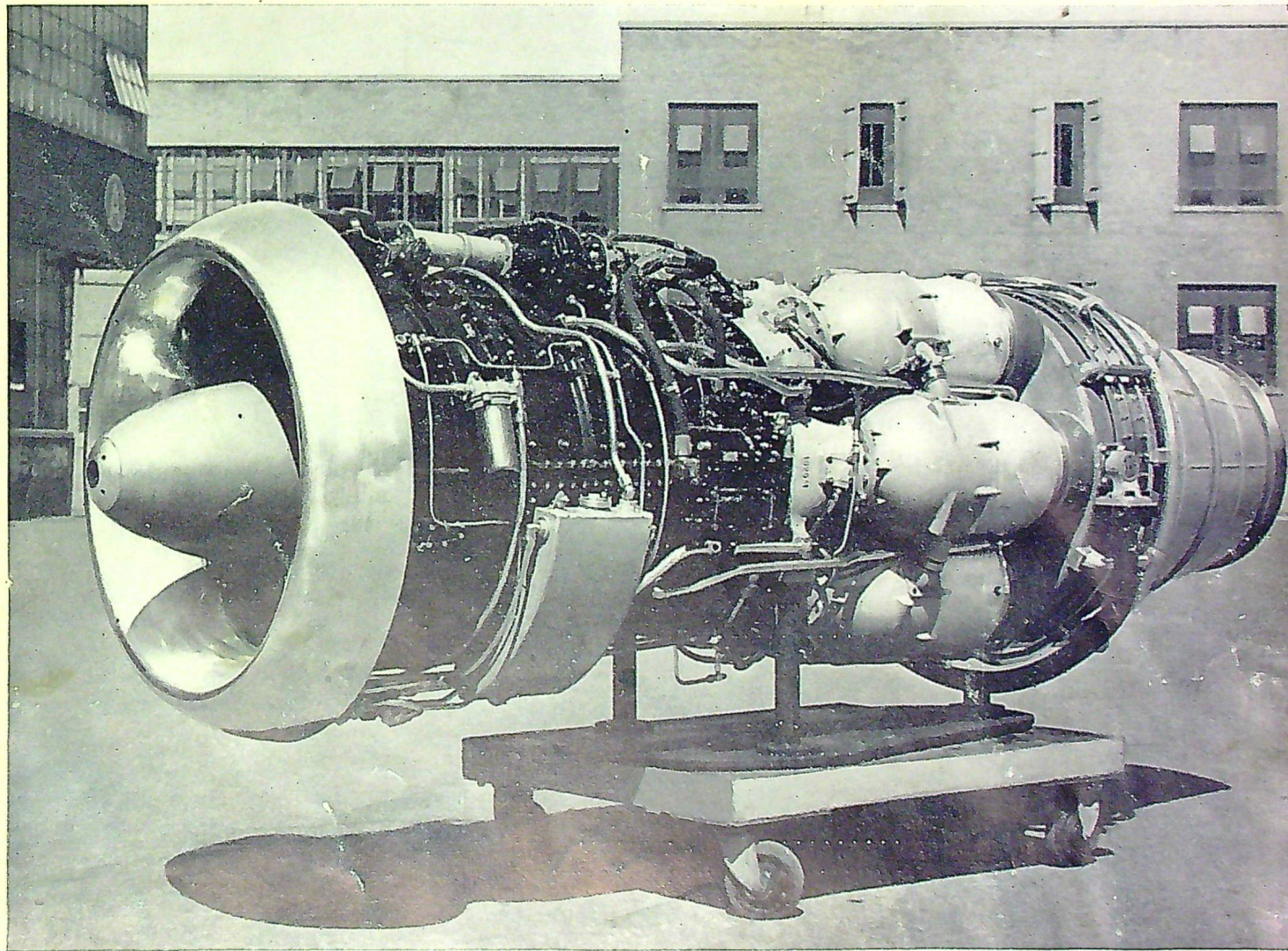


The ROUNDDEL

VOL. 3, No. 3
FEBRUARY 1951



ROYAL CANADIAN AIR FORCE



Issued on the authority of
THE CHIEF OF THE AIR STAFF
 Royal Canadian Air Force

VOL. 3, No. 3

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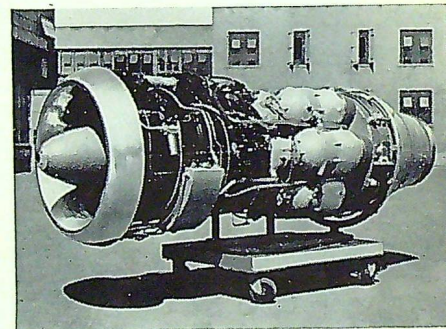
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This Month's Cover



The Avro Orenda engine, now in mass production. This turbo-jet, designed and built in Canada to R.C.A.F. specifications, was developed expressly for installation in the Avro CF-100. It is expected that the first CF-100 to be powered by an Orenda engine will fly in the fairly near future.



Sgt. Shatterproof will not Dictate

The weight of the footsteps advancing along the corridor was familiar, but not their tempo. They came at no stately rate of a hundred paces to the minute. On the other hand, it was not the brisk stride of the Security Guard. Nor was it the sound — virtually unknown in A.F.H.Q. — of one who trots smartly about his business in double time. It was, I decided, more like the approach of a well-goaded elephant, which, as everyone knows, tools along very nicely at 40 m.p.h.

An editor is necessarily a man of iron. No one who is not a man of iron could possibly read the things an editor reads and still retain any liking for humanity. But — and I admit it without shame — the editorial reason tottered for a moment when the elephant, having reached the office door and decelerated by grabbing at the jamb, re-resolved itself into the menacing bulk of Sgt. Shatterproof.

The old wardog was evidently a prey to emotions of the most tumultuous kind. He leaned in the doorway for a full two minutes, his chest heaving, eyeing me as a berserk but temporarily baffled water-buffalo might eye an over-agile missionary. Then, while I still sat aghast in my chair, he heaved himself upright, marched towards me, and saluted with ominous formality.

"Well!" I said. "I'll be —"

He silenced me with a wave of his pipe.

"This, Sir," he said, "is no time for lewd utterance. It is a time for swift action." He thrust a paper at me. "Can this be true, Sir? Let us have no evasion or subterfuge. I ask a simple question. Can this, I repeat, be true?"

I blinked at it. It was a copy of the February contents page which I had sent him a few days earlier.

"True? Of course it's true. Don't you like it?"

After a long silence, during which his lips moved soundlessly and his gaze went questing heavenward in search of divine aid, he said:

"If, Sir, the sole purpose of the February issue is to cause a shriek of derision to rise up from the entire civilised world, I like it. If, I say, that is your aim, you have succeeded admirably." Suddenly his voice hardened. "Do you realise, Sir, that it contains nothing but pilferings from other publications?"

"Certainly I realise it. But they aren't pilferings: they're reprints. That's the whole idea. We're holding back all our original material this month to make room for a few outstanding reprints. After all, Shatterproof, the R.C.A.F.'s isn't the only voice in the world, you know. — And you needn't tell me you've read them before, either."

He did not deign to answer. His cup of bitterness was full to overflowing. In a voice that would have made Hamlet sound like a radio comedian, he said:

"So it has come to this. After all my work, I must resort to the bludgeon in the end. The Brass understands nothing else. Shatterproof must lay aside his rapier. He must dispense with the lightning thrust of sarcasm, the quart and tierce of raillery, the parry of common sense, the riposte of wisdom. He must forswear the gentleman's weapon, the weapon which brought fame to his ancestor Onésiphore. He must go back to the stone age. He must take up the club of Shatterproof the Troglodyte, whose bellow once spread terror across the pre-cambrian shield. The Brass —"

But my interest was aroused.

"Onésiphore? That sounds French, Shatterproof."

He started from his reverie.

"French? Yes, Sir, it is. Onésiphore, the Sieur de Château Prouffe, was my great-great-great-grandfather's maternal uncle. He was the idol of old Quebec, a chevalier of the utmost punctilio, and one of the greatest duellists of his day. It was said that he had kissed more ladies and spitted more Englishmen than any other officer in Montcalm's army. He fell on the field of honour in the year 1721. Historians consider that, but for his untimely death, General Abraham might never have triumphed on the Plains of Wolfe."

"You mean he was killed in a duel?"

Sgt. Shatterproof sighed.

"Yes, Sir. The episode is one of the saddest in Canada's history. The Sieur became interested in a humble charcoal-burner's daughter, a certain Clotilde Casserole. It was the first pure passion of his life. Not unnaturally, however, the young lady's fiancé, Hégésippe Sansculotte, suspected the integrity of his motives, and he occasioned the lovers constant embarrassment by pelting them with bits of bark at awkward moments. In the end, the Sieur was forced to challenge him. Young Sansculotte had the choice of weapons. Being a logger, he of course chose peaveys — and harpooned the Sieur to the nearest balsam tree."



Shatterproof shuddered. Then, quickly recovering himself, he proceeded in an altered tone:

"But enough of the past. Our concern is the present. Do you realise, Sir, the danger of what you propose to do? Have you thought of what the men in the Kremlin will say?"

"As a matter of fact, Sergeant, I hadn't. I don't speak Russian."

"They will say to themselves: 'Ha! Canada depends on others. She has no thoughts of her own. Come, Comrades! We have nothing to fear. On to Ottawa!'"

"Do they always talk English in the Kremlin?"

Shatterproof looked at me as one looks at the more sickening sort of movie child.

"Jest on, Sir. Jest on while you may. But will you joke when atom bombs are dropping about you and the flesh is peeling off your bones? Will your skeleton see the funny side of things? I doubt it, Sir. Then, perhaps, you will pause to reflect. 'If only,' your fleshless jaws will murmur, 'if only we had not run that reprint issue I might even now be sitting comfortably in Room 2738, enjoying all —'"

I flung up my head.


"Stop!" I cried. "No more! I am convinced. We shall scrap the issue, Shatterproof. Nay, we shall do more." I reached into my "OUT" basket. "We shall save others from themselves. I have here a letter I wrote this afternoon, giving permission to an American magazine to reprint two or three of your letters to 'The Roundel'. I shall tear it up. I shall refuse their request. We must not destroy our friends the United States. We cannot let them rush headlong to their doom."

Sgt. Shatterproof made no reply. A curious expression flickered across his face. His glance wandered from the letter up to the Elvgren girl on my wall-calendar, then back to the letter. He tapped his teeth thoughtfully with the stem of his pipe. At length he squared his shoulders and said:

"No, Sir, on second thoughts I cannot let you make such a sacrifice. The February issue is ready. Let the presses roll! Let us fling the gage in the face of the Russian horde. And — er — as for my letters . . . surely it would be presumptuous in us to dictate policy to the United States?"

I nodded. "It might be so construed."

We considered each other without speaking. Then Shatterproof saluted, turned slowly, and moved towards the door. Presently I heard his footsteps receding . . . calm, unhurried . . . a stately hundred paces to the minute . . .



The Historic Forty-Ninth: Part I

(This is the story of how a band of men laboured and toiled westward along the 49th parallel into an unsettled land to establish the most friendly boundary in existence — the line between Canada and the United States.—EDITOR)

By John Peter Turner

(Reprinted by courtesy of the "R.C.M.P. Quarterly": Can.)

DISPUTES CONCERNING international boundaries clutter the pages of history.

Difficulties bearing upon territorial limitations have resulted in countless wars and the dissolution of many dynasties. But resort to arms for the purpose of establishing tangible or imaginary walls between territorial claimants has not always followed. Goodwill, equitable interchange of human energies, cooperation, trust — these are a few of the inevitable blessings that have accrued from well-defined and well-respected boundaries. Nowhere has this been more fully exemplified than in the New World. No international demarcation stands more firmly rooted or enjoys more wholesome respect than the border line between the Dominion of Canada and the United States.

Happily, there have been no Maginot or Siegfried lines in North America.

The story of the actual marking of the 900-mile link from Lake of the Woods to the Rocky Mountains by the North American Boundary Expedi-

tion of 1872-4, is one of remarkable foresight, unbending courage and high achievement.

To look back. Upon the completion of the 'Louisiana Purchase', in 1803, the boundaries of the vast territory thereby ceded to the United States presented a geographical problem. Subsequently, in an endeavour to arrive at a definite solution to the vexatious question, it was claimed that, by the Treaty of Utrecht, concluded in 1713, the 49th parallel of latitude had been adopted as the dividing line between the old French possessions of the west and south and the British territories of Hudson Bay on the north. Concerning the limitations of the vague, unknown Louisiana, especially beyond the Rocky Mountains, no-one could speak with finality. There were the unsettled claims of Spain, Russia, and Great Britain besides those of the United States. The latter proposed, as a basis from which to work, that the dividing line should run from the north-western extremity of the Lake of the Woods,



Officers of the U.S. Northern Boundary Commission. Standing (l. to r.): Sec'y Bangs; Astronomer, Major Twining; Surveyor, Lt. Green. Sitting (l. to r.): Astronomer, Capt. Gregory; Chief Astronomer, Col. Farquhar; Commissioner Campbell. (The six men on right side of photo are escort officers.)

north or south as the case might require, to the 49th parallel of latitude, thence to the Pacific. At the convention of London, Oct. 20, 1818, the commissioners appointed respectively by Her Britannic Majesty and by the President of the United States agreed to admit this line as far west as the Rocky Mountains.

Negotiations bearing chiefly on the regions of the Pacific were carried on over a period of years. In 1845, the British minister at Washington suggested a completed east and west line which would have given Great Britain two-thirds of Oregon, including the free navigation of the Columbia River.

This proposal was promptly rejected, and no further attempt at adjustment was made until the next year. President Polk then insisted that the boundary should be fixed at $54^{\circ} 40'$. An animated debate on the subject began and lasted until near the close of the Washington session of 1846, and the question lost most of its national importance in bitter party conflict. An election was pending. Most of the Democrats adopted the recommendation of the President, and coined the defiant cry:

'Fifty-four forty or fight!' This ultimatum caused a few leaders of the government party, of whom Col. Thomas H. Benton was perhaps the most prominent, to unite with the opposition.

Finally, that same year, a treaty was signed and the 49th parallel became the international boundary.

Meanwhile, as a result of the Oregon dispute, the British Government sent out a military force "for the defence of the British settlements." These troops — 347 regulars under Major Crofton — were made up of a wing of the 6th Royal Regiment of Foot, a detachment of Royal Engineers and some artillery. The traditional redcoat was thus introduced to the plains. Some of the men were stationed at Fort Garry (the embryo Winnipeg) on the Red River and the others twenty miles down the stream at Lower Fort Garry, known also as the 'Stone Fort'. These troops returned to England in 1848.

In 1870, Canada completed the purchase of the great realm of Rupert's Land from the Hudson's Bay Company. The time had come for the marking of the Canada-U.S. boundary and the establish-

The Roundel

ment of law and order in the West. Two years later arrangements were made with the United States for the survey and demarcation of the line; and the following year, 1873, was to witness the formation of the North West Mounted Police.

In 1872, under the titles of 'Her Majesty's North American Boundary Commission' and 'United States Northern Boundary Commission', a dual organization was set up by Canada and Britain on one side and the United States on the other. The commissions were to cooperate in locating and marking the line agreed upon.

The Canadian Commissioner was Capt. Donald Roderick Cameron, R.A. (later major general, appointed in 1888 to the command of Royal Military College at Kingston; a son-in-law of Sir Charles Tupper, Prime Minister of Canada, 1896). He was supported by four officers of the Royal Engineers: Capt. Samuel Anderson, Chief Astronomer, who had seen service at Greenwich and taken part in the survey of the boundary between British Columbia and the United States years

earlier; Capt. Featherstonhaugh, senior officer to Anderson; Capt. Arthur C. Ward, Secretary and Paymaster; and Lieutenant Galwey. In addition there were sub-assistant-astronomers Coster, Ashe, George F. Burpee, and W. F. King (subsequently International Boundary Commissioner). There were two principal surveyors, Lieutenant Colonel Forrest, Commandant of the Ottawa Garrison Artillery, and Alexander Russell, brother of Deputy Surveyor-General Lindsay Russell. L. A. Hamilton, who years later was to map out the townsite of Vancouver and become land commissioner of the Canadian Pacific Railway, served as assistant surveyor. Dr. Burgess, his assistant Dr. Millman, and veterinary surgeon George Boswell were also members of the staff. A company of Royal Engineers served in various capacities. Occupational positions were filled by nearly three hundred young Canadians and Old Countrymen. A corps of mounted scouts, composed chiefly of half-breeds, served under William Hallett, a famous Scotch Métis from Red River.

Officers of Canadian Boundary Survey. Standing (l. to r.): Sub-ass't Astronomers Burpee, King, and Coster; Commissary, Capt. Herchmer; Chief Astronomer, Capt. Anderson; Geologist, Prof. Dawson; Surveyor Russell; Sub-Astronomer Ashe. Sitting (l. to r.): Ass't Astronomer Galwey; Secretary, Capt. Ward; Commr., Capt. Cameron; Ass't Astronomer, Capt. Featherstonhaugh; Dr. Burgess; Vet. Surgeon Boswell.



The United States Commission employed about 250 civilians under Archibald Campbell, who had been a commissioner in the survey of the British Columbia-United States' line. Other officers were Lt. Col. F. M. Farquhar, Chief Astronomer, who was later succeeded by Capt. W. J. Twining; Sub-Astronomer Captain Gregory; Lieutenant Green of the U.S. Engineers, Chief Surveyor; and J. E. Bangs, Secretary. Dr. Elliott Coues acted as geologist and naturalist. In addition to two troops of the 7th Cavalry, there were five companies of U.S. infantry acting as escort.

Actual field work commenced in September, 1872. By pre-arrangement, the line was run eastward from the Red River to the Lake of the Woods mostly by the British party. Advantage was taken of the late season to negotiate the many muskegs and swamplands encountered. East of the Roseau River, through the forested country strewn with windfall, *brulé* and rock, dog-teams and snowshoes were the principal means of travel. The winter was exceptionally severe and the hardships were extreme. Quartermaster Capt. Lawrence Herchmer, late 15th Regiment (fourth commissioner of the North West Mounted Police, 1886-1900), had his hands full keeping two supply posts and the scattered parties replenished from the main depot at Dufferin.

Upon reaching the Lake of the Woods, the boundary as defined by treaty was found to turn north-east to the Northwest Angle, where boundary commissioners under the Treaty of Ghent, 1814, had terminated their labours in 1825. In determining the point where the 49th parallel strikes the western shore of Lake of the Woods, there was a difference of only twenty-eight feet between the findings arrived at by the British and the U.S. astronomers; as a consequence the middle point was accepted as correct. During the winter two men lost their lives, one from exposure, the other by a falling tree.

The survey parties returned to the Red River in the latter part of February, 1873, having completed the first part of the work.

On the west bank of the river, a short distance north of the boundary and from the old Hudson's Bay post of Fort Pembina, commodious buildings



Royal Engineers building boundary mound.



Canadian Boundary Commission ox train.



Half-breed scouts for the Canadian Commission.

for the Canadian headquarters had been erected under the supervision of Captain Ward. Near-by was the present town of Emerson, at that time known both as North Pembina and West Lynne; and just south of the border was the U.S. army post also called Fort Pembina, headquarters of the United States Commission.

The new settlement at the Canadian headquarters was named Dufferin in honour of the Governor General of Canada then in office. Facing the river was a large house used as offices, living quarters and mess room for the staff, who were billeted in several one-storey dwellings. Other buildings housed mess room and kitchen, barracks for the engineers, surveyors, astronomers, photographers, axe-men, harness-makers, wheel-wrights, cooks, picket men, blacksmiths and carpenters.

A farm was established where all necessary produce was grown for men and horses. A canteen was stocked with the best of liquors, imported duty-free direct from England; all brands were sold at the moderate charge of five cents a glass. Crosse and Blackwell's potted meats and pickles and other luxuries were obtainable. Weekly, each man was rationed a plug of T&B smoking tobacco and three plugs of 'chewing' if he wished it. All profits from the sale of 'extras' went towards a library. The food was of the best quality. Supplies were brought in from Moorhead, 150 miles south in Minnesota, and from Fort Garry, sixty miles north. So efficiently was the commissariat handled by Quartermaster Herchmer that complaints were unknown. Necessary articles of clothing could be purchased cheaply.

Buckskin and leather clothing, moccasins and woollen mitts were issued for winter use; and as bedding, each man received a large oilskin sheet, a buffalo robe, and two pairs of 'four-point' Hudson's Bay blankets.

In the winter of 1872-3 a grand dance and feast was given in honour of the Canadians by Commissioner Campbell and his staff at the U.S. army post. Later the same winter a similiar compliment was paid the Americans on the Canadian side. Both events were attended by many guests including the fair sex from Fort Garry. In season there was hunting, skating, snow-shoeing, boxing



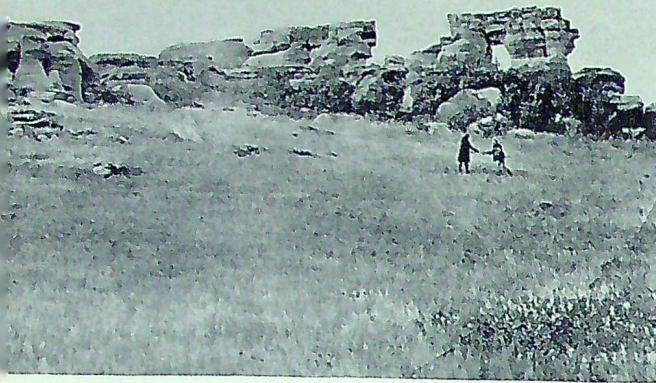
Royal Engineers bridging the Souris River.



U.S. Commission ambulance.



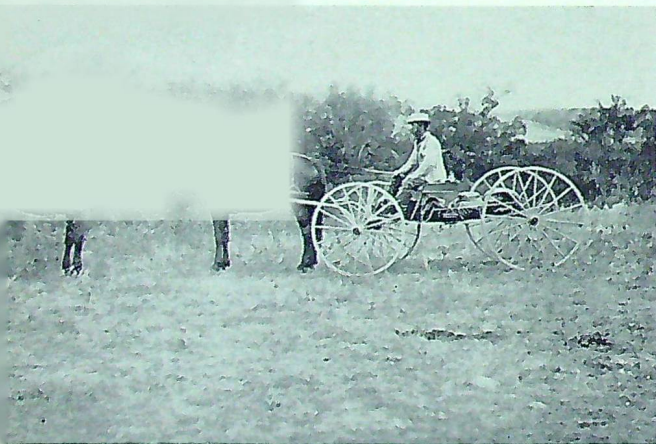
Commission employees at North-West Angle.



Roche Percée.



Canadian Boundary H.Q., Dufferin, Man.



Commr. D. R. Cameron and interpreter.

matches, an occasional theatrical, and other diversions.

In April 1873, preparations began for the greater part of the work. Enough men, horses, oxen, wagons, equipment, regulation army tents, instruments and provisions had been carefully assembled.

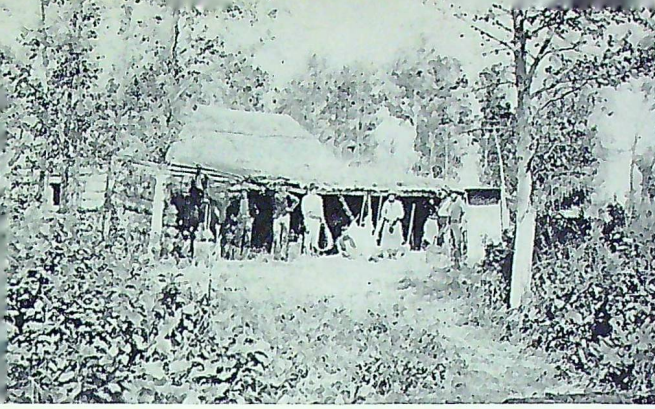
The Dominion Government had deemed it advisable that the Canadian part of the expedition should move through the Indian country without show of force. It would have been unwise for the British party to travel through the United States as, in that event, the Indians would have had no visible evidence that British interests were distinct from those of the United States. Although every member was furnished with arms and ammunition, there was no display of special precautionary measures. Parties and individuals prosecuted their work and hunted on the prairie without apparent fear. No escorts were in evidence. Indians were given free access to the camps.

At any time the natives might have sacked supply stations, have necessitated a concentration of the labourers, and generally delayed operations; but it had been felt that a friendly attitude and good behaviour by the expedition would obviate these possibilities.

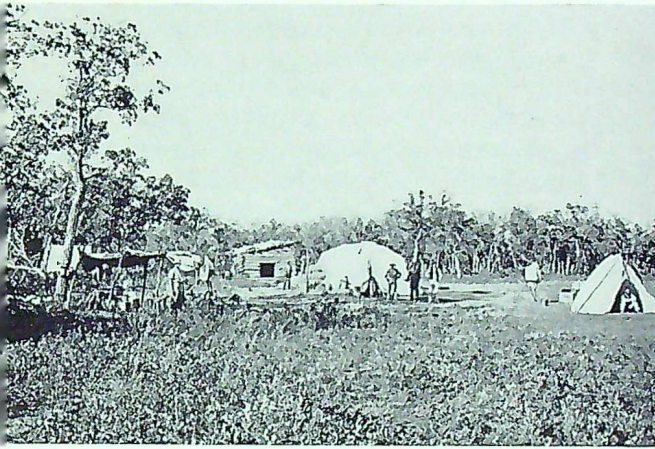
Conversely, the United States Commission, because of the Indian wars raging on the trans-Mississippi and Missouri plains, saw fit to travel under military escort.

As the prairies stirred beneath softening winds, a start was made. To the west lay a savage land. This way and that, the eye rested upon space. The wooded course of the Pembina River paralleled the line of travel along the south, and far ahead rose the Pembina Mountain. League on league of virgin soil, that down the centuries had put forth naught but successive growths of grass and flowers, spread westward.

Like a ship at sea the joint expedition travelled mostly by observation, marking the boundary as they progressed. Astronomical stations and supply depots were established. Cattle were driven to furnish meat until the buffalo country could be reached. A road-making party, preceded by native scouts, went ahead of the main body. Rivers that



Supply depot at Turtle Mountain.



Supply depot at Pembina Mountain.



Royal Engineers detachment.

were not fordable had to be bridged, often necessitating wide detours to obtain suitable timber for the purpose. A chain of field depots, strategically placed to ensure wood and water, was thrown out from the main station at Dufferin.

The first of these depots was erected about forty miles west of the Red River at the Pembina Mountain; others were located at irregular intervals as the work proceeded. There were few dry camps. Barrels, mounted on wheels, carried a water supply over the arid districts. Half-way to the Pembina depot, at the astronomical station known as Point Michel, observations taken by both parties to determine the parallel gave a difference of seven feet; sixteen miles further west there was a difference of twenty-seven feet. These results were considered satisfactory, the difference being divided; and the central point in each case was assumed to be on the true 49th. The greater part of the line was determined in this way. Tangents of approximately twenty miles were taken turn about by the Canadians and Americans. The working parties on both sides were kept as much as possible within a distance not exceeding sixty miles of one another. Considerations of supply and the presence of Indians forbade any greater extension.

In the swampy country from Lake of the Woods to the western boundary of Manitoba, iron pillars were placed at two-mile intervals as nearly as the nature of the ground would admit or at such sites as were available.

Westward from Manitoba to the line previously run and marked from the Pacific coast, stone cairns or earthen mounds were constructed about three miles apart. Buried in their centres were iron tablets bearing the inscription 'British and United States Boundary Commissions, 1872-74, 49° north latitude'. Square posts four feet high and tapering at the top were also used. These were sunk six feet in the ground, having a flange at the bottom to ensure stability. On the north side each post was marked 'British Possession', on the south 'U.S. Territory'.

To provide for the possible disappearance of monuments and the definition of the line in intervening spaces, Commissioners Cameron and

Campbell agreed that the line between neighbouring monuments should be held to run from point to point of the astronomically determined 49° north latitude, following the course of a line having the curvature due to a parallel of that latitude.

It had been arranged that throughout the entire distance topographical surveys extending six miles north and south of the boundary would be made by both commissions. By pre-arrangement, an exhaustive collection of western birds was gathered for the British Museum by Prof. Geo. M. Dawson, Geologist of the Canadian Commission, who also reported upon the resources of the region traversed.

Over the well-marked trail of the advancing expedition, covered wagons in horse and ox trains, and Red River carts driven by half-breeds, continually freighted the Canadian supplies from Dufferin. The American provisions were drawn by bull and mule teams from various trading posts on the Missouri River. Oats for the many horses constituted a large part of the shipments.

The first important halt was made after a strenuous period of axe-work across the Pembina Mountain; and a supply depot was established near the Pembina River. Game abounded. A moose hunt was staged. Prairie chicken and wild duck were served at every meal, until the exasperated cooks insisted that the plucking should be done by those who wanted birds on their bill-of-fare.

From the Pembina depot the line of travel took the survey past the White Earth and Badger Creeks.

A monotonous region stretched ahead. Clouds of grasshoppers swarmed upward with crackling sound; mosquitoes and bull-flies tormented man and beast. Bleaching skulls and bones of buffalo littered the ground. Stunted grasses clothed the rolling uplands; no trees worthy of the name relieved the dreariness. But as days passed, a blue outline resembling a low-hung cloud, which proved to be Turtle Mountain, appeared in the south and west. A large depot was established there. The line now ran directly across brush-clad hills in which were many lakes and creeks literally filled with wildfowl. Many deer were seen; some were killed.

The expedition came upon a large camp of Sioux. The chief was friendly and addressed himself to Commissioner Cameron in peaceful terms:

"I am Weeokeak, head of a hundred lodges — the Waughpatong band of the Dakotas — son of a great chief. I am glad to see the English. I would like to smoke with any English chiefs I might meet, and would be thankful for food and ammunition. The Canadians and English I respect; and I would be very glad of anything they give me. We all wish for a piece of English ground."

A wide expanse was next traversed to the Souris River, where three days were spent in making bridges. For this purpose the Royal Engineers constructed coffer-dams and floated them out to be filled with stones. While crossing the stream in the army ambulance drawn by four mules customarily used by Commissioner Campbell, several officers of the U.S. Commission narrowly escaped calamity when the conveyance upset.

The featureless terrain spread onward to the second crossing of the Souris beyond which towered the Hill of the Murdered Scout. According to the legend, a Cree scout had been watching for Mandan enemies from this conical butte. Tiring of his vigil he stretched out and slept. A Mandan who had been spying from another vantage point

Horse corral at Dufferin.



stole upon his sleeping foe and brained him with a large stone. In commemoration the Crees had carved in the turf at the top of the butte a giant figure of a man with arms and legs outstretched. They placed a large boulder nearby and cut a long series of footmarks in the hillside to indicate the Mandan. Each year, these cuttings had been renewed to perpetuate a fanciful twist of Cree mentality. Thus the butte gained its picturesque and lasting name.

A few miles westward just north of the boundary, the remarkable Roche Percée (Pierced Rock) rose abruptly. Its fissured sides were scored with native figures and hieroglyphs; to these were added the names and initials of several men of the 7th U.S. Cavalry who, under General Custer, were fated to fall in the battle of the Little Big Horn, 1876.

Nine miles beyond at a favourable location significantly called Wood End, another depot was placed near a plentiful supply of coal which was used to good account in the camp kitchens and portable forges.

Athwart the entire range of vision to the west spread a stupendous upland — the Grand Couteau du Missouri. In addition to the depots at Pembina

Mountain, Turtle Mountain and Wood End, seventeen temporary astronomical stations, observed by the joint commission, had been set up at Lake of the Woods (joint), Pine River, West Roseau Ridge, Red River (joint), Pointe Michel (joint), Pembina Mountain East (joint), Pembina Mountain West, Long River, Sleepy Hollow, Turtle Mountain East, Turtle Mountain West, 1st Souris (or Mouse River), South Antler, 2nd Souris (or Mouse River), United States' No. 8 Astronomical Station, Shore Creek and 3rd Mouse River (Wood End). And more than four hundred miles of arduous work had been completed.

Summer was over; winter was fast approaching. The commissioners gave orders to return, but a snow-storm delayed departure for more than a week. During these idle days, the weather-beaten men waited impatiently, eager to return to the Red River. Yet eagerness was tinged with speculation. Adventure beckoned. The next spring would see them back to continue the task. They would then discover the secrets of the rolling heights that lay ahead.

What revelations and experiences awaited in the Great Beyond? The following year would tell.

(To be continued)

LUNAR SPACESUIT

IN THE "Journal of the British Interplanetary Society" is a full account of the "spacesuit" designed by Mr. H. E. Ross. Being designed for use on the Moon, the suit has to protect its wearer from a vacuum outside, as well as from extremes of temperature, which may reach 248 degrees F. at lunar noon and -238 degrees F. at night.

The suit has four layers: (1) an exterior skin of cloth, (2) a thickish layer of heat-resisting material, (3) an airtight sheath of fabric-backed rubber, and (4) a lining of non-hygroscopic material, separating the rubber from the wearer's skin. Most of the suit has a bright metallic finish, to prevent heat from passing in or out, but the area over the chest is matt-black, and can be covered at will by a bright metallic cape, so enabling the transmission of heat to be regulated. There is an

air-lock in front for taking geological and other specimens inside.

A back-pack carries the air-conditioning apparatus and radio. Mr. Ross proposes to use pure, undiluted oxygen at a pressure of 160 mm. of mercury, which is the "partial pressure" of oxygen in ordinary air at sea level. Its wearer will absorb carbon dioxide, and much of the water vapour breathed out, by means of sodium hydroxide.

In the absence of an atmosphere, radio range is the same as visual range, which is shorter on the Moon than on the Earth, because the horizon is nearer. Total weight of the suit and equipment, charged for a 12-hour exploration on foot, is estimated to be 150 lb. on the Earth, but only 25 lb. on the Moon, owing to reduced gravity.

— A.E.S.

(*"The Aeroplane"*: U.K.)

The ROYAL CANADIAN AIR CADETS



By Arthur Macdonald,
Director of Publicity, Air Cadet League of Canada

FROM SUMMER CAMP TO FAME

WE HAVE BEEN HEARING a great deal lately about a pair of young Canadians who are winning fame in the entertainment world with a novel type of act. The two young men are Barry Authors and Howard Swinson, who have played numerous professional night club engagements in Canada and recently appeared on a popular television show over Station WBEN Buffalo.

The lads built their act around nothing but their own expressive faces and a handful of Spike Jones recordings. On stage, they look as though they are singing their hearts out. Actually, they aren't making a sound. The music, voices and noises come from off-stage Spike Jones records. The boys only pantomime, carefully synchronising their expressions and stage business with the

records. The total effect, according to those who have seen the act, is hilarious.

The road to fame for these talented young men started innocently at an Air Cadet summer camp about two and a half years ago. The two of them teamed up in a little act for one of the summer camp "amateur shows". They were an immediate hit. Getting more interested in the idea, they started to practise and were soon appearing at banquets and other parties for a small fee. Later they won an amateur show in Ottawa, then invaded the C.N.E. and won first prize in the Fairex Theatre Contest which is intended to uncover new Canadian talent.

It's a far cry from an Air Cadet summer camp to fame and fortune on television, but it looks as if Messrs. Authors and Swinson are headed for the top.

SPOT NEWS

Once again we turn to our press clipping service for spot end-of-the-year news on the activities of squadrons in all parts of the country. The following are a few of the more interesting items which have turned up recently.

Powell River, B.C.

A visitor to this district early next month will be Air Vice-Marshal Guthrie. He will present the Guthrie Trophy and Guthrie Shield to No. 22 (Powell River) Squadron. The local squadron topped all squadrons in western Canada in competition for the Guthrie Trophy. The Shield is emblematic of top honours in B.C.

Along with the Trophy presentation, three cadets will receive pilot's wings which they won last summer in Vancouver.



The Roundel

They are Bill Foote, Alan Crab, and Eric McDowall. The party will be held in Dwight Hall.

"Powell River News".

London, Ont.

Members of No. 27 (City of London) Air Cadet Squadron will have an opportunity to try out the navigation they have learned in the classrooms when they are taken aloft tomorrow in aircraft of No. 420 City of London R.C.A.F. Squadron. The cadets will be flown on navigation exercises by the squadron pilots.

"London Free Press".

Montreal, P.Q.

Air Vice-Marshal Frank McGill, C.B., paid tribute to the smartness and efficiency of the Rosemount Squadron at the annual inspection in the Drummond School last night. The airman, who is honorary president of 305 Wing, R.C.A.F. Association, which sponsors the unit, pointed out that the service record of Rosemount was one of the best in the Montreal area and the keenness of the cadets was to be commended. The squadron parades every Monday evening at 7.30 in the school and is commanded by Flight Lieutenant J. English.

"Montreal Daily Star".

Moncton, N.B.

Newcastle Air Cadets were guests of the Moncton High School squadron Saturday at an informal get-together which featured a program of sports and social events. The visit will be returned next week-end by the Moncton group, who will visit the Miramichi.

The Newcastle cadets arrived in Moncton at 2 p.m., and half an hour later took on the locals in a basketball game, winning 40 to 28. The visitors then swept a three-game volleyball series, but bowed to Moncton in a target-shooting contest. Early in the evening the cadets were tendered a banquet in the Legion Memorial Hall, followed by a dance from 8.30 to 10.30.

The Moncton visit next week-end will alternate between Newcastle and Chatham. A dinner will be tendered at Chatham, with sports and a party slated for Newcastle.

"Moncton Daily Times".

Amherst, N.S.

A combined Army and Air Force cadet night will be staged in the Armouries on Wednesday evening, it was announced by Flight Lieutenant T. M. Brown, commanding officer of Amherst Air Cadet Squadron.

"It was originally planned to hold an Air Cadet father-and-son night", said Mr. Brown, "but plans have been changed, and the two cadet corps will combine operations in a joint social evening and sports night."

Parents of cadets interested in the proceedings are invited to attend to witness the presentation of trophies to the Amherst Squadron. Following the presentation, the two corps will hold competitive sports events followed by refreshments in the men's mess.

"Amherst Daily News".

Taber, Alta.

The second annual Father-and-Son banquet of 225 Squadron, Royal Canadian Air Cadets, was held in the Legion Hall here on Friday evening, with some one hundred and sixty in attendance. Each cadet was accompanied by his father or a substitute where necessary. The banquet was served by the ladies of the Moose Lodge. Flight Lieutenant Stan Bartram, C.O.,

was master of ceremonies, and the special guest was Squadron Leader C. C. Lee, of Northwest Air Command.

Taber's cadet of the year, Sgt. Glen Gardner, gave a report to the gathering of his summer trip to the United Kingdom. Sgt. Gerald Palmer, who was a member of the International Drill Competition team, told the story of how the Canadian team won the Trophy for the third consecutive year. Another highlight was the presentation of wings to Sgts. Garth and Keith Palmer, who won flying training scholarships this year and placed second and third in their class at the Lethbridge Flying Club.

"Lethbridge Herald".

Thorold, Ont.

On Thursday night No. 128 Squadron, of Thorold High School, was presented with the Frontier Trophy and the Strathcona Trust Fund Award.

It is an honour for any group to win one award, and officials and cadets alike should be very proud indeed to win both of these fine trophies. It speaks well for the training they are being given and for the attention cadets are in turn giving to instructors.

"Thorold News".

Mission City, B.C.

Excellent results were achieved by Air Cadets of No. 521 Squadron at their first annual Tag Day last Saturday. Total sum realized was \$146.74, which the officials in charge consider outstanding.

In their next public presentation, the cadets will sponsor the appearance of the Firemen's Band of Vancouver at a concert in the Auditorium of the Canadian Legion. This band is considered one of the outstanding musical aggregations in Vancouver and has been a popular performer at events through the province and in the coast city.

"Fraser Valley Record".

Ottawa, Ont.

Three boys of No. 211 (Ottawa Kiwanis) Air Cadet Squadron, who had won R.C.A.F. flying scholarships, received their wings at the hands of Air Vice-Marshal F. M. Miller at the Kiwanis Club luncheon Friday. They were: Sgt. M. Lightstone, Sgt. Don Syms and Sgt. Douglas McDonnell.

Before making the presentations, Air Vice-Marshal Miller said that "the work being done by the Kiwanis Club is greatly appreciated by the Air Force". Presiding over this part of the programme, George A. Perley, civilian chairman, declared that "we are proud of these boys and justly proud of the interest taken in them by our civilian committee". Mr. Perley was later awarded the weekly president's rose, "for his fine work done throughout the year for our Air Cadet squadron".

"Ottawa Citizen".

Windsor, N.S.

About 125 attended the annual banquet for No. 106 Squadron Windsor Air Cadets at the Memorial Centre on Friday evening. Commanding officer C. H. Snell presided. Rev. D. G. Ross asked the blessing.

Squadron Leader Allan Ross, of Maritime Group Headquarters, Halifax, told of his experiences and his ideas for developing Air Cadet work. He presented Charles Suret with his Air Cadet wings, won last summer. Other speakers were Mayor W. D. Martin and Major Russell McManus.

A cup, to be engraved with the name of the best bugler of the year in service calls, was presented to the squadron by J. A. Williams on behalf of the Canadian Legion. The first name to be inscribed is James Clark.

"Halifax Chronicle Herald".

Cornwall, Ont.

No. 325 Air Cadet Squadron's newly organized trumpet band will make its second appearance of the season Saturday, when it heads the Santa Claus parade sponsored by the Junior Chamber of Commerce.

The local squadron has also entered the O.C.O.T. City and Air Cadet hockey leagues, so that a busy winter season of sports is in the offing for the cadets.

"Daily Standard Freeholder".

New Westminster, B.C.

A flight with Trans-Canada Air Lines and a close-up of the R.C.A.F.'s Vampire jets highlighted a visit of 513 Squadron New Westminster Canadian Legion Air Cadets to Vancouver's International Airport on Sunday.

Under Flight Lieutenant F. A. Jack, D.F.C., 28 members of the squadron spent the day at the airport, observed the inner workings and administration of the big T.C.A. base and the R.C.A.F.'s 422 Squadron.

In the afternoon the boys scrambled aboard a T.C.A. Dakota and flew over New Westminster and the Fraser Valley. At the controls was Bill Marr of New Westminster, T.C.A. pilot and member of the civilian committee of this squadron. Later, the boys inspected jet fighters at the R.C.A.F. Reserve Squadron hangar.

"British Columbian".

Shawinigan Falls, P.Q.

An aerial demonstration by jet-propelled Vampires of the Royal Canadian Air Force was given in the skies over Lac à la Tortue on Sunday afternoon. Following a twenty-minute exhibition by the jets, there was a demonstration of helicopter flying. Focal point of this display was the area around the well-known Ideal Beach.

The air show was held in aid of the recruiting campaign being conducted by the Shawinigan Falls Squadron of the Royal Canadian Air Cadets. This squadron is sponsored by the Kinsmen Club of Shawinigan Falls.

"Shawinigan Standard"

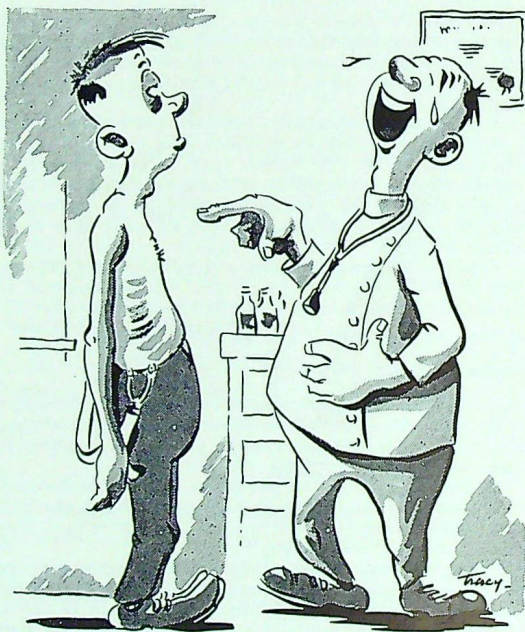
We're Obsolescent

The design of the human body is becoming the main stumbling block in the path of development of high speed military airplanes, Dr. N. E. Edlefsen . . . of North American Aviation, says. Dr. Edlefsen predicts that the pilot in the jet interceptors of the future will merely "go along for the ride", supplying intelligence in the airplane which would be difficult to build electronically.

"Characteristics of military airplanes have continued to improve . . . but the pilot is a different matter," says Dr. Edlefsen. "His design has not changed perceptibly in thousands of years . . . Operating speeds of to-day's military airplane are making the reaction time of the human body a stumbling block in the path of progress."

Dr. Edlefsen pointed out that present interceptors, flying toward each other at 600 miles an hour, will diminish the distance between them at the rate of one mile in three seconds. When the pilot recognizes the enemy he can't react soon enough to fire his guns.

The entire interception operation of the future will be done automatically with "brains" built

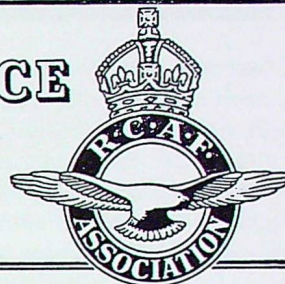


into small boxes, says Dr. Edlefsen . . . During automatic interception of an enemy, the pilot will do little more than press buttons to supervise the action in the various phases of the mission, and even this will be eliminated eventually . . .

("Contact": U.S.A.)

ROYAL CANADIAN AIR FORCE

Association



THE PRESIDENT IN THE WEST

THE DOMINION PRESIDENT, Air Vice Marshal A. L. Morfee (ret'd.), C.B., C.B.E., recently visited the four Western Groups and addressed each and every Wing. On the first phase of his tour he was accompanied by Group Captain R. S. Turnbull, D.F.C., A.F.C., D.F.M., Director of Reserve and Manning at Air Force Headquarters, and on the second phase by Wing Commander F. W. Ball, D.F.C., who is R.C.A.F. Reserve Liaison Officer at Air Force Headquarters. Both of these officers gave very informative talks on the post-war development and projected future of the R.C.A.F.

In addition to the addresses given by these officers, the Dominion President spoke to each Wing. Excerpts from his talks are given below.

"This is my first visit to the Wings of the R.C.A.F. Association in Western Canada, and I can assure you that the R.C.A.F. Association is here to stay. The number of our Wings is increasing, and our strength is growing.

"Our main aim is to foster Air Power in Canada. To do this we must establish good relations with the public. Likewise, by the sense of responsibility displayed in our resolutions, we can expect the welcome and attentive ear of the Government.

"Let me cite one or two instances of the approach made by certain Wings to our problem.

"It is one of our aims to commemorate the Battle of Britain. This fall a Wing arranged a dedication service on Battle of Britain Sunday. A bronze plaque containing the names of all airmen of the county who lost their lives in the Second World War was prepared. At the dedication service, in which the plaque was installed in the

county court house, the Air Cadets (sponsored by the Wing) were in attendance, citizens were invited, city and county officials were on hand, and the Lieutenant Governor graciously deposited a wreath. The next-of-kin of those commemorated on the plaque were there by invitation; and following the ceremony all invited guests were entertained in the Wing Club-rooms. The programme was broadcast and re-broadcast. I had the honour of unveiling that plaque, and I could truly sense the public feeling of appreciation and gratitude towards the Wing and our Association.

"In another locality the local Wing staged a reunion of Air Force types, regardless of whether or not they were members of the Association. Between four and five thousand turned out, and the Wing netted \$1800. Within a few days the Executive voted \$1000 towards the support of a band for an Air Cadet Wing.

"Again, it recently came to my attention that one of our Wings (not a large one) assisted in raising \$35,000 for the Manitoba Flood Relief Fund.

"These are only three instances. There are many others. Such endeavours commend our Association to the public.

"It is the duty of every citizen to interest himself or herself in the defence of our country. The questions relative to it cannot and must not be left entirely in the hands of professional sailors, soldiers and airmen. It is, therefore, the especial duty of Air Force veterans to interest themselves in air defence, since they constitute a body of informed opinion. Our Association welds together that authoritative voice on a national scale.

"To promote Air Power in Canada, it is our aim to support the R.C.A.F. (both Regular and

Reserve), the Air Cadets, civil Flying Clubs, the aviation industry, and the development of airways and supporting facilities.

“Now let me speak of Air Power and how we feel it should be applied. First I would like to consider its advent. In the First World War the aeroplane was adapted as a weapon and used to gain local air superiority, thus permitting our reconnaissance aircraft to operate. When we had achieved local air superiority, it became possible to spot and correct our artillery fire. When we lost the initiative in the air, the advantage fell to the enemy. This oversimplifies the matter a little, but the point is that our Air Force was used locally over the land battle and immediately in support of the surface engagement.

“Until the Second World War, wars were fought out by surface forces. Air Forces, when used, were required to co-operate in support of such surface battles. Given the weight in men and materiel, a decision gained in this way will be decisive.

“With the progress of the air war in 1939-45, however, the bomber emerged as a weapon that could penetrate the enemy's heartland and strike directly at his means of making war. It was another way of out-flanking, using the third dimension. We believe that Air Forces can destroy an enemy's means of making war, and that a decision can thus be obtained without depending on a preponderant surface force. Although doubt on this score is certainly entertained in some quarters, I would ask you to listen to what I'm now going to read:

“The German experience suggests that even a first-class military power . . . cannot live for long under full-scale and free exploitation of air weapons over the heart of its territory. By the beginning of 1945, before the invasion of the homeland itself, Germany was reaching a state of helplessness. Her armament production was falling irretrievably; orderliness in effort was disappearing; and total destruction and disintegration were well along. Her armies were still in the field, but . . . the indications were convincing that they would have had to cease fighting — effective fighting — within a few months . . . In other words . . . before the first atomic bomb was even tested . . .

Germany was mortally wounded, with the culminating act of the surface concept unnecessary except to hasten things along . . . The experience in the Pacific War supports the finding of the Survey in Europe — that no nation can long survive the free exploitation of air over its homeland.’

“The foregoing words are from an official document. They are the conclusions of the United States' strategic bombing surveys of the Second World War in Europe and the Pacific. These surveys were made right after the war by a carefully selected and highly qualified group of civilians. As Winston Churchill said two years ago: ‘For good or ill, air mastery is to-day the supreme expression of military power, and armies and navies, however necessary, must accept a subordinate rank.’

“With the lessons of the last war so evident, we feel that Air Power should spearhead our defence. The old concept by which the Air Force is called upon to co-operate in supporting the surface battle should give place to a new concept wherein the Navy and the Army co-operate in furthering the air war.

“Then there is the question of balanced forces, as between the Navy, Army and Air Force. In the past every sovereign power had of necessity to be prepared to meet any one or combination of potential adversaries. Thus, it was necessary to strike a balance in the effort expended on the sea, on land, and in the air. Now the situation has changed. We and our allies know who is our potential enemy, we know our friends. There is a need for suitably balanced forces on our side, but for an overall balance only. In the obligations under the Atlantic Pact, for instance, France might provide the majority of the army, the United States the majority of the navy, and the British Commonwealth participants the majority of the air forces. Therefore it is no longer necessary, or, in fact, desirable that Canada maintain any established balance of forces.

“I have spoken of balanced forces. Now may I refer to a balanced Air Force. The previous speaker has mentioned the lack of a ‘Sunday punch’ in the make up of the R.C.A.F.— there is

some tactical air force, a fighter force, a maritime air force and the echelons to support them, but there is no strategic bomber force. I cannot help but feel that Canadians would by temperament wish to be 'in there punching' — and one thing is certain: if we do not contribute to a strategic bomber force, someone else will have to provide our share. The strategic bomber is the essence of Air Power.

"Russia is our enemy. Russia and her stooges are preponderant in manpower, and with the large land mass at their command, have what is known in military science as 'internal lines of communication'. She can concentrate East, South, West and even North around the periphery of her Union, and thus present almost an impossible problem if we were to attempt to contain her or meet her thrusts. To borrow a phrase from the reputedly illiterate but spectacularly successful Confederate general, Nathan Forrest, Russia will always 'get there fustest with the mostest.'

"Can anyone seriously suggest that we of the western powers can maintain in peace-time sufficient ground forces on all fronts to contain Russia? As for Canada, we have always been an agricultural nation, and we emerged from the Second World War as an industrial nation. I put it to you: would it not be foolish to jeopardize the production of our farms and our industry to maintain larger military forces than are necessary either in peace or war? The armed forces must be manned adequately, but let us choose that arm of the Service which, though costly in materiel, is economical in manpower.

"Let us not forget that the aim is to avert war by deterring the aggressor. He will not be deterred by preparations to meet him in his own fashion where he has the advantage, but he may well be deterred by an air force in being, ready to strike at his heartland within hours of his crossing a frontier. It is my dream to see an all-powerful air force at the command of the United Nations, intercontinental in scope, poised and ready to strike. I believe it will come.

"Before I sit down, perhaps I might say something about the happenings in Korea. I know nothing beyond what I have read in the press, but

some evaluation can be made. Real as the war is to those engaged and to their kin, it is in fact what military science calls a 'limited war'. In other words, the goal was worth trying for at a limited cost. Actually it seems to be a more limited war than any limited war was ever limited, for Russia has not committed any men at all! Nor has she shown her air power — and that appears to me significant, for I believe she is not yet ready or prepared to disclose her air force.

"The real reason I have in bringing up Korea is to warn you against false prophets. Whether you are golfers or not, you will understand when I suggest that you ignore Korea and keep your eyes on the ball. False lessons are coming out of Korea. Only recently I had occasion to reply to an editorial in a prominent Canadian newspaper. The editorial was entitled 'Limitations of Air Power in Korea'. The fairness of the editor was displayed by his prompt printing of my letter.*

"Just before coming West, however, I read of a naval spokesman returning from the Korean scene and suggesting that there was a return to sanity in the conduct of operations. As a sample, he told of the 'Big Mo' firing shells from her naval rifles which landed with the force of a 1000 lb. bomb.— It was interesting to note, by the way, that the gauge of hitting power was borrowed from the Air Force.— Yet, in spite of the velocity of such shells from gun to target, what was the overall cost of depositing the explosive, and how long did it take for that 1000 lb. bomb's-worth of explosive to get from the continental United States to the target? My guess is weeks. Had it been carried by air, it would have taken a few hours.

"We all remember two fine ships of the Royal Navy — modern, well equipped and manned — which sailed within range of Japanese aircraft. They were sunk quickly and comparatively easily. Had Russia decided to throw in even a token bomber force, the naval craft off Korea would suffer the same fate. To take naval units within range of hostile shore-based aircraft is suicidal. So, I repeat, beware of the false lessons coming out of Korea.

*See November 1950 issue of "The Roundel"



No. 412 Wing. Ex-Flying Officer L. Baldock lays wreath at Windsor Cenotaph, 11 Nov. 1950. Left to right behind him are: Hon. Paul Martin, Mr. D. Brown, M.P., and Hon. C. D. Howe.

"Mention has been made of the three Services, Navy, Army and Air Force; but we should not overlook the Defence Research Board. The push-button war is not here yet, but great progress is being made with guided missiles and such. Let us, who advocate Air Power as the modern expression of military power in this age, not hesitate to keep an open mind and accept new weapons as they appear. I say, then, let us not get hide-bound and steeped in so-called tradition to such an extent that we will not welcome new weapons when they can be forged for the defence of our country.

"In the meantime, let us take a lesson from David of the Old Testament. He was faced by a very big man with a very big club. With faith in his God, he reached for an air-borne missile and hurled it right where it hurt his enemy the most."

WING NEWS

No. 700 (City of Edmonton) Wing

How do you keep interest alive and raise money? That is the question most often raised by many Wings. We think the answer is in a hard-driving Executive that keeps the membership busy. We propose to publish from time to time reports on how successful Wings have managed; and the following is a report from No. 700 Wing.

"We took a leaf from curlers out here who sponsored 'car-bonspiels', but we eliminated the work of

heaving 'rocks' and 'sweeping'. We merely sold tickets to purchase a car. Tickets cost fifty cents each, or three for a dollar. The proceeding is quite legal. The Wing purchases a popular type of car through an agency and then calls upon another agency to sell it for us. This second agency is connected with the Provincial Government's branch for aiding veterans, and therefore its activities come within the War Charities Act. This second agency sells the car to the public at large at the regular price, and takes twenty per cent of the net proceeds as a fee. This fee covers the pay-roll and overhead of the agency, while a sizeable portion of the fee goes to the Veterans Comforts Fund. A car usually brings in about \$2,000 to \$3,000 over and above its original cost price. The winner is not interested if we make a few thousand dollars on the sale — he got it for virtually nothing.

"The City Police allow these sales on the downtown streets, provided we keep pouring pennies into the parking meters while occupying space. Naturally, the car is parked at or near one of the busiest intersections. The Wing has absolutely nothing to do except check ticket stubs to keep track of revenue and, at the last, to organize the drawing of the winning number. Suitable precautions have to be taken to ensure the draw is done openly in front of a crowd. We stage the draw at the wind-up of our annual carnival and get some prominent citizen to make the draw.

"Our second money-maker is a carnival. The first year we held it outdoors, and, though we made a fair profit, bad weather seriously reduced our revenue. This year we put on the carnival (29th March to 1st April, inclusive) in the Canadian Legion's Memorial Hall. It was a financial success, netting over \$1,000. The paraphernalia consisted of numerous games of chance — wheels of fortune, crown and anchor, bingo, etc., etc.—and the prizes ranged from cheap to expensive items. Door prizes were given and refreshments sold. Information booths, giving information regarding the Association and the Regular and Reserve Air Force, were operated. All booths were manned by members of the Executive and volunteers.

"Activities of a social nature are operated on a pay-as-you-go basis, each being self-supporting.

If there is a poor attendance we may take a small loss, if there is a good turn-out we make a bit above our budget. The chief objective of these functions, however, is to strengthen the fraternal bond between members, not to make money. We have found that husband-and-wife (or girl friend) social functions, such as dances or mixed smokers, are the best drawing cards for a large attendance. N.W.A.C. Headquarters, No. 418 Reserve Squadron, and R.C.A.F. Station Edmonton, have all been most co-operative in providing guest speakers and special films, and in numerous other ways.

"At present we are planning on holding a 'Klondike Night' wingding. This will be largely in costume, with 'Soapy Smith', 'Klondike Kate', 'Sam Magee', and many others in attendance. Our problem is to find a place large enough for the affair, so that we can open it to the public. This type of enterprise includes a combined gambling hell and dance hall. Paper money in large denominations is obtained at booths at ten cents per thousand dollars, and pokes of gold dust are sold at so much per ounce — usually five cents. All dances are squares, with old time fiddlers and callers. These dances always draw a crowd, and suitable prizes will be awarded for the best couple, the best individual woman and man, and the best square. We are now sponsoring city-wide square dance competitions, and the finals will be put on at the 'Klondike Night'. The publicity being obtained is already bearing fruit in the way of additional membership and improved attendance at all meetings."

No. 412 (Air Force Club of Windsor) Wing

The Windsor Wing took part in an impressive ceremony on Armistice Day with Mr. L. Baldock, the Wing Treasurer, laying the wreath.

No. 307 (Eagle) Wing, Montreal East

On 18 November, 1950 the Wing held its first annual dinner and dance, with Air Vice-Marshal C.M. McEwen (ret'd.), C.B., M.C., D.F.C., as guest speaker. Supper was served to 137 members and friends.

The Wing is attempting to establish an Air Cadet Squadron in the east end of Montreal. A committee for this purpose recently met with the



No. 702 Wing, Lethbridge. Left to right: F. Sutherland, S. Parker, R. MacLeod, Air Cdre. A. D. Bell-Irving (ret'd.), F. Mulok, Air Vice-Marshal A. L. Morfee (ret'd.), T. Segsworth, Wing Cdr. F. W. Ball, E. Moffatt, C. R. Dixon, Sqn. Ldr. J. H. Giguère, P. McNab.

Mayor, with the result that quarters for the squadron, if formed, are already assured. The matter is being followed up and the prospects are good.

No. 107 (Morfee) Wing, Annapolis Royal

On Wednesday, December 6th, Group Captain N. S. A. Anderson, A.F.C., the C.O. of R.C.A.F. Station Greenwood, addressed the Wing and spoke of the progress of the Service since war days.

The Wing also held a very successful dance in conjunction with the entertainment committee of R.C.A.F. Station Greenwood, and the proceeds were turned over to the Wing funds.

The current Executive is:

President:	J. A. McDonald
1st Vice-President:	E. C. Atkinson
2nd Vice-President:	Alex Smith
Secretary-Treasurer:	John Fox

No. 109 (Confederation) Wing, Charlottetown

The organization meeting of No. 109 Wing was held on 7 December 1950, with 78 present.

As a result, a Wing was formed and the following Executive elected:

President:	A. M. McInnis
1st Vice-President:	Dr. R. H. Kennedy
Secretary:	Miss Mary H. Robin
Treasurer:	G. H. Hood
Members:	Peter Sinclair
	C. M. Sinclair
	W. R. Burdet
	W. S. Chandler

Our heartiest congratulations to the organization committee and to the first Executive.

Days of Dare and Do:

Part 2



(Reprinted by courtesy of "Air Clues": R.A.F.)

EFFECTS OF A CROSS WIND

(1) ON STARTING (See Figure VII).

Suppose that for reasons which do not matter, it is only possible to start in the direction AB, and that the wind is blowing in the direction CD. As soon as the tail skid leaves the ground, the tail will naturally be blown round by the wind and the machine will try to turn to the left into the wind. Therefore, the rudder must be put over to the right to make the machine run straight along the ground and prevent the tyres from being torn off.

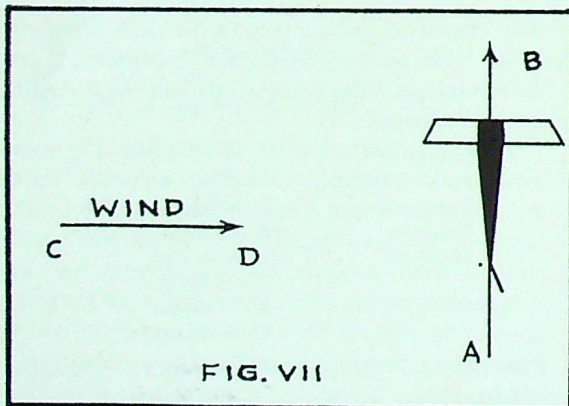


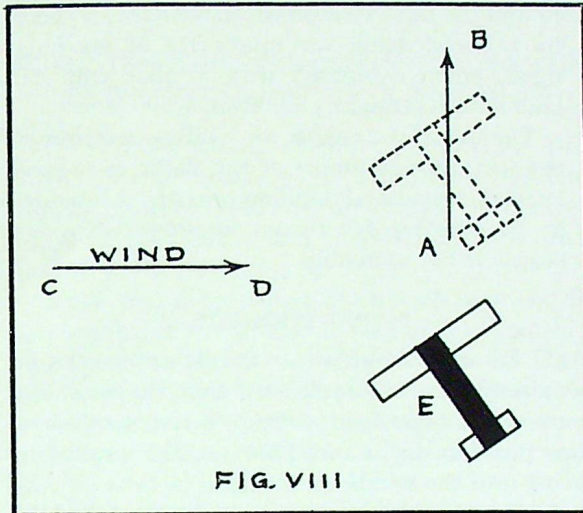
FIG. VII

Directly the wheels leave the ground, the pilot will naturally cease to think about the cross wind and use the rudder to make the machine go in any direction he pleases in the ordinary way.

EFFECTS OF A CROSS WIND

(2) ON LANDING (See Figure VIII).

Suppose that, for reasons which do not matter, it is only possible for the machine on landing to run along the line AB, and that the wind is blowing in the direction CD. The pilot must obviously arrange for the machine to be travelling in the line AB when it reaches the ground. This he can do best by getting the machine in position at E and gliding down in the direction shown by the diagram, and gliding down to the landing ground. But when the machine gets to the ground as in the dotted diagram, it will be found to be travelling in one direction (AB) and pointing in another. These two directions must be made to coincide before the wheels touch the ground, or the wheels will be smashed. But the direction in which the machine is travelling, is right, therefore it is the direction in which the machine is pointing which must be altered. It must be made to point in the direction AB. This can only be done by kicking the



rudder sharply over to the right, which is therefore the obvious course to pursue. It should be done at the last possible moment before the wheels touch the ground, as otherwise the machine will cease to travel in the true line AB and will begin to drift away down wind.

APPROACHING AN AERODROME

When a pilot arrives over an aerodrome on which he wishes to land, his sole duty is, and his own idea should be to apply the machine to the ground as gently as possible in exactly the right place, and in exactly the right way.

The question of frightening the observer or impressing the assembled public should not be allowed to weigh with him, or influence his actions for a moment.

Every perfect landing is the result of a combination of—

- (1) Judgment.
- (2) Knowledge.

(1) Judgment is not worth discussing. It is a thing you have, or you have not (and moreover it varies with the state of the pilot's liver).

(2) Knowledge can be acquired, and it is the pilot's duty to neglect no opportunity of acquiring it.

The following is the knowledge which a pilot would like to have when he is landing on a strange aerodrome:—

- (a) The nature of the ground surface.
- (b) The strength and direction of the wind.

(a) Can frequently be guessed, and it is therefore the pilot's duty so to arrange his descent as to give himself the best possible chance of guessing rightly. Even if you are landing on the aerodrome on which you were born and bred, some person may have dug a hole or left a wheelbarrow in the middle of it while you were away.

(b) Can in 99 cases out of 100 be ascertained accurately if the pilot takes the trouble, and it is therefore the pilot's duty so to arrange his descent that he has the best possible chance of gaining this information on the way down. It is easy to imagine one and difficult to imagine any other manner of descent, which will satisfy these conditions.

The pilot should arrive over the landing ground at about 2,000 feet. A greater height than this is wasted because he cannot see well enough to determine the nature of the ground, and the wind higher than 2,000 feet will be quite different from that in which he has to land. He should then glide as slowly as possible round the edge of the landing ground, making a circle of about 400 to 500 yards diameter. After one circuit, he will have travelled once against the wind for a distance, once with the wind for a distance, once across the wind blowing from the right, once across the wind blowing from the left. Having done this, no (sane) pilot can possibly be in any doubt as to the approximate direction and strength of the wind.

The slower the pilot can glide, the greater the effect the wind will have on the machine, and the easier it will be to deduce the necessary facts, but this should not lead the pilot to keep his speed dangerously low when he gets down below 1,000 feet. The pilot will now be able to decide from which direction he will approach the aerodrome for the short straight glide at the end. He will also have about 1,000 feet height with which to get into position for this purpose. He will then go straight to the leeward side of the aerodrome

and use up his surplus height in a series of S turns a short distance outside the aerodrome.

If the pilot is in doubt about the strength of the wind, these so-called S turns should really be a series of straight glides across the wind with a sharp turn at each end, always turning with the front of the aeroplane towards the aerodrome. This series of short glides across the wind in opposite directions gives the pilot's judgment the best possible opportunity of making its decision about the strength of the wind.

If after having the best possible opportunity, the pilot's judgment is not equal to the situation, that is not the pilot's fault. It is his misfortune certainly, and a serious one, and detracts from his value as a pilot, but it cannot be called his fault.

The reason why this method of approaching a landing is preferred to any other, is as follows:—

To apply a moving aeroplane to the ground and cause it to come to rest in a certain spot is a feat of judgment of the same kind as catching a moving object and causing it to come to rest in the hand. Now when a man is judging a moving object with a view to catching it, the first law which he must obey at all costs is that he must keep his eye fixed on the object. A man trying to land an aeroplane on a given spot is trying to judge the position of the spot in relation to himself, and must therefore keep his eye fixed on it. Therefore, any method of approaching (such as quick spirals, side slipping, tail sliding and looping) which prevents a pilot from keeping his eye on the place where he is to land, or distracts his attention from his duty of observing the strength and direction of the wind and the nature of the ground, is not only foolish but most reprehensible.

Stunting is practice for fighting, and should be carried out chiefly with the engine full on at heights over 3,000 feet.

The duty of stunting should never be confused with the duty of landing. The acme of perfection in piloting as regards landing would be to be able to make a straight glide of about 4 miles and finish on the right spot at the right speed. No one will ever be able to do this. A pilot who has to use spirals, S turns, or other manoeuvres

to find the right spot on the aerodrome, is thereby acknowledging the inferiority of his judgment, when compared with a pilot who can land with a straight glide from 1,000 feet.

The use of the engine for landing destroys all the instructional value of the flight as regards landing, because all landing practice is intended to be practice for forced landings when the engine is not available.

FLYING ETIQUETTE

(1) Do not labour under the delusion that an aerodrome is a cab rank, and that the machines must stand facing the centre of the aerodrome. The position for a machine on the ground is facing into the wind.

(2) Do not allow an engine to be started if the tail of the machine is pointing into a shed or into the face of a pilot sitting in the next machine.

(3) Do not try to induce the mechanics to remove the chocks while the engine is still delivering about 60 h.p. Sooner or later one chock will come out without the other, and the machine will swing round, behead the mechanic whose chock would not come out, and run into a shed.

(4) Do not when arriving at an aerodrome at 3,000 feet, cut in under a pilot who has already begun to glide down from 4,000. For all you know he may have lost his engine. The man who cuts his engine off first, has the right of way.

(5) When you are one of a crowd arriving at an aerodrome in a strong wind and have just landed in your turn, do not taxi wildly about the aerodrome. If the wind is so strong that it is humanly impossible to taxi straight, acquiesce in the facts and sit still until the mechanics come to guide you in.

(6) If there are machines gliding down, and you wish to start off, do not taxi about in an undecided way. If you see there is time to get away before any machine can possibly get within 500 feet of the ground, start off without hesitation. If there is any doubt whatever, don't start until the air is clear.

(7) If you are one of a crowd starting off from an aerodrome and everyone else is doing left-hand circuits in climbing, don't do right-hand circuits.

APPENDIX "A"

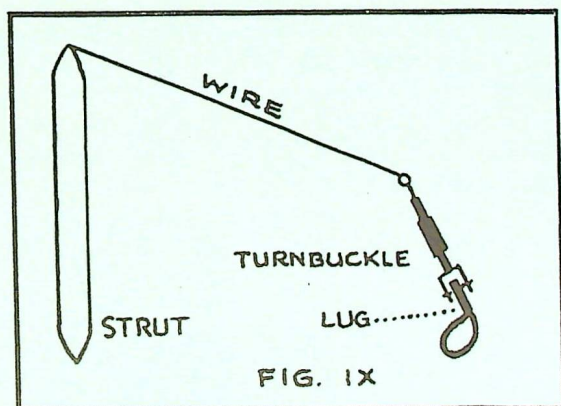
SOME DETAILS OF POINTS TO EXAMINE BEFORE TAKING UP A MACHINE

(1) If it is a strange machine, not having passed A.I.D. since repairs were done to it, examine rigging, noting whether turnbuckles are locked and all nuts tight and locked, and all split pins are in place.

Since the introduction of streamline wires, the knowledge of the proper fitting of turnbuckles is not nearly so widespread as it used to be. There are, however, two very important turnbuckles on every machine of the B.E. class, and it is necessary that every Officer, N.C.O., and man should know how turnbuckles should be fitted.

The most important thing about turnbuckles is not in the turnbuckle at all. It is that the lug to which the turnbuckle is pinned must point exactly in the same straight line as the wire at the other end of the turnbuckle, so that after being fitted, the turnbuckle can be moved freely in every direction, however little, and will vibrate freely with the wire when the wire vibrates. Otherwise, if the wire can vibrate and the turnbuckle can not, the turnbuckle will be subjected in flight to rapid oscillatory bending, which will soon crystallise the turnbuckle, so that it breaks.

After a turnbuckle is fitted, it is either free to vibrate in every direction or it is not. If it is free it is fitted properly. If it is not free, you can easily convince yourself that it is wrong, by drawing a picture like this:



and imagining what will happen when you pull the wire.

(2) Examine the engine and the connections of oil system and petrol system.

Unions are not locked, and unless they are tight, they will come undone.

(a) If a Gnome Engine, look over it, and see that the high tension wire is fastened on with tape. Make tape bridges from one thing to another and fasten the h.t. wire in the middle of the tape.

Do not bind the h.t. lead to one of the copper pipes because metal is the thing which the h.t. lead wishes most to avoid; suspend it in mid-air by tape.

(b) If the engine is controlled on the throttle, test the slow running position. You should just not be able to stop the engine with the throttle.

(3) Personally examine the tanks, unless you find a reliable man who can say: "I filled them up myself, and they have not been touched since."

NOTES FOR INSTRUCTORS — NORTHERN GROUP

(To be read with Notes on Flying)

Criticism is the basis of instruction.

Every effort of every pupil should be criticised verbally and dispassionately, unless the pupil has wantonly disobeyed his instructions or the laws of common sense.

If a pupil has done badly, he should be told how he could have done better. If a pupil has done well, he should be told how he could have done better, but in this case, he would also be told how he could have done worse. This is very important, because many hundreds of wasted hours are flown by pupils with apparent success—wasted because the pupils have unconsciously and not consciously avoided some dozen of mistakes which they might have made.

Unless a pupil knows of all possible mistakes and can give reasons in words for not doing the things which constitute those mistakes, he is liable at any time to make one of those mistakes without warning. The instructional value of success is absolutely nil, unless the pupil knows and can say

in words why it was that he succeeded and did not fail.

It is, therefore, waste of machines and petrol, to let solo pupils take off, fly round, and land again at their own (sweet) will, uncriticised, because with criticism much more value would have been obtained from the flight.

The fact that the aeroplane is intact after a solo flight is no proof that all has gone well. The pupil may have made in a small degree or shown a tendency to make several mistakes, which could be checked by criticism from an instructor watching from the ground. If he is not checked, the pupil will some day make the same mistake in a greater degree and wreck a machine simply because he did not know that such a mistake was standing by ready to be made.

ELEMENTARY INSTRUCTION

In M.F.'s some instructors show a tendency to leave a pupil too long in the back seat. The pupil should take his first flight in the back seat so that he may be reassured by seeing that it is possible to fly an aeroplane with two feet and half one hand. After that, the instructional value of the front seat is much greater than the value of the back seat, and the pupil should therefore be put in front.

A very clear and unvarying code of signals should be arranged between instructor and pupil. The most important signal is the signal for the pupil to leave go and allow the instructor to take full control. No attempt should be made to take the air until the pupil has practised obeying the signals on the ground. In the air, the instructor should not correct the pupil's mistakes by use of the aeroplane's controls. He should make the pupil correct his own mistakes either by signalling to the pupil by touch or by word of mouth, using a speaking tube or trumpet. This method is quite safe over 500 feet high, and immeasurably more valuable than the method of using the aeroplane controls to overpower the pupils.

It is very important that pupils of M.F.'s should not be allowed to get into the habit of doing things which they will not be able to do on H.T. machines. They must therefore be prevented from putting the nose down in order to get into an aerodrome, since this habit will be harmful to them later on.

Likewise, a pupil should not be allowed to think that he has achieved unqualified success when he has learnt to land a machine on a big aerodrome at an indefinite speed. He should be reminded that he is allowed to do so as a temporary expedient in order to save the M.F. and that he will not be of any use as a Pilot until he can land on a particular spot at a particular speed — the slowest.

— End —

TRACERS

Mr. H. C. Beaupré of Portsmouth, Ont., would be grateful for information enabling him to contact Flying Officer "Bud" Brash, formerly of No. 6 Group Headquarters.

Mr. Einar Berg, of Archerwill, Sask., would appreciate hearing of or from Mr. John Cowell, whose home used to be (and perhaps still is) near St. Catharines, Ont.

Mr. G. L. Harkley would like to hear from any war-time personnel of Nos. 3 and 10 C.M.U. who would be interested in getting together sometime during the coming spring or summer. Mr. Harkley's address is: "Nick" Harkley Enterprises, Lakefield Highway, Peterborough, Ont.

The Kruger National Park

By Col. J. A. B. Sandenbergh, O.B.E., Warden of the Kruger National Park

(In our last issue we printed an article by Wing Cdr. F. H. Hitchins on one of South Africa's most remarkable sons, Field Marshal J. C. Smuts. This month, by kind permission of the Editor of the "South African Air Force Journal," we reprint a description of one of South Africa's most remarkable institutions.—EDITOR)

IN THE NORTH-EASTERN corner of the Transvaal Province, the South African nation, inspired by the foresight of the last President of the Transvaal Republic — Paul Kruger — and the later enthusiasm and vision of Lt.-Colonel J. Stevenson-Hamilton, in 1926 established the Kruger National Park. By Act of Parliament it was laid down that this vast area of over 8,000 square miles was forever to remain in its natural state — Old Africa — wherein all forms of wild life would find sanctuary.

The fauna, the flora, the rivers, the streams, the rocks and the earth of this area were to be protected and preserved for all time. To the human race it meant "hands-off" in every conceivable way. No matter how the progress of man advanced, how changed the rest of South Africa might become, the nation was determined to keep this area as it was in the beginning.

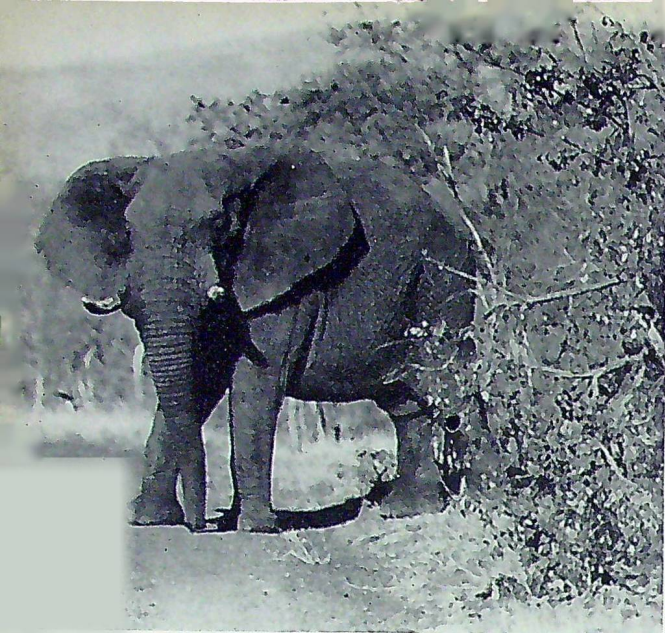
Provision was made, however, to allow humans to enter the area on specified conditions, to enjoy the many beauties and thrills of a visit to this remnant of Africa — the haunt of the mighty elephant, the regal lion, the graceful antelope of many species, and the wealth of bird and other life — living their lives freely as Nature intended them to do. But more than anything else preserved in this area was that intangible something which can only be described as the strange, brooding atmosphere of the Wilds where Nature rules supreme. In the words of that great South African, Field-Marshal J. C. Smuts — "but greater even than its wonderful fauna, its sub-

tropical flora, its unrivalled scenery, is the mysterious eerie Spirit which broods over this vast solitude where no human pressure is felt, where the human element indeed shrinks into utter insignificance, and where a subtle Spirit, much older than the human spirit, grips you and subdues you and makes you one with itself. To those who wish to experience a thrill — a thrill which is unlike any they have ever experienced before — I venture to recommend a visit to this secluded home of the Earth Spirit."

In 1928 the first tourists entered the Kruger National Park — 180 cars — and from that time onward people came in ever-increasing numbers from every corner of the globe to enjoy one of the most unique experiences in the world. Last year 15,500 cars entered the Park and possibly consideration will have to be given to limiting the

A bevy of naiads.





"Well, gentlemen, what can I do for you?"

numbers of tourists in order to avoid undue disturbance of the Spirit of Sanctuary.

Fifteen rest camps of varying sizes are strategically situated, and in all these camps the necessities of life are provided. In the main camps, restaurants and stores provide meals and a wide range of commodities. Rondavels — circular thatched huts — and other huts, in keeping with the African Wilds, are provided for sleeping accommodation. In establishing entry fees and fees for other services, it has been constantly borne in mind that this Sanctuary must be kept within the means of all sections of the people of South Africa.

Although only 280 miles from modern Johannesburg, the Park is starkly primitive, and the world of glittering hotels and busy streets could well be thousands of miles away. The camps, too, are designed as camps in the wilderness — where only the necessities of life are provided and where tourists must not expect to find all the luxuries of modern city life.

In the Park the tourist has the opportunity of living once again a simpler and more natural life — far more closely associated with Nature and far removed from all the noises, hustle and bustle of the cities. An atmosphere of remoteness is provided which can only be found in the very out-of-the-way places of the world — now so rapidly being encroached upon by human progress.

During the summer the lower parts of the Park are almost unbearably hot; for this reason, only the higher-lying portions of the Park are open to the public in summer. From the beginning of June to mid-October the entire Park is open to tourists. During this period the climate is second to none — with clear, sunny, windless days and just sufficient nip in the air to make sleeping a joy after the day's sightseeing. It is true that tourists may be disturbed by the reverberating roar of lion, the wailing of jackal or the weird, moaning call of hyena. It is not uncommon for the still night to be suddenly split by the crash of a tree coming down under the weight of an elephant not far from the camp. But these are sounds which only add to the enjoyment of a visit to the Sanctuary.

Over a thousand miles of roads form a network affording ample opportunity to observe all species at close quarters. Wild life in the Park has learnt that cars driven within the regulations are harmless things, and it is common to see lions within a foot or two of cars — while elephant and other animals go quietly about their business of living as if the cars did not exist.

Among the species which may very readily be seen in the Kruger National Park in fair numbers, the following will give some idea of its wealth of wild life: elephant, African buffalo, hippo, zebra, warthog, eland (the biggest of all antelope), sable, roan, kudu, inyala, reedbuck, impala, waterbuck, tsessebe, blue wildebeest (brindled gnu), bushbuck, duiker and the graceful klipspringer. Lions, leopards, cheetah, wild dogs, spotted hyena, saddle-backed jackal, sidestripe jackal, banded mongoose, African caracal, serval, baboons, vervet monkeys, crocodiles and a host of smaller animals.

By no means least is that weird old-world animal — the giraffe — and these are seen in considerable numbers.

Ornithologists find an enormous field of interest inside and outside the camps. Nowhere in South Africa is there such an abundance and variety of birds as in the Park — from the exquisitely beautiful Bee-eaters and Rollers, the lordly Martial Eagle and the comical Ostrich, to the sinister Vulture, diving out of the dim remoteness

of the upper skies to his carrion food below; the Park is an enormous aviary filled with colour of every hue, with song and sound to delight any ear.

To both the professional and amateur photographer there is a wealth of subject matter, and it is no longer necessary to probe the depths of Central Africa to procure close-up photographs of some of the greatest of African animals. Anyone with an average knowledge of photography can take outstanding photographs of wild life from a car. In recent years the Kruger National Park has become the Mecca of cine-photographers — some of whom have acquired films which are truly extraordinary. Quite a number of these photographers have managed to secure films of lions actually killing their prey. From every civilized country professional photographers have poured into this area to take back with them photographs and films of an area and its denizens so far untouched by the hand of man. To give an indication of the value some people place on their films taken in the Park, the following is a true story of an occurrence during the 1948 season. A wealthy gentleman from the United States of America came out here and took cine films in the Park which he considered so good that he assured officials in the Park that it would not be very long before he made a return trip. The surprise of these

officials can be imagined when only some ten days later this same gentleman returned. It seems that he had returned to America by air but on his journey homeward along the coast by steamship, his films were stolen. He immediately booked a passage back to South Africa on the next air-liner and hurried to the Park to get more "shots" to replace the stolen films, for showing to friends and relatives at home!

To anyone who has not visited the Kruger National Park it is impossible to give an exact picture of just how many opportunities present themselves for taking photographs and films which, a few years ago, would have been thought impossible to procure.

As it is of the utmost importance that animals must never learn to associate cars with their hereditary enemy — man — very sound and very purposeful regulations governing the conduct of tourists exist, and these are, needless to say, rigidly enforced. All tourists must be inside the area of a rest camp not later than half-an-hour after sunset, and the gates of the camps are not opened earlier than half-an-hour before sunrise. No person may, outside a rest camp, get out of a motor car. No vehicle may be driven off a recognized road; the speed limit is 25 miles per hour, etc., etc. To some, these restrictions may seem irksome, but they have all been imposed for very definite reasons. All regulations are primarily designed to safeguard the Sanctuary of the South African nation gave to wild life in 1926. Others are designed to protect thoughtless and irresponsible tourists from injury or worse. Many tourists seem to think that because some of the most formidable animals in the world — elephant, buffalo, lion and leopard — are unconcerned in the presence of cars, they are therefore tame and harmless. Nothing can be further from the truth and any tourist getting out of a car in the presence of some animals, or unduly disturbing them, is taking a very serious risk of retaliation in swift and deadly form. Even the most formidable of animals, including the African buffalo — which has the name of being the most savage of all — have only one desire, and that is to be left alone to live their lives as they choose. Throughout the

"To hell with these tourists!"





social hour, when zebra and hartebeeste meet for a drink.

...times they have learned to fear the most
...of all living creatures — man — and this
...is ingrown and inbred in them and, when
...frenly confronted with apparently no chance
...away from this terrible enemy, they are
...to attack in self-defence.

...still, beautiful reach of the river may offer
...temptation to a swimmer, but there is every
...hood of a crocodile lying in wait, and if you
...the sunny bank at mid-morning you will,
...all probability, see these sinister creatures
...out of the depths for their daily sunbath.

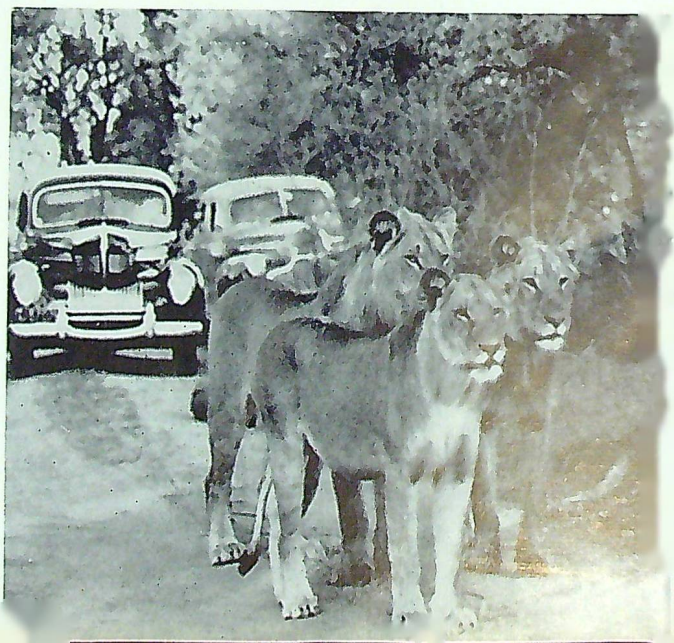
...throughout the tourist season, the Ranger staff
...at it correcting erring members of the
...who do not realise their foolhardiness or the
...that the animals in the Park are as wild and
...med as they were a thousand or more years
...The very fact that one can drive a car among
...animals is one of the greatest attractions of
...Park.

...you drive along you may suddenly become
...of lions lolling in all attitudes a few yards
...side of your car. Sometimes they roll about
...play with each other; sometimes they lie on
...backs and wave their paws in the air, just
...so many great cats. At times battles-royal
...been seen by tourists — usually the trouble
...er some lioness or other. A sight like this will
...your memory for ever. It is not uncommon
...ese animals to roar to distant friends whilst
...ng about within a few yards of a car which

they treat with complete indifference. At times, grass and shrub may partially obscure such a view and the tourist may be tempted to get out on the other side of his car and look over the top of the hood to get a better sight. A few years ago, a member of the staff came upon a tourist doing this, and having a wonderful time taking cine films of a group of lions. Unknown to him one member of this pride of lions was lying on the other side of the road and was watching him with great interest! When the tourist's attention was drawn to his observer, all records were broken for getting back into the car — and his excuse was "that he did not know a lion was there!" A lion makes it its business to use the least cover to make itself as inconspicuous as possible — and the wise tourist takes the advice of the staff, who spend their lives in the wilds.

In the last glow of sunset, cars pull, one by one, into the camps for the night, and from the cooking fires comes the scent of salt rib, boerewors and chops grilling over the coals, and the quiet companionable life of the camps begins. All noise and disturbance must cease by 9.30 p.m. After this time many will be seen sitting round their camp fires exchanging stories of the bush, the day's sights and the places they have visited during the day.

"Is that chap getting out?"



On such a night, as you sit round the dying glow of a camp fire under the purple star-studded African sky, watching the golden ball of a full moon rising through the trees in the East, you will feel a wonderful calm and peace — but, in the dense bush around you, stark tragedy is constantly occurring — perhaps a shrill scream of agony, suddenly choked off, startles the quiet of the night and causes you to sit closer to the fires — or you will hear the beat of staggering, exhausted hooves, and the sobbing breath of some creature about to give its life that another may live. Down in the river, over which the moon is rising, the proud bull buffalo you saw today may be fighting his last desperate battle for existence with a fourteen-foot crocodile clamped to his face, and slowly but inexorably being drawn down to the water and oblivion. You may shudder, and the night may lose its charm and become a cold and merciless beauty; but forever after when you scent



"So it's you again, eh?"

woodsmoke on an autumn evening you will remember South Africa's Garden of Eden, and no matter where you may be you will long for another night in that vast solitude where the Arch Spirit rules supreme in Unspoilt Africa.

The Texas Navy

Lt. Gen. William H. H. Morris, Jr., Commander in Chief, Caribbean, Quarry Heights, Canal Zone, today enjoys the distinction of being an Admiral in the Navy of the State of Texas . . .

Engraved on the scroll . . . is a capsuled history of the Texas Navy. In the days when Sam Houston headed the Republic, four gallant little ships, the "Liberty", the "Brutus", the "Invincible", and the "Independence", comprised the "fleet". This force shortened the Texas War of Independence by holding the New Orleans supply lines open,

compelling the Mexican forces to travel a long, overland route, exposing them to hostile Indians.

Texas won her freedom and proclaimed her independence on 2 March, 1836. As for the gallant little four ships of the Navy, the "Liberty" was sold to satisfy repair bills, the "Independence" was later captured in a battle with two Mexican gunboats, and the "Brutus" and "Invincible" were pounded to pieces by waves after having grounded on sandbars in the Gulf.

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

Aircraft Ski Research at N.R.C.

By G. J. Klein

(This is a condensation of a longer article by Mr. Klein, of the National Research Council, published in the N.R.C. "Quarterly Bulletin". It is non-technical and of considerable interest to skiers as well as pilots and engineers.—EDITOR)

AIRCRAFT SKI RESEARCH began in Canada in 1922, when Gliddon measured the sliding resistance of a number of small model skis at McGill University. The first aerodynamic tests of skis were conducted in 1928 by Parkin at the University of Toronto. These early tests, though limited in scope, were the beginning of the important ski research carried out by the National Research Council of Canada after its Aeronautical Laboratories were established in 1930. The following article gives an outline of the various phases of Canadian ski research.

Snow Characteristics of Skis

There are times when the sliding resistance of aircraft skis is so great that it is impossible to reach flying speed. There are other times when the skis, after remaining stationary for even a few seconds, adhere to the snow to such an extent that drastic methods have to be used in order to break them free. Therefore, the object of the tests about to be described was to determine what changes in ski design should be made in order to achieve a substantial reduction in both the sliding resistance and adhesion of skis.

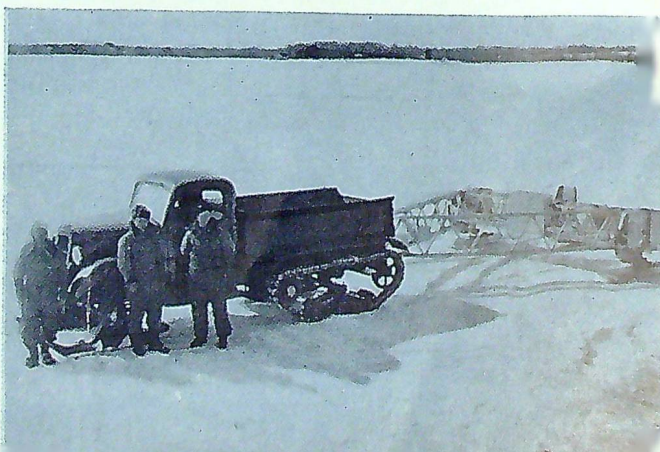
The towing dynamometer shown in Figure I was used to measure the adhesion and sliding resistances of more than 40 ski models. Fairly large models (approximately half scale) were used. In one series the models differed in shape; in another they differed in shoeing material. Only three of the models were of flexible construction and a few others incorporated some special feature — such as a glass window in the ski bottom — to aid in the investigation.

Early in the tests it was found that sliding resistance and adhesion were far more dependent upon snow conditions than on the design of the ski. Further, the skiing quality of the snow changed continually and it was not unusual to observe marked changes taking place during periods of less than an hour. This made it difficult to compare the resistances of two different skis unless they were tested at very nearly the same time. Therefore one of the models was taken as a reference and was always tested simultaneously with one of the other models. Even with this procedure it was necessary to carry out a very large number of tests in order to obtain reliable information on the effects due to variations between the different models.

It was found that the sliding resistance of a ski could be divided into:

- (a) the resistance component due to compacting the snow while forming the ski track — analogous to "form drag" in aerodynamics, and

Ski dynamometer.



(b) the resistance component due to friction.

When these components were expressed as coefficients:

$$\mu_p = \frac{\text{component due to compaction}}{\text{load on the ski}}$$

$$\mu_f = \frac{\text{component due to friction}}{\text{load on the ski}}$$

it was found that μ_p increased with increasing unit loading while μ_f decreased to such an extent that, for all snow conditions on areas exposed to moderate winds and for the range of unit loading (100 to 500 lb. per sq. ft.) covered by the tests, the total resistance coefficient $\mu_p + \mu_f$ decreased linearly with increasing unit loading.

It was discovered that μ_f varied with the bearing surface length of the ski. This suggested that the mode of friction was not constant along the length of the ski; and, after further analysis, the following theory of ski friction was developed. It gives a qualitative explanation of the results obtained in all the sliding resistance tests, of which there were more than 2,000.

The theory is based on the idea that the contact between ski and snow takes place at a large number of very small areas and that the heat generated by friction causes sufficient melting to provide water lubrication at the points of contact. Bowden and Hughes, working independently of the present author, also concluded that lubrication caused by frictional melting occurs during sliding. It is further considered that each contact area is enclosed in a water drop which does not move appreciably with respect to the snow, and that the remainder of the ski bottom is in contact with air. Thus, in the case of dry snow, the frictional component of ski resistance is considered to be made up of:

- (a) solid friction, most of which occurs near the toe of the ski,
- (b) viscous drag due to shearing in the very thin film of water between the ski and the areas of contact which, because of the burnishing action of the ski, became small polished flats, and
- (c) drag due to surface tension forces acting at the perimeters of the water drops in contact with the ski bottom.

A glass window was set flush in the bottom of one of the ski models so that the contact between

the ski and the snow could be examined. When the ski was in motion, a narrow meniscus* of water surrounding each small flat contact area was clearly visible.

Under certain snow conditions of fairly common occurrence, the drag due to surface tension is a surprisingly large part of the total ski resistance. Some simple experiments have shown that, when the water drops are small and very closely spaced, surface tension drag may be of the order of 20 lb. per sq. ft. of bearing surface area.

The sliding resistance of a ski is quite high at very low temperature because the area over which solid friction takes place is relatively large. Since this area is approximately proportional to the width of the ski, the sliding resistance can be effectively reduced by using a high aspect ratio** ski. Sliding resistance at low temperatures may be further reduced by using shoeing of low thermal conductivity, because it helps to conserve frictional heat. In this connection it is interesting to note that the sleds used by the Eskimos to carry fairly heavy loads in the Arctic are from 14 to 20 ft. long and have runners only 2 to 3 in. wide, which they coat with a smooth layer of ice (a poor thermal conductor).

In very wet snow the entire bottom of the ski is wet and most of the resistance is due to viscous drag which varies as the square of the speed. Increasing the unit loading, *i.e.* decreasing the bearing area, seems to be the only method of reducing sliding resistance in very wet snow.

Whenever the snow is of feathery structure and is slightly wet, a large part of ski friction is due to surface tension drag. Surface tension drag may be reduced by increasing the unit loading. It is also influenced by the wetting properties of the material used for shoeing the ski.

All three components of ski friction increase with an increase in the number of contacts between the ski and the snow and are therefore greater for soft snow than for hard snow. They are also greater for low unit loading than for high unit loading.

*A meniscus is a lens concave on one side and convex on the other.—Editor

**The higher the aspect ratio of a ski, the narrower its width in relation to its length.—Editor

In order to evaluate the component of resistance due to compacting the snow, a recording type penetrometer was used to obtain curves of pressure against penetration. It was found that the part of the ski resistance due to forming a track in snow is approximately equivalent to climbing a grade having a rise equal to the depth of the ski track in a distance equal to twice the length of the bearing surface of the ski.

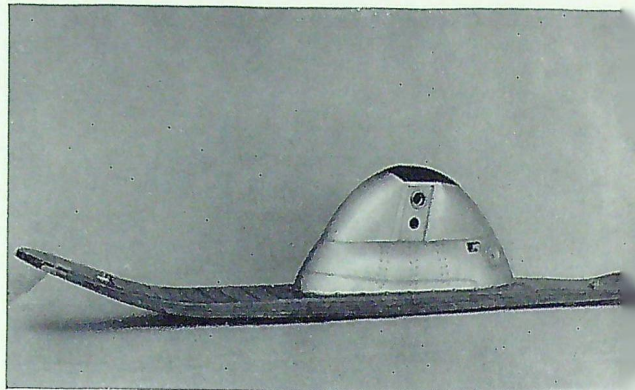
The model tests showed that, for skis used on landing areas exposed to moderate winds, the maximum sliding resistance could be reduced to about one-half and adhesion to about one-third that of a conventional ski by using:

- high unit loading,
- laminated bakelite shoeing,
- a high ratio of bearing surface length to width,
- an entrance angle at the toe of the ski not greater than 25 degrees, and
- an axle position such that the resultant load will pass close to the centre of the bearing surface length.

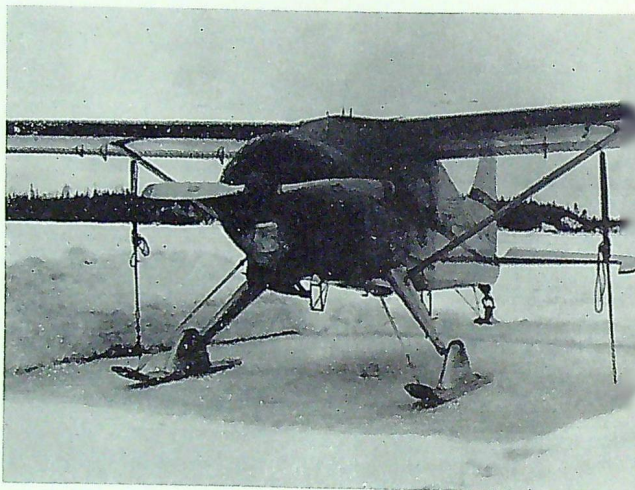
Ski flexibility had no effect on sliding resistance, but the adhesion of a flexible ski was about 85 per cent of that of a similar ski of rigid construction.

Laminated bakelite, because of its toughness and hardness, has remarkable resistance to wear. Experience has shown that bakelite shoeing will outlast sheet metal shoeing and rarely needs to be replaced during the life of the ski. Bakelite shoeing on an Arctic type sled, after three winters' service on the dry, very cold snow in the Barrens, has shown only minor signs of wear. The low thermal conductivity and smooth surface of bakelite appear to be mainly responsible for its low sliding resistance and low adhesion. However, its surface tension drag, while not high, is not as low as that of some other materials (such as wax), so that there is a possibility that a still better ski shoeing material may be found.

During the winter 1949-50, the Department of Lands and Forests of Ontario in co-operation with the National Research Council of Canada carried out service trials of skis on the DeHavilland "Beaver," which has an approved all-up-weight of 4820 lb. The tests were made on a number of the small lakes in the area between Sudbury and Kapuskasing, Ontario. This fairly flat area is



N.R.C. ski for De Havilland Beaver.



Beaver on N.R.C. skis.

covered with a dense forest which, to a considerable extent, shelters the snow on the lakes from the wind.

Two practically identical aircraft were used in nearly all of the tests; the one fitted with N.R.C. skis as shown in Figure 2, the other fitted with Elliott Brothers E-13 skis which are one of the best forms of conventional skis and, for many years, have been very popular in the northern wooded areas of Canada.

The principal features of the two types of skis are given at top of following page:

	N.R.C. Ski	E-13 Ski
Length overall, inches.....	95	108
Length of bearing surface, inches.....	70	80
Width, inches.....	10 $\frac{5}{8}$	22
Unit Loading, lb./sq. ft.....	465	195
Shoeing.....	laminated bakelite	sheet brass

The most significant result of the Beaver ski trials was that the snow conditions on the small, fairly well sheltered lakes were found to be considerably different from those which occurred during the model ski tests. In the earlier work the underlying settled snow was usually fairly hard, while in the Beaver ski trials the underlying snow, though settled was relatively soft. Further, due to the prevalence of fairly low temperatures, few crusts were found in the snow-cover, and when they occurred it was noted that the snow between the crust and the lake ice had developed into a weak layer of depth hoar. The thickness of this layer was sometimes as much as half the total depth of the snow-cover.

Although the penetration of the N.R.C. skis was generally from 2 to 2 $\frac{1}{2}$ times that of the E-13 skis, the total sliding resistance of the N.R.C. skis was generally as low as or lower than that of the E-13 skis. In one test the N.R.C. skis had higher resistance because they penetrated to snow of much poorer skiing quality than that of the snow near the surface. In another test on deep soft snow the resistance of the N.R.C. skis was about 60 per cent of the resistance of the E-13 skis.

The adhesion of the N.R.C. skis was generally appreciably less than that of the E-13 skis. N.R.C. skis could even be brought to rest on snow-covered slush without any difficulty in breaking free again — a procedure which the pilots would not risk on E-13 skis.

The N.R.C. ski had a tendency to sideslip on snow; therefore two laminated bakelite strips, 2 in. wide by $\frac{1}{8}$ in. thick, extending along the entire length of the ski, were added to overcome this tendency.

The weight of the N.R.C. ski without pedestal was about half that of the E-13 ski and the aerodynamic drag was considerably less. Level flight tests made on the same aircraft gave airspeed indicator readings at cruising r.p.m. of 108 m.p.h. for E-13 skis and 124 m.p.h. for N.R.C. skis.

Plans have been made to continue the Beaver ski trials next winter using new skis which will have a bearing surface length of 88 in., a width of 12 in. and laminated bakelite shoeing and runners.

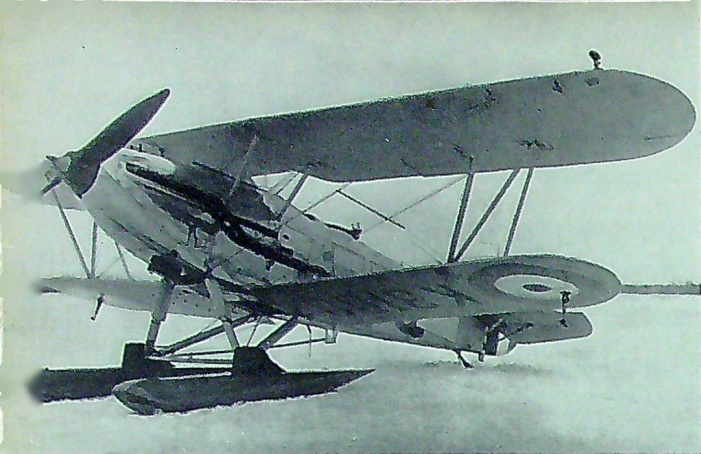
Aerodynamic Characteristics of Skis

There are two aerodynamic problems in connection with aircraft skis:

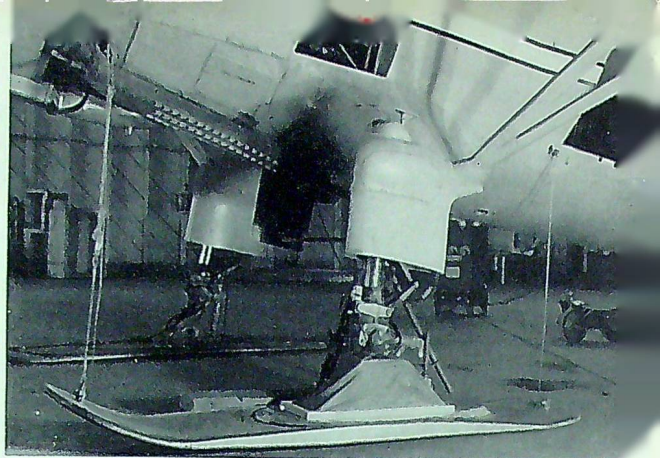
1. the reduction of drag, and
2. the reduction or complete elimination of the aerodynamic instability in pitch.

Since skis are unstable in pitch it is necessary to adopt some form of trimming gear in order to maintain the skis in their proper attitude in relation to the aircraft in flight. The trimming gear must also permit considerable freedom in rotation about the axle in order to provide for taxiing over uneven snow surfaces.

The most common form of trimming gear is two or more strands of shock-cord, in series with a length of steel cable and in parallel with a short length of steel safety cable which limits the extension of the shock-cord. One end of this assembly is connected to a deck fitting near the toe of the ski while the other end is connected to some convenient point on the aircraft. A steel cable, having a length which assures the proper attitude of the ski in flight, is also connected to a



Hawker Audax on N.R.C. streamlined skis with internal locking type trimming gear.



Load-measuring pedestal (near ski) and strain gauge (far ski).

deck fitting near the heel of the ski and to a second convenient point on the aircraft. Sometimes a second shock-cord assembly is used in place of the simple rear cable.

The aerodynamic drag of this type of trimming gear is quite high and, in the case of moderately high-speed aircraft, the moments to be controlled are so large and the trimming gear consequently so stiff that there is insufficient flexibility when taxiing over fairly uneven snow surfaces.

Summing up, then, we find that, for good snow performance, a ski should be long and narrow and should have a smaller bearing surface than a conventional ski. These features also have real aerodynamic advantages. If a ski incorporating the above features were streamlined, its air resistance would be very low and its aerodynamic instability as represented by the slope of the pitching moment curve would be relatively small. The use of an aerodynamic stabilizer of reasonable size, attached to the heel of the ski, may therefore be quite practical for a streamlined ski of these proportions and would seem to be the logical solution for skis of high-speed aircraft and for retractable skis, since stability is maintained at all speeds and at all positions during retraction of the undercarriage.

Dynamic Loads on Aircraft Skis

The need for experimental data on the loads encountered by skis led the National Research Council of Canada to extend its ski research to include dynamic load and bending moment measurements. The results of these measurements

were made available to the International Civil Aviation Organization as part of Canada's contribution to the group setting up strength requirements.

A Noorduyn Norseman Mk. VI was used in the tests. This type of aircraft has an approved all-up-weight of 7400 lb. and is very popular in Northern Canada. Three types of skis were used.

Vertical velocity immediately before landing was measured and vertical acceleration of the fuselage was obtained with electrical accelerometers.

Most of the tests were made on a rolled snow landing strip at Arnprior, Ontario. The snow surface was generally quite hard, but each spring, when thawing conditions set in, the surface became icy and fairly rough. Some tests were also carried out at Churchill, Manitoba, in order to include the severe snow conditions peculiar to the Canadian Barrens.

The bending moment records showed strong oscillations and bending moment reversals over the entire length of the ski. These were most pronounced for landings on ice but were also present when the landings were made on fairly deep snow. Since the maximum bending moments were found to extend to the very toe of the ski, the necessity for including a toe loading condition in the design requirements was very clear. The Canadian and I.C.A.O. regulations were therefore changed accordingly.

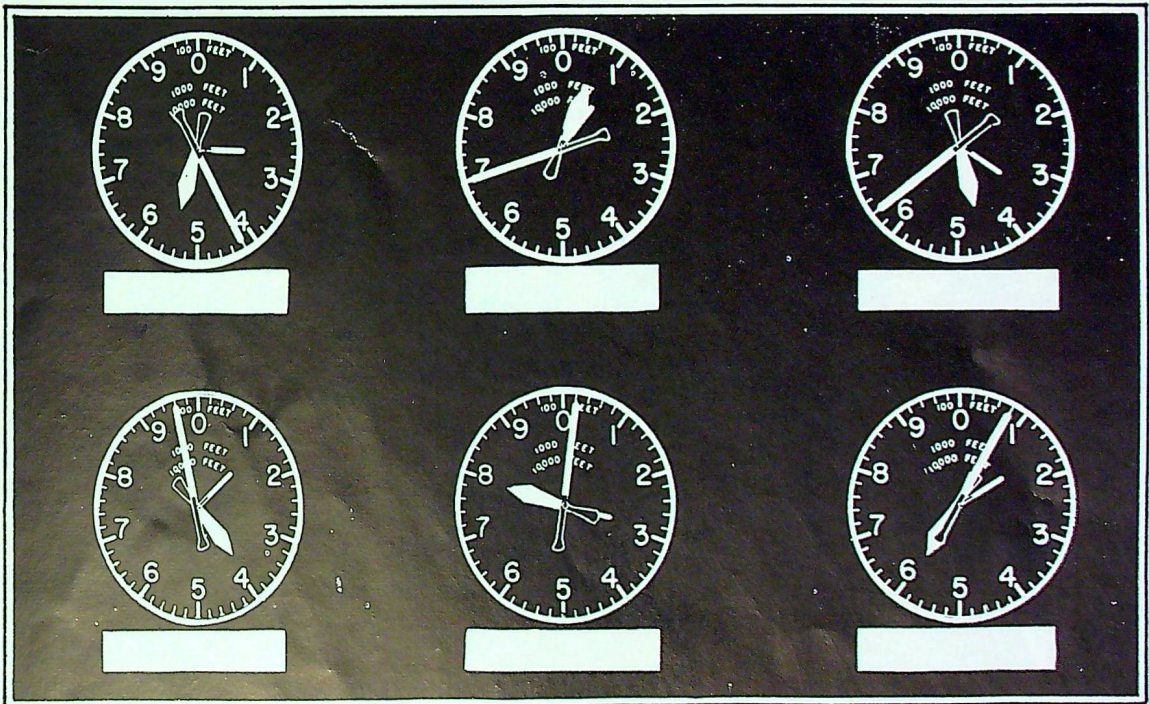
Those familiar with the severe conditions in the Canadian Barrens will appreciate that the snow surface is not always clearly visible to the pilot due to the presence of a layer of "blowing snow"

above the surface. It is therefore considered likely that a small proportion of all landings made in the Barrens will be extremely severe. Opposed to this point of view is the fact that ski failures are quite rare even in the Barrens, but this may be largely due to the exceptional skill of the pilots who fly in

this area. Admittedly, the margin of safety, as it now stands, appears to be small when operations in the Barrens are considered. However, the problem is not only concerned with the strength of the skis but also with the shock absorbing characteristics of the undercarriage.

What Do They Read?

This little test is reproduced by courtesy of the U.S. aviation magazine, "Flying". How accurate are you in reading the three-pointer sensitive altimeter? We tested several of the more experienced pilots who are serving their two-year sentence at A.F.H.Q. desks, and the results were a bit horrifying.



Correct readings are: (1) 25,420 ft., (2) 10,700 ft., (3) 34,640 ft., (4) 13,960 ft., (5) 28,020 ft., (6) 16,080 ft.

Pilot in Jungleland

(Reprinted by courtesy of "Flying Safety": U.S.A.F.)

*The time has come, the instructor said,
To speak of many things—
Of planes and ships, survival facts,
Ditchings and other things—
Of why the sun is boiling hot
And whether pilots have wings . . .*

Every so often, in sessions of hangar flying among pilots and aircrews, there is a spate of speculative oratory about survival at sea, in the Arctic, desert, Times Square, Los Angeles, or the jungle — not the city type of jungle, but the hot, steamy kind with bugs, snakes, animals and cannibals.

And while pilots and crews usually have a misty idea of just what they would do in order to survive

the hot, steamy kind of jungle, the jungle predicament, they are convinced, is for some poor dope other than themselves . . . and even if they *DO* project themselves into a mythical jungle situation, it isn't so easy to think of starving with a full belly. Nevertheless, there is a surprising lack of beaneries along the jungle byways and this shortage wreaks havoc with the pilot's or crewman's necessary, if somewhat ancient, habit of eating.

Both the gourmet and gourmand among aircrews may undoubtedly hoist a few eyebrows at some of the entrees listed on the jungle survival menu, but for aircrews forced down in jungle areas, hunger as well as necessity can be the mother of invention, and Dr. R. A. Howard, Professor of



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Botany at Harvard University, has offered some good advice to student officers of The School of Aviation Medicine.

Dr. Howard, a recognized expert in jungle survival, in his "Jungle Housekeeping" address to the Flight Surgeon class at Randolph AFB, Texas, gave the literal advice to eat like a pig and stay alive.

"Some persons stranded in the jungle," Dr. Howard said, "have had pretty good luck by watching the monkeys and eating what they eat, but it's better to watch the pigs. A wild pig has a digestive system very much like ours, and when you see one of them eating something, you will know it's safe to eat the same thing. If there is not any more around, chase the pig off and eat it yourself." This was but one of many dietary rules given the sky doctors by the former wartime chief

of the Jungle Survival Section at the School of Applied Tactics at Orlando, Florida.

There's plenty of food in the jungle, according to this authority, but the principal trick is knowing what to eat, where to find it, and when possible how to prepare it.

Food is to be found among both plant and animal life.

"Personally I like the plant food best," he said, "because you don't have to run it down."

But as for the animal food, the jungle expert said, any animal with hair is good to eat, and better, of course, when cooked. If cooking is not possible, it can be eaten raw. One should eat first the muscles, second the heart and third the liver. Any animals with two shells, "bivalves" as they are called, are good, and for animals with one shell, the larger the better. Also, anything that looks like a fish is all right if it has scales, but it must not be spiny-backed, puff itself up or have a beak like a parrot. Furthermore, anything taken from the ocean can be regarded as safe to eat. Flesh should be boiled, baked, roasted or fried in that possible order.

"And in speaking of animal food," Dr. Howard emphasized, "don't overlook the insects. They are a source of much nutrition."



"Grasshoppers," he said, "are good if you pull the legs off. So are butterflies with the wings pulled off. One airman said the latter had a faint meat taste. Wood grubs found in rotten logs are very nutritious, and so are common ants and ant eggs."

Many of the American airmen who got down in the Pacific jungles soon learned that ant hills were a wealthy source of good food. They used to dig them out for the eggs and sometimes cooked the eggs with rice.

He told of one airman whose case history he surveyed, who told this story:

"During my first days in the jungle I used to brush the ants off my food but before I got out I was brushing them back on."

As for the plant life, Dr. Howard advises that any part of a palm tree is safe to eat. Ferns are also good, especially the fiddlehead, or curled up ferns, and so are all flowers if they do not have a milky or colored sap. His advice is to leave red and white fruits alone unless you know them particularly, because the percentages would be against one who just took a chance on them. Most leafy plants are good, he explained, as are any seed that will germinate in a wet sack. Some seed have poison in them which is destroyed by germination.

Concerning water, Dr. Howard emphasized that the common belief that running water purifies itself is absolutely untrue.

"Rainwater is always the safest," he said, "and if the purity of other water is in doubt it should be purified. If no water is available the blood of a turtle or any animal life will suffice. The juice of any vine or fruit of any tree can also answer the water need, provided it is not bitter or soapy, or is not milky or colored."

Contrary to popular belief, man's greatest hazard in the jungle comes not from animal but from plant life.

"Animals and reptiles, excepting alligators and crocodiles, will usually get out of your way," he has observed, "but many plants and vines are covered with small spines. These are usually rotten at the tips and are infected with fungi and bacteria. Extreme caution must be taken to protect the body against these."

And as a final warning against insects, Dr. Howard said that the best insect repellent one can use is his own undershirt.

"Just tie up the arm and neck openings," he said "slip it over your head and tuck ends securely under other clothing." (U)

A WORD OF THANKS

The editor of "The Roundel" wishes to thank all those readers and fellow-editors in various parts of the world who sent Christmas Greetings either to him or to Sgt. Shatterproof. Competent observers in the Sergeants' Mess report that the old wardog was visibly affected when he received them. He was (so the grapevine has it) even detected in the act of dashing away a manly tear that threatened to dilute the Yuletide pint.

The Passing of Pilot Officer Percy Prune

By Charles Anthony

(Reprinted by courtesy of the "RAFA Annual: 1950": U.K.)

From *The Times* — Monday, 4 March, 1946

"R.A.F. men will not hear unmoved the news that 'Pilot Officer P. Prune' is shortly to be demobilised, for he has played a considerable part in their war-time lives. Nor can the announcement escape a wider notice. The name and fame of this unhappy fellow who always did the wrong thing have spread into civilian life to which he is now returning, and many elderly and not particularly air-minded people have learned enough from their offspring to know that the man who landed 'down-wind' with his undercarriage up would infallibly be identified later as Pilot Officer Prune. Well meaning but weak, Prune is the latest of a long line of characters in the world's literature to proclaim the truth of the proverb that He that will not be counselled cannot be helped.

"His co-creators Anthony Armstrong Willis (better known as Anthony Armstrong) and W. J. Hooper ('Raff' the cartoonist) are leaving the R.A.F., and Prune belongs to the same release group. Not only has a great deal of welcome amusement been provided by their joint activities, but the pill inside the jam must also have been effective in preventing many accidents. These cautionary tales have done for the Royal Air Force what 'Famous Last Words' once did for the motorist, and they have earned additional thanks for the encouragement to sound elocution furnished by a word which, as Little Dorrit was told, 'give a pretty form to the lips.' Perhaps this was involuntary: but Papa, potatoes, poultry, prunes and prism are all very good words for the lips."

In these staid terms did *The Times* record the end of the Service life of "Pilot Officer Percy Prune," who for five years had served as the R.A.F.'s prize boob, butt, clot and nit-wit; as an awful warning to the young, the embodiment of all that a good flyer should not be, for Prune invariably made a muck of everything he set out to do.

During 1940, while "Raff" was serving with a fighter squadron on the south-east coast, he was asked to create a fictitious character to permeate the pages of an official training magazine to be published each month from the Air Ministry. It was in the early stages of its inception, with author and playwright Anthony Armstrong ("A.A." of *Punch*) as its editor, and it became known as *Tee Emm*.

When cartoonist "Raff" had submitted his conception of what W/Cdr. Joe Stewart's Prune should look like, it was decided that with his egg-like head, mushroom nose, almost entirely expressionless face and untidy bearing, the Prune character could stand as the cap which might fit anyone guilty enough to wear it. It was considered unlikely that he resembled any pilot in any



Prune always reports the result of an experiment.

The Roundel

Command who had not been guilty of a "prunery," yet who might, by his personal appearance, earn himself the doubtful distinction of being called "Prune." But despite this caution on the part of the artist, happenings of subsequent years proved him wrong . . .

The Press got wind of Prune at an early stage in his misspent career, and one newspaper said: "Gravity is always lying in wait; and to understand Newton's third law is a pilot's first commandment. The people who break that law are chiefly prunes . . . Pilot Officer Prune is the pilot who doesn't think, who lands with his undercart up, who always presses the wrong knob, who relies on the A.A. to stop firing when he crosses their practice range . . . One day I think, in some solemn dictionary, Prune will become immortal: Prune — a thoughtless fellow; a fool."

It must be said for Prune that he tried but never learned, strove but never succeeded, was keen but "clueless." If he ever did the right thing, that happening was in itself an accident.

In all his adventures in every phase of flying, training and operations, Prune was supported by W.A.A.F. Winnie Winsum, Flying Officer Fixe (his navigator), Sergeants Straddle, Winde, and Buste, and A.C. Plonk.

The *Tee Emm* office was seriously approached after the first three years of Prune's existence by people who wanted him promoted. It was difficult to explain exactly why this could not be. Once the character was established as an eternal "P/O" he had to stay that way. Finally, the requests became so heavy that the Editor of *Tee Emm* framed a charge for Prune and had him court-martialled to dispel any hopes that he would be

anything but "P/O" for some time to come.

When Prune had boobed his catastrophic way through the pages of his own and other Air Force journals, on posters and on to the walls of "Gen" rooms, as the worst example to all bad flyers, he almost achieved the status of a living person. His name appeared on the door of an office shared by "A.A." and "Raff." This was worded "Pilot Officer Prune, M.H.D.O.I.F." The letters after his name indicated that Prune had earned the medal which his creators had instituted — the "Most Highly Derogatory Order of the Irremovable Finger." Prune was the patron of this Order, which was awarded each month to all ranks for "Prunelike" activities brought to the Editor's notice. Typical is one which appeared in the October, 1944, number of *Tee Emm*:

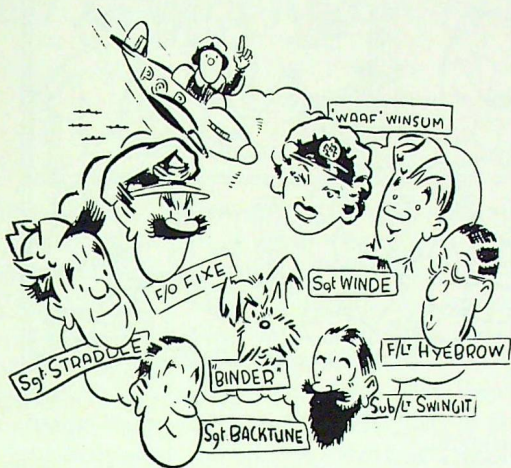
"The Most Highly Derogatory Order of the Irremovable Finger is this month awarded to Wing-Commander——— for high-speed landing.

"Having borrowed a Seafire from a neighbouring Fleet Air Arm airfield, he flew back to his own station. On landing he was surprised to find that his landing had taken up the whole length of the runway (2,000 yards) and promptly tore a strip off the flying control officer for having landed him down-wind. The flying officer tactfully showed him the Seafire's A.S.I., murmuring something which sounded like 'Knots to you!'"

These monthly awards were not intended to pin-point individuals but to make known their mistakes for the guidance of others, and when on



With a little patience you can always get your dinner in the jungle, says Prune



The "Tee Emm" team.

one occasion the award was made to an officer who, on landing on an airfield, had to consult D.R.O.'s to find out where he was, the Editor was telephoned by three different pilots who all asked "How did you know about me?"

The "Finger" award was further enhanced by the practice of giving "Bars" to the Order. These were known as "Joints to the Award" and were *not* highly prized by the unknown recipients. In time "Finger" became an admonition which proved more effective than the old-fashioned "Get weaving" or "Get cracking". More time was saved and more bitterness injected when anyone guilty of Prunish action had "Finger" hurled at him . . .

Another *Tee Emm* feature which carried on the tradition of Prune was the sketch of a tombstone which graced the back cover, and which bore such captions as "He didn't need a map for that little bit" or "He was certain those bombers were unescorted."

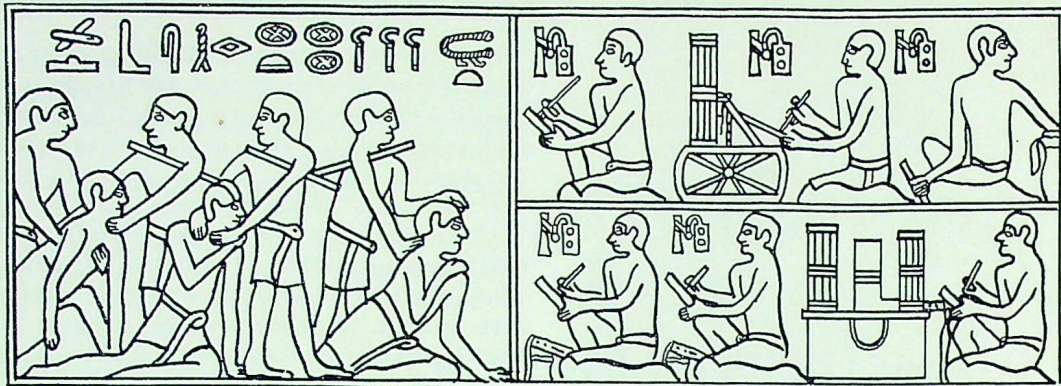
Prune's creators were able, with a good deal of stealth, to get Prune's name into the official Air Ministry telephone directory, which caused a deal of amusement to those who knew him to be a legend, and as much puzzlement to any new recruit asked to look up P/O Prune's number and give him a ring about some planned fool question. "A.A." or "Raff" invariably tried to oblige, if they were able, by thinking up some gag answer.

Prune was the greatest of all line-shooters. The simplicity of his experience of flak has about it a beautiful finality: "It was so thick I got out and walked home on it." Once he flew so low over the sea that his navigator "had to stand up to see over the waves." Believing that a good landing is "one you can walk away from," Prune was once heard to boast: "When I first touched down, I bounced so high I had to slip off altitude to get in." And anxious to graduate from trainers, Pilot Officer Prune remarked contemptuously of the Miles Magister training plane: "I was flying along the main road in a Maggie with a strong head wind, when an Austin Seven hooted and overtook me."

"Raff" was invited during the heyday of Prune to invent a similar character for the Fighting French Air Force and in time the pages of the *Bulletin des Forces Aériennes Français en Grande Bretagne* (a title a little less snappy than *Tee Emm*) were sprinkled with a character called "Aspirant Praline."

The French, typically, described this resemblance to Prune with the story that during the First World War Praline's father erred in his navigation across France, crossed the channel and forced-landed near the Prune ancestral home at Ineyne manor, Prune Parva, in Sussex. He was accorded a fulsome welcome by Mrs. Prune. On precisely the same night, husband Peter ("Ropey") Prune deviated slightly on *his* flight to the British lines in France, from his base at Mansden, and landed hard by the Praline home, where he, too, was welcomed with the utmost hospitality of Madame Praline.

A demand grew for Prune's creators to supply information regarding the history of their character, and together they wrote and illustrated *Prune's Progress*. In this work they establish the fact that he came of a very old family and that such a high standard of fatuously exuberant bone-headedness could not have been achieved in the twenty years of Pilot Officer Prune's life. Heredity must have played a part. Generations of Prunes undoubtedly have lived, boomed, and died before the sum total of their cosmic ineptitude could be concentrated in one human frame . . .



LEST WE FORGET . . .

For those of us who are beginning to worry about the imminence of March 31st, it may prove salutary to gaze awhile upon this cut from James H. Breasted's "History of Egypt". Pharaoh's scribes and fiscal officers are shown keeping their records, while the royal muscle-men of 5000 years ago bring in the taxpayers. On the whole, perhaps we aren't too badly off.

50 YEARS AGO

A recent application to our War Department for experiments with military automobiles was answered with a prompt refusal on the ground that they could be of no use in war.

February Transfers

(As received from D.P.C. on 29 Dec. '50)

Officers

W/C S. R. Burbank, M.B.E. (T.L.) — No. 1 Radar & Comm. School, Clinton, to A.F.H.Q.
 S/L R. J. Lawlor, D.F.C. (G.L.) — Training Command H.Q., Trenton, to Can. Joint Staff, London
 S/L C. N. McVeigh (G.L.) — Can. Joint Air Trng. Centre, Rivers, to A.F.H.Q.

Warrant Officers

W.O. 2 H. Vernon (Com. Tech. G.) — R.C.A.F. Stn. Whitehorse to Tact. Group H.Q., Winnipeg

KEY TO TRADE DESIGNATIONS

G.L. — General List
 T.L. — Technical List
 Com. Tech. G. — Communications Technician (Ground)

Dr. Von Flugen's Glossary

(Reprinted by courtesy of "Aviation Week": U.S.A.)



- Air Carrier:** Any container or vehicle used primarily for the purpose of carrying air.
- Aircraft Dope:** See AIRPLANE DOPE.
- Aircraft Flight Report:** A loud noise accompanying the termination of an aircraft flight; usually preceded by a rapid descent.
- Airframe:** Ambiguous terminology. May mean either a frame constructed around a body of air or a body of air surrounding something.
- Air Hostess:** Same as ground hostess only before grinding.
- Air Minded:** A deprecatory invective, similar to "addle-brained."
- Airplane Dope:** See AIRSHIP DOPE.
- Airship Dope:** Dope, schmope, what's the difference?
- Airship Hull:** A whole airship.
- Airspace Reservation:** Any geographical location set aside by the U.S. government for the exclusive occupancy of airspace.
- Alclad:** Entirely clothed.
- Alcoa:** A mineral base shortening frequently used as a substitute for butter.
- Amyl Acetate:** See aircraft, dope.
- Angle of Zero Lift:** The angle immediately preceding an aircraft flight report.
- Arctic Front:** An attitude assumed by an uncooperative stewardess.
- Arresting Gear:** A police officer's equipment.
- Artificial Aging:** A phenomenon which occurs after approximately seven hours' association with the aircraft industry.
- Assembly Drawing:** A gathering at which a prize or prizes are awarded by means of pulling names or numbers from a hat or other container.
- Astronomical:** The boss' salary.
- Ballast:** See BOOM
- Bank Indicator:** A device used by safe crackers to locate prospective business sites.
- Barrel Roll:** A type of athletic contest. Usually occurs at company picnics and is enjoyed only because the barrels have been previously emptied by the contestants.
- Base Metal:** A term used by makers of aluminum products in referring to stainless steel, and vice versa.
- Boom:** See BALLAST.
- Brazier:** A garment used to minimize the effects of flutter and vibration.
- Bucking Bars:** A pilot's favorite pastime.
- Buffeting:** Eating dinner while standing up.
- Bulkhead:** A derogatory expression usually applied to persons of questionable intelligence.
- Burbling:** What the stewardess does to your baby after it has eaten.
- Cap Strip:** To remove one's headgear.
- Carburetor Icing:** A sweet substance applied over carburetors to improve palatability and/or appearance.
- Castor Oil:** A lubricant used for cross-wind landing gears and wheel chairs.
- Certificated Aircraft:** An aircraft, all hazardous features of which have been either overlooked or camouflaged.
- Characteristic Curves:** Easiest way to distinguish between a steward and a stewardess.
- Chief Engineer:** A person, totally devoid of all engineering knowledge, who married the boss' daughter.
- Cluster Joint:** A crowded establishment.
- Commercial Brass:** Persons of high authority.
- Compensating the Compass:** A ritual performed by pilots and navigators after emerging from a heavy cloud formation.
- Contra-Rotating Propellers:** The act of turning a propeller in the opposite direction at the same time.
- Detail Assembly:** The aft portion of an airplane.
- Die Casting:** A form of gambling.
- Dzus:** Ancient Greek God.
- Elastic Center:** Having a hard resilient center, as a golf ball.

Factor of Safety: An ideological allusion to the fact that safety should be considered in designing airplanes.

Fahrenheit: A system of measuring vertical distance above the earth's surface. One Fahren equals 0.53959 nautical miles.

Farad: A high official in the Egyptian government.

Fitting Factor: A process utilized in structural analysis whereby a factor is manipulated so as to fit the particular airworthiness requirement.

Galvanized Iron: Iron which has been rapidly set in motion.

Gamma Rays: A fraternity basketball team noted for their infiltration tactics.

Gang Drill: A military reserve unit training procedure.

German Silver: A type of silver containing any metal except silver.

Gliding Distance: One-half of the vertical distance from an airplane to the nearest landing area at the time of complete power failure.

Gusset: A light gus.

Ham Standard: A method of comparatively evaluating pork products.

Hammer Head Stall: An arbitrary method of avoiding work.

Hand Forging: An illegal type of penmanship.

Hand Forming: A type of plastic surgery.

Heterodyne Reception: A private gathering attended by a motley assortment of people.

Hydrogen: An alcoholic beverage consisting of water and gin.

Induction System: A network of draft boards.

Inflation: A financial condition evidenced by a lack of sufficient money.

Involute: One who acts involuntarily.

Jury Strut: A dance popular in legal circles.

Kapot: A colloquialism meaning "done," "finished," or "all washed up."

Lap Joint: A bar or other establishment having private booths and/or dim lighting.

Lightening Holes: The process of removing stuff from empty holes in order to reduce the weight thereof.

Link Trainer: A device to train linx.

Lock Washer: One who washes locks.

Louver: An art museum in France.

Low Brass: An immediate supervisor.

Mach Number: A quantity encountered in flying, one of which is enough of.

Magnetic Equator: An automatic calculating machine.

Masonite Die: Refers to the death of a member of a fraternal organization.

Master Oscillator: One who is adept at kissing.

Mating Jig: An animal husbandry accessory.

Maximum Mean Camber: This is a common fallacy among aircraft engineers. Actually, maximum does not mean camber at all.

Maxwell's Theorem: States that coffee is "good to the last drop."

Mechanical Lift: An automatic elevator. Also, see BRAZIER.

Medium Bomber: One who practices the suppression of spiritualistic arts by violent means.

Microfarad: A small official in the Egyptian government.

Micrometer: A very small meter.

Moment of Inertia: A short period of hesitancy.

Nitriding: Piloting an airplane between the hours of official sundown and official sunrise.

Nominal Capacity: The amount of nominal which can be put in any given container.

Ohmmeter: One who eats ohms.



Orsat Apparatus: A substitute or imitation apparatus.

Ozone: An area of zero magnetic deviation.

Parachutes: Two chutes.

Precipitation Hardening: A meteorological term meaning that the rain is freezing.

Pylon: All aboard.

Quiet Birdman: A non-existent type of airplane pilot.

Race Rotation: Practiced by totalitarian governments. Similar to crop rotation, but more fun.

Resisting Moment: A short period during which a cold front exists. Usually occurs immediately prior to mutual inductance.

Root Section: Portions of the grandstands set aside for active supporters of the opposing teams.

Skin Drag: A dance held at a nudist colony.

Solo Flight: An airplane flight conducted at low altitude.

Stable Air: An atmosphere tinged with the odor of fertilizer.

Staff Engineer: The chief engineer's brother-in-law.

Standard Air: Air supplied free of charge for customers of Standard Oil Co.

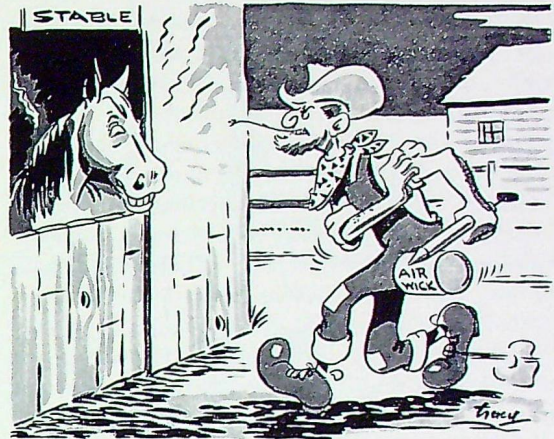
Stationary Front: The result of constructing an ideal truss around a set of characteristic curves.

Stress Analysis: The art of manipulating figures in such a way as to prove that a deficient structure is twice as strong as it is supposed to be.

Suction: Influence with the boss.

Terminal Velocity: Speed limit at an airport.

Thermite: A small insect which eats houses.



Thermocouple: Newlyweds.

Uniform Load: The weight of one uniform.

Utility Glider: A type of silent butler.

Vacuum: A place with nothing in it.

Vacuum Pump: A pump used to pump nothing into a vacuum.

Vacuum Tube: A tube through which a vacuum pump pumps nothing into a vacuum.

Vanadium: A native of Vanadia.

Wing Flap Controls: Devices used to control the flapping of wings.

Yaw Guy: A yes man.

Yield Point: To admit defeat.



RADAR REUNION

A reunion of radar types is held every spring in Toronto, on approximately the first Saturday in April. All those who served on radar stations, no matter in what trade, are welcome. If you are interested, and want to see the old gang again, send your name and address to Mr. J. Musselman, Dundalk, Ont., and you will receive further particulars when the Committee has decided upon the date and the place.

Flying Saucery

(Reprinted by courtesy of the "Inter-Services Aircraft Recognition Journal": U.K.)

THE ADVENT OF FLYING SAUCERS is not so surprising as the fact that so many people seem able to recognize them. Or are they? From published reports the names "disc" and "saucer" seem to have been applied to every unfamiliar object seen in the sky, but in many cases so-called "saucers" appear not to be anything like saucers. Descriptions of them have been extremely imaginative, and have ranged from "pint bottles" to "balls of fire" and "circular saws." Others have been reported as "dustbins," "rocket-ships," "cigar," "rings." The most unimaginative description was of a silver "thing." Perhaps the most spectacular was of "ice-cream cones with red tops" or of "five silver dough-nuts rotating round a sixth." Some one also saw "a grey tadpole travelling at lightning speed," and another, we believe a housewife, "wash-tubs — about the size of a five-roomed house." One seen over South Africa had a glowing white tip, a green body and a red tail. This list is not exhaustive. Doubtless many experienced observers could add to it if they were so minded.

A flying-machine in so featureless a form as a saucer would probably be one of the most difficult things to recognize, as such, even in ideal observing conditions. Consider its outline. With its greatest area exposed it can show only as a disc: at a minimum, it is half an ellipse. In all other views it is roughly elliptical. Any object (including the largest aeroplane) tends to become a blob or a speck, and may actually look disc-like in certain conditions if far enough away. A polished object in sunlight is often more difficult to recognize, even when quite close, because of glitter. There is as any observer will tell you, nothing so vexatious and delaying to recognition, nothing so disruptive of an aeroplane's outline, as glitter. The largest "saucer" under these conditions could appear star-like or as a shapeless sparkle — so could an F-80, a Meteor, or a B-50.

In considering the published reports, one must make allowance for the eyesight, training and experience in observing, and the emotional characteristics of those seeing the "saucers." It is a well-known fact that persons under the influence of emotion will often attach, in all sincerity, an imaginative interpretation to what they see. They

may often see things which do not exist, and they are prone to be influenced by previous suggestion. Almost all reports of flying saucers, except the first one, could have been influenced by previous news. Incidentally, we find it interesting to conjecture upon what people would now be reporting, if the first sighting had referred to some other form of domestic earthenware.

Disc-shaped aeroplanes have been built and flown in the past. It is possible that they exist today, though not in the numbers suggested by the reports of flying discs. Many readers will be familiar with the most recent and well-known example, the Chance Vought V-156. This is not now flying according to reports, but no doubt other disc-shaped aeroplanes will appear from time to time in the ordinary course of aeronautical progress upon this Earth.

The whole business of "flying saucers" would have been rather entertaining had it not been turned into tragedy by the loss of three lives of American Air Force Officers: one in pursuit of a "saucer," the other two whilst they were returning from investigating a report.

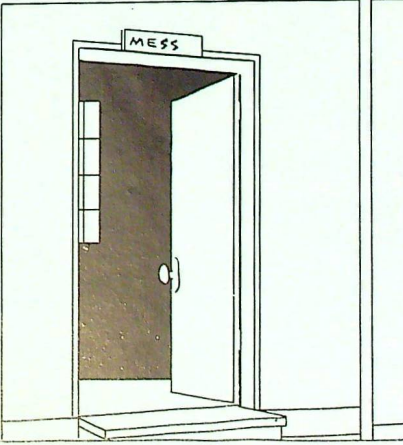
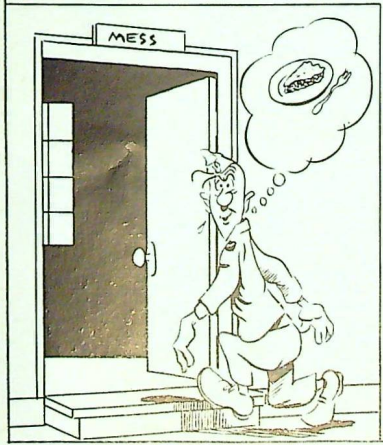
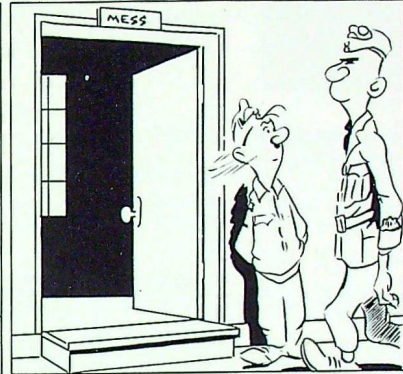
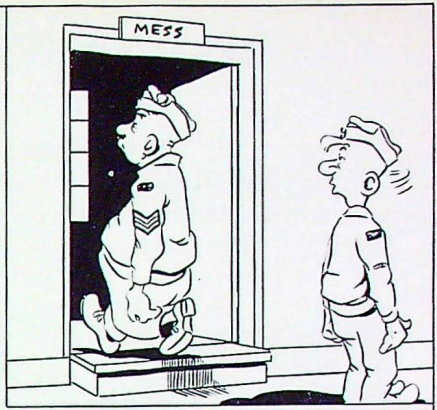
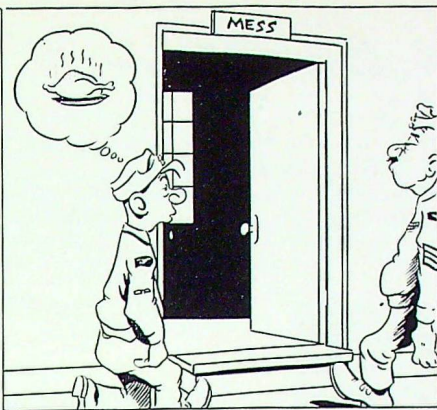
It is significant that in Britain, where there are thousands of trained and experienced observers, very few "saucers" have been reported. No Royal Observer has sighted, much less reported one, and until they do, we think everyone may rest assured that flying-machines celestial or supernatural do not exist. The lesson of all this is obvious. Learn to recognize aeroplanes and you will not be troubled by "flying saucers."

Our advice to anyone who may think he sees flying saucers is to do what General Hoyt. S. Vandenberg, Air Chief of Staff, U.S.A.F., did when he was flying a B-17 bomber one night in 1947, when the "saucer" scare of the year was at its height. A strange, disc-shaped light was observed to pass by at great speed. Instead of calling the nearest tower and reporting the "saucer," the General gently moved his head about and found that he could bend this "saucer" to his will, making it appear and disappear as often as he wished. It was merely the reflection of a light upon the windshield.

The DIMMER VIEW.

2 WHOLE HOURS UNTIL LUNCH!

by ray tracy



Letters to the Editor

TRANSATLANTIC FIRST

Dear Sir:

"Pin Points", in the November 1950 issue of "The Roundel", brought to my mind Air Vice-Marshal (then Group Captain) Stedman's flight across the Atlantic. I believe he was the first member of the R.C.A.F. to make the flight. If so, I



would like to suggest that you mention it at some convenient time. The trip was made away back in the quiet old days of 1930, in the ill-fated airship R-100.

Group Capt. R. S. Grandy (ret'd.)
(Any other claimants?—Editor)

BRANTFORD CLAIMS FAMOUS SON

Dear Sir:

Mr. Jones has commissioned me to commend you on your nice placing of his portrait in November's "Roundel". He is entirely satisfied with the prominence accorded him. However, he is not quite sure about Sgt. Shatterproof's parting shot, and has been observed several times sitting thoughtfully on the magazine while he ponders the import.

But, SIR, how could you rob Brantford of its rightful claim to Jones' birthplace? As I pointed out, No. 4 R.E.M.U. was formerly No. 5 S.F.T.S., which was Brantford. (Dunnville,



Port Albert, Mt. Hope and Jarvis had also folded as active flying stations at that stage of the game in 1945, and were all satellites of 4 R.E.M.U.).

Poor old Brantford has hard luck retaining its famous sons. The Americans walked off with Alexander Graham Bell. And now you coolly hand Jones to Dunnville.

As for Jones himself, he says one Mess is as good as another to get born under, and sometimes he wishes to hell he was back under any one of them, where no one would keep reminding him of the embarrassing cost of milk.

Miss Mary Mark, R.C.A.F.A.

NEW YEAR'S DAY

Dear Sir:

Re question 15 in "What's the Score?", Dec. '50. You state that it was Julius Caesar who established Jan. 1st as the beginning of the year. According to Ripley in the "Toronto Star" (Dec. 30th, 1950), the man responsible for the deed was Quintus Fulvius Nobilior, a Roman consul in 153 B.C., who advanced his inauguration from Mar. 15th to Jan. 1st so that he could go on a military campaign.

Flt. Sgt. M. W. Evoy,
A. M. C. Headquarters

(Now, Learned Readers—what's the score on this? Personally, we'd like to know Ripley's authority for his statement.—Editor)

SUMMER UNIFORMS

Dear Sir:

In Arthur Macdonald's article on the Air Cadets in the November issue of "The Roundel", I observed a recent photograph on page 27 which shows some of the R.C.A.F. officers in Summer Dress Uniforms. I recall that this style of



Summer Dress was abolished in 1944, and I would appreciate knowing if this is again being written into dress regulations as acceptable, and optional, summer dress.

G. M. King, R.C.A.F.A.

(The officers in the front row belong to the R.A.F. Khaki drill is no longer permissible in the R.C.A.F. Our compulsory—not optional—summer uniform for officers is tropical worsted or wool rayon of a khaki shade differing slightly from that worn by the Army.

—Editor)

Logistics and “The Roundel”

We propose, sometime this year, to run a series of “popular” articles on logistics. Until such time as they begin to appear we would ask all those of our readers who do not receive individual* copies of “The Roundel” to undertake a little preliminary research on this most fascinating subject.

- Are you seeing “The Roundel” each month?
- If not, why not?
- What happens to the supply of “Roundels” that is sent to your Station, Unit, or Cadet Squadron?
- What can be done to ensure that they are not pocketed by individuals before others have had a chance to read them?

Logistics, as everyone knows, is the science of getting the right materials, in the right quantity, at the right time, to the right place, for the right

people. We of “The Roundel” have played our part in the logistical team to the best of our ability. We have analysed needs and arranged for the necessary regular shipments to all points where the magazine is required. Distribution from those points on is the problem of the other members of the team — from AC2’s to CO’s.

It should not be a very difficult matter to control the circulation of a publication within a limited group, and it is the concern of everyone to see that he is getting what is intended for him.

Whatever your rank or job, send us your thoughts on the problem.

*Individual copies of “The Roundel” are, with a few exceptions, sent only to members of the R.C.A.F. Association, as part of their membership privileges.

