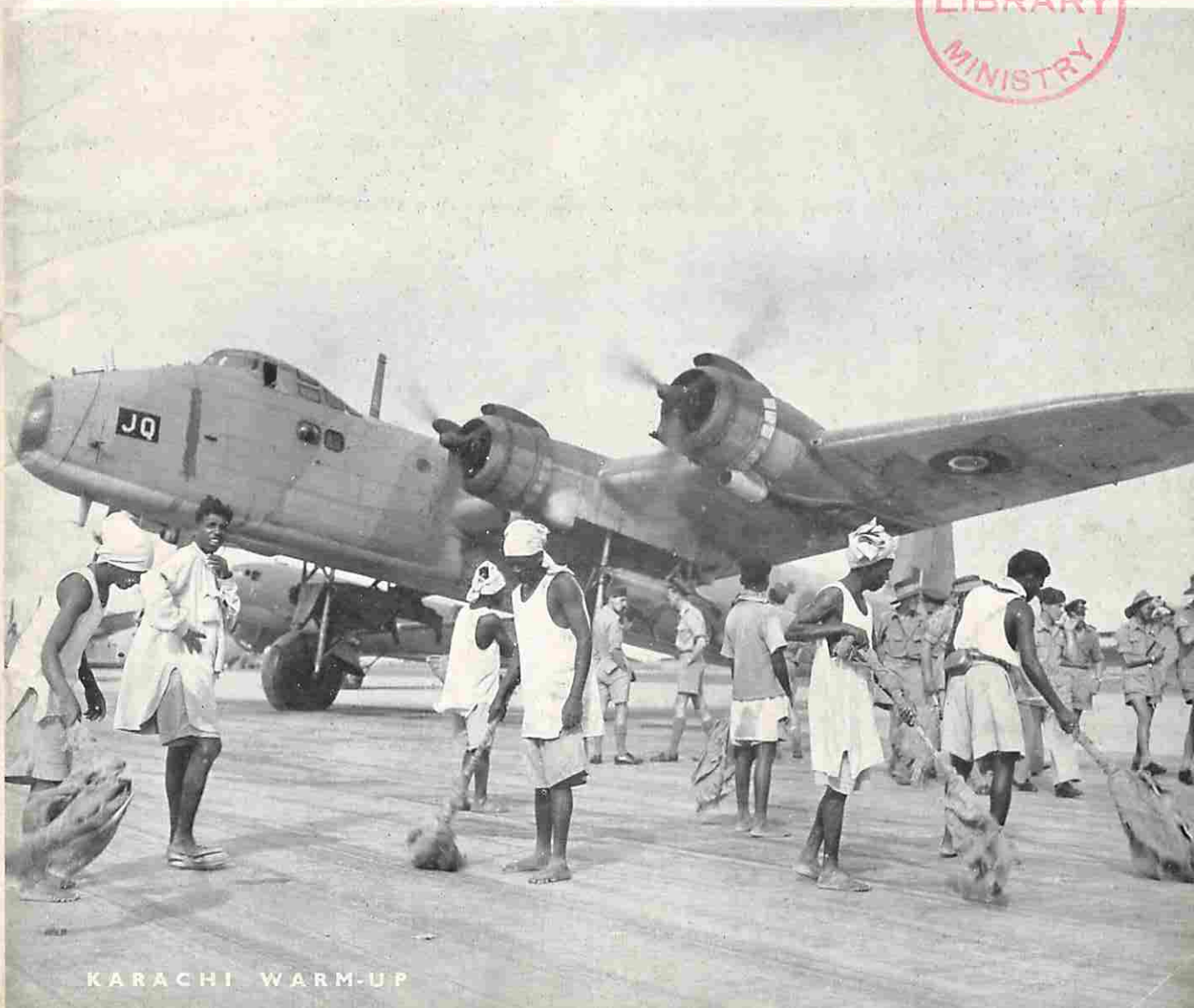
RAF TRANSPORT COMMAND REVIEW

NUMBER SEVEN MARCH 1946



KARACHI WARM-UP

WHAT IS IT? ANSWER ON PAGE 22

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TRANSPORT COMMAND REVIEW

ISSUED BY H Q TRANSPORT COMMAND
ROYAL AIR FORCE

No. 7 MARCH 1946

ALTHOUGH, by the time this issue is in the hands of our readers, the Transport Groups overseas will belong completely to Overseas Commands, we are continuing to distribute TRANSPORT COMMAND REVIEW as before. We do this in the desire to help Transport formations and units in Overseas Commands and hope that, for their part, they will continue to help us by providing articles for the REVIEW.

CONTENTS

Were YOU to blame?

No, not about accidents. This is about complaints.

It is a challenge to Traffic Officers and Aircrews

IT is impossible to fly 877 million passenger-miles a year without incurring some passenger complaints.

The Traffic Branch at Command is the repository of such complaints as reach us and, so far from burying them, we believe they should be ventilated and lessons learned from them. It is, indeed, one of our functions to investigate all complaints as far as possible, and endeavour to avoid their recurrence.

We say "as far as possible" because you would be surprised (unless you were in a Passenger and Freight Section) at the great variety of incidents beyond our control for which we get blamed. But the fair and reasonable complaint is always of value to us and often it is possible to put into effect some helpful suggestions arising from such comments.

Probably the most frequent source of complaints is delay in take-off. It need hardly be said that this is not always the fault of the crew or of the Passenger and Freight Section. But, if a complaint is made, they are the people who are going to receive it, and it is upon their handling of the situation that Transport Command —and the RAF itself—is judged.

It is very apparent from the records that no reasonable person complains of a flight being cancelled or delayed *provided* he is advised at once of the facts. But if that same reasonable person arrives, as ordered, at the airfield an hour or so before take-off, and is then kept waiting about, and finally informed casually that the flight is cancelled, then he becomes a very irritated man. It is all a matter of tact and consideration.

Here is an actual example from the files.

"*Having arrived at the airfield an hour before take-off, I was greeted casually by a RAF Sergeant, who said, 'Didn't you know the flight was cancelled? The aircraft didn't arrive yesterday.'*"

If the aircraft "didn't arrive yesterday," the Traffic Officer must have known, and if the passenger slept in the Transit or Passengers' quarters he should have been informed of the cancellation, and given fresh instructions as to when to arrive. And if the Sergeant's attitude was casual it was gross bad manners, to put it at its mildest. One is forced to the conclusion that a general slackness had set in throughout this Unit. If the persons concerned in these events—the Sergeant and the Traffic Officer—were charged with negligence and bad manners, each would undoubtedly be outraged and claim that it was nothing to do with him. This, as was said of another quality, is the last defence of rogues.

Here is another case.

"*On inquiring if the flight was going to take-off to schedule we were told that we were awaiting the pilot's arrival. Eventually crew and passengers got into the aircraft. There was then a delay of* 30 *minutes whilst the freight was rearranged, and a further* 60 *minutes while the engines were started up and warmed, and some mechanics made some tuning adjustments. No explanation of the delays was offered.*"

On the face of it, a shocking case of negligence. The aircraft had been on the airfield overnight and, obviously, the captain should have satisfied himself as to freight stowage and engine serviceability long before the time of take-off. Nor can the Traffic Officer escape his share of blame. For it was jointly his duty to have seen that the freight was loaded to the satisfaction of the captain. In any case, a delay of 90 minutes should have caused someone to find out about it, and a word of explanation and apology to the passengers would not have been out of place.

And where was our busy friend the Load Control Officer? No clue to the name of the airfield was given in this complaint, but if a Load Control Officer was present on the Unit, he, too, would want to know all about the muddle.

In both these cases the P & F Section failed lamentably in the most elementary of their duties, and in one case the crew was also involved.

Now let us look at a third complaint.

"*I have often had to remove mud and dust from the aircraft seat. This should be done before the passengers emplane.*"

We agree. But it might be asked, who puts the mud on the seats? Not the crew, certainly. Here we must put the blame fairly on the shoulders (or rather the boots) of the passengers. Admittedly every aircraft should be cleaned out at each landing stage, and when time permits this is rarely omitted. But on many occasions the aircraft does not stop long enough for this to be carried out efficiently in addition to more important tasks. It can also be remarked that except on Staging Posts employing native labour the personnel for this work is often not available.

Nevertheless, if the aircraft was in a dirty condition it was the *Captain's* duty to complain before the passengers had seen it. And if the passenger compartment, for some good reason, could not be cleaned out, the least he or the Traffic Officer should have done was to express some regret and explanation.

It is, of course, true that Transport Command is now more frequently open to comparison with Civil Airlines. But passengers often overlook the fact that our aircraft were primarily intended for military purposes, and not for a passenger service. Moreover, our aircraft are required by the Air Ministry to be immediately convertible to other operational demands, such as heavy freight carrying, paratrooping, supply dropping, glider towing. Our personnel are frequently changing and the new staff that has to be used on Staging Posts is not always trained in the rather special duties of passenger handling.

Finally, Transport Command are only carriers to the requirements of the Services and the Government; we do *not* have anything to do with the allocation of priorities.

Our air services are determined by the Air Ministry in accordance with inter-Departmental requirements. Their frequency and the room available are not the result of fancies of our own.

These points are made as defence against the spontaneous attack of anger to which a frustrated passenger may give vent—and the Passenger and Freight Section will be at the receiving end. In these circumstances the facts should be tactfully pointed out.

But having said that, it remains to be emphasised that the air passenger, be he service man or civilian, private or VIP, rightly expects from any Command of the RAF a high standard of efficiency and courtesy. If any of us fail by the smallest measure to contribute to efficiency and fail to accord the ordinary courtesies to our passengers, our deficiency is reflected throughout the Command and throughout the RAF.

It is the duty of every officer in charge of sections handling passengers to ensure that everyone passing through the hands of the Command should be treated not only with efficiency, but with consideration and courtesy. Only by constant vigilance, by frequent visits to the counters and to the waiting-rooms and to the aircraft, can these standards be maintained.

THE GEE SYSTEM

explained for the not-so-technical

FLIGHT LIEUTENANT S. T. GRAHAM, *Navigation Officer, RAF, Hendon*

RADAR NAVIGATIONAL AIDS—words once shrouded in mystery and housed in "Top Secret" files. The story has been disclosed to a certain extent in the daily Press, but actual details have been very limited. We are going to explain one of these aids, the Gee System, in some detail.

Gee is a device which provides navigational fixing and homing aids. The necessity for such a device arose during the war because aircraft of Bomber Command, operating at night, needed an accurate method of maintaining their tracks to and from various targets. The system was so successful that, not only was it extensively developed during the later months of the war, but to-day it is assuming major importance on transport routes throughout the world.

The system is based on ground transmissions of radio energy, and no transmission on the part of the aircraft is necessary.

Let us consider two radio transmitters radiating omnidirectional signals at the same time. An aircraft flying within the range of these transmitters would receive both signals after the time interval taken by each to traverse the space between the aircraft and the transmitters. Obviously, should the aircraft be nearer one station than the other, it would receive the nearer station's transmissions before those of the more distant station. The difference in time between the two receptions is due solely to the variant distance of the aircraft from the transmitters. It is this Time-Difference that is the underlying principle of the Gee System.

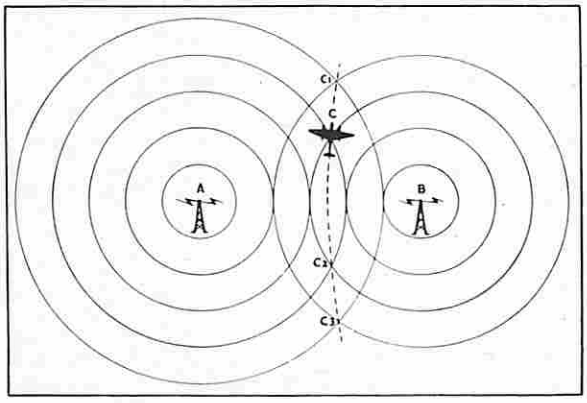


FIG. 1

The concentric circles in Fig. 1 around the two transmitters, A and B, represent one second of time of travel of the radio waves. An aircraft at C, therefore, receives the radiation from A four seconds later, and from B three seconds later, than the actual time of its transmission. The time-difference between the two receptions is one second. Had the aircraft been at position C_1 the figures would have been five seconds from A and four seconds from B. The time-difference would again have been one second. Similarly for positions C_2 and C_3. If these points are joined (the dotted line) we have the *locus* of all points which are at such a distance from the transmitters that the time difference is one second. By having this line, and others representing various time-differences, drawn on a map or chart, the navigator has a system from which he can obtain a line of position (*i.e.* a line somewhere along which the aircraft is located) which will aid his navigation.

Now, if we introduce an additional pair of stations so that the line joining the second pair of transmitters (known as the "base line") is inclined to the base line A—B we should obtain a further set of position lines. The two sets used together would give us the exact position of the aircraft over the ground, *i.e.* a *fix*.

Now let us relate the above to the Gee System. A main transmitter known as the Master, or "A" Station, is used in conjunction with two or three other stations known as Slaves, or B, C and D Stations.

Such a grouping of four stations is called a Gee Chain.

The slaves transmit after the master signal is received. Not immediately after, but after a determinate interval of time (or delay) which is controlled by the station operators. The delay is adjusted so that the B slave transmits before the C slave, which in turn radiates before the D slave. Thus, to an aircraft in flight, the order of reception of signals, irrespective of position, is always A, B, C and D. It is important to note here that the Gee transmission is not continuous but consists of short powerful bursts, or pulses of radio energy transmitted at intervals. These intervals are only a certain number of microseconds in duration

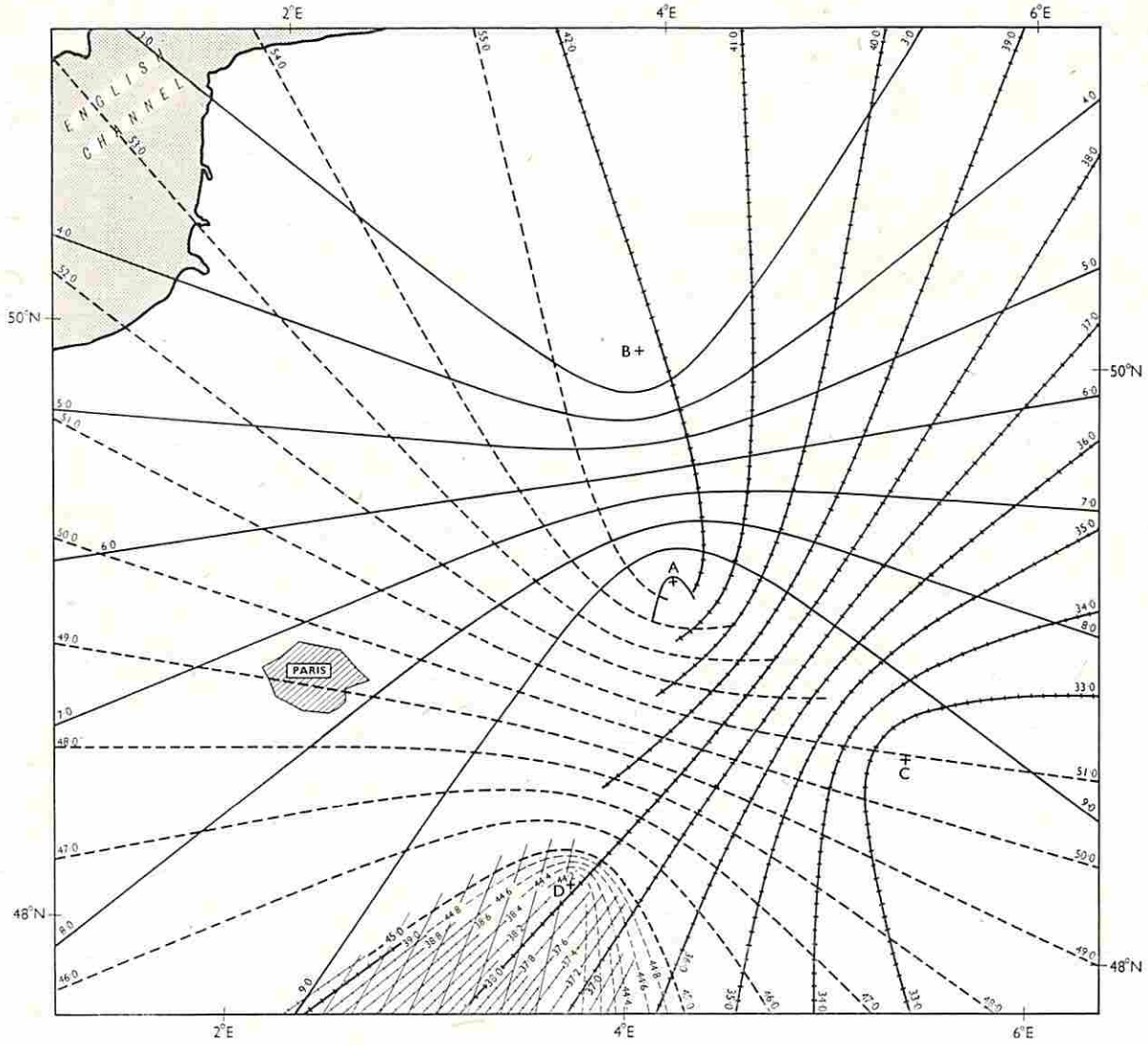


FIG. 2

This is a much simplified reproduction of a Gee Chart—in fact it is taken from part of the Rheims Chain Fixing Chart. On the real chart the Lattice Lines between each Station are printed in different colours, and between each of the lines shown here are printed nine intermediate lines representing Gee units to the first decimal place; in the section around Slave Station D these intermediate lines have all been put in to indicate the effect, but the diagram would become unnecessarily complicated if this were attempted over the whole surface without the use of colours. Again, the real chart bears a co-ordinate graticule of latitude and longitude, topographical features of the country, and spot heights, all of which are omitted from this diagram for the sake of simplicity.

and are not apparent to the Gee operator (the microsecond is the millionth part of a second).

To return to our sets of *loci* or position lines, the arrangement of a Gee Chain will be as shown in Fig. 2, *i.e.* there will be three separate sets of position lines indicating time-differences between the three slave stations and the master. The lines are curved—mathematically they are spherical hyperbolae—and are called Lattice Lines. Figures are printed alongside each line, and these represent the time-difference expressed in an arbitrary unit known as a Gee Unit. A co-ordinate graticule of latitude and longitude and topographical features are impressed on the same chart to facilitate the reading of the geographical position.

We have stated that two lattice lines only are required in order to obtain a fix; why, then, is the third set of lattice lines (that is those formed between the A—D stations) necessary? One answer is that the A—D lines give coverage on the lower left-hand side of the chart; that is, in the back coverage area of the other two pairs.

The third slave has another important function. It can be seen that the lattice bends most sharply around the stations. In the area enclosed by the innermost hyperbola, the signal of the neighbouring slave is used. Thus, in the bottom left of the chart, the area within station D's innermost hyperbola is served by signals from A and from C. In other words, around each station the signal of that station is not used, but the signals from the other slaves are employed.

This briefly describes what happens on the ground, and we must now see how all this is interpreted in the air.

The function of the airborne apparatus is to receive the radiation from the ground and to present it in some form to the navigator. This is done by means of a receiver unit and an indicator unit. (Fig. 4.)

As there is more than one chain of stations in operation at the same time, each operates on a different frequency in order to avoid confusion when the signals are received on the screen. When the navigator has determined which chain he is going to employ, he can very speedily adjust the receiver to the frequency of that chain. The whole process is similar to the selection of programmes on a normal radio set.

Owing to the speed at which wireless waves travel, and also the small differences in time that it is necessary to measure, the instrument in the indicator unit used to portray these time-differences is the Cathode Ray Tube, in which an electron beam is created and deflected in all directions across the screen (which is merely one end of the tube) by incoming impulses of radio energy. On this screen all the necessary information the navigator requires is presented.

When the equipment is switched on and certain controls manipulated, a picture (as shown in Fig. 3) will be obtained.

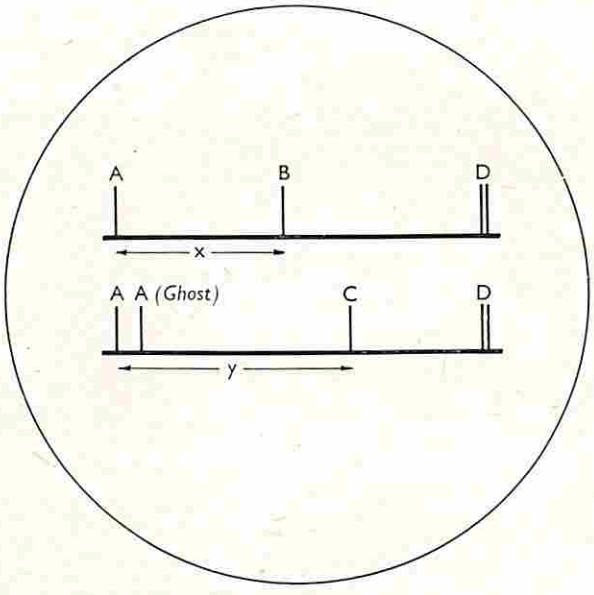


FIG. 3

Main Time Base Picture of Indicator Unit. The circle represents the rim of the Cathode Ray Tube.

This is known as the Main Time Base picture. The two horizontal lines, which are lines of light traced by the electron beam on the surface of the Cathode Ray Tube, are designated Time Bases, as it is along them that the time-differences are measured. The vertical blips are the representations of the signals received from the transmitters.

Although the time bases are shown as two lines, the lower one is really an extension of the upper one, which has been cut off and placed below, merely for the sake of convenience.

The three signals (pulses, or blips, as they are more commonly called) marked "A" constitute the A pulse. As we have seen already, it is the time-difference between the receiving of the master signal and the receiving of the slave signal with which we are concerned; therefore this A pulse can be used as the datum from which the time-differences can be measured. This master signal appears on both of the time bases in order that time differences may be measured for pulses on each of the traces. The second blip on the lower time base, immediately to the right of the original A, is the "A ghost" pulse, the function of which is to identify the A signal, in that the ghost must always appear on the lower trace. The ghost also serves as a means of identification of the particular chain which is being portrayed, as it is made to "blink" periodically in accordance with a known code.

The pulses marked "B," "C" and "D" are the received signals from the B, C and D slaves respectively. It should be noted that the D blip appears on both traces in order that combinations of either A—D and A—C or A—B may be used for fixing purposes. Also the D pulse is a double pulse to prevent confusion with the others.

The time-differences to be measured are indicated by the lengths of time-base (x and y in the diagram). This difference is measured by the use of a system of calibration markers, which can be obtained on the screen by the manipulation of one of the controls. The markers give a number, in whole units, and two decimal places, for each time-difference to be measured, *i.e.* for the A—B and A—C or A—D pulses.

These numbers correspond to the similar co-ordinates which are printed against each of the lattice lines on the Gee charts.

As the two readings from the indicator are obtained simultaneously, two lines of position are obtained, and hence, when the Gee co-ordinates are plotted, an instantaneous fix is obtained. The geographical latitude and longitude of this position is also obtainable directly from the Gee chart and is used to aid the navigation of the aircraft.

The converse is equally true. If the Gee co-ordinates of a given position are set up on the indicator, without reference to the pulses, then the aircraft can be manoeuvred until the signals show that the given position has been reached. This procedure, known as

"homing," is usually carried out along one of the lattice lines. When an aircraft is flying continuously along one of these lines, then the time-difference is constant, *i.e.* the A signal and the particular slave signal will remain at a fixed distance apart on the tube. Thus is homing accomplished—the aircraft being kept on a certain lattice by a reference to the pulses on the navigator's screen.

The Layout and Range of the Ground Stations

The distance between the Master and Slave stations is not a fixed one, but is usually in the order of between 50 and 60 miles over land.

High ground has a serious effect on Gee transmissions, as it "screens" or cuts off the radiation. In fact, in order to obtain the maximum range of signals, the stations are usually sited as high as possible to overcome this screening effect of high terrain.

It will be clear from what has been said that the geographical direction of lattice lines is determined by the positions of the two transmitters. Thus, if it is desired to have maximum fixing accuracy in any particular area, it will be best to site the stations near that area and to have the base lines as near right-angles as possible. On the other hand, it may be required to place a lattice along a certain direction to facilitate homing. This can be accomplished by a careful choice of sites for the stations, so that the base line of the stations is at right-angles to the direction of lattice required.

As with other forms of wireless transmissions, the range of Gee depends upon the power of the transmitters. On the average, some 200 miles over land, and 250 miles over sea, are the generally accepted ranges from medium-powered transmitters. The effect of height is considerable, and an aircraft flying at 20,000 feet will obtain greater ranges than one flying at 5,000 feet. These ranges quoted must be treated as very average representations; it would be impossible to quote accurate figures unless numerous other factors were taken into consideration.

One of the commonest forms of interference on a normal wireless equipment is the effect of weather in the form of "static." This does not occur in the very high-frequency band in which the Gee System operates, and this is one of its great advantages over other similar radar aids. It is virtually an all-weather navigational aid.

The Accuracy of the Fix

The navigational accuracy of a fix depends on many factors. In the first place, the accuracy of any two-position line fix is dependent upon the angle at which the two lines intersect; the smaller the angle the lower the accuracy of the fix. The Gee lattice lines are not parallel, but diverge as the distance from the stations is increased. Thus, as the range of reception is extended, the lattice of two pairs becomes more nearly parallel and the value of the fix, navigationally, is reduced.

This divergence of the lattice also causes another error at increasing distances from the transmitters, in that some interpolation is required when plotting the readings obtained from the indicator on the chart. As the distance is greater between the points of interpolation, should an error of plotting be made, the resulting fix will be more in error than it would have been had the same position line error been made nearer the stations.

Large errors from the ground transmissions are rare and can be ignored. A careful watch is maintained by a ground organisation and the highest praise is always given by navigators to the maintenance crews of the Gee chains.

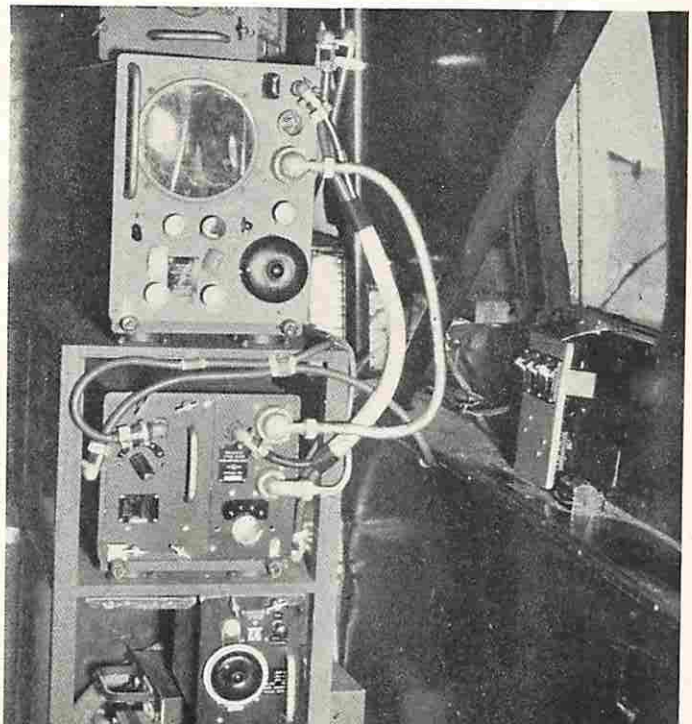
Errors from the manipulation of the airborne equipment are very small owing to the extreme simplicity of operation, and once navigators have had a certain practice in the use of the equipment, no major error is usually made.

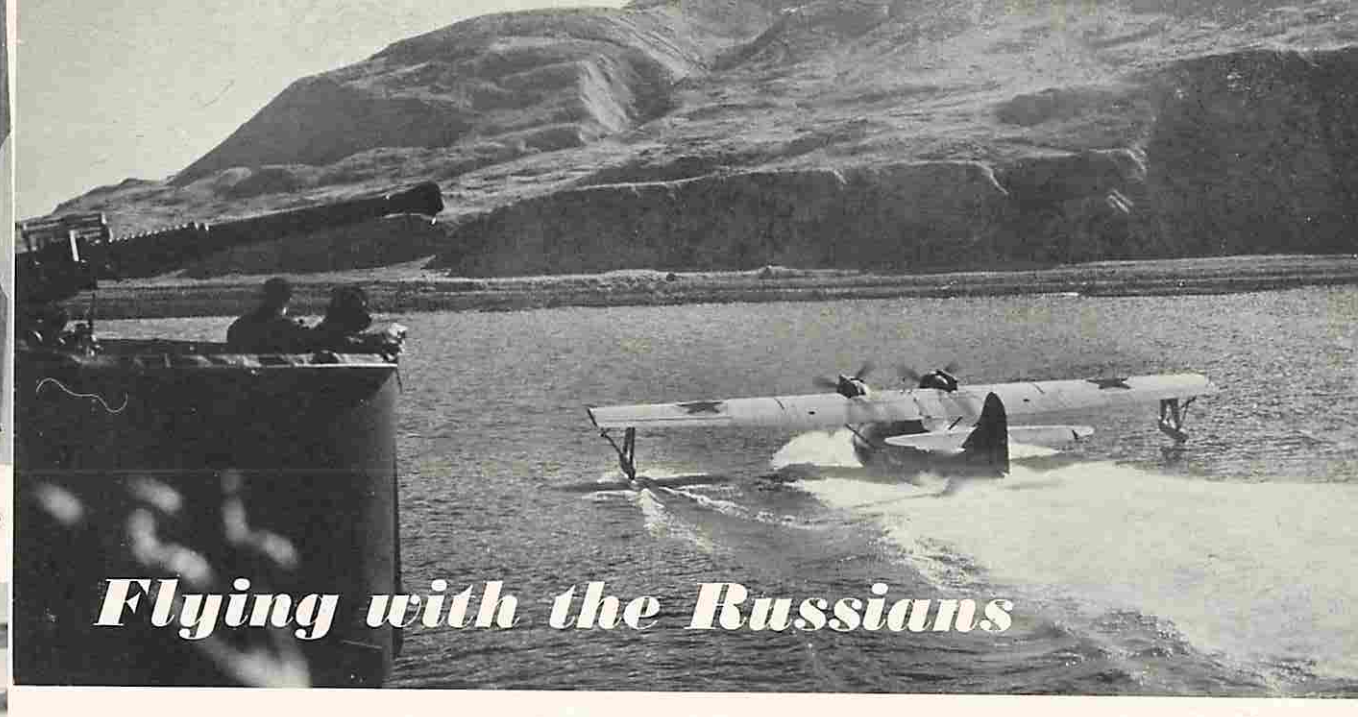
The homing procedure outlined earlier is being used to provide a method of airfield approach in conditions of low cloud and poor visibility. Under this scheme the aircraft is homed to a point just off the landing end of the runway, at a height of 600 feet, and in a position to effect a landing as soon as a turn is made on to the direction of the runway. It is also possible for the system to provide a method for the control of flying when a number of aircraft is approaching an airfield.

The present layout of the various Gee chains gives complete coverage over Europe, and further development throughout the trunk routes is under consideration.

FIG. 4

The Indicator Unit (top) and Receiver of the Gee equipment.





Flying with the Russians

THE frequent visits of Russian transport aircraft occasioned by the UNO Conference in London recall the flight delivery of Catalinas from America to Russia during the close of 1944 and the spring of 1945.

At that time it was a common sight to see lines of Catalinas riding at anchor on the muddy waters of the River Pasquotank, beside the US Naval Base at Elizabeth City. But in place of the familiar American white star, they wore the red star of the USSR. The Catalinas, type PBN1, were ready for delivery, and this was their take-off point for a journey of more than 10,000 nautical miles to Baku, on the Caspian Sea.

Operation "Light Up" was a rather unique adventure in RAF-USA-Soviet co-operation. It was planned and controlled by 45 Group, jointly with US Naval Air Staff and the Soviet Air Staff.

The crew of each Catalina consisted of a normal complement of six Russians, plus a skeleton crew of three from 45 Group—a pilot, radio navigator and flight engineer; these were variously RAF, Dominion Air Force or American civilian aircrew. None of the Russians spoke English. No Russian was spoken by their companions. The language of signs and a common technical knowledge and skill were the means of understanding between them.

Before deliveries began, a survey plane was flown over the proposed route to determine final control and briefing arrangements. Interpreters and briefing officers were provided along the route by the US Navy Air Staff and the RAF.

The Catalinas flew in pairs from Elizabeth City to Porto Rico, Trinidad, Belem, Natal, Bathurst, Port Lyautey, Augusta (Sicily), Fanara (Egypt), Habbaniya, Baku. As far as Habbaniya, the RAF pilot was captain of the aircraft. From there, the RAF crews returned to base and the Russians completed their journey alone.

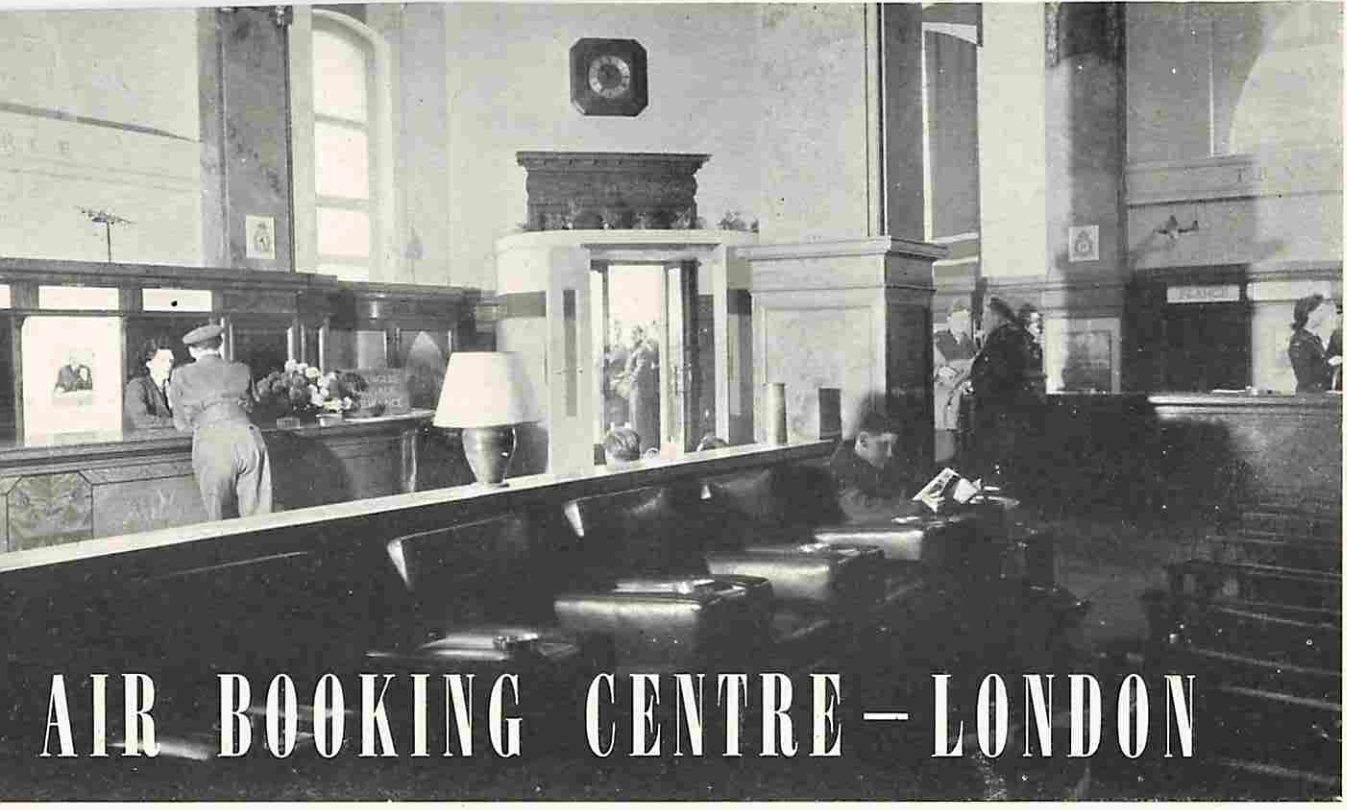
Generally these flights were completed in about two weeks; the fastest trip from Elizabeth City to Baku was accomplished in 11 days. But some of the deliveries took as long as two months, largely due to U-boat activity diverting facilities at bases on both sides of the Atlantic. Nevertheless, the whole delivery of 60 aircraft, with only one loss, was completed in 6½ months. It had been originally scheduled to take 10 months.

In spite of the language difficulty between these mixed crews, co-operation and team work were markedly high throughout the operation, and our men generally found each trip better than the previous one, as they got to know the ways of their companions.

Inevitably, there were amusing incidents which greatly helped to break the ice. Arrival at Habbaniya was always the signal for a Russian-sponsored celebration, and they would have the bottles open by the time the Catalina was moored to its buoy. It was only on later trips that experienced RAF crews were able to persuade the Russians to wait until landing formalities were over.

Although the Russians handled the aircraft well and were technically very competent and thorough, it was noticeable that they appeared inexperienced in ocean flying, and were not impressed by cumulo nimbus clouds until they had flown into them.

The Russians have used these flying boats, of which they received other deliveries by the North Atlantic route, for a wide variety of purposes in all theatres—for patrol work in the Baltic, in the Black Sea, and in the Far East; for night bombing in a grave emergency, as at Odessa; for parachute-dropping frequently; for landing personnel on enemy coasts; and, very widely, for general transport purposes.



AIR BOOKING CENTRE—LONDON

For some years the ground floor of No. 20 St. James's Street, London, lay empty. Last year, when it was taken over by Transport Command for an Air Booking Centre, it wore an air of desolation and neglect. The marble, the gilt, the mahogany, shrouded in dust and gloom, presented the appearance of a deserted mock palace.

All that has been changed by the initiative, energy and skill of Transport Command's Passenger Services Section, working on "self-help" lines, and with the assistance of some of the Works Flight.

These pictures show the centre hall as it has been redecorated and furnished.

The first essential was to get more light into the place. This was achieved by painting and distempering the ceiling and all wall surfaces in cream colour.

A general view of the entrance is shown at the top of this page, and the camera is then turned to the right to give the picture at the top of the opposite page. Note the streamlined draught-excluding structure round the swing doors. The frames in the mahogany panelling behind the counters are now filled with gay posters, hand-painted murals and portraits of the nation's leaders. Above the panelling, a cream-coloured screen right round the hall carries the title of TRANSPORT COMMAND—ROYAL AIR FORCE, and models of British aircraft are mounted in front of it. Between each chair is a built-in rack for papers and magazines.

The light-coloured partition, shown in the photograph at the top of the right-hand page, keeps office accommodation and baggage storage out of sight, and the resulting wall space is effectively used for the display of notice boards; the partition is then flared round an existing mahogany structure to provide the booking clerk's office for fare-paying passengers.

To the right of this was an untidy space for weighing and labelling luggage, flanked by an old-fashioned telephone box (*see bottom right*). Here, using scrap plywood from aircraft fuselages, two telephone booths were built in the place of one, the partition was extended to provide a two-way passage to the Despatch and Baggage Section, and a fine mural was painted on the panel above (*see centre right*). On another wall, not shown in these pictures, is a huge painting of a map of the world with the Command's routes traced over it.

A neat device to make more seating available for the peak traffic at rush hours is a broad seat, upholstered in rexine, built round three sides of two of the pillars; each provides comfortable seats for seven or eight people in a space that would otherwise accommodate three chairs.

The Air Booking Centre is a good example of the ingenuity, the skill and taste of the Passenger Services Section. So much has been achieved out of so little. The men who design and carry out this work are drawn from all ranks and trades in the Command. Some have professional skill, some amateur talent, some have acquired their skill in the Service. Almost all the material with which they work is scrap, salvage or u/s equipment.

The sole purpose of the Passenger Services Section is to improve the amenities and comfort of all sections of Transport Command Units used by passengers. How well they can succeed is shown in these photographs.

Products of the workshops of the Passenger Services Section are put to good use in the London Air Booking Centre. Hand - painted crests of Transport Command Squadrons, ash-trays made from piston heads, cigarette bins from propeller bosses, plywood magazine covers; the table lamp in the centre of the photograph on page 10 is turned out of an odd piece of heavy timber. Notice boards and direction boards are made and painted in the studio. Hard, wooden stools for the staff have been comfortably upholstered and covered in rexine, desks are provided with pen and ink trays.

A Warrant Officer is on duty to maintain cleanliness and tidiness.

PHOTOGRAPHS BY SERGT. J. V. E. HICKS

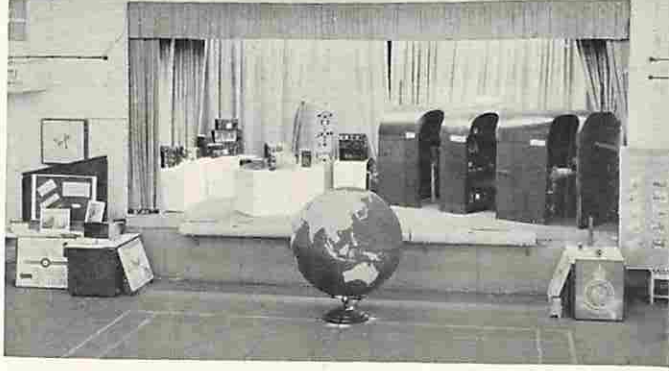
ABOVE : *A mural design, over the new entrance to the Despatch and Baggage Section, depicting the history of flying, painted by Flying Officer Brooke, an ex-glider pilot, now serving in the Passenger Services Section. Elsewhere in the hall are other murals by another ex-glider pilot, Flight Lieutenant Stringer.*

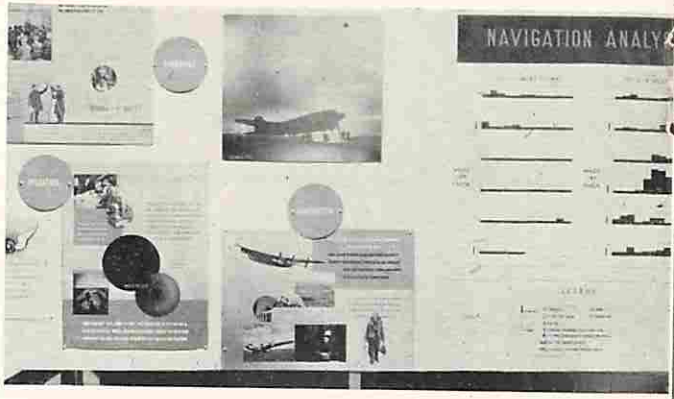
LEFT : *This is the same corner as shown above, before work was started.*

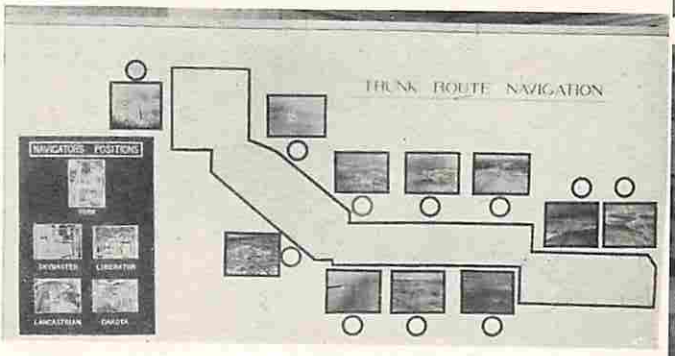
TRANSPORT COMMAND

EXHIBITION

AT HEADQUARTERS







AT the beginning of January the Air Officer Commanding-in-Chief decided that a series of exhibits should be set up at Headquarters, Transport Command, Bushy Park, to demonstrate in a simple and condensed pictorial form the system adopted by Transport Command for the operation and maintenance of its many responsibilities.

This display consisted of a series of exhibits, designed to illustrate operational technique, traffic, maintenance and training, and there were also sections dealing with flight efficiency and aircraft deliveries. Photographs of some of the displays are shown on this and the opposite page.

The operational aspect of the Command's activities was represented by displays of signals, navigation and flying control equipment, showing the close integration of communications and navigational aids with the three types of flying control.

The traffic display consisted of diagrams showing the organisation of the passenger and freight and load control sections, and an exhibition of the products of the passenger services section, which is responsible for studying the comfort of passengers.

How maintenance is planned and executed throughout the Command was shown by the Engineer Branch. A prominent part of this display was an explanation of the progressive servicing system which has been introduced to meet the Command's particular problem of maintenance.

The training branch showed by means of chart and photographs the nature of the specialised training required for crews of transport aircraft, and full details of the new Transport Command categorisation scheme.

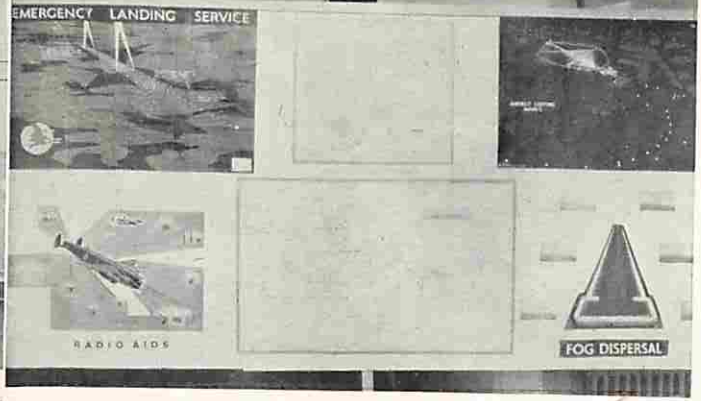
In the Operations Room visitors were shown the system of recording and progressing the movements of aircraft flying to and from the UK along the recognised routes, together with an explanation of the working of the card index system, and a description of the organisation of a normal Staging Post.

In order to give visitors as comprehensive an idea as possible of the scope and complexity of the Command, an introductory talk was given on the functions and organisations of the Command.

After seeing the various displays, visitors were given some interesting figures by the AOC-in-C, relating the work of Transport Command to pre-war civil aviation. Meetings were then generally rounded off with informal discussion.

The exhibition was shown first to the Press on the 4th January. On the 16th January it was visited by the Chief of the Air Staff, Members of the Air Council and senior Air Ministry officials. Since then the display has been repeated in slightly modified form to representatives of home-based Groups, the Society of British Aircraft Constructors, the Staff College, Members of Parliament and various Air Ministry departments.

The statistical charts dealing with the casualty rate were reproduced in last month's REVIEW. This month we reproduce copies of graphs showing the rate of expansion of the Command during 1945, and the effort of No. 511 Squadron in 1945 as compared with the whole of British Civil Aviation in 1938. With 20 Yorks, this Squadron flew a greater passenger mileage in 1945 than the whole 120 aircraft employed by British Civil Aviation in 1938.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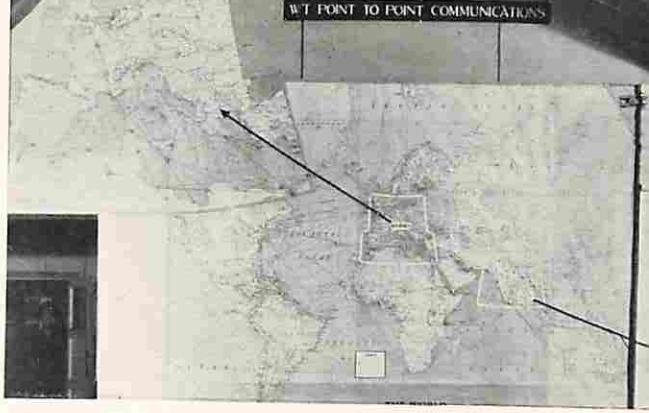
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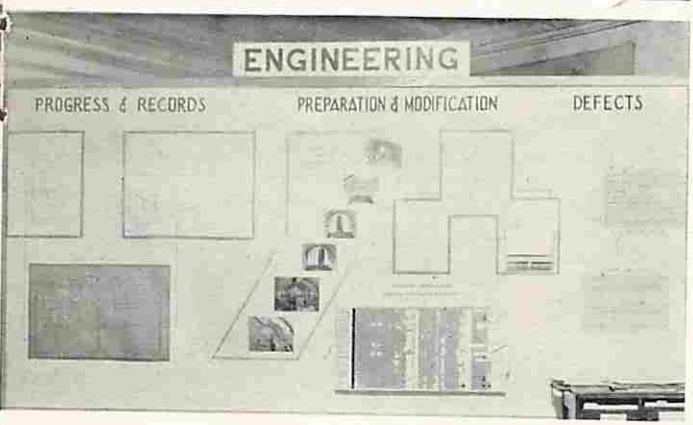
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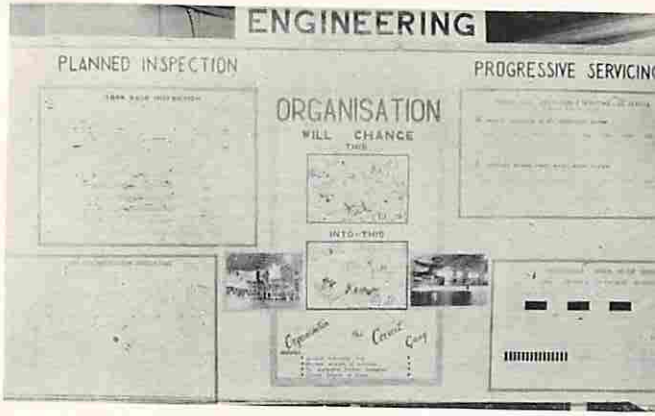
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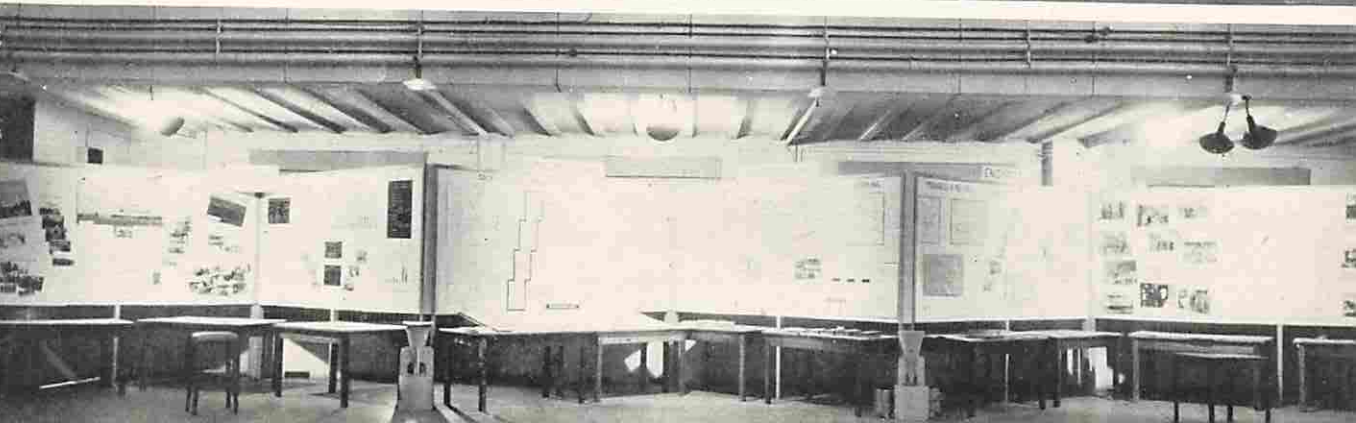
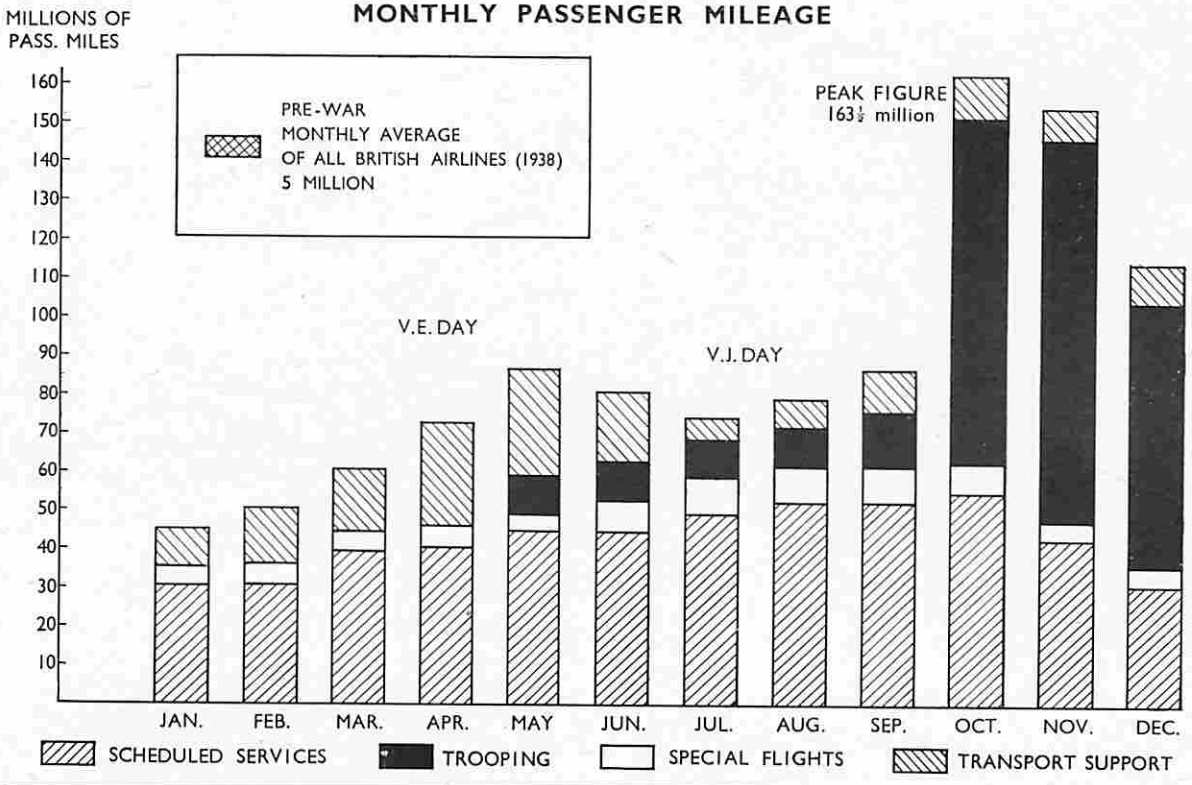
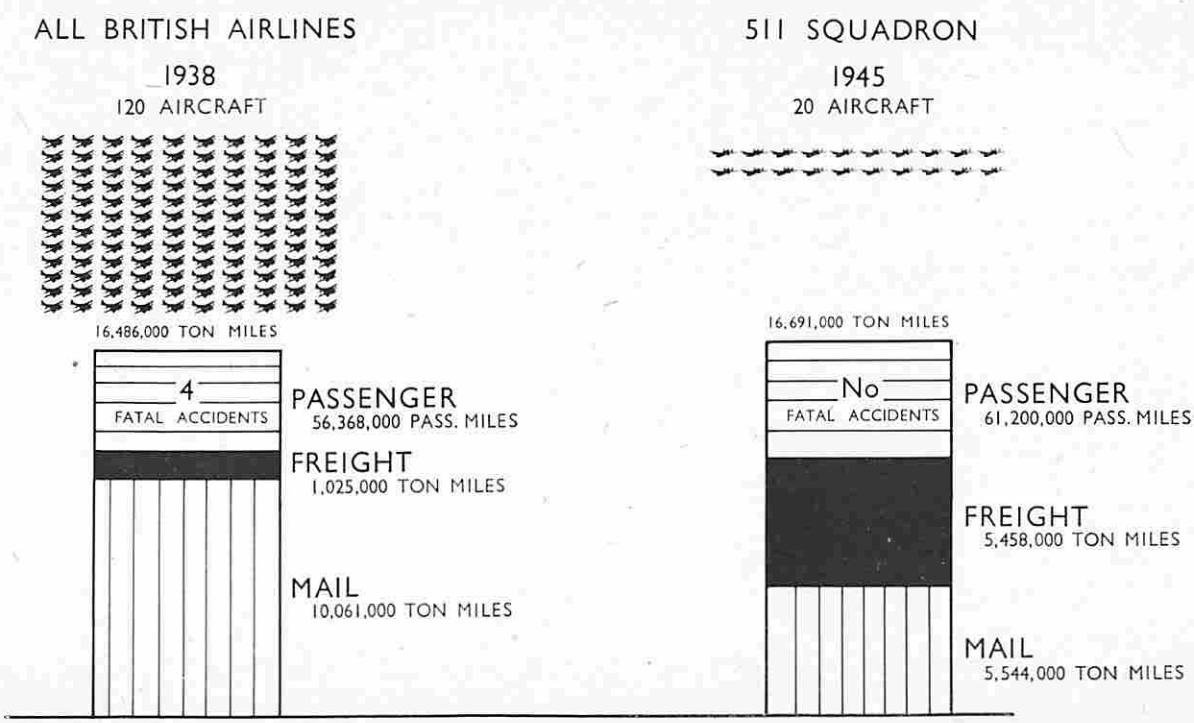
SIGNALS, NAVIGATION & FLYING CONTROL



TRANSPORT COMMAND EXPANSION—1945



PROGRESS IN AIR TRANSPORT



INTRODUCING THE

AIR QUARTERMASTER

SQUADRON LEADER E. LYON,
Traffic Training Officer, Headquarters, Transport Command

RECENTLY, the first Air Quartermasters were posted for duty with Squadrons operating along the trunk routes and with certain special flights.

What is an Air Quartermaster? He can best be described as a super Air Movements Assistant, who flies as a member of a Transport Command aircrew. He is, to the captain of a transport aircraft, what a purser is to a ship's captain.

But since the trade of Air Movements Assistant is a comparatively new one, perhaps we should start by explaining his qualifications. These are laid down at length in AMO A.869/45, and briefly they amount to all those qualifications required of a Traffic Officer's Assistant. In the past, NCOs and airmen carrying out traffic duties at Staging Posts were Equipment Assistants, Clerks GD, or ACH/GDs. But the ACH/GD with a sound knowledge of traffic duties could only remuster to the higher trade group if he had the qualifications of an Equipment Assistant or Clerk GD. Under active service conditions these men had little chance of gaining the necessary qualifications, and so the trade of Air Movements Assistant was introduced.

The Air Movements Assistant is, then, an airman qualified in all traffic duties, and if he is a particularly good AMA, he may be selected as an Air Quartermaster.

Now, the captain of a Transport Command aircraft is responsible for the care of his passengers, and for supervision of the loading and safe lashing of the freight and mail, as well as for the many duties connected with the actual flying of the aircraft. The Air Quartermaster is an extra member of his crew whose sole duty is to look after the passengers, freight and mail while the aircraft is in flight. He also has some knowledge of catering and of elementary first-aid. Obviously, he is going to be a very busy, and a very useful, member of the crew.

Let us take an imaginary trip by air and see just how the Air Quartermaster carries out his duties.

As soon as he knows the details of the flight and aircraft, the Air Quartermaster completes Part I and part of Part II of the Transport Command Weight and Balance Clearance Form, No. 2870, on behalf of the captain of the aircraft, and hands this to the Load Control Officer. As soon as possible, he orders the appropriate amount of liquid and solid refreshment

The Air Quartermaster and the Captain check over the load sheets and manifests before take-off

for the trip from the Catering Department, and about two hours before the ETD, goes to his aircraft and proceeds to check the position of the load for correct balance and the security of the lashings. He will make sure that the freight to be off-loaded first is in an easily accessible position, that the passenger compartment is clean, that safety belts are attached to each seat, that oxygen bottles are provided, and that any diplomatic mail to be carried is placed in a safely guarded place. He then checks and signs for all the safety equipment and other loose equipment such as blankets, electric lamps, fire extinguishers.

He may sign the Load and Mail Manifests on behalf of the captain, but he must hold the Weight and Balance Clearance Form for the captain's own signature.

Doubtless, by this time, rations for the journey have arrived from the Catering Department, and these must be checked against the demand voucher, and the containers examined for cleanliness, before they are stowed away.

His next job is to visit the Flying Clothing Store,

where he advises passengers as to clothing suitable for the trip, and signs in duplicate for the actual clothing issued. He retains one copy of this voucher.

Back to the aircraft, where he takes over the passengers from the Traffic Officer, allotting them their seats, and briefing them as to the layout of the aircraft and use of safety belts.

Now the aircrew are aboard. The captain has taken over the load from the Traffic Officer, and given the passengers the final briefing, doors are closed, the aircraft taxies off to the runway and becomes airborne.

On reaching level flight, the AQM visits all passengers to see that they have settled down for the journey—probably he will serve a hot drink.

Then he again checks the freight lashings, and notes the items of freight to be off-loaded at the first stopping place, and prepares the aircraft papers which are to be handed to the Traffic Officer at the next Staging Post.

He will already have flown this route in the course of training, and knowing the next Staging Post, he now tells his passengers just what the procedure will be for those who terminate their journey there, and for those who will be flying on to another place. This will assist the Traffic Officer at the Staging Post and enable him to deal quickly and efficiently with the aircraft on its arrival, so that there will be no delay in taking off on the next stage of the flight.

By now, the end of the first stage of the journey is reached—the aircraft has landed and taxied to dispersal; the engines have been switched off, and the Air Quartermaster alights. At once he contacts the Traffic Officer, hands over the manifests and identifies the passengers as they descend from the aircraft. As the off-loading party arrives, he indicates the items of freight and mail that are to be off-loaded, together with the luggage of passengers who are terminating their journey. This eliminates the risk of lost or mislaid luggage and, at the same time, eases the minds of passengers as to the fate of their belongings.

Next, a journey to the Flying Clothing Store to hand in the flying clothing of those passengers who have left his aircraft, and to have his Issue Voucher adjusted. Then to Load Control, to find out the number of passengers and the amount of freight to be added for the next stage, and thence to the Catering Department to demand fresh rations. Here, if there is time, he has a meal himself before going back to the P & F Section to obtain details of the new load, which he again checks on the aircraft and signs for on behalf of his captain.

The passengers now arrive, and he checks them as they emplane, sees that rations are correctly stowed and searches the aircraft for stowaways and unauthorised cargo.

Airborne once again, with the passengers comfortably settled for the trip, he carries out his routine inspections and checking of the load.

This stage is rather longer than the first, so he arranges meal periods accordingly, probably a meal after four hours flying, and a hot drink one hour before landing. By this time his passengers will be

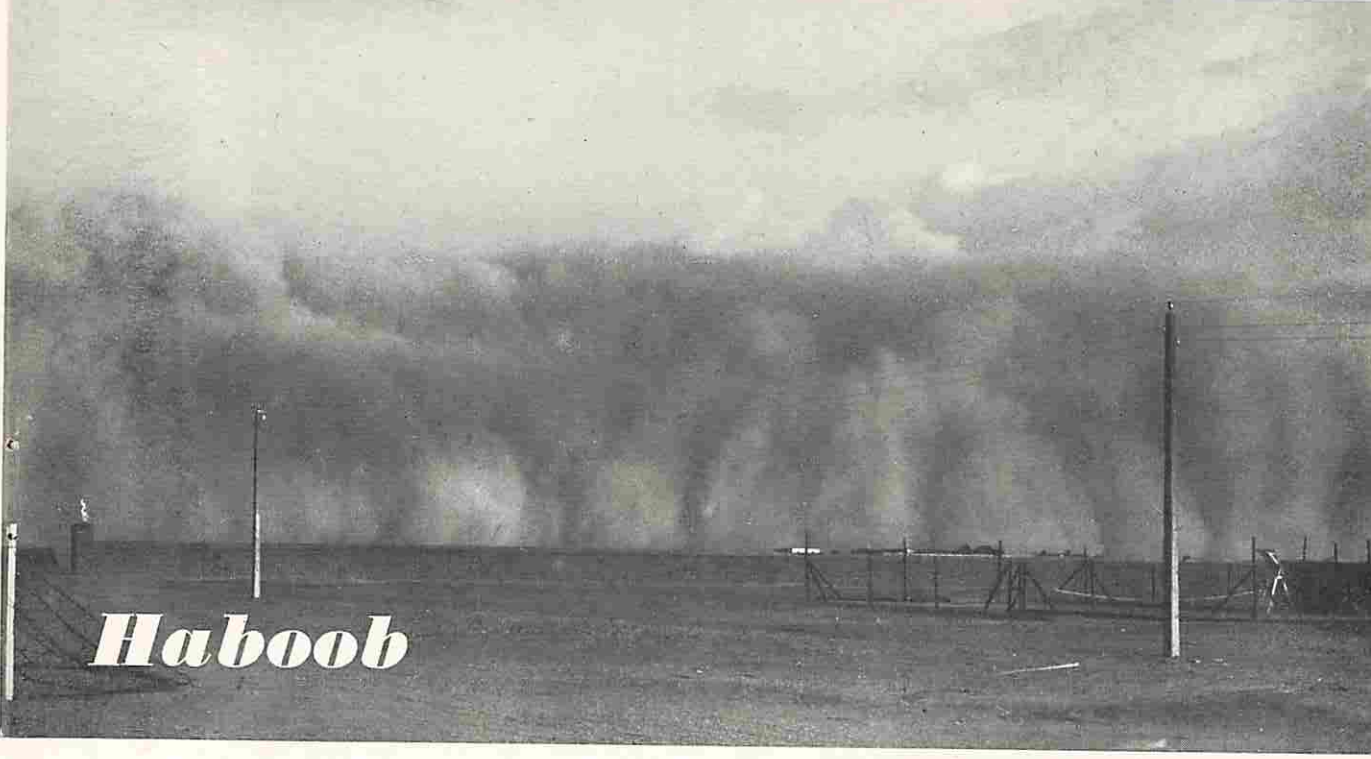
The Air Quartermaster helps the passengers with safety straps

Checking flight rations in the galley

regarding him as friend, guide, and perhaps philosopher. At any rate, there will be a number of questions to be answered and the Air Quartermaster's knowledge of the route will provide much interesting information for passengers. Perhaps, on the other hand, some new points of interest will be indicated by a more experienced traveller and, if he is wise, the AQM will remember these for future journeys.

Suppose rough weather is encountered. The Air Quartermaster comforts and helps those passengers who suffer from air sickness. Soon he is sent for by the captain, who tells him that height will be increased, and so before 12,000 feet is reached he assists every passenger with oxygen apparatus. Whilst flying at this altitude, it will be his duty to see that no passenger falls asleep. Before descent is made, the captain will again advise the AQM, who will remind passengers how to relieve discomfort in the ears. Then, as the airfield is approached, he orders all safety belts to be fastened, takes his own seat and fastens his own safety belt.

(Continued on page 21)



Haboob

THIS is a photograph of a Haboob which occurred at Khartoum recently. We quote the accompanying description:

"*It occurred last Tuesday while we were having our afternoon siesta. Word went round that there was a Haboob coming, so we all went out to see it. We could look out over the blue for about* 20 *miles, and could see what appeared like small pillars of sand. I got on the roof with a camera and waited. I suppose it took about* 30 *minutes to arrive, and just before it burst over us I want you to imagine brilliant sunshine with a towering wall of miles of sand. I took the picture and ran for shelter, and had just reached the bunk and shut doors when instead of sunshine, came impenetrable blackness, wind roaring outside, and sand coming in everywhere through the smallest cracks. This lasted for about* 45 *minutes, and then sunshine again. The camp looked terrible, sand everywhere and in everything.*"

The following definition is quoted from "THE METEOROLOGICAL GLOSSARY" (A.P. 897):

"HABOOB: The name is derived from the Arabic 'habb,' meaning to blow, and is used generally to imply the passage of a dense mass of whirling dust which is usually accompanied by a sudden increase in the strength of the wind with a change of direction, by a sharp fall of temperature and by very low visibility on account of the dust raised, while often it is followed by heavy rain and sometimes by thunderstorms. Haboobs occur in north and north-eastern Sudan and are most frequent near Khartoum. At Khartoum they are chiefly experienced from May to September, though they may occur at any time; they have a pronounced diurnal frequency, being rare between 4 a.m. and 2 p.m. and most common in the afternoon and evening. Most haboobs appear to be due to a current of relatively cold air undercutting warm air; occasionally the cold air is due to the passage of a shallow depression across northern Sudan."

Aircrews should note that the typical wall of sand is at right-angles to the wind blowing it along, so that if the haboob appears to lie NE.SW the wind is NW and the haboob travelling SE. No matter what the wind-indicator on the airfield may be showing as the wind-direction ahead of the haboob, the phenomenon itself will, in such case, be accompanied by a violent north-westerly squall.

TRIBUTE FROM GENERAL SIR WILLIAM SLIM

SPEAKING to the British Empire Society and East India Association in London, in February, General Sir William Slim said:

"*Our one superiority over the Japanese was command of the air. On this we based all our plans. We depended on the air not only for tactical co-operation and strategic attacks on enemy lines of communications, but for a very large part of our movement and maintenance.*

"*We developed a technique of air transportation and a volume of air supply and movement on a scale not reached in other theatres. We moved whole Divisions by air and maintained them throughout the heaviest battles and most rapid advances, entirely by air. At one time during the Imphal battle there were in the Forces under* 14*th Army's operational control six Divisions transported by air, and eight Divisions being permanently maintained by air. The victory in Burma was a victory of the Allied Air Forces no less than of the Army; without this dovetailing of the air and land effort, the campaign in Burma would have been completely different in shape, and victory could not have been achieved in anything like the time it was.*"

INDIAN NORTH-EAST FRONTIER POSTS

supplied by air

FLIGHT LIEUTENANT E. A. ELDERS

SEVEN frontier posts, only a few miles from the Assam border with Tibet, isolated among 14,000 ft. mountains, recently received six months' supplies of rations flown in to them at a time when it was feared that the garrisons might have to be withdrawn because of transport difficulties.

The supply of posts like these in NE India has always been a matter of difficulty and hardship when carried out by land. These seven posts were inaccessible to supply columns, and porters to manhandle stores through miles of jungle were getting scarcer. The supply position was really acute when the Government of India sought the assistance of the RAF.

The "Met" authorities said that only during November and from March–April would weather conditions permit low-level flying among these mountains. If the operation was to be carried out at all, the attempt had to be made at once.

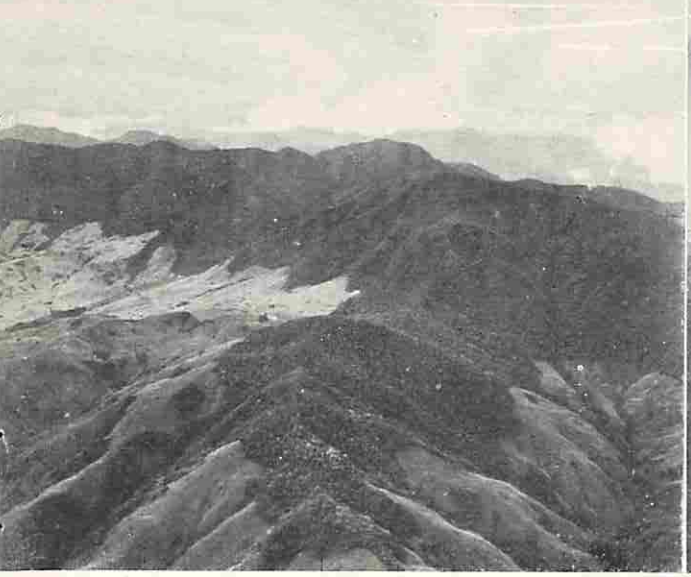
Base Air Forces, South East Asia, detailed 238 Wing of 229 Group to undertake the task. A detachment of four Dakota aircraft from No. 3 Parachute Training School at Chaklala was ordered to Tulihal, in Northern Assam, towards the end of October, 1945. Their assignment was to fly in six months' stores—rice, flour, vegetables—during November. The detachment left Chaklala on October 20th but due to weather delays *en route*, they did not reach Tulihal until October 28th. Dropping commenced on October 30th and was expected to take three weeks. Instead, the entire commitment was completed inside five and a half days.

The posts supplied were those at Walong, Karko, Hayuliang, Dirandzong, Rupa, Riga, and Pangin. These frontier posts were manned by Gurkha troops of the famous Assam Rifles. Three of the seven posts were in W/T communication with their Headquarters; the other four posts made communication only by runner.

Each of the posts was situated in a gorge among jagged mountain peaks, ranging from 10,000 ft. to 14,000 ft. in height, covered with virgin jungle almost up to the 13,000 ft. snow line. There were no roads; the only ways through the wilderness were those made by the rivers, so each post lay by a raging torrent. All that could be seen from the air was just a few red-roofed shacks with a field or two in the bottom of a gorge so deep that sunlight only reaches it for an hour or two each day.

The posts had been warned that attempts were to be made to supply them by air; and the troops had been told to use their bed sheets to mark out dropping zones. So quickly was the 238 Wing detachment ready to operate, however, that it was by no means certain that the instructions had reached all the posts. So, on the first recce flight over each DZ the aircraft dropped a Mk. Va container with two Verey pistols, a supply of pyrotechnics, and instructions (in Urdu) to the troops to use these and to light smoky fires each time they saw or heard an aircraft. It was apparent that these instructions were received, for whenever an aircraft got within two miles of a DZ it was greeted with a "Brock's Benefit" of pyrotechnics and bonfires.

Pangin, Riga, and Karko were the more easily accessible of the posts, so their supply was undertaken first. Three aircraft started with this on October 30th,



The photographs show views typical of the Rupa–Karko valleys

flying over the hills from Tulihal and tracing their way up the valleys. They found the Gurkhas' bed sheets laid out very neatly and, contrary to expectations, they got down to within 200 ft. of the DZ and were able to do free drops. The principal worry was in case any of the supplies fell in the raging mountain torrents, when they would have been irrecoverably lost. This did not happen, thanks to excellent co-operation between pilots and despatchers. In the next two days the supply of these three posts was completed without mishap.

On November 1st, a sortie reconnoitred Rupa and Dirandzong. Rupa was clearly marked, but it was some time before the DZ at Dirandzong was located about three miles higher up the gorge than had been expected.

Rupa provided some of the most difficult drops imaginable. The DZ was not only right on the edge of the raging river, but on all sides it was surrounded by mountains, rising almost sheer. "I didn't see how we could possibly get in," said an officer who made the trip to Rupa. "When we did get in, we couldn't get below 1,500 ft., and the aircraft was constantly making steep banking turns and abrupt climbs and dives. I didn't know which to admire more—the skill and cool daring of the pilot, or the sheer guts of the despatchers, staggering about inside the tossing aircraft and yet managing to lift, carry and eject at the proper time 140 lb. packages. Some of them had narrow escapes from going out along with their packages; and many times I saw them forced to their knees or thrown headlong by some particularly violent manoeuvre."

Rupa and Dirandzong were completely supplied by November 3rd, and attention turned to Hayuliang and Walong. The Dakotas went in—at 10,000 ft. over the ridges, and then at 8,000 ft. up the gorge. Finally, the drops were made from 6,000 ft.—as low as it was possible to go. Some of the containers at Hayuliang fell a little way off the DZ in dense jungle. But this was better than in the river, and the Gurkhas were soon on the job of recovering them—though the liaison officer thought it might easily take them a month.

Walong is only eight miles from the Tibetan frontier and it was feared that intruders from over the border might attempt to intercept the supplies.

One of the packages, caught in the slipstream, "floated" and the parachute hung up on the tail of the Dakota. The pilot temporarily lost control, and the aircraft dived towards the mountain side. The despatchers, thrown off balance, were on their knees on the floor, unable to stir. The pilot managed to throttle back one of the engines and the parachute fell clear.

By midday on Sunday, November 4th, the whole of the scheduled supplies—60 tons—had been delivered. The Detachment prepared to return to Chaklala, but next morning a "rush" message came over the telephone, requesting delivery to Rupa and Dirandzong of further loads of 8,200 lb. of rice, flour and salt for the local civilian population. Two aircraft carried out this job in the afternoon. Detachment HQ received the official confirmation signal asking them to undertake this extra commitment at 1610 hours, and had the satisfaction of replying that the supplies had been delivered by 1600 hours.

Before the Detachment left, word was received by W/T from two of the posts that the supplies had been delivered with practically no loss. One report simply said "Two tins of ghee broken."

The official report comments: "It is considered that the supply-dropping on this operation is the most difficult that has ever been undertaken by the Royal Air Force." (Any contestant of this opinion can have a page of the REVIEW to himself.—Editor.)

Design for utility

THE BRISTOL 170 FREIGHTER

NOBODY would call the Bristol Freighter a beautiful aircraft. But it has other features which are of considerable interest in air transport. Briefly, these can be summarised as simplicity and cheapness in manufacture, low operating cost and high load capacity; a design for utility.

The high cantilever wing and slab-sided fuselage were decided upon to obtain the maximum load capacity. Ease of manufacture and simplification of stock spares are other results of the fuselage design. Operational speeds of 150–200 mph do not require great attention to streamlining, and so a fixed undercarriage is fitted, which cuts down weight and provides sufficient strength for weight-carrying in the nose. The twin Hercules engines, each giving 1,675 BHP for take-off, are completely removable.

With a full load of some 4½ tons, the Freighter will cruise at 180 mph on 969 BHP per engine, for non-stop stages of up to 500 miles. This pay-load, together with the great volume of the main hold—2,020 cu. ft.—makes the Freighter capable of carrying cargoes which no other aircraft of equal power could take.

One of the most necessary features of a freight-carrying aircraft is accessibility to the hold. A glider, with nose or tail-loading, is a good example, and the Bristol Freighter offers the same advantage, having two large doors in the nose, which open sideways to give unobstructed access to the full width of the hold. The door-sill is only 4 ft. 6 in. from the ground, so that with the assistance of a short ramp, a 3-ton lorry can be driven straight into the aircraft and carried overseas. A secondary hold at the rear, entered by a door 60 in. by 50 in., gives an additional 340 cu. ft. of space for mails or special freight.

The Freighter prototype has already completed its trials successfully. There is now in production a passenger version, The Wayfarer, which externally is identical with the Freighter, except for a fixed nose, square windows and a passenger entrance on the starboard side. The passenger cabin seats 32 passengers.

As a final note on the practicability of this aircraft, the Bristol Company calculate operating costs (to include every conceivable item, from insurance to civil pay of crew, running repairs and replacements) to be approximately 6d. per pound per 1,000 miles for freight, and 2½d. per mile for passengers.

PROGRESS REPORT

SPORT

IN TRANSPORT COMMAND

SQUADRON LEADER J. S. LANCASTER,
Command Physical Fitness Officer

THIS is just a very brief progress report on the part that Transport Command has played in the Royal Air Force sports and games scheme since it began last July.

By way of explanation it should be mentioned that the Inter-Station Competition was organised on a geographical basis, the United Kingdom being divided into eight districts and each district into four areas.

Inter - Station Competition — Crosby-on-Eden were area finalists at soccer, cricket and hockey.

Northolt reached the district final at hockey, to be beaten by Calshot.

Wymeswold were area finalists at squash and badminton.

Tilstock were in the area final at cricket, area finalists at soccer, and finished fifth in the area athletics.

Pershore were the area finalists at golf.

Valley became the area finalists at soccer and tennis.

Inter-Group Competition—By winning the boxing, rugby, tennis, squash and swimming, 38 Group became the "champion" Group of Transport Command. Of the remaining sports, 4 Group won the athletics and hockey, 44 Group the soccer and cricket, and 47 Group the badminton.

In the competition proper, in which each Command entered its winning Group at each sport, 38 Group became champions at boxing, finalists at squash, semi-finalists at tennis and swimming, and are still in the rugby, which has reached the semi-final stage. 47 Group won the badminton and were semi-finalists at golf. 4 Group reached the hockey final and, after a 3—3 draw, were beaten 1—0 by 43 Group in the replay. 44 Group reached the semi-final at both soccer and cricket.

Inter-Command Competition—Transport Command won the boxing and badminton, were finalists at rugby, tied for second place at swimming, semi-finalists at cricket, third at fencing, and fifth at athletics. At soccer, golf, tennis and squash we received the knock-out in the first round.

Boxing—On 7th March we hold the Command Individual Boxing Championships at Ringway, and an interesting programme has been assured by the number of entries received.

Cross-country Running—By winning the Command Inter-Group cross-country run at Dishforth on 27th February, 1946, No. 4 Group will be entered for the Royal Air Force Inter-Group cross-country run, which is to be held at Halton on 13th March.

On 27th March the Command team will be participating in the Inter-Command cross-country run also at Halton.

WAAF Sport—The Command representative netball team reached the final of the WAAF Inter-Command Netball Championship, after beating Maintenance and Flying Training Commands. They were beaten in the final by Technical Training Command by 17 goals to 6.

For the final phase of the Command Inter-Station Netball Tournament the following Stations have qualified: Netheravon, Welford, Hendon, Pershore, Blakehill Farm and Waterbeach, while Dunkeswell, Bushy Park, Welford and Bassingbourn have qualified in the hockey competitions.

The hockey will be decided on the knock-out system, while the netball will be arranged as an American tournament. In each case the ultimate winners will compete in the competition proper with the winning Station team from each other Command.

Overseas Notes. During the season, 87 Group hockey team have played twelve matches in France and one in Switzerland. They won four, lost two and drew the remaining seven. The match in Switzerland was won by one goal to nil against the "Black Boys" at Geneva.

In India, Flying Officer Upson, of 52 Squadron, won the 200 metres at the Calcutta Sports Club meeting, and Flying Officer Haile of the same Squadron was first in the 1,500 metres. In the 1,500 metres at the Bengal Olympics, Flying Officer Haile finished second in 4 minutes 24 seconds.

AIR QUARTERMASTER *(Continued from page 16)*

Only when the aircraft is halted at dispersal does he allow passengers to move about.

As this is the terminus, all passengers, freight and mail are to be off-loaded but, first, flying clothing must be collected, checked and handed in to the Flying Clothing Store. The receipt will eventually be returned by the AQM to the original issuing Station, for any discrepancies must be accounted for and a report made to the Section concerned. All equipment issued on the AQM's signature must be cleared before the aircraft passes out of his hands.

In addition to his official duties, the AQM will probably keep his own log of the journey as, by so doing, he will make future trips both for himself and his passengers easier and more comfortable.

It will be realised that the Air Quartermaster is not only an extremely busy person, but an important member of the crew. His job requires patience, great tact and firmness, coupled with an alert brain. A good Air Quartermaster will be of great assistance both to captain and passengers, and he can make all the difference to the life of the harassed Traffic Officers at the Staging Posts.

A Signal to 52 Squadron

FROM AOC 229 GROUP REAR TO OC DUM DUM AND OC 52 SQUADRON

TO-MORROW, February 17th, this Headquarters relinquishes operational control of 52 Squadron. Since May, 1944, this Squadron has flown 46,000 hours, a great part of which has been over the perilous Hump route, without loss of life or injury to passengers or aircrew. During the whole period there were only four accidents, out of which only one aircraft was damaged beyond repair, and this was due to mechanical failure. This splendid record has only been made possible by the fine devotion to duty of aircrews and ground crews in the Squadron, and in the support they had from Station personnel, traffic equipment, MT, cooks, and all sections. Please express my thanks to all ranks.

QUIZ PICTURE : *The photograph on page 2 is of salt marshes on the Mauripur–Poona route*

MAURIPUR

Inevitably, the air routes to India from the West converge around Karachi, but until the end of 1942 *the civil airport and the airfield at Drigh Road accommodated the limited amount of air transport flowing into and out of India. At that time a small Unit of ferry pilots, under the title of Air Reinforcement Centre, was located at Karachi airport to collect aircraft from the MU at Drigh Road and deliver them as far as Allahabad or Calcutta.*

The big airport at MAURIPUR, *5 miles out in the desert, and still under construction, received its first aircraft when one of these ferry pilots force-landed there.*

Soon after the formation of Transport Command, in the spring of 1943, *the Air Reinforcement Centre moved over to* MAURIPUR *and was renamed No.* 21 *Ferry Control.*

MAURIPUR'S *history thus began with Refors and Ferry operations, and one of the earliest problems which arose was that of accommodation for transit aircrews. In August,* 1943, *the first of the tents, which have been a feature of the* MAURIPUR *scene ever since, made their appearance.*

The first airline service into MAURIPUR *started on 5th September,* 1943, *with Liberator C87s of No.* 511 *Squadron from Lyneham. There was then no terminal building, no restaurant, no waiting-room. The Ferry Control HQ, Orderly Room and Transit Reception were all housed in the present Flying Control building; ferrying was still the principal business of the day.*

Before the end of 1943, *BOAC, Tata Airlines and Indian National Airways moved in to share the facilities at* MAURIPUR. *A Check and Conversion Flight to train ferry pilots on new types was also added. And work began on the huge Air Transit Camp.*

Passenger traffic began to arrive early in 1944; *January records show a total of* 92 *passengers and* 91,000 *lb. of freight handled, but Ferry and Refors Despatches reached a record of* 438 *aircraft.*

The airfield was handed over to the control of 229 *Group in February,* 1944. *No.* 48 *(Terminal) Staging Post was formed in anticipation of the big increase in air transport movements planned through* MAURIPUR. *The Air Booking Centre was opened shortly afterwards.*

Just as this expansion programme was in full swing, in August, 1944, *the wettest monsoon since* 1894 *deluged the area with a rainfall of* 23·6 *inches. The average rainfall for the whole year is approximately* 6 *inches. Everyone in camp, including the stranded transients, had to turn out and help repair the damage and make the flooded runways serviceable. And this on a ration of bully beef and biscuits, as for days no supplies could reach the airfield.*

By the end of the year, airline and ferry traffic had monopolised MAURIPUR; *the training Units had to go. Liberators and Dakotas of* 45 *Group were now arriving from Canada, and services from UK were increasing steadily.*

Air Trooping began in a small way in May, 1945, *with a Dakota Service of No.* 187 *Squadron. Aircraft arrivals for the month totalled* 770, *with* 795 *departures, and the transit camp accommodated just short of* 8,000 *men during the month. It was clear that the founder members of* MAURIPUR, *the Ferry Unit, would also have to give way for the enormous trooping and airline traffic scheduled to pass through. So the Ferry Unit went over to Drigh Road, and construction of the air trooping hotels began.*

*With the beginning of large-scale air trooping in October, arrival and departure figures for the previous month were immediately doubled—*1,244 *aircraft arrivals,* 1,230 *departures, and* 14,739 *troops passed through the transit camp. Stone billets, now provided, are a great improvement on the tents which used to get filled with dust or mud, according to the season.*

A tremendous amount of administrative work falls to the lot of the staff at MAURIPUR *as a result of the vast numbers of aircraft and people passing through. For instance, everyone arriving from the West goes to see the Accountant Officer to exchange money and arrange payments and allotments. Everyone proceeding East from Karachi must be supplied with a mosquito net. The catering and messing for transients is in itself an immense task. And it all has to be done under a vertical sun.*

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Command's-eye view of Sydney

PHOTO BY STANLEY DEVON (ex-RAF), *Daily Sketch*