

THE Aircraftman

MONTHLY FEATURE:
EQUIPMENT SECTION

APRIL 1943



THE - Hughes -
TECHNICAL TRAINING
ST. THOMAS **SCHOOL** ONTARIO

« « VISITORS of NOTE » »



VISIT OF GERMAN NIGHTMARE

"That's what I'd call Beurling. Reckon he's one of the biggest single headaches 'Jerry's' found yet."

It doesn't matter who voiced the idea. In the crush his name was lost. But he was one of the thousands of in-training ground personnel who heard Group Captain J. H. Keens, A.F.C., interview Flying Officer George "Buzz" Beurling, D.S.O., D.F.C., D.F.M., at the Station drill hall when he, the latter, paid a visit and made a tour of inspection at Technical Training School on Saturday, March 13.

There isn't much to be said which has not already been said by peer and Prime Minister alike, of the exalted record of the "Air Knight of Malta", or of the endless exploits which he describes when asked "how he does it". So we gathered these "small" impressions (the kind the camera doesn't record) from one of the officers, Flt. Lt. R. K. Armstrong (Motor Transport Division), who accompanied Beurling during much of his visit.

"Beurling is unassuming, natural, high strung," he said . . . "You notice that when, with the rest of the party standing about, he fingers a near-by piano and keeps pretty much on the move."

"That would be necessary when he's fighting?" interjected an interviewer.

"Yes." We showed him a Times magazine picture of Malta, taken somewhere off the "Rock", and asked him if he recognized the spot. "I was shot down there, or thereabouts," he replied. He seemed to recognize the place as though it were his backyard.

Beurling had apparently received the injury which sent him winging home, at the age of 21 (with 29 enemy planes in his bag, plus three probables and nine damaged, to his record) somewhere in this area of the eastern Mediterranean.

Beurling has many times told the press that he would "rather be back over Malta" than warming his present, strange, cockpit in the multi-motored bomber of Canadian publicity.



AUSTRALIAN TENOR AT T.T.S.

During the month of March we here at T.T.S. were favoured by the visit of A.C.2 Kenneth Neate, Australian tenor, who had recently enlisted in the R.C.A.F. with the hope of getting into the flying end of things in the quickest possible time. But when the R.C.A.F. discovered that it had an internationally known tenor on its hands, Aircraftman Neate was quickly dispatched on a singing tour of Air Force Stations in Canada. And that's how come we had the pleasure of hearing him here. He was on the Station about four days and during that time sang before enthusiastic audiences of T.T.S. personnel in the Recreation Hall, before the movie in the Drill Hall, at the Y.W.C.A. dance in St. Thomas, at the Saturday night dance here, and then topped it all off before a large crowd at the Sunday night Band Concert in the Capitol Theatre in St. Thomas.

If you heard him on any of these occasions you know how fine a singer he was, so we won't go into that. But you may be a bit interested in the highlights of his singing career, so here's an outline: Starting in Australia, he became well known on concert tours there, and on coming to the U.S.A. and Canada made successful concert appearances in the principal centres. Going into the fields of opera and radio, he became tenor soloist for the Canadian Broadcasting Corporation during their broadcast opera season of 1942. Before this he had been chosen by Sir Thomas Beecham for the Montreal Musical Festivals, and during 1941-42 was with the Metropolitan Opera Company as understudy in the gala production of Mozart's "Magic Flute". All in all, a pretty fair background.

Aircraftman Neate joined the R.C.A.F. in October, 1942, and since then has been on this singing tour of R.C.A.F. Stations, accompanied by A.C.2 Donald Mackey, a former organist and choirmaster at a large Montreal church. Kenneth Neate's visit here was a thoroughly enjoyable experience for everyone who heard him sing, and we certainly wish him the best of luck in his aircrew studies.

"These Were Bombed With A Spanner"



- A.C.2 NOBLE, T. C. (R160952)
A.E.M., Lethbridge, Alta.
- A.C.2 HARVEY, J. S. (R167790)
A.F.M., Winnipeg, Man.
- A.C.2 CROSS, G. W. (R178660)
Electrician, Edmonton, Alta.
- A.C.2 TIVY, R. N. P. (R178510)
I.R., Edmonton, Alta.
- A.C.2 THOMSON, J. R. (R166844)
A.E.M., Vancouver, B.C.
- A.C.2 SVENDSON, A. E. (R172621)
A.F.M., Winnipeg, Man.
- A.C.2 WILLIAMS, W. J. (R158362)
Electrician, Saskatoon, Sask.
- A.C.2 FORTIN, L. A. S. (R177216)
I.R., Quebec City, Que.
- A.C.2 JOHNSTONE, L. M. (R175828)
A.E.M., Terrace, B.C.
- A.C.2 SLEMKO, J. E. (R168730)
A.F.M., Medicine Hat, Alta.
- A.C.2 DICKINSON, D. R. (R180189)
Electrician, Winnipeg, Man.



- A.C.2 GLEESON, R. C. (R180019)
I.R., Port Arthur, Ont.
- A.W.2 WILSON, E. I. (W309294)
Hospital Assist. Course, Providence Bay, Ont.
- A.C.2 BARATELLI, P. (R168820)
A.E.M., Blairmore, Alta.
- A.C.2 McCREA, A. E. (R184555)
I.R., Toronto, Ont.
- A.C.2 BROWNING, A. (R168146)
A.F.M., Hamilton, Ont.
- A.C.2 DOBROFSKY, M. S. (R154223)
Electrician, Montreal, Que.
- A.C.2 ZELLIT, H. (R175010)
A.E.M., Toronto, Ont.
- A.C.2 HEDICAN, E. V. (R169321)
A.F.M., Fort William, Ont.
- A.C.2 FOLLETT, G. (R199498)
I.R., Toronto, Ont.
- A.C.2 CALDWELL, J. B. (R188027)
Electrician, Toronto, Ont.

The Aircraftman

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THE COMMANDING OFFICER,
GROUP CAPTAIN
J. H. KEENS, A.F.C.

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LOOK UPWARD . . . THERE
FLIES FREEDOM

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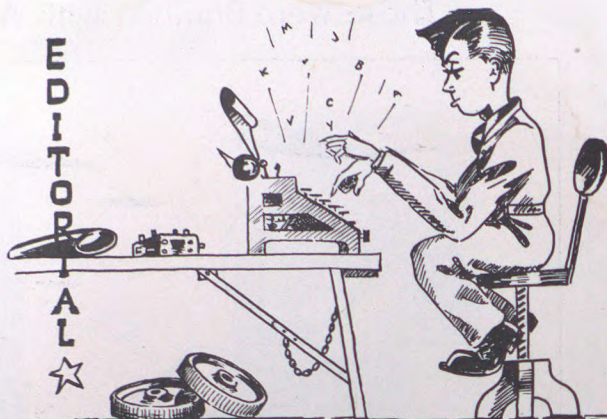
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THE PRESS CLUB meets every Tuesday at 1930 hours in the Press Room. Membership is restricted to all who attend—all are invited. Please address all communications and contributions to THE AIRCRAFTMAN and deposit to the Squadron correspondent in your Orderly Room, the Y.M.C.A., or into any local letter box. For further information ask any of the above contributors.

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T. T. S. BIDS WELCOME

"Ring out the old, ring in the new . . ."
We don't ring bells as officers and men come and go here at T.T.S. Yet often, in terms of effort and ideas which are left behind, or brought here, well we might.

In this issue we welcome five officers of those most recently posted to the administrative staff. We speak the word "Welcome", and through the camp magazine say that the word springs from desire, deeper than words, to encourage co-operation between officers and men on this Station, newcomers and old.

To encourage that co-operation on a scale never thought of or hoped for before! Largely, the new officers, whom we salute, are here to replace several of the staunch Britishers, officers and "non-coms", who are gradually leaving us to our own devices here in Canada.

Their task, in taking up the challenge of the men who leave, is of no small proportion!

BACK THE ATTACK
BUY BONDS

WRENCHING "JERRY" OFF THE MAP

That's what it amounts to, men. That is the prime purpose of T.T.S.! The prime purpose of all of us!

Wrenching "Jerry" off the map.
That is the idea which inspired the very nobly executed cartoon by "Hughes" (Cpl. Hughes), page 1. And there lies a tale:

It is acknowledged that much of the world's great art had its seed from anonymous sources; so it is with the mind behind "Hughes" hand, behind the wrench, behind the allied technical effort to beat Germany; (all these ideas are contained in Cpl. Hughes' work). The idea came from an anonymous letter (signed A.C.2) asking why The Aircraftman artist didn't make some effort to portray allied technical effort as the bulwark behind the allied air offensive over Germany.

His words: "Easy is the work, and undeserved is at least some of the reputation of the airman. He falls asleep at the controls and his engines, and airframes, still carry him on, on, over continental Europe . . ."

"The spanner", winds up our unknown artist, or writer, "still stands behind the allied offensive . . . If you can put the idea on paper, I suggest you picture allied planes above the wrench and call it: 'This Started With a Spanner', or 'Success Begins on the Ground.'"

Success does truly begin on the ground. So do most "high" ideas. Won't the originator of the idea get in touch with us?

He may (why not?) have more "war winners" in his cap!

BACK THE ATTACK
BUY BONDS

IMPORTANT CHANGES FOR YOUR INFORMATION



SQN. LDR. P. A. WATERS, Chief Technical Instructor. Technical men and N.C.O.'s, meet the sunny-faced, much-Canadianized but British-born Squadron Leader. If you run across him in his office, on Station business, there will be little chance of your missing the strong cheer of his geniality.

(Continued on Page 11)



SQN. LDR. N. J. WALSH
This is the Station's new Senior Administrative Officer: genial, progressive in feature and fact, "a skier when there's snow", a Montreal business man (manufacturing and importing), before enlisting in the second world war, ten days after Canada declared herself in it.

Since that time he has served as Commanding Officer, the Halifax recruiting centre (1939-40); at Trenton on the administrative course, and in succession at No. 3 Training Command, Montreal (personnel branch); No. 1 Wireless School, Montreal (adjutant); No. 1 Bombing and Gunnery School, Jarvis; No. 6 B. and G. School, Mountain View; No. 6 Repair Depot, Trenton; then as "S.A.O." to succeed Wg. Comdr. Norman McLeod (recently posted to Moncton, N.B.) on station here.

Sqn. Ldr. Walsh's brother is Air Vice-Marshal G. V. Walsh, M.B.E., Air Member, Canadian Joint Staff, Washington, D.C.

He is the son and member of a military family. His father, the late Commander J. T. Walsh, R.N.R., F.R.G.S., F.R.C.I., was at one time general manager of Canadian Pacific Steamship Lines, Montreal. His two sisters, Sqn. Ldr. K. O. Walsh, Senior Officer, W.D., R.C.A.F., who is now posted overseas to the R.C.A.F. Bomber Group to take charge of the women personnel, and Sec. Officer F. T. Walsh are in service.

A graduate of Loyola College, Sqn. Ldr. Walsh was a member of the original council of the Montreal Junior Board of Trade and devoted much time to amateur dramatics of the musical revue type, working with several organizations serving charity show needs (Junior League shows). He has had much to do with station amateur dramatics wherever posted.

We bid Sqn. Ldr. Walsh a hearty wel come to T.T.S.

Born at Arichat, N.S., Padre Latimer comes to us from No. 6 S.F.T.S., Dunnville, enlisting in April, 1942. He holds the degree of Bachelor and Master, Art. McMaster University.



FLT. LT. A. B. TAYLOR, Squadron Leader Administrative. Strikes you, first, as though he might have enjoyed many hours on hockey ice, or on any of a variety of sports fields, and when you ask him about it he replies, in quiet, modest air: "Yes, president of the Ontario Badminton Association for two

(Continued on Page 11)



F. O. JOHN ARTHUR REYNOLDS, Station Adjutant. "Mr. Reynolds" was the very popular "O.C." in charge No. 3 Squadron, 2 Wing before being made No. 2 Wing Adjutant in succession to Flt. Lt. J. E. Boyes, who left this country recently to report for duty overseas.

Truly, thus, it can be said (let all fitters on Station take note) that F.O. Reynolds is a "rigger" of the old school of No. 3 Squadron (a post now filled by F.O. Rogers). Much of the story matter of F.O. Reynolds' background was published in a recent Aircraftman. A supervisor with the Circle Bar Knitting Co. of Kincardine, Ont., and active there for 18 years in Scout organization.



FLT. LT. REV. R. R. LATIMER

If an open letter may be addressed to our new (posted to T.T.S. on February 25, 1943) Senior Protestant Padre, Flt. Lt. Latimer, we say:

"Welcome, sir, to the restless spiritual fields of T.T.S. and may God speed you in the work which lies before you, and in your contact with the passing warrior-airman here.

"Of Anglican-Protestant faith, you are to us, sir, a 'Bluenoser'. There are many more amongst us, officers, trainees, instructors, just as there are many Westerners. One and all (those of us who have seen you and know you, sir) we like your slow smile and its sincerity. Again, welcome to T.T.S."



BOXING

The regular monthly boxing tournament took place in the Drill Hall on February 24, 1943.



Due to the change in Station routine, the regular short leaves were taken in the middle of the week—covering 24th of February. Of those remaining on the Station 800 were in attendance and were rewarded with

the best tournament to date. All bouts were evenly matched, providing some exciting fights. Several good boxers, including the Anderson brothers from No. 1 Squadron, 1 Wing, and Cpl. May, were on 48's but new faces filled in and several real fighters appeared in the bouts. A.C.2 Galon, J., of Regina (No. 2 Squadron, 2 Wing); A.C.2 Barrier, R. J., of Montreal (No. 3 Squadron, 2 Wing); A.C.2 Willis, D. W., of Edson, Alberta, were exceptionally good. Barrier had previously won the C.O.'s Boxing Shield in his weight at Manning Pool, Toronto, two successive months.

Our Station goalkeeper, A.C.2 Irvine, J., was outpointed by Galon in the 126 lbs. opening bout. In the 136 lbs. Burns of Quebec City, after a month's layoff, was on the way to a comeback when Lepitre caught him with a blow to the throat, knocking him hors-de-combat. Hebert was floored by Barrier in the 147 lbs. class in what looked to many like sponge art. These two men meet again in the March tournament.

Probably the best fighter of the card, A.C.2 Yates, the Sydney boy, gave the Chinese lad, Fong, E., a lesson in boxing. However, Klassen from B.C., won his first fight since coming to T.T.S., defeating Baird of Ottawa. Campbell of Cornwall accomplished a similar feat, winning from Cooper of Parry Sound. Willis of Edson, Alberta, in a rough-and-tumble scrap, won over Boucher of Gravelburg, Sask.

Intermission saw Sgt. O'Mahoney, J. R. (Fif, the Clown) in a hilarious act. The last bout of the evening was a free-for-all—twelve men blindfolded went at each other in one uproarious ten minutes of fun.

Gp. Capt. Keens, A.F.C., presented prizes to the contestants at the conclusion of the bouts.

The results of Sgt. Despres' efforts as Boxing Instructor at T.T.S. are becoming more evident each month. To him goes a great deal of credit to the success of the bouts. He has been very faithful in his attendance at the Drill Hall during training hours.

The March Tournament takes place on Monday, 29th, with L.A.C.'s Stogre and

Schlosser (boxers) and Sgt. White (wrestler), all from No. 9 S.F.T.S., Exeter, are included on the card.

Eight boxers from the February card have been posted. We still have Cpl. May, A.C.2 Galon, Lepitre, Barrier, Hebert and Willis with us, in addition to some new faces. Let us not forget Bill Howarth and Art Gardner of the Sports Stores in the Drill Hall. These men have made things easier for Boxing nights, assisting in setting up the ring and all the equipment that goes with arranging a tournament. Bill has been on the job well over two years and knows all the answers. Good work, men!

STATION BADMINTON TEAM

The T.T.S. Badminton players excelled in inter-section competition this past winter, having a better record than any of the other Station sports. In fact, although the Hockey, Basketball and Volleyball teams finished up with more games won than lost, the "Raquetters" had a perfect record—6 wins, 0 losses.

The team played against Aylmer S.F. T.S. and Fingal B. & G.'s and each night managed to win at least two-thirds of the games.

The team was mostly composed of trainees. However, they did not seem to be frightened by playing against the Officers, who were usually their opponents. The C.O.'s of both Fingal and Aylmer can vouch for the playing ability of the T.T.S. lads as they were active competitors.

Sgt. Stewart of the P.T.I. staff selected and made up the teams, and had an extensive if varied crew to draw from, all being inter-squadron players.

A.C.2 Mustart, a former British Columbia champion who only was around for two of the nights, was probably the outstanding player of the T.T.S. He, along with A.C. Fox, was in No. 2 Squadron, 1 Wing. A.C. McGregor of No. 3 Squadron, 2 Wing, and A.C. Lamey of No. 1 Squadron, 2 Wing were also outstanding and saw a lot of play.

Cpl. Moore, No. 3 Squadron, 2 Wing, who got into all the tournaments, lost his playing shoes early and being unable to replace them (size 13) he "slipped" considerably. Among the others on the team were Flt. Sgt. Godfrey of Headquarters, A.C. Freedman of No. 1 Squadron, 2 Wing, A.C.'s Hamer and Wulff and A.C.2's Gosson and Ball of No. 2 Squadron, 2 Wing.

Sgt. Nae of this squadron also got into several games. No. 1 Wing also provided A.C.'s Letrae, an exceptional doubles player, and A.C. Sweetman, both of No. 1 Squadron.

A very representative team that not only excelled in doubles play but also in exhibition singles matches were able to usually win easily from their older opponents from Aylmer and Fingal.

COMMANDING OFFICER'S TROPHY

The results of the Commanding Officer's Trophy for the month of March are as follows:

No. 2 Squadron, 2 Wing were successful in winning the highest total points, which gave them the Trophy for March. No. 2 Squadron, 2 Wing qualified for the Volleyball Certificates.

Headquarters were successful in winning the Basketball.

No. 3 Squadron, 2 Wing were the Badminton Champions.

This past month proved to be one of the hardest contested indoor sports programmes we have had this season. It was a close race but the hard fighting of the No. 2 Squadron, 2 Wing team was the ultimate winner.

Final Standings in the Commanding Officer's Sports Trophy Series for the Month of March

(1) No. 2 Squadron, 2 Wing; (2) No. 1 Squadron, 2 Wing; (3) No. 3 Squadron, 2 Wing; (4) No. 1 Squadron, 1 Wing; (5) No. 2 Squadron, 1 Wing; (6) No. 3 Squadron, 1 Wing; (7) Headquarters.

STATION VOLLEYBALL TEAM

The T.T.S. Volleyball team carried on quite credibly all season despite the secrecy that surrounded their movements. Accompanying the Basketball and Badminton teams on four trips to Aylmer and Fingal Air Schools and playing two games against the former at T.T.S. They lost only one evening's play.

And in this their last game at Fingal they were playing with a short-handed, inoculation-weakened team that still won the first two games of a three out of five series.

With a continually changing team, due to postings, they used twenty-one players in all during the season. Most of these came from No. 2 Squadron, 2 Wing, the perennial inter-squadron winners.

Ace of the team was Cpl. Harwood, who showed himself to be the heaviest hitting spiker in these parts. Three other potent spikers who were only with the team for two games each before posting were Flt. Lt. Scott, A.C. Poss of the 125th A.F.M., and A.C. Dempsey of the 60th Entry I.R. Cpl. Hodgkiss, besides being able to put a ball away neatly at the net, was a smart fighter. He, along with Sgt. Smith, D. H.; Cpl. Bozinski of the P.T.I. staff, and L.A.C. Barnes of the Medical staff, were regulars for most of the games. Smith and Barnes were quite versatile, being both "setters" and "killers".

Sgt. Charlton was the only player to get in on all the games. His forte was fielding. Perhaps the best "setter" on the team was A.C. Leach (later Cpl.) of the I.R. 58th Entry. He only got into two tournaments. Among the other smart players who only managed to be around, or able for a game or so, were Cpl. Grant, Flt. Sgt. Walker, A.C. Shepherd, A.F.M. 119; A.C. Macfarlane, Entry 125 A.F.M.; A.C. Thickson, A.E.M. 136, and the two latest recruits, A.C.2 Habuts of the 144th A.F.M. and A.C.2 Kidder of the 145th A.F.M.

After organizing the team and playing in three games, P.O. Grabb was hospitalized. He was missed as a player and coach. In the last two games his place has been taken by Flt. Lt. Setterington as handler of the team.

« Station Chatter »

Broadcast??

Don't know how many of you make the reading of this column a monthly penance, but if it should happen to strike you that this current edition is a little more lacking than usual in anything of merit, put it down to the hastiness of its composition. Actually your worthy slave is slapping this together about five minutes before deadline. Incidentally, I hope you find this month's column all under one heading and not half of it credited to the W.D.'s as was the case last month. Anyway, here we go.

Dances

Many pleasant dances were held in the Recreation Hall during March by different squadrons, the W.D.'s, etc. The high-light affair, though, was the No. 4 Technical Section dance (E. & I. School to you). Held on Saturday, the 13th, this fine evening saw the staff of the section cavorting with wives and lady friends in a rather merry gambol. Usual procedure of dancing was enlivened by the bestowal of numerous prizes, and the consumption of a very fine repast. The unusual sight of two solemn gentlemen staggering around the hall shackled to a heavy ball and chain was but a bit of a parody on their immediate future—they are both to be married shortly. Two other gentlemen—also staggering—insisted on assisting the unfortunates with their burden, and very nearly precipitated a major calamity when they attempted to secure the "mike" from M.C. Cpl. Davies in order to favour the guests with one of those "songs". However, it was all in fun, and rather amusing, too, and the prosaic good time was enjoyed.

New Set-up

Maybe it was the appearance of our spring-like weather that brought smiles of relief to the faces of many of our incumbent N.C.O.'s this past month, but more probably the fact that control of the squadrons has been taken over by the Chief Technical Officer was the main reason. This meant a more equitable distribution of duties and considerable relief in the job of parading the men to work, so naturally the new set-up is much appreciated.

Entertainment

We were rather well looked after in the entertainment way during March, what with a couple of very good variety shows and the visits of a couple of outstanding people. The first variety show early in the month was acclaimed as especially fine, and the later one—on the 25th—staged by the concert party, is, at this writing, being eagerly looked forward to. Personnel who heard any of his performances were much impressed with A.C.2 Kenneth Neale's singing, and details of his visit can be found in the account inside the front cover. It seemed, too, that all were very impressed with the straightforward personality of F.O. George Buerling, Canada's war ace, when he addressed assembled troops in the Drill Hall here on March 13th—see slide front cover on this one also.

And as that seems to wind this up, we'll leave you to your own devices until the next issue, and what may have been washed along by the impending April showers.



WOMEN'S DIVISION

TORONTO'S BIGGEST SEVENTY-FIVE CENTS' WORTH

"Well, the bus went out half an hour ago."

"My hostess will have given me up for lost!"

These were the remarks of the W.D.'s who arrived in Toronto a few minutes before midnight, stranded—but not quite, for up we went to 86 Yonge Street, where the I.O.D.E. have an Active Service Club for girls.

The House Mother greeted us kindly and showed us around. We were pleasantly surprised at the size and furnishings of the place. Sleeping quarters would accommodate approximately 100 girls. There were double-decker bunks, the usual mattresses and potato sack pillows, but the linen was spotless, and the quilts beautiful homemade ones, with all the familiar patterns and dainty colours of civilian life.

After registering, we were given a locker and shown to our bunks. Leaving our bags in safe keeping, food was our next quest. A new by-law forces all restaurants except those with special all-night permits to close promptly at midnight. However, we found a place on Bay Street (name on request) where all ranks and Services stood in line to order. Considerably refreshed after baked apples and coffee, we retraced our steps to the "Barracks".

Further inspection of the club proved very interesting. We found on the second floor, with the sleeping quarters, a very comfortable sitting-room, spotless washrooms and showers and a powder room decorated to any girl's taste.

After a good night's rest we went downstairs to the lounge, which was as beautifully decorated as any smart hotel lobby. Amid the brightly coloured surroundings of cheerful drapes and baskets of pussy willow and forsythia, the chesterfields and chairs were arranged in groups.

All three Services sat down together at small tables and were served a tasty dinner, at the minimum price, by smart young things from High School. Some civilians, guests of W.D.'s, were interested and amused by the ideas and opinions expressed by the Service Girls regarding military life. The exciting programmes advertised on the Bulletin Board tempted us to go to some nearby Y.M.C.A. or Y.W.C.A., or merely linger in the Lounge, but we were on our way.

We left but not before we extended our heartiest thanks to the hostesses, all of whom served just for a "Thank you".



Vital Statistics

I think a brief look at some of the more vital of Vital Statistics would look well at the beginning of list this time, as there have been a few marriages and betrothals of note. Flt. Sgt. Cam McLean joined the ranks of the benedicts but recently, and along about the middle of the month Cpl. G. Martin of Hangar 24 tied the knot with a comely Port Stanley miss. It is evidently very definitely a fact that venerable Sgt. McGregor of the Instrument Section plans to wed his Vancouver sweetheart some time early in April, and it appears that L.A.C. G. Gould of the Hospital Staff is about to be ensnared by a winsome W.D. Such romancing! Oh yes, and Cpl. W. Rolfe of Hangar 19 is very proud of the fact that he shall be christening a baby daughter some time late in March.

Ground Training a National Necessity

By GROUP CAPTAIN D. C. M. HUME,
National Director, Air Cadets of Canada.

If you have seen a builder starting a house, or a contractor beginning a large building, you will have noticed the amount of time and care that they both put into the foundation of the structure. If you examine the countries of today that are providing a successful and satisfactory way of life, you will find that the brains, care, thought and application that went into their constitutions were of a very high order.

Everything that is worth while depends upon the forethought and labour expended upon its initial stages. In aviation this basic truth of everyday life sticks out like a lump on a log. In the process of producing a man and an aircraft flying successfully together, there is involved a wider appeal to the resources of science and to the knowledge of individuals than in almost any other activity of this mechanical age.

The man who justly calls himself an Aeronautical Engineer, for instance, must have a knowledge, and a good one at that, of such branches of engineering as mathematics, structures, metallurgy, chemistry, factory processes, electricity, optics, electronics, with sidelines of textiles, rubber and plastics. It is, therefore, quite obvious that considerable care and application are required in laying the foundations of a useful and correct knowledge of aviation, and, apart from the fact that people's lives may be involved, there is so much to know and so little time to learn it in the business of

aviation, that preliminary training on the ground must be good, intense and essential.

It is very important, for instance, that though instruction be given on the ground in the method and apparatus involved in navigation. It is a poor time to start thinking about how to use your instruments after you are 6,000 feet over strange country and do not know the way home!

It is important to have people who really know their engines. It is a poor time to sit and wonder why your engine is getting hot as your aircraft shows signs of descending. It is important to have people who know their details. It is a poor time to talk of horsepower after you have put the wrong gas in the tank. It is important to have people who know their subjects. It is a poor time to talk aerodynamics during a spin.

The rendering of an aircraft and engine airworthy calls for contribution from many well-informed people. The airframe must be true, the covering taut, the oleo adjusted, wires and bolts all locked, surface smooth, in good condition and properly adjusted, controls correct and recently inspected in detail, instruments in order, tanks safe and full, wheels, tires and brakes all ready to do their job, the engine adjusted to give correct power, magnetos checked, plugs clean, valves tight, cowlings secure, air-screw properly attached, every little

detail checked and cross-checked to make sure the aircraft is in the best possible shape. The same care is used whether the next flight is around the aerodrome or in the heart of the enemies' defences. In either case the protection of the life of the crew is involved and on that score alone too much care cannot be exercised.

The importance of ground work, therefore, cannot be exaggerated. Ground crewmen are and must always be regarded as essential members of the team that is responsible for aircraft performance. They are co-partners in its every achievement.

The best pilot in the world cannot do much useful work with a faulty engine and the best rigger in the world cannot prevent a crash from over-shooting. But as a team the best pilot, the best fitter, and the best rigger can do more with a given aircraft than any other trio.

After all, a flying machine's primary objective is to fly and the shorter time it is out of commission the more effective is its life. Keeping it in commission is the ground crew's responsibility.

Practical aviation would be impossible without good ground crews. If training pilots is a great national work, the training of the personnel of the ground crews is a great national necessity.

Truly may we say that the structure of modern aviation has to be built like that of any other noble edifice, from the ground up.

JOE AIRMAN'S LETTER

Dear Maw:

Did you ever hear the story of John Doolittle, civilian?

The Canadian author, Dr. Watson Kirkconnell, has written a classic obituary to his memory, and included it in his best seller, "Twilight of Liberty", just out.

John Doolittle, born a man, died a real estate agent. In his youth he entered on an Arts course but was ploughed under at the end of his second year. He took no part in sports, but was a fanatical roofer.

From his membership in a fraternity he derived nothing but an expensive taste for cigars. In due season he joined a church, a serv-

ice club and a lodge, but he dozed during the sermon, charged the service club to his advertising account, and relied on the lodge for a first class funeral.

Apart from the mere satisfaction of making money, he prized his business chiefly because it made possible a crude range of sensual thrills.

He called himself a staunch party man, but his politics were a loosely organized set of petty prejudices and antipathies. During his lifetime, he created no beauty of any sort, grasped no intellectual principal whatever, performed no act of outstanding moral merit, and exhibited no saving grace of mind or disposition.

The dates of his birth and death are not given for they really don't matter.

Isn't it a revelation, Maw, to see what useless lives some of us really lived. Perhaps that's why we had a war, do you think: too many something-for-nothing experts before the war!

If we want a great nation here, Maw, we're going to have to work from a firmer foundation than last time. What do you think?

JOEY AIRMAN.



BUTTERCUP
Gone For This Winter

A.C.2 Groundcrew says that it is wise to hold your nose when drinking good Scotch whiskey so that the smell of it won't make your mouth water and dilute the bonny brew.

Air Cadets Have Creditable Showing



REAR ROW (standing)—Blewett, MacFadden, Graham, Scidmore, Richardson, Sadler, Spry, Parkins, McTaggart and Roberts. NEXT ROW (standing)—Allen, Wrathell, Ryan, McIntyre, McLean, Ross, McKeown, Montgomery, Babcock, Laurence, Previl, Partridge, Burnett. NEXT ROW (sitting)—Garrow, Atkinson, Dickerson, Sgt. Bayliss, P. O. Cameron, P.O. Shepherd, A.D.J. F.O. Shipman, C.O., P.O. Lane, W.O. Chapell, Flt. Sgt. Preston, Preston, Vince. NEXT ROW (sitting)—Wintermute, McDonald, Wraight, McCormick, Bird, Barrett, Strong, Meredith, Cook, G. Nunn, Roulston.

Meet the 163rd Squadron

Tucked away in quite an ordinary room in the Weatherhead block in St. Thomas (a room which has become a control cabin extraordinary to at least 60 air-minded young men) you'll find, hiding, one of the military secrets of the war.

This is an inkling of the secret—a question it presents:

How much fire-power, and brain-power, and enthusiasm-power have we got locked up in the hearts and heads of the next crop of warrior airmen which we in Canada are going to produce?

Nobody knows, entirely; not even Gp. Capt. D. C. M. Hume, National Director, Air Cadets of Canada.

It is a military secret, super!

But the 12 N.C.O.'s, all T.T.S. men, who instruct the St. Thomas Air Cadets (163rd Squadron), know part of the answer. F.O. R. Stabler, the liaison officer acting between the 163rd and the Royal Canadian Air Force (which together with the "local" civilian committee in charge, sponsors Air Cadet organization) knows part; so does the civilian

committee headed by Mr. N. Kilmer of St. Thomas.

The instructors and the maze of instruction which they are responsible for (in addition to firing the active and impressionable minds of a group of 15- to 17-year-olds) are as follows:

W.O.2 F. Chappell, drill and administration; Sgt. R. C. Moore, physical training and administration.

Flt. Sgt. M. C. "Mike" Prust, aircraft recognition; Sgt. C. W. Norton and Sgt. W. A. Henry and Cpl. G. C. Mycock, theory of flight and aircraft recognition. (The number of different types of aircraft known to the modern air cadet would stump you.)

Sgt. W. M. Wood, first aid (working in co-operation with Dr. J. D. Curtis of St. Thomas); Sgt. L. A. Green, knots and rope splices; Cpl. G. McWilliams, and Cpl. G. R. Appleby, Link trainer; Sgt. Bayliss and Flt. Sgt. Preston, stores and equipment in which the 163rd is completely self sustained.

Flt. Sgt. L. Gold is in charge of the Air Cadets' orderly room organization.

Equipment expenses are cleared from funds raised under the aegis of the civilian committee under Mr. Norman

Kilmer (also General Manager of the Weatherhead Co. of Canada Ltd., which company donates Air Cadets' space). Other members of the committee are: H. R. Allan, treasurer; Rev. M. B. Johnson, padre; W. J. Stewart, secretary. Directors are: Thomas Keith, L. B. Bird-sall, H. L. Preston, G. M. Bingman and Air Cadet P.O. Jack Shepherd, both on the staff at T.T.S.

Meetings in future will be held on first Mondays of the month. Membership prospects: overflowing and room for more being planned!

The two-year Air Cadets' course fits members, aged from 15 (sometimes younger) to 17 and 18, with the full equivalent to R.C.A.F. Initial Training School, providing they successfully pass their post course test. (An aircrew medical (M2) is a necessity to gain admittance.) Thus after the course recruits go directly through Manning Depot to Elementary Flying Training School of the R.C.A.F.

In the words of their liaison officer: "These fellows, keen, naive, enthusiastic, are the best hope we have for tomorrow's pilots. They are a pleasure to work with and winners, every one."

ART EXHIBITION

An outstanding exhibition of drawings, sketches and paintings done by members of the three armed services in Canada will be on display at the Recreation Hall, Technical Training School, St. Thomas, on Tuesday, April 6th, 1943.

This Art Exhibition, which was organized by the Art Committee of Hart House, University of Toronto, was designed especially to create interest among service personnel in sketching, painting and drawing.

Approximately two hundred entries were received from service personnel in various parts of Canada in the Art Exhibition and the quality was so outstanding that the exhibit was taken to Ottawa and displayed at the National Art Gallery.

During recent weeks the exhibit has been shown at military centres in various parts of Canada and all airmen on the Technical Training School Station are urged to take advantage of the opportunity to see these outstanding paintings, sketches and drawings at the Recreation Hall on Tuesday, April 6th, 1943.



"BLACKOUT"

CLOTHING STORES

Clothing Stores is a major equipment problem on this Station due to the large number of personnel and the fact that when airmen and airwomen are posted to this Station they have been in the service just long enough to need a large number of exchanges. There are many airmen paraded through Clothing Stores each day, with many exchanges being made not only for items that they have outgrown, but also due to the fact that they are posted here deficient a number of items of kit.



FRONT ROW (left to right)—Flt. Sgt. F. Alway, W.O.1 Jimmy Snider, Flt. Lt. P. Chantler, Sgt. Danny Groff, L.A.C. Joe Broadley. CENTRE ROW (left to right)—A.C.2 Hall, A.C.2 Consigny, Cpl. Bert Fowler, M. Wightman, Cpl. Ed. Coates, Cpl. Davey Parker, L.A.C. Reed. BACK ROW (left to right)—L.A.W. Linda Deschenes, A.W.1 Skelton, A.W.2 Whitbourne, L.A.W. B. Dietrick, L.A.W. G. R. Sweeney, A.W.2 Wray, Cpl. Sara Janes.

WING AND SQUADRON STORES

Due to the number of trainees, the location, the upkeep of the Government buildings, the various training routines, it is necessary to assign Equipment Assistants to each Wing and Squadron for duty purposes. Each Wing is composed of three Squadrons, and the Wing Storekeeper also supervises and instructs the Squadron assistants. The assistants are under the jurisdiction of the Wing and Squadron O.C.



STANDING—Cpl. Bob Stein, L.A.C. Dentry, L.A.C. McFadden, L.A.C. Bob Miller. SEATED—L.A.C. Katzman, A.C.2 Cole, A.C.2 Friesen.

Equipment Section

The general routine of the Equipment Office consists of the preparation of Parade Statements, final checking and mailing of demands and correspondence. The Senior Equipment Officer acts as the overseer, and is responsible for the administration and organization of the entire Equipment Section. The work of an Equipment



General Equipment Office

SEATED—Sqn. Ldr. H. M. Coleberry. STANDING—Cpl. T. Donaldson, Ilene Stafford, W.O.1 B. Spence.

Assistant in the R.C.A.F. is vitally important to the success of the whole organization. The Equipment Section is one link in a chain which has been forged to produce nothing less than the winning of the war. Since no chain can be stronger than the strength of each of its component links, ours is an important and irreplaceable job.

TECHNICAL STORES

The purpose of the Technical Stores is to provide for the provisioning of all items of equipment of a technical nature such as aircraft, aero engines, aircraft and engine spares. The Issue and Receipt Section looks after all incoming and outgoing shipments of equipment.



TECHNICAL STORES PERSONNEL

FRONT ROW (left to right)—Cpl. Rex McLean, Sgt. Jimmy Blake, Flt. Sgt. Jack Preston, P.O. F. S. Lemon, Sgt. Bill Walker, Cpl. Doris James, Cpl. Charlie Wright, Cpl. Frank Wright. BACK ROW (left to right)—L.A.C. Andy Whetham, A.W.1 Betty Jary, L.A.W. Hattie Olafson, L.A.W. Frances Oakes, Jim Shingler, L.A.W. Marg. Harrison, Lucille Bolt, L.A.W. Clarice Chandler, L.A.W. Helen Brown, A.C.2 Ed. Friesen.

BARRACK STORES AND PUBLICATIONS

All Barrack Equipment is handled through Barrack Stores, working in conjunction with the Stores is a Barrack Officer and a Barrack Warden.

Publications and Stationery Stores is one that is generally given the least attention at any Station due perhaps to the seemingly greater importance of the other groups. Therefore, very little is known of the actual procedures and workings by the average storekeeper. However, it is of major importance, and particularly is this true in respect to the publications and amendments.



SEATED—Mr. Bellamy, A.S.O. M. Van Allan, Col. Gerrard, V.D., Flt. Sgt. "Butch" Scammell. STANDING—Stan. Robinson, L.A.W. L. Silcox, A.W.2 I. J. Knox, L.A.C. Johnny Pool, A.W.1 N. Angus, L.A.C. Upton, E. Edwards.

FLIGHT STORES

In order that supervision is maintained over the six (6) Flight Stores located in the various hangars, a Senior N.C.O. is appointed to act in the capacity of a Liaison Equipment Assistant between the stores and the S.E.O. This also ensures uniformity in the records and set-up of Flight Stores. He is responsible only to the S.E.O.



KNEELING—Cpl. W. Sullivan, Cpl. Battle, Cpl. Gingras, Cpl. Mitchell, L.A.C. Ramsay. STANDING—A.W.1 Sweeney, G. A.; L.A.W. Richardson, P.; L.A.W. McLaren, Nat.; Cpl. Campbell; A.W.1 Fleming, E. M.; A.W.1 Lockyer, J.

Y. M. C. A. WAR SERVICES AT T. T. S.

WHAT DO WE DO?

This is a question frequently asked of all Y.M.C.A. War Services Supervisors and the source is usually either a civilian or rookie. There are many young Canadians entering the Service and receiving their early training at T.T.S. This brief outline of our position and duties may be of value to them in future Service life.

The Y.M.C.A. Supervisor is appointed and posted by the National Council of the Y.M.C.A. Our office and personnel, however, are directly responsible to the Station Commanding Officer and our administration comes under the jurisdiction of the Senior Administrative Officer of the School.

We are mainly concerned with the A.C.2's of the Station and as "Providence takes care of the Officers and Senior N.C.O.'s", the A.C.'s are of primary importance.

T.T.S. Y.M.C.A. STAFF



FIRST ROW (left to right) — Sid McLennan, Ruth Rowley.
SECOND ROW (left to right) — Dick Jolliffe, Keith Robinson, Gord. Burrell.

Our Supervisors are chosen for previous education and experience in fields of recreation. They have had college or university education and while attending have participated in extramural activities such as sports, music, hobbies, etc.

SPORTS

T.T.S. has an excellent winter and summer programme of sports, which include: volleyball, basketball, badminton, hockey, etc. The outdoor programme of softball, soccer, lacrosse, tennis, constitute the games for the Commanding Officer's Trophy Series. Sgdn. Ldr. H. Lea, President of the Sports Committee, encourages suggestions from the A.C.2 which he can present to the Sports Committee. It is the Sports Committee who plan the programme, and we assist in having this programme function.



The Press Club, with which we are actively associated, is responsible for this publication, and all Station personnel interested in journalism are encouraged to

ENTERTAINMENT



Visiting troops such as the London No. 1 Troupe, London Life, Tweedsmuir Review, London Little Theatre, etc., and our own entertainers receive co-operation and encouragement from the Station Entertainment Committee, of which Flt. Lt. E. Davidson is the President. Our Office does the liaison work between the Station personnel and the Entertainment Committee.



TOBOGGAN FRONT

PRESS CLUB



attend its meetings. If you are unable to attend the meetings, submit your articles, editorials, cartoons, etc., to your Squadron representative.

CAMERA CLUB



Photography is a popular pastime and T.T.S. boasts an up-to-date dark room with all the necessary equipment. If you are interested in photography don't feel hesitant about attending the lectures or working in the dark room. Service regu-

lations do not permit cameras on the Station, but accommodation for the checking of your cameras off the Station is provided. You will find no high-brow attitude in this club, so come out to our next Monday night meeting.



To conserve valuable space, the above picture includes several activities such as the small games, dances, movies, square dancing and personnel services, etc. These will give you an insight into a few of our other services.

The excellent co-operation from everyone at T.T.S. is most encouraging and as it is our duty to serve the Station, it

is this co-operation that enables us to give our best to you.

What you don't see—ask for. Our entire staff is always at your service and since we offer no claim to perfection, we welcome suggestions and criticisms. With your enthusiastic support, we are better able to serve the troops.

Sqn. Ldr. P. A. WATERS

[Continued from Page 3]

Gradually, and with the progression of Sqn. Ldr. Waters' experience with it, the R.C.A.F. progressed (at first through the early days before it had Royal charter—April 1st, 1924—from the "Air Board" and the "Canadian Air Force", recognized on February 18th, 1920) to become the "second parent" of the

world's greatest combined air training scheme.

Sqn. Ldr. Waters was commissioned in June, 1940, after having piled up a service record reaching to his days as a boy apprentice to the ground crew section of the R.A.F., at 15 years of age, in 1915. He was then a "rigger". He hailed from the great old British summer resort of Brighton.

TRUE OR FALSE WHAT'S YOUR I.Q.?

We suggest you keep the list below and subsequent lists to be published to gain a complete knowledge of any question you could possibly be asked by any Trade Board. Answer "True" or "False" and add 10 marks for each correct answer and subtract 10 for each incorrect answer. Last month's answers are at the bottom of the list, and this month's will appear in the same place next month.

1. Zero degrees centigrade is equal to 32° Fahrenheit.
2. Two lbs. + boost pressure = 40' manifold pressure.
3. U.M.O.'s are part of Station standing orders.
4. A major inspection may be anticipated or delayed ten hours.
5. A wide spark gap will not possibly erect insulation of plug.
6. An uncompensated altimeter capsule will expand with an increasing temperature. Pressure remaining constant.
7. Mercury does not wet the glass.
8. The leads to thermocouple instrument should not be cut.
9. The rate of a standard turn is 180° per minute.
10. A.P.T.I. is an approved dope.
11. There is a salt bath on this Station.
12. Decalage is a thinner for dope.
13. Movement about the normal axis is known as yawning.
14. Elevators are rigged with Droop the same as Ailerons.
15. Does the T. R. Wasp use four lobe cam?
16. T. R. Wasp has three scavenger pumps.
17. Boost control corrects the mixture for altitude flying.
18. The S. U. Carburetor has a spring loaded needle valve.
19. Constant speed unit controls engine boost pressure.
20. Torque loading is not necessary on rotol propeller.

ANSWERS TO LAST MONTH'S QUESTIONS

True—2, 5, 6, 8, 9, 10, 13, 16.
False—1, 3, 4, 7, 11, 12, 14, 15, 17, 18, 19, 20.

Flt. Lt. A. B. TAYLOR

[Continued from Page 3]

years, and also vice-president of the Canadian Association for two years."

When asked about his job, Flt. Lt. Taylor, who has come here after spending 15 months as second in charge and adjutant, the Hamilton Recruiting Centre, says:

"Squadron leader administrative means that I'm really senior adjutant and assistant 'S.A.O.', a post peculiar to T.T.S. I believe, and created because of the size of the Station."

Flt. Lt. Taylor joined the Royal Flying Corps in 1917 in the last war and just got through a short course in England when the armistice came. He was commissioned in June 1940, after leaving his company, the Huron & Erie Mortgage Corporation of Toronto. He was born in Mt. Clements, Mich., lived in Oakville and comes here after serving in Winnipeg and at the Toronto Recruiting and Manning Depot, and Hamilton, respectively.

Who's Who at T.T.S. - This Month

A.C.2 BOLL, D.

Here is one of the fellows who help to keep the boys out of mischief after working hours. He is one of those men that we call talented. He is a tall lad who is very modest, and talking about his achievements is not for him. However, with a little persuasion and a threat here and there he told us his life story. Boll is a native of Saskatchewan, having been born at Bengough in November some 20 years ago. He attended High School at Viceroy, Saskatchewan, and while going there he did much cartoon work for the school.



Painting is his main hobby, and even here in barracks during his spare time he does very well. He never attended art school but on his own picked up painting. Painting is one of the achievements of life that every man cannot have, but owing to his ambition he became very good in wild-life painting as well as scenic painting. However, sports is another of his many hobbies and he has 27 homing pigeons which he races quite frequently.

L.A.W. MORRIS

L.A.W. Morris, one of our Hospital Assistants, who helps the boys in hospital to while away the lonely hours, but in spite of her diminutive size she seems to get around quite well in these uncharted corridors of T.T.S. Most of you who know her will best know her as Sparrow, for that is what she has been christened by her many friends. She was born in Wales, England, and at a very early age graduated from a girls' Anglican school. Then she attended a private music school, where she studied for a short time before moving to Canada.



On arriving in Canada she became a sales clerk for Simpson's in Toronto, and for her period of stay with them she sold women's sporting goods. This was too tame a life for her so she decided to go in for something big and more interesting, which was baby nursing in the Sick Children's Hospital, Toronto. This still wasn't exactly what she wanted so when the war broke out she decided to join the R.C.A.F. and see what she could do to help her brother who is in the R.A.F. as an air gunner. However, after the third attempt she finally, to her great joy, was admitted to our service. You will find her down in our hospital looking after the boys who are sick.

A.C.2 BAKOWSKY, E. J. (R174093)

(Polish), 2 Squadron, 1 Wing

This lad is one of many of the Polish race who have joined our forces for the purpose of revenge. He was born in Jagelnicza, Poland, and left there when he was 9 years of age. While he lived in Jagelnicza he attended a grade school for three years. This young lad's parents were continually on the move as his father worked for the Polish Government and his business took him to Germany, France, England and neighbouring countries, so he can boast of seeing plenty. He moved to Canada in 1930 and continued his schooling at Montreal, where his parents settled. On completing High School he went to work for Canada Car, and then for the Fairchild Aircraft in Longueuil, Que. This young man had other ambitions and all his spare time was spent in drawing sarcastic cartoons about his friends. In the year 1937 he became a King Scout as he was ambitious and this saw the year of the Coronation.



He moved to Canada in 1930 and continued his schooling at Montreal, where his parents settled. On completing High School he went to work for Canada Car, and then for the Fairchild Aircraft in Longueuil, Que. This young man had other ambitions and all his spare time was spent in drawing sarcastic cartoons about his friends. In the year 1937 he became a King Scout as he was ambitious and this saw the year of the Coronation.

A.C.2 LEE, D. (R170973)

3 Squadron, 1 Wing

Here is another one of our jolly allied partners in this great show. He is one of the boys who keep our aircraft flying and hopes to do his job very thoroughly. This bright Chinese lad is one of many who have answered the call to our country. He says that this is one way of getting even for all that Japan is doing to his country. This smiling lad was born in Vancouver, B.C., and attended New Westminster Trapp Technical School for a period of four years. On moving to Toronto he continued his schooling at the good old Central Technical School for another 1½ years. Just to show how anxious this lad was to join the R.C.A.F., he journeyed to Vancouver to enlist in 1940, but they refused him. This nearly broke his heart, but in 1942 he was finally rewarded by being told that he was to go to the Galt Youth Training School. After serving his time at this school he was finally sent to Lachine, Que., to wait the time when he should be sent on his A.E.M. course.



He moved to Canada in 1930 and continued his schooling at Montreal, where his parents settled. On completing High School he went to work for Canada Car, and then for the Fairchild Aircraft in Longueuil, Que. This young man had other ambitions and all his spare time was spent in drawing sarcastic cartoons about his friends. In the year 1937 he became a King Scout as he was ambitious and this saw the year of the Coronation.

A.C.2 CLARRIDGE, W. H. (R175327)

(Bahamian) 2 Squadron, 1 Wing

Who wouldn't want to live in the Bahama Islands? Well, that is exactly where this tall, dark and handsome lad is from.



This lad is originally a Torontonian, but at the age of 9 months moved to the Bahama Islands, where after growing up to school age he went to Queen's College for a period of 10 years and graduated when he was 17 years old. Now just who wouldn't enjoy themselves? This lad partook very frequently in English rugby, swimming, horseback riding and water skiing. For some time he worked in a dairy, but this was no life for him so he quickly got himself another job in a hardware store, where he spent three years. Now yachting was one of his great ambitions but the nearest he came to doing this was to work on one but, again, swabbing decks was not exactly what he had figured on.

Great ideas were in the back of this man's head so he tried to get permission to come back to Canada, but for some time could not do this. As time went on I guess they got tired seeing him around all the time so they consented to let him come back to Canada, where he immediately tried to join the R.C.A.F. The same old story again—he had plenty of trouble getting in but, due to his stubbornness, he made it.

CPL. EARL CRANGLE

"Slim", Georgia's contribution to the R.C.A.F. Hailing from Waynesboro, Georgia, this tall, good-looking American lad has come to us with his tales of the Sunny South.



"Slim" was born in the Adirondack Mountains of New York some twenty-five years ago. When he was quite young he and his parents moved to Waynesboro in the southern part of Georgia.

However, this lad never forgot the place of his birth as there always was good fishing and hunting there and in later life this was one of his main pastimes.

After attending Alandale High School in South Carolina he was sent to a military school for 1½ years, where he learned to soldier under the stern arm of American discipline. "Slim's" father was a man who always took a great interest in dogs and during his time had some of the finest dogs on the American continent. However, all this was in this lad's veins so he too took a great fancy to raising pointers and setters and right now he can boast of having won several noted championships with his dogs, and that he has with his dogs shot upland birds for several years in practically every part of Canada and in most of the States.

FREE MOVIE TICKETS

If the Airmen and Airwomen in these candid shots will identify themselves at the Y.M.C.A. Office, in the Drill Hall, they will find some FREE THEATRE TICKETS waiting there for them. Drop in, folks, and pick them up!

AT THE GRANADA, ST. THOMAS

April 12-14—"I MARRIED A WITCH."

April 15-17—"ONE DANGEROUS NIGHT."

April 19-21—"THE MUMMY'S TOMB" plus "NIGHT MONSTER."

April 26-27—"ICE-CAPADES."

April 30-May 1st—"HI-BUDDY."



How Do You Like The New Hats?

AT THE CAPITOL, ST. THOMAS

April 10-14—"YANKEE DOODLE DANDY."

April 15-21—"RANDOM HARVEST."

April 22-23—"MEANEST MAN IN THE WORLD" and "CHETNIKS."

April 24-28—"STAR-SPANGLED RHYTHM."

April 29-30—"NIGHT PLANE TO CHUNKING."

CALENDAR OF COMING EVENTS

Thursday, April 8th—
1900 hours—C.O.'s Sports Trophy Games in the Drill Hall.

Friday, April 9th—
2000-2340 hours—Twin Triangle Dance at the Y.W.C.A., St. Thomas.
2015 hours—Movies in Drill Hall, "The Great McGinty."

Saturday, April 10th—
2015 hours—Movies in the Drill Hall.

Monday, April 12th—
1900 hours—C.O.'s Sports Trophy Games in the Drill Hall.

Tuesday, April 13th—
2000-2340 hours—Twin Triangle Dance at the Y.W.C.A., St. Thomas.

1900 hours—C.O.'s Sports Trophy Games in the Drill Hall.
2015 hours—Movies in the Drill Hall.

Wednesday, April 14th—
1930 hours—Bingo Night in the Recreation Hall.
1930 hours—Small Games Night (No. 2 Wing Mess Hall).
1900 hours—C.O.'s Sports Trophy Games in the Drill Hall.

Friday, April 16th—
2000-2340 hours—Twin Triangle Dance at the Y.W.C.A., St. Thomas.

2015 hours—Movies in the Drill Hall, "The Avenger."

Saturday, April 17th—
2015 hours—Movies in the Drill Hall.

Monday, April 19th—
1900 hours—C.O.'s Sports Trophy Games in the Drill Hall.

Tuesday, April 20th—
2000-2340 hours—Twin Triangle Dance at the Y.W.C.A., St. Thomas.

2015 hours—Movies in the Drill Hall.

Wednesday, April 21st—
1900 hours—C.O.'s Sports Trophy Games in the Drill Hall.
1930 hours—Square Dance in the Recreation Hall.
1930 hours—Small Games Night (No. 2 Wing Mess Hall).

Thursday, April 22nd—
1900 hours—C.O.'s Sports Trophy Games in the Drill Hall.

Friday, April 23rd—
2000-2340 hours—Twin Triangle Dance at the Y.W.C.A., St. Thomas.

2015 hours—Movies in the Drill Hall, "Sabotage Squad."

Saturday, April 24th—
2015 hours—Movies in the Drill Hall.

Monday, April 26th—
1900 hours—C.O.'s Sports Trophy Games in the Drill Hall.

Tuesday, April 27th—
2000 hours—No. 4 Troupe (London Little Theatre).
2000-2340 hours—Twin Triangle Dance at the Y.W.C.A., St. Thomas.

Wednesday, April 28th—
1930 hours—Small Games Night (No. 2 Wing Mess Hall).
1900 hours—C.O.'s Sports Trophy Games in the Drill Hall.

Friday, April 30th—
2000-2340 hours—Twin Triangle Dance at the Y.W.C.A., St. Thomas.

2015 hours—Movies in the Drill Hall, "Black Cat."

Saturday, May 1st—
2015 hours—Movies in the Drill Hall.

Tuesday, May 4th—
2000-2340 hours—Twin Triangle Dance at the Y.W.C.A., St. Thomas.

2015 hours—Movies in the Drill Hall.

Friday, May 7th—
2000-2340 hours—Twin Triangle Dance at the Y.W.C.A., St. Thomas.

2015 hours—Movies in the Drill Hall, "Invisible Agent."

Saturday, May 8th—
2015 hours—Movies in the Drill Hall.

BACK THE ATTACK
BUY BONDS

« TECHNICAL TOPICS »

AIRCRAFT HYDRAULICS

By CPL. C. G. COURAGE

Like all weapons of war today, the aeroplane has become an instrument of precision, massive in size and deadly in efficiency. During the years of the first World War the pilot had to depend on his physical strength, supported by simple mechanical levers, to operate all the components of his craft. Now, however, such simple application is impracticable, not because we are in any degree physically inferior, but because the modern aircraft has outgrown the limits of our physical capacities. Sources of energy to supplement our own must be used. One of these sources is hydraulic.

An aircraft hydraulic system is composed of several hydraulic components and a network of small pipe lines leading throughout the craft to the various components to be operated. Through these pipes a light oil is forced, under control, at a pressure necessary to overcome resistance, and so perform work. Advantage is taken of the fact that a liquid, practically speaking, cannot be compressed, i.e., cannot be squeezed into a smaller space. A force applied at one end of a column is felt immediately and undiminished throughout the system.

High and low pressure cannot exist at the same time within a body of liquid. Hence any number of pipes, if they are intercommunicated, will have in them a pressure equal throughout. Due to incompressibility, movement at one end of a column will result in an immediate movement at the other, unless air exists within it. In such an event movement can occur only when the air has been compressed to a pressure necessary to overcome resistance.

Basic Features of Hydraulic Systems

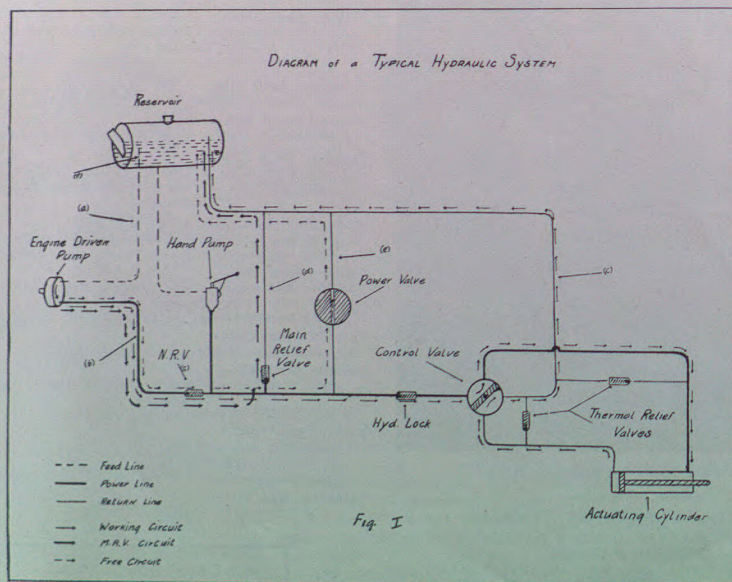
All aircraft hydraulic systems are in essence similar, and differ only in the manner of their mechani-

cal operation. The importance of this fact cannot be over-emphasized.

A reservoir is used in a hydraulic system to store the liquid used in it (see Fig. 1). The position of the reservoir is usually high in the system in order to provide the advantage of a gravity feed for the pump. The pressure in the reservoir approximates that of the atmosphere.

A pipe is lead from the reservoir to feed the pump, the source of energy for the system (a, Fig. 1). Pumps are of several types, gear, annular displacement, multi-cylinder, etc., but the task which they perform is in every instance the same, i.e., to deliver the fluid into a line at a pressure necessary to overcome resistance. Consider the perspiring motorist inflating a tire by the roadside; the pump he is operating is performing exactly this function. Almost invariably the pump used in an aircraft system is directly driven by the engine. No clutch assembly is incorporated to disengage the pump when the necessary work has been accomplished. Hence a constant flow of liquid is supplied to the system while the engine is operating. A constant circuit, from the reservoir and back to the reservoir, must always be provided. An obstruction anywhere in the system, if only for a moment, would inevitably result in immediate damage.

The power line from the pump (b, Fig. 1) is lead to one end of a sealed cylinder, in which is fitted a liquid-tight piston having attached to it a ramrod which extends outside the cylinder. Two conditions must obtain before movement of the piston is possible: (a) that a flow of liquid under a pressure necessary to overcome resistance be introduced into one end of the



cylinder; (b) at the same time, the liquid from the other end must be able to escape back to the reservoir. The power-line accommodates (a) while a line (c, Fig. 1) caters for (b). Being mechanically attached in a suitable manner to the aircraft component, e.g., flaps, movement of the ramrod results in the required movement of the component. Thus, hydraulic force supplied by the pump is converted into mechanical work.

The pressure which the pump will produce at any time is directly determined by the resistance offered to it. Movement will result at this pressure and the pump is incapable of a greater effort until such time that it encounters a greater resistance. The greater resistance to movement of the hydraulic piston the greater will be the pressure developed by the pump, which has all the power of the engine behind it. The fluid flowing from the pump must invariably follow the path of least resistance. It can be observed, during the retraction of an undercarriage, that frequently one wheel moves ahead of the other. The actuating cylinders of both wheels are supplied from the same pipe line, but the liquid flows only into that cylinder which is attached to the mechanism offering the least resistance to movement. To overcome this same tendency of the flaps, which would result in unbalance of the craft, it is necessary that they be mechanically synchronized.

Function of Selector Unit

To accommodate both the extension and the retraction of the ramrod in the actuating cylinder, so that the component may be moved in two directions, a mechanism is incorporated in the system whose function is to divert the flow of liquid from the power-line into the desired end of the cylinder, and at the same time accommodate the return flow from the other side back to the reservoir. This mechanism performs what is termed the Control Valve function, and is embodied in a hydraulic component usually called the Selector Unit, Selector Valve, or some such name. Over this mechanism the pilot must have immediate control, for by its operation he determines which component shall be operated, and in what direction it shall move. The operating lever, therefore, will be found by his hand. A separate Control Valve for each component to be operated is necessary, although all of them may be embodied in one unit. The mechanism may be of several types, rotary, poppet, or plunger; but, irrespective of type, all accomplish the same hydraulic result, i.e., effect the two conditions requisite for the movement of the piston within the actuating cylinder.

Hitherto, only one path for the flow of liquid has been considered, namely, from the pump to one end of the cylinder, and from the other end to the reservoir. While the liquid is thus flowing work is being performed. Hence this may be called the Working Circuit. The movement of the piston, however, is limited to the length of the cylinder, and, when its travel is completed, no further flow is possible in that direction. This would provide an obstruction, and damage would immediately ensue, unless an alternate route were possible for the liquid. Such a path exists in the nature of a communication between the Power line and the Return line (d, Fig. 1).

In this communicating line is found a one-way valve which permits the liquid to flow in one direction only, i.e., from the Power line to the Return line. The spring loading of this valve is greater than the working pressure, yet below that of a pressure likely to create damage. Such a spring loading, therefore, allows that sufficient pressure can be exerted to perform the normal functions of the system, but will relieve excessive pressure which would result from any obstruction to flow. This valve is called the Main Relief Valve (see Fig. 1), and in function resembles that of the safety valve of a steam engine. No pressure greater than its spring loading can ever be exerted on the system by the pump. It may be found in any hydraulic component in the system when a communication between the Power line and the Return line is possible.

Power Valve and Free Circuit

Normally, work is required to be done by the hydraulic system during only a few moments of flight,

and to obviate the necessity for the pump to force the liquid through the Main Relief Valve at high pressure for the remainder of the time, and so cause undue wear of the pump and unnecessary waste of power, another path is incorporated. Through this path the liquid may be returned to the reservoir against a resistance no greater than the pressure existing in the reservoir. This is provided for by a second communication (e, Fig. 1) between the Power and Return lines, in which is embodied a mechanism which can, if required, entirely blank off the communication, and, if desired, open it and provide an unobstructed pathway for the liquid back to the reservoir. When this valve is open the pump is unable to create a pressure. The valve must therefore be closed for work to be done. This valve is the Power Valve. When it is open the system is considered to be in "Free Circuit". The valve may function automatically or manually, or by a combination of both; but whatever the mechanism the hydraulic result is always the same. Should it be manually operated, however, the lever will be found in a position easily accessible to the pilot.

The three possible paths through which the liquid may flow are, therefore, as follows: (a) The Working Circuit (indicated by light arrows on Fig. 1). Movement of the ramrod results and work is performed. (b) The Main Relief Valve circuit (shown by broad arrows) through which the liquid is forced when an obstruction is encountered. (c) Free Circuit (broken arrows) through which the liquid may flow when the power valve is open and the system is idling. The system, as shown in Fig. 1, is in Free Circuit.

The Hydraulic Lock

In order that a component may be secured in any desired position, in the absence of a mechanical locking device, to prevent, for example, the flaps being blown back up by the airflow, a one-way valve (see Fig. 1) is placed in the line to prevent the escape of liquid from the actuating cylinder. The trapped liquid being incompressible, the component is powerless to move the ramrod and is so held securely in position. This is called a Hydraulic Lock.

Like most substances, hydraulic fluid will expand if subject to increased temperature, and as the trapped line is already completely full of liquid, expansion would create dangerous pressures, unless some means of permitting the excessive liquid to escape is provided. A Thermal Relief Valve, reasonably highly spring loaded, is found facing in the direction opposite to that of the valve producing the hydraulic lock. This valve permits the fluid to pass from the line that is trapped to one having access to the reservoir. In this manner, therefore, a limit to the pressure resulting from the liquid expansion is predetermined.

Use of the Hand Pump

A Hand Pump is found incorporated in an aircraft system for two reasons: (a) that the system may still function in event of failure of the engine or the engine driven pump, and (b) for maintenance purposes. Many types are used, but they will be all found to have reasonably small deliveries to minimize the effort necessary for their operation. To ensure the use of the Hand Pump in the event of a damaged engine driven pump power line some method of providing for a reserve supply of fluid is found incorporated in the reservoir, e.g., the E.D.P. feed line may be stacked into the reservoir (f, Fig. 1). A one-way valve (g, Fig. 1) is found in the E.D.P. power line close to the junction with the Hand Pump line to prevent liquid from the Hand Pump escaping through a possible leakage in the E.D.P. power line and so further ensure operation of the system.

Summary of Components

The foregoing provides the essentials of an aircraft hydraulic system and can be summarized as follows:

Reservoir: To store the liquid, accommodate expansion and provide feed for the pumps.

Engine Driven Pump: The source of energy. It is directly driven, thereby creating a constant fluid flow while the engine is running.

Actuating Cylinder: By attachment to the compo-

ment, converts hydraulic force into mechanical work.

Control Valve: A mechanism which (a) diverts fluid from the pump into the desired end of the actuating cylinder, and (b) accommodates the return of the fluid from the other end to the reservoir. Operated by the pilot when he desires to move a component.

Main Relief Valve: Provides an alternate route for the fluid in the event of an obstruction to flow, thus relieving excessive pressure.

Power Valve: A mechanism which provides an unrestricted path from the pump to the reservoir when work need not be done.

Hydraulic Lock: A means by which a trapped column of fluid can secure a component against movement in any desired position.

Thermal Relief Valve: Used to relieve excessive pressure in a locked line, due to thermal expansion of the fluid.

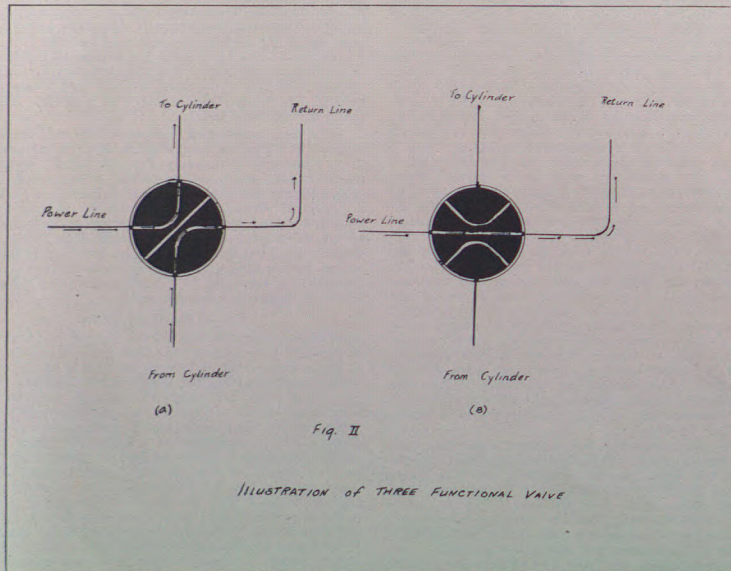
Hand Pump: For use in case of engine driven pump failure and for maintenance purposes.

The mechanisms performing these functions may be simple or complex, may be such as to operate a simple function or several. For example, in Fig. 2(a) is shown a simple mechanism performing the Control Valve function, while Fig. 2(b) shows the same mechanism, operated through 45°, performing the Power Valve function, as well as hydraulically locking the two columns leading to both ends of the actuating cylinder. Thus three functions are performed by one simple valve. Other examples could be given. It should be

clearly understood, however, that when some provisions must be found which will embody the principles, then upon investigation, any particular hydraulic system can readily be fathomed. The mechanical differences should present no great difficulties.

In addition to the foregoing, other hydraulic components may be found embodied in certain systems. A one-way valve may be found in the flap circuit to permit fluid to by-pass, at a predetermined pressure, from one end of the actuating cylinders to the other, which will allow the flaps to blow back if subjected to excessive air pressure, and so prevent damage to their structure. Restrictor valves may be found, which, by restriction of the pipe orifice will prevent a too rapid movement of a component in a desired direction. Surge tanks, pressure regulators, filters, etc., may all be found. They are, however, incidental to the prime essentials, and their existence should offer no grave problems.

A word may be said of the fluids which are used. The fluid is primarily chosen for its low expansion co-efficient, its lubricating qualities and for its low freezing properties. They are of two types: (a) vegetable oils, (b) mineral oils. The vegetable oils are used exclusively in systems in which natural rubber flexible parts are incorporated, and mineral oils are used in systems having synthetic parts. Under no circumstances may these oils be mixed, as deterioration of the glands, etc., will result, as well as a sludging of the system. To prevent this, the fluids are dyed for identification, but where mixing has inadvertently occurred the system must immediately be completely drained and thoroughly flushed.



LETTERS TO THE EDITOR



GROUND CREW - AIRCREW THEME

Dear Editor:

Story of a ground crew man, skeptical of the "easy" work and the "undeserved" attention enjoyed by the aircrew, who falls asleep in a bomber and is carried over Germany into a maelstrom of action and death. Stress the efficiency of the aircrew and the extreme concern of the ground crew man for the motors as they are taxed to the limit in a brush with Nazi fighters, etc., etc.

Idea for Picture

A patchwork composite, made up of different bombing scenes, labelled "Berlin", "Saint Nazaire", "Cologne", etc., occupying bottom half of composite. Top half occupied by Allied Air Force bomber and fighter formations and in the entire background a shadowy hand grasping an oil can or a spanner.

Titles

"This Started With a Spanner."
"Berlin Was Smashed With a Spanner."
"Success Begins on the Ground."

Further Salutes

1. Airman having completed a salute to a hotel doorkeeper (embarrassment).
2. Salute with arms full of parcels.
3. The way an A.C.2 never salutes. (A.C.2 gazing intently into a store window as officer marches, glaring, by).

A.C.2 GROUND CREW.

Editor's Note: You will observe your theme, "This Started With a Spanner", was developed to the picture of the month page No. 1. Cpl. Hughes, i/c Art for Aircraftman, divides the glory with you and the satisfaction from the printing of idea. Thanks kindly. Welcome other ideas.

UNMITIGATED BRUTALITY

Dear Mr. Editor:

Someone, evidently a "man" with the initials C. M. G., has no soul. He has had the unmitigated brutality to criticize your January editorial on "Medals and Mother's Mantelpiece".

Mr. Editor, I ask you, had the writer himself no mother? Was it "maudlin sentimentalism" (to use his own words) which brought him into this world; which cared for his, C. M. G.'s, quailing frame while still in the construction stage?

Why, without mothers we could have no wars! Such talk!

Yours,

AIRMAN'S MOTHER
(Mrs. G. W.)

Ed.: This is the first letter that the Editor has received from off the Station. It is very gratifying to see how far "The Aircraftman" is travelling, even though there is an indignant tone in this Airman's Mother's letter.

WALLPAPER

Dear Editor:

I think that this wallpaper is one of the best ideas I have heard in ages. What can one do to show his interest and appreciation of it?

A most willing worker for a good cause.

—N. R.

Editor's Note: Submit ideas and articles to this publication.

BACK THE ATTACK
BUY BONDS

CHINA NIGHT

Last night seems to have been China night with me. First of all, at Pay Parade I gave a dollar to the China Relief Fund and then I got a letter from Bill Stevens, who is in China flying fighters.

I felt pretty good inside when I saw my crisp new dollar bill lying in the box with all the nickels and dimes the other fellows had given. Not that I brag about being big-hearted, but I really have a great respect for fighting China and it made me feel all warm and self-satisfied to know that I had contributed a whole dollar.

Bill's letter was very interesting and he is really a witty chap, but I must admit that somehow I didn't enjoy it as much as I usually do. I did give a whole dollar and lots of chaps who make more money than I do didn't give a thing.

The part in Bill's letter that sort of spoiled it for me might interest you. Maybe you gave to the fund, too. Anyway, this is what he wrote:

"All this is very funny, Jim, but if you could see the bravery of these people (he meant the Chinese), the proudness of them, to go on fighting for seven years now, all alone, with their wooden guns against tanks, and their dilapidated planes against modern fighters, refusing to ask for help, it would tear your heart out.

"In a city near where I am now there is a big mound of earth with a cross on top of it. It's a common grave for 13,000 people who died of starvation and bombings in only three days. It says on the cross, 'They gave their lives that we might have freedom!'

I gave a dollar.

—A. J. (R89432)

Ed. Note: T.T.S. contributed nobly (\$274.16). Help is on the increase. We trust it will not be too long before China is released from this gorilla grip.

Editor's Note: As the space for letters to the Editor is very limited, the Station personnel writing to the Editor are requested to be concise and brief in writing to this column. It is well to give the editorial staff an opportunity of printing a number of letters rather than a few lengthy ones. Thanks.

