TEE EMM

Vol. 3. No. 7 October 1943

Vol. 3. No. 7 **TEE EMM** October, 1943

CONTENTS

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

NOTE!

Judging by frequent letters, some of our readers seem at a loss to know where to write to us because our address does not appear in every issue. The secret of the whole thing—and frankly we didn't think it was very secret—is that we are an Air Ministry publication and therefore the words "Tee Emm, Air Ministry," will find us.

"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

TRAIN-BUSTERS ON THE HOME FRONT

TRAIN-busting is a grand game, but why play it in England? By this we mean why beat up English trains when, if you wait, you may get a chance at real enemy ones? It isn't laid down anywhere that pilots have to get in a certain number of Unauthorised Low Flying Hours, but from various reports which have reached us lately some pilots seem to have that impression.

Here's an Oxford (in charge of an instructor at that) and (so runs the report) "as the aircraft approached the train it appeared to dive on it. It then dived more steeply, struck the ground and crashed." Both were killed, and the A.O.C. states: "A disgraceful case of an experienced instructor carrying out unauthorised low flying."

And here's a Spitfire, during the very same week, the pilot of which "carried out a head-on attack on a train. He then turned on to a left-hand circuit with the intention of repeating the attack." The train, however, was going faster than he expected, so he tightened his turn; and then struck the train with his port wing, while steeply banked and side-slipping owing to loss of speed. The aircraft was wrecked and the pilot killed. The accident was found due to unauthorised low flying in an unauthorised area, and the A.O.C. said "This accident was caused by flagrant disobedience of orders."

BUMPH SPEAKING

V

WE discussed files pretty fully last month, but before leaving the subject, we'll tell you straight out that you'll save yourself many headaches if you understand the numerical filing system in use.

Each file bears a file number in the top left-hand corner which looks something like this, "6XYZ/17/11/AIR" (or worse!), and also a "Subject"—such as "Instructional Films." All letters written about films from that Unit will bear the file number, and the carbon copy will be filed on that file. All quite easy if you master it, but you may meet difficulties if you don't.

Only a limited number of files are likely to concern you, and it is well worth while making a note in your notebook of the "Subject" titles of those files with their file numbers. Then when you want a file about such-and-such a matter you can ask for the file by its number.

* * * * *

Although what has appeared in this series of articles has been on general lines, it is the budding flight commander whom we have had at the back of our minds. So, to end up with, let's look at his job in particular, and suggest that, when faced with it for the first time, he adopts the following "office drill" for taking over:

(1) Write down, from what the chap ahead tells you, everything that has to be done. If he's got it written down for you, so much the better, but if he recites it from memory and you rely on remembering what he says, you can bet your boots that half of what he knows will be forgotten by him, and half of what he tells you will be forgotten by you.

(2) When you have got it down, go through it with your Squadron Commander or Adjutant who will be able to add dozens of things that your predecessor has omitted—or maybe that he didn't even know. This record will be invaluable to you, and also to your successor.

(3) Don't insist on your own methods until after you have had some experience of following your forerunner's. Changes are bad for everyone unless they are definite improvements and not just whims. Uniformity of procedure in all the flights is a big help.

(4) As quickly as possible select an understudy—but don't "appoint" him until you have got your Squadron Commander's O.K.

(5) Aim at having essential information in visible form, such as:—

(*a*) Slotted racks for cards bearing the names of your underlings, their qualifications and their whereabouts.

(*b*) An *adequate* leave-and-pass roster. (There is much heartburning when this is badly done.) Also, now that the hours spent on courses look like approaching the hours spent on flying, a course roster.

(*c*) Something similar to (*a*) for pupils, if you are at a training Station, and a large blackboard which will show at a glance the progress of each pupil.

(*d*) Day and night flying times, daily and from the beginning of the month.

(*e*) Aircraft serviceability.

(*f*) Anything else you think of, for this list does not pretend to be exhaustive.

(6) Take pains with your Flight Order Book—and ensure that your staff refresh their memories from it frequently.

(7) Air Staff Instructions (A.S.I.) are probably held at Squadron H.Q. only. Check that your instructors are familiar with them—and with amendments.

(8) See that A.M.O.'s are circulated to you, and don't keep information under your hat. Let your staff know about anything which affects them.

(9) If you are in Flying Training Command or an O.T.U., previous training records will be passed to you for your pupils (P, N, or B or anything else). Arrange things so that instructors have them at the earliest possible moment—and make sure that they understand them and make use of them. In turn, enter up carefully and promptly whichever report form your unit has to fill in—for the benefit of the next unit. These valuable records are worthless if the next unit does not receive them until a few days before a chap moves on again.

(10) Log books, too, for both instructors and pupils call for methodical handling.

(11) The confidential progress book is most important. See that it is well and decently kept.

(12) Watch your diary, and get returns in and out on the proper day.

(13) Delegate specific duties to your staff—and let each know what every one has to do. Have an organisation plan.

(14) Keep your table and your office tidy.

(15) And so on. . . .

But, above all, do appreciate the fact that a measure of office work is absolutely essential. The more you know about it and remember about it, the quicker you will get through it. Study it. Think out ways of improving it and simplifying it. If you do this you will not only do a better job, but you will get more time for flying.

And after that? Well, more rapid promotion than would otherwise have been the case. And with it, of course, and alas—more bumph.

(*The previous articles in this now completed series appeared in* TEE EMM *for June, July, August and September*, 1943.)

DON'T BE A PARROT!

YEARS and years ago, before the last war, when service life was comparatively leisurely, the art of instruction consisted chiefly in the Instructor (*a*) memorising his lectures, drill, detail, or what-not; and (*b*) pushing it over parrot-fashion to his class. Thereafter it was up to them to learn what they could; and since, as we said, service instruction in those days was "slow-motion" compared to the present time, the subject-matter as a rule gradually sank in.

We say "*sank in*," not "was put in." For a vast number of those old-time instructors were more like the official Guide Round the Castle than teachers. ("Hon-the-right-you-'ave-the-hold-hoak-staircase-famous-for-its-carved-nulepost-passing-this-way-no-not-there-sir-'*ere*-we-have-the-Lady-Hermyntrude's-bood-wah-the-winders-are . . ." and so on.) After a long period of instructing (and instructors had often been instructors "man and boy for fifty years coom next doong-spreading") they could recite their lectures—complete, of course, with proper pauses and proper questions—without fault, without hitch, and also after that long period without any real understanding of the subject themselves. One felt that an original and unexpected question in the middle would throw them right out of gear. For they only knew their stuff like a not very bright sentry knows his orders. When asked by the orderly officer what his orders are he begins "Wun-'is-beat-extends-from-the-guard-room-door-to-my-sentry-box-two-I-must-allow-no-unauthorised-person-on-or-near-'is-beat-three-he . . ." etc. And interrupted halfway to repeat some particular order, he is struck dumb, and only after pressure will he furrow his brow, moisten his lips and in a rapid monotone reply: "Wun-'is-beat-extends-from-the . . ." etc.—till he gets to the order required.

All that is, of course, now gone. For to-day it is clearly realised that the marrow of good instruction is to make the pupil use his own brain in order to develop not only his basic knowledge, but those very necessary qualities of alertness, resource and initiative. And

to achieve this the real subject-matter of the lecture must also have sunk into the *instructor's* brain : otherwise he can never establish the necessary intellectual relationship with his class.

In other words it is the first duty of an instructor to *gain the confidence of his pupils by proper absorption of the knowledge he wishes to pass on.*

It is at this point that instruction becomes an art, for the instructor must regard his class as an instrument upon which he must learn to play skilfully. That is, he must know how to grapple with its varying mental capacities and characteristics.

Here, then, are a few personal maxims for the conscientious instructor :—

(i) Know your *subject* thoroughly : not the words, or flesh, in which you clothe it, but the real matter, or soul, which is its core.

(ii) Consider carefully the best way to *present* it, both in form and method : a good lecture—like a good play—needs production and stage-management.

(iii) Remember a lesson should be in a way *mutual :* so consider how much intelligent criticism and how much of the gen you wish to put over can be *drawn out* of the pupils themselves. Remember, too, that " drawing out " does *not* mean just getting them to say " yes " and " no." They'll soon learn to do that without its meaning a thing.

(iv) Study and use all possible methods of *visual instruction* as an aid to oral. Remember what we said last month : What goes in at one ear frequently goes out at the other, but what goes in at one eye is definitely going in at the other too and is more likely to stay in.

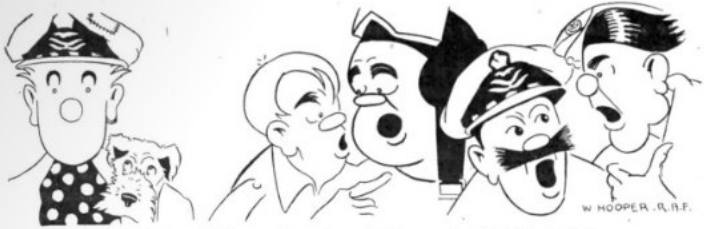
(v) See that each man is *brought into* the discussion and criticism : don't ignore the slow-witted bloke while the quick-witted one holds the stage. You want a *star class,* not *one meteor.*

If you follow out these maxims you can hardly fail to make your period of instruction a personal and interesting affair. This in turn will lay the bogey of boredom which is responsible for more lack of knowledge than nearly all the other factors put together. You will also be ensuring that you bring into play the minds of all your pupils in quick and regular succession. This again in turn will keep the whole lot on their toes, for every one will be conscious that at any time he may be called upon. And finally by knowing your subject thoroughly yourself you will be *interpreting* the manuals (which invariably contain more than the pupil really needs to know) rather than just passing them across word for word ; and this will make your lecture not a mere period of instruction but a mutual *search* for knowledge.

And it all begins with the elimination of " parrotry " on the instructor's part. Look for it and see that it doesn't creep back !




WHO'S IN CHARGE HERE?



The Soviet. Or Prune waits to hear what his crew has decided he shall do.

MANY years ago, we remember, in our cadet days we lived in a small barrack-room with six other cadets. One night the whole room got joyfully embroiled in a good old-fashioned rag, due largely to an announcement that four days' leave was to be given to all at the end of the week. The commotion was at its height when the door was flung open, and there was the Orderly Officer.

"Who's in charge here?" he thundered out into the sudden silence.

"Coo!" we thought to ourselves, glancing furtively at our comrades. "Someone's going to cop it!" We concentrated our gaze on our left boot and stood there breathing heavily but respectfully.

"Well, who's in charge?" snapped the officer. "Speak up!"

With a sudden gasp we realised who *was* in charge. It was *us*, personally, by virtue of our acting, unpaid, and practically unearned stripe . . .

We personally didn't get that four days' leave after all, and it taught us a lesson: the lesson that in any Service there is always *someone* in charge, whether it is the Group Captain on a Station or merely the senior airman of a small party of men; and, that that person, being in charge, has got to realise his responsibility.

That lesson is the sole reason we told you the story, for it's a lesson that is a very important one to-day, particularly for bomber crews. Every bomber crew has a captain; and that captain is in charge. He must always remember that fact. He, the captain, is in charge of his aircraft and of the crew who fly it, whether there're on a short flip back to their own station after a diverted landing or on a major operation taking in Happy Valley and all points West.

Now it is by no means true that a good member of an aircrew is automatically a good captain. *But*—and here's our point—he *can* turn himself into one. It is largely up to him.

A good member of an aircrew who wishes also to be a good captain must constantly exercise his qualities of leadership, if he has them, and must concentrate on developing them if he has not. He must at all times cultivate proper discipline and control over his crew. He must, in short, make himself their leader, *and* ensure that he is recognised as such.

One of this country's born leaders in battle, Lt.-Col. Campbell, the V.C. of Wadi Akarit, gives as the essential requirement for a leader, the ability to win and retain the confidence of those under him. To accomplish this (he goes on) he must acquire and develop the following qualities :

(i) Sincerity. If he is sincere in all he says and does, he will be trusted, as one who is straightforward and honest.

(ii) Enthusiasm. If he is keen on the job, energetic in carrying it out and able to foresee its conclusion, he will be trusted, as one who will bring those under him through to success.

(iii) Knowledge. If he knows his stuff, he will have confidence in himself, and so will be trusted, as one who knows what he is about more than those under him.

(iv) Unselfishness. If he can sink his own feelings for the sake of doing the right and best thing, can give credit when it is due and not let himself be carried away by a sense of his own authority, he will be trusted, as one who is out for the good of the community and the proper carrying out of the job.

If, therefore, he is trusted on all these counts, he will find that he can give orders without fear or favour, can listen to suggestions and either accept them or turn them down, and can make decisions which the others will carry out cheerfully and willingly, *because* they will be positive that his decision is the right one and the one ultimately to be obeyed.

How best then can the captain develop these qualities in actual practice ?

Sincerity can be developed by constantly keeping in mind the fact that you are in charge and that the success of the operation depends on you. Never, therefore, say anything you don't mean or that you feel to be wrong, just because you are too careful of a person's feelings. The fact that you are always honest in what you say will soon be borne in on him and he will respect you for it. *Never* defer to a member of your crew because he happens—as may well happen —to be of senior rank to yourself. You are the appointed captain and you have the weight and backing of the whole Air Force behind you. If he is one who understands the value of responsibility —and by virtue of his rank and job we presume he is—he will realise this and appreciate your attitude.

The second quality, enthusiasm, comes from keenness on the work in hand and a strong desire to make it successful. This can be attained by constantly keeping your aim in mind ; by checking and supervising the work to be done by all crew members before, during and after the flight ; by helping the Navigator, Air Bomber and W/Op. in pre-flight planning ; and by holding " post mortems " to correct and avoid mistakes. The fact that you seem to be going outside your own job for the good of the job as a whole will make your crew realise how determined you are not to have a failure and will stimulate their own enthusiasm.

Knowledge, the third quality, is only acquired by hard work. If you are to be in charge you must try to know just a little more than the other members of your crew if you wish to ensure their respect. It's no good bluffing ; you must *know* ! You must, therefore, acquire a sound knowledge of flying regulations, of the proper use of all equipment, of the personal duties of your crew, of geography, of Flying Con-

trol, of the safety organisation, of crew drills, and of many other things. Authority without knowledge is worse than knowledge without authority in destroying the confidence of those under you. For knowledge is always respected : bluff is not.

The last quality, unselfishness, can be developed by looking upon the welfare of those under you as a duty, by seeing that they are properly equipped and dressed and have the proper books and instruments, by working as hard or harder at your job as they do at theirs, by insisting on practices, by encouraging and cheering them at all times, by knowing their weak points and by appreciating their good ones, by, in short, thinking of them and taking a personal interest in them—and *never* by adopting the attitude of " Oh, well, if he chooses to slack off it's *his* fault, *I'm* all right, *he'll* buy it one day."

This does not only apply, remember, to your crew. The welfare of the maintenance crew should also be the concern of captain of aircraft. Upon the work of these airmen, and nowadays often airwomen, depends very largely the safety of the whole aircrew. And it is work which has to be done frequently in the open and under trying conditions. Unselfishness in helping them, in seeing they get what comforts they can, and thus doing something towards their efficiency and well-being, is a very vital part of a captain's duties.

The above, then, is the way in which you should set about acquiring the qualities that give you the confidence of those under you and the ability to lead them. Armed thus you will become a real captain of your crew—and it is then

Prune always takes an interest in his ground crew —particularly the new member, Waff Winsum.

that you must fully realise the responsibilities of that position. Crew captaincy is not only an appointment : it's a *job*. *You* are the one to give orders. You must always remember that, and see that the others know it. Never, never let your crew develop at times of doubt into a local soviet, all blathering about what's best to do. There will always be a chap who thinks he has a better idea than yours and wants to argue it out with you. There will always be a chap with a strong personality and a fixed course of action he wants you to follow. There will always be a chap who wants to improve on your order—" wouldn't it be a little better, if . . ." There will always be a chap who says, " Oh, well, none of us knows, let's toss for it ! "

All these types may have valuable

suggestions, and it is up to you to weigh each one in the light of your own knowledge and of the man who makes it. But it is *you* who give the ultimate orders, and it is you who take the ultimate blame. Many people are extraordinarily vocal and helpful, when they don't have to carry the can if their suggestions turn out wrong ; and it's never a bad idea to point this out to them.

Firmness backed by knowledge, backed by the definite realisation that you mean what you say and that you are being firm for the good of all, breeds respect and confidence.

Once again remember that you're not just one of the boys, to be momentarily flummoxed by the question " Who's in charge here ? " *You're* in charge, as captain of the aircraft—and you have, whatever your rank, the weight of the Air Force behind you.



BAG THE HUN

Here's an excellent booklet. It's called " Bag the Hun "—though its Whitehall name is " A.P.2580A—Estimated Range and Angle Off." It's obviously frightfully clever, because we've looked it through and can't understand a word of it. But we feel certain all fighter pilots, or anyone else who uses a front gun in a hostile manner, can not only understand it, but benefit considerably from the gen therein.

For only by constant practice in judging the range and angle off can the Hun be bagged. And here in potted and attractive form—indeed the book looks like one of the flossier advertisements for a tailoring firm—is not only instruction but practice in the fundamentals of aiming. And those who study combat films are unanimous in saying that practice is certainly needed, for films continue to show fire opened at ranges of 600 to 800 yards !

The best part of this book is that it makes you test yourself. There are many questions and problems and the solutions are given—generally on the next page, to stop cheating. There's even a mistake on page 36—can you spot it ? The authors of the book say the mistake was put in on purpose. Well, that's their story and they're going to stick to it. *We* think it just slipshod proof-reading !

The booklet, by the way, has already been out two or three months, on the scale of ten per fighter squadron, twenty per A.F.U.(P) and thirty per S.F.T.S. and Flying Instructor Schools, also individual copies at O.T.U's., so you've probably seen it already. But we've been asked to bring it to your notice again, because, judging from those combat films, some of you could still use it profitably.

If you haven't seen it get hold of it ; if you have, see it again.

FOR SIGNALS PEOPLE ONLY

SIGNALS Officers and Air Signal and Air Radio Officers of the Fleet Air Arm should brush up their telescopes and keep a careful lookout for some new Air Ministry and Admiralty Fleet Orders which are expected shortly. They deal with a revised procedure for the reporting of defects in air radio apparatus, and the reason we're mentioning the fact here—Fleet Air Arm Officers, for the benefit of—is that they have been drawn up by an Inter-Service committee. They are, therefore, the result of the pooled experience of the Royal Air Force and the Fleet Air Arm—and who can say fairer than that ?

Once you've read these Orders you'll realise one big thing. The committee have got wise to the inadequacy of Forms 1022, 1023 and A21 as a means of conveying one's real feelings about the shortcomings of air radio equipment, in terms which leave no doubt about what has gone wrong, and in what circumstances. Far be it from us, of course, to infer that all radio equipment is full of inherent bugs when it is released to the Services : obviously that's a libel. But so long as there exists the slightest risk of something going wrong with a set there should also exist a means of rapidly devising and circulating the proper cure for the evil. The idea then of these Orders is to explain the set-up for doing this, and the way in which essential information must be collected. No doctor can cure you unless he has fairly full details of your symptoms : and he can cure you more quickly if he knows these at an early date. The same applies to radio equipment.

The new Orders definitely kill the 1022s, 1023s and A21s so far as air radio equipment is concerned. Their place is taken by a list of questions, very much like those on which crash reports are based, and the answers to these questions are to be sent to the Air Ministry *direct, by postagram.* Copies still have to be sent to other authorities, of course, in order to keep them in the picture and help fill their " IN " trays, but the important thing to remember is that the original goes straight to the People Who Matter, instead of through administrative authorities, usual channels, and other well-known sources of delay.

The drill for units stationed abroad or embarked in aircraft-carriers must of necessity be a little different. They still send their reports *via* the administrative authorities, using of course the new form, but by the quickest possible means—such as airgraph or micrograph. Since, as Bertie Wooster says, " Speed is of the essence," units at home may even telephone Air Ministry direct when a radio defect causes aircraft to be grounded. And in these circumstances administrative authorities abroad or at sea can signal reports to Air Ministry.

A word about the type of information called for in the new form. The Orders deal with this in some detail, and your first impression may well be to think that the bumph merchants have once again got out of control. But a good deal of the information wanted concerns the accurate designation of (*a*) the faulty part, (*b*) the set of which it forms a component, and (*c*) the circumstances of the failure. All this is most necessary. After all, the back-room boys are not thought-readers.

Anyhow, there are thirteen columns to be filled up and, after the first two or three shots—material for salvage !—it should be a piece of cake to those who have their sections properly organised, and who can lay their hands quickly on the gen.

Sub-Lieutenant Vereshackle will by now be wondering what the point of all this is, and why he should be forced to get on terms of intimacy with a lot of technical dope just to please blokes up above who are making his life a misery anhyow. Well, the answer is that the Services have outgrown the old procedure. It was just too slow. As a result chaps who religiously filled up their 1022s and A21s got all discouraged because of the time-lag between the sending of reports and the appearance of mod. leaflets, and also because of the total lack of news as to whether the reported snags were being looked into or not. Units then began putting sets right themselves, each unit having different ideas on the subject, or else were constantly getting sets replaced. In either case, 1022s and A21s as a means of getting ropey sets cured were definitely a falling market and filling the forms up became a complete bind. The new form, however, calls for more information and is going to do much more with it.

How ? Well, all the gen sent in will be indexed and cross-indexed. Chaps who know their stuff will, on receiving a defect report in its new form, turn up the book to see whether the fault has already been reported. If it has, they will rap out the answer p.d.q. If it is a new one on them, they will call in the scientists to investigate and advise, not forgetting to give them frequent reminders that a reply is urgently required. When a really hot line of trouble is disclosed a modification will be shot out to both Services.

Obviously, the seriousness of any defect in radio equipment can be gauged by the number of times it is reported over a given period of time, and keeping a general eye on this situation is an Air Ministry worry. They do it by a process known as " statistical analysis," which saves a lot of trouble when deciding whether an investigation is, or is not, necessary. Isolated failures, occurring one or twice over a long time-period, naturally don't call for special attention. We make a point of this because P.O. Prune may be tempted to run a line of vitriolic and subversive propaganda in the event of the Air Ministry failing to re-design a modulator on the strength of one

report from him, and that probably made on a morning after when his critical faculties were not hitting on all six.

The Orders also contain a section on the return of defective components for examination, and when doing this you must remember that the engineers' job will be made much harder if they have to guess how much of the damage occurred during transit. So pack carefully and label carefully; otherwise the investigation will take longer than it should, and you'll suffer by it.

A final word. Give the new scheme a fair trial by first reading the Orders thoroughly, and then by co-operation with the Air Ministry. It will be worth it in the long run, if only by the reduction in the number of your headaches. The Orders, as we said, will be out soon. You have been warned!

THIS MONTH'S PRUNERY

THE MOST HIGHLY DEROGATORY ORDER OF THE IRREMOVABLE FINGER (Patron: Pilot Officer Prune) has this month been awarded to Sergeant-Pilot —— for Truly Remarkable Navigation.

Being detailed for a cross-country from Peterborough to Aberdeen he fetched up at Portreath (West Cornwall). Having moistened lips and started afresh, his next attempt got him to Manston (East Kent). Any third attempt to reach Aberdeen (which would no doubt have got him to Llandudno) was ruled out by the effects of overshooting on putting down at Manston. In each case it appears obvious he only put down because he was running out of land!

The M.H.D.O.I.F. is also awarded this month to Squadron Leader——for Touching Faith in his Compass.

On being asked by the Navigation Officer to hold an aircraft off operations for compass swinging, as the compass had not been swung for six weeks, he replied: "But why? It's been all right up to now!"

AIR GOLF

From a report: "The pilot executed a very skilful forced landing upon an obstructed golf-course, his approach to the edge of the 11th green being one of the neatest of the day's play. After the temporary removal of the necessary hazards, the aircraft was successfully flown off from a neighbouring fairway.

Service Terms Illustrated

by

Well-known Newspaper Cartoonists

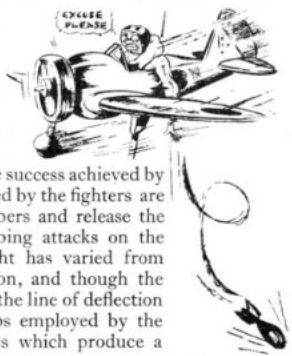
No. 9. MOON of *The Sunday Despatch.*

"A NEAR MISS"

AIR-TO-AIR BOMBING

THE use of anti-aircraft bombs is not new ; on the other hand, as a form of attack by aircraft on other aircraft it is not very widespread. Still, here's a little bit of gen on this particular form of amusement as practised by the Unspeakable Jap.

The first use of aerial bombs was reported in May, 1942, in the Solomons area, when a Japanese type "00" fighter, flying about 1,000 feet above and ahead of a formation of Fortresses, dropped an object which exploded in front of the leader in a burst of bluish smoke and fragments.



Since that date, there have been many instances reported of this type of attack and though the methods have varied somewhat from time to time the success achieved by the enemy has been negligible. The tactics employed by the fighters are either to fly above and slightly ahead of the bombers and release the bombs in level flight, or to carry out dive-bombing attacks on the bombers. The height of release from level flight has varied from 500 feet to 3,000 feet above the bomber formation, and though the altitude of the bomb burst has been fairly accurate, the line of deflection has in most cases been poor. The type of bombs employed by the Japanese vary, and include some incendiary types which produce a curtain effect and apparently contain phosphorus.

Here is another instance, this time in the words of the report : "About 25 minutes after leaving the target a fighter was seen to cross from the port bow about 1,000 feet above the bombers. Immediately afterwards from fifteen to twenty very closely spaced black puffs appeared between 100 and 200 yards astern and 50 to 100 feet above the No. 2 bomber in the formation, throwing that aircraft into a heavy lurch. The only damage sustained consisted of a few scratches on the starboard stabiliser." Not a very effective attack that one !

Besides the faint possibility of actually destroying the bomber, of course, the main object of the exercise is to break up the formation and thus enable the fighters to start their stuff with more chance of success.

The degree of success so far has, however, been pretty small compared with the effort involved ; while any idea of upsetting the Allied bombers' morale by this form of attack must be written off completely. Though there is, naturally, a possibility that the numbers and effectiveness of the bombs dropped may be increased, the present defensive manœuvre is merely to maintain the bomber formation so as to be absolutely ready for the much more vital job of defence against the subsequent fighter attacks.

COME UP HERE AND HAVE A LOOK DOWN!

BETA PRUNII, the new heavenly body.

SNOOPING round the other day in our usual fashion—and it makes us pretty unpopular at times—we unearthed some interesting points about this High Level Reconnaissance racket. And when we say High Level we mean *High* Level. Prune, as one might expect, isn't interested in up-top : he prefers the other end—and can generally be found sitting on it. "What? Go right up there," he says. "It isn't natural!"

Maybe he's not far out, for the Operational Height for normal work—and it makes us quite dizzy even to think of it—is just below Con-Trail level, which, as you know, is anywhere between 26,000 and 32,000 feet, the latter being the summer-weight fitting. The idea of this position is that you aren't likely to be bounced from above by a bandit, because he can't get up there himself without giving himself away.

Perhaps the best way in which we can give you an idea of what it's like up there looking down is to take Prune up—cajolery, force and promise of subsequent drinks necessary here—and let him do the looking. So up we go amongst the heavenly bodies and the first thing Prune remarks is the phenomenal visibility range, though he words it more tersely and with a hint of medical phraseology.

He's certainly right. It looks like the answer to the Pilot-Navigator's dream, a complete map sitting on the deck below him. From our particular vantage point we can see the whole of the South Coast, and Prune calls attention to the fact that funnily enough it's almost exactly like his map of it, blow him down, he can hardly believe it.

The sheer immensity of it all soon affects Prune with delusions of complete mastery over all navigational problems, with the result that he inserts the navigational finger and by way of passing the time has a look at the knobs and taps.

Yes, he *does* remember now he was told to watch them in case they froze—and he hasn't, and of course they are frozen. He utters an oath—which rather to his surprise cames out at that height all squeaky and schoolboy and gives no real satisfaction whatever. . . .

By the time he has freed the taps he is all dizzy. He wonders why. . . .

Yes, it's the result of more finger trouble. He *was* told not to economise on the oxygen and he didn't really believe it. We tell him there's always bags of

it, and that things are so arranged that if the juice will do the trip the oxygen will.

Prune says, ah, well, this isn't quite such a piece of cake as he thought and applies himself to the Camera Control fitting. Everything is simple here, because if it isn't properly set there's sure to be some other type he can blame for it. He doesn't bother with it for long.

All this having amounted, as it were, to a pleasant zizz in the office, Prune thinks it time to take a peep out of doors —and stap him, if half of his magnificent map hasn't disappeared !

We point out to Prune that the reason is we happen now to be flying in a steep bank. Yes, Prune, once you get up to that altitude strange things happen. You must fly absolutely accurately or you go down, down, through fifth floor ladies' underwear, fourth floor boys' clothing, books, games, right down to—and through—boots and shoes in the basement before you even know you've started.

We get level again and Prune now has another problem. The coast is still away in front of us, but how far ? It looks nothing from six miles up, but surely, he can't be there already. We tell him to try gauging the distance between his vertical point and the coast and then compare it with a known length of coast line. Having done so, he soon finds he's ten miles or more further away than he thought. This also gives him for the first time an idea of the huge area his aircraft must hide from his view. As big as . . . well, no, bigger than . . . oh, let's get on with the job. The object of the exercise is to find a pin-point, and if we don't return with the gen we groaned up to get, we shall simply have wasted petrol.

We tell Prune we won't bother to look for pin-points right away, but will think in terms of area and direction. " Areas " are the thing in high level navigation—areas with their main characteristics, and their relation to adjoining areas. To these areas, towns, forests, rivers and coast-line features are the clues—reliable enough in West Europe at any rate.

So on we grind, recognising " areas " by their main features, and taking pretty good care to memorise them against that inevitable rainy day that will catch us out if we don't. The time will come, we tell Prune, when he may only just sneak a glimpse of a forest through a gap in the cloud, but—if he has done his memorising properly—will be instantly able to recognise it. Then he'll like that forest and hope everyone down there is liking it too—a pretty decent sort of forest all round. For it will at once mean to him something in terms of areas, directions and flying terms—it will be in effect a signpost for home and the *Rose & Crown*. . . .

Prune sits up at this and starts trying to memorise everything in sight. . . .

Ah, here we are at last, coming abreast of the area we're hunting—a maze of little woods, canals and roads, somewhere in which, we hope, lurks our pin-point.

And our hopes are justified : it *is* the right area. There are the two towns and the forest we expected—we must remember to stand these map-making boys a drink—and that's where our pin-point must be. Prune is all for going straight at it but we restrain him : it's only twelve miles away and the nose of the aircraft will almost immediately block it from our view. Besides, we want room to turn on to it in such a way that it is nearly

beneath us during the turn. So we will hold a course to one side of the pin-point until we get some prominent object on the beam which puts us in transit with it.

We must not, however, forget that minutes are long things. Wait until you are well up, Prune! It is a common error—and if it's an error it's something right up your street—to turn towards a target too early with the result that you come out of the turn right above it and you have no room to manœuvre so as to make a straight run over it. So we'll hold our course until we are sure it is in transit with us and some prominent object, as explained above. *Then* we'll drop the wing and have a look-see.

We have by these means reduced a huge area by easy stages into a confined space which should hold our pin-point. Does it?

We drop our wings and look. Oddly enough, there it is. . . .

Prune thinks it's magic.

"Why," says Prune, "there's the 'Rose & Crown'."

WINDE GETS A SHOCK

What is this picture? Guy Fawkes day before the war, or an Me cannon shell exploding in the rear turret, or what?

No, it's only our old friend Sergeant Winde—blast him! What's he done this time? Well actually, in his usual sloppy manner, he hasn't ever bothered to wear his brown outer gauntlets over his electrically heated Type D gloves, with the result that the black silk has got so worn that most of the insides, all loaded up with amps and volts, has become exposed. Naturally there's been a bit of a scene when he took hold of his turret control handles. . . .

Not only does Winde get a severe shock, but he is outlined in blue flame—and sets his turret on fire for good measure.

Don't *you* be such a fool as Sergeant Winde! Wear outers always, and keep 'em in repair.

GET FILM CONSCIOUS!

"THIS is the Station Commander, R.A.F. Station, Much Pranging, speaking. Is that the Instructional Training Films branch of the Air Ministry?"

"Yes, sir."

"I hear that you may have a film about how to use Cloud Cover? One of my Squadron Commanders thinks something of the sort might go down well here. Have you got anything in that line?"

"Oh, yes sir, No. 366—Tactical Use of Clouds. It's quite an old one—1941."

"Is it! I never heard of it till last week. Have you anything else in the film line that might be of interest? . . ."

Well, we won't go on with the conversation. Suffice it to say that it was subsequently discovered that at that particular Station there were no fewer than three copies of A.B. 1972, which is the official catalogue of *all* R.A.F. Instructional Films available. The Station Commander could have picked out the cloud-cover film or "anything else in the film line that might be of interest" from this useful little catalogue. He then might have gone further and discovered that a copy of the actual film he wanted—along with several others of interest—were actually held on his Station at the time! And he could have gone even further still by not bothering to ring up himself, but by chasing up the person on his Station responsible for Instructional Films, and asking *him* what he wanted to know—and having the hide off him if he didn't know it. Unless, of course, he had failed to appoint such a person?

"Yes, Sir, we do have an instructional film on the tactical use of clouds!"

Now this reveals a state of affairs which is only too common. Lack of film-consciousness. Films being sent to a Station and apparently thereafter lost to mortal ken; people on the Station not knowing how to get films or how they are issued; people not being aware that there is even such a thing as A.B. 1972, which gives not only the list of available films, but the scale and methods of distribution.

We are—we hasten to add—not trying to pick a quarrel with Station Commanders. We appreciate their troubles and worries and the enormous responsibility they have to carry. The use of R.A.F. Instructional Films is obviously only a very small cog in the machinery which a C.O. has to keep working smoothly. But their value has been proved again and again. The majority of instructors, gunnery leaders, training

officers, technical officers and so on will bear this out. And as the C.O. is, after all, responsible for everything in his Station, he is ultimately responsible for the showing of films as and when required.

But he is not expeeted to do it himself. He is not expected even to ring up the Air Ministry about films, or to know off-hand just what films he has. It is a responsibility he should delegate. He should, in fact—if he is doing his job—see that *someone* is made actually responsible under him for handling Instructional Films, and that people know who it is. It is Not Good for the Air Ministry to get complaints from aircrews and trainees to the effect that " I want to see such-and-such a film, because I think it'd help me, but no one here knows anything about it and we don't appear to have any films on the Station, at least they're never shown."

The person made responsible for the screening of Instructional Films may be the Chief Technical Officer, or the Officer i/c Training, or whoever the C.O. thinks best, but preferably *not* the Photographic Officer. Too often are the films handed over to this latter merely because they are a string of pictures in celluloid and if he deals with photos, he must also deal in films.

Instructional Films are valuable aids to efficiency, whether on training or operational Stations, and one cannot get away from the fact that it is the C.O.'s duty to do everything in his power to maintain the efficiency of his Station. Getting his Station film-conscious is part of it.

WHAT LACK OF OXYGEN DOES TO A GUY

RECENTLY an Air Bomber over Germany, having just dropped his bombs, went back to have a look at the flare chute. Foolishly he did not take his portable oxygen bottle with him and when he reached the flare chute he saw to his horror that the photo-flash had been thrown on to the floor, and was lying there safety cap off and safety pin out of the fuze.

The Air Bomber threw himself at the thing and tried to reinsert the pin. But it *would* not go in, and as he feverishly fumbled he heard, above the noise of the engine, another sound. It was the fuze in the capsule burning. He grabbed the whole thing up in his arms, yelling to the pilot as he did so : " Fifteen seconds ! We've only got fifteen seconds ! "

Parachute packs were brought to the ready while the captain ordered a hole to be made in the side as quickly as possible and the thing thrown out. An axe did the job just in time.

But, if the air bomber had been fully oxygenised he would not have behaved so foolishly. It just shows what lack of oxygen can do to your brain. For there was another very simple thing he could have done, and if you who are reading this don't know what it was, you'd better get out your portable oxygen set, take a few whiffs, and then look for the answer on a later page !

ESPRIT DE A.G.

HAVE you a Squadron Score Board ?

Do your gunners consider themselves picked marksmen in four-engined fighters, whose pleasure it is to deal death to airborne Hun night-life and, on fitting occasions, to take over control of their aircraft ? If they do not, they are missing a lot, and so, Gunnery Leader, are you ! When a new crew visits your office to be " genned-up " does a scoreboard like the above confront its staring sprog eyes—a scoreboard illuminated in many rich colours, extolling the worth of Fighter Affiliation and the prowess in combat of their comrades of Squadron X ? Or do your gunners set forth like cooped fowls to the battle, their hopes of a happy return based on wishful thinking and luck ? If their paramount wish *is* to see no enemy fighters, it well may be granted. They may *not* see them—but such is a dangerous blessing !

Nay, let them rather set forth like that Arch-paladin Flight-Sergeant Pepper, who always keeps a sharp lookout, but never goes after a fight—though he knows what to do when he's in one. Sergeant Pepper has learned something, and passes it on thuswise :

" When they first started this fighter circus for affiliation," he relates, " everyone wasn't so keen. You know what it is : Flight Commanders don't like flogging their aircraft off ops., neither does Chiefy, *nor* the Engineer Officer—and as for the air-crews, *they'd* far sooner have a stand down. . . . If they don't use their loaf, that is. . . . But I and my skipper were keen. We went up once with the pilot who runs our circus—he can operate bombers *or* Spits so he knows what he's talking about—and we flogged the old kite round the sky till my skipper knew just how to corkscrew. There's more in *that* than you might fancy. Then we went up on our own with a fighter attacking. Cor, but my skipper got artful. The fighter pilots say now that it's all they can do to get their sights on for a second—and that's in daylight, mind you—and *then* they aren't being fired at !

" No, fighting with enemy fighters is only half shooting it out. It's keeping your head and weighing up ranges and giving the word to your skipper at the right

moment. You don't want no panicking, neither. Cor sufferin' Messerschmitts, have you ever been up with one of those crews where everything flaps bar the wings ? Thus : ' *Look out, Skip, searchlights !* ' ' *Flak on our starboard, Skip !* ' ' *Jeeze, get weaving, Skipper, there's a Junkers right on our tail !* ' . . . till the poor old captain is pouring with sweat and gets into a proper flat spin.

" No, the value of this fighter circus practice is not only seeing a fighter and knowing what it can do, and weighing up proper deflections : its value is in crew drill, training the crew to realise just how important it is that one man shall speak at a time.

" *Fighter, 900 yards, port quarter down* ' is all you need tell your skipper. Then ' *He's closing in now . . . get ready to corkscrew port. Corkscrew port . . . Go !*

" Easy, isn't it ? But remember to say that word ' *Go !* ' and see that your skipper waits for it. Timing is everything. And give the poor beggar a rest just as soon as you can, or he'll corkscrew from here to next Friday ! You see, he's relying on you."

He's relying on *you*. Have you got it ? That's *esprit de A.G.*.

MIND YOUR MARCOLINS !

MARCOLINS (so the history books will tell us in the future) were first discovered by Sergeant Backtune, who later came to be considered quite an authority on these pests, his knowledge of them—partly real and partly assumed—being worth many a free pint to him when in line-shooting mood down at the local.

The dictionary describes Marcolins as under :

" *Marcolins :* A type of imp or gnome, related to the Gremlin family (*q.v.*) but confining their activities to W/T equipment. Marcolins are small and tubby and appear to be constructed mainly of resistance wire. This enables them amongst other things to insert themselves into the H/T lead and produce a falling feed, otherwise unaccountable. They invariably carry adequate equipment for their purposes, such as soldering irons for shorting positives to negatives, or a monkey-wrench for the double purpose of shifting frequencies or bashing in the tops of valves. Marcolins should be constantly suspected everywhere in W/T equipment and suitable steps taken to discourage and outwit them."

You might like to hear how Sergeant Backtune first discovered a Marcolin. He was trying to remove the back VT 104 to his transmitter and finding it reluctant to come out he very suddenly looked into the valve compartment. And there was one of

the little pests, shoulders braced against the metal wall, pushing down with his feet on the top of the valve. Stung to fury, Backtune decided to match force with force. . . .

The top of the glass envelope caved in and the Marcolin, laughing raucously and triumphantly, swiftly crept out of sight.

Backtune *was* asked if he had disengaged the anode cap connection first, but replied airily ' Oh, the valve will come out without all that fag." Well, it will, but the odds are that a Marcolin is on the spot holding on to the anode cap, with the result that half the glass envelope will stay in the transmitter.

The rear PA valve is a favourite hunting ground of the Marcolin and you should always be on your guard when taking it out. Here's the drill : First disengage the anode cap connection before you do anything else, then bring it fully forward and to the left-hand side. Next, with your right hand, grasp the valve by the ceramic base, which prevents your giving unwitting assistance to the Marcolins who have inserted little levers between it and the glass envelope, and are trying to induce the two to part company.

Before withdrawing the valve, protect the top with the first two fingers of the left hand, placing one on either side of the anode cap. This provides adequate protection for the glass against other Marcolins, who are bound to be trying to press it in, and saves the anode cap from becoming entangled with their legs and breaking off.

Then ease the valve out of its socket, exerting the main pressure upward, and not from side to side in a " waggling " motion, as this again assists those Marcolins who are busy underneath trying to loosen the pin-holders. When the pins are out of the socket, draw the base of the valve towards you, but don't remove those two protecting fingers from the top until it is completely clear of the set.

When you are replacing the valve, hold it with your hand reversed—thumb and forefinger downwards. This enables you to see the base and the socket, and thus fox any Marcolins who may be trying to push the pins into the wrong holes. Never try to put on the anode cap connection until the valve is firmly in position and driven right home : if you do, an odd Marcolin is bound to spot it and give it a twist with his little monkey-wrench, which will break it off.

We've given you all this dope at some length because a VT 104 is a very expensive instrument and, though you may have forgotten this, the Marcolins certainly haven't. And there's nothing they like better than shuffling about with shrieks of delight in the shattered remains of one they have helped to destroy.

LEARN FROM THE OTHER FELLOW'S SUCCESSES

A Sunderland was carrying out a normal patrol in the Bay of Biscay when it was sighted by eight Ju. 88's which formed up to attack, three on each beam and one on each quarter.

The Ju. 88's peeled off to the attack in pairs, one from each bow. The first attack hit the port outer engine, setting it on fire, and also resulted in an incendiary bullet entering the P.4 compass, setting light to the alcohol. The engine fire was extinguished but the engine became unserviceable. The alcohol fire, which had set the Captain's clothing alight, was also put out with the fire extinguisher. During the attack, one of the Ju. 88's attacking from starboard beam broke away, exposing his belly to the midships gunner at point blank range. The midships gunner fired and the Ju. 88 burst into flames and crashed into the sea.

The next attacks severed the hydraulics of the tail turret, shot away the elevator and rudder trimming wires and scored numerous hits on the hull. The tail gunner was temporarily knocked unconscious against the side of his turret. However, the midships and nose gunners sent another Ju. 88 blazing down towards the sea.

Simultaneously another Ju. 88 came up on the starboard quarter from below and his burst fatally wounded the starboard galley gunner. The port galley gunner drove off an attack from the port quarter underneath.

Shortly afterwards a Ju. 88 came in on the port quarter and the midships and tail gunners opened fire, the latter, owing to hydraulic failure, depressing the sears with his fingers in short bursts. The Ju. 88 crashed into the sea on the port quarter, leaving, however, five Ju. 88's still to attack.

Result : the Sunderland's intercom. and radio were shot away, the A.S.I. ceased to work, the navigator was wounded in the leg and evasive action, which owing to the u/s engine and shot-away controls had to be carried out by both pilots, was controlled by hand signals. Yet still another Ju. 88 coming in from the starboard bow had to break away with port engine on fire and smoke pouring from the cockpit.

The combat continued for 45 minutes in all and the crew of the Sunderland estimated that every Ju. 88 partaking in the attack had been hit. Thus three Ju. 88's were destroyed, one probably destroyed and the remaining four damaged. The Sunderland managed to reach England and beach itself with one member of the crew killed, and others injured. A *Good Show !*

AN ADJUTANT'S WARNING

WHEN dicing in the upper air
At night, my son, I pray take care ;
And ere you leave the flarepath's glow
Recite this charm before you go :

" From Gremlins and Gremlets * and other strange beasties,
And things that prang kites in the night,
Good Lord deliver us ! "

Keep out of clouds, watch out for ice,
Mark well the circuit as you dice :
Rely implicitly, O tyro,
Upon the reading of your gyro.

Remember this and other lore
Drummed into your head before :
Apply with care all ' gen ' you know,
Land her safe, then taxy slow.

Guard your precious life, my son,
For once the damage has been done
Your worry's o'er : *You* leave life's clangour—
But *my* work starts from there, O Pranger !

* Small, immature Gremlins, usually born out of wedlock, found almost exclusively in the North of Scotland

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OXYGENATED ANSWER : All he had to do was to give a half-turn to the 848 fuze and take out the capsule. (See page 171.)

He said hedge-hopping was easy when one knew how.

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"Feels a different person"
and All Due to PILOTS' NOTES

Before

What Pilots' Notes Can Do For YOU!

After

Read this Unsolicited Testimonial from a Pilot Officer.

Dear Sirs, R.A.F. Station, New Heary.

For years I suffered from inability to make proper landings. My undercarriage was frequently retracted and I found myself going round and round again. At other times I had had attacks of bouncing immediately after touching down. Once in front of a Group Captain and several other officers I badly overshot myself.

Then a kind instructor told me about your *Pilot's Notes*, and after reading them regularly several times I feel a different person, and my landings are much admired. I enclose photographs of myself taken before and after the treatment and you are at liberty to use them and this letter in whatever way you like.

I am, yours truly, (*Sgd.*) —— P.O.