

# TEE EMM



Vol. 5. No. 7

October 1945

*for official use only*

## CONTENTS

	PAGE
ADMIN. AND THE FUTURE . . . . .	153
IT MAKES YOU THINK !!! . . . . .	156
THIS MONTH'S PRUNERY . . . . .	157
YOU'RE ELECTED! . . . . .	158
THE SEVEN DEADLY SINS OF NAVIGATORS: No. 3 . . . . .	159
RIDING THE RANGE . . . . .	160
ARE YOU GETTING YOUR TEE EMM'S? . . . . .	162
HOW'S YOUR I.F.? . . . . .	163
MUMMY, ARE THEY OURS? . . . . .	164
DITCHING WITHOUT HEDGING, 1945 . . . . .	166
THIS MONTH'S GOOD SHOW . . . . .	168
TRAILING CLOUDS OF GLORY . . . . .	169
A HAPPY RETURN . . . . .	170
GOOD OPENING FOR KEEN TYPES . . . . .	173
THREE AND THREE-QUARTER YEARS AGO—A PAIN IN THE EAR . . . . .	174
INDIAN NOTES—3 . . . . .	176



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



*"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"*

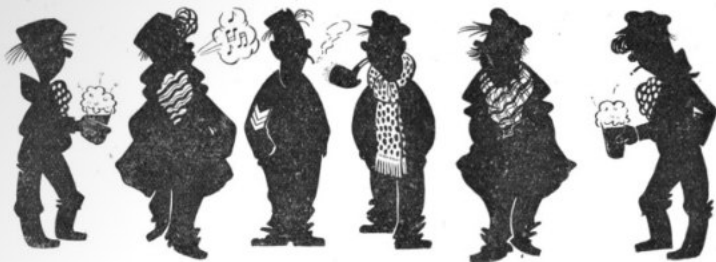
*Marshal of the Royal Air Force,  
Chief of the Air Staff*

## ADMIN. AND THE FUTURE

### IV. DRESS AND BEARING

**D**URING the war there was, inevitably, a certain slackening in the standards of dress and bearing in the Royal Air Force, due to the stress of operations. Pilots returning from fighter sweeps and still at an advanced state of readiness had no time to change flying boots before going in to feed. Bomber crews had to be booted and spurred as they snatched a hasty meal before setting off on night operations. Airmen found little time to keep themselves smart and tidy when working at top pressure servicing aircraft on advanced landing grounds. Slowly but inexorably all this led to a universal lowering in the general standard; and undoubtedly the Service became careless and apathetic about its appearance.

There is now absolutely no excuse for a slovenly appearance, which in the past was considered the hall-mark of a good "operational type." No longer is it thought "tough" to be seen in the local immersed in Irvin jacket and flying boots, the necessary properties for Sergeant Flash-Alf's line-shoots about his daring to the local populace. Instead the Service must strain every nerve to regain its reputa-



tion for the smartness for which it was some years ago justly renowned. It must strive to get back to the standard of earlier days, say, those of 1935, the year of the Jubilee, when men of the Royal Air Force, trained at Uxbridge under the finest drill instructors in the Service, formed part of the Royal Guard of Honour, and were acclaimed one of the smartest units on parade. For the glories and glamour of "being air crew" and in the forefront of the battle must now be a thing of the past, and the reputation of the R.A.F. in the minds of the public will be based in future largely on our appearance.

And that appearance means something too. It shows you have pride in your service; and this commands respect from those who are not in it themselves. Have you ever seen a policeman walking along with one hand in his pocket, his top button undone, his greatcoat open with collar half-turned up behind his ears, his helmet battered, greasy and askew, his neck adorned by a rather filthy spotted scarf? You certainly have not. And if you had, what would you think of the police force? Your respect for it would vanish.

But have you ever seen an R.A.F. man—airman, sergeant or even more often, we regret to say, an officer—going round London in that fashion? You certainly have. Unfortunately, however, you don't think about him in the same way as if he were a policeman. He does not forfeit your respect. *But* why shouldn't you think about him like that? And how do you know the public don't?

What is the difference between the R.A.F. type and the constable whom you always expect to see so smartly dressed and walking with his shoulders back and head erect? Can you frankly say to yourself that there *is* no difference, and that you yourself, as a R.A.F. officer or sergeant, are always well turned out? If so, you are not the subject of this article—you are one of the "few." But if you have to hesitate at all in your answer, then you are one of the "many."

Unfortunately those "many" are letting the R.A.F. down badly. Though there is perhaps some excuse for the airman who is new to the Service, and is still learning, there is certainly no excuse for officers and potential officers. How can you

expect an airman to be anything but slovenly, if he is never set a good example by his superiors ?

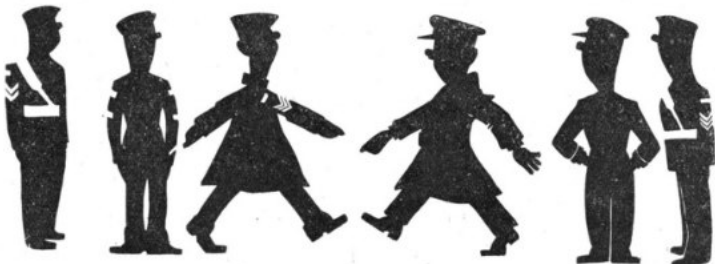
For, make no mistake, subordinates, whether airmen or junior officers, definitely do follow the example set by those above them. There is, in proof of this, the true story of the fighter pilot up for investiture who, being asked to fasten his top button, replied : " Why should I ? My C.O. always has it undone."

How many times, too, have not air crew, on first posting to an operational Station, seen fighter aces or favourite bomber pilots in filthy uniform, or wearing silk spotted scarves instead of ties, or slouching about the Station obviously not giving a damn for anyone or how they look? And how often, as a result, have not these new air crew as soon as maybe gone in themselves for scarves, slovenliness and devil-may-care slouches ?

It must be remembered that the very word uniform means " all the same," not a mere general foundation on which to build your sartorial vagaries and whims. Uniform also is the King's uniform, worn as a badge of your service and loyalty to the Crown ; and so to be treated with respect, not as " slouching kit." Uniform, too, upholds and strengthens morale by increasing self-respect. The morale in many P.O.W. camps was kept at a high standard merely because the C.O. of the camp insisted on the dress regulations being observed.

Now, with the war over and won, is the time to get down to it and see that we are worthy of the Force in which we serve. We must change that " few " into the " many," and the " many " into the " few " or none. It is up to every officer and N.C.O. to have sufficient pride in himself to dress and carry himself smartly at all times. It is up to him, too, to remember that he is probably being imitated by somebody somewhere, possibly by quite a lot of people. He must set the sort of example which will do most good to the Service. If a man's subordinates see him always smartly and correctly dressed then they will follow his example.

Only by so doing can you encourage those beneath you to do likewise and thus show that they too are well disciplined and proud of the uniform they wear.



## IT MAKES YOU THINK !!!

**H**ARK to the story of Christopher Spink,  
A young Sergeant Pilot (from Sydney, we think),  
Who never from danger nor hazard did shrink,  
But suffered from one most unfortunate kink—  
He just wouldn't practise I.F. in the Link.

One day, while returning to base o'er the drink,  
The weather clamped down with a sky black as ink  
And twenty-tenths cloud showing never a chink.  
What happened that day caused a terrible stink ;  
For Christopher's flying just went on the blink,  
And the capers he cut would make anyone think  
That he'd rammed in his finger right up to the brink.

To cut short our story and save H.M.'s ink,  
Our unhappy Chris finished up in the drink.  
The kite was a write-off, and as you might think,  
The poor duty pilot, in fear that he'd sink,  
Until he was rescued, slept never a wink.

At the Court of Enquiry the Acting Chief Gink  
Examined C.'s Log Book for times in the Link.  
When he found sweet F.A. he raised such a stink  
That C. was court-martialled and landed in clink  
With practically nothing to do there but think.

But he thought to some purpose, and ironed out his kink,  
And now Flying Officer Christopher Spink,  
(D.F.C. and two bars), a most popular gink,  
Makes a habit of standing sprog pilots a drink.  
And to aid their refreshment he tips them the wink  
That the way to keep out of the drink and the clink  
Is by taking small regular doses of Link.



W.HOOOPER

## THIS MONTH'S PRUNERY



**T**HE MOST HIGHLY DEROGATORY ORDER OF THE IRREMOVABLE FINGER (Patron: Pilot Officer Prune) has this month been awarded to S/Lt. (A) — and Acting Leading Airman — for Prolonged Finger Insertion in More Ways Than One.

Their aircraft had to make a forced landing in the sea, and much to S/Lt —'s satisfaction, as Squadron Safety Equipment Officer, the "M"-type dinghy functioned correctly. Subsequently, however, it developed a small leak and since the only leak-stopper available was too big for the hole, the three occupants of the dinghy took it in turn to use their fingers till picked up two hours later.

It was later pointed out to them that a leak-stopper of the proper size was stowed inside the larger one they had rejected.

The M.H.D.O.I.F. has also been awarded to A. C. I. — for Literally Gumming Up the Works.

This Air Mechanic, when refilling the coolant system of a Kittyhawk with Glycol, did so from a tin marked "Shellac Varnish," and seemed surprised to discover that it actually contained Shellac Varnish.

The M.H.D.O.I.F. has also been awarded to Wing Commander — for Wanting to Get it Quite Clear.

While acting as Duty Wing Commander he asked the Ops. room about certain aircraft and was told they were not available as they were on a Daily Inspection. To this he replied: "O.K. And how often do these have to be done?"

The M.H.D.O.I.F. has also been awarded to S/Ldr. — (Tech. E.) for Knowing the Wrong Way to Put Things Right.

As Daily Servicing officer, he expressed considerable annoyance with a pilot who returned to base because one of his engines was giving an oil temperature in excess of the safety limit. He explained that the pilot should have flown into wind to cool it down.

The M.H.D.O.I.F. has also been awarded to Pilot Officer — for Not Having a Clue.

This pilot landed at airfield "X" and told the Flying Control Officer he needed refuelling. When questioned by the Duty Engineer Officer he was unable to say whether his Spitfire was a XIV or a XVI; whether his fuel was grade 100, 130 or 150; or what his maximum permissible boost was. All he knew was that he had been told to land at "X" airfield if short of fuel, but even this unexpected gleam of intelligence was dimmed by his almost immediately asking if "X" airfield was anywhere near.

## YOU'RE ELECTED!



St. Peter stood at the Golden Gates welcoming new arrivals.

The queue moved slowly onward, and soon a young R.A.F. pilot came to the head, a look of fatuous amazement still on his face.

"Another one!" grumbled Peter to Azrael, standing just behind him. "That's the tenth to-day already—and just think of the number we had yesterday."

Azrael agreed. (It was his job to agree anyway.) "You'd think that, now their war's over, there'd be a falling off in our intake here."

Peter shrugged his wings. "Name? Number? Rank?" he snapped to the newcomer. "And why are you here?"

"I honestly don't know, sir. I was flying along quite happily above cloud and when I reckoned I must be somewhere near my destination I came down

to find out where I was. . . ."

"I know, I know, And you found out you were *here*."

"They *will* do it," murmured Azrael to a passing cherub.

"I don't know how it happened, sir. I *had* a vague idea there might be some high ground where I was. . . ."

"And *where* were you, young man?"

"Well, I don't know quite. I mean, I was coming down to find out."

Peter passed a hand wearily across his forehead. "Yes, I think you can apply to join the C.B. Club here. . . . Azrael, give him the application form. . . . Write 'yes' or 'no' only to the questions."

The young pilot stepped aside to an onyx writing table and started to fill in the form Azrael gave him.

It read as under:

*Application for Membership of the  
C.B. Club*

1. Did you arrive here by flying into high ground?
2. Did you fly into said high ground while in cloud?
3. Were you coming down through said cloud to find out where you were?
4. Were you completely ignorant of your position at the time you came down?

5. Did you refrain from using Radar or any other aids to ascertain just where you were ?
6. Did you know there was high ground somewhere on or near your route into which you might crash if you descended below safety height ?
7. Were you flying below this safety height at the time you crashed ?

The young pilot completed the form and handed it in.

"You're elected!" said Peter briefly, waving him towards some majestic portals close by. "In you go. You'll find the Club has a large membership."

And so the pilot, who had answered "yes" to all seven questions, became yet another member of the CLOUD BORERS' CLUB.

---

## THE SEVEN DEADLY SINS OF NAVIGATORS.

### No. 3.



**Not knowing the Safety Height.**

## RIDING THE RANGE

(An article on the subject of "Range Flying" has been asked for by one or two correspondents and so we have dug up the following)



W. HOOPER



AMERICA is a very large country, larger than Europe with its two dozen odd different nations. Three thousand miles separate the eastern and western coasts, yet its people all speak the same language and all have the same government. Because of this, civilian air transport had greater scope for early and rapid development in the U.S.A. than in any other country and more or less had its origin there. Air transport companies sprang up over-night, and since they operated in all directions and with no co-ordinated control they soon created a major problem.

At this point the U.S. Government stepped in. They realised that some system would have to be devised to enable aircraft to fly to a time-table, to fly from place to place without getting lost, and to fly without risk of colliding with one another. As a result a network of "airways" was developed, along which aircraft had to travel and which were signposted by radio beams from the airports served. This system was called "Radio Range"—from the old custom of flying across country by lining up two landmarks and then going from one to the other, known as "steering the range."

In the last twenty years the network of radio range stations has spread from the U.S.A. to all parts of the world, and we're aiming here to tell you something about it and just how it works.

First, a brief description of range setting. When you have a single vertical aerial it radiates in all directions. If two aerials, however, are joined top and bottom they will radiate a signal in the form of a figure eight. The radio range utilises this property of the loop transmitter aerial and actually uses two loops crossed at right angles. The area of radiation of an aerial can be depicted by what is known as a polar diagram. Figs. 1, 2 and 3 show the polar diagram of a single vertical aerial, a simple loop aerial, and two loop aerials crossed at right angles. If, say, two of the loop aerials transmit the Brains Trust and the other two hot music the polar diagrams show that there are two areas where the Brains Trust



Fig. 1.

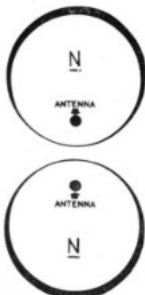


Fig. 2.

fans can argue the toss, and two where hot music fans can jive, and four rather smaller areas where those of more catholic taste can enjoy both together, and probably hear Professor Joad stating that "it depends what you mean by 'hot' music!" and Commander Campbell saying: "Hot! Why, when I was on the

West Coast of Africa. . . ."

In practice one loop transmits Morse "A's" (dot-dash) and the other "N's" (dash-dot), with the result that in the four areas where both signals are heard together, the result is a monotone note. Outside these you have a "bi-signal" zone where you hear one of the signals

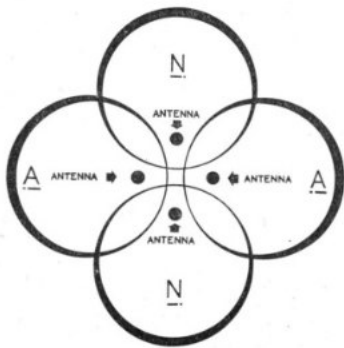


Fig. 3.

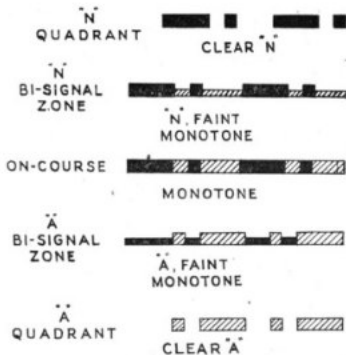


Fig. 4.

more faintly. Further out you hear only one—which corresponds to the "twilight zone" of S.B.A. flying. (Fig. 4 shows diagrammatically how these signals are heard.) As in Beam Approach, too, there is, you will see in Fig. 3, a "cone of silence" when no signal comes through.

As increased use was made of ranges, certain refinements were added. One such was an identification signal, of letters keyed alternately on either loop, to prevent pilots using the wrong range. Another was the incorporation of voice transmission on the same frequency, so that the pilot could be told at what height to fly, where he was to report, what the weather conditions were, and what had won the 2.30.

Since, too, the airways frequently crossed each other or had other danger points, such as mountain ranges, "fan markers" were installed—high-frequency low-powered transmitters

radiating upwards with a characteristic warning signal, and even, on modern installations, causing a light to glow on the instrument panel.

The great advantage of an airways system using the radio range is that a pilot with no more than a simple radio receiver can leave A, fly to B, and know when he is at B. He merely looks up the ranges that lie on his route in the radio facilities book, then takes a note of their frequencies, call signs and the magnetic bearings of the legs. Armed with this list he needs no more information for his cross-country flight.

He takes off from his base, flying, as per the rule of the air, on the right-hand edge of the beam going his way. When about halfway between stations he changes frequency to that of the next and follows the edge in the same way. When over the cone of silence he reports to the station below him, giving his height and his E.T.A. at the next station. In reply he receives a regular weather report, information of any other traffic, or anything else he wants to know. He repeats the dose from one station to another till he reaches his destination. Even Prune who never knows where he is or how he has got there can't go wrong, because he is told.

There are three types of radio range station: (1) the simple-crossed loop; (2) the mobile crossed loop; and (3) the Adcock or tower type. These are used according to the requirements of the moment. A semi-permanent route over simple country where absolute accuracy is not essential calls for the simple crossed-loop type. This is easy to instal, needs relatively light maintenance, and, although it suffers from the defects of the frame aerial operating on medium frequency bands, there is no danger, so long as pilots are warned of defects. A route that has to be opened up rapidly, though probably not for any length of time, calls for the mobile cross-loop type. This is simply a truck with a telescopic mast on top of which the cross-loop is put. The truck carries its own generator and the equipment is simply operated and maintained by a two-man crew. A permanent route, such as the trunk routes across the Pacific, calls for the Adcock type, which has all modern conveniences, is absolutely accurate, and is maintained in a high state of efficiency by a permanent staff living on the site.

Summing up, the radio range is one way of meeting the needs of Transport Command, which operates routes to the most inaccessible parts of the globe.

---

### ARE YOU GETTING YOUR TEE EMM'S ?

**M**ANY 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.

## HOW'S YOUR I.F.?



W.HOOPEE.

**N**OW is the time for all good men to brush up on their Instrument Flying—if it needs it. (Prune assures us *his* doesn't.) For in the near future, if a recently proposed scheme comes into force, you will no longer be able to shoot a line about your incomparable skill in blind flying, when, in point of fact, you're fairly clueless about the whole thing. From now on, if your I.F. is *really* wizard, everyone will know it: and if it's extremely ropey, they'll know it too. How? Because the scheme to which we are referring—and which we're asked to break gently to you—is one for grading your ability to fly safely on instruments.

Of course you must not take this as gospel, because the scheme is still under consideration and the details may be altered, but, broadly speaking, pilots will be divided by it into three grades, as under:—

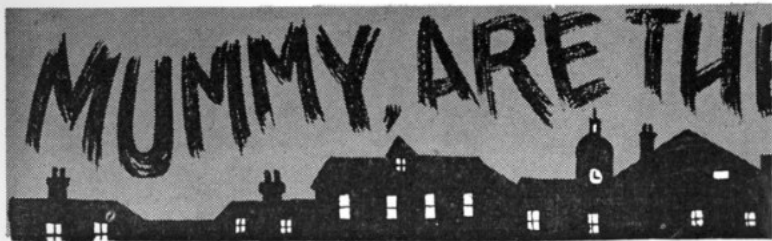
- (i) Those of approved ability, capable of flying blind in any weather condition ;
- (ii) Those who are fully trained but have not yet had sufficient experience :  
on these chaps certain limitations as to when they may fly, *i.e.*, under what weather conditions, will be imposed ; and
- (iii) Those *not* qualified to fly under Instrument Flying Rules.

Standard tests would of course be instituted in order to divide the sheep from the lambs and the lambs from the goats. A pilot who passes the tests will then probably be given a "B," or "limited instrument" grade, or something of the sort ; and when he's flown under these conditions for a certain number of hours he'll go into the "unlimited instrument" or "A" grade. Also, no doubt there will be regular check-up tests to see that he is keeping up to standard.

But the actual details of the scheme will be announced later. The point is that it will be an added safeguard against accident and, we hope, will also be an added incentive to pilots to become as proficient as possible in instrument flying and so even more efficient as pilots. And our part is just to warn you in advance that an A.M.O. on the subject is now in preparation.



RAFF

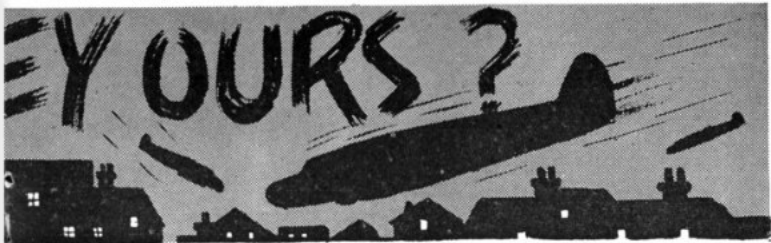


WE were writing about “sky-hogs” two issues ago. In the article we pointed out, with our usual charm and succinctness, that the general public—*vide* innumerable letters to the Press—were getting more than somewhat fed-up with persistent low-flying over their homes. Mr. Civilian, we stated, has had six years of strain, during most of which time he has been in constant dread of death from the air. He now doesn’t want to see or hear an aircraft again and when he does get beaten up by some nitwit of a show-off he blames the whole Air Force and slowly loses his regard and respect for us all.

Something must be done to stop this form of nuisance and we can only hope that our article, backed up as it was by an Air Council letter—or *vice versa* if you insist, the Air Council letter, backed up by our article—has had some effect, and that the complaints will dwindle and cease.

There is, however, another form of nuisance which is also—judging by complaints received—causing the public to take a dim view of their Air Force; and that is night-flying.

As we said, Mr. Civilian at the moment doesn’t want to hear an aeroplane again ever, and *particularly at night*, when he used to get most bombing and felt worst. He is, however, a fairly sensible man on the whole and realises that night-flying for training purposes could not possibly stop dead on VJ-day; at the same time, judging again by the complaints, he feels there’s a little too much of it going on, and is it *all* necessary? Does he really *have* to be woken up out of a sound sleep—and it’s astonishing how easy it is after six years’ conditioning to wake at even the most distant sound of aircraft—by a zooming and droning in the sky? He hates it. He hates to have his wife say rather petulantly, “Quite like old times, isn’t it?” He hates to have his children ask fearfully: “Mummy, are they ours?”



Now it is almost certain that many of the instances complained of are due to prowlers—poor types deliberately flying in areas which are forbidden, but in which they have a personal interest. Other instances are no doubt caused by certain towns being used as turning points on night exercises, or even as “stooging grounds.” Wind conditions, too, no doubt play a part in giving particular built-up areas or towns more than their fair share of noise.

Well, this is a matter in which Station Commanders in particular—and we hope they are reading this—can help. They should realise first that huge numbers of complaints are flowing into the Air Ministry, that a certain proportion of them are certainly justified, and that for the sake of the prestige of the Air Force they must take what steps they can to reduce the flow. They should then do everything in their power to see that no *unnecessary* night-flying is allowed on their Station; that all necessary night-flying must be planned so as to cause as little nuisance as may be in inhabited areas; that, where possible, “stooging grounds” should not be sited over such areas; that big towns are not chosen as turning points in exercises simply because it’s the easiest thing to do; and that routes to and from airfields must if humanly possible be adjusted so as to cause the minimum amount of disturbance and worry to the sleeping and still war-weary general public.

We should all of us remember that Mr. Civilian is, after all, the taxpayer, and thus he is the man on whom an adequate Air Force really depends for its existence. And we should also remember that, even more important, it is an adequate Air Force on which the nation really depends for *its* existence. It is vital, therefore, that Mr. Civilian should be persuaded to respect the Air Force and not complain of it.

## DITCHING WITHOUT HEDGING, 1945

FULL honours should be accorded to the Allied Air Force crew\* of a Baltimore, who recently provided an excellent example of unshakable non-recognition of five years of progress in Air Rescue facilities.

Two outstanding features of the accident which occurred to this aircraft were the complete disinterest with which the crew applied themselves to the task in hand, and their conspicuous devotion to their own convictions concerning "what to do in an emergency."

The aircraft captain's evasive action



*Brilliant evasive action.*

started quite early in the proceedings when by a brilliant manoeuvre he succeeded in absenting himself from the initial briefing for the exercise which was to be carried out. The remainder of his crew, receiving information at the briefing that bad weather was to be expected en route—in which case they were to return immediately—are to be complimented on successfully keeping this secret from the absent captain, no doubt in the best

\* All we can tell you is that it was not a R.A.F. or U.S.A.A.F. crew.

interests of refraining from creating alarm and despondency in his midst.

The air gunner decided to report sick shortly before the take-off, reducing the crew to three. With mild surprise the captain learnt, after becoming airborne, that the number had been made up by the inclusion of a corporal fitter, who had been working on the machine, and who was now airborne without a parachute or Mae West. In spite of this, the captain pressed on regardless.

The wireless operator was also without a Mae West, having previously (with the captain's sanction) declined to accept an issue, presumably on the principle of the Negro soldier who preferred being in an infantry regiment to the cavalry, as "on the sounding of the 'retreat,' he didn't want to be hampered by a horse."

On running into the anticipated bad weather, the captain dealt with the situation by taking up a new position in an area of clear weather, and incidentally nearer to an island where relatives of two of the crew, whom they had not seen for some time, resided. This change of route was affected without the formality



*Relatives of the crew.*



*With a minimum of difficulty.*

of notifying base of their new position.

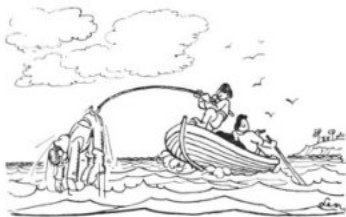
One engine "just stopped" whilst over the sea and the aircraft commenced to lose height. In spite of the fact that with the dead engine unfeathered, he had to use 40 inches boost and 2,500 revs., against the normal requirement for Baltimore single-engined flying, of 27 inches boost and 2,100 revs., the captain remained true to his predetermined theories and did not feather, stating in his subsequent report that he considered he would still lose height and *would have to unfeather on ditching*. Determined to ditch at any cost, this was carried out close to the shore of the island. The corporal fitter and the wireless operator, being without Mae Wests, were not seen again.

The captain of the aircraft, ignoring the vital precaution of strapping himself securely in his seat, was rewarded by the customary blow on the head from the windscreen, which could have been worse. The idea of opening the pilot's escape hatch occurred to him for the first time when the aircraft was a fathom or so below the surface of the water. He thereupon shot up to the surface with a minimum of difficulty.

Here he found the navigator un-

successfully attempting to unscrew the valve of the mouthpiece of his Mae West, which presumably had not been examined for months, finally abandoning the attempt.

The captain then established himself as a pioneer by the markedly original act of *removing and throwing away* his Mae West on the grounds that "he was too tired to blow it up," at the same time facing with commendable equanimity in view of his "tired" condition, the prospect of swimming the odd few hundred yards to the shore without it. It is interesting to note that, as far as can be deduced from his report, his position in relation to the shore, when he was picked up by a rowing boat fifteen minutes later, was approximately the same as when he started.



*Picked up by a rowing boat.*

It is felt that to point a moral to the narrative of this ditching (the events of which would have been discreditable even in the unenlightened days of 1939) would be superfluous, but for the benefit of those who may desire to emulate this example it should be mentioned that the subsequent Court of Inquiry recommended court martial action against the individuals concerned.

## THIS MONTH'S GOOD SHOW



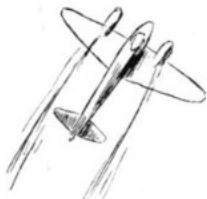
TEE EMM's "GOOD SHOW MEDAL" is this month awarded to Flight Lieutenant — for Saving a Valuable Aircraft.

This pilot was on a photographic reconnaissance sortie in Burma and was doing a run over the target at 16,000 feet. He was flying at +2 boost, 2,200 r.p.m. when the revs. on the starboard engine suddenly increased to 2,300 r.p.m. He corrected this back to 2,200 r.p.m. by moving the pitch control lever, only to find the revs. increased again, this time up to 2,500 r.p.m. Eventually the revs. increased to 3,400 r.p.m. although the control was fully back. The oil pressure fell rapidly from 70 lbs. per square inch to zero and both oil and coolant temperatures started to build up. The pilot tried moving the pitch control to fully fine position only to discover that the revs. on the starboard engine increased to 5,000 r.p.m. and produced an extremely high-pitched noise from the engine. On returning the pitch lever to fully coarse the revs. came down to 4,000 r.p.m. To add to the pilot's troubles the navigator reported that the starboard engine was on fire and that he could see parts of the cowlings were glowing red. The pilot therefore operated the fire extinguisher with the result that a few moments later the glow faded. He was unable to feather the propeller. At about 165 m.p.h. I.A.S. the engine note became more settled and the vibration lessened.

Once more, however, the navigator reported trouble. Following a loud thud from the engine he said that parts were flying off it. All the instruments on the starboard engine were at the same time registering zero and it was still impossible to feather the propeller. The port engine, however, had been opened up and was working well; but the pilot still had to work hard for he found full rudder trim was not sufficient to hold the aircraft steady and he had to apply continual heavy pressure on the left rudder.

By this time the aircraft was down to 600 feet, but they were able eventually to jettison the drop tanks. This increased the air-speed a little, but the pilot still had to put in heavy leg work to keep the aircraft steady. The port engine, in the pilot's own words, "was absolutely grand and took the power with no undue strain. When temperatures did tend to build I would gain a little extra speed by decreasing height, and this usually proved effective. As the petrol was used and the aircraft became less heavy, things improved, to the comfort of my legs, and I eventually decreased power." On reaching the nearest airfield the pilot once more increased power and climbed up to 2,000 feet, preparatory to landing. He finished this excellent performance by making a really good landing, thus bringing his damaged aircraft back 700 miles to safety.

## TRAILING CLOUDS OF GLORY



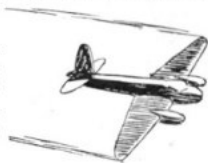
We have been so constantly asked by readers exactly what is the difference between exhaust and wing-tip trails and how they are actually caused that we feel we ought to do something about it. So we've dug out the real gen from a big aircraft manufacturing firm, and hope it will set our enquirers' minds at rest.

*Exhaust Trails.* Exhaust gases all contain a large amount of invisible water vapour, due to the combustion of the hydrogen in the fuel. (Indeed a modern aircraft at cruising speed may put out as much as 400 lb. per hour.)

Now the amount of invisible water vapour that a cubic foot of space will hold depends on the temperature and is limited. When, therefore, there is more invisible water in any cubic foot of space than it can accommodate at the temperature, the excess condenses into cloud and becomes visible as trails which may prevail for a long time.

*Wing-tip Trails.* The pressure of air is high near the middle of the underneath surface of the wing and low at the tip. On the upper surface it is just the opposite. Air passing over and under the wing tends to seek a low pressure region, *i.e.*, away from the wing-tip on the top and out towards the wing-tip on the underneath. These movements form a vortex at the wing-tip itself. The air in the centre of the vortex becomes rarified, expands and so drops in temperature. If the air is at all humid this means that some of the water in it condenses and becomes visible as trails. These, however, disappear more quickly.

Summing up, both kinds of trails are merely condensed water vapour; one made by the exhaust adding excess of water vapour to that already in the air, the other made by the wing-tip vortex locally lowering the temperature and causing the water already in the air to become in excess of what it can hold invisibly.




---

## DOOMIE SAYS



Don't forget to make certain of your position before coming down through cloud.

## A HAPPY RETURN

HERE'S a story of a pilot who, having had to bale out over the jungle, kept his head from the word "go," and so after six days brought himself safely back into circulation again.

We know that the story is a trifle out of date, in that the war is over and conditions have changed. On the other hand, they have not changed as much as all that. Much flying over jungle territory has still to be done, certainly for the next few months. As a result, people may still have to bale out unexpectedly; and above all, many natives are still, and always will be, hostile.

There is, therefore, a lot to learn from the story should you bale out too, and we have asked the experts to stand on the touchline and comment at suitable intervals upon points of interest.

(For the sake of brevity we have slightly altered the pilot's own words here and there.)

I knew my position on landing and also knew from my briefing where our own troops were. I destroyed the secret equipment on my aircraft and immediately made for cover in the thick elephant grass. I saw no one about. When I reached cover I decided to stay there for a bit; so I took stock of my kit and tested my revolver. I also went through my  $\frac{1}{4}$ -inch maps and made sure of my position and the best way of reaching our troops. *(The pilot had paid careful attention to his briefing and so knew exactly where to make for. Observe, too, that although he noticed no one about he nevertheless promptly made for cover, just*

*in case. He then took stock of his position and formulated a plan.)*

At about 1300 hours I decided to move off to the north, and reached a track nearby, with some derelict lorries on it. I soon arrived at a river and village, but saw a man lying beside the track, so I decided to go back and hide in one of the lorries to see what he would do. *(Note that as soon as he came across inhabitants he took cover to see how the land lay.)*

On my way back I met two more natives who proved unfriendly. We had an altercation, and as the native I saw first must have heard what was going on, I dived into the thicket at the side of the track. During this encounter the pockets containing my emergency rations and my machete were torn away and their contents lost. *(It looks rather as if the word "altercation" was a bit of an understatement! The loss of his emergency rations was just bad luck. This should not often happen, and always make sure*



*A slight altercation.*

beforehand that all components of the Jungle Kit are in the pockets. At any rate, he had his  $\frac{3}{4}$ -inch maps and compass and made full use of them later.)

Moving about two hundred yards into the jungle, I rested, but stayed alert, as I expected a search, although I had not made much of a trail. I set off again at 1500 hours. I did not worry much about the loss of my rations as I was confident of being able to contact our troops fairly soon. Reaching the river again, I bathed my head and filled my chargal, which served excellently throughout. I sterilised the water. (Rightly he sterilised all water and so was able to drink it safely.)

I kept on through the jungle and at 1730 hours reached another river. It was too swift to swim (I am an average swimmer), so I decided to stay the night there. I tried fishing with grubs, but had no luck. I made myself as comfortable as possible on a bed of leaves, but only dozed. The mosquitoes were very bad, and my kit did not include the mosquito net headgear when issued. I wore my helmet, however, and covered my face and neck with a handkerchief and leaves. I also wore my silk flying gloves, but they left part of my wrists unprotected. (It is essential to have some kind of head covering, and, in the absence of a mosquito net, he had kept his helmet as the next best thing. The gloves provided in the kit cover the wrists and are essential for protection not only against thorns, etc., but against mosquitoes.)

On the second day at about 0600 hours I started off to the south-east to reach a river which I wished to cross; it was about twenty yards across, and I swam it successfully. The jungle to the



Fishing with grubs.

north was too thick, so I made for the hills to the north-east. I continued along a ridge and eventually reached the top of a hill, where I checked my position. (Remember the going is often much easier on high ground, even if it's not the most direct route.)

From the hill I saw a river which I made for, but could not cross it owing to the swift current; so I rested, filled my chargal again and had a drink. I was not hungry. I then tried to move north once more, but the country was too difficult, and I climbed the hills again. I was making for tracks shown on the map, but could not find them. I climbed another hill, reaching the top at about 1800 hours, and decided to spend the night there. I collected leaves, etc., but it started to rain and continued all night; so I was most uncomfortable and could not sleep. I still did not feel hungry.

On the third day I set off at the same time as before and again made for the river. An elephant heard me on my way down, but I hid behind a boulder



*It rushed past.*

and it rushed past me. (*Trouble from animals is comparatively rare. This pilot was quite right to hide from the elephant as these animals are short-sighted. One should at all events keep still.*)

Once again I found it impossible to cross the river, so after resting I tried to move parallel to the river; but even this was too difficult, so I went back to the hills, where there were trees and comparatively little undergrowth. (*The value of being a good swimmer is becoming very noticeable; this pilot's plans are constantly being impeded by not being able to cross the bigger or swifter rivers.*)

At about 1800 hours I decided to bed down for the night, but it had rained all day and I was again most uncomfortable. I saw blood on my stockings, and found four or five leeches; I used the leech stick and they came off without any difficulty. (*Other ways of removing leeches are: (a) the juice of a lime (if available); (b) salt; (c) strong solution of potassium permanganate; (d) tobacco juice; (e) a lighted cigarette end, but carefully applied so that the leech doesn't*

*leave its jaws in the wound. The leech stick also stops any bleeding.*)

Throughout my journey I made it a practice to start off at about 0600 hours, to rest at midday, and to start getting ready for the night at about 1800 hours. (*Try always to keep to a routine like this, both so as to get as much travelling time as possible and not to get caught by darkness without a suitable resting place for the night.*)

On the fourth day I again set off for the river and reached it at 1200 hours. I could not cross it and got rather lost in the swamps alongside it. The marshy land prevented me from moving either to the north or in the direction of the hills, and at 1800 hours I found myself back at the river where I had been earlier in the day; so I decided to spend the night there. It was still raining and the ground was damp, and when I awoke from a doze I found myself in an inch of water. (*If you have to sleep near a stream, by the way, do so away from a game trail; otherwise you'll be bothered continually by animals coming down to drink.*) Leeches were bad during the day. I removed seventeen from my right leg and eleven from the left, and the next morning found nine more. My legs and ankles were the only parts affected. (*Carbolic soap and probably yellow soap, smeared on the stockings, etc., will keep leeches off.*)

On the fifth day I was still feeling quite fit but somewhat tired; I had so far had no food at all, but did not feel hungry. There was plenty of water, which I always sterilised. I took salt tablets the first day when I sweated very badly, but not afterwards. I took Mepacrine every night. (*A mighty dose*

of Mepacrine, in malarial areas, is an essential safeguard.)

On the sixth day I went down the hill towards the river, reaching it at midday, when I rested for an hour. I knew my position accurately, and that there was every chance of our forward troops being close at hand. I fired my revolver three times in quick succession, but without result. The weather was fine, and as the river bank was sandy I walked along it until I came to a stream which I could not cross. I got on to the sand again and went to sleep in the sun—the first real sleep I had had. *(It is doubtful, however, whether sleeping in the sun is good tactics.)*

I awoke at 1700 hours and decided to get into the bushes and stay there the night. However, while I was preparing for the night five water buffaloes, who had been watching me, were suddenly attracted by something upstream. I looked, and eventually made out three horses with riders and three men on foot. I was certain they were British troops, so I shouted and made my way towards them. It was a patrol out to find me.



WHOPPER.

*Who had been watching me.*

*(So after six days the pilot gets safely back. He has had no food, but plenty to drink, and because he has always sterilised the water he stays quite fit. He is also much helped by the fact that he has kept regular marching hours and rested in the middle of the day. It is also very important—except in very special circumstances—to move at a moderate speed and so conserve your strength for real emergencies rather than to rush things and so exhaust your energy.)*



## GOOD OPENING FOR KEEN TYPES

**F**URTHER to our many articles on the subject of the various jobs which are now available for redundant G.D. officers, we have been asked to announce the following:—

There is an opportunity now for G.D. officers to replace R.A.F. Regiment officers who have been released in the early A. and S. groups. These replacements are urgently needed. Prospects of promotion are extremely good and a number of G.D. officers have already been accepted. Refer to A.M.O. A.552/45, if interested.

## THREE AND THREE-QUARTER YEARS AGO

Each month we publish a selected article from our corresponding issue of three and three-quarter years ago. The following piece comes from our issue of January, 1942:

## A PAIN IN THE EAR

**D**O you suffer from pain in the ears, when. . . .

(I think we'd better point out at once that this isn't Tee Emm's advertisement page, and that no "Life-long Sufferer" will be found to have been cured by regularly taking Tee-Emmeline—of all chemists 8/- a bottle, or 1/3 per sample dock glass. Now let's start again.)

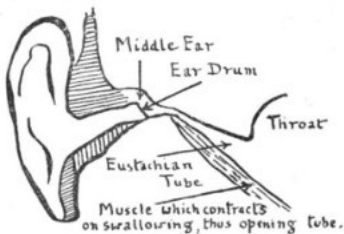
Do you suffer from pain in the ears when descending quickly while flying? Many members of air crews do. Judging by tests in the decompression chamber at Farnborough, many cannot descend even at moderate speeds without pain. And of these very many indeed have assumed that, like rheumatism or chronic air-

sickness, to have ear pains during and after any swift descent is a personal failing to which they must resign themselves.

Now this is by no means always the fact. While the pain may in some cases be due either to some abnormality of the ear, or even simply to a cold in the head, it is

in the majority of people caused by lack of proper training in clearing the ears during descent. By "clearing the ears" we, of course, mean clearing them by natural means, not mechanical; no syringes, tooth-brushes, lift-and-force pumps, Hoovers, or anything of the sort are required.

Before going further, we'd better explain the anatomy of the ear. First, a picture, herewith—



Yes, all that goes to make up an ear; the thing that sticks out into the air outside the skull fuselage is really a very minor part of the whole works.

Now the middle ear, as you see, is a small cavity in the bone of the skull. Across the outer side of this cavity is stretched the eardrum which is like a diaphragm. The middle ear, therefore, is cut off from the outer air by the ear drum, *but* it is connected by the very fine Eustachian tube to the back of the throat and the air therein. This Eustachian tube operates something like a



P.O. Prune always has believed in ear maintenance.

valve, allowing air to pass between the middle ear and the throat, but owing to the way the tube is made, air passes more easily *out* of the middle ear into the throat than it does in the reverse direction, *unless* the muscle shown below it is contracted and pulls the valve open. So far, O.K.

Now what happens when you go up in an aircraft is that the outside air decreases in pressure, and so the air in the middle ear immediately equalises this by passing, at intervals, down the tube and out to the throat. You hear a click each time this occurs; it is the drum snapping back into place as the pressure is released. This doesn't hurt the drum at all; it's used to it.

When you start to come down, however, the outside air *increases* in pressure, but from the valve-like nature of the tube, as mentioned above, can't pass so easily into the middle ear, as when going the other way. Thus the drum bulges inwards, causing pain from even quite a small pressure rise; and with a continued increase it may even be broken.

Now the obvious remedy for this is to open up the "valve" part of the tube and let air get in from the throat. This can be done by working the muscle we mentioned, *i.e.*, contracting it and so opening the tube. Unfortunately it's not the kind of muscle you can consciously control, like those which bend the arm or lift the elbow. It's rather like trying to move your ears when you were a schoolboy. You frown and scowl and concentrate on your scalp and jaw muscles—on anything except your ears themselves—and suddenly they move. Triumph! You can do it (and are probably called "Moke"

for the rest of your school-days), though you never *quite* know how you do it.

In the same way this tube muscle can suddenly be made to work by one or more of a variety of manœuvres and every flyer should find out which suits him best. Try, for instance, swallowing repeatedly; chewing-gum helps in this! Or try yawning: thinking of some of the radio-comedians' jokes will assist here! Try jutting the chin forward; thinking of Mussolini is the dodge for this one. Or again, pinch the nose and blow, with mouth shut and cheeks held in; and to improve the performance with head held back. Any of these are good, but many people do not find this last one effective unless combined with swallowing or chin-jutting. Better not look in a mirror while it's going on though; you'll be sure to laugh which will probably cattle the whole thing.

To impress upon you how important is regular and repeated clearing of the ears while coming down and *before* pain is felt, you should realise that a continued descent, without relief, may reach a point when, the increased pressure is such that the muscle *can't open* the tube, whatever you do, re-*ascent* being the only answer. Therefore get to work on your comic exercises in good time.

And, above all, remember that practice is of great value in achieving high rates of descent without inconvenience. Certain peculiar people at Farnborough Physiological Laboratory can come down at 50,000 feet a minute, yawning and swallowing and Mussolining all the way and never have a moment's pain. If *they* can teach themselves to do this, surely operational air crews can do so too!

## INDIAN NOTES—3



Service in India can be quite enjoyable if you take proper care of yourself ; with proper care you are likely to keep fit and to return home as fit as when you set out.

The main health risks to be met with in countries such as India are bowel diseases, diseases carried by insects, skin diseases and heatstroke.

The common bowel diseases are dysentery, typhoid fever and cholera. They are all caused through drinking contaminated water, mineral waters or milk, or by eating infected food. Germs are conveyed to the food or drinks by dirty hands, by flies or by dust. On the station a high standard of hygiene can be maintained in the kitchens and messes, but this is not possible in civilian cafés and hotels. You should, therefore, never have food or drinks in unauthorised places, or eat fruit or sweetmeats in native bazaars, where flies are always abundant and the dirty hands of the natives have to be seen to be believed. Fruit with a thick protective covering such as oranges or bananas are the exception, but all fruit should be washed before eating.

Of diseases spread by insects, malaria is the most important. To contract the disease you must be bitten by an infected mosquito. To prevent it from biting you, slacks and long-sleeved shirts are issued and mosquito nets are provided. Anti-mosquito lotion or cream are also available for smearing on the hands and face. There is, too, another very important way of preventing malaria ; it is the taking of Mepacrine. It is supplied in the form of small yellow tablets, and one should be taken every day where there is a risk of contracting malaria. If you don't want to get malaria see that there are no rents in your mosquito net, wear your slacks and roll down your sleeves from sundown onwards. Use your anti-mosquito cream and, above all, take your Mepacrine regularly.

Skin diseases are more prevalent in warm climates than in the British Isles, the commonest being sweat rashes, dhotie itch and athlete's foot. These conditions are caused by fungi and the presence of moisture encourages their spread. Particular attention should, therefore, be paid to personal cleanliness. Daily showers, if possible, should be the rule, but do not forget to dry yourself thoroughly, especially between the toes and in the crutch. A little dusting powder in these areas after drying is very useful.

To prevent heatstroke, wear a proper head covering when in the open and drink plenty of fluid ; but take no alcohol until after sundown and then only in moderation. Take the extra amount of salt recommended by the medical officer, and avoid constipation. There is no harm in sun-bathing, but it is most important that the early exposures to the sun should be short. Start with five minutes on the first day and then increase the exposure by five minutes on each successive day until a good tan is developed.



He could always fly under the weather.

THE 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.



Did you  
**MACREAD**  
your Pilot's Notes

*Wise guys do*



*Pilot's Notes—invaluable at all times*