TEE EMM

Vol. 5. No. 5 August 1945

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Vol. 5 No. 5 **TEE EMM** August, 1945

CONTENTS

Pilot Officer Prune says— "Take Tee Emm regularly! Prevents that Thinking Feeling!"

ARE YOU GETTING YOUR TEE EMM'S?

MANY units are now being allocated new plate-numbers by A.P.F.S. owing to the operation of A.M.O. 1114/44—plate numbers being, as it were, the code number for a unit's name and address. In one or two cases units have missed getting their TEE EMM owing to the old plate number being cancelled before the new one came into force. If, therefore, at any time you have not had your TEE EMM'S by the middle of the month, please write to the Editor and we'll put it right.

THE FLYING INSTRUCTOR'S LAMENT

" What did you do in the war, Daddy,
How did you help us to win ? "
" Circuits and bumps and turns, Laddy,
And how to get out of a spin."

Woe and alack and misery me ! I trundle around in the sky,
And instead of machine-gunning E/A I'm teaching young hopefuls to fly.
Thus is my service rewarded, my years of experience paid ;
Never a foe have I followed right down, nor ever gone out on a raid.

They don't even let us go crazy, we have to be safe and sedate ;
So it's nix on inverted approaches, they stir up the C.F.I's hate.
For it's, oh such a naughty example, and what will the A.C.C. think !
But we never get posted to fighters—we just get a spell on the Link.

So it's circuits and bumps from morning till noon, and instrument-flying till tea.
" Hold her off, give her bank, put your undercart down, you're skidding, you're slipping "—that's *me*.
And as soon as you've finished with one course, like a flash up another one bobs,
And there's four more to show round the cockpit and four more to try out the knobs.

But sometimes we read in the papers of the deeds that old pupils have done,
And we're proud to have seen their beginnings and shown them the way to the sun.
So if *you* find the money and turn out the planes, we'll give all we know to the men,
Till they cluster the sky with their triumphs and burn out the Japs from their den.

"I hope that these Training Memoranda will continue to be as widely read and studied as they have been during the past four years. It is impossible to exaggerate the importance of constant training in ensuring the highest operational efficiency"

Marshal of the Royal Air Force, Chief of the Air Staff

Admin. and the Future

II. THE G.D. OFFICER

AS you have realised by now—for it was carefully explained in our article "Clipped Wings" in June 1945 issue—the end of the European war has resulted in a large number of G.D. officers becoming surplus to requirements, though not yet due for release; while many Admin. and S.D. officers who cannot yet be spared are nevertheless entitled to go.

As a result G.D. officers are now being required to undertake various administrative duties, such as Station Admin. Officers and Adjutants. We are, therefore, in this article aiming to tell those of you who are concerned something about your position in this business, *i.e.*, what the duties are, and how you can best fit yourself to carry them out efficiently.

Compared with flying, of course, Admin. work must appear very dull to many young pilots and aircrew, something to be dodged if humanly possible. "I joined to fly, not sit at a blanky desk," seems a very reasonable argument. So, too, does,

"I'm leaving the Service anyway after the war, why the hell teach me R.A.F. administration?"

Well, what are the answers to these arguments?

In the first place, it's a matter of appreciating your position. While *you* may have joined because you wanted to fly, the Air Force did not accept you on that understanding. You are in it to do what they think you can do best and what they think at any time most necessary. That they taught you to fly and fight was because that was what they wanted you to do at that time, but so long as you remain in the R.A.F. you may be used in any other way they think best for the R.A.F.

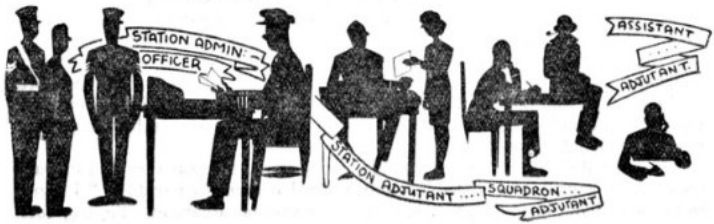
Again, you were not commissioned as a reward for good service in the ranks or because you flew well or navigated well, but because the authorities considered that you were a potential commander, leader and administrator. Apart from any specialist skill you may have, these are the basic qualities which an officer *must* possess, and they are by no means developed to the full by mere flying and nothing else.

Remember, too, that though you may have so far specialised in aircrew work you do not belong to a specialist Branch. Your Branch is not *Flying* Duties but *General* Duties. Normally, *i.e.*, in peace time, you'd have been learning your admin. stuff alongside your flying right from the very start at the Cadet College or Flying Training Unit, and you'd have had to keep up with it, too, to pass your subsequent promotion exams. It is only the demands of war which have cut this side out of your Service life.

If, on the other hand, you feel that this is all very well for the fellow who is making the R.A.F. his career, while you are going out when your turn comes, you should remember that, by doing a tour of, say, Station Adjutant or Station Admin. Officer before you go you are, in point of fact, gaining valuable experience for your civil job. For there is practically no walk of civilian life in which you don't become more and more involved in administration, the further on you get. You are, in short, being better qualified to grapple with your forthcoming civilian career than you would be if you spent your last months in the Service continuing merely to fly.

Now having said all that, we've asked the Admin. experts to give a brief explanation of the jobs which are likely to fall to your lot.

Here's what they say:



Now oil is different from grease! It can get loose from the engine as fluid or as vapour, from joints or pipe lines, from the constant speed unit or from the propeller; and if it gets out anywhere near the propeller, it may be atomised by the extractor effect of the slipstream over the gap between the spinner and the engine cowl, and so distributed with absolute but distressing impartiality.

This is more serious, because not only is very little oil needed to blur a windscreen, but the supply is unlimited, and until seen to, the trouble goes on getting worse. However, you must realise that all single-engined aircraft do not throw oil on the windscreen in hot weather; where this *does* occur, it is due either to the breakdown of the oil seal arrangements or—we whisper it!—to servicing.

Luckily, however, just as the jam round a small boy's mouth conveys the big idea to his mother that he's been at the store cupboard, so does oil give itself away.

Here's how to track down sources of leakage! Oil from the propeller is thrown off by centrifugal force and generally lands on the inside of the spinner. If opposite the cylinder head, well, that needs tightening or the gasket replacing. If from the base of the cylinder, then piston leathers want tightening or renewing. Oil trying to sneak out unobserved from the front cone packing washer gives itself away by showing on the blade roots or the grease gun holes in the barrel of bracket-type propellers or between the spider and rear cone on hydromatics. But don't confuse this oil and oil leaking from the engine at the propeller shaft seal.

Leakage from the dome nut or the dome plug on hydromatics can usually be stopped by tightening nuts, but if from between the barrel halves, the blade roots, or from between the barrel and spider at the rear, then the propeller must be dismounted and stripped and the defective oil seals replaced.

Once the various oil seal arrangements have proved satisfactory, it is unlikely that they will go back on you because of a change in the weather; so if you are puzzled as to the exact source of a leak, look carefully at all joints and pipe connections on the constant speed unit and near the engine. Oil escaping from these positions will almost certainly find its way into the spinner and be thrown off at the skirt on to the windscreen.

If you've been following all this carefully—and P.O. Prune, of course, has been following every word—you ought to be able to find out and deal with oil leaks. If the trouble is serious you may have to think about removing and exchanging the propeller. The decision will be up to you, of course, but, when making it, remember that the really important thing is not the propeller itself but the transparency of the windscreen—and the fact that if the makers had wanted an opaque windscreen they'd have built it in at the start.

Three and Three-Quarter Years Ago

This month we print a piece from our issue of November, 1941.

OIL

Petrol makes the wheels go round; oil sees that they keep going. Without oil machinery won't work. Oil is thus "A Good Thing."

One can, however, often have too much of any good thing. And this is certainly very true of oil. When oil is used to excess all its virtues become vices. Its beneficence becomes a malevolence affecting everything in reach. Life becomes sheer hell. Oil is then "A Bad Thing."

Take oil and grease on the windscreen, for instance, one of the worst manifestations of over-oiling. This trouble is generally caused, in one way or another, by the propeller; so let's examine the problem from the propeller point of view.

The propeller will carry a certain amount of grease, and if not overfilled, none will come out—just as you can swing a bucket of water round your head as long as it's not too full, and, of course, as long as you remember about the electric light overhead. But if there is excess of grease (or oil) in the propeller, centrifugal force makes it overflow from the blade roots, whereupon some of it will be thrown off and distributed about the place by the slipstream. It is, however, a slow business; it may take some time for all the surplus to be thrown out; and much can thus be done to lessen the trouble by taking off the spinner and clearing away all grease inside and round the propeller after every flight. Starting then from scratch each time, less grease will take longer to arrive in any quantity—and things will gradually get better.

Hot weather of course helps the trouble; not only is the grease more fluid, but for the same amount of work on the ground more is forced into the propeller. Don't carry out greasing therefore during hot spells. Like tyres or gasometers, overfilling means bursting, so remember it is better to remove any surplus rather than let it remove itself. Unfortunately the grease in a propeller can't be measured by a dipstick, which leaves you rather in the dark about how much you've got. But there is this to make up for it; a propeller isn't nearly so fussy about its ration of grease as an engine is about its oil, and, like the camel, will go long distances on very little.

Summing up, therefore, remember it's more important to see through your windscreen than pamper your propeller—which not only doesn't need it, but sometimes resents it—and what you take out of the propeller on the ground can't come out over the windscreen in the air.

(1) *The Station Administrative Officer.* He ensures that all sections on the Station work harmoniously in achieving the object for which the Station exists. He is responsible for the airman's housing, food and welfare, and he generally commands a H.Q. unit composed of the personnel of the sections of the services on the Station. He supervises the administration of non-public funds—the ways and means to promote contentment ; he even has the service bicycles on his charge. He must be a good steward. He is responsible to the Station Commander for the discipline on the Station and is the filter by which administrative questions needing a decision reach the Station Commander.

(2) *The Station Adjutant.* The Station Adjutant is his Commander's personal Staff Officer. This in itself entails a sound knowledge of the principles of administration. It is only by efficiency in his job that he gains the confidence of his superior. To fill his proper rôle he should know exactly what is going on on his Station ; so his job is not always in the office, but getting around the Station and *seeing* what is going on. This enables him to be of real assistance to his C.O. in the many intricate problems which arise. He requires a good working knowledge of the Air Force Act, for he is responsible for the work which leads up to a Court Martial. He must be familiar with Court of Inquiry procedure. He attends to all officers' personal matters, officers' documents and Confidential Reports on officers. Quite apart from these specific responsibilities which are laid down, he has to handle a multitude of telephone conversations and correspondence on nearly every conceivable subject.

(3) *The Squadron Adjutant.* Whilst the Squadron Adjutant does not normally have to perform the full range of duties which are the lot of the Station Adjutant, his day is a full one and his duties are many and varied. The Squadron Adjutant is usually the only purely administrative officer of his squadron, and so the efficiency of the squadron depends to a large extent upon the degree of his effort. The Squadron Commander unavoidably is more concerned with the operational side than with administrative details, which of necessity fall to the Squadron Adjutant. As the Squadron Adjutant's duties are more closely related to the operational side than those of the Station Adjutant, this post provides a good opening for the ex-aircrew officer who has completed his tours of operations and is turning his hand to administration.

(4) *The Assistant Adjutant.* The Assistant Adjutant is engaged on detailed routine work which he carries out under the supervision of the Accountant Officer. The post is established at Stations and Units where the volume of work justifies it. The work calls for a knowledge of the details of administrative procedure, particularly of the work which passes through the Orderly Room.

Well there you are. You will, of course, go to the School of Administration for a training course varying from four to eight weeks (see A.M.O. A.696 of 1944). But the more you can learn on your own, the more you'll get out of the course ; and the more you get out of the course, the more efficiently you'll do this new job that is coming your way.

A few final tips on learning on your own will be found on the next page :

(*a*) Take an interest in the domestic affairs of the Station, and in the welfare of the airmen and airwomen. This sudden interest may, of course, surprise them considerably, but never mind that.

(*b*) Spend some time in your Station or Squadron Adjutant's Office, and find out how he spends his time. But *don't* get in his way !

(*c*) Attend whenever possible : C.O.'s Orderly Room ; Summaries of Evidence ; Courts of Inquiry ; and Courts Martial. Once people know you're keen, they'll co-operate.

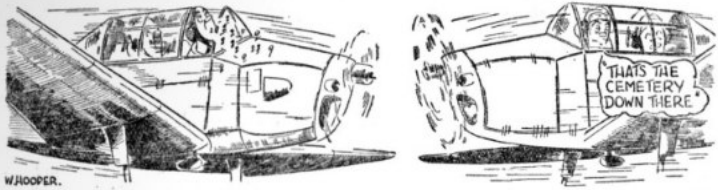
(*d*) Study the Manual of Administration in the Royal Air Force—A.P.837. This gives the gen, the whole gen and nothing but the gen. Well, at least not too much . . .

Lock It Up

WE had an article called " Going to India ? " in last May TEE EMM. It gave you several tips about the life in India, kit, luggage, what you could get out there, what you should take with you and so on. A correspondent, recently back from India, has now added a further important tip, which we omitted.

He says : Do ensure that whatever kind of luggage you take will LOCK, whether it be a zip-grip or suitcase. Unauthorised civilians strongly resemble servants and their presence in camps and officers' quarters is not easy to detect. Even apart from this risk, it does not necessarily follow that natives are honest simply because they do have authority to be where they are. Even authorised native servants may succumb to the temptation of a fountain pen, watch or wallet. Therefore, *never* leave your valuables lying about in your quarters, not even while you are only having a bath.

You're not the only Pebble in the Sky!



ALTHOUGH the sky is getting pretty crowded these days, a lot of types still fly along with their heads in the office as though they had the whole of the atmosphere to themselves. Result : too many mid-air collisions, most of them due to poor look-out. We know it's difficult to detect other aircraft on a pitch-black night, but many of these accidents happen in daylight when you don't have to be a " cats-eye " type to see the other fellow. You MUST remember it's your job to keep your eyes skinned, especially when there's haze about.

A typical example of this sort of accident happened recently. A Martinet took off on a target-towing detail when there was no cloud and but slight haze. While climbing into sun it overtook from below a Liberator which was flying round the aerodrome with its wheels down. The Martinet's starboard wing hit the port undercarriage of the Liberator. The wing was badly damaged ; the aircraft went into a spin and crashed. Both occupants were killed.

Here's another case in which two S.F.T.S. instructors were killed in a daylight collision, this time through disobedience of orders. They were authorised to carry out entirely different duties, one in an Oxford and the other in a Harvard. They took off at the same time, but thirty minutes later they were seen practising air fighting. The Harvard had got onto the rail of the Oxford which was doing tight, steeply banked turns, both to port and starboard. This went on for some minutes. The Harvard's port wing then hit the Oxford's port wing, and both aircraft crashed to the ground out of control. Both pilots were killed instantly. The C.O. stated subsequently that " a contributory cause was a slight mist in the air on a sunny day,' causing one of the pilots to momentarily lose sight of the other aircraft and so collide."

The last story shows how a viligant look-out can be relaxed by concentrating too much on other things. Two Tiger Moths, each with an instructor and a pupil, were returning to base on different courses in bumpy weather. Both instructors were so busy concentrating on flying their aircraft that they failed to keep an adequate look-out, although visibility was good. The result was a collision. In this case, however, both aircraft landed safely without injury to the occupants.

The two instructors got red log book endorsements for not keeping a good look-out. They were lucky to escape a more drastic fate.

subject and can put it over successfully.

At Station " C " all the pupils possess amazingly good eyesight, so they never bother about dark-adaptation of the eyes before flying. Yet it's funny somehow that these very same " cats-eye " fellows can never find the Flarepath. Dark adaptation is more important for Day-Night than for real night flying.

At Station " D " they think that the Flarepath is a positive menace. P.O. Prune taxied into one of the Flarepath boxes the other day and explained he " thought it was only the Works and Buildings grass mower anyway." Result : at this Station they now keep all the equipment safely stowed in a hangar, where it is found to be less of a danger. Well, the boxes *are* a slight obstruction, but these people fail to realise that the higher standard of night flying which Day-Night can produce might be the means of preventing several complete write-offs on future dim and dirty nights.

At Station " E " the pupils perspire freely. Result : they mist up their Day-Night goggles. This Station is found—perhaps through no fault of its own—to be still blissfully unaware of the Goggle Ventilating Tubes issued some time ago.

At Station " F." they think the Flarepath's only good use is for airfield location in foggy weather. Yet no one has paused to wonder why it can be that another similar Station not far away is knocking up a steady 500 hours' Day-Night a month and turning out more confident night pilots than ever before. No one at Station " F " apparently has thought it desirable to contact Day-Night Section, E.C.F.S., or even to read the instructions. (" Oh, yes, we think that there is a copy of the Instruction Manual —Synthetic Training Committee Paper 29—in the C.O.'s secret file, or it may be with the C.T.O. or somewhere.")

And so we go on ! Now Stations A, B, C, etc., are not just single isolated examples. So, as Prune says, if the cap fits, you know what to do with it. Ponder a moment and ask yourself : " Are *we* using this Scheme correctly, intelligently and to the maximum advantage ? " And if you really do feel that Day-Night Single-Stage is a frightful bind, then *please* tell the Day-Night people of your troubles. It may be that you are doing something positively foolish, or it may be that you have a real grouse and are trying to use the Scheme with heavy or high-speed aircraft, for which types improved longer range equipment is only now being developed. But in any case, E.C.F.S. will be interested to hear your views, and the chances are that they may be able to help you.

Prune hasn't yet got this turning-day-into-night business.

This Month's Good Show

TEE EMM's "Good Show Medal" is this month awarded to Flight Sergeant —— for Exemplary Coolness and Good Captaincy.

This N.C.O. safely landed his twin-engined aircraft at base under most difficult circumstances.

The aircraft, an Anson, was on a night navigational detail. When on the third leg and over the sea the port engine lost power, whereupon the pilot immediately applied single engine procedure and checked cockpit for faults. Flames appeared from the port engine, so the engine was opened up a quarter to a half throttle until the flames disappeared.

The aircraft was then climbed on the starboard engine with some small assistance from the port. As the aircraft was maintaining height the pilot decided to make for base. A short time afterwards, and when about 17 miles from base, the port propeller flew off and smashed into the nose of the aircraft.

Dinghy drill was at once initiated and a priority S.O.S. was sent immediately. All the correct drills were put into operation. By this time height was being lost at the rate of 50 feet per minute with an A.S.I. of 95 m.p.h.

When arriving over land permission was requested and granted over the 1196 for a crash landing. The Air Bomber was instructed to come forward and wind down the undercarriage when told. Base were informed that a normal landing might be possible.

The funnels were reached at a height of 1,900 feet, the undercarriage was wound down, flaps were put on, and a successful glide approach and landing was made.

The subsequent report stated that the pilot acted very wisely and showed good captaincy, and he has been awarded a green endorsement in his log book.

He has also been awarded privately TEE EMM's own Good Show Medal.

TEE EMM's "G.S.M." has also been awarded this month to F/Lt. —— for Cool Behaviour in a Tricky Situation.

As instructor he was giving single-engined flying practice in a Wellington III with the port engine feathered. At 3,000 feet the starboard engine suddenly failed. F/Lt. —— took over, maintained a steady glide at 130 m.p.h., unfeathered the port engine, jettisoned fuel, made an emergency R/T call, and landed safely.

THE SEVEN DEADLY SINS OF NAVIGATORS.

No. 1.

Ignoring Wind Effect.

Carry Your Bag, Sir?

WE have been asked to let you know that the R.A.F. Golfing Society is open to all ranks in the Royal Air Force. All those who want to join should send in their names, with their permanent and Service addresses, to the Hon. Sec., Wing Commander C. H. Hayward (Retd.), Little House, Binfield, Berkshire.

The subscription is £1 per annum, and, provided subscriptions are paid, members leaving the Royal Air Force may still retain their membership.

Members will be notified of any Meetings, Competitions and Matches that may be arranged during the year.

"Hellish dark night! I can't see a thing."

pupil; while the instructor, who has full daylight visibility, can let the lad turn the kite sufficiently inside out to make the effect obvious before correcting him, and yet not risk the life and limb of what may be an embryo P.F.F. pilot—to say nothing of the instructor himself who probably has his own views on continuing to live a little longer.

Admittedly, Day-Night Flying (or "Synthetic Night Flying" as it used to be called) has suffered somewhat through lack of publicity and instruction gen. It has remained cloaked in mystery, and burdened with needless difficulties and not-too-efficient equipment, but this handicap is rapidly being remedied. There is now at R.A.F. Cardington a special Day-Night Section of those M.A.P. types who invent and develop weird synthetic training gadgets—viz., the Training Aids Development Unit; and in addition there has been for a very long time the R.A.F.'s own little cluster of Day-Night specialists down at Empire Central Flying School, ready to help all and sundry of any Command, under the terms of A.M.O. A.578/44.* Visitors are always welcome, and an officer of the Section will himself gladly visit any Station where people may be getting all hot and bothered through incorrect use of their Day-Night equipment, or where they can't get the desired results. And, believe us, some of the things he finds provide food for melancholy thought!

Apart from the childishly absurd type of mistake, such as pointing the special Flares in the wrong direction, or expecting the Generator to do its stuff when running at less than the prescribed 250 v. or using altogether the wrong type of goggle filters, the following are some of the more favourite methods of doing the wrong thing:—

At Station "A" they just can't find time in the existing syllabus, so they shove in Day-Night at any old period of the course. Result: Fellows often do their Day-Night actually *after* real night flying! To be of maximum benefit it must, of course, be introduced as the first stage of "night dual."

At Station "B" the Chief Instructor is wont to say—"Now let's see, who isn't busy? We'll put him in charge of Day-Night to-day." Result: Chaos and no joy or gen for anyone. Day-Night instruction is a specialised job demanding a technique of its own. That's why some Stations have even formed a "Day-Night Flight" (or sub-Section of a Flight) with instructors who *know* their

* We hate to drag frivolous things like A.M.Os. into an otherwise serious publication, but it's well worth your while to look this one up and see the sort of Sodium Job service you can get from E.C.F.S.

"That Sodium Job"

WE have had some papers flickering around our desk, in the "Work to Be Avoided" Tray, for a very long time now. We are supposed to be writing a piece about them and we just can't get around to it. Every morning these papers catch our eye and metaphorically almost tap us on the shoulder. They look at us with the imploring limpid gaze of a spaniel who puts his nose on your knee, and stares piteously into your eyes—to conceal the fact that he is dribbling down your trouser leg.

We kept saying soothingly that we would tackle the job to-morrow, and then we didn't. We were definitely allergic to those papers, for they were titled "The Day-Night Single-Stage (Flarepath) Scheme," and it scared the living daylights out of us. We tried our best. Don't be frightened, we told ourselves. But that title . . .

Then yesterday we spoke to a training bloke along the passage about it, and he said: "Oh, that Sodium job"—and suddenly we were no longer frightened. There was nothing wrong with those papers, once we were on Christian name terms. We rushed back to the office, hauled them out and got cracking.

The first thing we found out was that there are two very different viewpoints among trainee types about this Sodium job. Some say it's a wizard and highly popular scheme; others, that it's a useless bit of unintelligible nonsense.

The reason for this differing opinions is, as far as we can make out, that it is a training method which *appears* simple, but is really highly scientific and needs special instruction methods. Applied correctly it can be of enormous value; applied incorrectly, or even indifferently, it's at first regarded as an amusing novelty and later perhaps as little more than a nuisance to all concerned.

You promptly ask—if by any chance you're reading this—in what ways can it be of such value, when we get all the night-flying we need at night. Well, every sort of night condition can be produced in daylight as required. For example, for training a pupil to switch straight from Flarepath to instrument flying immediately after take-off—without indulging in corkscrewing efforts better suited to ops—a 10/10 cloudy night is necessary. Strangely enough, nights with 10/10 cloud, no moon, and yet suitable for flying training, are not so common even in England. Sodium however, provides these conditions in daylight.

Again, practising circuits on a dirty night, when attention is divided between instruments and airfield lights, requires naturally a dirty night. Except in the most brilliant midsummer sunlight, Sodium can provide dirty-night visibility (or lack of it) whenever required, so that practice in instrument circuits and contact approaches can go on merrily without the hazards and discomfort of a genuine dirty night, not to mention loss of sleep and cancellation of "dates."

Yet again, preparing a pupil for his first night solo can sometimes be rather a shaky job for the instructor, in the limited visibility of a real night. But Sodium produces the desired conditions for the

Air Crew and A.C.S.E.A.

NO doubt many of you air crew who are at the moment leaving, or due to leave, your O.T.U.'s for India are wondering vaguely just what happens to you on the long, long trail between O.T.U. and operational squadron. Many of you, too, who have already got there are perhaps still wondering what it's all about, why certain delays occurred, and why you went to certain places. Well, here's the form—the pukka gen.

Air crews fetch up in India from all over the world, though in the future they will mostly come from O.T.U.'s in England. They come either by air or sea and land either at Karachi or Bombay.

Most single-engined fighter pilots will go to India from the Middle East. A few have been coming from South Africa, but this is rather far away and instruction liaison is therefore difficult; so the South Africa supply will soon cease for all except S.A.A.F. fighter pilots. Middle East pilots are nearly all flown to India and land at Karachi.

Heavy bomber (Liberator) crews at the moment come from Canada—after taking anything up to six months *en route*. Shortly, however, Lancasters will be substituted for these Liberators and the crew will then come from the U.K. There may be a slight hiatus before that, when Canada stops sending and the U.K. has not yet begun. During this period crews will be supplied to India from the Middle East.

The remaining air crews will come from the U.K. The only exception to this is that L.R./G.R. crews, flying Liberators, are being supplied at the moment from Nassau, Bahamas, until that O.T.U. moves to the U.K. in the autumn.

From Karachi and Bombay crews go off for four days or so to an Air Crew Reception Centre (A.R.C.). At present this is at Poona, about a hundred miles S.E. of Bombay, but it is shortly moving to Bhopal about four hundred miles to the N.E.

The next step is a very important course, the Jungle Self-Preservation Course. Naturally all air crew members go through this course, which is held in typical lonely jungle country about sixteen miles from Bhopal. You learn there how to use your self-preservation kit, how to feed yourself in the jungle, how to travel intelligently on foot by compass, in short, how to live to fight another day should you have to bale out over the wild country of Burma or Malaya. The course lasts two weeks and can take five hundred people at a time. You might think that that would make the practice bit of lonely jungle country pretty crowded at times; but as it is five hundred square miles in extent, and only forty people are loosed in it at a time, and the average Prune only requires fifty square yards to lose himself in . . . well, it works.

The next step is the Refresher Flying Unit and here crews split up according to their respective jobs. The heavy bomber boys go to Kolar, near to Bangalore, and the course there is four weeks.

The R.F.U.'s for fighter pilots are at Bhopal; for twin-engined aircraft they

Prune only needs fifty square yards to lose himself in.

are at Ranchi. Their courses are from one to three weeks. The time actually spent there depends chiefly on the rate of replacement at squadrons, but also, to a small extent, on the pilot's own ability.

G.R. crews are not normally required to undertake further training and on arrival in the country go direct to their squadrons, most of which are based in Ceylon.

From the R.F.U. heavy bomber crews are ferried by air to their squadrons, but the others usually go by train as far as the Calcutta area and are then taken on by air, for in the forward area air transport is practically the only means of travel.

From all the above you can roughly calculate out the time between your landing in India and arriving at your squadron. It comes to about seven weeks—in the case of heavy bomber air crew, though, it may be as little as three weeks. But don't forget the time taken in travelling by train; Bhopal to Bangalore, for instance, is quite a journey. It is sometimes difficult for people used to the U.K. to realise that you may easily have to spend anything up to nine days and nights in varying stretches just in train travel alone before you have done all your courses and got to your unit.

Bon Spectacle

IN our report last month of the extremely good show put up by an S.F.T.S. pupil in dealing successfully with an engine failure in the air, we failed to make it clear that the pilot was French and his correct carrying out of all the emergency procedure in a foreign land was therefore all the more praiseworthy.

Erratum

In our article "Clipped Wings"—June, 1945, issue—in the third paragraph from the end, the words "and have been in an established flying post" should be deleted. A line lower down, for the words "have not been in an established flying post" substitute "are unqualified."

This Month's Prunery

THE MOST HIGHLY DEROGATORY ORDER OF THE IRREMOVABLE FINGER (Patron : Pilot Officer Prune) has this month been awarded to F/Sgt. —— for Failing to put his Hand Up when Wanting to Leave the Aircraft.

F/Sgt. —— was passenger in the rear of an Oxford which was on a daylight exercise. On completion of a period of instrument flying, at about 3,000 feet, the pilot and instructor looked round and found that they no longer had a passenger.

It turned out later that F/Sgt. ——, wishing to relieve himself, had opened the door of the aircraft, but instead of carrying on with the exercise had fallen out. He eventually returned to camp by bus with his open parachute tucked underneath his arm.

The M.H.D.O.I.F. is also awarded to Lt. (A) —— R.N.Z.N.V.R. for Taking Things in His Stride.

Returning from a night flight and seeing a row of lights, he dived down without further ado and made a landing on the taxi track much to the surprise and discomfiture of the crash party. Turning off further along he taxied onto the duty runway, where, having lost his bearings, he had to call up flying control and ask where he was. He stated later that he thought it a bit strange the runway should have a bend in it.

The M.H.D.O.I.F. is also awarded to Sergeant —— for Genuine Admiration of the Other Chap's Work.

As pupil navigator he was taken for his first night flight in the U.K after having been trained in S. Africa. He was shown all the various types of landmarks, beacons, and so on, but remained apparently unimpressed until, while climbing out of the aircraft on return to base, he suddenly remarked to the pilot. " It beats me how you chaps find your way about at night."

The M.H.D.O.I.F. is also awarded to F/Lt. —— for Having an Enquiring Mind.

While up at the Air Ministry from a Station, he asked an officer in the Branch which he was visiting if the Air Ministry ever got A.M.O's, or only the Stations.

The M.H.D.O.I.F. is also awarded to Group Captain —— for Displaying a Most Laudable Thirst for Information.

While in conversation with a Medical Officer who had just joined the Station (somewhere in India) he asked him what he did in civil life.

A Joint to the Order is awarded him for further asking an Indian O.R. how long he'd been over in India.

And so the Seventh and Last Golden Rule is :—

Adjust the Earphones Close to Both Ears.

As a tailpiece we must emphasise the value of training. Experiments have shown that intelligibility with untrained men varies from 20 per cent. to 75 per cent., the average being about 50 per cent. This means that about half of every message may be lost or misunderstood. But with trained people following the Seven Golden Rules above, the percentage goes as high as 85 per cent. These figures speak for themselves.

So you here get Golden Tailpiece :—

DON'T NEGLECT TRAINING AND PRACTICE

The Eye-witnesses were duly impressed

IN case you should think that bad and dangerous flying is only indulged in by the new-fledged and inexperienced pilot, who wants to show his friends how well he can fly, we'll tell you the tale of a recent accident. It shows you how even good and experienced pilots who should know better can be just as bad as anyone else when it comes to showing off. And incidentally can kill people and destroy aircraft just as effectively as the next clot.

Here's the sad story :

An experienced pilot was detailed to carry out an air test on a Mosquito. The aircraft taxied out in a normal manner and took off. Immediately the aircraft was airborne it executed a steep climbing turn to port. Eye-witnesses were duly impressed. The aircraft then climbed steadily to 3,000 feet, turned towards the airfield and started to dive. This king-pin pilot brought his aircraft to within a few feet of the ground and crossed the airfield at an estimated speed of 500 m.p.h. The eye-witnesses were again duly impressed. One stated later that the aircraft was flying faster than he had ever seen any aeroplane fly.

The pilot next suddenly executed a steep climbing turn to port. This, too, would have been very spectacular, had not the pilot overstressed his aircraft, torn the starboard wing off and crashed.

The eye-witnesses continued to be duly impressed, but no longer by the pilot's skill and daring. Rather by the fact that killing two people and destroying a valuable aircraft in a cheap desire to show off seemed to be his idea of serving his country.

Sky Hogs

THOSE of you who read your papers will perhaps have noticed that a considerable amount of public comment has recently been appearing on the subject of low flying. And you will perhaps have been a little shocked to realise that this public comment seems to have been definitely critical of the Royal Air Force. Terms like " sky hogs " are bandied around. In other words, a poor view is being taken of us.

Some of this comment, we must admit, seems only too reasonable. Take, for instance, this letter : " *If the R.A.F. pilot who flew in from the sea and almost took our roof off could have seen my little girl's cheeks go white, have seen her tremble and say ' Is it one of ours, Mummy? ', he would not have done it.*" Nobody could fail to sympathise with that.

On the other hand, Mr. Civilian, whose cottage is near an airfield and who complains that he can't get a wink of sleep after 8 o'clock in the morning, strikes many of us as just a carping old so-and-so. We resent his apparent selfishness and stupidity. But next minute we are lumping all the adverse comments together and dismissing them from our minds as mere unjustified grousing by people who don't understand and who ought to be grateful to the R.A.F., not critical of them.

But *is* Mr. Civilian a carping old what-we-said-before ? May it not be we who don't understand *hum*, rather than the other way round ? Consider.

Mr. Civilian has lived through nearly six years of strain, restrictions, and petty hardships. He is not as young as he used to be. He has worked too hard on a dull diet with too little relaxation. He has been bombed by aircraft, bombarded by doodlebugs, and shot at by rockets. Night after night he has borne the nerve-shattering cacophony of sirens and anti-aircraft guns. For months on end, he has been frightened to death. Mr. Civilian, in short, has had a pretty bad time.

He has, however, stood up to it—because he has known it to be unavoidable. But now that the first great objective has been achieved, he feels that he has earned a bit of peace and quiet. The one thing that he craves above all others is rest, and the one noise which above all others has lost its charm for him is the sound of aircraft

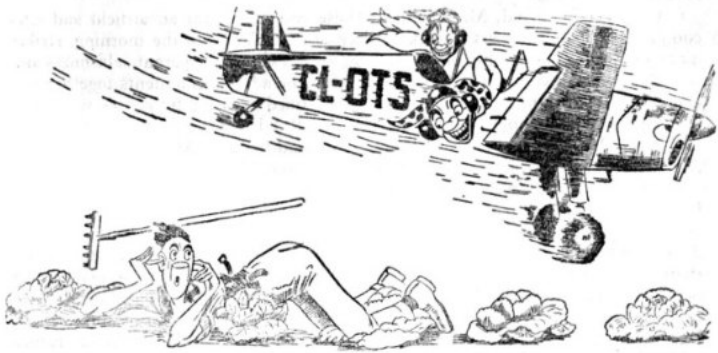
engines. He is tired and irritable—and particularly is he touchy about aircraft. Though fully mindful of what British aircraft have done for him in the past, the sight and sound of aircraft reminds him only too vividly of what German aircraft have also done for him in the past. Mr. Civilian feels that he can now get on very well without any aircraft at all, thank you.

Now there is a lot that Mr. Civilian does not understand. He doesn't realise that the *need* for large-scale flying has *not* ceased with the 'Cease Fire.' He does not realise that thousands of essential sorties have been flown since VE-Day and are still being flown. He does not realise that bad weather or low cloud may force a pilot down far lower than he wants to be. But even he can still see the difference between a low flying aeroplane in difficulties, or soberly homeward bound from a mission, and a bellowing, cavorting mass of steel which, when he is peacefully working in his own garden, suddenly hurls itself at him from the sky and frightens him out of his wits.

And he is fed up with being frightened out of his wits—particularly when it is being done by some exuberant and misguided young ass who is only concerned with wasting petrol and showing off to the girl next door. He has a variety of names for him—all uncomplimentary—and by the time it has happened two or three times he is applying these names—and others—to the whole Air Force.

Now if we are to avoid this wholesale condemnation, we *must* realise the shattering effect of modern high-pressure aircraft noises upon great numbers of inoffensive war-weary people. Not only has the man in the street *earned* consideration, but he is in the end the boss and can, if need be, *enforce* consideration.

Is it wise to goad him to this? If there is one lesson which has stood out in the



"Scared you, hey? Didn't you know I was a British aircraft?"

rough guide therefore is to speak a little faster than when dictating a letter.

Don't forget, too, that however you are speaking you should speak concisely and clearly. Cut out the "ums" and "ers." Use short words rather than long ones. Avoid slang: your listener may not get it and be mentally held up for a moment, thus losing the next bit.

Golden Rule Four, therefore :—

Speak Slowly and Clearly.

The best way, however, of making your speech intelligible is to know what you're talking about. If you have to search for words in the middle of a sentence, or work out what you're going to say next, in will come the "ums" and "ers."

This gives you Golden Rule Five :—

Know What You Have to Say and Say it as Shortly as Possible.

The last two rules deal with the actual use of your equipment. You can't

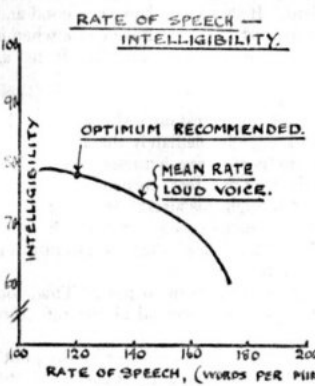


Diagram 3.

expect to get out of it more than you put in through the medium of the mike, for the latter's response to input depends on the volume of air striking it.

Now this air is set in motion by the lungs and vocal cords. Obviously if the mike is some way from the mouth you'll have to exert greater effort to get the same volume of air to it than if it were close. Remember, too, that the distance from the mouth to the diaphragm must not vary, and the sound waves or moving air must strike the diaphragm directly. That is to say the head should not be turned away from the microphone during speech. Again the volume of speech should not vary—see Golden Rule One. What, then, is the ideal distance the mike should be from the mouth ?

Well, the Service type microphone has been designed for close use. The best results are obtained by placing the microphone directly in front of the lips, with the rim resting lightly on the upper lip. This ensures not only that its position in relation to the mouth does not vary but it provides a maximum transfer of energy to the diaphragm. It also helps to exlude extraneous sounds (engines and so on) from producing interference at the listening end.

Golden Rule Six is therefore :—

Speak Close to the Microphone.

No matter how clearly and carefully a message may be spoken, and all the rules observed, the listener will not hear it properly if he does not take care to use the earphones correctly. So see that they are in good order. Put them snugly and evenly over *both* ears. By so doing you, too, will exclude the extraneous noises which otherwise might prevent you hearing anything at all.

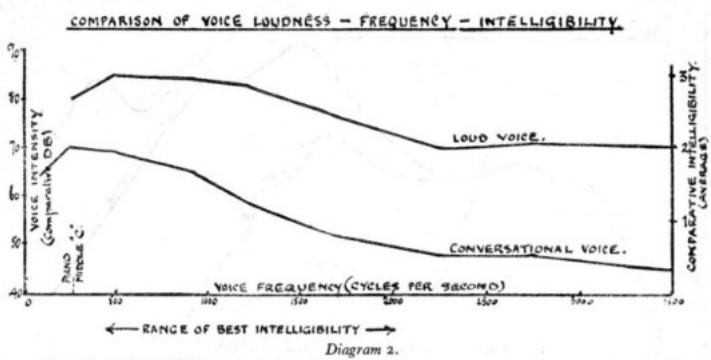


Diagram 2.

hand, without bursting a blood-vessel in your endeavour to keep it up.

Diagram 2, above, shows the improved intensity when the voice is raised. This diagram also shows, on the right, a scale of comparative intelligibility as compared with loudness. This varies with individuals but the average results show that if you raise your voice and speak loudly you have twice as good a chance of being understood than when speaking conversationally.

Golden Rule Two therefore is :—

Speak Loudly.

If you now refer back to Diagram 1 you'll see that there is a range of frequencies where the equipment gives best response. This is not accidental ; it is deliberate and follows the research made to discover the most productive voice frequencies. All frequencies contribute largely to intelligibility, but the best of them lie between Middle C and Top C on the piano. These are fundamentals. The Harmonics, above Top C, also contribute largely to intelligibility, hence the equipment is designed to give good response to them. (This explains why, as a rule, female voices are more easily understood on the telephone than deep male voices.) The pitch of your voice should therefore be raised so as to avoid using, as far as possible, bass notes.

Here, then, is Golden Rule Three :—

Raise the Pitch of the Voice.

Next, how *fast* should you speak. Research again helps. Diagram 3, opposite, shows the intelligibility curve drawn for a number of speakers using a loud voice. Intelligibility varies with speech. It is poor at very low and halting speeds ; it improves up to 100–120 words per minute and then begins to fall off. At high rates we are apt to run words into one another or to clip their ends. The speed recommended from observation is 120 words per minute maximum throughout. Don't gabble one minute and slow up the next ; 120 words per minute is a moderate rate, one which a shorthand-typist would have a little difficulty in following unless she was very good. A

past six years, it is Britain's absolute and vital need of air power if she is to be safe—especially in this post-war world, which is irritable, over-sensitive, suspicious, resentful, and touchy which, in short, has the jumps, and therefore faces a future still pregnant with war.

Now it is the man in the street who decides whether or not, or to what extent, that air power is to be maintained. For one things he pays for it. The upkeep of an adequate air force will mean for him in the difficult years ahead a considerable financial sacrifice. Nevertheless, if he thinks it a good thing he will go all out for it. If he does not, he will withdraw his support.

But he is no expert on policy and strategy and operational needs. In peace-time his impressions of the efficiency and usefulness of a Service are based largely upon what he sees of its administration. The ideas of correct behaviour and of effectiveness are inseparable in his mind—and rightly so. The sight of sloppy and ill-disciplined troops in the street undermines his confidence in the fighting value of their unit. In the same way, any apparent lack of courtesy, consideration or restraint on the part of air crews lowers his respect for, and faith in, the Royal Air Force.

The esteem and regard in which we are held by the public is vital to our survival as a great and essential fighting force.

Let us therefore show not only good manners but also good sense in this matter of low flying.

The R.A.F. Flying Club

WE have heard that the R.A.F. Flying Club, which was closed during the war, will reopen as soon as the present regulations banning private flying are lifted. This Club provided flying facilities for R.A.F. pilots at a reasonable rate under civil conditions.

Pilots interested, including pre-war members, should drop a line to W/Cdr. R. E. G. Brittain, Air Ministry, King Charles Street, London, S.W.1, quoting A.M.O. N.620/45, giving full name, rank and permanent address and stating whether as pre-war members or potential post-war members they are interested in reviving the Club's activities.

If and when this Club is able to reopen all those who have written in will be sent full details and those not already members will be sent an application form for completion.

You realise, of course, that we are putting this in TEE EMM because so few of you bother to read A.M.O's.

Talk Sense

"*It sounded to me like* clot." "*It* was *clot.*"

WE eavesdropped on a conversation between Prune and a Flying Control pal the other day. There had apparently been some argument about what Prune had said into his R/T and what the friend had *thought* Prune had said, and Prune was being advised to re-read a TEE EMM article called "R/T Sense"—if indeed he had ever read it at all. "R/T Sense" retorted Prune. "What, another one! How many senses *are* we supposed to have? Talk sense, old boy, talk sense!"

And there Prune, though unwittingly, has put the thing in a nutshell. *Talk* sense! For on the R/T talking sense is the only way to *make sense*.

If you'll bear with us for a few pages we want to try to show you how to speak—whether on telephone, R/T, or intercom.—so that you can be at once understood; how not only to choose the right words, but also to speak them in the right manner. And *why* this should be done.

Starting at the beginning, the act of speaking is merely producing sounds which convey meanings. The Lungs and Throat Muscles are the producing agents; the Voice is the producing medium; the Air is the transmitting medium; and the Ear is the receiving agent. Before we can speak at all we have to learn how to use all these correctly.

If therefore we have thus to learn natural speaking, so also do we have to learn unnatural speaking. That is, we must learn to speak by the aid of artificial channels such as the telephone or intercom. in such a way that we can still achieve the essential aim of conveying our thoughts clearly to a remote listener, who cannot be helped—as unconsciously he always is in natural speaking—by watching the speaker's lips, expression and gestures. In other words, R/T meanings have to be conveyed and understood by voice and ear alone.

Consider now the artificial channels we have to use in this "unnatural" speaking. They are (i) the microphone; (ii) the amplifier and wiring, with, in addition, for R/T the radio transmitter and receiver; and (iii) the earphones.

Each of these pieces of equipment introduces into any speech some loss or distortion, so that the sounds that come out are not quite the same as those that went in. These losses are most noticeable at the extreme ends of the voice frequency scales. There is a fall in the response of the equipment in the lower bass and upper treble of the piano scale. (These latter frequencies are, so far as

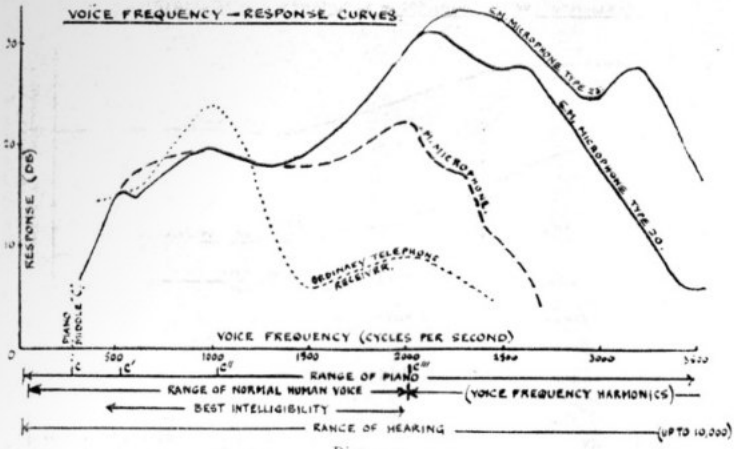


Diagram 1.

speech is concerned, Harmonics of Voice frequencies.)

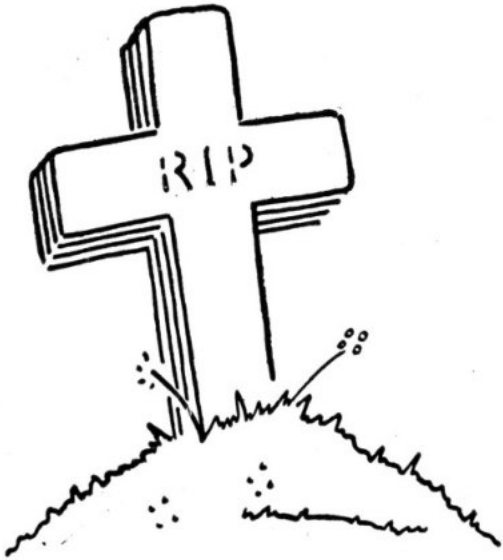
Above is a diagram (Diagram 1) which shows the variation in response in relation to frequency of several types of microphone. From it you can see that if you try, by raising the voice too loudly, to get good response at the extreme frequencies, you are likely to overload the equipment in the middle range and so reduce intelligibility. Volume also affects the response of the equipment. Whispered words will not be fully amplified, while very loud words will force too much air into the microphone and so " blast " it.

Both these faults have to be watched. It is a very natural habit to lower the voice at the end of a sentence, or when thought outstrips speech, but the words won't get through. Equally, is it natural to raise the voice in moments of excitement. For instance you spot the enemy and go off like this : " Enemy aircraft to port " . . . " *Another to starboard* " . . . " ANOTHER ABOVE." It is too much ; most of what we are saying is lost to the rest of the crew in a loud burst of unintelligible noise.

And so you come to the first of Seven Golden Rules for talking sense :—

Speak with a Steady Tone and Volume.

Now, how *loud* should you speak, if you mustn't whisper and mustn't shout. A good deal of effort has been spent on research in this matter, and it has been found that the best results are obtained by using a loudness between conversational tones and shouting, *i.e.*, a voice raised as loudly as you can comfortably maintain it without getting tired and dropping it half way, or, on the other



He never used chart symbols: he laid off track from his air position.

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