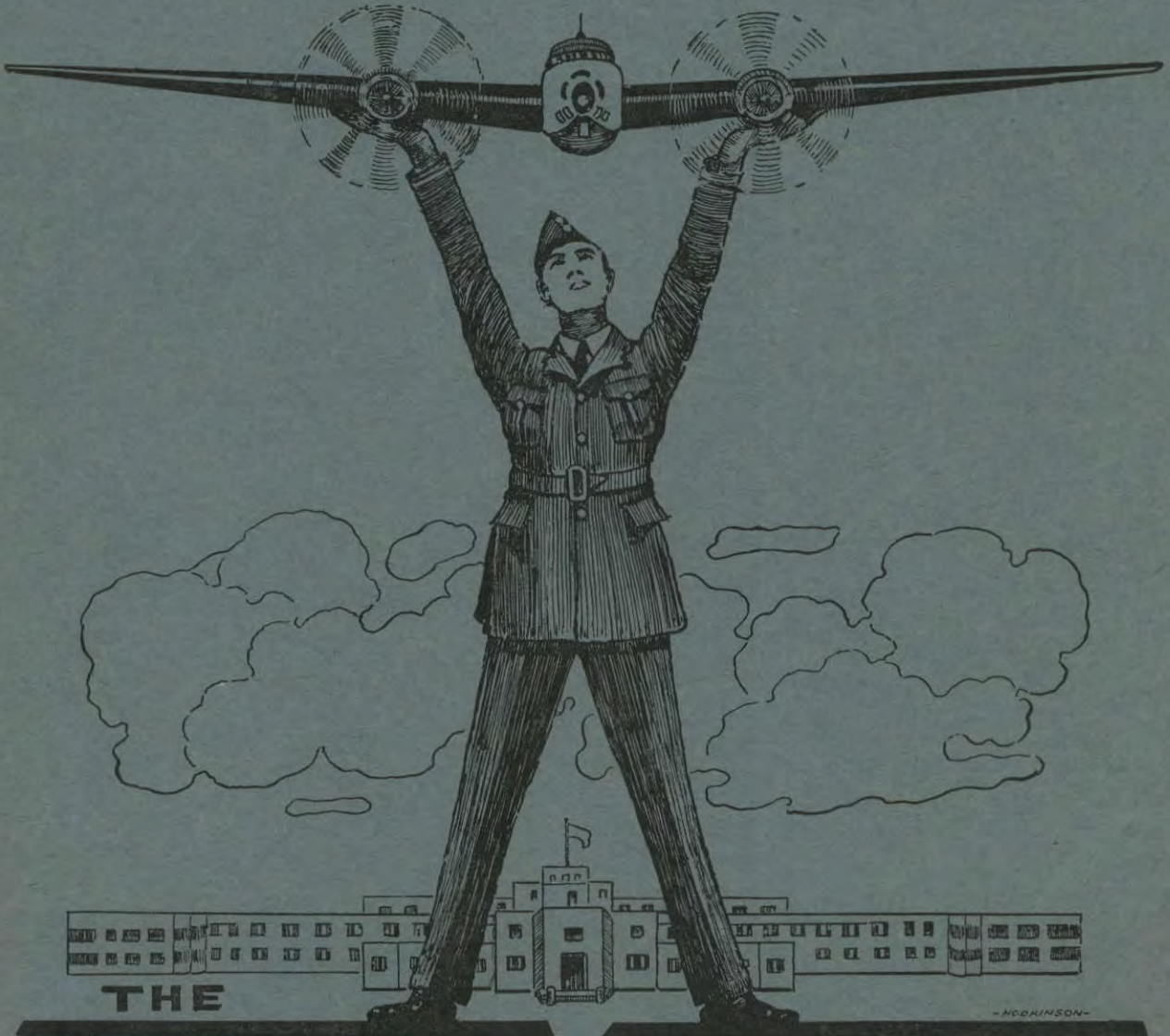


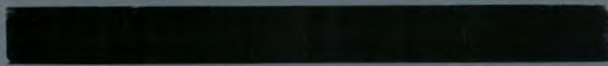
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THE *Aircraftman*



THE -ROBINSON-

TECHNICAL TRAINING
SCHOOL ST. THOMAS ONTARIO



« « EDITORIALS » »

GOAL CONSCIOUS

We are in the midst of a grave game which, if lost, will mean the crumbling of the greatest Empire the world has ever known and, if won, it will mean the preservation of those things which are so dear to us who have known Liberty, Freedom and Justice.

It is not our purpose here to attempt an explanation for the stand we have taken against the foe, but rather to remind ourselves of the goal.

The building of a strong, efficient war machine is not unlike that of training a football team. A team, to achieve its end, must have all its players conscious of the ultimate objective; namely, the scoring of a goal.

A player may possess one of several attitudes. He may look upon his task as that of keeping the ball off his area. He "boots" it in order to free himself of responsibility—anywhere is good enough so long as it is away and he can relax.

Another type, quite different from this, is the player who "hogs" the ball. Once he has the ball in his possession, he carries it with all the show possible. He manoeuvres, sprints and prances over the whole pitch in the hope that his efforts may be seen. This man "plays to the gallery."

There is, however, another type of athlete who is totally "goal-conscious." He forgets the grandstand; he dismisses the hope of being caught in brilliance in some spectacular play, and goes steadily about his task of playing the game. His plays are methodical. He endeavours to guard his area and at the same time to place the ball in that position where it will put his team at the greatest advantage. He recognizes that there are others playing by his side and he co-operates so as to enable the team to overcome its opposition and achieve the objective.

It is hardly necessary to point out that the War cannot be won by accountants, gunners or air frame mechanics alone, but the punch comes in the esprit-de-corps that exists between all factors building up our nation's war effort. We have our little area to work, which, in most cases, is well done. Our challenge must always be to hold ourselves "goal-conscious"—

striving daily to develop a finer sense of co-operation and team spirit, which will eventually put our Empire in a spot to score.

* * *

WHO IS "JOE"?

Has anybody here seen Joe? Joe, with the general duties complex? Now, don't say, "Yes, I know Joe," because your Joe is not the Joe I mean. I mean the Joe who can be an officer, an N.C.O., an Airman, a wise man or a fool. You can't distinguish him by the stripes on his sleeve, nor by the rings under his eyes. He just looks like other folks except for a little "sheepish" grin sitting around the corners of his mouth. You can't tell him from a guy that's all made up for a dance, except that a fellow when he's Joe stays at home and winds the clock and puts out the cat while the rest of the gang go howling.

Joe is not usually a very pious fellow. You often find him swearing softly under his breath, muttering vindictive threats that he doesn't really mean against the Service. Joe gets up at night sometimes when all the rest are sleeping. He doesn't want to get up and he doesn't get up to attend to the requirements of the natural man. He rises because of some irritating little trouble that has occurred in the small hours. An Airman has torn his pants crawling through the fence, and the rip of the cloth on the wire has aroused a corporal and an arrest is made and Joe is told about it. Joe would have been just as glad if the Airman had got stuck unnoticed on the fence all night and let decent people sleep. But Joe commends the corporal in his duty and goes back to bed.

Joe is usually a good-hearted fellow. He works for nothing, not because he wants to work for nothing, but because His Majesty's Service requires that he does. And Joe makes a virtue out of a necessity. He sympathizes with himself and thinks how he's doing his little extra bit for King and Country, and how well he'll have earned a good down-sitting after the show is over, and a drink when the cock crows in the morning.

Joe has a funny habit of changing his name and appearance. You can be certain that Joe

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is always going to be around, but you never can tell just what new name he's going to take or what new facial characteristics he'll assume. We know Joes who are old and have been in other shows and known many comrades and have stories to tell. Then again, Joe will impersonate somebody who has just come in. A lad with down on his face, his pants freshly pressed, and saluting at every opportunity.

Joe has a way of causing general good

humour. Other people laugh when they see Joe. They don't laugh with him; they laugh at him. They smile good-humouredly to think they are not Joe. But as they leave him they are sobered by the thought that some day soon they will be Joe. But then there always has to be a Joe—just like there's always going to be an England. Everybody has to be Joe sometime or other. Everybody except the padres or maybe, just maybe, they are Joe all the time.

* * *

« « SPORTS » »

STATION INTER-SQUADRON TRACK AND FIELD MEET

On Saturday, August 17th, No. 1 Squadron, 1 Wing, captured the Station Inter-Squadron Track and Field Championship. On July 13th, this Squadron won the Hepinstall Trophy in the Wing Inter-Squadron Track Meet, and it appears that there is just no holding this energetic group down. No. 2 Squadron made a hard bid for the honour, but finished 4½ points behind the winners.

The Meet was the most spectacular performance yet staged by this School. Over 3,000 Airmen paraded to Pinafore Park, either to compete or to cheer the athletes of their Squadrons on to success. The competition was keen from start to finish, and the times and marks achieved in the various events were considerably higher than those scored in the two previous meets.

No. 3 Squadron, 1 Wing, won the Tug-of-War Trophy, when they outpulled No. 1 Squadron of the same Wing in the final.

The Esprit-de-Corps Trophy, which was presented by the Officers' Ladies' Club to the Airman giving the greatest measure of support to his team, went to A. C. 2 Malone, of No. 2 Squadron, 1 Wing.

The Meet included novelty numbers such as "Tilt-the-Bucket," Obstacle Race, the Band Race and the Three-Legged Race.

Every event was run off in perfect order, and we feel that a great deal of credit is due W. O. 1 Stubbs, Chairman of the Athletic Committee, for this very successful day.

Prizes were presented by Mrs. R. Collis.

The total scores obtained by each Squadron are as follows:

Wing 1

No. 1 Sqdrn., 73
No. 2 Sqdrn., 68½
No. 3 Sqdrn., 17

Wing 2

No. 1 Sqdrn., 21
No. 2 Sqdrn., 53½
No. 3 Sqdrn., 35

E. & A. T. S., 51

* * *

TWO RELAY CHAMPIONSHIPS

The honour of bringing home the first major victory to our newly established School goes to a team of six brilliant runners. On August 10th, after careful training over a period of several weeks, the cream of our sprinters went to the National Service Championships held at Hamilton. Fighting through the grind of heats, semi-finals and finals, they emerged victors in both the 440 and 880 yard relays.

Our team consisted of A. C. 2 Hutchinson B. F., A. C. 2 Murray J. R., A. C. 2 Murray E. J., Cpl. Richards, Cpl. Evans F. J. and A. C. 2 Batchelor.

The team had all their heats well under control, finishing in every case in championship style. Our only regret is that we are losing three of these stars. However, our loss shall be the gain of another Station. The staff joins me in wishing these boys the best of success in the days that lie ahead.

* * *

CRICKET

The boys have certainly gone places and done things in the realm of Cricket. A series of decisive victories has built up an enviable record for the Station Team, and has gone far to stimulate a better trend of cricket in this part of the province. Squadron Leader Macey, a versatile sportsman and cricket enthusiast,

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at an organization meeting of the Cricket Club, on 16th April, 1940, was elected Team Captain, and Corporal P. L. Barling, the Honorary Secretary. From the first an abundance of cricket talent volunteered. Soon 38 members were registered, and the local club was received into the Western Ontario Cricket League. A cricket field at the School not being available, the St. Thomas Club kindly offered the use of their cricket facilities for practice and matches. Practices take place on Tuesdays and Thursdays of each week at 6.00 o'clock.

The first League match took place on home grounds on 18th May, against the Woodstock Club. The T.T.S.C.C. won, 78 for 5 wickets against 39 for 10. Other League matches have

THE T. T. S. CRICKET TEAM



BACK ROW (left to right)—A. C. Mildrum, Sgt. Hogan, Sgt. Jeffrey, Cpl. Frost, Sgt. Edney, Sgt. Ireland, Cpl. Read.
SEATED (left to right)—Cpl. Clancy, Cpl. Richards, S/L Macey, Cpl. Hoare, Sgt. Thompson.

been played against Ontario Hospital, Stratford, London C.N.R. and St. George's, London. All these contests were won with very little difficulty, with the exception of St. George's, London. Here the Club met some opposition for the first time, but after brilliant batting by Corporals Clancy and Richards, we won the game, 116 for 10 wickets against 80 runs for 10 wickets.

The Club have entered with the St. Thomas Cricket Club the county championships representing Elgin County, and have played their first round against Kent at Chatham, resulting in a win, 140 for 10 wickets against 84 for 10 wickets, and in the semi-finals were drawn against Woodstock, playing at Woodstock, to win 131 runs for 5 wickets against 122 for 10 wickets. In their second game the T.T.S. beat Middlesex at London, and are now scheduled

to play in the finals at Armour Heights, Toronto, on Labour Day, and it is hoped that the cricket ground at the School is in condition to enable the club to play their final game of the season on their own ground, and thus receive the full support of the School.

It would be very difficult to make any distinction of the brilliant play given by all members of the team, but the beautiful batting stroke always shown by Sgt. Thompson has on several occasions been remarked upon by both the opponents and spectators. Corporal Clancy can always be relied upon to take all the wickets that may be required of him, and produce the necessary runs. And the swift bowling of Corporal Richards is a nightmare to batsmen. And so, under the captaincy of S/Ldr. Macey, who has the wide experience of knowing exactly where to place his men in the field, and the most efficient scoring of Cpl. P. L. Barling, the team is worthy of its place at the top of the League.

* * *

SOCCER AFFAIRS

With the completion of our new Soccer field, there has come a burst of enthusiasm for this game. Rainy weather and lack of proper grounds made it very difficult to carry out schedules during July, but during the month of August, the Commanding Officer's Trophy series has been progressing favourably. It is too early yet to predict what squadron is going to win but, as this article goes to press, No. 1 Squadron holds the lead.

Our Station Team made a flying visit to the Fleet Aircraft Soccer Club at Fort Erie, and lost a closely contested game with a score of 4-2. On August 11th, the Fleet Aircraft Club played the return game and again defeated our team 3-1. In this last game, Cpl. Richards and Cpl. Joyce turned in brilliant performances. The game was refereed by W. O. Ramsay.

* * *

IN APPRECIATION OF THE WORK OF THE Y. M. C. A.

As President of the Sports Committee on this Station I am taking the opportunity presented by this magazine to express my thanks, on behalf of the personnel on the Station, to the Y. M. C. A. for active help they are giving us in furthering sports activities, not only with advice and assistants, but also with equipment which they have provided and are still providing so liberally.

J. M. FREEMAN, S/L.

SOFTBALL

Congratulations to all concerned on the improved showing of the Softball Team.

Both teams made an excellent showing in the United Service League. Interest in the St. Thomas City League has revived to a large extent, and with both teams in the play-offs, we can expect the R. C. A. F. to furnish plenty of opposition.

Both teams won their first game in the Round Robin Series, and with the growing sup-

port of the School, it is hoped that we can produce at least one team in the finals—both, we hope.

It is appreciated by all that it is difficult for team captains to keep their teams intact due to the continuous movement of personnel, and the splendid showing of late is all the more encouraging. Keep it up, boys!

The new uniforms have improved the atmosphere, and "The Aircraftman" wishes both No. 1 and No. 2 Wing Softball Teams every success in the final drive.

* * *

« STATION STATIC »

SOUP'S ON! . . . 'NUFF SAID!

L. A. C. Esau

Greetings from the kitchen! You may be surprised to see the hash-slinging gang break into print. We are sort of shocked ourselves, but it's always well in these days to have a couple of strings to your bow, so that if the culinary job peters out, we can muscle in on the literary racket and keep going. Ours is an ancient and honourable house. Apprentices and craftsmen galore, up through the centuries, have slung gravy, turned the spit, mixed batter and kneaded dough. No body of people have suffered more from a wrathful public. In olden times our grandfathers were hanged for an underdone goose; in later days our fathers had their ears boxed for burning the gravy; and we of modern times endure the stony stare of angry youth for serving a glass of milk from which a farmer has skimmed the cream.

Someone has said that the way to a man's heart is through his stomach. Well, all we can say is that these directions don't always take us to town. We've been travelling this road for a good long time, and it is true that we find a few warm grateful natures en route, but have to admit that the blinds are down and lights out in a whole lot of others.

But there's a difference in hearts just as there is in stomachs. One warm-hearted nature will respond to a good dinner with a burst of passionate utterance. Another will express his thanks by falling-to with a will and lick his own platter and his neighbour's, too. Others will take their grub for granted, and you only hear from them when they get dyspepsia with the turn of the moon.

Women have a saying that, emanating as it does from the feeding experience, is worthy of notice. "Feed the brute and he'll love you." Well, we can't say, boys, that we're anxious for any mushy dates, but it's certainly our desire to cram that yawning of yours three times a day.

Before signing off, I'm going to call on the boys to take a bow. There's Patty Floyd, the man with a steady hand, soup on his mind, and an early riser. There's McShane, the baker; he knows how to mix them, but says he never can get his hands into enough dough. Next is "Black-eyed" Joe, with the iron temper, who would rather run into a door than be hit by a beer bottle. Last, but not least, is our representative of the Salvation Army, who can date his history back to the tribe of Israel and is dedicating his life to killing flies in the kitchen—"Scotty Moses."

Some of the boys have gone over to dear old Blighty to sling hash for those who are flying against old Jerry. Maybe we'll join them soon, but until then, it's beans, stew, hash and five o'clock in the morning.

* * *

JUST DISCIPLINE

by W. O. Lipscombe, R. A. F.

A few years ago the writer was on a yachting trip down the Mediterranean Sea on one of His Majesty's Aircraft Carriers (the carrier sunk five times by Nazi propaganda and recently beaten in the boat race with the Italian Navy). Suddenly an A. B., who was working on the forecastle, was seen to disappear down the hawsepape (the hole in the side of the ship

through which the anchor chain passes).

Immediately a cry of "Man overboard!" was raised and, as is usual in such cases, the duty boats crew went to their stations and the boat was launched to carry out a search. After two hours, however, no body was found, and the boat was recalled.

The ship's company was then mustered and the roll called in an effort to find out who was the unfortunate seaman. Strangely enough, no one was found to be absent. Eventually a seaman stepped forward and, saluting the Captain, said: "Excuse me, sir, I think I must be the man you are looking for, as it was me that fell down the hawsepipe." The skipper, in the most polite language imaginable, enquired as to the reason the man had not reported before, and he answered: "Well, sir, I fell down the hawsepipe but managed to cling to the cable (anchor chain). As I was climbing back on deck, I heard them pipe the duty boats crew and, as I was a member of that crew, I had to go out with them."

* * *

DEFINITIONS - VERY TECHNICAL

Q. *Square-headed Bolt.*

A. Hitler in full retreat.

Q. *Incidence?*

A. Is something that happens.

Q. *Epicyclic?*

A. Is the kind of a fit my Grannie passed away with.

* * *



"THAT WILL BE THE DAY"

MY DREAM

by A. C. 1 Powers, N.C.

My Dream, it was a nightmare, an apoplectic stroke,
A paroxysm of fear. Indeed it made me choke.
I dreamed of carburetors, diffuser tubes and boost,
I twirled like an airscrew upon my army roost.
It was so darned confusing, this business of diffusing
To get a proper mixture o' gas in air.

My engines they were rusty, my memory never trusty,
Was crammed with terms to bust me,
And I couldn't think of any to save my all
On mags, ignition — a veritable inquisition,
I knew that I was bound to take an awful fall.
I worried then on airscrews—on little things I'd missed,
I wished I'd spent more time on notes than on the girls I'd kissed.

This trade test board's a devilish thing, a torture to my soul,
An Airman's Hell I pictured it, a barrier to my goal,
'Twas true I knew a little, but 'twas true I couldn't see
How in the name of Heaven I'd ever get my "B."
But in the morn I wakened up and felt quite Heaven blest,
And took my place in line—you see, I was to take my test.

The tester he looked up at me: "I 'opes you know a lot."
And I, in broadest accents, looked up and said: "Eh, wot?"
And gas it turned to petrol — and paraffin — not wax,
But kerosene. Diffuser tubes were air bleeds, my memory need't tax.
Boost, it was the throttle, the airscrew was the prop.
The Merlin — it was simple like the Ford I drove for Pop.

In fact, it wasn't hard at all to pass my test that day,
'Cause I only changed the Yankee terms into the Blokish way.
And now if necessary I spell tires with a "Y,"
But petrol's labelled gasoline and I heave quite a sigh,
As I tickle a Pratt and Whitney and dream of days just past,
When I was understudy to the British instructors' blast.

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NOTES FROM E. & A. T. S.

H. L. Parker, R.66010

On July 31st, approximately 140 would-be Accountant Officers and Paymasters arrived at St. Thomas to commence the second Equipment Accounting and Pay course.

Having served our apprenticeship in Manning Pool, and there learned the code of ethics of the Royal Canadian Air Force, interspersed with fatigues of every manner and description (it was rumoured some of the lads grew so fond of the kitchen, they shed a few tears on departure), we felt that we were well able to cope with anything St. Thomas had to offer. Little were we prepared for the transformation of "from rags to riches." After sampling the food—real crockery—and looking over our bunks and sleeping quarters, we were sold!

For the next three days we went through as stiff a session of drilling as we had ever experienced. Corporal Sisk informed us that he had made good Airmen out of worse (?) looking squadrons than ours. We quote: "I've done it before, men, and I'll do it again." (N.B.—He is still trying!)

Then the eventful day when our classes began. A more befuddled and bewildered body of men, after several days of assigned pay and vouchers, registers and dependent's allowance being thrown at us from all angles, has never been seen on this Station. About this time, our instructors started informing us not to worry, it would all be cleared up in a short while. This was a discrepancy on their part, in not telling us sooner. Some of the boys had already started to worry and were just about caught up in that department. Now we have to wait for a compulsory worry period, and are we going to concentrate on that one!

The next item on our program is our first examination. Here and there, around the bays, you notice a chap looking reflectively at his knees, possibly wondering how they will stand up under the strain of a General Duties classification. The writer is more concerned than anyone; his knees already have knobs on them. The night before the exam was a never-to-be-forgotten evening. Wherever one looked there was an industrious student with a worried frown on his face, mumbling over some formula for disposing of seven copies of a voucher, or else wondering why an Airman's wife couldn't support herself, and thus do away with the Dependent's Allowance Board. I venture to say there wasn't a smile in Accounting Wing 2 that night. The next day the exam was written and, win, lose or draw, the darn

thing was over and we could relax for a day or so.

Along with our other worries, we have to listen to at least a dozen rumours a day, circulated by A. C. 2 "Squadron Leaders" about where we are going when the course is finished. However, throwing all cares overboard, our motto is: "Every man an L. A. C."

* * *

FAVOURITE SAYINGS IN NO. 3 SQUADRON

- Cpl. Ard: "Stand still, No. 5 Flight."
Cpl. Dawson: "I'll see what I can do."
Cpl. Kerr: "Pay attention, now."
Cpl. Armor: "Get the idea?"
Cpl. Burkholder, R.C.A.M.C.: "Stretcher Bearers."
Cpl. Balsom: "All right, you blokes." (With accent.)
Cpl. Gay: "Down in Toronto . . ."
A. C. 2 Heckman: "Fieldmouse."
(We wonder.)
A. C. 2 Ringland: "You want to get in the game."
A. C. 2 MacNulty: "When I was in Galt."
A. C. 2 Romanow: "We can't write anything he says."
A. C. 2 "Kit" Carson: "In the good old Frontier days."
A. C. 2 Manfield: "Yes! The weather's fine up here, laddie."
A. C. 2 O'Neil: "Have you a pencil to lend?"
A. C. 2 Mordle: "Down in St. Kit."
A. C. 2 Grenier: "When you've been where I have."
A. C. 2 Ruddle: "Actions speak louder than words."
A. C. 2 "Smokey": "Take that down, Harry."
A. C. 2 "Doc": "Up in Wingham they have . . ."

The boys of the T. T. S. are losing a lot of sleep lately, wondering all night if they will have porridge or corn flakes for breakfast.

A. C. 2 NORMAN,
No. 3 Sq., 1 Wing.

* * *

HEARD ON Y. V.

Inst.: "Define the term 'Nuts'."

Trainee: "The inhabitants of this institution in normal times."

THE HOUR OF TORTURE

He slouched in his chair, hung his head and shivered as he thought of the torture awaiting him. Cold beads of perspiration stood on his forehead. His heart beat weakly.

His senses were dazed; his vision dull. What would happen to him? Would he pull through—or would he? He didn't know—neither did anyone else.

A short time, and then—then what? He might make it. If he did, all would be well. If he didn't—well, it wasn't pleasant to think about.

Nervously he glanced at his watch and looked about him. It wouldn't be long now. He asked himself what he had ever done to deserve such torture.

He drew himself together for a last tremendous effort. Again he asked himself: "Why haven't I prepared for this?"

There is the signal now. The final moment has arrived. The instructor motioned for him to come forward for his trade test.

A. C. 2 NORMAN,
No. 3 Sq., 1 Wing.

* * *

FUME'S PRIVATE NOTE-BOOK

(Found in the Gas Chamber, T.T.S.)

Hairy Dynamics is the science of going up in the air and staying there. Most Senior Officers have lots of Hairy Dynamics. Flight Serg'ts and below have just the ground work.

A flight or flit is a quick movement, under the influence the compelling forces of need of fresh air. This is the First Law of Moving. The Second Law is that in order to get a move on, an Air Force is necessary. The Third Law is that to every Action by the Powers that be, there is an opposite but unequal Reaction from the Airman.

Air Speed is a bit of a blow that you measure with a Pilot tube, which is a sort of twin whistle gadget on a plain strut, it has holes and doesn't play "Whistle while you Shirk."

When a Designer doesn't know what he wants he uses a Wind Channel to approach the subject. It's full of holes both ends with one in the middle for the muddle. It's used for Research because, if you have anything in it, you must look for it again and again. When the muddle is in a Bank a Balance is used to Stable it.

Airfoil is the thin sheet of wind around a Wing. In the case of a Flight Surging, it's

called a Bounding Liar. It's very thin and very importunate.

Resistance is the opposite of Insistance. It is the objection of a heavy body (like Sgt. —) to being hurried through the Air. If you can smooth down the Bounding Liar the Resistance is reduced.

The Stratosphere is a round ball that's got stuck above the ceiling. It's a very rare thing and usually never encountered except in America where there are some Stratiopher plains which are large flat tracks of grass with no ceiling where Senators fly kites. Any activity below this is called in the Proper Sphere.

All aircraft fly on three Axes, sharply defined as Felling, Lopping, and Splitting axes (or it is Ditching, Holeing and Clawing Axes?). It is equipped with Hanger-ons and Eliminators to keep it in the Axes. To make an aircraft adhere to a course stick control is provided, to make it turn wheel control is used.

Stability is the process of getting home on an Even Keel. An aircraft that gets steady gradually suffers from damned oscillation. One that stops suddenly is steadied by subsidence.

The noise a Harvard makes is due to the Split Screen pinging on the Can Opener. (? Canopy—Ed.)

The principal manoeuvres seen with an aircraft are the Zoom, the Crawl, the Swank, the Boop, the Skin, the Crash. They are all due to Hairy Dynamic Features which have failed.

Performance is what an aircraft should do but doesn't, due to a variety of things and the Designer's imagination. It is quite easy to work out but usually doesn't.

The Wangle of Attack is the approach to a Wing in the Air. It is a freek expression involving a C. O. Efficient. It is the basis of Hairy Dynamics.

There was a lot more in the lecture but I reached my Burble point and could not keep with the Bounding Liar and so got into the Back wash and subsided.

* * *

PRIZE T.T.B. ANSWERS

Camber is a kind of French cheese.

Definition: A mail-plane can be easily recognized because it has more ribs than the other sort.

* * *

? ? ?

Did you see the gravel fly when W.O. Stubbs told his beloved Corporals to "step it up?"

STATION ACTIVITIES

"TOC H" ACTIVITIES

by Cpl. Baker

During the early months of the year a committee, composed of Y. M. C. A. members and other local organizations, held a number of parties in the Red Triangle Club room with the object of making the room more entertaining for the Airmen using it.

The local group of "Toc H," which is largely composed of R. C. A. F. members, has co-operated on this committee from the beginning, and until the hot weather intervened, parties for about 30 Airmen and the same number of girls were held every second Wednesday. "Cootie Drives" were the most popular feature, followed by refreshments and some impromptu dancing until about 11.00 p.m. Station Time.

On August 13th, "Toc H" held a "Cootie Drive and Dance" at Alma College. The committee anticipated about 70 Airmen and an equal number of ladies. When our group assembled and the roll was called, there was found to be about 150 of each sex. Fortunately, our hall was large and refreshments plentiful, and the additional number made it "all the merrier."

Special thanks go to Sergeant Green, Corporal Pitt and the band boys for the splendid dance music they provided, and also to the Y. M. C. A. for their co-operation.

In the Fall, "Toc H" will be holding regular weekly meetings in the form of study groups, either in the Camp or in the Y. M. C. A. Further details on this program will be published later. In the meantime, if you are interested in this Club, you are asked to communicate with F/Lt. Abraham, F/Lt. Porter, E. R. McEwen of the Y. M. C. A. office, or the writer, who may be located in No. 2 Squadron, 2 Wing.

* * *

FENCING CLUB

This Club, organized under the auspices of the Y. M. C. A. in co-operation with A. C. 2 Brooks, has been making good headway. During the first few meetings, Wing Commander Chalmers, who has had years of Fencing experience, very kindly gave the Club members fundamentals of this sport. Since Wing Commander Chalmers has been posted back to Toronto, the instructing has been in the hands of

"Larry" Brooks, assisted by A. C. 2 Patterson.

The Club is looking forward to enlarging its equipment and expanding its membership. Meetings are held every Monday and Wednesday nights at 1815 hours.

* * *

CHURCH SERVICES

Airmen are good church-goers. Every church in town on Sunday evening has R.C.A.F. personnel in its congregation. Morning services on the Station are well attended, and the number of those who take Communion is better on this Station than anywhere in the Air Command.

The churches wish to welcome the Airmen and any service that Preachers, Priests and Padres can do to aid the boys will be gladly given.

* * *

"THE TEST"

The test of a man is the fight he makes,

The grit that he daily shows;

The way he stands on his feet and takes

Fate's numerous bumps and blows.

A coward can smile when there's naught to fear,

When nothing his progress bars;

But it takes a man to stand and cheer

While the other fellow stars.

It isn't the victory after all,

But the fight a brother makes;

The man who, driven against the wall,

Still stands erect and takes

The blows of Fate with his head held high,

Bleeding and bruised and pale,

Is the man who'll win and Fate defy

For he isn't afraid to fail.

It's the hurdles you mount and the breaks you get,

And the shocks your courage stands;

The hour of sorrow and vain regret,

For the prize that escapes your hands,

That test your mettle and prove your worth;

It isn't the blows you deal,

But the blows you take on this good old earth

That show if your stuff is real.

« DO YOU KNOW? »

DO YOU KNOW?

That Airmen desiring accommodation for their wives and families in St. Thomas may secure a list of rooms for light housekeeping, apartments and vacant houses from Padre Porter, Padre Howard or E. R. McEwen, Y.M.C.A. Secretary? The St. Thomas Times-Journal has provided us with a list of over 100 places offering accommodation to Airmen. Many have found satisfactory quarters with a minimum of trouble through the use of our catalogue.

* * *

That every Airman is given full membership privileges at the local Y.M.C.A., corner of Ross and Talbot Streets, which include the following:

1. Swimming daily, except Sundays (Soap and towel supplied by the "Y").
2. Wednesday, 2030 hours, special instruction in swimming.
3. Full use of club room, which is equipped with fireplace, games, radio, reading and writing material.
4. Special interests, such as: Gymnastics, Weight Lifting, Camera Club, Life-Saving. You are invited to make use of all these privileges.

* * *

THAT Private T. W. Hudson, who has been serving with our Postal Corps prior to being posted to Ottawa, is the youngest Canadian ever to win the "Croix de Guerre with Star." He won this distinction at Vimy.

* * *

That you can secure free writing material at the Station Y.M.C.A. Office?

* * *

That the dart board in the Sergeants' Mess looks as though it could be used? How about a competition among the N.C.O's?

* * *

That you can send a telegram from the Station Y.M.C.A. Office?

* * *

That Sergeant Pearce is looking for Airmen interested in Gymnastics?

SUNDAY EVENING SOCIALS

A jolly group of business ladies, under the leadership of Miss Irene Paddon, have been holding interesting socials every second Sunday in the local Y. M. C. A. Club Rooms.

The evening starts off with a delightful supper, which is followed by a rousing sing-song. The balance of the time is taken up with games, stunts, musical numbers, etc.

These entertainments have been very popular with the Airmen, and it is rumoured that other ladies' groups are organizing to carry on a similar type of work.

If you are interested in meeting this group, you are advised to get in touch with Cpl. Lome, No. 2 Squadron, 1 Wing, or inquire at the Station "Y" office.

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PLANE FACTS

by L. A. C. Harland, M. W.

1. For almost two years during the last war, Canada produced an average of more than two hundred aircraft a month.
2. In 1911 the British forces owned just nine airplanes, which were attached to the Army. The Navy operated two borrowed ones.
3. In 1914, R. F. C. aircraft in service were completely overhauled about once a week.
4. Late in 1918, Lieut.-Col W. G. Barker, V.C., of the R. F. C., flying alone, met and engaged sixty German Fokkers. Wounded three times in the battle, he accounted for eight of them, crashed behind his own lines and lived.
5. The first airplane flight in Canada was made on the 24th of February, 1909, by J. A. D. McCurdy. He flew a biplane with a Curtiss engine.
6. In 1920, Air Commodore Collishaw wrote from Persia that they had trouble with deep snow in mountain airfields. They used 500 camels and 700 horses to trample the snow on the field after each storm, he said.
7. Official battle scores of air fighters in the last war show Canadian and British aces as achieving the following: Bishop shot down 72; Collishaw accounted for 60; Barker, 50; McCudden and Mannock, British flyers, shot down 54 and 50 respectively.

TECHNICAL TOPICS

AIRSCREWS DEVELOPMENT

Airscrew design has made vast progress in the last 20 years and the science can still be regarded as being in its infancy. Aerofoil sections of the blades have been changed and are changing as a result of research in wind tunnels. At present, experiments are being conducted with a four-bladed airscrew made up of one pair rotating in the opposite direction whilst mounted on the same airscrew shaft. We can, therefore, only undertake a brief survey of a subject which is changing daily. The science of airscrew development has been largely based on the Froude momentum theory. This in short says that the momentum of the airflow generated at the airscrew disc—and which is helical in direction—is equal to the power developed by the engine. As with all forms of Kinematics, losses are bound to occur and due to airscrew slip and other losses, airscrew efficiency rarely exceeds 80%.

The function of an airscrew is to convert the power produced by the engine into forward pull or thrust. Early designs can be seen in drawings or photographs of fan shaped blades whereas modern airscrews are thick at the roots and taper toward the tips. The reasons for this change in design will be seen in the ensuing article.

Air, the medium in which an airscrew works, obeys certain definite laws up to a certain point, and an aerofoil section being propelled through air will have calculable forces exerted on it. These forces are dependent on (1) the velocity of the section; (2) the area of the section; (3) the angle which the chord of the section presents to the air. The point at which the laws break down is when the velocity of the section approaches the speed of sound (1100 ft. per sec.). At such velocities another set of laws, which are not yet well known, presumably hold good. The tip speed of an airscrew must therefore be kept well below 1100 ft. per sec. This limits the diameter of an airscrew since the speed of any section increases with the radius or distance from the hub. When it is found that a two-bladed airscrew cannot absorb the whole power of an engine without coming up against this limitation, there are two remedies: (1) Increase the number of blades; (2) Gear down the rotating speed of the airscrew. Now there

is a limiting factor to the number of blades which can be used. It is found that one blade will interfere with the airflow over the adjacent blade if set too close. In practice it is found that three blades is the greatest number that can be used. Gearing always entails a loss of power; the more the airscrew is geared down the greater the loss of engine power. The area of an airscrew cannot be increased with advantage by increasing the width of blade or chord for reasons which are too complicated to go into in this article.

The shape of any section of an airscrew is known as an aerofoil. It is the same shape as that given to a wing. There are many aerofoil sections but they all have this in common, a thicker leading than trailing edge, a convex top surface, and their chord (distance from leading to trailing edge) is greater than their depth. The force exerted by an aerofoil section when propelled through air is derived from: (a) the positive pressure on the bottom surface, about one-fifth of the total force, and (b) the negative pressure on the top or convex surface, about four-fifths of the total force. The lift exerted by a wing increases steadily with the angle which the chord makes with the airflow up to the stalling angle (approximately 15°). However, the drag on the aerofoil increases more rapidly than the lift with increasing angle of chord so that the optimum angle of chord, i.e., where the ratio of lift over drag is greatest, is at a lower angle (approximately 3°). At the stalling angle the negative pressure on the top or convex surface breaks down and four-fifths of the lift is lost. The forces exerted by the airflow on an airscrew are similar.

The path described by any point on an airscrew blade is known as a helix. The speed of any point can be resolved into two component speeds, forward and rotating. Both of these speeds vary considerably during the course of flight. It is obvious that a fixed pitch airscrew can work with maximum efficiency only when its rotating speed and the forward speed of the aircraft are such that the pitch is at its optimum setting.

An airscrew with a pitch which can be varied so that at all times the pitch is set at its optimum angle would obviously be the most efficient. Such an airscrew has not yet been designed as a practical proposition.

It is impossible in this short article to describe the many types of V. P. airscrew in use and impracticable to describe their mechanism in detail without diagrams. Two types of widely differing designs, however, are in use in the Service and should be briefly described. The De Havilland V. P. Airscrew can be set at two pitches—fine and coarse. Fine pitch is used for take-off and coarse pitch when speed has been attained. Coarse pitch is such that the airscrew gives maximum efficiency at top speed at the engine's rated altitude. This type of V. P. airscrew attacks directly the chief problem of the designer of the fixed pitch airscrew, the great difficulty here was to produce an airscrew which gave reasonable efficiency at rated altitude and yet would get the aircraft quickly off the ground. As a digression it might be mentioned here that to overcome this difficulty the engine designer came to the rescue by allowing the engine to be run for sufficient length of time at speeds which were detrimental to the engine if prolonged beyond the time limit, to enable the aircraft to take off. The Rotal airscrew designed by Bristol and Rolls-Royce engine manufacturers automatically sets the pitch to such an angle that the airscrew revolves at constant speed. This is of great advantage in fighter aircraft since it relieves the pilot of the necessity of manipulating the throttle to keep the engine revs. below the maximum permissible during the aerobatics of air combat. Rotal airscrews also produce a fully feathering model which has great advantages in gliding. The head-on resistance of the airscrew blade is lowered, thereby decreasing the gliding angle of the aircraft and increasing the distance which it can glide.

The De Havilland V. P. airscrew is operated by a piston working in a cylinder on the airscrew shaft. Oil pressure forces the piston along the cylinder, so changing the pitch of the airscrew, which is connected by a suitable linkage to the piston, into coarse pitch. Balance weights return the pitch to fine by centrifugal force when the oil pressure on the piston is removed.

The Rotal airscrew is operated by a hydraulically controlled constant speed unit. A governor by-passes oil (stepped-up in pressure from the engine) to the faces of a fixed piston contained within a cylinder which has free lateral travel. Movement of the cylinder is transmitted to the blade roots of the airscrew causing change in pitch to maintain constant r.p.m. A control box or Selector unit enables the pilot to regulate the governor for constant fine or coarse pitch. Rotols manufacture metal, wooden and composite (reinforced wooden)

airscrews. Neither of these V. P. airscrews produce the best pitch settings but they are a great improvement on fixed airscrews.

The stresses set up in an airscrew are severe. The working portion of the blade is over the outer two-thirds. This has a cantilever action about the boss. It is necessary, therefore, to thicken the section near the boss and little attempt is made to obtain thrust from the first third of the blade. Various materials have been used,—laminated wood, the Leitner-Watts hollow steel construction, forged duraluminium and manganese alloy among others. Plastics have been tried, but not with success. Laminated wood, which held the field for many years, had the disadvantage that the laminations did not stand up to severe climatic conditions. This disadvantage has now been surmounted by covering the blades with a vulcanized surface which is pressed into a gauge covering producing a hard durable surface. This finish is known as a schwartz finish and has brought the laminated wooden airscrew back into favour. One great disadvantage of wooden airscrews is that a damaged blade cannot be repaired, whereas a slightly damaged metal airscrew can be bent back to shape. The Leitner-Watts steel airscrew was one of the first metal airscrews to be used in Service aircraft in the R. A. F. It was not entirely successful because the airloads caused the thin steel shell to distort. Duraluminium and manganese alloys are now widely used and have the advantage that they can be produced quickly by a duplicating shaping machine copying the profile of a master blade. These airscrews can be repaired when damaged within certain limits. The structure of all airscrews have to be massive to prevent flutter of the tips at high speed, which sets up fatigue stresses in the blade and which must be prevented at all costs since an airscrew breaking up in the air will rip the whole engine out of the aircraft by the unbalanced forces set up, in a matter of seconds, unless the engine can be shut off in time.

Centrifugal forces set up in an airscrew revolving at speed are considerable. These forces assist to prevent the airscrew blades bowing under the load. It is obviously important that these centrifugal forces should be carefully balanced to prevent rough running of the engine.

Fresh fields of research are always being sought by active designers and no doubt the accepted ideas of the present generation on airscrew design will meet with changes as vast as those which have occurred during the last decade.