

Gas Room

TEE EMM



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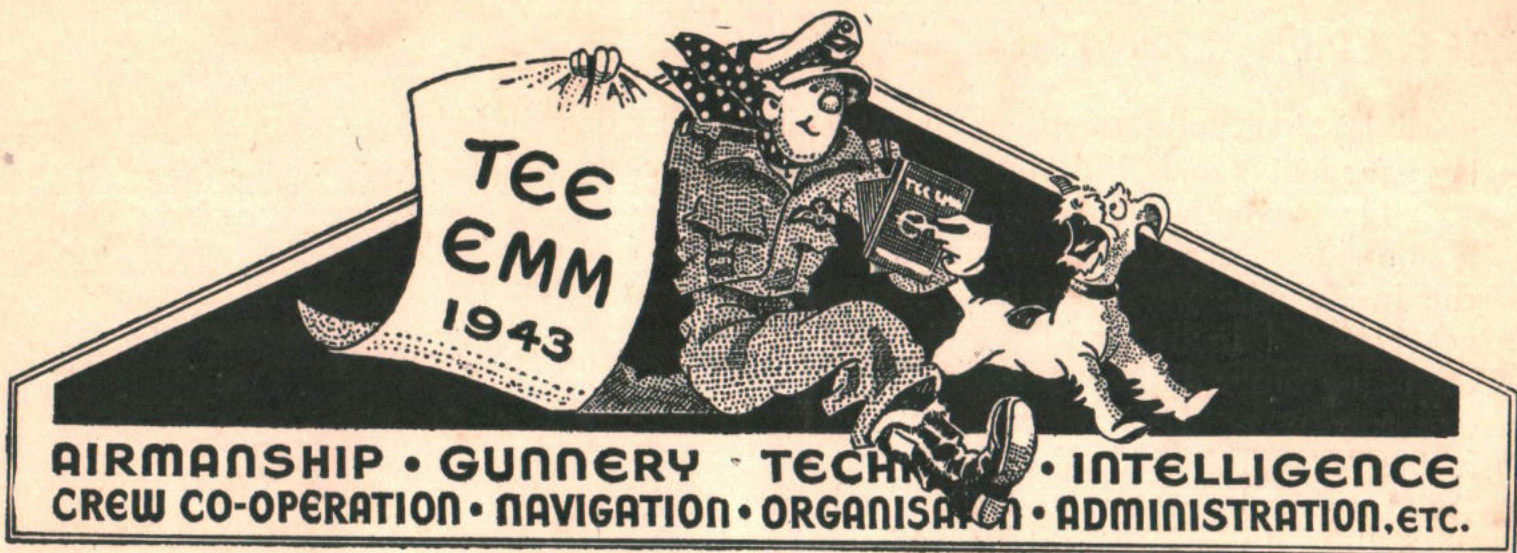
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*Pilot Officer Prune says—
 "Take Tee Emm regularly!
 Prevents that Thinking
 feeling!"*



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

Air Chief Marshal, Chief of the Air Staff

BUMPH SPEAKING

II

LAST month we published under the above title the first of a series of articles designed to help those of you who are facing office work for the first time.

For—excuse us for repeating ourselves—you must have good administration if you want to ensure all-round efficiency; administration in turn means organisation; organisation demands a certain amount of office work. And so, though you may escape this fate for some while, sooner or later, with promotion, will come your turn to put in some desk-hours. You must therefore be ready to make the best of a bad job.

Last month we talked about the elementary points in furnishing an office—if you don't inherit one already furnished—and the all important subject of notebooks. We'll now go on from there:

DESK ORGANISATION

Under furniture we mentioned that you should have at least three letter trays. If you can bag one of those natty rows of five trays, all the better—provided that you know what to do with them. If you cannot get even three trays (and it is quite

possible) then make them out of any suitable box or material you can lay your hands on. But you *must* have three at least.

The first should be marked "IN"—not only on the outside where clerks or runners can see it, but also on the inside where *you* can see it. Positions of trays *do* get changed inadvertently, and there has been more than one minor disaster through the O.C. Desk thinking one tray was "IN," when a runner could see it was "OUT."

Insist that papers and files and messages are delivered to you *via* this "IN" tray, and not dumped in the centre of your table where runners think that you will see them more quickly. The reason why they do this of course is that most "IN" trays are filled to capacity;

they feel that one paper more or less makes so little difference that its arrival will probably pass unnoticed, especially if it is immediately snowed under by subsequent deliveries.

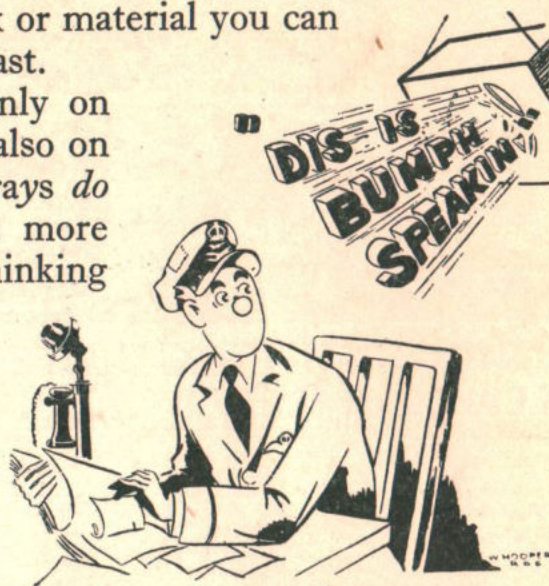
In this they are not far wrong, which brings us to the main object of your second tray. That is, to keep your "IN" tray *empty*.

The second tray, therefore, should be marked "FOR ATTENTION" or "ON HAND," or better still, "ACTION," which is a perpetual clarion call to you as you sit facing it. "PENDING" and "IN ABEYANCE" are to be avoided. They have a *mañana*-like quality about them, *i.e.*, you feel their contents can always be dealt with to-morrow; and to-morrow never comes! (Here in TEE EMM office, by the way, we now have five trays. One is labelled "IN," one "OUT," one "WORK TO BE DONE" and one "WORK TO BE AVOIDED." The fifth tray isn't labelled at all because it has nothing but pens, pipes, matches—which the Assistant Editor regularly swipes—and innumerable small animals which our young daughter can't be stopped from giving us. But we digress! . . .)

Since your "ACTION" tray is designed to keep your "IN" tray empty, you should, the moment anything comes into the "IN" tray, at once take it out, read it, and either deal with it immediately or pass it to the "ACTION" tray. If you thus keep your "IN" tray empty, you can always see immediately if there has been an interesting event in your absence and a Little Stranger is occupying the vacant cradle waiting for attention.

An experienced Squadron Commander once commented on an inefficient Flight Commander in this way: "His 'IN' tray was always full and his 'OUT' tray was always empty." *Verb. sap.* (Keep that "IN" tray clean.)

The third tray should, of course, be labelled "OUT." How and why the stuff goes is beyond the scope of this short article. But let it be mentioned that in a big outfit where there is tons of bumph—being where we are we mention no names!—at least *three* "OUT" trays are necessary. One, perhaps, for the post; a second



for the filing department (Central Registry to you) ; and a third for papers for distribution to other departments within the big outfit. But these things need not worry you. For you, *one* "OUT" tray will be sufficient.

If you happen to get hold of four trays use the other one for a subdivision of the "ACTION" tray. In the stuff you receive will find that there are some things which you can deal with at once, but others may require several days' attention. This is a polite way of putting it, of course! So if you have a tray to spare, call one "IMMEDIATE ACTION" and the other something like "PENDING."

Finally, above all, do cultivate the habit of *using* the trays. You will be slowed down more than somewhat if you have papers littered all over your table.

WHO DOES WHAT ?

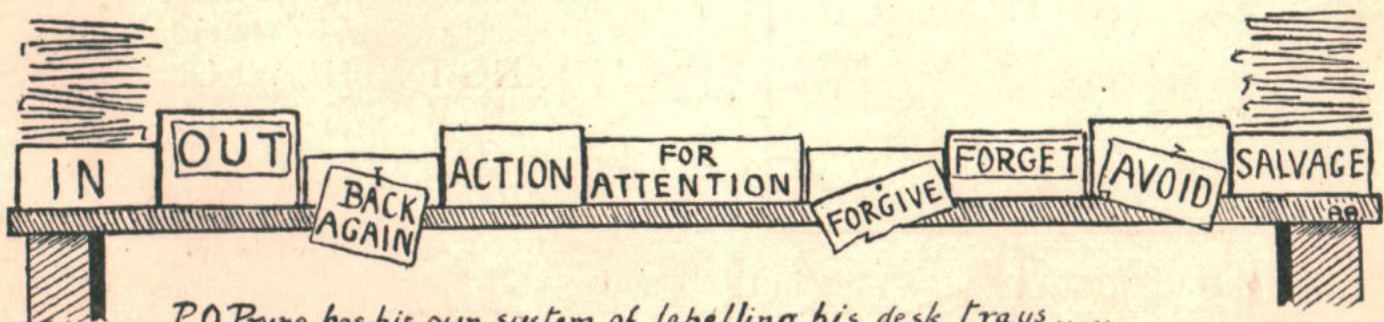
You know how much care is spent in determining the causes of "avoidable accidents." Why not take the same care to prevent "avoidable work" ? Here's a tip for cutting out the irritation caused by referring things to the wrong blokes :—

Keep a record in your permanent notebook of who in your Unit does what. You may think that the title of a man's job indicates the scope of his work ; that the Accountant Officer deals with accounts, and the C.G.I. with ground school, and so on. If you think that, you're crazy. In these days, everyone has many jobs to do. The Accountant Officer may also be P.M.C., and the C.G.I. may also be Permit Officer, and P.R.O., and A.T.C. Liaison Officer, and (as we remarked before) so on.

In large organisations, senior executives find it absolutely necessary to have a chart setting out "who does what." Honestly, it will pay you to do the same. Keep it simple. Something like this will do—jotted down as you come across them :—

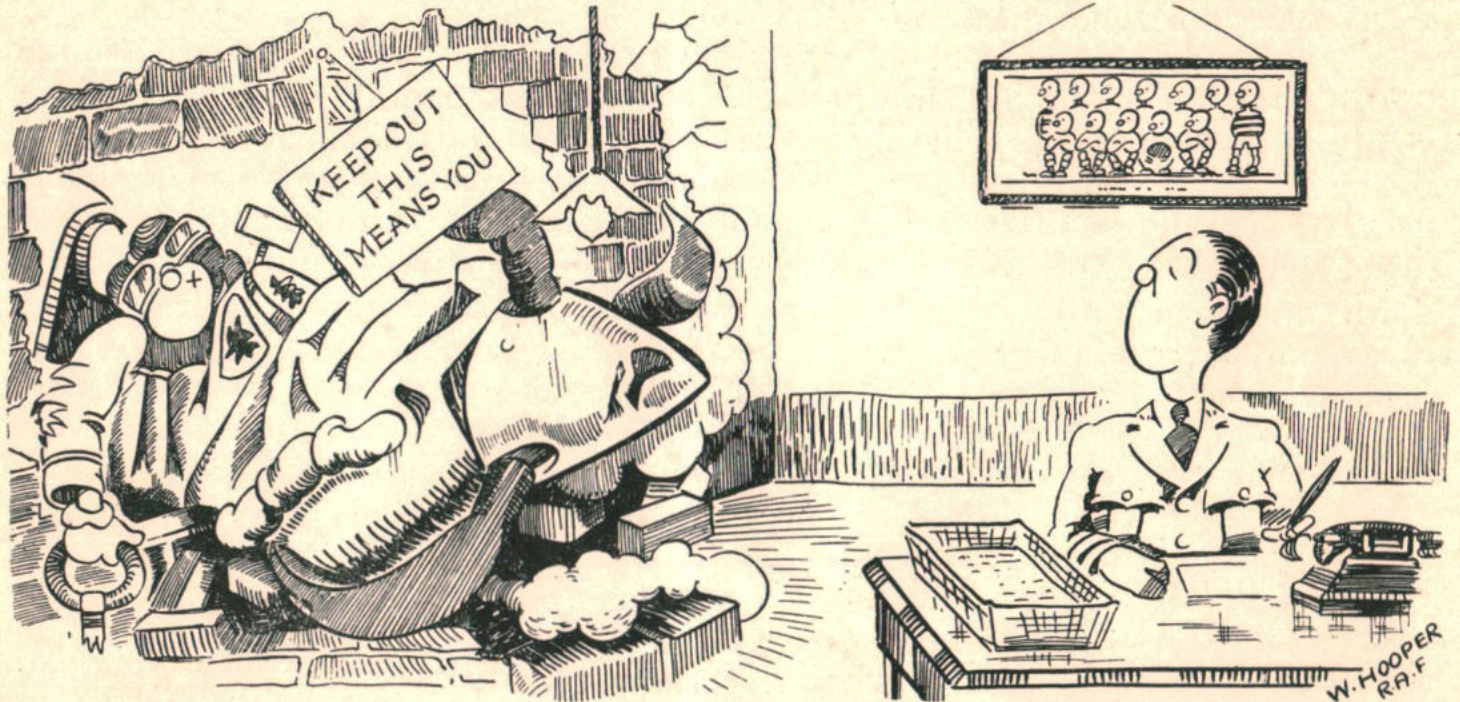
Officers' Mess affairs	P.M.C. (S. Acct. Officer)
Sergeants' Mess affairs	W/O Smith
A.T.C.	C.G.I.

No—don't carry them only in your head. Write them down. The written record will be of help to you in training *your* subordinates.



P.O. Prune has his own system of labelling his desk trays

CHOOSE YOUR ACCIDENT!



And Prune invariably chooses a good one.

WE have just been reading a Secret Document—come by quite honestly we hasten to assure you. It is “secret” because it contains a number of statistics which would, if published, give away vital information. But this is not true of all the figures, and as it happens there is a striking lesson to be learnt from some of those which can be published. Look at this :—

	Average number of deaths per 100 accidents
Overshooting	2
Undershooting	5
Stalling on the approach ..	150

Well, one thing sticks out a mile in the above figures : namely, that *stalling on*

the approach is 30 times as dangerous as undershooting and 75 times as dangerous as overshooting. So, if you can choose your accident, it is fairly obvious which you should choose.

Now, *can* you choose your accident? You will probably say no—because you aren’t meaning to have an accident at all. If you do have one, it’s obviously a mistake ; and no one can *choose* what sort of mistake he is going to make.

True, but you can choose what sort of mistake you are going to *avoid*, and the lesson of these figures is this :

IT IS FAR SAFER TO MAKE A LANDING IN THE WRONG PLACE THAN TO STALL YOUR AIRCRAFT IN TRYING TO REACH THE RIGHT PLACE.

We need hardly point out the alternative still open (in most cases) of using your engines to get you to the right

place: the important point is that by making up your mind beforehand to avoid stalling on the approach (which only requires *care and attention*) you are avoiding the sort of accident which may be briefly described as a "killer." Finally (to preserve the balance), we must point out that to avoid stalling it is not necessary to approach faster than the Pilot's Notes recommend; it is only necessary to avoid getting appreciably slower.

We could give another table of figures and let you do a sum like our first one, but instead we'll tell you the answer without all the fuss. *Flying into the ground in bad visibility is 12 times as dangerous as the average forced landing* (and this doesn't include forced landings when the pilot is lucky enough to find an airfield to land on). The lesson of this second set of figures is this:

IF YOU ARE COMPLETELY LOST AND VISIBILITY IS GETTING BAD, GET DOWN WHILE YOU CAN STILL SEE THE GROUND, EVEN IF YOU CAN'T FIND AN AIRFIELD.

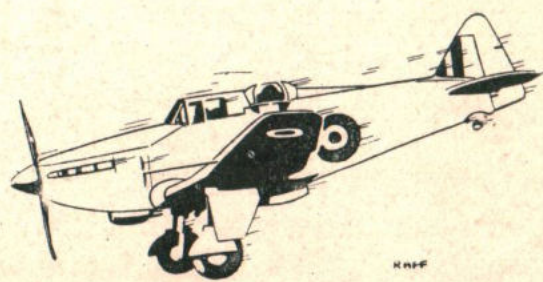
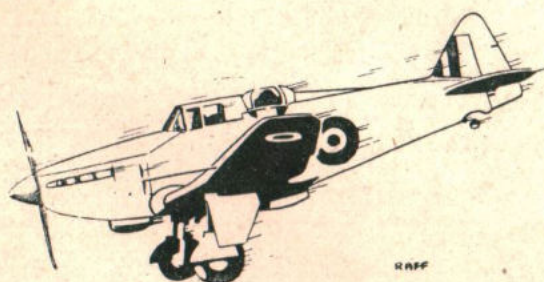
(We hasten, of course, to add that we are only referring to occasions when you can't be got safely in by flying control; and, as you know, heavy aircraft when above cloud and uncertain of position should not come down unless definitely brought over a landing ground by navi-

gational aids, or over ground whose height is known to the pilot.)

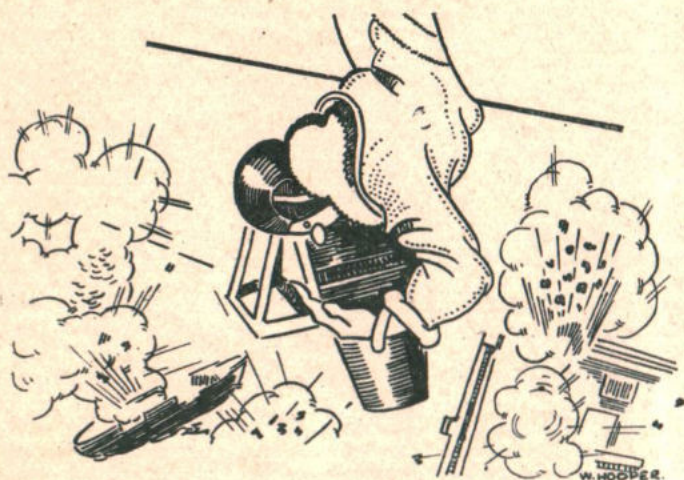
Once again then you can see how, by making up your mind *beforehand*, you can ensure that if you do have an accident it is not likely to be a "killer." For if you fly on in diminishing visibility, without knowing where you are or having any knowledge of conditions at your destination, in circumstances when you can't use the aid of flying control, then every time you have a chance of getting down and choose *not* to take it, you are choosing to run more and more of a risk of that "killer" accident.

Don't think it morbid to speculate along these lines; it is quite well known that the people who do the right thing in railway accidents or crowd stampedes are nearly always those who have thought out beforehand what they would do under given circumstances. And an "accident" does not begin at the moment of impact; it can often be foreseen at a time when the pilot also can think out what he is going to do.

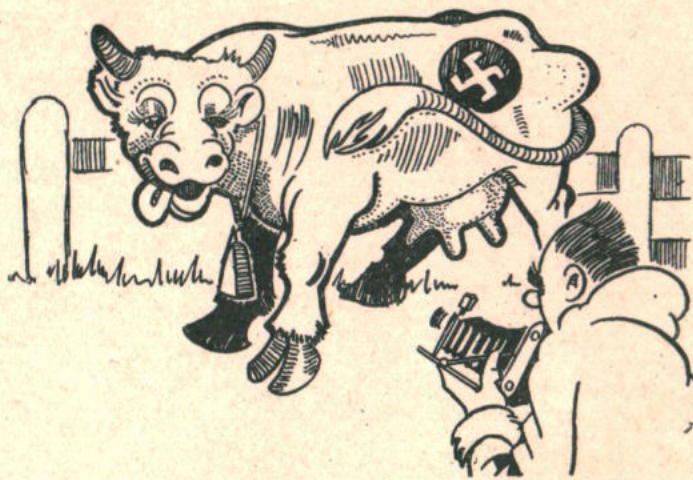
Well, these are only two examples of the lessons to be learnt from statistics. But they both show just how the thoughtful pilot *can* choose what kind of accident he is going to have, and can make sure that it's going to be one of those in which the risks of fatality are smallest—even before he is necessarily committed to having any accident at all.



ARE YOU CAMERA-CONSCIOUS?



Do you get the right sort of photographs? . . .



. . . Or the wrong?

THE scene is the Intelligence Office at a Bomber Station. It is full of humanity in Irvin jackets. They are surging round a board on which are mounted the more successful photos of the Squadron's last operation. At the edge of the maelstrom is a haggard figure with a slightly malevolent gleam in his eye. . . .

The mob soon rounds upon him and for the next half hour he answers question after question—all too frequently the same ones. . . .

He explains to mystified officers why they failed to obtain a photograph. He soothes aggressive sergeants who relate in vivid vernacular how they tried so hard for a picture and yet got Sweet Fanny Adams. He tells hostile inquirers . . . but you know the sort of thing.

Well, what is the explanation for these failures? The answer simply is that in most cases, the crew were not camera-conscious. Of course, cameras can fail, flash bombs can explode at the wrong time, fuses blow—but taking all these things into consideration you'll still find that it is our old friend the human element which is mostly to blame.

Why fly over the heart of Hamburg and come back with nothing more convincing than a piece of blank film, when by more interest on your part you could have got tangible proof of your claims? For the camera gives a permanent record of what it sees, while the human eye gets only a passing glimpse. Your Bombing Leader wants to *see* where all the bombs are being aimed—he isn't interested in epics of description: and to achieve his object he is ready, and even willing, to help you all he can in regard to photography. This is where the interest on your part comes in. Don't think that because you once owned a Kodak you already know all the answers. Go and tackle him; ask him questions; find out all you can about your camera—just what it does and how it works.

Then trot along to the Photograph Section, where they'll be equally ready to help. Most R.A.F. photographers are ex-professionals, and on top of that they have all

undergone a long course of specialist instruction, and quite a lot of them have been on "ops" themselves. Consequently they know what the gen is: what they tell you will by no means be all armchair stuff.

To become camera-conscious doesn't mean tying yourself up with technical details. It doesn't matter a tinker's cuss if you know whether the lens is manufactured by Pentac or Ross; but it does matter that you should be aware that there *is* such a thing as focal length and that it has a most important bearing upon the nature of the eventual picture.

If you're on a Squadron carrying out Night Photography find out about flash bombs and capsules and don't believe people who tell you that the camera is completely automatic. There's nothing supernatural about night photography; though some people seem to look on the whole business as a sinister witchery of dark rooms, red lights and gremlins!

All we're trying to make clear is that cameras are not fitted in aeroplanes as ornaments—they're there to take photographs. Use them intelligently and they'll do it. Treat them with contempt—and they'll still take photographs, but not necessarily where you intend or expect.

SQUARE SIG.

WHEN flying over the Signal Square
What do you see when you look down there?

If a yellow cross Control display,
You mutter a curse and fly away.

One yellow bar on the small red square
Means "E.C.L." You must land with care.

A Dumb-bell exposed and completely white
Means stick to the Runways or prang your kite.

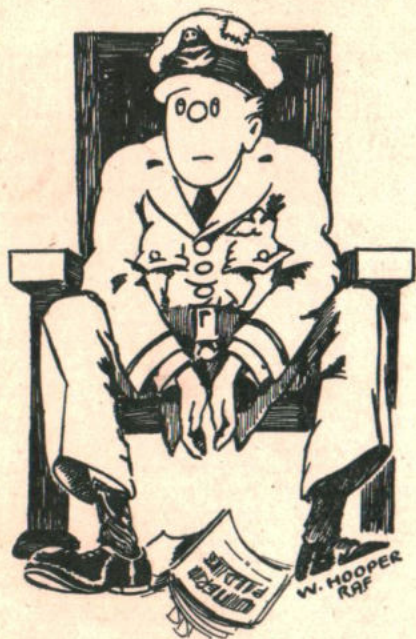
When the Dumb-bell's knobs have strips across,
The Aerodrome isn't a total loss:
But still be careful and don't be an ass:
Land on Runways, and taxi on grass.

See two red balls and two white crosses:
Steady on now, lads! Hold your hosses!
Your eyesight's right, you're not seeing double:
There are gliders about—look out for trouble.

You know all about the landing "T":
Across wind again as you can see.

But when one black ball is hanging there,
OBEY all orders in the signal square.

PRUNE SHIVERS



P.O. Prune is shivering in his flying boots. He's just had a severe shock. He is saying to himself he's glad he's not in the German Air Force. Not for any of the reasons you might think—and there are plenty of them,—but for a special one of his own.

It seems that yesterday Prune was out on a flight and, so to speak, "slightly deviated" from the course he should have flown. Not to put too fine a point on it, he went several miles out of his way to beat up the village where his latest frippet was staying with her aunt.

Hoping he hadn't been spotted and reported, he came back to the Mess and one of the first things he picked up was an article based on a captured German document dealing with breaches of flying discipline in the German Air Force—and the punishments awarded.

This is what he read :

"The Reichsmarschall sternly reminds all ranks of the great value of discipline, and of the great burdens being placed on the German people in order to maintain the Luftwaffe strong and well-equipped. He threatens the severest punishment for all frivolous and thoughtless behaviour which in any way threatens to weaken the striking power of the Service. The following is brought to notice: In the period 16th August to 15th November, 1942, ten aircraft were destroyed, four damaged and eighteen people were killed as a result of such breaches of discipline. A total of 478½ months imprisonment was imposed, 52 weeks close arrest and six weeks open arrest; twenty men were de-graded; and in the cases of six men killed the dead men were deprived of the honours of a military funeral. The last punishment involves the refusal of pension or any other sort of state support to the man's family and dependents.

"A particularly bad case was the following: A young fighter pilot under training was ordered to take a small two-seater trainer aircraft, with a passenger, from Schwechat to Villabouclay in France. He had to fly above 1,600–1,700 feet. At first the pilot followed out his instructions religiously. But as he approached Ulm he remembered that some of his relatives lived in the neighbourhood. He turned off his course and flew over and around the house in question three times, at heights varying from 320 to 260 feet. By now he was only three miles from his parents' home. He decided to pay them a visit also. This time he flew over the house five times at heights between 170 and 250 feet. He then thought it only proper that he should call on his fiancée now he was in the neighbourhood. So he set course for Routlingen and flew four times over the house of his bride-to-be, at approximately 150 feet. It was only when he was leaving the area and was about to return to his prescribed course and height that he decided to go back once more and land to offer

a more personal greeting. An excellent landing was made quite close to the house, but unfortunately the girl was not at home.

"The pilot's prospective father-in-law started up the engine and he was just taking off when he hit a tree, crashed on the roadway and turned over. The pilot was unhurt, but the passenger was injured. A Court Martial was held and the culprit was sentenced to seven years' penal servitude, loss of all military privileges, and loss of all civil rights for a period of seven years. The sentence was confirmed by Goering himself who refused all recommendations to mercy and added that any period of the sentence falling within the duration of the war was not to be included in the sentence of seven years but to be added to it."

That was where Prune fainted. On coming to he called for a can and made a solemn vow to obey all flying regulations in future. So far he's kept his vow. But as we said, he only made it yesterday.



"And now you've got your kit, my boy, I suggest you read this and see if you can't do better with our sort of flying."

LUCKY, BUT—OH, THAT RANGE!

A BEAUFIGHTER took off on an interception patrol, and when at 1,000 feet a Dornier 217 was seen flying south at 500 feet. The Beaufighter attacked in a dive, and opened fire from 1,000-400 yards, producing hits on E/A's starboard wing. The Dornier 217 is claimed as damaged and the combat was discontinued near the French coast. But why was he only damaged? He should have been destroyed. As no doubt he would have been had the Beaufighter held his fire and closed right in before attacking.



LIFEBOATS FROM THE SKIES

MANY peculiar things have been dropped from the skies in this war—pamphlets, fully-armed soldiers, beer bottles, supplies, “block-busters,” even small tanks, but surely the last thing one would expect to come down from heaven would be a complete motor-boat in full working order, with two engines, mast and sails. Yet this happened only a few weeks ago and was the means of saving seven lives.

Here is the story of the first crew to be rescued by an air-borne lifeboat, dropped from a Hudson like manna from heaven.

The ditched aircraft was a Halifax and the crew, two of whom were slightly injured, had been in their dinghy three hours when their earlier S.O.S. resulted in the appearance of a Hudson which circled for an hour giving the dinghy's position. At 08.20 hours, five hours after the ditching, two Hudsons, one carrying an air-borne lifeboat Mk. I, arrived and dropped smoke-floats.

Now the dinghy crew had never heard of this new lifeboat and were very curious about the peculiarly shaped Hudson flying above them. Their

curiosity soon changed to astonishment when the bottom of the Hudson fell off and they saw a real live sea-going boat with propellers protruding from the bottom. A moment later this boat was satisfactorily dropped from 800 feet and became air-borne on three parachutes.

One parachute developed slightly before the others, but the general parachute development appeared most satisfactory. The rocket drogue, however, did not fire and the self-righting chambers failed to inflate.

The boat descended in a slightly bow-down attitude at a noticeably low rate of descent, but, due to the fact that the parachute slings were fitted the wrong way around, the craft struck the water in an attitude much too near horizontal and the impact appeared to the crew to be considerable. This nearly level impact caused an athwartships skin fracture just aft of amidships and on each side of the keel. Longitudinal starting of the planks also occurred in a few places. As a result of this damage the engine and amidships hatches flooded.

Just after the craft had struck the water the parachute automatic release

functioned and the parachutes blew clear of the boat, which had descended 25 yards to leeward of the dinghy. The line throwing rockets failed like all the other electrically operated gear.

The dinghy crew boarded the lifeboat with ease in spite of having been wet, cramped and seasick for the last five hours, but one of the injured men lay down on the forward self-righting chamber which had not inflated and thus concealed the forward equipment hatch, the presence of which the crew did not suspect. Furthermore, only the aft self-righting chamber was inflated by hand, and that only to half.

The engineer and navigator (who had yachting experience) started the engines and noted the smoothness of their running. At the same time the captain shipped the rudder, which he found difficult owing to the collapsed state of the aft chamber. Meanwhile the wireless operator read an Aldis signal from the aircraft above, instructing the craft to steer 214° M. Soon the boat was on this course, going at 6 knots with the dinghy in tow. After a few moments, however, the tow broke and the dinghy drifted away, to be sunk by gunfire from one of the accompanying Hudsons. For two and a half hours the lifeboat proceeded under power at maximum cruising revs and a speed of 6½ knots, but at 11.15 the aircraft lost the lifeboat due to cloud.

Having run for two and a half hours the shear pin on the starboard engine propeller fractured and the motor raced. The crew thought that the propeller had come off; they, therefore, stopped the engine. While proceeding on only one motor the crew rigged the mast and sail. Owing to the collapsed state of the self-

righting chambers it was found hard to get the mast clear of the deck, but once this was done the actual stepping of the mast was found to be easy. The shrouds (side-stays) were first set up and then an endeavour was made to set up the fore-stay which could not be made to meet its attachment point. They therefore made this stay fast with a length of line. The mainsail was set without attaching the mainsheet tackle properly. The fore-sail was never removed from the locker.

For one more hour fair progress was made under sail and half-power, when the port engine failed in a similar manner to the starboard. There was not much wind and the craft made little progress under only the mainsail.

At 13.00 hours the lifeboat was again sighted by aircraft and surface rescue craft were ordered to the position. At 16.48 another reported the position of the lifeboat, stating that it was making slow progress and that fog was developing. In the meantime the lifeboat crew wrote "engines u/s" with fluorescent upon the sail, hoping the aircraft would see the message. A high-speed launch and two R.M.L.'s were given the new position and after visual signals from an Anson and Walrus, the lifeboat was sighted and the crew transferred.

During all their time afloat in the lifeboat the crew failed to find the instructional booklet, in spite of the fact that the lockers had the contents marked clearly thereon. The crew also left some hatches open when under way.

Now there's a lot to be learnt from this first rescue by an air-borne lifeboat.

The first is that though several things went wrong the crew were saved, and the A.S.R.S. have already profited by the

practical experience to obviate such failures in future. The breaking of the propeller shear pins, for instance, had not occurred on trials, but the pin has now been modified, and it is believed the fault has been cured. The incorrect fitting of the parachute slings which made the boat damage itself on landing, was a regrettable error, but the shackles are now painted different colours to avoid such a mistake in future. Action has also been taken to reduce the possibility of a break in the electrical circuit which was responsible for the failure of the self-righting chambers, the drogue rocket and the line rockets. These and other points the A.S.R.S. have under control.

The second lesson to be learnt is the importance of all crews fully and immediately studying the Lifeboat Instructional Air Diagram (A.D. 3983), issued to every flying unit in the R.A.F. and U.S.A.A.F., as well as the instructional booklets, the model lifeboats and films which are in course of preparation.

Of course it was rather hard on this particular crew, who were, so to speak, the guinea-pigs of the experiment, but they would have found things much easier if they had only discovered the

instructional booklet on board the boat. It was, after all, in a locker, on the hatch, of which the contents were clearly marked. Had they found it they would have realised the presence of the forward equipment hatch, on which one of the injured men was lying, they would have used their sails properly, and they would have realised the importance of inflating the self-righting chambers fully. They would also have realised the great importance of not leaving hatches open, because the buoyancy depends on water-tight hatches, an open hatch being a definite danger. The booklet, by the way, has now been placed in one of the starboard engine lockers where it just can't be missed—except perhaps by P.O. Prune.

The main thing, however, is that we live and learn and this crew *did* live and *will* learn; and so, we hope, will all other crews similarly situated. But do study the gen as soon and as thoroughly as possible. You never know when it may not be *you* who have suddenly to deal with a motor-cum-sailing boat dropping from the skies, and just asking to take you home—as long as you know how it works.

WOULD YOU DO THIS?

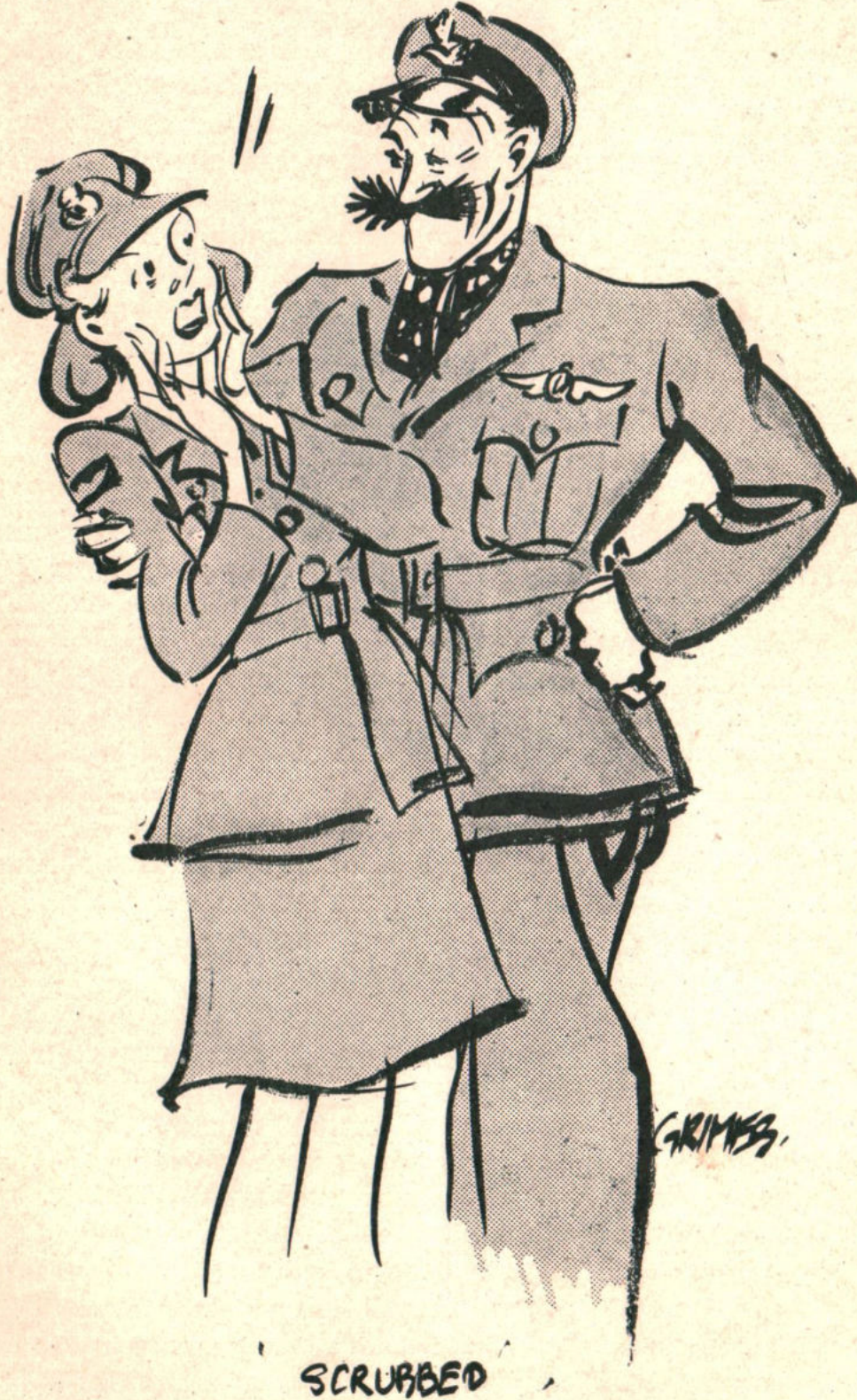
WE hope not. But it's been done. Some Beaufighters were quite quietly and happily practising circuits and bumps at night over their own airfield, when two Spitfires from a neighbouring Station out on a practice flight decided it would be fun to beat-up the Beau's with a few dummy attacks. This they did so successfully and bravely that one of the Spits, pressing home its attack on a Beaufighter, collided with it and destroyed both aircraft. Score: 2—0 in favour of the Hun, who didn't even have the bother to be there.

Service Terms Illustrated

by

Well-known Newspaper Cartoonists

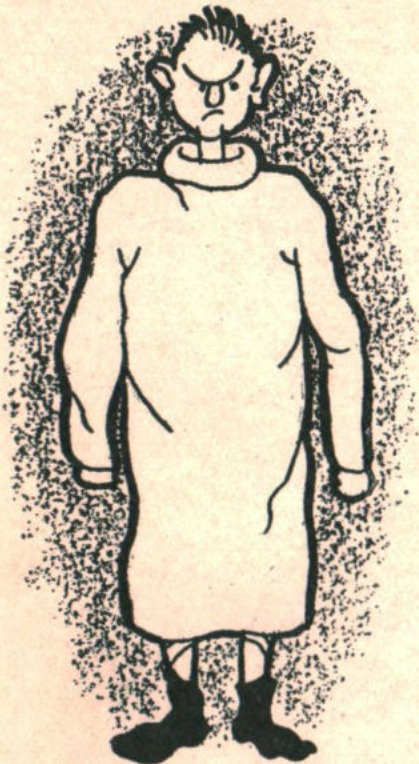
No. 6. GRIMES of The Star.



BRASS MONKEYS, AND HOW TO AVOID BECOMING ONE

II

THE BODY BEAUTIFUL—AND WARM



“Remain decent even when debugged—”

Last month, you may remember vaguely, we loosed our Basic Clothing Expert into these columns, and he fairly let himself go on the subject of nice warm hands and feet at 20,000 feet, irrespective of outside temperature, heating breakdowns and perforated perspex. . . .

Now, if you'll excuse the liberty, he will take a look at your Body. . . . What you want round that is a nice layer of still, captive air, he tells us; not a succession of howling draughts. So sort yourself out a fairly loose-fitting outfit, rent-free. Kapok is warm-making because it traps a layer of air in its fibres.

All members of the crew should, of course, wear the Great Minimum of Battledress and the oddly-named “Frock, Air Crew”—a cosy woollen confection which turns out to be a sweater built on W. G. Grace lines, in which a small air-gunner can remain decent even when debugged.

The W/Op. and the Navigator will normally need no more than these, but should always have an Irvin jacket (if they can get one before the supply finally dries up), or a Sidcot Inner or Outer, handy in case the heating packs up or a bit of flak lets in the elements. Just something to slip on in an emergency, or for a trip back to the flare-chute or the Elsan.

For Captains our Clothing Expert recommends the Sidcot—Inner or Outer, take your pick. The inner is better insulated and warmer, but the Outer has the bulge in the matter of pockets. The 1941 wired Sidcot Outer enables you to wear electric socks, if you haven't naturally hot dogs.

Flight Engineers will find the Sidcot Outer fairly chill-proof, and the Bomb Aimer will keep the icicles at bay with the 1941 wired version, or perhaps with a Sidcot Inner. If his little conservatory becomes a cold frame, electrically heated waistcoat, socks and gloves are *de rigueur*. He won't want the connectors from the waistcoat to socks if he connects his electric waistcoat to the inside of the Sidcot Outer, 1941 pattern—this is sometimes known as the East Coast Hook-up, and is not so difficult as it sounds—and so makes the sock contacts live.

Really warm gunners wear those chic yellow Kapok-lined buoyant suits (“You too, can have a figure like mine!”) which pack their own flotation pads, and make Mae West superfluous. These somewhat Arctic-looking outfits are apt to put people off when they first emerge, bright yellow, stiffish and fearfully bulky looking, from the

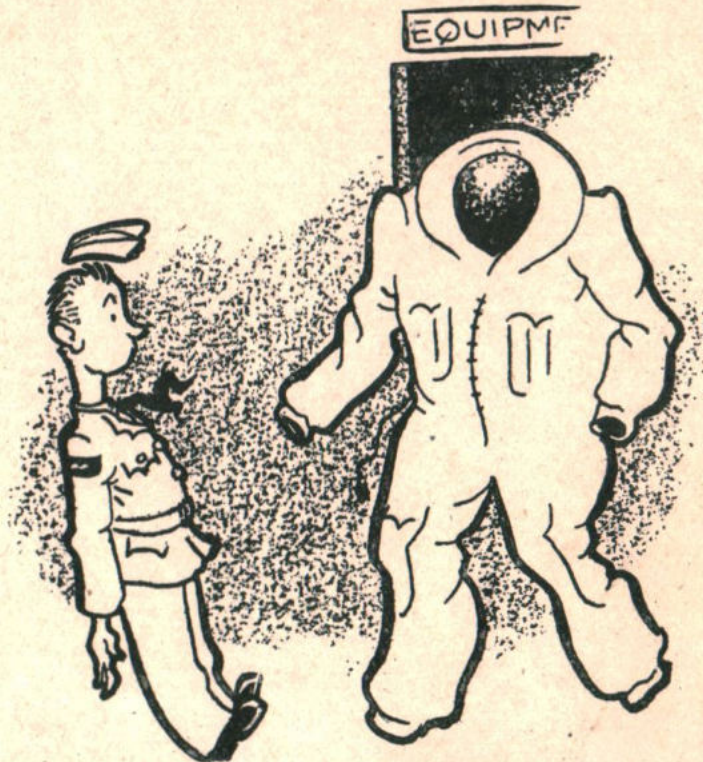
store ; but after a session in the drying room to remove any damp, and a few trips' wear to break them in to your own particular contours, they're your pals for life.

A word or two about buoyant suits, which take a bit of getting to know. The two small flotation pads go in the outside partition of the pockets just below the knee; the big ones in the inside breast pockets. (The outside breast pockets take maps, gloves and any quantity of gum, chewing). The boomerang-shaped pad goes inside the collar itself or if you find that this rubs the back of your neck, in the special compartment below the back of the collar. The built-in braces should go over your shoulders before you put your arms in the sleeves, and should be tightened up when the suit is on. (Sgt. Winde, who has been converted to these suits, just in time, says this takes a lot of weight off your feet!) The zippers have a quick-release action if you pull the runner beyond the normal stopping place; this enables you to get out of the suit in a hurry—but remember that when you want to get into it again, you have to start the runner at the bottom of the zip.

Mid-Upper Gunners have a full length electric lining which buttons inside the Taylor-suit; Rear Gunners a slightly hotted-up job which doesn't, being a step-in affair with buttons up the front and press-studs down the sides of the legs. We are told that this lining makes minus 45° C. feel like the South of France before the Vichy frost.

Some people we know—including Equipment wizards who are usually omniscient—are completely foxed when it comes to the Taylor-suit electric layout. To obviate strangulation and other ill results of ignorance, we have assembled the complete gen on wiring yourself up for warmth, and here it is! . . . Stand by! . . . Contact!

The lead which goes to the electric supply is permanently attached to the high-wattage lining, whereas the lead from the Mid-Upper Gunner is clipped by a waist pad on to the right hand side of his electric lining. Push the leads out through a little button-hole which you will find on the inside of the suit at waist level, into the pocket, and so out to the exterior. Make sure you do not leave the end of the lead hanging about when you walk, or it will get bent and won't fix into the socket in your turret. The small pocket on the thigh of the suit is conveniently placed for this plug. The press-studs inside the Taylor-suit on the left-hand side are for a waist pad if you want electric heat to the gloves and socks only. In this case the gloves and socks are



“—when they first emerge from stores—”

plugged into the two sockets on the outside of the cuff and inside of the angle of the suit. If the Mid-Upper Gunner prefers his gloves outside his cuffs he can make the sockets live by clipping the studs on the left of his lining and left of the Taylor-suit together. Otherwise the gloves and socks must be plugged on to the cuffs and ankles of the lining. Once the socks and gloves have been firmly attached by the press-studs, leave them always in position. The fit of the studs is usually fairly stiff, so that a good electrical connection can be made, but if you are always pulling them on and off, they may become looser, and the lining may be damaged by the socket being pulled out of the cloth.

These electric linings keep you really warm, but don't discard your buoyant suit for something thinner. The heating might fail and then you will be putting in some frost-bite hours.

Don't forget to test your electric clothing as soon as you draw it from Stores, and before each Op. Your Squadron Electrical Section will oblige with a nice, reliable ammeter, and there should be one in the crew room as well.

We omitted to say that these notes are primarily for Lancaster crews, but for the Gunners the gen is general, and if you ride a Stirling or a Halifax we shan't have led you far astray.

And we haven't finished yet . . .



RECIPE FOR STARTING UP AN AIRCRAFT

WE can hardly pretend that the following technical advice is of the same calibre as that usually appearing in TEE EMM. We publish it, however, for its human interest; and so the instructions given should perhaps not be taken as indicating the usual method of starting up a recalcitrant aircraft.

A pilot borrowed a Moth from a station near London to fly to Devon. When he was ready to return, the Moth could not be made to go. All the experts within range worked on it for over an hour without result, till at last in despair the pilot rang up the Station from which he'd borrowed it, got hold of the Flight Sergeant and explained his trouble.

"Start her?" said the Flight in faint surprise. "Oh, she's quite easy, sir, if you know the trick. This is all you have to do. Open up the right side of the engine and you'll see a piece of bakelite. Behind that you'll see a lump of metal, which is pitted a bit as if by hammer-marks on one side. . . . Well, hit it two or three times hard with a hammer on the pitted side. Then tickle the carburettor till she floods. Then go round to the back and lift the tail of the aircraft as high as you can without hitting the prop on the ground and shake it thoroughly. Then try starting up in the usual way. . . . *She'll* start all right. . . ."

And she did. . . .

LOOK—OR YOU'LL LEAP!

THE above is a phrase which, rather unconventionally, appears as a title to an official R.A.F. map. But the map has a meaning for pilots, just as the phrase has a warning for pilots. For it is a map of all the Main Grid Transmission Lines, *i.e.*, the high-tension cables, for electrical supply, which are carried on pylons hither and thither about the country and into which with far too great regularity pilots crash.

Why do they do this? There are varying answers. To get at them we'll analyse twelve such accidents which occurred during last March and April.

The first thing we find is that only three of these accidents, that is 25 per cent., were genuine accidents, *i.e.*, the pilots, due to forced landing or side-slipping or something, couldn't help flying into the cables. In a third of the cases the pilots simply "didn't see" the cables. And in the remainder, over 40 per cent., the pilots flew into the cables, partly because they didn't see them till too late, but primarily because they were disobeying orders in flying at too low a height, even though low flying had been authorised.

What is the remedy for all this? Well the main remedy is the map we've just referred to. Indeed that was why it was produced—and as a matter of interest high-tension cable accidents dropped off most satisfactorily as a direct result of its production. For from study of the map not only can Station Commanders so site their Low Flying Areas that there are no, or at least very few, transmission lines in the area, but pilots can in most cases get a good idea where such lines are and be prepared to look out for them. Of course there's no remedy for disobedience of low flying orders except a determination to obey them, but it must be remembered that there may be and probably are, high-tension wires even in authorised low flying areas and that the specified heights given to pilots must be adhered to. The cables are rarely more than 100 feet high, yet in one of the cases under consideration the pilot, though told not to fly below 300 feet, was actually attempting to fly under the wires at the time of the accident—and killed himself as a result.

The only other remedy for high-tension cable accidents is that, whether disobeying orders or not, whether force-landing or not, whether lost and coming down to see where you are or not, indeed, for whatever reason you find yourself nearer the ground than you ought to be, *a good look out must be kept*—unless you want to play the part of the bloke in the electric chair. For high-tension cables are difficult to see till it's often too late; and the more you are on the *qui vive* for their possible sudden appearance the more likely you are to avoid getting a nasty shock in all senses of the word.

For it is a regrettable fact that despite the original improvement in the number of these accidents due to the production of the map, the figure has now started to creep up again. And, apart from damage to aircraft and injury to crews, there is an important subsidiary result, not always appreciated. Even though you may escape actual damage yourself, you invariably damage the transmission lines. This cuts

off the electric supply, often over large areas and often for some considerable period. Railways are put out of action, and so are factories. War transport is hindered: war production is hampered. And this is what the Hun is trying to do with *his* aircraft. Don't help him by doing it with *yours*. LOOK—OR YOU'LL LEAP!



GAD, SIR, I'M BEING SHOT AT!

SO bellows Colonel Blimp when a machine-gun bullet whizzes in through his dining-room window. Shades of Majuba! The old warhorse snorts and paws the ground. He's under fire again.

He rushes out into the garden and, his shot-gun having been taken from him just in time by his daughter, has to content himself with shaking his fist and shouting blood-curdling threats at the two aircraft away in the sky.

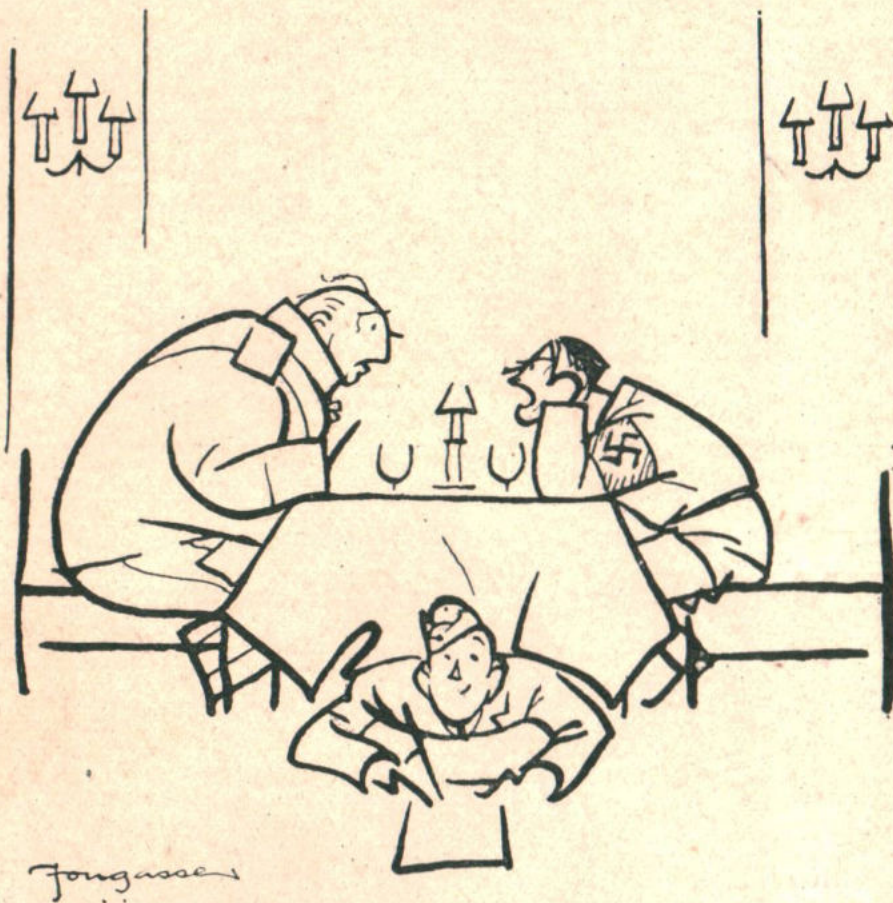
He then goes in, digs the bullet out of the wall and finds it is not German but *British*. This practically gives him apoplexy. For weeks afterwards he writes scorching letters to the Air Ministry.

All this is just to remind you that an increasing number of such complaints are being received. The bullets are invariably British ones from bomber aircraft practising air-to-air firing, and the reason they come sailing through the dining-room window of Pondicherry Lodge is that the rule for the practice firing is not being obeyed.

We'll repeat it here. *In air-to-air practice guns must not be depressed below 20 degrees above, repeat above, the horizontal.* Otherwise the bullets arrive in the countryside at velocity, not merely spent; and this makes a certain amount of trouble for all. And while we've all so far been lucky, if you *do* actually hit a Colonel Blimp the trouble for all will be infinitely greater, small though the actual loss may be.



WHAT THE HUN IS DOING



While returning from a raid, and flying at 10,000 feet a rear gunner sighted an E/A at 600 yards, carrying a red and white light in the tail, and a red one in the nose. He and the mid-upper turret fired two or three bursts. E/A broke away and disappeared without firing in return. The crew suspect that it was a decoy. Through sighting at long range, our aircraft avoided surprise and prevented attack, although the E/A seemed to be a decoy—particularly as enemy pairs are on the increase. So, although both gunners did well to get in bursts, it is essential for the

mid-upper gunner to keep on the lookout for the partner.

Two Mustangs took off on an operation. The weather conditions were ideal, but, when within five minutes flying time of the French coast, a message was received "Hullo aircraft, S/Ldr. calling, return to base"—they returned. Would you have fallen for this simple little ruse or do you include extraction of the digit in your R/T procedure?

On two other occasions, signals were used by the enemy in an attempt to confuse our aircraft. On May 31st, fighters about to attack an M.T. concentration heard in English over the R/T "Look out, fighters." This ruse was successful and the fighters abandoned their attack and prepared for battle with non-existent enemy aircraft. On the second occasion, a voice said "Look out, fighter aircraft are about to attack us." This deceived one member of the formation, but he was fortunately unable to get in touch with the rest of the formation and they went into the attack.

From a report: As the F.W.190 reached enemy coast it climbed to 500 feet and seemed to be engaged by light flak. From another report: Twelve F.W.190's were also observed to climb on reaching French coast. It is suggested that ground defences are at liberty to fire on all aircraft approaching the coast below a certain height.

ACCIDENTS THAT NEED NOT HAPPEN



One of our main objects in war is to kill as many of the enemy as possible. The last thing we want to do is to kill our comrades or even help in their death. Yet we can do this quite unconsciously. It is, in fact, being done.

You don't believe us? Well, we'll tell you one way in which it can happen—and has recently happened—merely from a seemingly quite trivial omission. A steady, experienced and popular pilot was killed, together with his air gunner, simply because several people had failed to fill up a certain form.

It happened like this. The pilot, with 416 hours solo flying behind him, had gone up in a Defiant for air-to-air firing practice on a drogue. When he had signalled to the towing aircraft that he had finished he was seen to make a turn to port and then to go into a spin at an estimated height of 700 feet. An eye-witness stated that he came out of this at 300 feet, but was unable to pull out of the ensuing dive. The aircraft crashed. The pilot and air gunner were killed.

At the inquiry, *after* this had happened, a number of other pilots reported they had had trouble with their Defiant aircraft, through the perspex cover of the landing light coming out about 4 or 5 inches while the aircraft was in flight. One pilot said this had happened to him six weeks before and the result was that his aircraft flicked over to its back and got into a spin from which, however, he was able to get out successfully. He did not enter anything on his Form 700 but spoke to the ground crew, who tightened up the screws of the perspex cover for him. Another said almost exactly the same thing, stating that he at once landed, but only reported it verbally to the ground crew. So did a third; and a fourth, who frankly admitted "I do not think I entered anything on the Form 700."

Later in the inquiry the Chief Technical Officer said he was told by a Warrant Officer that he had heard pilots discussing the accident in the Mess and suggesting that it was caused by the perspex cover coming out.

In other words, here is something which affected the safety of pilots flying Defiants, which in fact caused the death of two people, which was never reported and, in fact, only came to the ears of the Chief Technical Officer *via* a report of conversation in the Sergeants' Mess. *Via*, in short, simple gossip.

Had all the pilots who had had that same experience only reported it on Form 700, had, moreover, the defects which caused a landing been reported to the Maintenance people so as to enable them to render the Form 1022, then this result of the slight defect in the Defiants (which, we may say, has since been dealt with) would have been suspected earlier. Official action would have been taken earlier. And two men's lives would have been saved.

The instance quoted above refers only to a technical defect, but any "vicious"

flying characteristic of an aircraft, particularly of the new or modified types, should always be reported at once. The Air Ministry Departments concerned have recently issued letters on the subject, but issuing letters is no earthly use unless they are read and complied with. Unless, in fact, all those who actually fly the aircraft and notice defects or peculiar characteristics play their part by reporting them.

The regulations are there. See that you carry them out. As you have just read, to none of the Defiant pilots concerned did a loose landing-light cover seem important at the time. *But*, we repeat, it cost the lives of two good men.



THIS MONTH'S PRUNERY

THE MOST HIGHLY DEROGATORY ORDER OF THE IRREMOVABLE FINGER (Patron: Pilot Officer Prune) has this month been awarded to Lieutenant —, Fleet Air Arm, and to P.O. —, both for Skilful Use of the Elements.

The former officer, while on a practice flight, informed his C.O. on landing that his radiator temperature had been rather high, but that he had been able to cool it by climbing to six thousand feet and turning his aircraft into wind! The latter officer, while on a height climb, noticed at 20,000 feet, that although his trim was fully

forward he still had to push forward on the stick to avoid the nose coming up too much. He reported that he thereupon turned to fly *into* wind, but that it made no difference!



BIG FLEAS

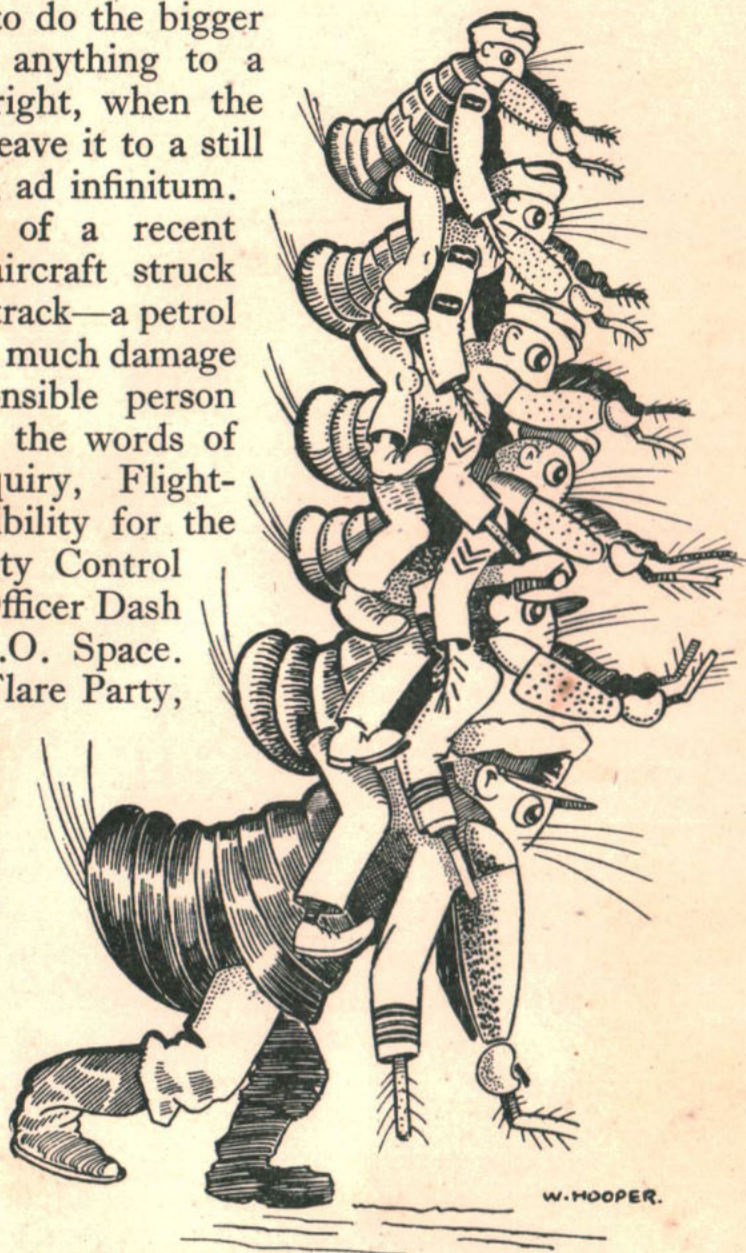
Big fleas have little fleas
Upon their backs to bite 'em.
Little fleas have lesser fleas,
And so ad infinitum.

But the lesser fleas are not there to do the bigger fleas' work for them. Don't leave anything to a smaller flea and think it will be all right, when the responsibility is yours. For he may leave it to a still smaller one—and so, as the song has it, ad infinitum.

This was the principal cause of a recent accident when one night a taxiing aircraft struck two obstructions just off the perimeter track—a petrol trailer and a civilian tractor roller—and much damage resulted. Why? Because no responsible person inspected the taxi track. Because, in the words of the Finding of the Court of Inquiry, Flight-Lieutenant Blank “left the responsibility for the airfield lighting that night to the Duty Control Officer, Flying Officer Dash. Flying Officer Dash left it to the Airfield Controller, W.O. Space. W.O. Space left it to the L.A.C. i/c Flare Party, L.A.C. Stroke; and L.A.C. Stroke left the taxi track entirely to an A.C.I., who forgot about the part where the accident took place.”

The moral of this is: if you *do* have to hand a job on to someone else, be quite sure he can do it—and *will*. The responsibility remains yours even if he passes the buck to someone else.

The Investigating Officer stated: “With a view to preventing similar accidents in the future, I am of the opinion that (i) The organisation of the Flying Control should ensure that an Officer not on duty relieves the Officer on duty while the latter supervises the laying of the airfield lighting, and that until this has been done, Night Flying must on no account commence; and (ii) much greater attention should be paid by Flying Control to the clearing away or adequate marking of all obstructions, and much closer collaboration should be organised between The Clerk of The



Works and the Senior Control Officer. A further point which arises is that the Airfield Controller is, apparently, in the habit of leaving his post (i) to go to meals and (ii) to fetch the colours of the period, etc. This is irregular."

His remarks may well apply to other Stations. For there are quite definite instructions about it all, and if they had been carried out the accident need never have happened. Fortunately, no lives were lost and no hospital cases resulted, but one very valuable aircraft *was* damaged and put out of action.

A TIP FROM GERMANY

SOME time ago a German aircraft was brought down at sea. (Yes. We know it's a common occurrence. But that's not the point of our story.) The first point is that one of the members of the crew could not swim. Presumably their dinghy was u/s for they had to spend two hours in the water. The rest of the crew had therefore to keep the non-swimmer afloat before the German Air Sea Rescue Service got to them, so a bad time was had by all.

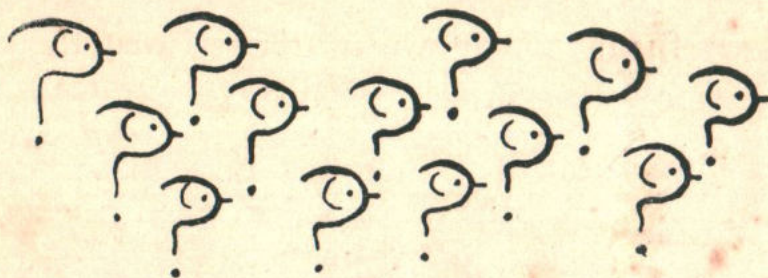
A few weeks later the same crew was again shot down into the sea about 20 miles from land. But by then the Captain was determined not to take any chances—anyway not more than he had to. He decided that the crew should be tied together on the principle of "united we float" which, anyway, is better than drifting apart. This was lucky, for the dinghy had been shot up during the Spitfire's attack, and they only had their Mae Wests to support them. Cutting the painter, they lengthened it by adding their belts. The line was then threaded through each man's Mae West and tied at the ends so that a circle was formed with the men about a yard apart. They then started to try and work their way to the coast.

After a time the W/T Operator became delirious and violent and tried to break away. The report says "he was restrained and quietened" (it doesn't say how, but we can guess) and recovered in about half an hour.

Later two others went through the same process, and after twelve or thirteen hours the Captain also had an attack but managed to get over it in a short time. By dawn they were still 15 miles away and all pretty hopeless, but the officer managed to persuade them that they were nearer than they thought, and it would be foolish to give up after doing so well. This kept them going, till at last they were picked up by a British destroyer after twenty hours in the water.

There is no doubt that the lives of all these men were saved by this linking-up scheme. Not only did it enable those who were "up" to cheer up those who were "down"—for they were never all suffering in the same way at the same time—but the officer, who was obviously a "leader," was able to keep control of his men throughout and make the most effective use of his qualities of leadership.

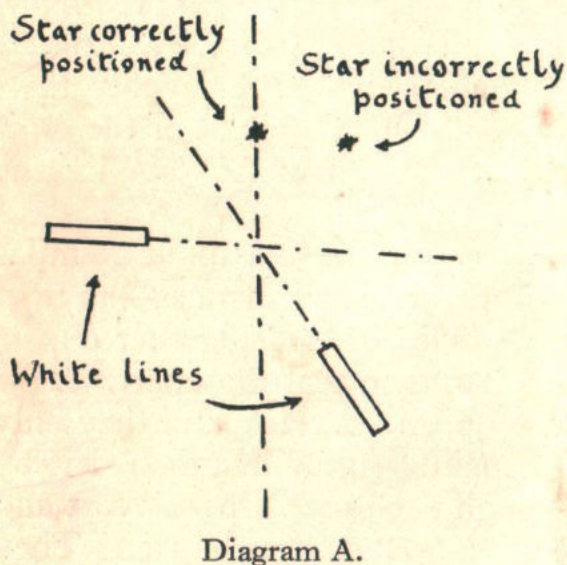
It's certainly a tip worth thinking about. And as we go to press we hear that A.S.R.S. are taking steps to introduce a line on the Mae West for this very purpose.



TEE EMM'S Brains Trust

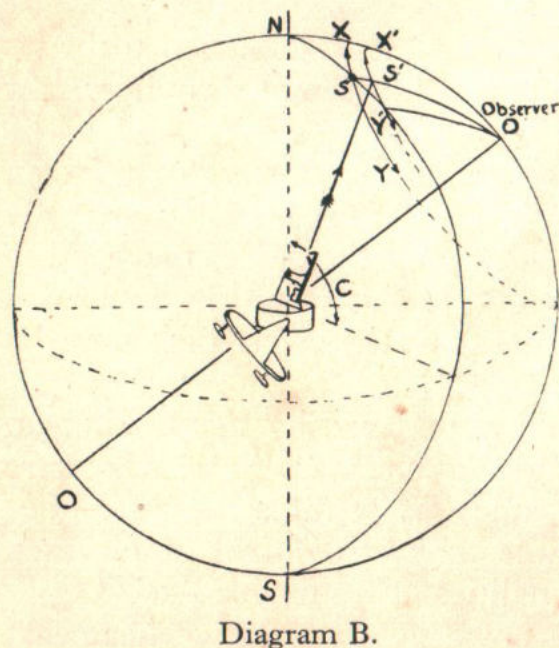
Tee Emm, being an official publication, everything in it appears with the approval of the Air Member for Training and represents official views on policy. This page, however, we reserve for occasional unofficial correspondence, to which we have tried to dig out an official reply.

LETTER. "SIR:—Could I have an opinion on the following perplexing diagram which appears in the booklet of instructions on astro-compass Mark II. On page 5 we read 'the correct azimuth setting is when the star is vertically above or below the point of intersection of the white lines without paying any attention to the positioning of the lines with regard to the vertical. See diagram A.'



And there is the following diagram.

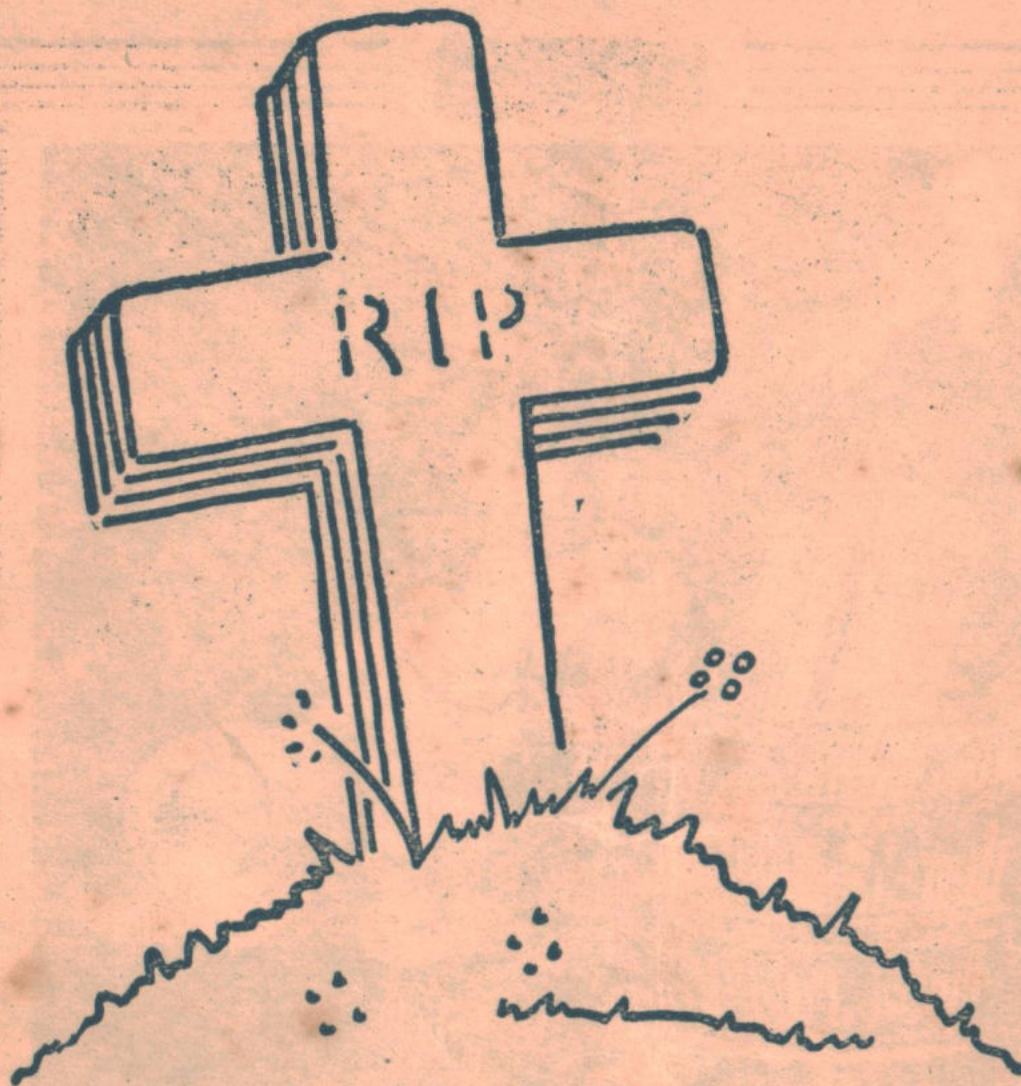
"Should not the correct positioning of the star be along the line bisecting the angle made by the extensions of the white lines?"



REPLY. The reason for aligning a heavenly body on the perpendicular through the point of intersection of the two short sighting lines instead of along a line bisecting the angle between them is illustrated in the accompanying picture. (Diagram B.) NOS is the celestial sphere, O is the observer's zenith, and S or X is the star. If the observer had made all the settings exactly, on rotating the base scale of the compass about OO' his sighting point would swing along XY until the two sighting lines met at S. Because the adjustments are slightly in error, however, his line of sight actually swings along X'Y'. The correct azimuth angle is SON, given when the sighting lines cut on CS'. The condition for this is that the star S should lie in the vertical plane SOC which is the vertical plane containing the observer and the point of intersection of the sighting lines. If the observer sets the point of intersection of the sighting lines at Y' so that the star lies on the line NY' bisecting the angle between them, then the azimuth angle NOY' will be in error by an amount Y'OS. To put the matter in the simplest terms, the astro-compass compares a calculated star azimuth with an observed one. The azimuth, however, is the angle between the observer's meridian and the point where a vertical line down from the star cuts the horizon. Hence if the sighting head does not happen to be tilted up correctly the base plate should be adjusted until the sighting head lies vertically above or below the star.

Diagram A.

Diagram B.



He left his sextant behind.

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.



W. HOOPER, A.S.P.

**“HIS
MASTER’S
VICE”**