

RAF TRANSPORT COMMAND REVIEW

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TRANSPORT COMMAND REVIEW

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AREA CONTROL

A picture of Overseas Aircraft Control, Gloucester

Contributed by Officers of O.A.C., 44 Group

ABOUT a year before the end of the war, the Air Ministry decided it was necessary to set up a standard world-wide system of aircraft control, to ensure maximum safety to aircraft on long flights, and uniformity of procedure along all routes.

Two alternative systems could be used; either the American R/T Check Point system, or the Area Control system used so successfully across the Atlantic. It was primarily this problem of long flights across water, where check points are impracticable, which decided the Air Ministry to develop the Area Control system. As Transport Command had been responsible for the development of the system for Transatlantic flights, and therefore had the experience and trained personnel, this Command was given the task of putting it on a world-wide basis.

Basically, the area system entailed splitting up the main areas in which RAF aircraft fly throughout the

world into "blocks of air." In each block of air there was to be one focal control point responsible for all long-distance flights within its area. Eventually it went further than this, and the Area Controls in many places found themselves responsible for planning and directing land and sea rescue services. This, of course, is logical, because there is only one valid reason for flying control, and that is to ensure the safety of aircraft. In the UK the excellent communications which exist ensure close co-ordination between the Area Control organization and the Air/Sea Rescue organization, which functions under Coastal Command. The distances are much greater and the communications less developed in most of the other areas, and it is therefore natural that the Area Controls should also become the centres for directing rescue action.

Around the many air routes covered by Transport Command there now exists a pattern of controls whose

boundaries when projected on a map link up with each other, and just as the blocks of air are all joined together so also are the adjacent Area Controls closely linked by communications so that there is continuous liaison. Two Area Controls may share frequencies so that each can hear what the other is doing; they have quick means of contacting their neighbours on point-to-point W/T, and in some cases they have contact with controls beyond those immediately adjacent.

Now the idea behind this world-wide organization is summed up in the phrase, "Safety of Aircraft." The organization is not provided for the sake of passengers' convenience, though this is considered as well; nor yet is it intended to keep a tag on aircraft so that staff officers can have attractive WAAFs moving coloured discs about on large maps. There are large maps, and there are attractive WAAFs, and there are staff officers whom we need not describe. Their job is to ensure that aircraft reach their destinations safely, or if they cannot land with safety at their destinations, that they land safely somewhere else, but in all eventualities that they land safely.

Let's take a look at Overseas Aircraft Control (short title, OAC) at Gloucester.

Most aircrews know OAC Gloucester by its call sign, "Three Willie Sugar," or as just plain "Gloucester," though very few have more than the vaguest idea of what it does and how it functions. This is a pity, as really there are no other two elements of the RAF which should be better acquainted than those who fly the aircraft and those who are responsible for controlling the flight. Between them, the crew and the duty control room staff make up a team which is responsible for the safety of the aircraft and all it contains. You would rightly feel nervous in a train if you knew that the engine-driver and his crew did not understand how the signal system worked. It is at least of equal importance that aircrews who fly under Area Control should fully understand the system which controls their flights, particularly during these winter months when weather conditions increase the hazards and make diversions more frequent. Who decides when and to which airfield diversions are to be made? To what extent does the ground control know the whereabouts of aircraft? What happens to Met. reports sent from aircraft, and how are they used? Who tells whom that a certain aircraft is expected, and what happens if that aircraft does not arrive? Whose responsibility is it to take action if fog suddenly envelops the whole of Southern England whilst aircraft are approaching across France? These are just a few of the questions with answers which are closely linked with OAC.

At the top of the tree there is a Group Captain who is the CO of the Unit, and a Duty Wing Commander.

Both are experienced ex-operational GD officers, and the latter normally has the last word on all matters affecting the safety of the aircraft being controlled. We say "normally," because if a dangerous or difficult situation is arising he can usually call upon the Officer Commanding OAC, or the Senior Air Staff Officer of No. 44 Group, or even the Air Officer Commanding No. 44 Group (to which Headquarters OAC is attached) for advice. When time allows, the parent Group and Unit (if in UK) are also consulted before diversion or other action is taken in regard to any particular aircraft.

Under the Duty Wing Commander, there are the two Duty Area Controllers, whose job it is to ensure that aircraft get answers to their questions and are kept fully informed on all matters affecting their flight. When a message from an aircraft is received in the W/T cabin, it is immediately passed to the Area Controller, who is sitting just in front of the operator, and he takes appropriate action. If, for instance, it is a change in the ETA, this is 'phoned through to the destination at once on one of the direct tie lines. Should it be a request for an emergency landing, then the nearest serviceable and suitable airfield to the position of the aircraft is warned, and the aircraft diverted. If it is a Met. report from the aircraft, it is passed to the Met. office for plotting on their charts—an added aid for building up the weather picture for other aircraft going the same way later.

Working with the Controllers, there is the Duty Navigator who keeps a constant D/R plot of all aircraft under OAC control. His information is the time of departure of the aircraft, its ETA, the upper winds forecast for the route being used, and a few positions

The OAC Staff. The Duty Wing Commander and Controllers are on the balcony. The two Senior NCOs are engaged on Met. Liaison work. In the background, the Movement Clerks.



received from the aircraft. Some navigators would be surprised by the accuracy with which their opposite number on the ground fixes their position with just this information, and no more; and he does not do it for one aircraft, but sometimes for upwards of forty, all of whose positions are checked every half hour on the plotting table, to bring the picture up to date. All this is done in order to make available to the Duty Wing Commander and his controllers the position of the aircraft in relation to bad weather and to enable diversions, when necessary, to be planned well ahead. Supposing an aircraft force-lands or ditches without sending a position, then a rough check will indicate at once which rescue organizations should be alerted, and what other aircraft in the vicinity should be asked to keep a look-out. Don't be surprised if one day we correct your ETA for you—our Duty Navigators are pretty good.

To keep the control staff fully fed with information and airfield conditions, there is the Aircraft Safety Officer. He is the local Information Bureau on every facility used by aircraft, from the serviceability of the FIDO at Carnaby down to the number of cups of tea the NAAFI can serve at Hendon. One of his more serious responsibilities is the collection of half-hourly weather reports on all airfields at which aircraft will land or to which they may be diverted. This information is available to the controllers on large boards immediately facing them.

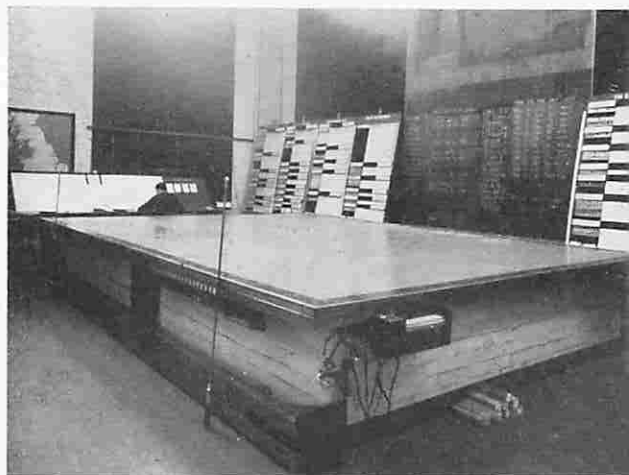
The Duty Meteorological Staff, consisting of forecasting officers and assistants (chart plotters, etc.) have a round-the-clock job. They prepare weather maps every three hours, covering an area from North America to Palestine; on the basis of these charts forecasts are issued to controllers in OAC and also to other meteorological offices in UK and overseas. In addition, pre-baratic charts (*i.e.* forecast charts) and diagrammatic sections of cloud systems along the routes are drawn. A valuable source of information to the forecaster is the *Ferimet* reports which are received direct from aircraft in the OAC area, and via the Area Control at Malta from aircraft under their control; (your *Ferimet*, let it be noted, is on a chart within five minutes of being received).

Route weather forecasting is rather like trying to find out what the enemy will do next. A good intelligence service will usually get some indication of what the enemy intends to do, but occasionally the opponent will pull a fast one and do something which has not been predicted. Similarly, our forecasting service is good, but the weather sometimes plays tricks on us. We shall not be satisfied until the majority of crews, on reaching destination, can write on their pre-flight weather forecast, "Weather exactly as forecast." And you can help considerably by sending *Ferimets*, and by handing in accurate route weather reports at destination.

The Movement Section carries out the routine, but no less important, function of informing overseas and home bases of the aircraft destined for them. The signals they send contain the type, number, callsign, time of departure, and ETA of each flight, as well as



The Flight Information Room, where the Aircraft Safety Officer works. The card index on the table contains details of facilities at all airfields in the UK and on the Continent.



General view of Ops. Room, showing plotting table and Duty Navigator at work.

the number of passengers and the aircraft's endurance. This information is not only passed to all the interested parties, but also placed on boards in front of the controllers who can see at a glance the important facts about each flight for the control of which they are responsible. All through the twenty-four hours there are ensuring that no aircraft arrives unheralded. Gone are the days when pilots used to land and stroll into Flying Control to be met with "Good morning, who are you?" Transport Command is justifiably proud of the speed of its communications, which ensures that those on the ground know what's in the air.

At the risk of repetition, it must be stressed that this organization, from the Group Captain to the clerks,

have, as their one ultimate aim, the safety of aircraft. The whole organization is dedicated to the task of getting aircraft safely to airfields, or, when a mishap occurs, to the provision of every possible aid to rescue the occupants.

With the onset of winter weather, with its gales, dangerous cloud conditions, low icing levels and frequent fogs, OAC's responsibilities become heavier. This particularly applies to aircraft inbound to the UK. OAC may have under its control and approaching UK forty aircraft bound for ten different airfields. Nine of these airfields may go "out" due to weather. It is then OAC's job to ensure that each of these forty aircraft get safely into the tenth airfield, or into other airfields which may become "open" for short periods, and also to ensure that each aircraft which is diverted has sufficient safe endurance to reach the diversion airfield. This requires quick decisions and very close liaison between the Controllers and the Met. Officers at OAC and at the terminals, and between the controllers and the parent Groups and Stations. Naturally, the parent formations prefer that diversions, when necessary, should if possible be made to terminals where the passengers and freight can be handled effectively, where the aircraft can be serviced, and where the crew can be adequately accommodated. Diversions are made with these factors in mind, but the overriding consideration is the safety of the aircraft. Diverting aircraft can be a very onerous task, especially in England where quick-moving "fronts" cause rapid changes in landing possibilities. Watching "fronts" and aircraft endurance are the keys to successful diversions.

Should an aircraft get lost, be overdue, or find itself in trouble, OAC will take "Distress Action." Every effort will be made to take bearings on the aircraft, if it is still flying; if it is known to be down, or if it appears probable that it will have to make an emergency landing or a ditching, the appropriate coastal or fighter groups will be alerted, searches will be planned, and search aircraft will be despatched. OAC will pass all available information to those responsible for search and rescue action, and will also request all other aircraft under its control and flying in the vicinity to maintain a sharp look-out. If the aircraft is still flying, but must land as soon as possible, OAC will alert the nearest suitable airfield and issue directions to the aircraft.

All those who are concerned in Transport Command route flying, and particularly the aircrews who fly under its control, should visit OAC at Gloucester. To crews we would say this. We have at OAC an enthusiastic and (we consider) efficient team, concerned solely with getting you safely from A to B, or, if B closes down, then to C. We maintain close liaison, in fact we would say that we are on terms of intimacy, with the operations staffs at your Group Headquarters, your departure airfield, your arrival airfield, and important airfields *en route*; with the Area Control to which you will transfer if you are outbound; and with the rescue

organization in the UK. We are determined that your route forecast and the forecast of landing conditions at destination shall be as accurate as possible; that when you are airborne you are warned of weather hazards ahead; that you will be diverted only when necessary, and that if you have to be diverted you are informed and given instructions well in advance of ETA; that if you run into trouble the necessary steps are taken to help you out of it. We have tielines with all the main terminals, and W/T channels with adjacent Area Controls and overseas terminals; we know the landing conditions at all the main terminals and emergency diversion airfields; we can have FIDO laid on at short notice when necessary. Other Area Controls in the overseas commands have similar teams. Some of them have not, as yet, all the facilities which we have, while others have facilities, such as VHF fixing, which we do not have. However, all are imbued with the same enthusiasm. All this goes for naught, however, without the co-operation of the aircrews; our weather information for the next aircraft cannot be accurate if you don't send us *Ferimets* when we request them, and complete your Forms 2306, AND hand them in at destination; if you don't conform to correct flight procedure; in fact, if you don't join the team.

And when you get the chance, come and see us, and tell us how we can improve our service to you, and in what ways we get under your skin. We are quite sure that CAC (Uxbridge), TAC (Prestwick), and the Area Controls at Bad Eilsen (Germany), Malta, Cairo, Khartoum, Karachi, right out to Singapore, will also be pleased to see you and discuss aircraft safety with you when you are in their neighbourhood.

AIRCRAFT DELIVERY

OWING to an error of alignment in the tables of aircraft deliveries published on page 9 of last month's *Review*, some of the figures in a few of the first copies distributed were incorrect. The corrected figures for Deliveries from Canada are as follows:

DELIVERIES FROM CANADA

(not including Russian Catalinas)

DESTINATION	TYPES	1943 (9 months)	1944 (12 months)	1945 (9 months)	TOTALS
M E	Single	—	—	—	—
	Twin	913	880	107	1,900
	Multi	26	278	162	466
U K	Twin	586	1,451	777	2,814
	Multi	131	481	464	1,076
ACSEA	Single	—	—	—	—
	Twin	90	251	200	541
	Multi	94	409	76	579

CONVERSION

FOR TRANSPORT FLYING

RAF pilots who fought through fighters and flak to bomb enemy targets or survived the hazards of the U-boat attacks are undergoing conversion training to fly the Transport way. At the units where this training is carried out in Transport Command they are meeting men who served for years as flying instructors, and aircrew who flew all types of aircraft in various parts of the world.

In addition to the knowledge already acquired, these pilots gain new and wider experience. They learn the difference between Transport flying and operational flying. They learn the distinction between carrying bombs or rockets and delivering passengers and mail. They learn a technique which is likely to be valuable for the future of civil aviation in Britain.

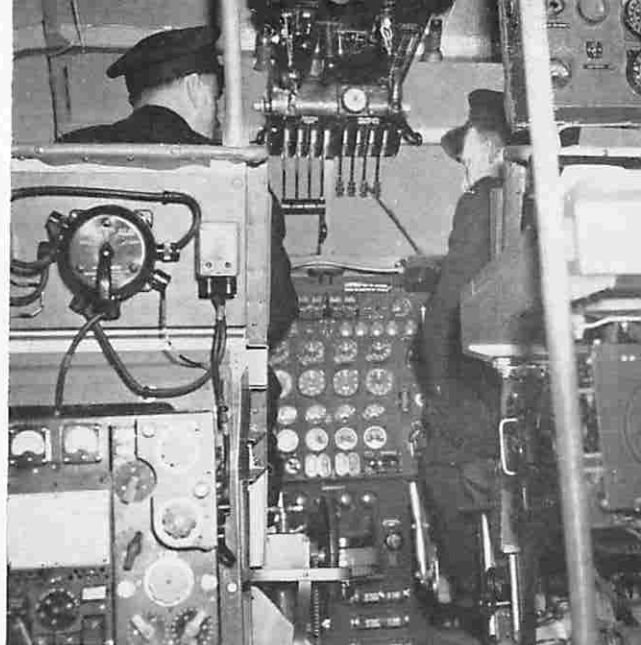
Nobody without extensive flying experience is sent to the Command, but its task is so specialized that training stations have been formed to convert crews, both technically and mentally, for this important job.

In other words, these crews are taught to fly differently. In a bomber, when anything went wrong, a pilot could at least jettison his load, whereas a Transport pilot has to bring his passengers back. A Coastal Command captain might make a "ropey" landing through exhaustion after a twelve-hour trip, and his crew would not complain. The transport pilot must always bring his aircraft in to a smooth landing, for his passengers may never have flown before, and will not excuse rough handling.

A transport crew has to be something more than a flying team. Its members must know how to load and lash cargoes securely. Should they land at a remote Staging Post on any of the Command's world routes, they must be able to supervise repairs to their aircraft. Flying alone over immense distances, they must rely largely upon their own initiative and skill to bring their aircraft on scheduled time to its destination.

Where passengers are concerned, the successful crew must be good psychologists. They must understand how to carry people who have never been in the air before. On their handling of these people, and of their aircraft, they can win or lose future passengers for air travel. Their flying must be steady, smooth and reassuring.

So, the correct selection of crews for Transport Command is of the first importance. This selection is done at an Aircrew Holding Unit at Snaith, a former bomber airfield in Yorkshire, and a noteworthy



feature of it is that men are picked by their peers.

When the "new boys" arrive they fill in forms giving details of their flying experience. They are then interviewed individually by young men, all of whom have been with operational commands or have had long experience of flying training. The officer commanding the unit is a navigator who is less than thirty years old. His assistants are young in years but veterans in flying experience. They read a man's record and weigh up what he has done. They try to find out his attitude to this new job. "Did you volunteer for this?" is among the first questions they ask. They must know whether he is reliable. Could he cope if his Dakota got into difficulties over the Western Desert wastes, or flying in monsoon weather? Is he self-reliant without being over-confident? Is he tidy in appearance? Is he keen? All the time they are looking for a pilot who will be like the master of a ship at sea, able to solve most of his problems alone.

Before a pilot is allowed to fly passengers in four-engined Yorks or Liberators he must have had a minimum of 1,000 flying-hours to his credit, with 200 of these on multi-engined machines. Pilots with less experience are selected for similar work on Dakotas.

The men chosen for the heavy aircraft do a three-weeks' refresher and pre-conversion course at Snaith. As many of them may have become rusty on the theoretical and technical sides of flying, they attend lectures and polish up their knowledge. They are introduced to the special problems of Transport Command—the carrying of passengers and freight.

They learn how to stow cargo for safe flying. They are made "passenger-conscious." They have impressed upon them the importance of the passenger chit, that slip of paper made out on the flight by the captain and passed back to the passengers to show them where they are, and at what height, and to suggest that they look out for stated landmarks.

They are continually urged to be courteous, civil and patient, and any easy going habits of dress or deportment which may have crept in with the atmosphere of operations are corrected. Instructors point out that a much battered "operational" hat may be a treasured relic but is an eyesore on a transport route.

After passing through this course, the crews chosen for four-engined transports go to Dishforth, in Yorkshire, to train at a Heavy Transport Conversion unit. This brings them nearer to the aircraft they will have to fly, but the instruction here is intensive and weeds out all but the very best.

For six weeks the pilot listens to lectures on airmanship, navigation, meteorology, engineering, signals, and the new topics of passenger and freight handling. He must learn more about his four engines. He must acquire a better working knowledge of weather conditions so that he will be able to decide when, where, and how to fly in the khamsin winds of Africa or the monsoons of India. Of the training given in night flying, something was said in the previous number of this *Review*.

Meanwhile, in specially equipped rooms, flight engineers study the engines they are to fly behind. Navigators work on an intensive four weeks' ground course and, for them, the emphasis is on astro and DR navigation. Although they still specialize in radar and radio aids, they must know more than ever about pure navigation, for they may have to fly along routes beyond the range of radar stations.

Day after day wireless operators work in a room with typical radio cabins ranged round its walls, where the students listen to messages similar to those sent out by ground stations. The men must be able to do 25 words a minute in Morse, know service and civil radio procedure, and be able to repair their sets.

For the men chosen to fly the familiar Dakotas of Transport Command the course lasts for twelve busy weeks. Four Transport Conversion units turn out Dakota crews, which include men from all the operational commands, and from Second Tactical Air Force, and Desert Air Force.

After being "crewed up" the pilot and his team go into the air. They feel that they are free men once more, back on the familiar round. The pilot puts his aircraft into a steep turn and sighs with contentment as it answers his control. "How do you think a nervous passenger would feel in a turn like that?" bluntly asks the instructor who is sitting alongside. The pilot resigns himself, brings the aircraft round in a wider, flatter turn and makes his approach to the runway. He forgets once more and comes in too fast, rocking merrily on landing.

"What about that passenger?" asks the insistent voice of the instructor.

So it goes on. On every flight the instructor tries to change this experienced pilot into a transport captain who will always remember the man in the back. He persuades the pilot to take off and land smoothly. He cuts off one engine and checks the

pilot's ability to fly—and fly safely and smoothly—on three engines. The pilot is reminded that he must always try to fly round bad cloud formations and areas of rough air. The instructor discourages "flashy" flying with the sound advice that passengers think the good pilot is the one who gives them no trouble and no aerobatics.

At the end of the course at the HTCU the crew does a long graduation trip, nearly always to Rabat Salé in French Morocco. Each aircraft carries two crews, one flying the machine on the outward journey, and one acting as passengers. On the way back the crews change positions. The flying crew must treat the passenger crew as though they were real passengers, for the aircraft carries an observer who reports on both crews.

If the pupils pass the stiff examination at the end of the course they are posted to squadrons where they normally have to do two or three freight-carrying trips before their squadron commander decides that they are now experienced enough to carry passengers.

An Exchange of Greetings

TO AIR MARSHAL SIR RALPH COCHRANE, AOC-IN-C TRANSPORT COMMAND, FROM LORD KNOLLYS, BRITISH AIRWAYS:

At Christmas time and as the New Year approaches I would like to send from British Airways to you and to all ranks of Transport Command a message of greeting and good wishes. During several years of war we have worked together with mutual goodwill, sharing a common task and a common sense of achievement. The many trials through which we have passed, as well as the problems which we both face to-day, have themselves operated to create a bond of sympathy and understanding between the two Services. We look forward in the years of peace to continuing alongside each other our work in the cause of British Air Transport.

TO LORD KNOLLYS, BRITISH AIRWAYS, FROM AIR MARSHAL SIR RALPH COCHRANE, AOC-IN-C TRANSPORT COMMAND:

Thank you for your message of greetings and good wishes. We are proud of the links with British Airways which grew up during the war when the need for Air Transport was urgent and time was short. In particular, we are grateful for the many ways in which you and members of your Staff helped us in building up the transport forces which were extensively used in the final campaigns of the war. Our main task is now over and Officers and men are returning to civil life, many with the hope that they will be able to find a career in civil aviation. Those of us who are remaining in the Service will watch with interest the development of British Air Transport on which so much depends.

We wish you all in British Airways success in the years to come and assure you of our hope that the collaboration which proved so fruitful in war will continue in peace.

LOAD CONTROL

*A subject of great importance in
Transport Command is explained and
discussed by SQUADRON LEADER DON
CASH, Chief Traffic Instructor, No. 1
Air Traffic School, now at Bramcote*

AN aircraft or motor-car is made in hundreds of different parts, and although the manufacturers of these parts are working independently they are nevertheless all working to achieve the same object—namely, to produce the best aircraft or motor-car possible. The parts are then delivered to one central point—the assembly point—where they are assembled, and the finished item emerges as an efficient product.

Load Control is the assembly point of a Passenger and Freight Section.

The phrase "Load Control" is something comparatively new in the RAF vocabulary, and it is a phrase which is peculiar to all Passenger and Freight Sections of Transport Command. The phrase is as self-explanatory as "assembly point." That is to say, it is the section which controls the loads placed on a Transport Command aircraft and, fortunately, it has not yet been abbreviated to LC, neither has the Officer in charge yet been called the LCO—but time alone will tell!

Before one can really understand the functions of a Load Control it is necessary to possess certain knowledge of the functions and workings of the other sections which operate in a Passenger and Freight Section. There are three other main sections, *i.e.* Passenger, Freight, and Mail.

Each of these Sections is responsible for the handling and documentation of their particular type of cargo, and whilst they are, to a certain extent, independent of each other, they are all responsible to the assembly point—Load Control.

It is common knowledge that a Section will not operate efficiently unless it enjoys a high standard of organization, and this is most particularly applicable to Load Control. It is applicable to the very last degree, and perhaps one of the most important aspects of this organization is the efficiency and the system with which the actual room allocated to Load Control is set out and arranged. A heap of unnecessary or mysterious papers on a desk, the unnecessary piece of furniture, or the badly-placed telephone, not only increase the work of the Load Control Staff but detract from the efficient smooth running which must be the aim.

Statisticians have proved that a housewife walks

many miles during the day in the course of her work in a house and that by scientific arrangement of the kitchen furniture and utensils she can be saved considerable physical fatigue. This applies equally in a Load Control room, except that the saving will be more mental than physical.

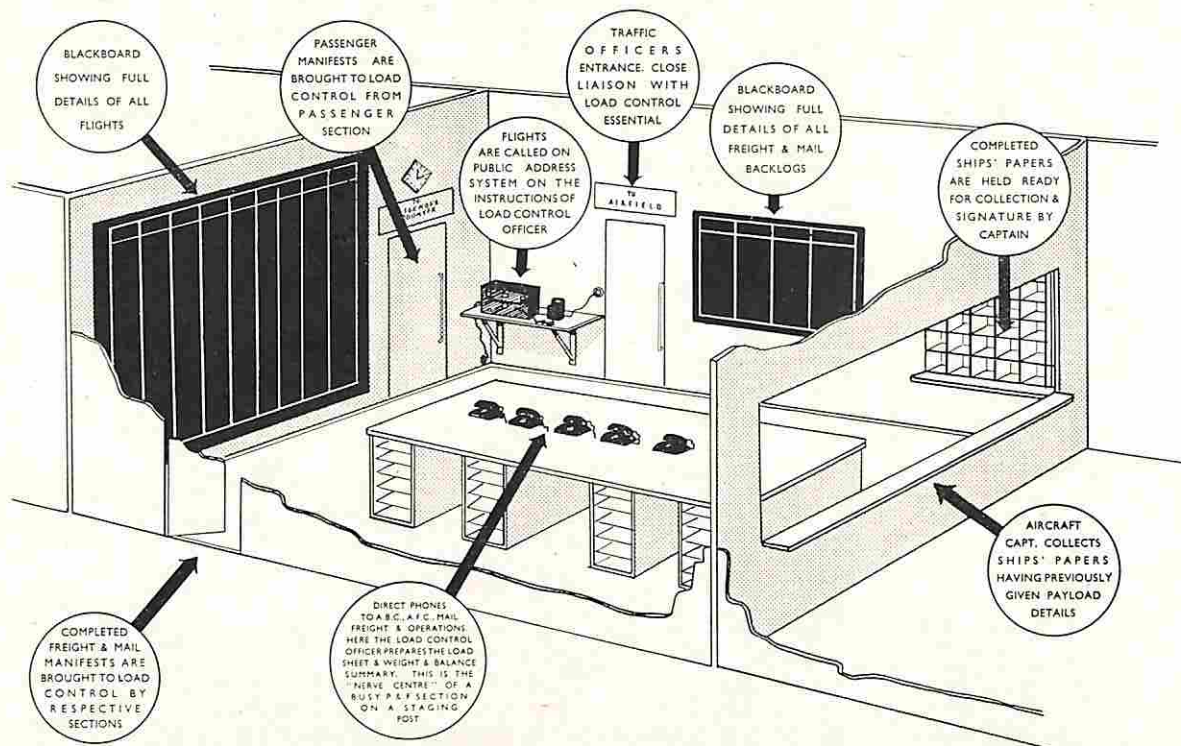
The diagram shown on the following page gives an idea of what a well-organized Load Control room should look like. It contains the minimum of furniture; the blackboard, the Captain's counter and the clock are within view of the Load Control Officer and the paths of the runners bringing manifests from the Passenger, Freight and Mail Sections do not cross.

Perhaps all this sounds a trifle fastidious, but when a Unit handles an aircraft perhaps every minute of the hour the importance of this will probably be appreciated. One would not place a bedside lamp in an inaccessible corner of a bedroom, so in the same way a Load Control room should be planned and set up intelligently.

The room must be out of bounds to all whose duties do not necessitate their presence. Superfluous personnel cluttering up a Load Control not only add to the noise of conversation and telephones, but occupy valuable space. The Load Control Officer must be very firm on this point. His office is not an inquiry bureau or a rest room, and he is invariably too busy to do anything but his own job. You may ask by this time what is his own job? As I have said, it is the control of loads placed on Transport Command aircraft, and this is how he exercises that control.

One branch of a Staging Post with which the Load Control Officer must have complete and entire co-operation is the Operations Room, which must provide him with minute-to-minute information of the ETAs of all incoming aircraft. It is sometimes found that the traffic is such that it is impossible to communicate this information the whole time on a telephone, in which case a small loud-speaker is placed in the corner of the Load Control room with direct contact to Operations, by which means the aircraft movement information is passed.

Immediately on receipt of this information, the full details are written upon the large movements blackboard in the Load Control room. This blackboard



Lay-out of a well-planned Load Control Room

gives information peculiar to Load Control. It should include not only the flight and aircraft numbers, but the name of the Captain, his pay load, ETA, ATA, ETD and ATD.

Advance information concerning the loads of all aircraft that will be landing at the Station or Staging Post and will be coming to the Passenger and Freight Section is usually available to him some time before the aircraft arrives. It comes in the form of a "May-load" signal which tells him the service number of the aircraft, the total load on board and the load that is manifested to, and, therefore, must be off-loaded at, his Station. This information is not always correct to the last pound, but provides a very useful indication of the amount of pay load that will be available to him so that he can warn the Passenger, Freight, and Mail Sections.

The initial information from Operations will, of course, only give the flight and aircraft numbers and the ETA. The ATA column is necessary by reason of the fact that on through flights most aircraft should remain on the ground for one hour, and therefore upon its arrival the ATA is entered which enables the ETD column to be completed. So much, then, for the movement of the aircraft.

So far, you will say, the Load Control Officer has had little to do, but he springs into very active life immediately that ATA time is written on the board, for within a few minutes he should receive the ships' papers for that flight, together with the partially completed Weight and Balance Clearance Form from the Captain.

This Form gives him all the data necessary for him to calculate not only the available pay load, but also the Centre of Gravity positions at which the cargo must be loaded.

Having calculated the pay load, and with the knowledge of the total amount which is going through, he knows at once the weight available for his own load, and this is the moment where he proves himself to be a good Load Control Officer or otherwise. His back-log board—also kept up to date as cargo moves in and out of the P and F Section—shows the total amount of freight, mail and passengers (together with their priorities) which are waiting to move.

The passengers will already have been booked, either by his Passenger Section or by the local Air Booking Centre, and he must decide according to his priorities the weight of freight and mail to be loaded on that aircraft.

He has no time to lose. Remember, in the space of, probably, an hour (sometimes more, sometimes less), the cargo destined for his area is to be off-loaded, the new cargo and mail loaded—and loaded scientifically in accordance with the Centre of Gravity requirements—the interior of the aircraft cleaned, additional passenger seats erected if necessary, the manifests prepared and the passengers emplaned—so there is no time to waste.

Having, therefore, decided upon his loads, the Load Control Officer will telephone the Freight and Mail Sections giving them the total weight and priorities of

cargo loaded and will warn the Passenger Section to have the passengers standing by for emplanement at such and such a time. In giving this information to the Freight Section (who should control the loading party) he will tell them the total weights to be placed in each compartment, and in fact provide them with a Loading Plan, having calculated this information from the Centre of Gravity data which he obtains from the Captain. If the loading party are unable to comply with the instructions on the loading plan—for example, the freight may be too bulky—the Load Control Officer must be informed immediately in order that he may re-distribute the load.

He then must sit and wait with an owl-like eye on the clock. Please don't think that he is sitting there "doodling," because before all this happened other flights have arrived or are leaving, and this example is just one of many flights which he will handle during his tour of duty.

The first piece of action will come from one of the other sections—probably the Passenger Section who will bring him the completed manifests. The Freight and Mail Sections should not bring him the manifests until their loads are correctly and securely loaded.

Hence, when the Load Control Officer has received the Freight, Mail, and Passenger manifests he knows that the only thing to be done now before emplaning the passengers is to load the baggage. He will telephone the baggage section and tell them to load so many pieces of baggage, and where to place it, on to that aircraft. He will know the number of pieces, as this is shown on the Passenger manifest, and by adopting this procedure this ensures a double check on the correct baggage being loaded.

He then completes his Load Sheet and Weight and Balance Clearance for the flight, and has them placed in the pigeon hole awaiting collection and signature by the Captain. His owl-like eye should still be well awake, for if the papers have not been collected fifteen minutes before ETD he should "tannoy" the Captain—whose name is already on his blackboard.

You see, this poor soul really has little time on his hands.

However, the Captain will arrive and will sign the ship's papers and leave for his aircraft.

There is only one further job to be done and that is to emplane the passengers. Now the responsibility of calling forward the passengers on the public address system is that of the Load Control Officer. He is the only person in the entire Unit who knows whether the aircraft is ready to receive its passengers. Let there be no mistake about this. The Passenger Section do not know whether the freight has been loaded, or whether the baggage has been placed on board, and it is not until the Captain has signed for, and taken away, his papers that the passengers should be allowed to emplane.

The accompanying diagram does in fact show the public address microphone in the Load Control room. This is considered to be often very desirable, as it then

comes under the direct control of the Load Control Officer and should not be used without his permission.

If, for example, the Passenger Section cannot find one of their passengers they should not be allowed to broadcast indiscriminately, for nothing is more annoying to a passenger than to hear the constant blare of the loud-speaker giving irrelevant information or making facetious requests.

There is still one column on the blackboard which has not been completed, and that is the ATD column. As soon as the aircraft is airborne, this information should be passed to Load Control so that the column can be completed and the information entered in the log book.

The reason for entering the ETD and ATD in the log book is that there are occasions when the departure of an aircraft is delayed and at some time or another Wing or Group Headquarters are likely to come along and ask the Staging Post the reason for such a delay. Now if there has been a delay the reason should be written in the log book. If the fault is that of the P and F Section action should be taken to discover the cause of the delay and to avoid a repetition. If the cause of the delay is due to a Section of the Staging Post other than P and F, this should be recorded, and if a subsequent inquiry is made the correct answer can therefore be given.

The idea of this log book is not to "pass the buck" to another section, but to tighten up on any sections who are not pulling their weight properly and whose negligence is causing aircraft to remain on the ground longer than scheduled.

There is just one more job for the Load Control Officer to do before he can forget this flight. The signed copy of the ship's papers is still in his possession and this should be passed with all possible speed to the Statistical Section who will extract the relevant information for record purposes, and the manifests will then be filed in a systematic and orderly manner. It is not sufficient to throw a set of ship's papers into a basket when the aircraft has left. They are important documents and may quite likely have to be referred to at some future date. It should be possible to turn up the details of any item of cargo flown during the past six months within a space of minutes.

So that is Load Control. That is the section upon which the efficiency of a P and F Section depends, around which the section revolves and to which complaints will pour in if everyone is not pulling his weight.

The clock is the Load Control Officer's greatest enemy. As I say, there is a lot to be done in a short time. The Freight Section should bring their completed manifests to him in good time but, if they don't, then the Load Control Officer should contact and hasten their production.

May it always be remembered that the efficient motor-car or aircraft will never emerge from the "factory" on time unless the assembly point is highly organized and manned by cool-headed and efficient operators.

PASSAGE TO THE ISLANDS

FLIGHT LIEUTENANT D. B. PRITCHARD,
Editor, *Transport Command Navigation Bulletin*

THE faint glow of an African dawn is breaking over Nairobi as we climb into our Dakota.

A dozen passengers shiver on the hard bucket seats—replacement personnel for the islands.

The pungent smell of cured bacon is wafted down the aisle. Four great sides, shrouded in sackcloth, lie half-hidden beneath a miscellany of kitbags and suit-

cases, the whole secured by a network of stout ropes. Bags of mail flank the entrance to the crew compartment.

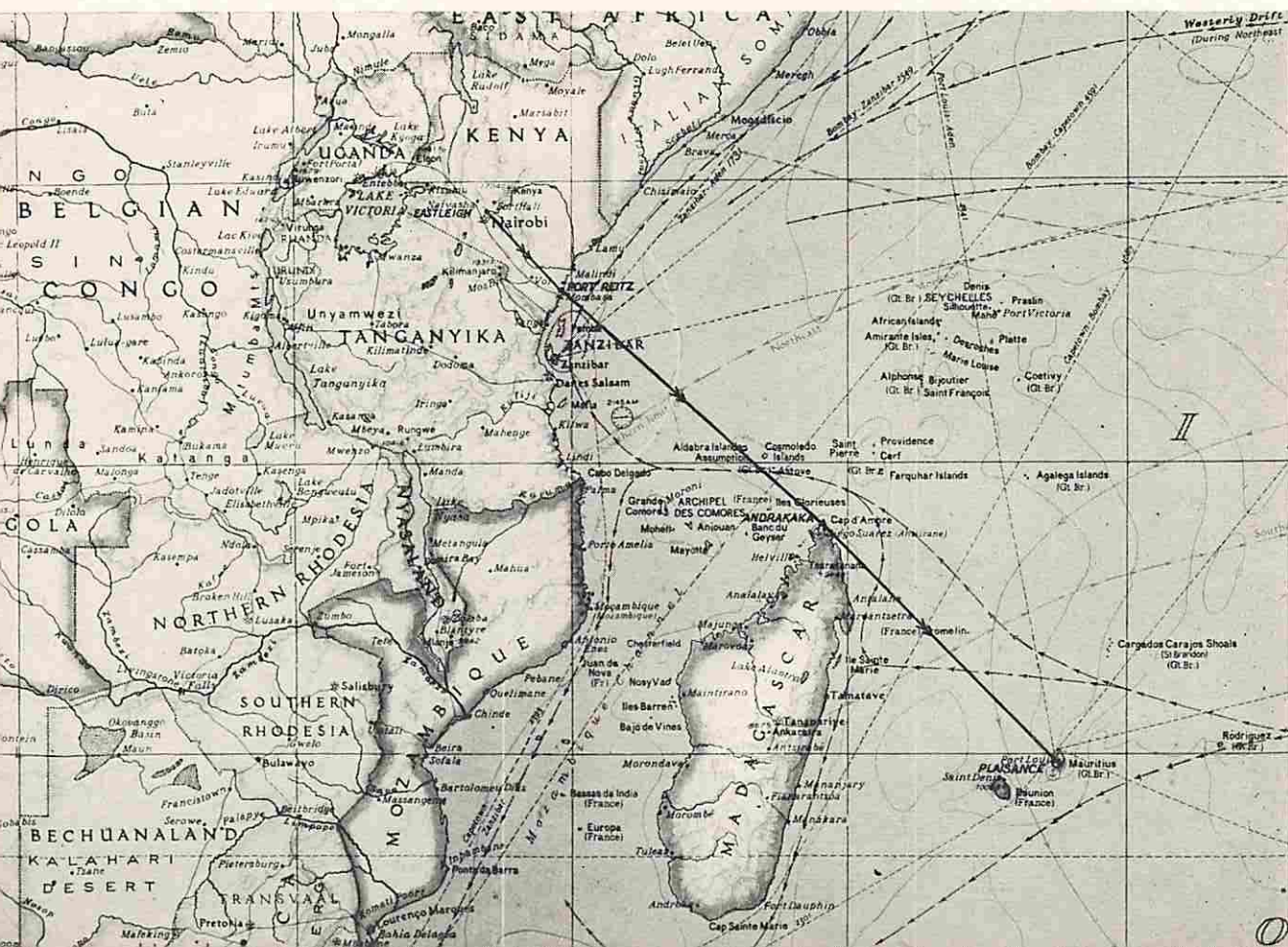
Pre-flight formalities completed, clearance is obtained from Control. The second pilot hangs up the R/T mike. "Let her roll."

The first stage is commenced. We break cloud at 2,000 feet with course set for Mombasa.

The sun rises to meet us, flecking the clouds with crimson splashes. Below us lie the great Athi game reserves, where the wildebeest and kongoni still roam in herds a thousand strong; the zebra and gazelle keep eternal watch for the lion pride; and the giraffe explores the squat mimosa for tasty shoots, supremely indifferent to the new world that is passing overhead. To the south, a giant snow-bound peak cleaves the heavy morning air: Kilimanjaro, supreme lord of the dark continent.

The plateau which covers almost the whole of south and south-west Kenya now falls away before us. The important road and railway junction of Voi, shadowed by the Bura hills, merges into the distance as the heavily-wooded coastal plain darkens the horizon.

The route of the flight described in this article traces almost a straight line, starting from just South of the Equator



Then, quite suddenly, Mombasa is below us. A squat, sultry town, with a harbour deep enough for large ocean-going liners. Mombasa is the clearing-house for the products of the uplands.

Behind the port a dozen backwaters, like giant fingers, stretch into vast mangrove swamps. An ocean-going submarine, its side thick with red rust, careens in a stretch of placid slime.

The aerodrome, constructed on a flat hill, provides a tricky approach. We skim a palm plantation and touch down on the edge of the runway, a clear hundred-foot drop not twenty yards behind us.

There is tea and a sandwich in the rest room below the control tower. It is a five-hour sea crossing to Madagascar, and a bare half-hour later the khaki-clad passengers, taking a last, half-envious look at the mainland, file up the steps to their places.

The white-streaked shores of the tropical coast are lost in the low, scudding clouds. Our compass settles down on a heading of one-three-five.

The strong winds of the south-east monsoon reduce our speed considerably; but the general outlook remains fine, the cumulus breaking down to less than one-tenth as we progress.

The sun is nearing its zenith, the torpid swell coruscating under the direct rays. A lone tramp steamer bound for the Seychelles, a thin wisp of grey smoke trailing from the smoke-stack, seems hardly to move across the water.

For hours the panorama remains unchanged—water, water, everywhere.

Now below us spreads a kidney-shaped atoll encircling a long green lagoon—a pale grass-green that can be seen with ease at fifty miles, and is clearly visible long before a trace of the surrounding land is outlined to the naked eye.

This is Aldabra, classified in the atlas as a British Colony. Thirty miles to the south, a mere speck in the boundless sea, is Assumption—a mile across at the widest reckoning. It is also under the protection of the Crown; the Governor's hut, with a roof designed to combat the fierce heat, is the only sign of civilization. A replacement, together with supplies, is landed by Catalina once every few months. Kipling, in one of his eulogies of Empire, strikes an authentic note:

“ . . . To the last, least lump of coral
That none may stand outside. . . .”

Northern Madagascar is almost breath-taking in its beauty when the visibility is good and the whole coastline from Cap d'Ambre to Minow Island is silhouetted against the blue ocean.

The land is sandy in colour, rugged and defiant; a chain of ill-shaped islands rising sheer from the water guards the eastern approaches.

Diego Suarez has a fine natural harbour, comparable with any in the world, protected from the gales that sweep the north of the colony by a series of rufous bluffs and scrub-decked hills. The wind accompanying the south-east monsoon rarely drops below thirty



Vasco da Gama Street, in the old town of Mombasa. The white tower was built in the seventeenth century by the Portuguese as a watch-tower to overlook the harbour.

In the heart of the south-west highlands of Mauritius. The peak in the foreground, known as La Fenêtre, dominates the Black River district.





A view of Diego Suarez, looking towards the bay.

knots, restricting fishing in the area for six months of the year.

Rainfall is extensive all the year round, especially in the eastern littoral; while crops thrive in the rich soils of the interior, although only a small percentage of the land is under tillage. Rice and coffee are the staple products, Madagascar providing a full half of France's imports of the latter. The country is rich in undeveloped minerals, particularly gold, of which as yet only the upper surface has been scraped.

Diego is a "night stop," and we are soon established in spacious, comfortable basha huts, partitioned off into double rooms. A quick dip just below the camp in a wired enclosure (to guard against that undesirable bathing companion, the basking shark) gives us an appetite for dinner. And so for an early night.

At first light we scramble into the Ford truck waiting for us outside the mess. A five-minute journey over a sand-bound track brings us to the edge of the airfield.

The windsock, extended at right-angles to the pole, betokens the customary gale. But the "met" report forecasts good flying conditions for the run to Mauritius, which is almost equal in length to the Mombasa-Diego Suarez leg. Nor are we disappointed. There is only mild turbulence over the hills to the south of the harbour.

It is not until three hours later that we again catch sight of land—a foreboding black peak, exceeding 10,000 feet, lies ahead of us to starboard. The pin-

point is unmistakable—the French possession of Reunion, some 600 square miles in area, and home of the clove and tapioca plant.

Now the journey is coming swiftly to a close and soon Mauritius is in sight, a squat, semi-tropical island with peculiar candle-snuffer shaped hills covering almost the entire interior. As we cross the coast we see the capital, Port Louis, compactly encompassing the banks of a natural harbour.

It is the only town of any consequence on the island, and lies almost midway down the eastern seaboard, an important coaling station for vessels on the Durban-Colombo route.

The sole aerodrome of the island, Plaisance, has a fine concrete runway and taxi-tracks originally built when the threat of Japanese aggression necessitated an efficient operational air base for naval support.

A perfect landing, and we taxi into dispersal where our tired passengers, their curiosity manifest, scramble out of the aircraft to survey their temporary homeland.

The first thing that strikes the visitor is, perhaps, the palm trees, all leaning towards the north-west. This is the result of the annual hurricane which sweeps the island, lifting houses bodily into the air, doing great damage to crops, and causing considerable loss of life. The hurricane, together with malaria, which reaps a grim toll amongst the natives, are the two black spots of what might otherwise be a tropical paradise.

Far out from the shore the long white line of breakers betrays the hidden coral reefs, enclosing placid lagoons which are ideal for swimming and fishing all the year round. The stretch of water directly opposite the camp is reputed to be the original of H. de Vere Stacpoole's "Blue Lagoon."

The sugar industry, which has been hard hit by the war and the consequent labour troubles, is the basis of the colony's export trade. The manufacture of rum from the cane is an allied industry, and although not to be compared with the fine products of the Jamaican distilleries, it is still of good quality and much in demand. During the war, when the petrol shortage was acute, the Mauritian buses were run entirely on the spirit.

The natives are of mixed extraction, and live in huts with corrugated iron roofs, frequently surrounded with banana palms. The true white Mauritians speak mostly French, for the island at one time was under the protection of France; the proximity of Madagascar and Reunion serve to cement the blood ties to-day.

The island link is a good illustration of a little-known Transport Command route serving those remote units which, scattered throughout the world "Far-flung, forgotten, lost . . .," are nevertheless vital links in the whole.

Life 'neath the Shwe Dagon

FLIGHT LIEUTENANT E. A. ELDERS

This account of life in Rangoon was written in November last, for 229 Group Weekly Review.

THROUGH the long and weary months when our Army and Air Forces were fighting southward through Burma, the golden pagoda of Rangoon's Shwe Dagon Temple shone ahead and marked the end of the road. Now that our men are living in the shadow of Shwe Dagon they are finding the reality rather more grim.

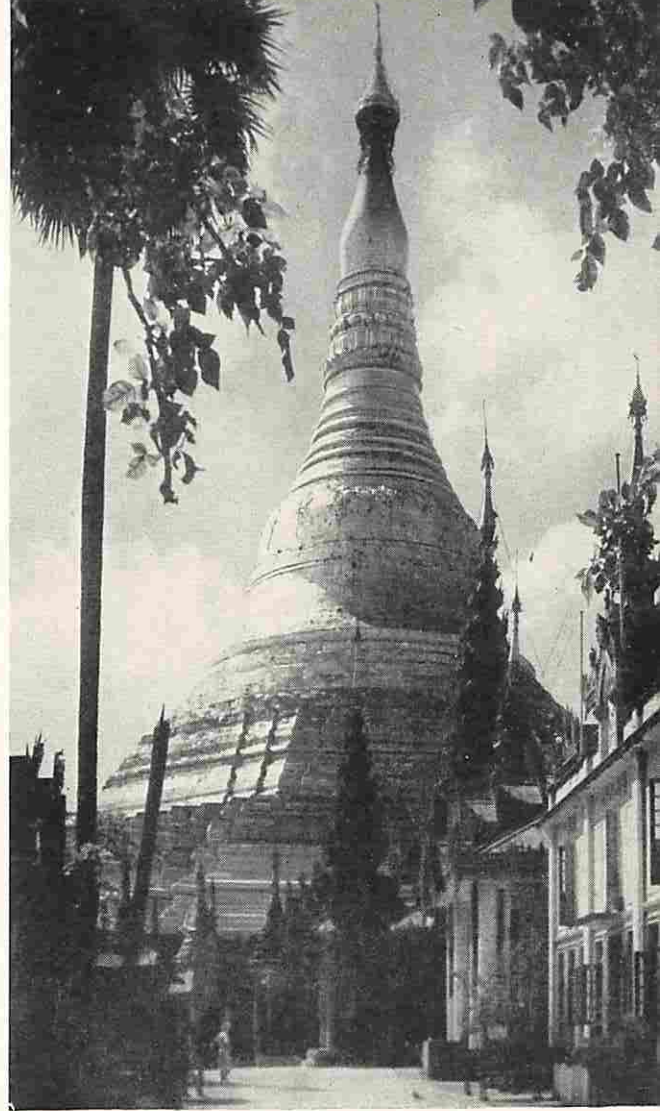
No. 232 Group in Rangoon has its Headquarters in the Pegu Club, a large wooden house standing in its own pleasant grounds, full of trees and flowers; but the scent of the flowers is submerged beneath the many and varied odours and stench which drift over from the ruined city. Sewers are blocked; in out of the way corners Jap corpses are still rotting. Streets are littered with rubble, the shops are open again among the ruins, but they have little worth buying and prices are high.

Food is scarce and very dear. If you go out foraging in the country villages, at least ten miles out, you may be lucky and pick up a chicken or two at Rs.4 each; in the city markets, even under price control, they cost from Rs.10 to Rs.12 each. Eggs cost 4 annas each in the villages, twice that in the city. A cup of tea in a café costs anything up to one rupee. Meat is poor in quality, and scarce. 232 Group Officers' Mess is still largely living out of tins, supplemented by rather tasteless bananas and an occasional pineapple. Soap costs Rs.5 per cake, and the natives will try to buy canteen cigarettes at one rupee for ten, so the "black market" price can be guessed. The only liquor in fair supply is Burmese whisky—very sweet and fiery, a dangerous drink.

Fortunately, in the messes and canteens, things are a little better. Officers and airmen get seven bottles of American beer per month, and there is also imported whisky and gin.

Prome Court, where the Officers of 232 Group mess, is a big block of flats opposite Group Headquarters. Most of the windows are broken and boarded up, and sanitary conditions are primitive.

Officers have two clubs—the Gymkhana, housed in what was formerly the Engineering College of Rangoon University, and the Rangoon Club near the docks. For Other Ranks there is an excellent Nuffield House Club, where, with the support of nursing sisters, WASBIs and WACI, regular dances are a feature. There is a Garrison Theatre with ENSA and Welfare shows, and most of the Units have their own cinemas.



Beautiful lakes, four or five miles out, provide bathing, and one of them, yachting—the yachts were found concealed but in good condition when the Japs left. Horsemen can get mounts from a Remount Depot—if they can provide saddles.

But all these activities are carried on against a background of smouldering unrest. There are dacoities in the area round the city and stray bands of Japs are still being rounded up. In the city, the Burmese—normally a docile lot but stirred up by nationalist agitation—are resentful of military occupation, and particularly of the large amount of accommodation required by the Forces.

There have been attacks on unaccompanied men, and it is considered unwise to venture out alone, particularly at night. Though there are constant armed patrols, it is wise to be armed at all times in case of sudden trouble. Altogether, life in Rangoon to-day is rather like sitting on the edge of a volcano, quiescent but definitely rumbling.



OPERATION 'THURSDAY'

SQUADRON LEADER R. N. BROCKMAN, D.F.C.

ONE of the most novel and exciting operations carried out by Transport Command during the war was in support of General Wingate's second expedition into Burma. The first expedition had had to hack its way across hundreds of miles of rugged jungle-covered country to reach its objectives, and was consequently a weary force on arrival. Operation "Thursday" was planned to obviate this difficulty by transporting a complete Division by air into Central Burma.

The Japanese occupation of Burma in early 1942 not only deprived the Allies of a valuable storehouse of rice and oil, but also cut the last remaining land route to China, a country desperately in need of all types of military equipment. In order to restore this lifeline it was proposed during the 1943-44 campaigning season to advance into Northern Burma from the Assam Valley; at the same time to cut the communications of the enemy forces opposing this advance by placing the greater part of a Division in Central Burma in their rear. This force was to be commanded by Major General Wingate, a past master in the art of long range penetration. Three jungle clearings near Wuntho, explored in early long range penetrations, were selected as suitable landing grounds. These were given the code names of "Broadway," "Piccadilly" and "Chowringhee." The ground forces taking part in this operation, the 77th and 111th Brigades of 3rd Indian Division, were based at Lalaghat in Bengal and on the Imphal Plain. The "fly-in" of these two

brigades was planned in two phases; it was intended to convey the 77th Brigade to Piccadilly and Broadway on the nights of D to D+4, while the 111th Brigade was to be flown to Chowringhee on the nights of D+4 to D+7.

The air forces available for this operation were all fully trained in the transport support role. Three RAF squadrons, Nos. 62, 117 and 194, had trained intensively for three months in the North-West Punjab, and were to operate from Tuliha and Kangla, two dirt strips on the Imphal Plain. The American element consisted of the First Air Commando Force and Nos. 27 and 315 Troop Carrier Squadrons of 3rd Tactical Air Force, and these aircraft operated from Hailakandi and Lalaghat. First Air Commando consisted of not only transport and glider aircraft, but also a strong striking force of Mustangs and B25's.

"D" Day was fixed for the night of 5th March, 1944, during which the moon was almost full, and it was planned to dispatch twenty US Dakotas each towing two Hadrian gliders to both Piccadilly and Broadway. The maximum payload of a Hadrian is 4,500 lbs., but in many cases it was found necessary to load them to 6,000 lbs.; this fact was probably one cause of the high number of glider casualties both on landing, and through the tow ropes breaking.

Forty minutes before zero hour a reconnaissance indicated that Piccadilly had been systematically obstructed by tree trunks. Fortunately the Army plan

was quite flexible, and as the precaution had been taken of briefing all aircrews for both Broadway and Piccadilly, it was decided to dispatch all the aircraft to Broadway. Needless to say there was a certain amount of speculation as to whether the Japanese had realised the potentialities of Broadway, and if so what sort of a reception would be given to our forces. However, this risk had to be taken, and shortly after six o'clock in the evening the first Dakota towing two gliders took off, and eventually a total of 52 gliders were airborne and heading east over the rugged Chin Hills. It was a fine, clear night, though the turbulence over the hills was considerable, and the Dakotas had great difficulty in climbing over the 7,000 ft. peaks. From pilots' reports it was found that the average climbing speed was only 85-100 m.p.h., while the petrol consumption on the climb averaged 280 gallons per hour!

The flight to Broadway was about 300 miles, or just over two hours' flying, and the problem of conserving enough petrol to enable him to return to base must have loomed prominently in the mind of every pilot.

Later in the evening a radio link was established with Broadway. At midnight a message was received saying, "Send no more ships," and all aircraft in the air were immediately recalled. Only two more messages were received during the night, the first being translated as "ground interference" and the second asking for light aircraft to evacuate casualties. After long, anxious hours of waiting, a message was received at nine o'clock from O.C., 77th Brigade, saying "Operation to continue." Some time later a clear picture was obtained of what had happened during the night. Of the 52 gliders that set out, 9 returned, 10 were lost en route—8 owing to the tow rope breaking—and the remaining 33 arrived at Broadway; of this last number, 30 were damaged on landing, killing 30 men and wounding 28 others. However, a large amount of equipment had been landed, together with 400 men, and by sheer hard work they hacked out a Dakota strip by the end of the day. Next night 77 Dakota sorties were flown into Broadway, and 12 gliders on single tow were all safely landed at Chowringhee, where a second landing strip was prepared.

Thereafter the operation was a complete success. Six hundred and twenty-eight Dakota sorties were flown into the two landing grounds by D+5 night without the loss of a single aircraft. A total of 9,250 men with all their weapons and equipment, including 1,200 mules, had been flown into the very heart of Japanese-occupied Burma in less than a week. For the next three months this force, which was at all times completely supplied by air, roamed throughout Central Burma and the Shan States, creating the utmost confusion wherever they went. Bridges were blown up, fortified blocks set up on road and rail communications, and the native hillmen organised into armed bands to harass the Japanese still further. There can be no doubt that these operations made possible the early capture of Myitkyina and the liberation of Northern Burma.



Typical dropping zone, marked by smoke, in jungle country.

BELOW : General Wingate plans his next move.

BOTTOM : A glider comes in at Broadway.

(These two pictures are from the film "BURMA VICTORY.")



THE END OF A.T.A.

FLYING OFFICER E. C. CHEESEMAN,
Air Transport Auxiliary



THE end of November marked the final closing down of Air Transport Auxiliary, the civilian organization which, during the six war years, ferried over 300,000 aircraft for the Royal Air Force and Fleet Air Arm.

In the summer of 1938, Mr. Gerard d'Erlanger, amateur pilot and director of British Airways, wrote to the Parliamentary Under-Secretary for Air proposing the formation of a Pool of civil pilots who could fly light aircraft on communications work in time of war.

When, in August, 1939, war seemed inevitable, d'Erlanger wrote again, giving fuller details of the scheme he envisaged and the Director-General of Civil Aviation entirely agreed. The Air Ministry records were combed and all holders of "A" licences with over 250 hours flying and no Service commitments were circularized. The title of Air Transport Auxiliary was chosen and the new organization was placed under British Airways (soon to become the BOAC) for administration and finance.

About a hundred replies to the circular were received and they came from a surprising variety of amateur airmen whose civil occupations comprised licensed victuallers, trawler-owners, stockbrokers, farmers, even a professional conjuror. For a start, thirty were chosen and flight tested on what British Airways described as "our Tiger Moth" at Whitchurch aerodrome, Bristol, and, later, some were given a short course on singles and twins at the Central Flying School.

Before the original scheme for communication flying could be put into action a note was received that twenty-eight pilots were urgently needed by RAF Reserve Command to ferry trainers, fighters and bombers from factory and store to Air Force Stations.

The civilians were attached to the RAF Ferry Pools at Hucknall and Filton, and on October 14th the first Service machines were ferried.

The whole thing was rather like throwing someone into a pond and telling him to swim, but much to the surprise of everyone, including the pilots themselves, they all survived and within a few weeks were flying Blenheims, Hurricanes—more or less anything that came along.

Those who had been through the CFS Course on "twins" gave the others an hour or so of dual on

Service machines which happened to be held up overnight in transit.

In December, 1939, as the results of the two months' trial period, it was decided that ATA should set up its own ferry pool and take over the delivery of the whole output of new aircraft in the British Isles.

The headquarters aerodrome was at White Waltham, Berks, but in the ensuing months ferry pools were founded at Whitchurch, Hawarden, Prestwick, Ratcliffe and Ringway, Manchester, to deal with the output of neighbouring factories and, in the end, no less than fourteen pools were in operation. The air crew strength increased from the original 28 to 734, and the ground personnel to over 3,000.

At the flying schools which were set up, pupils were put through conversion courses which qualified them to fly successively light aircraft, single engine fighters, light and heavy twins, four-engined bombers and seaplanes, until in the end the fully-fledged ferry pilot could fly at a moment's notice any one of over a hundred types. Any craft, anywhere.

Almost from the first, women pilots were admitted and their number ultimately increased to 120. Two of them in particular did remarkable work, one delivering over 400 four-engined bombers and the other qualifying as an instructor in all five classes of aircraft.

Pilots were recruited from no less than twenty-seven nations, and included a Chinaman, a Siamese Prince and an American preacher.

During the Dunkirk retreat ATA pilots, newly joined and literally rigged up for the occasion in a scratch uniform, ferried Fairey "Battles"—which were all we could muster—to front line Units in France, on some occasions with only a map sheet torn from a newspaper war atlas. More than once they found the Unit

packing up and got back to England in Hurricanes snatched from the airfields just ahead of the advancing enemy.

In the Battle of Britain, ATA flew from dawn till dark, replacing aircraft to the fighter squadrons on the south and east coasts, often landing among the bomb holes during, or after, an enemy raid.

During the middle years of the war vital work was done in flying aircraft to carriers destined for the relief of Malta, and on one urgent occasion when the saving of the island literally depended on a consignment of Spitfires, ATA, in appalling winter weather, flew 54 safely into the small rain-soaked morass of Renfrew airfield, where no fighter had ever landed before.

After the invasion of Europe the ferry pilots soon found themselves back on the Continent, delivering fighters to the Coastal GSUs and front line airstrips.

In September, 1944, the great Arnhem operations claimed the diversion of all Transport Command aircraft from their European freight services. Overnight, every available ATA Anson was summoned to White Waltham, and before black-out the following evening 33 aircraft flown from the West, the East, and from Prestwick and Lossiemouth, were swarming with engineers and ground crews. By the morning, seats had been removed, the floors strengthened for freight, and the Ansons now wore identification marks and the allied black and white stripes.

For weeks these old Ansons ploughed their way back and forth to Brussels and neighbouring fields, sometimes twice a day and generally without radio, carrying three-quarter ton loads of every description: Blood, Penicillin, Petrol, Ammunition, and Red Cross supplies. No navigator was carried and often the pilot had to climb in through the cockpit window as he was unable to squeeze past the "load".

Finally, a sort of Pickfords' service grew up to all parts of Western Europe, and Ansons operated to places as far afield as Oslo, Berlin, Hamburg, Prague, Marseilles, Rome, Naples, Tunis, even to Cairo. In all, 1,000,000 miles were flown abroad, 1,200 tons of freight and 8,000 passengers carried.

But the end was near. After the final close of the War, negotiations took place with Government departments, Ministries and civil bodies as to the future of ATA, but it transpired that no further use could be found for the "Ancient and Tattered Airmen." To use the word of the moment, they had become redundant.

As they came, almost unnoticed, so they went, and on a number of airfields in the British Isles can be seen lonely groups of empty huts, so recently the centre of a living and useful community.

But ATA leaves these figures for its memorial:

Over 302,000 aircraft ferried.

410,000 hours flown on operational aircraft.

18,250,000 miles travelled by taxi aircraft with only three passenger casualties.

Sic transit gloria mundi.

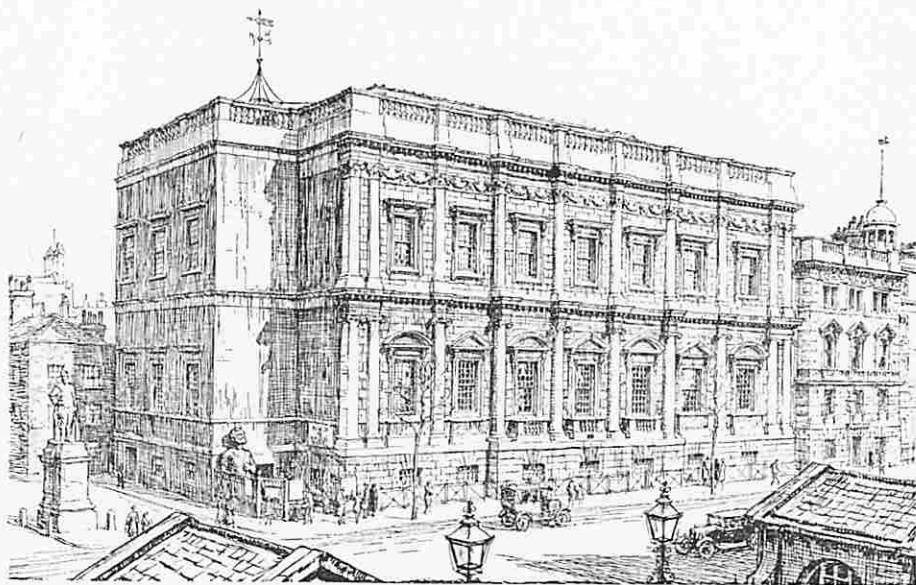


The only way in.



Flight Captain and her Flight Engineer take over a Stirling.

Royal United Service
Institution, Whitehall



THE ROYAL UNITED SERVICE INSTITUTION

How it Caters for the R A F

CAPTAIN E. ALTHAM, C.B., R.N., SECRETARY R.U.S.I.

THE Royal United Service Institution was formed more than a century ago, with the objects of "The Promotion and Advancement of Naval and Military Science and Literature." Since the creation of the Royal Air Force, the Charter has been officially amended to interpret those purposes as applying to all three Services.

Effect is given to them by the provision of a Library, a Lecture Theatre, a Journal, and a Museum.

The Institution's Library contains the finest collection of military literature, in its broadest sense, to be found in this or probably any other country. Books by all the best-known writers and specialists on every aspect of Imperial Defence and the conduct of war range from the latest publications to many rare old editions long since out of print.

There is a special Air Section which is being steadily developed, and many personal accounts of operations and authors' own experiences in air warfare, as well as the more official histories and records. Practically all these works and a large percentage of the other books are regarded as a Lending Library for Members*.

Opposite the Library is a very comfortable Reading and Writing Room with daily papers and those periodicals which cater for Service interests. Under its constitution the Institution cannot provide the catering facilities of a club; but it does constitute a *pied à terre* for Officers who have not got a London club where they can rest, read and write.

The RUSI Lecture Theatre has become the recognized forum where subjects of the greatest interest to the Services are expounded by the best professional

authorities and where Officers can take part in open discussions irrespective of rank.

Air subjects are given a prominent place in every Session, and for many years a lecture has been given at intervals on the progress of Civil Aviation. During the war, RAF Air Transport has been dealt with on more than one occasion.

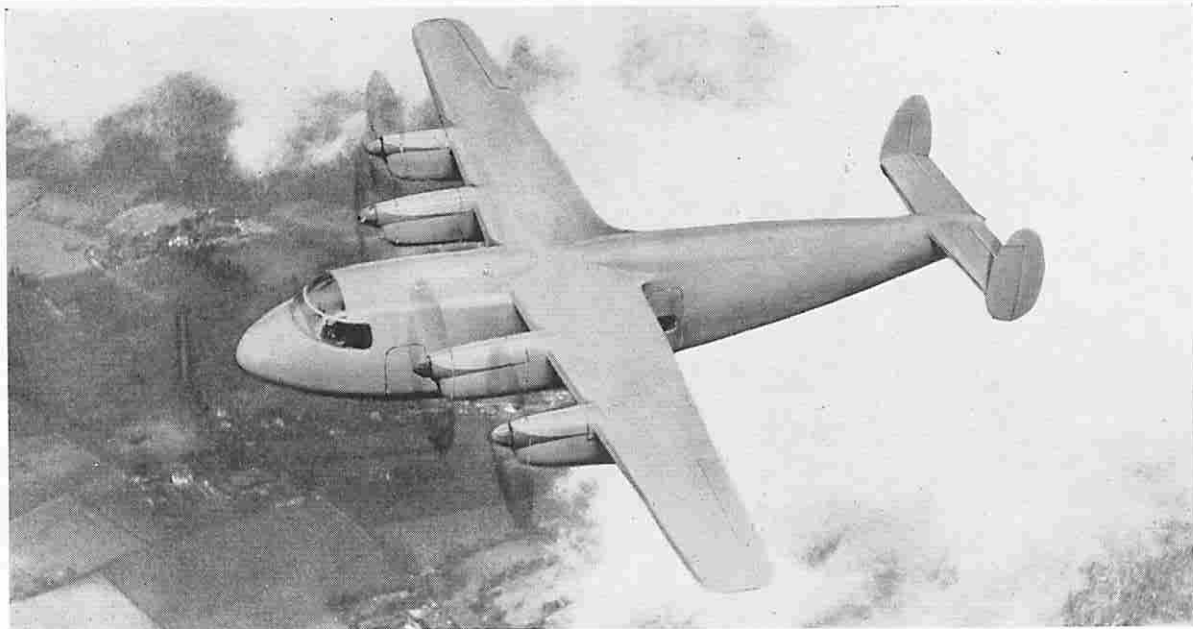
Members can bring friends, including ladies, to Lecture Meetings.

The RUSI Journal is the leading Three-Service publication in this and other countries. It is essentially the medium whereby lectures given in the Institution and the discussions which follow reach Members and Messes all over the world. It also contains articles by Officers and others with special knowledge of professional matters and of scientific subjects of Service interest.

Published every quarter, it is designed to give Officers of each Service a better understanding of the other two. For the student of war and of military history it is indispensable.

Housed in the grand old Banqueting House, the RUSI Museum is probably too well known to need much description. It is the very embodiment of the history, development and traditions of the fighting Services. Relics of air warfare from 1914 to 1945 and mementoes of many gallant exploits are a constant attraction both to RAF men and to the general public.

*Particulars of membership, which is open to all Officers whose names appear on the Official List, may be obtained from the R.U.S.I. Liaison Officer, HQ Transport Command, or from the Secretary of the R.U.S.I., Whitehall, S.W. 1.



The Miles Marathon

ANOTHER of Britain's post-war air liners, the Miles Marathon, is expected to be flown on test flight during the coming spring.

Basically, the Marathon is a high-wing all-metal four-engined 14 passenger air liner, but is capable of easy and rapid conversion into a 20-seater. It can also be quickly adapted for use as a freighter. The air liner has two distinct forms, one with a pressurized cabin for operation at heights up to 18,000 ft., and the other without pressurization for operation at and below 10,000 ft. The Marathon freighter is unpressurized.

The first Marathons will have four six-cylinder, air-cooled, geared and supercharged de Havilland Gipsy Queen 71 engines, each rated at 330 h.p. for take-off. These will drive three-bladed, reversible-pitch airscrews of 7 ft. 6 in. diameter.

Two wheels are fitted to each of the main legs of the tricycle undercarriage. All three legs retract by an upward-and-forward movement, and in an emergency can be positively lowered by gravity plus slipstream. Elimination of the need for a separate source of emergency power is an important feature and improves both maintenance and reliability. The undercarriage design provides for a steerable nosewheel.

The Marathon will probably be the first British air liner to incorporate thermal de-icing by a system independent of the engines.

As a result of the high-wing arrangement with tricycle undercarriage, the floor of the fuselage is brought close to the ground, and the passenger has only to mount two steps to go on board. Both front

and rear luggage compartments can be loaded from the ground. These are small details in themselves, but they all help to shorten the time spent on the ground during a journey.

Normally, the Marathon will be operated by a crew of two, but space is available for a third member if desired. Captain and First Officer sit side by side and, if a separate radio operator is carried, he will occupy the space near the crew's entrance door, part of which accommodates the radio sets and the forward baggage compartment.

One safeguard which has never before been fitted to any multi-engined aircraft is a device under the pilot's control by which it is hoped to obtain a large degree of automatic correction of the asymmetrical forces in the event of an engine failing on take-off.

The engine throttle levers are arranged to give three different combinations, as well as to provide separate control over each engine. One combination controls all four engines, another the inboard engines only, the third the outboard engines only. This lay-out saves a good deal of "juggling" on the part of the pilot to secure the best running conditions for taxiing, take-off, approach and landing, and facilitates the use of the reversible-pitch airscrews.

Particular attention has been paid to ensuring the widest possible range of vision for both pilots. The windscreen is exceptionally deep and structural members are reduced to the minimum. As is inevitable, however, the unpressurized aircraft is better than the pressurized version in this respect.



The first delivery of the new Transport Command Passenger Coaches which are being ordered for the use of Air Booking Centres throughout the Command. The coach, seating 20 passengers and providing 180 cu. ft. luggage space, is constructed on a Commer passenger chassis with 15' 9" wheelbase and is finished in Mayfair grey with blue rexine upholstery. The Transport Command crest will appear in addition to the RAF roundel. The coachwork is tropic-proofed throughout.

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The circulation of the REVIEW is limited. Please let others see this copy.

Has YOUR UNIT been featured in the REVIEW? If not, send in an account of its work and the local places of interest and diversion. AND photographs, please.

ST. MAWGAN

ST. MAWGAN has long-standing associations with flying. The old Whitney Straight landing-ground, situated about five miles N.E. of Newquay, became the Newquay airport, and was taken over at the outbreak of war as a satellite of St. Eval. In the photograph opposite, the original runways can be seen in the distance, towards the sea.

From such small beginnings ST. MAWGAN has become the largest airfield in the British Isles and covers an area of 1,140 acres. There are $9\frac{1}{2}$ miles of perimeter track.

Its growth was rapid; envisaged as the Main South Atlantic Terminal it was taken over by No. 44 Group on 30th December, 1941. The following March saw the first aircraft despatched for the Middle East, and when the 8th American Army Air Force took part in the airborne invasion of North Africa, ST. MAWGAN was the main controlling point. 176 aircraft landed and took off in one day.

Work on the present airfield was completed in May, 1944. Provision was made for the landing of the largest aircraft yet designed, and the main beam runway is 3,000 yards long and 100 yards wide. Recent tests, at various points, show that the surface will withstand, on an average, a pressure of 25 tons. ST. MAWGAN can boast of being one of the few airfields in the country to land B. 29s.

The field is excellently equipped for night flying, having Drem lighting with modern sodium approaches, "Contact" lighting, the American High Intensity—Low Visibility installation and subsidiary forms of sodium lighting. There is a wide choice of radio aids available; a listening watch is kept on five R/T frequencies alone; a radio range, SBA, SCS 51, Babs Mark II and M/F Beacon are installed.

The altitude of the field is about 350 feet—well above valley fogs, giving it a maximum number of days of flying

weather. Frequently ST. MAWGAN has the distinction of being the only "open" field in England. When the war in Europe ended and large-scale trooping movements were foreseen, this fact made ST. MAWGAN the obvious choice for Transport Command's No. 1 Diversion Centre, and the "jumping-off" point for heavy aircraft reinforcements to the Far East.

Now, since the collapse of Japan, a monthly average of 1,400 aircraft is being handled; the Passenger and Freight Section during November, 1945, dealt with 2,800 passengers and 1,500 aircrew, together with 114,000 lbs. of freight and 74,000 lbs. of mail of all kinds.

Diversions are often accepted at barely two hours' notice; on a recent occasion 41 aircraft were advised at 13.30 hours; 824 passengers and 253 aircrew were passed through Security and Customs Control, medically inspected and provided with their first hot meal in England. Special trains were arranged, and by 21.15 hours every passenger had entrained for his destination.

Training has not been neglected. In July, 1945, No. 1 Air Traffic School opened, eventually reaching a peak of 300 pupils per three-weekly course; 1529 RAT Flight has operated regularly since December, 1944.

The future of ST. MAWGAN was foreshadowed when, on September 6th last, Wing Commander JOHN MERRIFIELD, DSO, DFC, flying a Mosquito, took off and broke the previous East—West Transatlantic Record with a flying time of 6 hours 56 minutes. On October 23rd, following, he returned, having broken the West—East record with a time of 5 hours 11 minutes.

WANTED

Principal Staging Posts and Terminal Airports in Transport Command are requested to forward to the Editor oblique photographs and articles similar to the above for publication in these pages.





*York over the Khyber Pass, North-West
Frontier, India*