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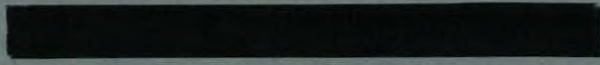
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THE *Aircraftman*



THE

TECHNICAL TRAINING
SCHOOL
ST. THOMAS ONTARIO



THE AIRCRAFTMAN

A Magazine of the R.C.A.F. Technical Training School
Published Monthly at St. Thomas

VOL. 1 - AUGUST 1, 1940 - NO. 1



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« « EDITORIALS » »

The first copy of the "Aircraftman" is in your hands. It is too much to hope that you will acclaim it as the greatest press sensation of the century. We trust that neither will it give you cause for condemnation. To launch into the whirlpool of our busy life and conflicting interests so fragile a craft as a newspaper is a venture of faith. That it can survive, and what is more, help others to live more abundantly and increase their joy of life is our earnest hope. The "Aircraftman" has set itself to become the friend of all, to enrich the work-a-day life of the School, to stimulate sports and recreational activities and to help us understand and be proud of "The Cause." The paper is not replete with all the appointments of a big daily. You will look in vain for the editorial bristling with harsh criticism. As yet it carries no comic strip to delight those who find the "funnies" a source of amusement. Limited finances also prevent us from carrying all the candid camera shots that might help to brighten the appearance of these pages. But, despite all these lacks, we feel the "Aircraftman" can serve a worthy cause.

One of our immediate objectives is to keep the personnel of this Station informed as to what is being done for the general well-being of the Airmen. There are numerous committees at work planning sports leagues, athletic meets, tours for Airmen and other projects. Although these committees are meeting with a measure of success, we feel the work as a whole could be carried on more effectively if every Airman knew what is being attempted. This paper, we hope, will help to achieve that purpose.

In this issue you will find a résumé of what is being done in the way of a sports program. In addition to this we try to give a cross section view of the activities being sponsored in this Station, making particular mention of "Outings for Airmen," "Camera Club Notes" and "Station Band." Although we are not able to tell in this issue all that is being organized, we endeavour, at least, to cover part of the ground, and issues that follow will help to meet this need.

The future of the "Aircraftman" is in your hands. Your constructive criticisms will be gratefully received. Furthermore, we shall welcome you at any time as a contributor to these pages. If this journal receives your support and loyalty, it can strut its little hour to our mutual advantage.

KNOWLEDGE IS POWER

SQUADRON LEADER FREEMAN

* * *

Rome was not built in a day, nor for that matter is a mechanic made in 18 or even 24 weeks. A century ago apprentices to a trade would work with their master for five to seven years before being considered, or even considering themselves, proficient in their trade. In civilian practice today several years work is the shortest time that is required before a tradesman is considered proficient. By comparison, the course given at this School is, of necessity, very short, requiring considerable effort and concentrated study on the part of both instructors and trainees.

Realizing the limitations that rest on our course, we are endeavouring, through the medium of this paper, to supplement the instruction given in class. In each issue of this paper an article will appear on some subject of interest related to our course.

Those who think that learning ceases with finishing school or upon the completion of a course are wrong. There is no one on earth, except those who are mentally dead, who does not continually increase his knowledge. To those who realize this fundamental fact, this supplement will be of value whether they are under training or in the field.

It is not possible, in a technical course of this nature, to give the mass of detail required for each type of engine or airframe which will be dealt with in the service. It is only possible to give instruction on broad outlines—to build a facade, behind which each individual must fill in the structure. There is, however, one aspect which is of the utmost importance and also the most difficult to teach; namely, "Pride of Workmanship." Thoroughness, or the knowledge that whatever is done is well done is the outstanding feature of every first-class mechanic, and its value on aircraft work cannot be too strongly stressed. Careless or hurried workmanship on ground or sea transport will cause inconvenience, whereas on aircraft it may cause death.

To those mechanics who are anxious to increase their knowledge of their trade, this Technical Supplement should be of valuable assistance.

(See "Technical Topics")

YOUR PAPER

I congratulate all concerned on the publication of the first issue of your paper.

"The Aircraftman" is unique. In addition to publishing subject matter of local interest, a Technical Section has been provided. Under this heading will be published standard notes, data, etc., relating to the various phases of training at this School and general information of interest and assistance to Airmen in the field. The cover of your paper has been designed to serve as a cover for filing and cataloguing subject matter for future reference.

I am confident that "The Aircraftman" will provide a useful service if you will do your part by contributing suitable matter for publication. I shall watch its progress with keen interest.

R. COLLIS, Group Captain,
Commanding Officer,
The Technical Training School,
ST. THOMAS, Ontario.

EDITOR'S NOTE: We wish to congratulate Group Captain R. Collis on his cleverly conceived cover design, and to thank him for all the work he has done in aiding the staff in the organizing of "The Aircraftman."

A MESSAGE FROM THE MINISTER OF NATIONAL DEFENCE

The following message has been received and is published for the information of all concerned:

"I have just taken over the post of Minister of National Defence. My colleague, the Minister of National Defence for Air and the Honorable A. L. MacDonald, Minister-designate of National Defence for Naval Services, join with me in sending you this message.

"We are workers together in the biggest task which Canada has ever undertaken. World conditions make it impossible to tell with any certainty what lies ahead of us — no man can foretell what will be required of this nation. Our job is to be prepared for whatever may come. The foundation of that preparation is physical fitness and discipline and training in the basic principles of the fighting services. Then with that foundation, training in any arm or any special branch can be readily added. The Department of National Defence must

spare no effort to provide the personnel and manpower.

"The task of providing equipment is not being allowed to lag for a moment. The abrupt cutting off of major sources of supply and the greatly increased requirements which the changes in the last two months have called for are making tremendous demands on purely Canadian production. We ask everybody to make the very best use of the things we have, and to use their brains and ingenuity and keep going at full speed even when complete supplies are not available. We did that in the last war, and we can do it again. The enemy works Sundays and holidays as well as week days, and nights as well as days; and so shall we, because victory depends directly on the untiring energy and effort of us all.

"Major Power, Mr. MacDonald and I pledge you the very best we can give in this great undertaking."

J. L. RALSTON,
Minister of National Defence.

* * *

« « SPORTS » »

No. 1 Squadron Captures Hepinstall Trophy in the Inter-Squadron Meet

Under almost perfect weather conditions, No. 1 Wing held their first inter-squadron track and field meet. The parade arrived on schedule at the Park, and Wing Commander Case, who represented Group Captain R. Collis, officially opened the meet. It was only a few minutes until the battle was on.

A.C./2 Hutchison, who figured large in the victory of No. 1 Squadron, scored the first "win" of the day when he captured the century dash. Not being satisfied with this, Hutchison later in the day entered the 220 and 440-yard races and emerged victor in both events.

A.C./2 Hartley was easy winner in the broad jump and hop, step and jump. He won the 880 race to tie with Hutchison for individual honors.

Martmen, who proved to be the strong man of the day, won the shot-put with a heave of 34' 9", and the discus throw with a toss of 92'. But when it came to twirling the hammer, he was pushed out of the picture by A.C./2 Belway

and Corporal Desjardines, who finished first and second, respectively.

Throughout the entire meet squadron spirit ran high, with each squadron giving their athletes a big hand. Strategy, rub-downs and last-minute coaching were the order of the day as the squadrons strove to outdo their opponents. When the tumult and the shouting died, and the score board was consulted, it showed No. 1 Squadron with the massive total of 36 points, No. 2 Squadron with 29 points and No. 3 Squadron—who were fighting rear guard tactics throughout—with the modest score of 18 points. (However, No. 3 Squadron wishes to make it known that they will be right in there fighting in the next meet.)

* * *

The dance in the evening was also a huge success, making a fitting climax to a good day. The music was supplied by the Station Orchestra under the leadership of Corporal Pitt.

* * *

Inter-Squadron Events

100-yard dash—A.C./2 Hutchison, A.C./2 Sadkowski, A.C./2 Jones.

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220—A.C./2 Hutchison, A.C./2 Taylor, A.C./2 Batchelor.

440—A.C./2 Hutchison, A.C./2 Jones, A.C./2 Lumby.

One-Mile—A.C./2 Clark, A.C./2 Ducharme, A.C./2 Emery.

880—A.C./2 Hartley, A.C./2 Corman, A.C./2 Creighton.

Inter-squadron relay—No. 2 Squadron, No. 3 Squadron, No. 1 Squadron.

120-yard hurdles—A.C./2 Hartley, A.C./2 Sinclair.

Broad Jump—A.C./2 Hartley, A.C./2 Taylor, A.C./2 Sinclair.

High jump—Corp. Richards, A.C./2 Hartley, Corp. Edney.

Shot-put—A.C./2 Martman, Corp. Richards, Corp. Desjardines.

Hop, step and jump—A.C./2 Hartley, Corp. Edney, A.C./2 Carson.

Discus Throw—A.C./2 Martmen, A.C./2 Daly, A.C./2 Atrill.

Hammer throw—A.C./2 Belway, Corp. Desjardines, A.C./2 Martmen.

Tug-of-war (Final)—No. 2 Squadron.

Point summary—No. 1 Squadron, 36 points; No. 2 Squadron, 20 points; No. 3 Squadron, 18 points.

Added Events

Following the regular program a number of events which did not figure in the point-scoring were run off. They were as follows:

Officers' open handicap race—Flight Lieut. Porter, Flight Lieut. L. C. Russell, M.C., Flying Officer Chedd.

N.C.O's race—Warrant Officer Taylor, Corp. Judge, Sergt. Reys.

Sack race—A.C./2 Sinclair, A.C./2 Roberts, A.C./2 Clark.

Open relay—No. 2 Wing, No. 1 Wing.

Inter-unit relay—No. 2 Wing, Equipment and A. T. S., Headquarters Squadron.

Service Ladies—Mrs. B. Langley, Mrs. J. Shaw, Mrs. Crane.

Service Boys—Dave Collis, Len O'Neil, Don Brooks.

Service Girls—Pauline Stubbs, Maude Lidlie, Molly Abraham.

* * *

No. 2 WING ATHLETIC MEET

We congratulate No. 2 Wing for their enterprise in holding the first Sports Day of this Station. On the day of the meet Trainees, N.C.O's and Officers laid aside formality and settled down to a gala afternoon of sports and

fun. The weatherman, although threatening the whole time to interfere, held off long enough to make the day a huge success.

The program was filled with the classic runs, jumps and throws, with such interesting touches as "Tilting the Bucket," a Band Race and an Obstacle Race.

The events were open to all and resulted in keen competition between the various flights. Some promising material was uncovered during the day. It was a real treat to watch the Murray brothers battle it out in sprints, and Munday driving through in the longer races. Corp. Evans turned in a nice performance in the 440 and Halpenny proved himself to be superior in the weights events by winning both the shot-put and javelin throw, while Fleming was an easy winner in the broad jump and low hurdles. It will be interesting to watch these athletes develop in the sports meets that lie ahead.

The Summary

100 yards—A.C. Murray, J. R.; A.C. Sheffield, E.; A.C. Murray, E.J.

220 yards—A.C. Murray, J. R.; A.C. Bennett, A.C. Gooding.

440 yards—Corp. Evans, A.C. McArthur, A.C. Haxby.

880 yards—A.C. Spruston, A.C. Ruland, A.C. Mullett, W.

1 Mile—A.C. Munday, A.C. McAlpine, A.C. May, S. J.

3 Miles—A.C. Munday, A.C. McAlpine, A.C. Mullett.

Long jump—A.C. Fleming, A.C. Murray, J.; A.C. Murray, E. J.

High jump—A.C. Williamson, A.C. Bennett, A.C. Gzowski.

Shot-put—A.C. Halpenny, A.C. Forsyth, F.S. Leaman.

Throwing the Javelin—A.C. Halpenny, A.C. Forsyth, A.C. Jarvis.

120-yard hurdles—A.C. Fleming, A.C. Bennett, A.C. Williamson.

Open relay—No. 2 Wing.

Officers' race—F.L. McLeod, W.C. Collis, F.O. Chedd.

Sergeants' race—W.O. Stubbs, F.S. Leaman and Sergt. Green.

Obstacle race—A.C. Wawrykow, S.; A.C. Sheffield, A.C. Ross.

Sack race—A.C. Ferguson, A.C. Brehan, A.C. Curran.

Tilting the Bucket—A.C. Curran and A.C. McKellar, A.C. Ross and A.C. Harrison.

Mixed three-legged race—A.C. Watson and

Miss Walker; Mr. Brickenden and Miss Brickenden; A.C. Rowland and Mrs. Sharpe.

Band race—A.C. Beck.

Ladies' race—Miss Khowry, Mrs. Langley, Miss E. Wagner.

Children's race (Boys)—David Collis, Bud Steepe, David Green.

Children's race (Girls)—Dorothy Luscombe, Eleanor Hutchison, Katherine Mason.

* * *

"BASEBALL ALIBIS"

Although our Baseball Teams as yet have no victories to their credit, they have been very much in the fight. They have come closer to winning, and yet losing, than any team in the league. Maybe it is a "jinx."

A few weeks ago they battled Aylmer (last year's league champions) in a 12-inning game to lose with a score of 3-2. It looked as though the long streak of bad luck had been broken, only to have the tide turn against them in the final inning, when a hard drive to the right field allowed a run to be scored.

The fans all declared that it was the most thrilling game of the season. Lefty Johnson, our star pitcher, gave a good account of himself, pitching the entire 12 innings without a break.

* * *

FLASH ! ! ! !

Our Ball Team is improving! In a recent thrilling three-inning round with our be-whiskered friends, the House of David, they emerged with a tie, 2-2. Again Lefty Johnson pitched a good game.

Sergt. Pearce, the team manager, claims he has found two other star pitchers, all of which indicates the "day" of the R.C.A.F. Ball Team lies ahead.

Although our station team has not been able to win a major game, they were successful in taking the Officers' All-Star Team into camp. The game was fast and furious, ending in a score of 16-2. Padre Porter, the manager of the Officers' Team, feels confident, however, that his team will be victorious in the next game.

* * *

Hints To Help You In Your Training

W.O./1 Stubbs, Chairman of the Athletic Committee, submits an outline to serve as a guide for training.

1. The Warm-up

Warm up well before starting serious training. You may do this by running slowly

around the track, keeping yourself fully relaxed.

2. Sprinting

Concentrate on style, noting particularly arm action. Remember that speed will come only when your effort is well directed. You cannot run off balance. In regard to starting, take a comfortable position on the mark. Practice holding yourself in the set position and try to break with the pistol. Never neglect stamina even in sprinting. You may build this up by fast striding over 200 yards.

3. Quarter Mile

Cultivate speed by sprinting and stamina by striding 600 to 800 yards at about 67 seconds to the quarter.

4. Half Mile

Cultivate speed by fast striding 300 to 600 yards. Build up stamina by striding 1,000 yards and over, at about 75 seconds to the quarter.

5. One Mile

Loosen up your muscles by fast striding and a little sprinting. Practice running 1½ miles at about 550 seconds to the mile.

6. Three Miles

Fast striding exercises, watching carefully your style. Build your stamina by slow work over greater distances.

7. High Jump and Hurdles

Practice high kicking and suppling exercises. Practice your style over low height. Have someone observe your performance and offer criticism.

8. Putting the Shot

Adopt a style, practice and try to master it. Practice with a lighter weight, working first from the standing position until you have mastered this part of it and finally work on the shift across the circle. Put the shot up an incline about 45 degrees. The tendency is to make the put parallel to the ground.

9. Long Jump

Adopt some such scheme as this: Mark out about a 30-yard run. For convenience sake—we may call the starting point "A" and the take-off board "B". Have a check mark—"C" half-way between "A" and "B". Form the habit of starting the same way each time. If you do not reach the board in a good jumping position, alter your starting point, "A". The advantage of the check mark is that you can gauge how far you are

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out and make the necessary adjustment before reaching the board. Speed of the sprint and height of the jump are the two main factors conditioning the length of the jump.

* * *

SPORTS REPORT

Early in March a committee was formed to organize sports for Officers and Airmen of this Station. Since then preparations have been under way to provide facilities for fifteen different games and, although this work is not yet completed, creditable progress has been made.

The task of organizing sports for three thousand men is a tremendous project, especially when starting from scratch. The problems confronting this committee were:

- (1) Preparation of playing fields.
- (2) Provision of sports equipment.
- (3) Creation of income to provide funds for this project.
- (4) Selection of sports leaders.

The major problem has been the supplying of playing fields. Funds were needed to pay contractors, and good weather was necessary so that the work could progress. Although the task was commenced while the snow was still on the ground, during the past few months frequent rains greatly hampered operations. However, when the work is completed we will have at our disposal facilities for the following:

- 6 Softball Diamonds (now complete)
- 2 Baseball Diamonds (now complete)
- 3 Playing Fields
- 12 Tennis Courts
- 5 Volleyball Courts (now complete)
- 8 Horseshoe Pitches
- 1 Hockey Rink
- 1 Boxing Ring (now complete)
- 1 Cricket Lawn
- 1 Quarter-Mile Track.

During the last few days work has been progressing rapidly on our racetrack, and a good number of athletes are now making use of it.

Early this month a real effort was put forward to get sports organized within the two Wings. It was the feeling of the Committee that this would be the most effective means for the promotion of sports. The Sports Officers of each Wing are now responsible for the promotion of sports in their Wings.

* * *

How to Arrange for Playing Fields

Each Wednesday a notice is sent to the Officer in charge of Wing sports, giving the

allotment of grounds for the week. The purpose of this is to enable each Wing to arrange inter-flight competition, which will not interfere with games in the Commanding Officer's Trophy series.

* * *

How to Arrange for Equipment

1. For Organized Games

Chairmen of the different sports committees will notify the store room regarding the equipment they require. The necessary equipment will be given to a representative from the team, who will sign and be held responsible for its return.

2. For Individual Sports

Equipment that is not required for the organized games may be secured by an individual, who will sign and be responsible for its return.

* * *

Schedules in Commanding Officer's Monthly Series

The Chairman of each sports committee has prepared a schedule for his sport. All schedules are arranged to provide inter-squadron competition during the first three weeks of the month. In this way winners are declared in each sport. The winners play off in the fourth week with the winners of the opposite Wing, and the Wing that produces the greatest number of victories will be presented with a trophy known as "The Commanding Officer's Trophy" by Group Captain R. Collis. This trophy is thus up for competition every month. Arranging the schedules in this way obviates the difficulty arising through the changing personnel of the School.

* * *

LITTLE THINGS

In all the strain of striving,
Of peasants or of kings,
The secret of arriving
Is found in little things.

With lofty projects luring,
Remember as you mount,
In work that is enduring
'Tis little things that count.

Think not to gain the height, lad,
At one tremendous bound;
To climb the ladder right, lad,
You must tread round by round.

In vain your haste and straining
To reach the goal on wings,
The secret of attaining
"Is doing little things."

—LOME.

« STATION STATIC »

HAIL AND FAREWELL

By A. C. DOYLE, J.A.

*Six weeks ago 'twas Hail,
Today it is Farewell,
Hail! St. Thomas, and Farewell!
We, who shall not fly, salute you,
Like wind we come, and like water
we go.*

The world moves, and so must the Equipments and their assistants, the Accountants.

You will find us in the lee of the snow-capped Rockies. Some of us shall loll upon the glistening beaches of Vancouver—yea, even Jericho. We'll feed the flies at Borden, and issue vouchers at Trenton. A few of us will eat Buctouche oysters at Moncton, while others will have fresh broiled lobster at Canada's Eastern Gateway, Halifax.

We have enjoyed our brief sojourn at St. Thomas. We have made a few friends and many mistakes. The native women loved us—but left us severely alone. Our instructors, one and all, have been valiantly patient; but theirs was an uphill fight. If most of us have passed our exams there is, indeed, a Santa Claus. If we have not passed, then it is not surprising. "... ours not to reason why." We have learned not to grouch but, as that unholy trinity—Gray, Hucker and Keennan—sing, to vouch.

Personalities have been developed and talent uncovered. There is, for instance, "Hardrock Willie" from the gold fields of Kirkland Lake, the lad who spent the first six years of his life in the woodhouse along the banks of the Madawaska River, and the past six weeks in the dog house at St. Thomas. Only last pay day Willie navigated the Queen Mary up the Rideau Canal. She ran aground at the London Hotel and, says Willie, "40,000 Airmen were calling for Willie to get them overseas." He stick-handled his way through—but that's Hardrock's story. Then there is "Squirrel" Gray, a professional steeplejack, who joined the Air Force for excitement. "Foghorn" Foster, of the rich contralto; "Fatso" Howard, a neat six axe-handles around the middle, and Timlin of the modest voice, whose great ambition is to re-muster as cook on a long-distance bomber—as soon as they become equipped with gas ranges. Then there is "Red" Machine-gun Dutton, who insisted upon being awakened for the smoking periods.

You know them all. There will be much moaning at the "bar" when they go overseas.

Yes, we have been requested to write a little something about the E. & A. T. S. We cannot—our hearts are too full. Adversity is still much too close for us to be able to fling you a handful of stars. Suffice it to say that we shall long remember our courteous Commander, our amiable Adjutant, those newly-feathered gentlemen, Flying Officers Harris and West, and last but by no means least, those lads who knew all the answers—our Instructors.

We shall endeavour to return from wherever the gods see fit to send us, with more stripes than a litter of tigers and more medals than a troop of Boy Scouts. So...

Cheerio, St. Thomas—and a hearty "God-go-with-you"!

* * *

A. C. SERGEANT!

By HEDGE-HOPPIN' IKE

Among the galaxy of notables that colour the life of our Training School, we must not forget "The Sergeant." She has no stripes to distinguish her from other canines. However, there is something about the quality of her bark, the tilt to her nose, the wisdom of her actions—that leads us to think that she must be a distinguished personality among her kind, and is deserving of proper respect in this, her latest environment.

Her claim to honourable regard, however, cannot be based on her past. It is true that she is a pure-bred Rat Terrier with the blue blood of noble breeding in her veins, but she has had a chequered career—in fact, a person not too fastidious in his phrases might say, a disreputable one. She has been up and down the ladder of fortune fairly frequently. At times she has been "flush," living off "the fatta" the land. Again, she has known what it is to be friendless, penniless, and down on her luck. Since coming to St. Thomas there has been a great up-swing in her fortune, and there is every indication that she is going to fill a highly respectable and worthy place in canine society.

Proving herself faithless to her first master, "Sergeant" was attached to one of our Airmen. Her first visit to the Station was exceedingly short. After a tour of inspection and a few introductions, she took "French Leave" and was next seen roving about one Saturday night in Toronto's Chinatown. Again a patient Air-

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man rescued her from her slum environment and brought her back to the straight-laced atmosphere of this locale.

"Sergeant" took one last "binge" before settling down, and landed up with a sore head and aching feet in the local "Dog Clink." With the patience of a Salvation Army lass for a drunkard, the Airmen again rescued their wayward friend. Such persistence in reclamation was at last rewarded. "Sergeant" has stayed "put" on the Station ever since. Her sharp, emphatic personality has made her a Station figure. She knows her way around this big house like "nobody's business." She can twist even the "toughest" around her little paw, and has worked on the cooks with such success that a handout at any old time is hers for the asking. She has a pretty shrewd idea of how she stands with the boys and, like every female with personality looks and a dash of conceit, is "going to town" in a big way in this game of heart "bustin'."

Our little heroine became mother to a goodly brood the other day. We are not sure whether this is evidence of "Sergeant's" splendid intentions for the future or the result of a mis-spent past. Three of the pups are little black devils and the fourth has the white glistening coat of an angel. W.O. Stubbs has stood by her in her hour of motherhood, and veterinary costs were shouldered by Corporal Blanchette and her many admirers. The christening of her offspring should be made a Station event, with the Padre's blessing and the earnest good wishes of the boys.

* * *

ALIBIS

(With apologies to Edgar E. Guest)

By F./O. VINCE

When the trade test Board was over, in
the Barrack room they stayed
Reciting their excuses for the dismal
show they'd made.
They could all explain their failures in a
self-consoling style
Which made even "Sarg," who taught
them, turn away to hide a smile;
And he said to his companion, "I will bet
you when they die,
For the sins they have committed, they
will have an alibi.

"I've been teaching many seasons, served
the students night and day,
And I've yet to hear an Airman say he'd
thrown his chance away.
I have never met a Trainee who accepted
any blame—

He could always prove his prudence,
never hang his head in shame.
'Dud instructor' is the reason, or 'Been
sick since last July,'
For the most imperfect Airman has a
perfect alibi.

"When this game of life is over and St.
Peter calls them all,
I should like to stand and listen, as
their efforts they recall.
I should like to hear them telling as He
thumbs their record through
Why the trade test forms show nothing
of the work they meant to do.
When they're summoned in for judg-
ment, just too late to change a thing,
I'll bet St. Peter chuckles at the alibis
they bring."

* * *

NOTES FROM E. & A. T. S.

By A. C. HORNER

With a hundred and ten fellow-accountants we checked in from Manning Depot, Toronto, on the morning of June 28th. We were subsequently joined by forty others on draft from Eastern cities via Ottawa and Montreal.

Destined to be the first class to take the new Pay and Accounting Course, we proved a surprise package to the Centre and under the capable direction of Flight Sergeant Teaffe we set about erecting bunks and making a home out of No. 1 Wing.

Manning Depot was fresh in our memories. We remember the barracks on the Toronto Exhibition Grounds as a house of discipline, if not a house of correction. Mile-long line-ups were the daily routine and the virtue of patience was rapidly acquired. It was there the clerical back was partially straightened, the body clothed in Air Force blue and the mathematical mind tuned to respond to intricate movements of routine drill.

It was at "Manning" that we learned not to declare native talents too quickly. Every day we saw our comrades break ranks to respond to overtures made by the Parade Sergt.-Major for help on what sounded like interesting jobs. When the call came for musicians, those of our number who could amuse friends at the piano or strike a tune on the fiddle came out at the double-quick as men who have come into their own. After weathering questions as to musical talent they were handed brooms and put to work sweeping out the spacious tanbark and bull pen. The musical touch came when told to "Whistle while you work."

Speaking personally, we responded to the call for shorthand writers; bright lads who

could take dictation at high speeds. They were shorthanded in the kitchen and we wound up before stacks of greasy dishes.

We got the meaning of being "Joe."

We are due to finish this six-week course in a month and our instructors work hard to put the new system of pay and accounting into our heads. As nearly all the entire class arrived with colds, they were at a disadvantage at the start with instruction being inserted between a bombardment of coughs and sneezes.

With the arrival of delayed Ontario summer, coughs have been reduced and comparative quiet now reigns in the classrooms.

After being shell-shocked by seven lectures a day with study and note writing until "lights out," we took our first exam on the unappropriate day of July 13th last. The night before the

exam was bedlam with students shouting back and forth the intricate routings and destinations of vouchers, vouchers and more vouchers, while others sat in dark corners mumbling over lists of new and old Air Force rates of pay.

The gentlemen studied in bed and in clothes closets. Often the night was made hideous as some "Joe" recited Assigned Pay and Allowance rates in his sleep. An open book was close at hand while shaving, showering, etc., and if the method of study was without genius the lack was made up in enthusiasm and the old fight.

We have said the exam was held on the thirteenth. The results are due within the next few days. Corporal Sisk, our friend of the morning drill, may find us standing at ease with fingers crossed.

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STATION ACTIVITIES

OUTINGS FOR THE AIRMEN

One of the many services provided by the Welfare Committee is the organization of outings to enable Airmen to see the beauty spots and points of interest in this locality.

A few weeks ago an interesting tour was arranged for a party consisting of 220 Airmen from No. 2 Wing. This tour was composed of boys from Western Canada and was arranged to include places of interest to the Westerner. The highlights of the afternoon centred around a visit to Louis Johnson's tobacco farm, where the boys were able to see the plants growing under glass, and later were taken out to the field to watch a demonstration of planting. From here the group moved on to Tom Jones' Bird Sanctuary. Many of the boys had heard of Jack Miner's Bird Sanctuary, but only a few knew that there was one that closely rivalled Miner's only a few miles from St. Thomas. The final stop of the afternoon was at Springwater, where the owner, Mr. White, acted as host. Hundreds of friendly fish came up to the surface of the water to take bread that was thrown to them by the men. While here, Mr. White explained many interesting things about wild life in these parts.

The tour passed through the most beautiful orchard areas, and while it was not the best time of the year for apple blossoms, the peach trees were in full bloom and made a rare sight.

Another interesting tour was held on June 16th, when 150 Airmen were taken on a motor

cavalcade to the City of London. Transportation was provided by the citizens of St. Thomas. This tour was piloted by Mr. Bernard, Secretary of the London Motor Club. On arrival the Airmen were met by Alderman Nichols, acting mayor of London, who gave them an official welcome to the city.

The tour took the men through the beautiful campus of the University of Western Ontario, and the lovely residential areas. From here the party proceeded along Mount Pleasant Avenue, where the Airmen enjoyed a magnificent view of the City of London. After a brief visit to Springbank Park, the tour returned home.

Possibly the most enjoyable outing so far was the tour to Niagara. Forty Airmen left early one Sunday morning by chartered buses to visit Niagara Falls. They were accompanied by Mr. Jack Stirling, of St. Thomas, who explained the points of interest between here and there. At Niagara the men were met by Mr. Biggar, of the Niagara Falls Y.M.C.A., who took charge of the tour at this point and directed the Airmen to Queenston Heights and other historical places in this locality.

These tours have aroused such interest that others are being planned for the near future.

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CAMERA CLUB NOTES

In the latter part of May the R.C.A.F. Camera Club was organized. Starting from a

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humble beginning, it has now developed into a thriving little club which meets every night of the week.

Mr. Omar Kilburn, a prominent amateur photographer of St. Thomas, is the instructor and technical advisor. His interesting lectures and thorough instructions are attracting a steadily increasing number of fans. The Club is now adding to its equipment, making it possible for a larger number of Airmen to learn the art of photography.

Airmen interested in joining this Club are advised to get in touch with A.C./2 Smith, D., President of the Club.

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THE STATION BAND

The formation of a Station Band has been an object of abiding interest to the Commanding Officer of this station.

This ambition was realized, at least in its initial stages, during the past month.

Due to the co-operation and generosity of Mr. J. G. Thompson, President of the Citizens' Committee of the City of London, Ontario, a number of very fine instruments have been

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TECHNICAL TOPICS

CARBURATION

History and Development

Carburation is the mixing of fuel and air in correct proportions under all conditions. Modern carburetors are vastly different from those used in the infancy of the I. C. E. Ratios of from 8 to 16 parts of air to one of fuel will burn in the cylinder, which gives considerable latitude. At first no attempt was made to produce the best ratio at the right time; *i.e.*, take off, cruising, full power, etc.

One of the earliest types, the Surface Carburetor, used on automobiles, consisted of a bowl of fuel over which passed air to the intake, so giving a combustible mixture — of sorts. Cambric on the fuel surface prevented undue swilling. A similar carburetor employed a wick, which protruded into the air-stream; the vapor was thus carried to the cylinder. These early efforts at carburation caused erratic running and poor starting.

Carburetors, as we know them now, began to take shape in 1914. The Great War, 1914-18, did a great deal to further this development,

received. We are also grateful to Mr. H. Wooster of London for his kindly interest. So now the Band has become a reality and is functioning as a regular part of this organization.

Although the brass section had only been in existence for less than a week, through the untiring efforts of Sergt. Green and Corp. Pitt they were able to take part in the inspection of Air Marshal W. A. Bishop, V.C. The showing they made on that first appearance was not only a pleasant surprise, but a most commendable one.

The Trumpet Band has also ably assisted since its formation.

Both Bands have received the closest cooperation from Flight Lieut. Howard and Flying Officer M. E. Jones.

Since their formation they have appeared on a number of occasions and in each case have given a creditable account of themselves.

Thanks must be given to the Bandsmen, some of whom have provided their own instruments, and all for their regular attendance at practice, and in the Station orchestra engagements.

particularly in the Aircraft field. One of the earliest successful aero engines was the "Mono" as fitted to Avro 504K, a Rotary engine in which the crank-shaft was held stationary, the cylinders and crank-case revolving around a crank-shaft. Carburation was obtained as follows: The cylinders housed only one valve, which was both exhaust and air inlet. At the end of the exhaust stroke the valve remained open to take in air and closed approximately 80° before B.D.C. The piston, moving relative to the cylinder, caused a partial vacuum inside the cylinder. Just before B.D.C. the piston uncovered a row of holes in the cylinder spigot. Fuel was sprayed into the crank-case fan-wise in a downward direction, and was then drawn into the cylinder to mix with air. The resulting mixture was then duly compressed and fired. The power stroke was short, the valve opening approximately 95° A.T.D.C., remaining open to exhaust and take in air. The pilot's control was by means of the Tampier valve in the fuel pipe line, the fuel flowing through a pipe-line in the hollow crank-shaft to the jet which protruded through the rear crank-web. This engine could not be run below about 800 R.P.M. on

that control, the maximum R.P.M. being 1,200 in the air and 1,050 R.P.M. when ground run. Therefore, to control engine speed for landing, etc., a "blip" switch on the "joystick" "cut out" the magneto as required. To prevent fire in the crank-case the cylinder holes were covered with a gauze. To create a certain amount of pressure in the crank-case, an air scoop was attached to the crank-shaft tail end. As fuel spray was in the crank-case, Castor, which will not mix with gasoline, was the lubricating oil. The oil system was of the constant loss type. "Working with this oil kept the doctor away."

Another war-time engine, the Bentley Rotary, fitted to the Sopwith Snipe, used a Block-tube type of carburetor. This consisted of a box-like casing attached to the crank-shaft tail end; a slide working in this casing controlled the air-flow and, through the medium of a tapered needle, fuel flow also. This arrangement, with the addition of a float chamber, is still used with the modern Amal motorcycle carburetor. The fuel was fed by pipe line to the jet. The pilot, operating his lever, controlled both air and fuel flow in reasonable proportion. The resulting mixture was then fed through the crank-shaft to a chamber at the rear of the crank-case and via induction pipes to the cylinders.

Towards the end of the first World War, Rolls-Royce, Falcon and Eagle engines, together with the Liberty, came into their own. Claudel-Hobson carburetors were fitted to the former and Zenith to the latter. These were similar in many respects to the modern carburetor, with a float chamber and a venturi to increase the depression. Claudel employed a slow-running system, rich enough for starting, with good running over the whole range. The diffuser was efficient and gave good acceleration, and the air-bleed holes were so arranged to give economical running over the throttle range. The main jet was of the variable type, employing a fluted needle. For altitude or mixture control the fluted needle, fitted with a quick start thread, was lowered into the jet, so cutting down the fuel supply. Adjustment was provided to correct fuel flow for ground running. A brass float in a conventional float-chamber controlled fuel level, whilst the throttle was of the barrel type. The Vickers Vimy machine which made the first non-stop flight across the Atlantic in 1919, piloted by Alcock and Brown, was equipped with similar carburetors. The Zenith carburetor gave equally good results, the main difference being the use of float chamber depression as the altitude or mixture control. This device is in use today.

After the war the Radial engine came into

prominence, and with the increasing H.P.'s, carburetors were designed to meet more exacting demands. Compression ratios were higher, and the need for elimination of detonation arose. Benzole was blended with gasoline and later the Power or Economizer jet was introduced, whereby the mixture at approximately 9/10 power was richened. This allowed an economical mixture for cruising and the richer mixture at full throttle allowed full power when required without detonation. To improve acceleration by overcoming fuel-lag, accelerator pumps were introduced as were fitted to Claudel-Hobson on later Jaguar engines. Pumps of the delayed action type followed in due course; *e.g.*, as fitted to Pegasus or Cheetah carburetors. With the advent of modern super-charging carburetor design has undergone considerable change, in that mixtures vary with engine output to a greater degree, provision being made to richen the mixture still further for maximum "take off" Boost conditions, when the enrichment jet, together with the power jet, enrichen the mixture up to as high as 42% above that used for economical cruising. To relieve the pilot and to improve performance, automatic controls were introduced. The automatic boost control ensures that the normal boost pressure will not be exceeded, so preventing damage to the engine by over-boosting, while the automatic mixture control provides the correct mixture ratio at various altitudes, so saving fuel and increasing engine performance by eliminating human error. An example of the fully automatic carburetor is the S. U. carburetor as fitted to the Rolls-Royce Merlin engine. This represents the latest carburetor of orthodox design employing float chamber and venturi. This design produces the correct mixture at the right time, but to prevent freezing requires warming devices in the carburetor, which decreases the volumetric efficiency of the engine and adds to the weight.

Today various carburetors of revolutionary design are said to eliminate freezing in the carburetor by avoiding the introduction of fuel into the depression caused by the venturi. The "Injector" type, manufactured by Stromberg and fitted to the later type of Wright and Wasp engines, eliminates float mechanism and introduces diaphragm fuel control. Fuel is injected direct into the super-charger in varying quantities to suit engine output, flow being controlled by these diaphragms. The Chandler-Groves carburetor also eliminates freezing by placing the fuel into the air stream above a variable venturi, which also acts as a throttle, the fuel flow again being controlled by diaphragms. These two types are new and are not in general use in this country.