THE VIPER, NEVERTHELESS, HAS AN ASTONISHING THRUST OF 1,500 POUNDS. THIS WEIGHT TO THRUST RATIO, NEARLY 4 TO 1 IS A REMARKABLE BRITISH ACHIEVEMENT



AROUND THE GROUP

S. D. DAVIES, CHIEF DESIGNER OF AVRO MANCHESTER, SHOWS A NEW TERMINAL BLOCK TO THE OTHER MEMBERS AT A HAWKER SIDDELEY TECHNICAL MEETING. LEFT TO RIGHT: SYDNEY CAMM, CHIEF DESIGNER, HAWKER; SIR ROY DOBSON, AVRO CANADA PRESIDENT, AVRO MANCHESTER MANAGING DIRECTOR AND GROUP DIRECTOR; T. O. M. SOPWITH, CHAIRMAN OF THE GROUP; SIR FRANK SPRIGGS, MANAGING DIRECTOR OF THE GROUP; W. SAXTON, DIRECTOR AND CHIEF ENGINEER, ARMSTRONG SIDDELEY; MR. DAVIES; R. W. WALKER, CHIEF DESIGNER, GLOSTER; AND R. JONES, CHIEF METALLURGIST HIGH DUTY ALLOYS



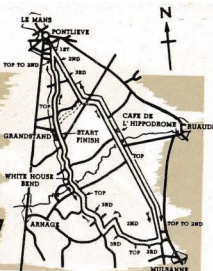


MOTOR

by A. H. de Solla

PRODUCTION CONTROLLER,
GAS TURBINE DIVISION

RACING



Original length of circuit was 11 1/4 miles but present length using dotted cut-off is 8 1/4 miles.
The sequences of gear changes shown was used on the winning Bentley in the 1927 race.

Motor racing is not merely a spectacular method of proving how fast one can drive, although there are, of course, certain types of racing which are purely spectacular, such events being almost invariably of short duration. This article, however, is not concerned with racing of this kind which, in the opinion of the writer, appeals to the type of mind that enjoys a bull-fight because someone is certain to get hurt and bleed!

Long-distance racing, particularly for standard or near-standard factory models of sports car type, is a highly developed science in which long-term planning, accurate thinking, meticulous preparation, and first-class team work are essential fundamentals.

It began in earnest in Europe in the 1920's and in those days many famous British firms contributed substantially to the establishment of the sport. Possibly the most important race in those days (still an outstanding annual event, incidentally) was the Twenty-Four Hours Race at Le Mans in France. This event started at 4.00 p.m. on a Saturday afternoon in June and

continued throughout daylight and darkness until 4.00 p.m. on the Sunday. The course was specially closed for the event but, as will be seen from the illustrations the race was run on roads normally used by every-day traffic, and drivers faced severe handicaps in driving at racing speeds on roads not designed for such conditions. Imagine the problem of keeping a team of, perhaps, three or more cars, operating in summer temperatures at speeds of over 100 m.p.h. much of the time, for a period of twenty-four hours!

There is scarcely any thrill in human experience comparable with winning a big race fairly in face of great odds -- truly one "walks with the gods". Conversely, to lose a race through one's own disobedience or stupidity makes one feel the lowest of the low. Both these experiences come within the lot of racing drivers at one time or another -- the great man learns from both and maintains his equilibrium under either.

Now, having given a glimpse of the ultimate objective, let us go back to the beginning and follow the activities of the own-

ers of the team of cars to be entered. It is important, too, to realize how much was at stake, not only financially, but also the prestige and progress of the company manufacturing the cars.

It is difficult to emphasize the tremendous amount of work that goes into the preparation and building of a team of racing cars. The regulations governing any deviation from standard equipment were very severe and most strictly enforced, and consequently, the care and skill with which the cars were built and prepared were deciding factors in their ultimate performance. Constant building, testing, stripping, rebuilding and yet more testing, went on for months, and mechanics who were to service the cars during the event became, during this period, familiar with literally every nut and bolt throughout the car.

Among points of interest in the race regulations was a requirement that, with the exception of such items as fuel, oil, water and spare tires and wheels, no repairs or replacements could be performed during the race except with tools, equipment, and spares carried

on the car throughout the duration of the race. This requires a great deal of ingenuity and study as to the most accessible means of carrying such items, and reduction to the lowest number of essentials without undue risk of being out of the race for lack of foresight. Such components as fuel systems, pipe lines and electrical services were invariably built into the racing cars in duplicate, failure merely requiring isolation of the faulty equipment and switching over to the reserve

The 24-hour period involves at least six or eight pit stops for replenishments, adjustments, or change of drivers, and much attention had to be given to reducing time lost by stops to an absolute minimum. Quick release radiator, oil, and fuel tank caps of large orifice size were developed through many years of trial and error. Quick lift jacks for lifting front and rear end of cars for wheel changes, special tools for handling hot spark plugs, and other such items, all played a vital part in saving time. At times during such a race, there could be less than 15 minutes separating the leading car from possibly the one running in 20th place, and faults in facilities during pit stops could easily destroy the value of skilful and courageous driving, losing the entrant huge sums of money as well as seriously damaging the maker's prestige.

This leads to another point of major importance -- the training and direction of pit

At Home

personnel to handle a car when it stops during a race. This calls for hours and hours of practice during the period prior to the race itself. It is amazing how many different ways there are to refuel a car; such problems as air locks, flow of fuel, weight of container (no pumps were allowed) avoidance of splashing on to hot exhaust pipes with risk of fire, all had to receive study and practice. How would you like to lift with jacks a car weighing two tons, change all four wheels, pour, from containers you have to hold, 30 or 40 gallons of fuel, check and replenish oil and water levels, adjust brakes and shock absorbers and have the car all ready for relief driver to move off in about $2\frac{1}{2}$ minutes from the time the car arrived at the pit? This was considered a fair performance in the days of which I write, and it can be done. -- Three men only were allowed!

In addition, the team of cars and drivers has to be briefed and controlled by the team captain. This requires the creation of a race plan, another vital link in the achievement of the race objectives. It is often erroneously supposed that a driver of a racing car, at the start of a race of this nature, receives express or implied instructions to "drive like Jehu and don't let anyone pass you." Nothing could be farther from the truth. The race plan involves a most accurate and intelligent study during practice periods, as well as during the

race itself, not only of the performance of one's own cars and drivers, but also of one's rivals. The latter is as important, and certainly more difficult, since co-operation from one's rivals can hardly be expected and, if granted, is highly suspect since they are generally out to tell you as little as possible and learn from you as much as they can.

Drivers are instructed both before and during the race as to the plan of action. To keep them informed during the race itself, a system of pit signals, easily read and understood by one's own drivers, but completely unintelligible to rival teams, is required. Much scope for ingenuity here, particularly as it is necessary to devise variations for each race in order to keep rivals guessing.

On a road circuit of about 12 miles (such as that used at Le Mans) by the time the race has been on for an hour or two, it is impossible for any driver to know his position in the race with any accuracy and he must rely entirely on pit signals to keep him informed. Changes of tactics during a race, made necessary by failures in one's own team or among rivals, must also be made known by pit signals; all such signals and all tactical decisions are directed by the team captain from the pit itself. Timekeepers within the pit record the lap speeds and positions not only of the team cars, but also of rival cars near enough to threaten the success of the objective.

Then there is the driver himself -- what kind of a man should he be? He needs, of course, out-of-the-ordinary skill and courage, but the successful long-distance racing driver needs far more than that. He must understand his car thoroughly and be immediately sensitive to any change of efficiency. He must, above all, be a man who obeys the orders of the team captain without any question whatsoever. This is probably the most difficult part of his job, operating as he is at risk of his life most of the race and surrounded by all the thrill and glamour of the contest.

Well, there is a glimpse of sports car racing, and -- as you can see -- it utilizes and develops individual effort and initiative, it encourages and makes necessary painstaking and accurate thinking, it calls for long term planning by flexible minds able to adjust themselves to the needs or unexpected developments of the moment, and it demands the unquestioning loyalty of every member of the team. It would be hard to find qualities more vitally necessary to the success of the important projects on which we at Avro Canada are engaged. So, the next time you hear the expression "motor racing", don't dismiss it in your mind as "just another bull-fight". We, all of us, owe a tremendous debt of gratitude to the men who established and developed this great sport to its present-day efficiency.



JOHN ELLIOTT EXAMINES THE LUNCH PAIL OF HIS DAD, HERB, ONE OF OUR CARPENTERS. HIS FAMILY WAS WRITTEN UP IN THE MONTREAL "STANDARD"



CUB SCOUTS IVAN AND BILLY WITH BROTHER LARRY WHO IS NOT YET OLD ENOUGH TO JOIN. THEY LIVE IN ONE OF THE WARTIME HOUSES IN MALTON



OUR CAFETERIA LINE UP HAS NOTHING ON THIS. EACH WEEK THE ELLIOTTS EAT 36 TARTS, 48 MUFFINS, 10 DOZEN EGGS

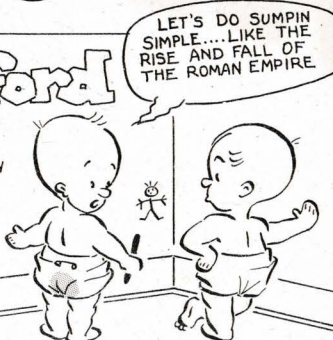


MRS. ELLIOTT SHOWS IVY AND BILLY HOW TO EMBROIDER. OF HER SIX CHILDREN, THERE ARE TWO SETS OF TWINS

Tale-Spin by Al Ponman

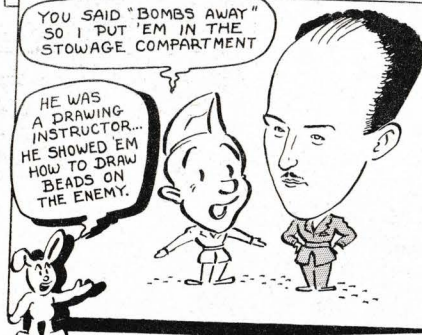
R.W. "Bob" Bradford

HERE'S SOMETHING ABOUT THE MAN WHOSE CARTOONS YOU HAVE, NO DOUBT, ENJOYED AND ADMIRER. BOB IS AN ILLUSTRATOR IN THE TECHNICAL ILLUSTRATION DEPARTMENT. HE IS A TWIN WHOSE BROTHER ALSO IS A COMMERCIAL ARTIST WITH THE DRUG TRADING COMPANY IN TORONTO. THEY COLLABORATED ON THEIR FIRST JOB AT AN EARLY AGE, WHEN THEY DECIDED TO "RE-DO" THE WALLS OF THEIR NURSERY. THIS WAS BY NO MEANS A COMMISSIONED ASSIGNMENT, BUT IT DID LEAD TO BIGGER AND BETTER PROJECTS...WE UNDERSTAND THAT THE WALLS OF A CHURCH WERE AMONG THE MOST IMPORTANT MURALS COMPLETED BY BOB AND BROTHER JIM BRADFORD.



YOU SAID "BOMBS AWAY" SO I PUT 'EM IN THE STOWAGE COMPARTMENT

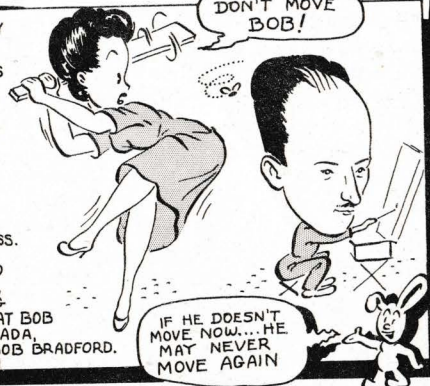
HE WAS A DRAWING INSTRUCTOR... HE SHOWED EM HOW TO DRAW BEADS ON THE ENEMY.



ART-WORK AND AIRCRAFT HAVE ALWAYS BEEN CHIEF INTERESTS IN BOB'S LIFE. BEFORE HE LEARNED TO FLY AT THE AGE OF 17, HIS TIME WAS SPENT DESIGNING AND ILLUSTRATING MODEL AIRCRAFT FOR THE EASYBUILT MODEL AIRCRAFT COMPANY. THE WAR OFFERED BOB A CHANCE TO CONTINUE FLYING AND HE JOINED THE R.C.A.F. AS A STAFF PILOT. HIS EXPERIENCES, WHILE HE WAS CONNECTED TO THE R.A.F., INCLUDED FLYING ANSON AND OXFORD AIRCRAFT ON TRAINING FLIGHTS OF NAVIGATORS. BOB'S FIELD OF ACTIVITIES WAS THE IRISH SEA AND THE SURROUNDING COASTS. HIS ONLY "CLOSE-CALL" WAS A COLLISION AT NIGHT INTO A CUMBERLAND MOUNTAIN, WHICH NECESSITATED HOSPITALIZATION FOR A PERIOD OF 4 MONTHS. THIS INCIDENT, HOWEVER, DID NOT DAMPEN BOB'S ARDOUR...HE WENT RIGHT BACK IN FLYING UNTIL THE END OF THE WAR.

DON'T MOVE BOB!

HERE AT AVRO CANADA, BOB HAPPILY HAS BEEN ABLE TO COMBINE HIS INTEREST IN AVIATION WITH HIS ARTISTIC ABILITIES. HIS LEISURE HOURS ARE SPENT WITH CANVAS AND OIL PAINTS. MRS. BRADFORD LIKES TO ACCOMPANY BOB ON PAINTING JAUNTS AND ALTHOUGH RUTH FEELS HER CHIEF FUNCTION IS MERELY BEATING OFF WOULD-BE PESKY INSECTS, BOB IS OF THE OPINION THAT HE COULDN'T POSSIBLY PRODUCE THE TYPE OF OIL PAINTING HE DOES, WITHOUT RUTH'S HELPFUL AND CONSTRUCTIVE CRITICISM. SOME TIME, TOO, IS SPENT DESIGNING AND BUILDING MODEL AIRCRAFT FOR WHICH BOB STILL HAS AN INHERENT FONDNESS. WITH PLEASANT MEMORIES OF TAILLESS MANX CATS AND IRISH SEA FOG, BOB BRADFORD IS, AND HAS BEEN FOR THE LAST 2 YEARS, COMFORTABLY SETTLED IN A JOB COMBINING THESE PLEASURABLE HOBBIES...A JOB THAT BOB CONSIDERS MOST SATISFYING. AVRO CANADA, UNDOUBTEDLY, IS EQUALLY SATISFIED WITH BOB BRADFORD.



Flat-Spin by R.W. Bradford



AFTER ALL - I HAD TO GET EVEN WITH AL!



I THINK IT'S ABOUT TIME WE GOT A LOOK AT THE MAN WHO CREATES THE REVEALING AND HUMOROUS FEATURE, "TAILSPIN". AFTER HIGH SCHOOL IN MONTREAL, CARTOONIST AL PONMAN, WENT ON TO COLLEGE THERE AND ASTOUNDED THE PROFESSORS (THEY WERE ASTOUNDED AT HOW LITTLE HE KNEW, HE SAYS). HE WASN'T EXACTLY AN HONORARY STUDENT - HE MISSED SO MANY LECTURES HE WAS CONSIDERED AN HONORARY STUDENT. HE PROCEEDED TO GIVE HIS ALL TO THE FOOTBALL FIELD (HE THOUGHT HE'D BETTER GIVE SOMETHING!) SHORTLY AFTER HE DECIDED TO GO TO NEW YORK TO STUDY ART, GOT SIDE-TRACKED AND BECAME ASSISTANT TO A WINDOW-DRESSER. AFTER WORKING-HOURS, HIS STUDY OF ANATOMY WAS FAITHFULLY KEPT UP AT BILLY MINSKY'S BURLESQUE. HE RETURNED TO MONTREAL AND SOLD HIS FIRST CARTOON. AFTER SEVERAL NONDESCRIPT JOBS HE WENT TO WORK WITH CANADIAN VICKERS, AND THEN WOORDIYN AVIATION. WAS INSPECTOR THERE ON FINAL ASSEMBLY SERVICE MANUAL FOR NORSEMAN ILLUSTRATION DEPARTMENT, ILLUSTRATING SERVICE MANUAL FOR THE ONTARIO AIRCRAFT. AT WAR'S END, HE DECIDED TO STUDY ART SERIOUSLY AT THE COLLEGE OF ART. WHEN INTEREST IN RADIO DEVELOPED, HE TOOK A POSITION AS RADIO ANNOUNCER AT CKL (KIRKLAND LAKE), THEN WENT TO BRITISH COLUMBIA AND DID ANNOUNCING AT CKLN (NELSON), CJAT (TRAIL), AND CJVI (VICTORIA) AND CAME BACK EAST TO CKOC (HAMILTON). HE JOINED THE LOFTING DEPARTMENT AT AVRO CANADA IN MARCH OF 1948.

OVER THE FENCE

Berniece Dorst regretfully left us early this month after almost ten years service at the plant extending back through Victory Aircraft to National Steel Car days. Recently as Murray Willer's secretary, she has become known to hundreds throughout the plant and many of us will miss her as a friend as well as a very efficient co-worker.

Bob Norman, of Sales and Service Division, as well as spending his spare time in building miniatures of everything from aircraft to breweries, does electroplating "down cellar". He has an artistic flair for electroplating such things as baby's first pair of boots, model airplanes for ashtrays, keepsakes etc.

We hear that Bob Warren who left the Gas Turbine Division to seek his fortune in England has found a small share of it doing supersonic research work at Armstrong Vickers. His wife who graduated with him from Varsity a couple of years ago has also landed a good job as an industrial psychologist with Hoover, fortunately for Bob's prestige at only ten shillings a week less than he is earning.

Bill Waterton, AFC and Bar, who carried out initial flight tests on the CF-100, is now back at his job as chief test pilot of Gloster in England.

Seems Ann Ritchie's flying enthusiasm is contagious. Jean Williams who works for Chas. Luttmann, Patents Officer, successfully graduated from an instruction course to her first thrilling solo flight and is now heading for her Pilot's License.

Eric Peckham, Stan Harper and Jack Nesbitt are now on a six-week tour of the United Kingdom looking for skilled workers for Avro Canada. The Canadian Government is paying part of the cost of bringing these workers here and Avro Canada is helping to obtain lodgings for them.

Morris Nix, Production Manager of the Gas Turbine Division and an expert automobile racer, had his car completely wrecked and had to spend several days in hospital when another driver cut in front of him on the highway last month. It can happen to the best of us.

Did you know that there are about 663,600 rivets in the Jetliner and 484,860 in the CF-100 fighter. That's even more than in the Lancaster which had an estimated 409,000.

Group Captain E.C. Luke in a recent "Roundel" article said the CF-100 and Sabre fighters "call for a bow from those engineers and technicians, service and civilian, who worked and wait for the day when their jobs shoot off the runway, airborne and successful, to mark a new point in the Canadian aeronautical history. This was their year, a grim warning to any aggressor and a preview of the future."

Congratulations to David R. Wallin, of the St. Louis, Missouri, "Despatch," whose color photograph of the Jetliner won him a first prize in the Trans-World Airline's mid-century writing and photographic competition. This photograph appeared in a full-color layout in the August 27 "Pictures."

Eileen Rice, of the Accounting Department, was apparently so deeply touched by that popular song "Christmas in Kil-arney" that she couldn't take it any longer. With practically no notice she packed her bags and headed by TCA for the old homeland, leaving us gasping and envious. Of course everyone in Belfast was very surprised to see her and the old gang was rounded up for a big party. We hear that old heart interests tried to keep her there, but Canada finally won out and we are happy to have Eileen back with us.

Some 40 employees in the aircraft production shop recently brought sunshine to the Lyndhurst Paraplegics Lodge by giving each patient a present at a gay party, the refreshments for which were also supplied by our employees.

A European delegate to the Brussels meeting of the Atlantic treaty organization said that "if there were plenty of CF-100's in Europe now, the danger of war would be far less."

The RAF greatcoat Michael Cooper-Slipper, DFC, our test pilot, wore during his adventurous career as a last war fighter pilot, is presently being worn by Penovic Nikola, of Zagreb, Yugoslavia. Only now it is called a "weathercoat." And behind all this is a story.

It seems that our friend Penovic, who fought with the Yugoslav guerillas during the war, recently lost his RAF "weathercoat," numbers of which with other clothing were dropped by parachute to the guerrillas. Although 30 years old, Penovic, with dreams of bettering himself, is trying to finish secondary school this year so he can go to university. He is struggling along with even less than ordinary Yugoslavs who have very little these days. So when he lost his RAF "weathercoat" he was heartbroken.

Penovic happened to see an Avro Canada advertisement in an English aviation magazine and wrote to the company explaining his plight and asking for a "weathercoat."

Michael Cooper-Slipper volunteered his greatcoat and now everything looks rosy.

There might be a sequel. Penovic offered various clothing of native Yugoslav craftsmanship in return for the "weathercoat" so don't be surprised if you see Michael turn up someday in a lamb-leather waistcoat of many colours ornamented with lace, embroidery, brass buttons and what-not.

Penovic's letter brought us very close to the pitiful present-day conditions in Yugoslavia. How fitting it would be if we with all our plenty could organize a drive to send clothing and other articles to other Penovics. Sounds like a challenge for the Avro Employees Welfare Fund committee.

ANSWERS

PAGE 5

- | | |
|--------------|---------------|
| 1. Smith | 12. White |
| 2. Shaw | 13. Murphy |
| 3. McCaw | 14. Hall |
| 4. Rimmer | 15. Barbour |
| 5. Read | 16. Armstrong |
| 6. Cannell | 17. Ewen |
| 7. Bannister | 18. Weeden |
| 8. James | 19. Jackson |
| 9. Ring | 20. Taylor |
| 10. Farmer | 21. Newman |
| 11. McDonald | 22. Johnstone |

YOUR PAY ENVELOPE



by Shirley Munshaw

Some 2,000 plant employees at Avro Canada receive their pay each Friday. Few of you probably know the elaborate preparations necessary to get your pay envelopes ready.

Every day but Monday, timekeepers pick up all clock cards. They are taken to the Timekeeping Office, under O. Belz, and the previous day's time is marked on the card. Time cards must then balance with the time slips (giving costs against different operations carried on at Avro Canada). Then balanced cards are replaced in racks.

Friday night new cards are put in the racks. Pay stubs must be detached Monday morning. Every Monday, the Timekeeping Office totals clock cards for the previous week, marking overtime hours, Unemployment Insurance days, night shift bonus hours, and number of travel days. Cards

are then sent to the Tabulating Department, under G. Francis to be tabulated by the I.B.M. machines. Tabulating summarizes this information on a preliminary payroll which is sent to the Timekeeping Office to balance against the week's labour distribution. Cards are then called against this preliminary payroll as a final check.

Did you ever realize that when you fail to punch your time card you make a great deal of extra work for the Timekeeping Office? A.V.O.'s must be secured from the foreman and authorized time must be marked on cards in ink. A.V.O.'s mean extra sorting and filing, for a check must be kept for the Internal Auditor, Gus Hendriks, to account for all written figures on a card.

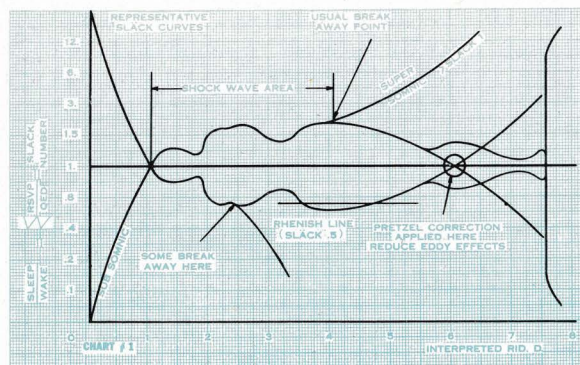
The preliminary payroll is returned to the Tabulating Department and the necessary corrections are made. Payroll cards are then collated against the master cards (which shows starting date, income tax class, rate, department, savings bonds, welfare chest, insurance, union and recreation club dues). These are all mechanically processed through the I.B.M. machine to calculate total earnings and net payable. In one operation total earnings are tabulated, and in the second, deductions are gang-punched from master cards.

The cards are then mechan-

ically sorted by check number and department, then payroll register and envelopes are tabulated. When all intermediate work is completed, envelopes are processed at the rate of 1500 per hour. Then payroll register and envelopes are sent to E.L. Marsden's Payroll Department. Envelopes are received by Payroll in continuous strips. These are separated by departments and adding machine tapes are taken and balanced to corresponding totals on tabulated payroll. Total of tapes are then balanced with final total of amount payable. A payroll is made up of paid-offs and adjustments. A summary is then made of the tabulated payroll, the paid-off employees and adjustments, and shown on a final re-cap. Envelopes are then pulled for employees working on outside contracts, such as Picton and Dunnville, where it is necessary to mail cheques. The remaining envelopes are then delivered to Brink's Express by 5.00 p.m. Wednesday night. Brink's then fill envelopes and they are ready for distribution on Friday.



A CRACK R.C.A.F. CREW LOOK ON AT THEIR SKIPPER IN THE FIRST MARITIME RECONNAISSANCE LANCASTER, JUST BEFORE THEY TOOK DELIVERY OF IT AT AVRO CANADA RECENTLY. HUGH McKECKNIE'S PHOTOGRAPH HAS BEEN ALREADY WIDELY USED BY THE PRESS, NOTABLY ON THE COVER OF "CANADIAN AVIATION"



Släck...

and the SOMNIC BARRIER

Editor's Note: Rid Dowding while trying to improve his mind (?) by readings in the original German came across this gem, a toast to the eminent supersomnambulist, Doktor Släck, delivered at his centennial banquet. This is Rid's liberal translation.

This year being the centenary of the birth of Doktor Släck (Dip. Eng.) Leipzig Slepingskul, what better time, indeed, than to discuss the great researches of this energetic little - dynamic - uh - this odd character.

Of course, we have all heard of MACH, (got a light, MACH? Sir Ernest MACHmillan, MACHine Shops and so on) and his little number, which bears some relationship to the speed of -uh-the-er-that is - compared with the speed of something else in the same - well that's all quite clear, I'm sure.

Oh, and to be sure, let us not omit the honoured names of Prandtl and Reynolds, without whom MACH would have never been called to the Bar (rier).

But back to Släck, and the

mysteries beyond the somnic barrier.

In his early youth (Släck wrote his world famed "Trips Mit Slepingsbag Unt Sheetsunt Things" (1) at the age of 13) Släck came under the subtle, persuasive influence of one Pretzel, a fellow student at their alma mater, Dunkel Kopf Haus, and together they developed the techniques and mathematical tools required to cross the somnic barrier - both ways.

The magic attraction of somnic effects had been strong in Släck's boyhood days, for hours he would assume a horizontal posture, relaxed and motionless, anticipating by three quarters of a century the classic anti-G position, now so widely accepted as the only way.

His early observations indicated that while under the influence of Pretzel and Rhenish (2), the somnic barrier presented no problems with regard to exceeding Släck I (see Chart #1) but the return to ratios below Släck I was difficult to the verge of danger. The eyelids

felt as if weighted with lead, a steady throbbing permeated the whole cranial region, and the respiratory tracts and lingual sensory buds closely approximated the ventilation system of a bonemeal plant. In fact, the "waking up and staying-woken" effect presented Släck with his greatest difficulties.

Having reached Släck I with almost frightening speed, he would accelerate through the somnic barrier with the aid of alcohol injection, into the unexplored regions where no instrumentation had yet been developed to record accurately his experiences. Translation from Släck's diaries (3) has not been easy, owing presumably to the tremendous physical and mental stresses involved in super-somnic experimentation, or possibly our data is incomplete with regard to Släck's mathematical terms of reference, which he evolved under the potent and lasting influence of Rhenish. (4)

It is interesting to note at this point that there is some evidence to indicate that Rhenish may have been a woman; take this rather liberal translation of one of Släck's laboratory notes. (5) Quote: "Whichever way I turn (sic) my theories are always greatly influenced by this Rhenish number". As this was written in 1874, when Släck was in his 24th year, and had admitted previously to being greatly affected by colour dynamics, particularly red (heads?) the use of "number" is open to conjecture.

To continue, one thing is certain. Släck's tireless devotion to the cause of science has had few equals. Pretzel, Rhenish and Släck knew no bounds in their search for super-somnic effects, time and time again all three enthusiasts were discovered in the classic anti-G position, obviously struggling to resist any complementary or subsidiary effects. Their breathing stentorious, struggling to put into words their latest findings, surrounded by crowds of fascinated students, the great cities of Europe came to know them well, but somehow true fame and recognition evaded them.

As is the case with many a fearless pioneer Släck knew privations, even the inside of prisons were not strange to him, and as the years slipped by he seemed to sense that his great mind would not be laid bare to his own era. It has been my great privilege to present to you in this brief paper enough of Släck's life story to further stimulate your own researches into the great mysteries beyond the somnic barrier.

Gentlemen, - Doctor Släck.

- (1) "Slepings unser Influenz" Hangover Press.
- (2) Shelsvig, Holstein and McFater - 25 RM.
- (3) "Släck Stuffunttechnik" - Saurkraut and Burp.
- (4) "Skul Tag Mit Rhenish" Bismark und Krupp (out of print).
- (5) "Släck's Notes" Dotes Unt Blotes.



Canadian Defense Economy

by *Rhys M. Sale*
PRESIDENT, FORD OF CANADA

Much as we dislike the thought, we know now that some day all the peoples on earth who want peace and freedom must come to grips with the U.S.S.R. and her satellites.

I do not mean that I think a third world war is inevitable. Some miracle may prevent it. But we live under a very real and terrible threat and have no alternative but to arm ourselves, militarily, economically and socially, to meet the threat if and when it takes aggressive form.

The sheer weight of manpower is on the side of Russia and her allies. That advantage must be outweighed on our side by more and better weapons of offense and defense.

To build up a vast arsenal of munitions and supplies, the democratic nations will have to harness wealth, productive capacity, material resources and manpower on a scale greater than at the peak of World War II.

The defense budget of the United States this year is about \$25 billions, may go to double that amount next year. Canada's

PRODUCTION OF THE ORENDA TURBOJET IS CONSIDERED TO BE THE KEY TO OUR AIR DEFENSES SO YOU CAN UNDERSTAND THE PRIDE IN THE FACES OF THESE PRODUCTION EXECUTIVES WHO WERE RECENTLY PRESENTED WITH THE FIRST ORENDA ROTOR OFF THE LINE. LEFT TO RIGHT: SAM WOOD, A. DIERDEN, EARL BROWNRIDGE, MORRIS NIX & ALFRED DE Solla

spending so far has not been in proportion, but the preparedness cost in 1951 is expected to go above the billion dollar mark - a tremendous amount for a nation of this size.

The maintenance and improvement of our standard of living depends upon production. The more we produce of the things that go for human progress and comfort, the higher our standard of living will rise. When we curtail this production, living standards level off and descend.

Production of tanks, guns, ships and planes contributes absolutely nothing to an improvement in the standard of living of a nation. Canada's output of \$10 billions worth of munitions during World War II created a vacuum that can never be filled. We used up priceless quantities of raw materials and human energy without getting in return a single thing to make our homes more comfortable, our lives more rewarding, our future one speck happier. But we did get in return a measure of short-lived security against those who would have

deprived us of our freedom.

Now, very much against our will, but absolutely necessary to our security, we have begun another period of military production. We have begun to drain off manpower for the armed forces. We have begun to divert materials to defense needs.

Let me cite a few simple facts:

-Cartridge cases for ten rounds of rifle ammunition require as much brass as an alarm clock.

-There is more steel in a light machine-gun than in a baby carriage.

-An anti-tank gun takes more steel than 25 or 30 refrigerators or washing machines.

-More aluminum is used in building a single heavy bomber than would be employed in Canada's kitchen utensil industry in a week.

-A jet plane plant in Toronto (Avro Canada) will employ as many workers in 1951 as we have on our payrolls in Ford of Canada, currently the largest employer of labor among all Canadian manufacturing companies.

We might as well face the fact that as major defense programs get rolling, there will be a proportionate falling-off in civilian production.

The process will be gradual. Some orders for war materials have been placed in Canada, but very largely in plants and shipyards owned by the Government and maintained as part of our

arsenal system. Relatively few orders are in the hands of private firms.

It simply is not possible, in most industries, to stop making civilian goods one day and start in making military items the next. In the motor car business, for example, there would be months of planning and tooling before the first war unit would come off the line.

The first effects upon the civilian economy will not result from a change-over of productive capacity to defense orders, but from gradual diversion of strategic materials from peacetime to defense needs. The blow will fall heaviest upon users of steel, copper and brass, aluminum, and other metals.

A slow tapering-off process in civilian production seems unavoidable. The simple truth is that, in spite of the tremendous expansion of North American industry during and after World War II, we still lack adequate capacity to support both an all-out defense program and an unprecedented civilian demand.

We can take some comfort from the fact that both the U.S. and Canada are in better shape to meet the situation than we were in 1939, but - I hate to admit it - we may be entering an era in which our economy will level off. We undoubtedly are approaching another crossroads on the road of national progress.

The situation presents a major challenge to all of us.