TEE EMM

Vol. 5. No. 3 June 1945

For official use only

Vol. 5 No. 3 **TEE EMM** June, 1945

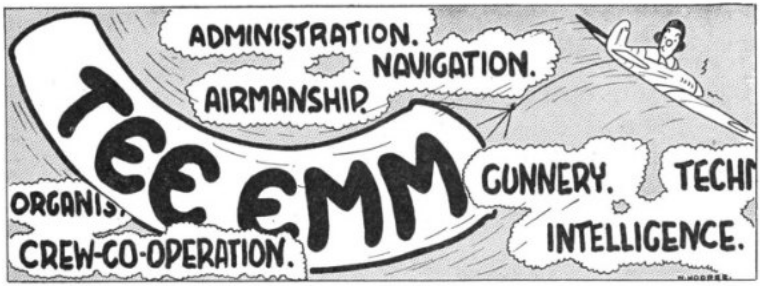
CONTENTS

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

BAD SHOW!

TEE EMM regrets that, unlike nearly all of its contemporaries, it has no Special Victory Issue or Grand Peace Number or even an Allies Triumphant Supplement. This is entirely the fault of the German High Command which decided to surrender without consulting us first as to whether it fitted in with our printing arrangements.

That's why instead of a Hyper-Super Grand Three-Colour Victory Number you've just got TEE EMM Vol. V, No. 3.



"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

TRAINING STILL GOES ON

"We must never forget that beyond all lurks Japan, harassed and failing but still a people of a hundred millions, for whose warriors death has few terrors. I cannot tell you to-night how much time or what exertions will be required to compel them to make amends for their odious treachery and cruelty. We have received—like China so long undaunted—we have received horrible injuries from them ourselves, and we are bound by the ties of honour and fraternal loyalty to the United States to fight this great war at the other end of the world at their side without flagging or failing.

We must remember that Australia, New Zealand, and Canada were and are all directly menaced by this evil Power. They came to our aid in our dark times, and we must not leave unfinished any task which concerns their safety and their future. I told you hard things at the beginning of these last five years; you did not shrink, and I should be unworthy of your confidence and generosity if I did not still cry, 'Forward, unflinching, unswerving, indomitable, till the whole task is done and the whole world is safe and clean.'"

From the Prime Minister's Speech on May 13th, 1945.

CLIPPED WINGS

This article is of particular interest, not to say value, to all members of air crew. Don't skip it just because you think it looks heavy.

IT is obvious that when a big war ends, we can't just pack up and go home. Still less can we do it in a war like this which ends in one half of the world while continuing in the other. The Navies, Armies and Air Forces which the last six years have called into being must be disbanded gradually. Quite a big chunk of them are still needed to finish off Japan.

Some while ago, therefore, the Government made public its plan for this gradual release. It has been accepted as a reasonable and fair one. Release is to be based on age and length of war service and, in addition, a small percentage is to be released for urgent jobs of reconstruction. The scheme was planned to come into operation soon after Germany had capitulated.

Well, Germany has capitulated and release will soon begin. As you can guess, the Air Force needed to beat the Japs will be much smaller than that which was needed to hold the Japs and beat the Germans. There are two obvious ways of making the necessary reduction. Either we can reduce each branch and trade separately or we can reduce the total strength of the Air Force. Many of the older men when they joined up came into administrative and sedentary jobs, and the young fit chaps came in as air crew. If, therefore, we reduced by branches and trades, quantities of air crew in late release groups would get out before older ground crew with longer service. This naturally would be unfair to the ground types in the early release groups, as it would mean departing from the Government scheme. If, on the other hand, we reduce the Air Force simply by letting out so many release groups, it would result in large deficiencies in certain trades and a mass of air crew with no aircraft to fly.

So it has been decided to keep the release groups as nearly as possible equal between branches and trades and re-train the surplus in some for the deficiencies in others.

This surplus will, of course—because they are, on the average, younger—include many air crew. The disproportion is even more marked by the fact that ground branches, as against the G.D. branch, contain a noticeable percentage of men who, though perhaps not immediately due for release, are yet not physically fit enough for service overseas and whose services could not, therefore, be utilised in the Japanese war.

So it comes about that many young air crew in the late release groups will have to have their wings metaphorically clipped for a time. They will have to re-train, and re-muster to those branches which are largely manned by the men whose age and service group entitles them to early release. We cannot here go into details of how the scheme will operate, but they are being published in an Air Ministry Order and we will give you some more gen later. This is just a general and friendly warning.

Many of you won't like the idea at all of giving up your Spitfire or your rear guns

or your bombsight for a workshop or a desk, but we invite you to think over the following points :

First and foremost, of course, Japan is not yet beaten and this still calls for a big effort by all in all spheres.

Secondly, the Air Force is a unified service. You didn't join it on condition that you were allowed to fly. You joined it to do whatever job the authorities wanted you to do and told you to do. You joined to co-operate in attaining victory—and so far we have only got half of it.

Thirdly, you war-time-only types must not forget that it was the usual practice in peace-time for G.D. Officers and air men air crew to do administrative and technical as well as flying jobs.

Fourthly, there is after all a certain bright side to the picture. It might be very much to your disadvantage to be pushed out right away into a post-war world not ready yet to absorb you. It might be very much to your advantage to stay in the Service a bit longer, where your re-training may give you a chance to learn, say, accountancy, or something else that would be valuable to you when you do go : for remember that, whatever you may think, there won't be enough civilian aircraft for all of you air crew types in peace-time and you will have to do something else.

The brightest side of all is that, if you are qualified and have been in an established flying post you will keep your G.D. rates of pay and promotion rights and will be liable to re-call for full flying duties. If you have not been in an established post, you will at any rate retain your present conditions of service for a year.

Well, there it is ! Think it over and accept the position. It is not too bad, come to think of it—but, however you look at it, remember it's *necessary* and you must co-operate. . . .

In 1914–1918, an elderly man often took up a civilian job " to release a young man for the war." In this case you will be taking up a non-flying job to " release an old man for the peace."

Releasing an old man for the peace.

GOODBYE TRACER

WE have in these pages, we regret to say, an irritating habit of constantly referring you back to earlier articles on the same subjects and advising you to re-read them. Well, for once we're breaking away from that old TEE EMM custom and referring you back to an article—" Does Tracer Help ? " in TEE EMM for September, 1944—and advising you *not* to re-read it. The reason is that there's been a change of policy about using tracer ammunition as an aid to air firing and the Powers That Be have decided that the time has come to dispense with it.

Sergeant Winde is up in arms at once. Originally a despiser of tracer he's latterly been all for it. It helps him, he says. He's never actually in four years *hit* an E.A., he confesses, but any moment now. . . . Hell, he bleats, why should he lose his beloved tracer ?

Now perhaps there are others of you who think like Sergeant Winde—though we hope that you at least have not gone for four years without hitting anything. So, to set your minds at rest, we'll give you the low-down on this momentous decision which we are proud to have been asked to announce through the columns of TEE EMM at our usual fee.

First, there has always been great difficulty in applying the rules for using tracer. There's nothing wrong with the rules in themselves, mark you. It's just that they're rather complicated, and in spite of everything possible being done to simplify them down to a rule-of-thumb basis, they still remain a bit of a headache. The real reason for the headache is not in the rules, which are as valid as ever they were, but in the lack of opportunity for practice.

Practice, as you know, is all-important for everything, from landing a plane to taking an Astro sight, but in the use of tracer no satisfactory ground synthetic training has yet been evolved, nor is there any proper drogue firing exercise during which the rules can be applied again and again till you have them at your finger-tips ready to try out on the Jap. In other words, the first time a gunner could really put into practice what he'd learned in theory was in a real live combat. And this, of course, was a Bad Thing, for he might not apply them quite correctly the first time and, since it wasn't an exercise, he might not live to correct his mistake.

Secondly, although it was hoped that the rules were simple enough to be effectively used for the first time in combat, this has not worked out. There has always been a tendency for a gunner using tracer to be, as it were, hypnotised by all those lovely bright bullets streaking towards the enemy and so forget the other sighting rules. It is very natural to watch the moving tracer and not the stationary ring sight. And this, as you know, leads to " hose-piping "—definitely also a Bad Thing.

And thirdly, there has invariably been the greatest difficulty in making the actual tracer bullets themselves. For though they are mainly sighting aids (and not proper ammunition), they must nevertheless have the same ballistic qualities, *i.e.*, they must travel in just the same way as the other bullets do, or obviously they're not the slightest bit of use.

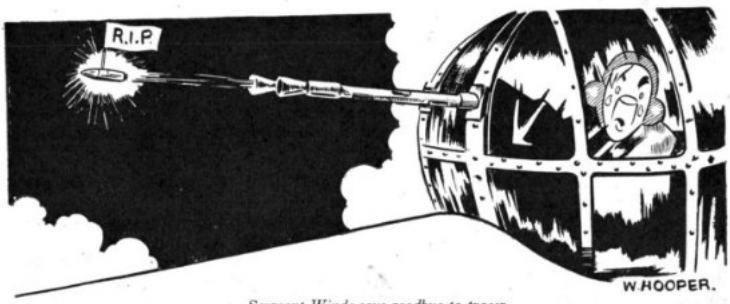
So we come to the Big Decision, that except for ground strafing, you gunner types must do without tracer in future.

This may be a blow to some of you, but you can see from the above it isn't just an arbitrary change-over because some Big Shot or other found himself short of a job and wanted to make his existence felt. There are reasons, and good reasons, for the decision. In any case, if you regret losing your tracer, ask yourselves do you *really* use it as it should be used, or is it merely that you just feel a little happier to have a bit in the belt and see it squirting out? In other words, do you only like it because of the kick it gives to your morale? If so, you are getting dangerously near the "hose-pipe" class?

The loss of tracer will not affect you—unless you have been a mere "hose-piper" all along. For all you have to do is to concentrate on the Zone System of Sighting, which, after all, you should have been using the whole time in conjunction with your tracer. The Zone System by itself is just as good; and, to state it bluntly, tracer has in many cases actually hindered gunners from putting it into effect rather than helped them. Besides, don't forget that the Mark IIC Gyro Gunsight (which we've already written up in TEE EMM for October, 1944 and January, 1945—damn, there we go again, recommending you to re-read articles!) is now being received in Operational Commands and will soon be universally supplied.

So there it is. Tracer is "out." The rules are now no longer being taught in basic schools, but if certain Commands require it they will be taught in O.T.U's. Coastal Command, for instance, will for some time longer be using tracer, though merely to enable their gunners to see whether they are hitting the water or the target. But for the rest of you—tracer will cease to distract you.

And so we say farewell to beautiful tracer bullets whose colorful flight through the azure skies, trailing clouds of glory like myriads of scintillating—oh hell, we seem to have got into a film Travelogue!



Sergeant Winde says goodbye to tracer.

THERE'S BEEN AN ACCIDENT !

Being a short record of various points from recent accidents—from which something might be learnt by our readers.

Watch Out for Cumulo-Nimbus—Elementary Precautions—Hitting High Ground—A Silly Taxying Accident—Read the Form 700—Aircraft Need Petrol.

DURING a daylight cross-country ferrying trip in a Boston, the pilot entered cumulo-nimbus cloud in order to climb over some hills. At 5,500 feet his aircraft was thrown about violently, but was still under control. It was when he estimated that he was clear of the high ground and started to descend that his troubles really started. The nose went up and the air speed dropped off alarmingly in spite of the fact that the stick was fully forward and the throttles wide open. Eventually the aircraft spun and the pilot couldn't get it out. So he baled out.

This pilot should, of course, have turned round if he found that he couldn't get over the hills other than by flying through that type of cloud. Cloud atlases are available to all air crew ; and if you know what's good for you, you'll learn to recognise cumulo-nimbus and give it a wide berth. After all, what's the good of ferrying a valuable aircraft from one place to another if you have to leave it in small pieces half-way between the two places ?

Here's a story which tells you what can happen to even the most experienced pilots if they fail to take elementary precautions. A Wing Commander, *with over 10,000 hours in his logbook*, took off to fly from A to B and did not realise until he was nearing the end of the runway and practically airborne that one of the elevator locks was still in position.

Once in the air he descended to do a circuit and attempt a landing. You can imagine the way he had to juggle with throttles and trimmers to be able to stagger round. His first approach was abortive—and no wonder. He then came in straight

from a distance to give himself the last chance to line up and let down with the limited amount of control remaining to him.

He might have got away with it, but, unfortunately, as he approached the airfield boundary he realised that he was not going to clear a wood just outside it, and had to fire a good burst of engine to get over. Naturally this upset his trim, and without elevator control he was practically helpless. The aircraft struck the ground at a fairly steep angle and the pilot was killed.

Here was a pilot, a senior officer, with a long record of valuable experience, whose life and value to the country were wasted because of an oversight. He obviously could not have done his cockpit check correctly or he would not have failed to notice that the stick was jammed fore and aft. If he could make a fatal mistake like this, how much more chance is there of your going for a burton one day, if you don't pay attention to vital details ?

Now here's a tragic story, also about an experienced pilot. He was a Wing Commander with 1,230 flying hours, and was flying a Procter from A to B. He carried no wireless, but had carefully consulted the met. forecast before take-off.

Two hours after becoming airborne he crashed on a hillside. The weather was 8/10ths cloud at 600–1,000 feet, with visibility 1–2 miles ; and the investigating officer found that the " aircraft was descending through cloud over hilly country, apparently to pin-point position." The pilot, and his passenger, were both killed.

The C.O.'s remarks were as follows : " It is considered that as he had no navigation aids he should have remained below cloud, and returned to base when he was forced down below the height of high ground on route."

When taxying out to take off on a night operation, a Mosquito pilot reported that the suction pressure for the blind-flying instruments had dropped to zero. He therefore started to return to dispersal and, ignoring the guidance of the ground crew, ran off the taxi track into a ditch, thereby damaging the undercarriage.

The C.T.O. subsequently reported that the suction pressure had dropped to zero because the vacuum pump cock had been either turned or knocked into the " off " position.

A Wing Commander, with 1,750 flying hours, landed in a Harvard and started to swing. He applied brake and rudder, but without any effect, and then the undercarriage folded up. Only when he had walked back to dispersal did he find that, prior to take-off, the aircraft had been placed unserviceable on Form 700 and had not been put serviceable again. The entry was " starboard brake completely u/s," but he just hadn't noticed that.

TAILPIECE.—A pilot took off in a Typhoon recently, and at a height of 30 feet the engine cut dead. He made a wheels-up landing straight ahead. The ground crew had forgotten to re-fuel the aircraft and the pilot had forgotten to check the petrol gauges.

NOTES ON NAV. IN THE EAST

HERE are a few helpful hints for Navigators going out to the East. We'll also refer you to our article " Old Father Fixe " in TEE EMM for March, 1945.

Navigation in the India-Burma theatre of war has been described as " pure navigation " ; for it is necessary to fall back on basic principles and D.R., the " artificial " aids available being few at present. These are the main aids in use : (i) Pin-points ; (ii) Drifts ; and (iii) Astro. Wireless aids are few owing to the long range sorties undertaken. Each station has a low-powered Homing Beacon and there are a small number of high-powered Beacons for Loop Bearings. There is no fixing service, though there are M/F.D/F and H/F.D/F Stations which provide bearings. These, however, are not much used.

Proficiency in map-reading is of terrific importance as there are large areas where it can be extremely difficult to pin-point, and, in addition, the maps available are not always of the greatest accuracy.

The majority of operations are carried out in daylight in formation, and medium level pattern bombing is the normal set-up, though all Squadrons are trained in low-level bombing. Thus map reading is sometimes made more difficult ; it definitely has to be up to good fast medium bomber standard.

Most sorties undertaken are long range ; they seldom last less than ten hours and are sometimes over eighteen and a bit hours. One Squadron flew 125 sorties during November, 1944, the average duration being thirteen hours thirty-nine minutes. Approximately 80 per cent. of the time is spent over the sea which reduces the aids available for most of the trip to a mere two—Drifts and Astro. All Rear Gunners, however, are trained to take accurate Drifts.

As regards equipment, no aircraft are at present fitted with A.P.I's. and so Air Plots must be kept accurately on Mercators Charts. The Drift Meter Mk. IXA, Sextants, the Radio Compass and the Mk. XIV Bombsight are all installed and, apart from the more modern instruments, aircraft are well equipped. The Astro Watch situation becomes critical during the Monsoon when the high humidity affects most instruments not meticulously cared for. Watch this one.

As we have pointed out in previous articles, there are three distinct periods of weather during the year, one of them occurring twice.

First is the N.W. Monsoon—October to March—when skies are clear, winds fairly steady both in speed and direction and fairly easily predictable. During this period, navigation, for the man who knows his D.R. and can make full use of the aids available, is a pleasant occupation and almost a piece of cake.

Second is the S.E. Monsoon—May to August—when the weather is normally bad for flying. The main difficulty during this period is the extensive cloud of the Cb. type. It is a golden rule during this period that cloud must never be flown into unless absolutely necessary. There are most violent currents (up to 120 m.p.h.), both up and down, in these clouds, which often extend up to 40,000 feet. They must be flown round at all times and the consequent co-operation

between pilot and navigator should be perfect. Winds, while not strong, can be extremely variable, especially in the vicinity of these clouds.

Third come the Transition Periods—March to May and again August to October. These are pretty tricky parts of the year when the Inter-Tropical Front is very undecided as to where to position itself. There is an increasing (or decreasing) amount of cloud, nearly always of the Cu. and Cb. type, and the winds are very light and variable. Navigation consists chiefly of keeping an accurate Air Plot and taking every opportunity to obtain any aids which present themselves. An ability to recognise pin-points rapidly through gaps in cloud is a great asset. This last is a thing you can practise at all times even when the clouds are not there.

Prune practises pin-pointing through cloud.

STOP PRESS PRUNERY

"Silly clot," says Prune.

As we go to press there comes this immediate award of the M.H.D.O.I.F., earned in the final days of the War in Europe.

THE MOST HIGHLY DEROGATORY ORDER OF THE IRREMOVABLE FINGER (Patron : Pilot Officer Prune) has this month been awarded to Flying Officer —— for Getting Through the War without Recognition.

As Duty Flying Control Officer at a forward airfield in Germany, not only did he fail to recognise a Focke Wulf 190 in the circuit, but nonchalantly gave it a red Verey light for approaching to land downwind. The German pilot, ignoring the pyrotechnic, made a perfect landing, and gave himself up.

A Joint to the Order is awarded for his subsequent telephone message to the Duty Flight : " Please look after that Mustang, which has just landed downwind."

YOU MAY BE O.K.

ON two or three occasions recently we have written about the importance of strapping yourself properly into your aircraft. We quoted various instances to prove our point. We mentioned cases where pilots and crews who had worn their harness correctly had survived bad crashes with barely a cut or bruise; and we mentioned cases where pilots had been killed, merely because they hadn't bothered to use their straps.

Here's another aspect of this same old thing, which may not have occurred to some of you. Simply this: It is not *your* life only by any means that can be saved by the correct use of Sutton harness.

Listen to these extracts from the report of a Lancaster pilot:—

"Whilst returning from operations in 10/10th cloud, the Navigator gave me a new course. . . . I proceeded to turn on to this at rate 1. . . . The aircraft shuddered violently, apparently due to slipstream from port. . . . The aircraft flicked on to its back, leaving me hanging in my straps."

And *because* he was hanging in his straps, instead of half-way down to earth, he was able to right the aircraft and bring it *and his crew safe back to base.*

And now for the other side of the picture. Another report says:—

"There seemed to be a good deal of cloud to port of our target. On turning to course I realised that the aircraft was in cloud. . . . I began climbing and turned to port intending to take up a reciprocal course. . . . Bluish electrical sparks flickered over the windscreen and the nose dropped sharply. The aircraft seemed to go into a bunt and I was thrown against the cockpit cover and knocked out by hitting my head. I was not strapped in. The next thing I remember was falling, and I pulled the ripcord."

This pilot was *not* able to right his aircraft—because he wasn't with it any longer. The aircraft crashed and the other *five members of the crew were killed.*

Do remember that if you are *not* strapped in you may, during inadvertent or unavoidable loss of control, be thrown out, or at least out of reach of your controls. And if you are thrown out—well *you* may be O.K., but what about the others whose lives were in your charge?

DOOMIE SAYS—

Don't Forget to Strap Yourself in.

THE SEVEN DEADLY SINS OF A.G.'s. No. 6.

Being Surprised.

HIP! HIP! UNRRA!

FROM time to time in these columns we've written scathingly or pityingly or contemptuously about " Whitehallese "—the official style of writing, in which one " peruses " but never " reads " and " personnel " is thick on the ground.

And yet they go on doing it. Here is Unrra's European Regional Office issuing a statement of which the opening sentence is as follows :—

" *The Director-General of Unrra has made few assignments of organisation or responsibility and of personnel within the European Regional Headquarters to shape the organisation and the staff assignments for most rapid and effective action in the period of intensive field operation now opening.*"

CUT OUT THE ALF

IT may be all very nice and friendly to hear on the intercom. phrases like "Look out, Bert, E/A coming up on port quarter down!" "O.K., Alf, I'm watching her!" or "Hey, Pete, where are we now?" "Just crossing the coast, Stuffy: I'm all set for a mug of tea, aren't you?" But it's all wrong. It's against orders. It's bad discipline.

The carefree pioneer days are long past now, when you were just three or four pals together in a Whitley or Hampden—Alf and Bert and Pete and good old Stuffy. A bomber crew to-day is an organised unit of the Air Force. It is much the same as an infantry Section, though it works under different conditions; it works under similar conditions to a submarine crew, though it is not so large. And in both these units of the other two services, the discipline is thorough: so therefore should it be in any similar R.A.F. unit, such as a bomber crew of seven men with a captain in charge.

As the old Army saying has it, "there's *on* parade and *off* parade." Off parade, "Alf's" and "Bert's" are all right, but on parade each member of the crew has his job and his duty, and the orders lay down that he is to be addressed according to that duty, viz., Captain, Navigator, Bomb Aimer, Wireless Operator, Engineer, Mid-Upper, Tail Gunner.

These instructions are not just finniky. They are designed to obviate risk of confusion when reports and orders are passed over the intercom. They are also designed to cut down idle and unnecessary chatter which occurs more frequently when a crew feel they are all one jolly family rather than a unit each member of which has a duty.

The above is not guess-work. We've seen it down in black and white in operational reports. During actual raids over enemy towns, "on each occasion when intercom. has been inadvertently radiated, much unnecessary chatter has been heard and crews have been using Christian names or nick-names."

This may be a small thing in itself, but it's bad crew discipline, and a crew with bad discipline sooner or later gets a chop, and they have only themselves to blame.

"*And kindly refer to me as* Captain: *don't keep on calling me 'Stinker.'*"

VEE EMM DAY

SOME of you may remember that in November, 1938, three R.A.F. Vickers Wellesley single-engined monoplanes set out to fly from Egypt to Australia and landed approximately forty-eight hours later at Darwin. This flight was quite an achievement in those days, and we feel that it may be of interest to pilots and navigators to-day.

The flight was made by three crews of the Long Range Development Unit after several successful practice flights from this country. The crews consisted of a captain of aircraft, a navigator and a wireless operator—both the latter also being pilots. The aircraft were standard Wellesleys, as supplied to several squadrons of the R.A.F. at the time, but fitted with some special equipment, which was being tried out, and a number of modifications, including long-range tanks in order to get the necessary range.

The flight started from Ismailia, in Egypt, and the route chosen was the Great Circle route to Darwin. This was in fact divided up into three Great Circles—Ismailia to Jask, Jask to Port Blair in the Andaman Islands and Port Blair to Darwin. By doing this the crossing of the Bay of Bengal was reduced to two crossings of eight hundred and four hundred and fifty miles and the actual increase in total distance was only two or three miles. Even on this route nearly 60%, or four thousand miles, was over the sea.

The engine fitted to the Long Range Wellesleys was the Pegasus XXII, instead of the standard "Peggy" XVIII. It developed 1,010 h.p. for take-off at 2,600 r.p.m., and would run very economically at a very low power output at 1,500 r.p.m. A Rotol constant-speed airscrew and the Farnbrough Mk. IV. automatic pilot were fitted and tried out for the first time in the service, as was 100 octane fuel. The petrol tankage was increased from about 400 gallons to 1,260 gallons, which were carried in the wings of the aircraft.

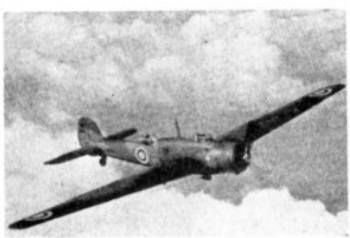
The inside of the Wellesley was very narrow and cramped but somehow room had to be found for a third member of the crew (two only was the normal crew), as well as extra navigation equipment, flying clothing, food, drink, etc. Changing seats to take over pilot was quite a job. The pilot's seat was let down from behind, the pilot crawled out backwards, the relief pilot scrambled in hurriedly, and while he took his weight on his elbows, the seat was returned and locked in position from behind. To save space and weight, no dinghy, parachutes or oxygen were carried.

November 4th was the first scheduled day of departure, and for several days before then weather reports were received at Ismailia each evening from places on the route. In the hope of more favourable winds, the flight was postponed twenty-four hours and final preparations made for take off at first light on November 5th.

At 03.55 hours G.M.T. (05.55 local time) on Saturday, November 5th, the three Wellesleys took off one after the other from Ismailia and headed East, climbing gradually on track. The take-off weight of the aircraft was 19,000 lbs., which was an overload of 71%, but they got off the ground remarkably quickly and handled quite well in the air under the fully loaded conditions.

The speeds flown had been worked out beforehand to give the maximum range. The indicated A/S was gradually reduced from 143 m.p.h. at the start to 115 m.p.h. at the end, which gave a true A/S of between 175 and 135 m.p.h. The average height flown at was 10,000 to 12,000 feet.

The first part of the route lay across Arabia; 5/10 Cumulus cloud between 7,000 and 12,000 feet caused very bumpy conditions for the first two hours and high cloud obscured the sky part of the time for the first four hours before clearing. Navigation comprised mainly D.R. and, until the Persian Gulf was reached just before 10.00 hours, G.M.T., track was maintained by frequent drift readings and position lines from sun observations. The average G/S so far was approximately 170 m.p.h., and



although the three aircraft were out of sight of each other, they were in R/T communication. From the Persian Gulf to Jask, conditions and visibility were very good, and map reading and pin-pointing was all that was required in the way of navigation.

The sun was setting as Jask on the Persian Coast was reached and the aircraft flew on uneventfully in the dark over the Arabian Sea. Astro was relied on for navigation and the Indian coast was picked up by the light of the moon after 18.00 hours G.M.T.—some fourteen hours since leaving Egypt. India was crossed by night. Unfortunately low cloud persisted practically the whole way so that navigation was carried out by Astro and a few D/F bearings.

The Mark VIII Sextant and Dreisonstok's Tables were used for Astro—it was before the days of Median marking devices or averaging sextants—and it took a good twenty minutes to take and work out one sight. Not that there wasn't plenty of time on this flight! For taking drifts, by the way, a Smith's Drift Sight was fitted in a very accessible position and the main advantage was its simplicity of use without any effort on the part of the navigator.

Dawn broke as the East Coast of India

was reached after some twenty hours' flying, and through breaks in the cloud good pin-points were obtained from which to set out over the Bay of Bengal. Navigation over the sea for the next five hours was chiefly by D.R. Large Cumulus clouds were encountered and attempts were made to fly around the worst of them owing to the excessively bumpy conditions, but the aircraft were constantly in and out of thunder clouds and rain storms.

After nearly six hours over the water the Andaman Islands were sighted through breaks in the cloud. Course was then set for Malaya and the weather improved, enabling a few sun sights and drifts to be taken to check track.

It might be mentioned here that the International 1/1,000,000 series of maps were used to cover the route as far as land was concerned, and various Admiralty charts varying in scale from about fifteen to forty-five miles to the inch to cover the areas over the sea. These were joined together in strips and made up into four rolls to fit on the chart table. A 1/4,000,000 roll covering the whole route was also carried to enable D/F bearings to be plotted when they were off the 1/1,000,000 rolls. This was nearly always the case, as owing to the unusual route most of the available D/F stations were at very long range. Tracks were measured off every degree of longitude along the route and a list of these and the different Magnetic Variations had been prepared before departure. These lists were referred to continuously and course altered from time to time accordingly.

The Malay coast was picked up and crossed under good conditions. The aircraft had then flown five thousand miles in thirty-one hours at an average G/S of over 160 m.p.h.

Darkness was now closing in, for the second night, and unfortunately clouds could be seen towering up ahead over Borneo. Conditions deteriorated very rapidly and, after trying in vain to avoid the thunderstorms by flying around or above them, there proved to be no alternative but to fly through them. So for four very uncomfortable hours they ploughed through severe thunderstorms, lightning and torrential rain. Eventually the clouds began to break up and for two hours before dawn the moon and the stars came out so that the navigators could fix position again after a long spell of nothing but D.R.

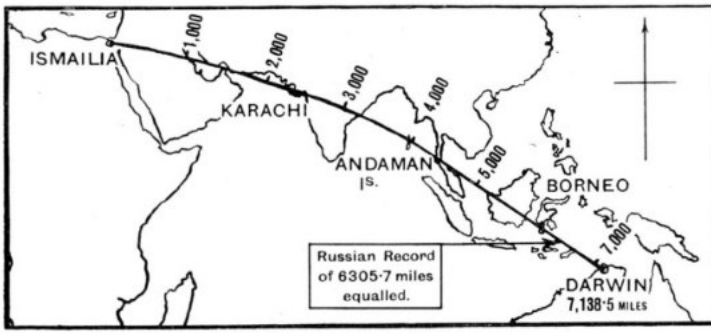
Dawn came as the aircraft were flying over the Flores Sea, South of Macassar, and with excellent weather and visibility, map reading and D.R. was the only navigation necessary. Up till then maintaining track had been the chief concern of the navigator, and G/S had not mattered so much. However, at that stage G/S became an important factor on account of range, and a decision

had to be made as to whether Darwin could be reached with safety or not. Opportunities of pin-pointing were fortunately available over the Dutch East Indies, and ground speeds and consumptions were accurately checked.

One of the aircraft unfortunately had not enough petrol for the 400-mile leg across the Timor Sea and had to land at Koepang, on Timor Island. This aircraft landed, refuelled and flew on within a few hours to join the others at Darwin. Meantime the other two aircraft carried on across the Timor Sea, the leading aircraft slowing down and the other increasing speed so that they met in the air over the Timor Sea and flew on together in formation. It was a remarkable meeting—two hundred miles from land and after some forty-six hours in the air without seeing each other. These two aircraft arrived at Darwin airport at 04.00 hours G.M.T. (13.00 hours local time) and landed in quick succession after forty-eight hours and five minutes in the air.

After landing at Darwin the two aircraft had forty-four and seventeen gallons of petrol left respectively. The average G/S throughout the flight was 150 m.p.h., there being an average head wind of 10 m.p.h. The Great Circle distance between Ismailia and Darwin is 7,158·653 statute miles and between Ismailia and Koepang, where one of the aircraft landed to refuel, 6,658·452 statute miles. These flights constituted new World's Long Distance records and the previous record—held by the Russians with their 6,306 miles' flight from Moscow to San Francisco—was well and truly beaten by all three Wellesleys, British-made and British-manned.

It is significant that this flight was carried out six and a half years ago by three aircraft, each with one engine only. The record, moreover, still stands. It certainly *was* quite an achievement. "A good week-end's work," says Prune, "and must look nice in the log book—forty-eight hours for one flight."



THIS MONTH'S PRUNERY

THE MOST HIGHLY DEROGATORY ORDER OF THE IRREMOVABE FINGER (Patron : Pilot Officer Prune) has this month been awarded to F/Lt. ——, with Joints too numerous to count, for Conduct Somewhat at Variance with the Principles of the Navigators' Union.

The aircraft of which F/Lt. —— was Navigator had to fly to Greece from Italy. Course was set and the Navigator logged " Course checked "—apparently from the Fluxgate Repeater only, whereas comparison with the Pioneer Magnetic would have shown a variation of nearly 60°. The Fluxgate V.S.C. was set at 56° East. For the next fifty minutes the Navigator did not even look out ; all he did was to take a loop bearing —and ignore it because it placed him so far North of track. As a result of steering approximately 070° instead of 127°, the aircraft was over the sea instead of being over land. This was not noticed.

A landfall was made on the Yugoslav coast and logged as Greece, 40 minutes before ETA. For an hour an attempt was made to map read along the coast, naturally without success. Finally a QDM was obtained which placed them about 210 miles North of track, so the compasses were at last compared with each other and the considerable difference noted.

No attempt was made to use the excellent Gee cover available. Instead, the Captain abandoned the sortie and the return journey was made using two QDM's and homing by radio compass. The bombsight, drift meter, Gee and radio compass were all serviceable. The error in setting the V.S.C. never was noticed. The chart work consisted of a track line joining a position on the coast near Base to the first turning point. Incredibly enough, the crew all lived.

The M.H.D.O.I.F. is also awarded to S/Ldr. —— for a Notable Attempt at Exercising War Time Economy.

This pilot jettisoned his depth charges over the land rather than over the sea. His explanation was that they might then be used again.

The M.H.D.O.I.F. is also awarded to Pilot Officer —— for Finger Trouble.

This pilot of a Mosquito returned to his base with his bombs not released. He stated that instead of releasing them he had unfortunately jettisoned his wing tanks.

The M.H.D.O.I.F. is also awarded to Warrant Officer —— (Nav. B) for Unconsciously Letting the Union down.

When being interviewed by the Station Commander for a commission and asked to outline the responsibilities of an officer, he stated " . . . an officer must be punctual ; he must not clear off ten minutes early as the Warrant Officers do."

LEARN FROM THE OTHER FELLOW'S SUCCESSES

DURING February, 1945, a Lancaster was attacked by three enemy aircraft soon after leaving the target area.

The first attack was made by an Me 110 and the rear gunner opened fire, at the same time giving the pilot instructions to corkscrew. The enemy broke off the attack and made a second approach during which the gunner continued to fire and the pilot to corkscrew, until the gunner was able to report that the fighter had been shot down. The destruction of the Me 110 was seen by the pilot and other members of the crew. The mid-upper gunner obtained very brief glimpses of the enemy aircraft and fired only a few rounds.

The second aircraft to attack was an Me 410 and this was also shot down by the rear gunner whilst the pilot carried out a normal corkscrew. Towards the end of this second combat only one gun was left firing in the rear turret.

The third attack was made by a Ju 88, but the rear gunner was only able to fire one very short burst before his guns became completely unserviceable.

Throughout all these attacks the pilot corkscrewed almost continuously for fifty minutes. Two of the three enemy aircraft fired at the Lancaster but the defensive action was completely successful and no strikes were made on the bomber.

The rear gunner reported that he used his sight throughout all attacks, and conformed to the recognised sighting procedure. The absence of tracer ammunition enabled him to aim his guns correctly,* and the destruction of two aircraft can be attributed to this fact and to the excellent co-operation between the pilot and the rear gunner.

In other words, both knew just what to do. Do you ?

* See article on page 60.

LIVE TO FIGHT ANOTHER DAY

In the last two articles of this series we published accounts of pilot's survivals after baling out over the jungle. In one we had asked the experts to pick out and comment upon the principal points of interest : in the other we left you to discover them for yourselves.

This month we have merely selected short extracts from various different reports of balers-out all of which seemed to us to contain some tips on what to do, what not to do or what to beware of. The experts have in each case commented officially.

V. Survival Tips

" During my crawl through the elephant grass I discarded my revolver holster, as it was hampering my progress. I also lost my money belt at this time."

Sliding the belt round so that the pistol is over the navel or at small of back would keep it out of the way and avoid the temptation to discard your only weapon.

" I was extremely thirsty and moistened my mouth by taking the dew off the leaves and the grass. I tried cutting bamboos for water, but was unsuccessful."

The lower sections of bamboo are the best to try. The presence of water is NOT invariable, but green rather than old yellow bamboo is the best bet. Remember the dew tip.

" Some time before this I had discovered that my compass was being affected to something like 40 degrees by my pistol, and also the soaking of the night before had made the pointer stick considerably."

Don't lose sight of the well-known fact that compasses are *affected by the near proximity of steel. The latest issues of compasses are now waterproof.*

" During the day I had opened my packet of nuts and raisins and had eaten some of them as well as some Horlicks and energy tablets. The best value was obtained from the barley sugar pastilles, which I split into four. They kept me going wonderfully. My throat had become very swollen but I had plenty of water although the remains of my water leaked out of the *chagul* during the night."

Remember that the canvas chagul (*or* chargal) *is porous and therefore water is slowly being lost all the time.*

" I was still in cloud and decided to bale out. I opened the canopy and pushed myself straight up with the aeroplane straight and level. My revolver and water bottle were torn off on the canopy."

This is more often carelessness than bad luck. There have been innumerable cases of essential equipment being lost when baling out. Whenever possible, all small articles required after landing should be stowed in pockets, secured in such a way that they cannot fall out during baling out.

" I asked him in Malay if there were any Japs in the area. He said that they were some many kilos away along the coast."

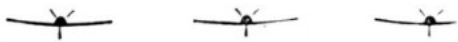
This pilot did not know Malay—but stated that the " Malay Vocabulary Sheet " was indispensable. Let's hope you'll find it so too.

" I went to sleep in a separate room and two natives watched me all night and redressed my wounds each time I woke. Just after dawn I asked the Headman of the village to take me to the mouth of the river, where I could have more chance of seeing aeroplanes. He wanted me to stay until my knee was healed, but I insisted on going and was taken about six miles downstream to the native permanent village. We had been there only ten minutes when the natives heard aircraft. Four Kittyhawks appeared shortly, apparently making a parallel search."

It would seem that this is a clear case where sound judgment justifies immediate or subsequent breaking of an otherwise golden rule, i.e., *don't risk crocking up completely, and if you are in good hands stay there till you're fit to travel. Clearly the rule must apply, but there must be occasions when the use of one's " loaf " will bear fruit, as on this occasion.*

" I flashed a metal mirror at the leading plane, and meantime the *Goeroe* (Village Teacher) brought a ten-by-twelve-inch wall mirror from a hut. The aircraft sighted the flash from this mirror and dived down to investigate. Number Two gave a one-and-a-half-second burst when within range. The natives dived into the sea under the huts and stayed there until the aircraft left. On his third run, Number One dropped a message that he would send a Catalina. The rounds fired had gone all round us but no one was injured. I persuaded the natives to come back and told them that the burst had been accidental. They were very puzzled and hard to convince. Previous experience had embittered them and the incident did much to destroy their very real desire to co-operate."

This is clottish action on the part of Number 2, especially when his leader was investigating. To retain the friendship of the natives, refrain from strafing or bombing villages unnecessarily. In this case, had any of the natives been killed they might easily have taken revenge on the pilot who was in their hands.



THREE AND THREE-QUARTER YEARS AGO

Carrying on with our plan of publishing each month a selected article from our corresponding issue of three and three-quarter years ago, we print this month the following piece from our issue of September, 1941.

WHAT DID YOU SAY?

THE invasion was at its height. For miles around the countryside heaved with troops, tanks, lorries, parachutists, Huns, guns and generals. At one place where the chances of the defence were looking pretty grim an excited Company Commander snatched up the 'phone to his H.Q. and yelled " Send reinforcements. I'm going to advance." An expression of horror crept over the face of the H.Q. telephonist as he wrote the message down and handed the paper to an anxious Adjutant. On it was written " Send three and fourpence. I'm going to a dance."

At a nearby R.A.F. Station a tired controller picked up his microphone, switched on his transmitter and ordered a squadron to patrol Oxford. The formation leader acknowledged, and ten minutes later the squadron was carefully patrolling Watford.

Well, there you are ! Most of us have had experience of this sort of thing when using the ordinary 'phone or the radio telephone. Your listener does not get all that you say ; but while at times he may get enough to understand what you are driving at, at other times he may not. It depends upon the apparatus you are using ; it also depends upon YOU. But of one thing you can be quite certain : the sounds your listener *hears* are quite different from the sounds *you* make. The fact is that human speech-sounds are quite unusually complicated things and there are not many telephones or radio systems that deal kindly with them. (Those of radio crooners particularly, says P.O. Prune.)

So, remember that speaking into a telephone is a thing to be done with care, especially when you are doing so in the course of your duty. Speech is merely a form of signals: and good signallers in speech are just as important to the Service as good signallers in Morse. See that you become a good speech signaller !

The first rule, and the golden rule, is " *Never begin to send a message until you have made up your mind exactly what it is going to be.*" Nothing causes more confusion, more misunderstanding, more

annoyance, or more waste of time and temper than messages hesitatingly delivered. Don't keep on saying, " Wait a moment ! " Don't hum and ha ! Don't keep on clearing your throat—till the fellow at the other end thinks you must be speaking in code. Make up your mind what to say, and blooming-well *say* it. Then you won't find yourself at a loss for some vital fact in the middle of your message.

The second rule is " *Don't speak either too fast or too slowly.*" Sounds simple, doesn't it ? But what happens when there's a flap and you've got a lot of messages to pass in a terribly short time ? You'll probably start to gabble, and that's about as useful as talking Polish ! Less, in fact, for in these days the fellow at the other end might easily *be* a Pole ! And the opposite fault is just as bad. You all know that irritating chap who talks so slowly and so carefully that half the time you're not listening properly from mentally urging him on ; and when he does get to the end you've forgotten what he said at the start. Speech signalling *is* a quick method of passing information from place to place : No need to try to make it quicker ; no sense in slowing it down. And don't mix your drinks, as it were, by starting slowly and then going off into a gabble. Keep the speed of your speech as even as possible.

The third rule is " *Use a reasonably loud voice, and try to keep its volume constant.*" Whispering and shouting are both bad faults in a speech signaller. The first doesn't give the microphone enough work ; and the second gives it too much. The result in either case is disastrous. And just as with fast and slow speaking, don't vary by talking loudly at one moment and softly the next. We all do this in ordinary conversation—you have only to think of the way the voice drops at the ends of phrases and sentences—but in speech signalling it merely results in dozens of " What's ? "

It isn't easy to alter speech habits, but if your duty demands your speaking down into a mouthpiece it's equally your duty to see that your signalling is as efficient as it can be. So try to listen to yourself next time you pass a message ; remember the rules ; and don't forget that the success of operations and the lives of people may depend on the intelligibility of YOUR signal.

P.O. Prune says that guy's been in the Air Force so long that he remembers Air Ministry, Bush House, when it was only a packet of seeds.

KNOTS PER HOUR

OYEZ ! Oyez ! Oyez ! We have been asked to announce in these columns that a significant change is pending in the A.S.I. world—in fact, has already pended, as far as Bomber Command is concerned.

The change is this : In future throughout the service all references to speeds and distances will be in knots and nautical miles instead of miles per hour and statute miles.

Oyeah ! Oyeah ! Oyeah ! says Prune, but it's quite true ; and as a matter of fact it isn't half such a sweeping change as at first sight it appears. Coastal Command have for many years used knots and nautical miles, and other Commands have used whatever calibration the A.S.I.'s of individual aircraft happened to be fitted with. And only a month ago Bomber Command switched over *en bloc* and adapted web-footed measurements of speed and distance. They had, of course, previously built up sufficient stocks of A.S.I.'s calibrated in knots to re-equip all their aircraft.

Transport Command is next on the list and presumably Training Command will follow. For the present, however, Fighter Command and T.A.F. will not be affected, owing to the difficulties involved in changing the very intricate ground organisation which their particular operations demand.

There is, of course, no particularly secret or subtle reason for the change ; it's simply due to the very sensible desire to use the unit of measurement simplest for the navigator and to standardise navigational terms throughout the Service. And we've merely been asked to give it a little more publicity than that provided by A.M.O's.

Yes, we know there is no such term as knots per hour. We simply gave that title to the article to induce you to read it—and also to see how many people hastily took pen and paper to point out our error, before reading as far as this.

STOP PRESS

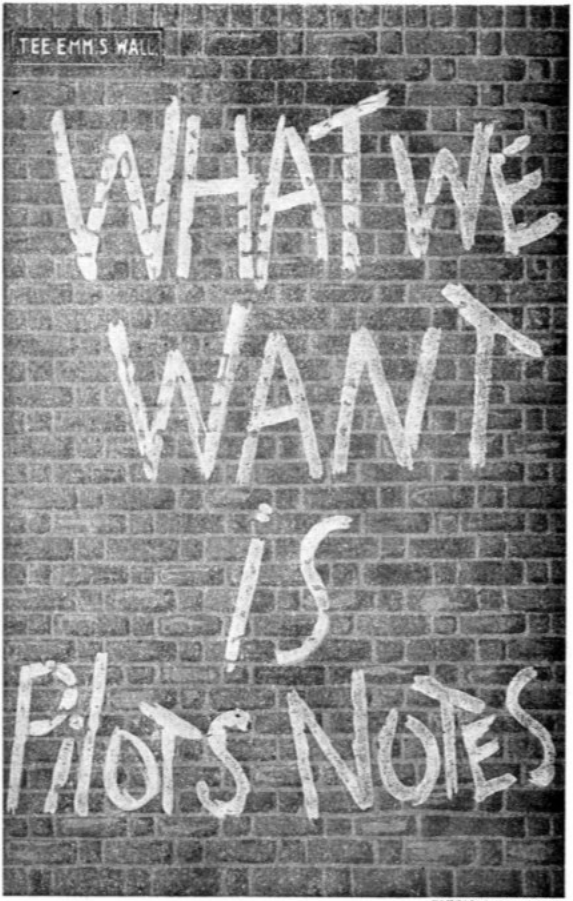
LATEST WAR RESULTS

2.21 a.m. Allies beat Germany

His pilot couldn't be bothered to strap himself in.

TEE EMM is an O.U.O. publication, which means it is for Official Use Only. And this means that those not entitled to see it are *not* to see it. It is primarily a Training Memorandum for air crews, instructors and all those in the Air Force connected with these jobs. It is, in short, a Service Training Memorandum written *for* the Service and issued *by* the Service in the person of the Air Member for Training.

(2026). 1423. Wt.8232/N.974. 32,000. 6/45. W.P.Ltd. Gp. 454.


TEE EMM'S WALL
WHAT WE
WANT
IS
PILOTS NOTES