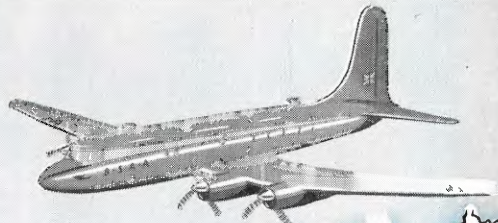


LONDON AIRPORT

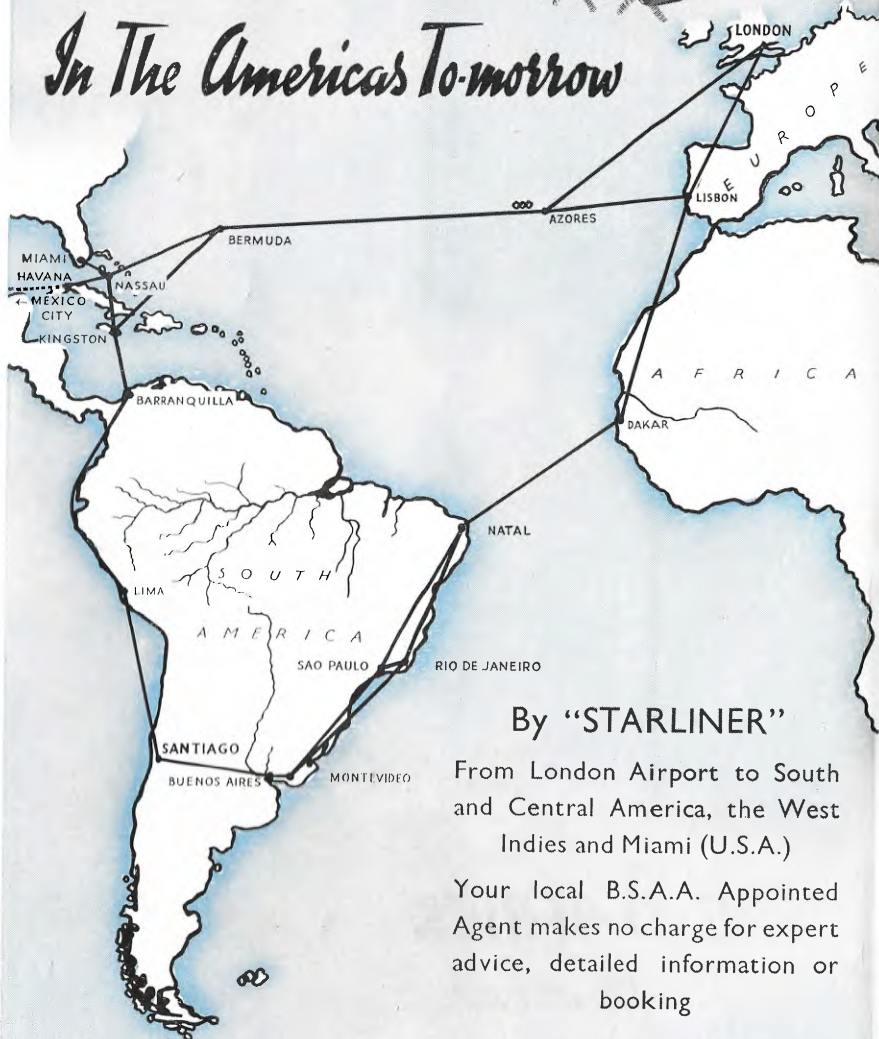
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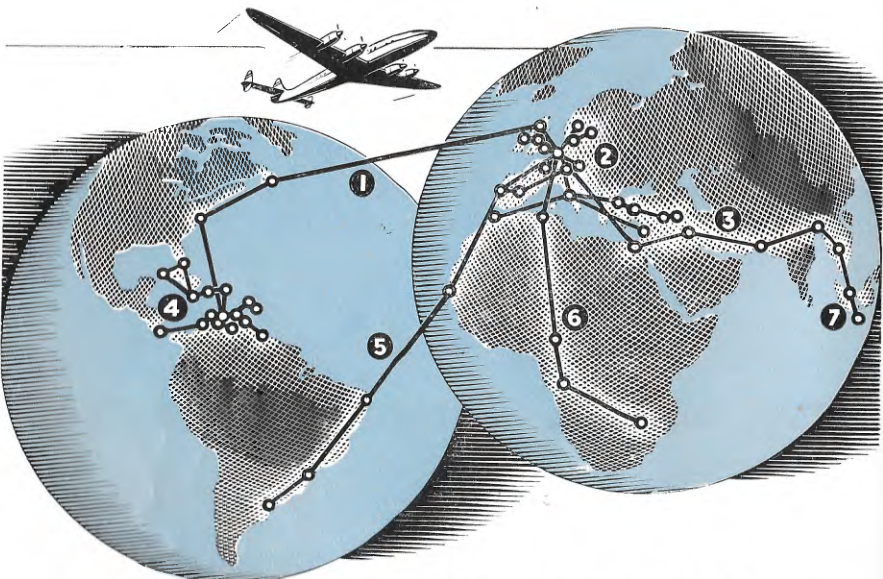
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LONDON AIRPORT



New Aircraft - New Airport

Time is more precious today than it has ever been. That is why the post-war network of air services is spreading out all over the world. More and more people are travelling by air. It is likely that more and more goods will be sent by air, too. People who have to count their time in minutes are no longer satisfied with the pace of the steamship and the railway.

Railways were a British invention, and in the development of airways Britain is also helping to make history. The world's first commercial air service, started in the year after the end of the first World War, operated from London—in fact from Hounslow Heath. Today, after the end of the second World War, Britain is constructing at London Airport an air terminus able to give a fitting reception to the biggest and fastest aircraft of the age in which we are now living—the air age.

Before the war, Croydon was London's airport. But the civil aircraft of today are a great deal heavier and faster than they were in those days, and Croydon is now too small. A site had to be found where there would be runways which even the largest aircraft could use, and where there would be enough accommodation for thousands more passengers and thousands of tons more cargo. That is why the new airport is being built.

The London Airport which you see today is far from being the great air-station which will one day be London's. The airport as you see it was put into service at very short notice. Until 1943 the site consisted mostly of market gardens and disused gravel pits filled with water. The first runways and a few huts were then built for the Royal Air Force. Soon afterwards work was begun on converting this war-time aerodrome into Britain's greatest civil airport, but much remains to be done.

The war left Britain with a great deal to do, and without enough workers or enough materials to do it. It is therefore bound to be some time before a scheme of the size of London Airport can be completed. But, while the work goes on, the world's airways are already using Britain's main airport.

WORK *begins*

The main runway of London Airport is more than 9,000 feet long, and the finished project for the whole airport will cover 7 square miles of land. How was enough room found for all this in the closely built-up London area?

The problem was tackled in 1943, when it was decided to build near London a Royal Air Force aerodrome which the heaviest types of war-plane would be able to use. In choosing the site, care was taken to find an area which would also be capable of development into a civil airport, so that glittering passenger aircraft would one day be able to take off from runways first constructed for military transport aircraft and bombers.

The site finally chosen was near Feltham in Middlesex. The northern part of the area is crossed by the main London-Bath road, and, when the site was selected, the southern part was pitted with old gravel diggings, many of which had turned into soft, muddy ponds. But the disadvantages of Heathrow—as the Feltham site was at first called—were less important than its attractions. It is within easy reach of Central London, and, unlike many of the districts on the outskirts of the capital, it is surrounded by flat country. Another advantage is that the meteorological conditions are better here than anywhere else in the area. That is why it was decided to change this expanse of market gardens and mud into a major airport.

In 1944 the work of construction began. The ponds were drained, and the mud was scooped out. Gravel and earth were used to fill in the pits, and then, to make sure that the runways would not sink, the filling was made solid by the use of heavy mechanical equipment. Next, a layer of concrete 8 inches thick was laid. After this, the runway surfaces were paved with 12 inches of specially strong concrete.

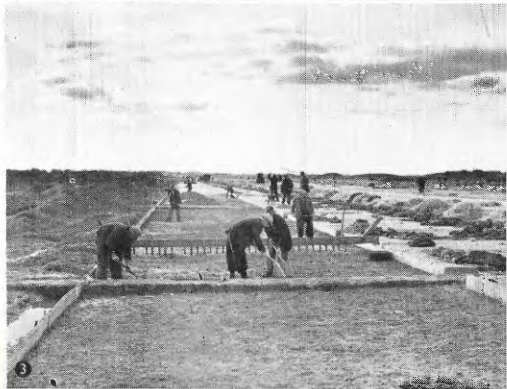
There was the problem of drainage, too. When all the runways have been constructed there will be so many acres of concrete that, if no precautions were taken, the rain-water drained off would be sufficient to flood the surrounding rivers and cause serious damage. The engineers have beaten this menace by building 'balancing reservoirs' which collect up the rain-water in wet weather and release it gradually. Special 'oil-traps' have been provided in these reservoirs so that waste oil from the concrete surfaces cannot escape. In this way the small rivers in the area, and the near-by Thames, have been protected from oil-pollution as well as from flooding, and the birds and fish have been safeguarded.

This careful preparation of the site looked as if it might be a long



The concrete-mixer in the background is one of the world's largest. In the foreground, a new runway takes shape.

job. But there were airline companies waiting to begin using the new airport, and work on the runways had to go ahead without delay. It was found possible to have the main East-West runway ready for service by September 1945. Test flights took place almost at once, and a regular British service to South America was started on January 1, 1946. In the following summer, the two American airline companies whose aircraft fly to Britain asked permission to transfer their services from Hurn (near Bournemouth) to London. It had not been planned to



1 This power-driven concrete-spreader is used to level the concrete when a new runway is being built.

2 Collector drains are being laid by these men to carry away the rainwater from the runway.

3 This shows the first layer of concrete being put down on a new runway at London Airport.

put the new airport into full service so soon, but accommodation was hurriedly improvised, and the American aircraft began to land and take off on the new runways within a few weeks of asking permission to use them. The British Overseas Airways Corporation also started operating from London Airport at the same time.

By the end of 1946, three runways were in use. By the end of 1947, an additional runway had been completed and two more were nearly ready. Up to the beginning of 1948 the work had involved the moving of 12 million tons of earth, and altogether nearly 500 acres—2½ million square yards of ground—had been paved with concrete for runways and taxiways. In addition to this, rather more than 40 miles of pipes had been laid as part of the drainage system for rain-water. This work had been made possible by using the most powerful earth-moving machinery and the latest types of concreting equipment. But it had not been simply a matter of machines. It had demanded all the energy and inventiveness of the combined staffs of the Air Ministry and the Ministry of Civil Aviation, and of the contractors. As it happened they had acquired a vast amount of experience of building aerodromes in a hurry, during the war. At London Airport this experience is now serving the purposes of peace.

AIRPORT OF THE FUTURE

During the summer of 1947, more than 130,000 passengers—over 1,000 every day—landed or took off from London Airport. This was in its early, makeshift stage. The airport now being completed by the Ministry of Civil Aviation will, when it is finished, be one of the largest and most up-to-date in the world. Much thought and research have gone into the project already, and much remains to be done. But already the airport of the future is taking shape.

One of the first steps to be taken in the development of London Airport for civil use was the setting up of an Advisory Panel by the Minister of Civil Aviation in September 1945. Its task was to consider the best layout for an airport standing at the junction of the world's main air routes, and destined to be used by aircraft faster and bigger than any yet seen. One of the Panel's most important jobs was to find an arrangement of runways capable of dealing with the maximum number of aircraft likely to use the airport. The experience of other nations was studied, and to it was added experience gained by Britain in the construction of more than 450 airfields during the war years. The final result of these investigations was the planning of a layout based on three parallel runways, with subsidiary runways arranged so as to form triangles. This pattern gives three sets of parallel runways in three directions, making it possible to vary the direction of landing and take-off according to the direction of the wind.

It is expected that, when the runways are completed, more than 100 aircraft may use the airport in any one hour, in good weather. This means that great quantities of freight, and as many as 4,000 passengers an hour, will be able to pass through the airport. Many buildings will therefore be needed. Passenger reception, customs and immigration controls, health clearance, freight storage, garages, heating and water supplies, hotels and restaurants—accommodation must be provided for all these. The pattern of the runways leaves an area of some 54 acres in the centre, where most of these buildings will be constructed. This central area will be a small town in itself, and it will probably be reached

DO YOU KNOW THESE PLANES?

These photographs show eight of the airliners that you are likely to see at London Airport. If there are some you do not recognize, turn to page 23.

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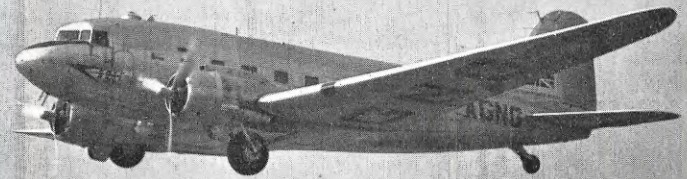
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← *Tuning in to the airport. This photograph was taken aboard a B.O.A.C. Constellation as it approached London.*

Air Traffic Approach Control staff directing an aircraft as it comes in to land at London Airport.



AIRPORT COMMUNICATIONS

The speed of air travel has increased enormously since the first air services were started, and this increase is likely to go on in the future. It would be impossible to keep up with the pace of modern air traffic if airports did not have the equipment needed in order to pass messages quickly and accurately to all parts of the world. The movements of aircraft must be notified at once to other airports. There must also be some way of keeping in touch with aircraft in flight, and of helping them to find the aerodrome at their destination, and to land on it, in bad weather. These needs are met by the Telecommunications Section at London Airport. More than 300 strong, it is the largest department of the Ministry of Civil Aviation there.

Messages to other land stations go by telephone, teleprinter or wireless. That is how weather reports, aircraft movements, details of passengers and cargoes, and other items of information are sent out. When the airport staff wish to communicate with an aircraft in the air, they can do so in Morse code—by wireless telegraphy. But it takes time for a message to be sent out in Morse and turned back into words by the radio operator who receives it. If an aircraft is near the airport it is essential to pass all messages with the least possible delay, and, for

short-distance communication with aircraft, to save time, radio telephony is used. The Control Officer can then speak direct to the pilot of an approaching aircraft, and in this way he can give quickly all the information the pilot needs.

Hundreds of aircraft will land and take off every day when London Airport is completed, and no effort has been spared to make sure that the airport shall have all the equipment needed to control this air traffic, and to guard against collisions.

Approach Control—that is, control of aircraft within about forty miles of the airport—is operated from the second floor of the Control Tower. As well as being able to send wireless messages to an aircraft from here, the Approach Control radio staff help it to find its way to the airport with the aid of various radio direction-finding devices. As a precaution against accidents, in foggy or cloudy weather aircraft are allowed to approach from only three directions, and are obliged to come in by way of Reading or Dunsfold (near Guildford) or Gravesend.

When an aircraft is within a few miles of the airport, it is handed over by the Approach Control Officer to the Aerodrome Control Officer. Aerodrome Control is operated from the 'glass house' on the top storey of the Control Tower. From here pilots are given permission to land and to take off, and are told which runway to use.

On a good runway, the landing itself gives no particular difficulty to a pilot—provided the weather is fine. But when visibility is poor, he needs all the help that a modern airport can give him. London Airport's system of navigational aids is provided for this purpose, and is described on page 17.



The Approach Controller's desk in the Control Tower. In the inclined case is the Airfield Control Radar tube.



The Teleprinter Room, from which messages go direct to Prestwick, Shannon and other airports and control centres.



Keeping the Aircraft Movement Panel up to date in the Approach Control Room. The pneumatic tubes bring in messages from other rooms.



The Navigation Officer at work in a B.O.A.C. plane above the Atlantic, on its way to New York.

RADIO AIDS for the pilots

Except in the very worst weather, air services today keep to their flying schedules, in spite of mist and cloud and rain. This has only been made possible by new radio and radar devices, the use of which was greatly developed under the stress of war. There are now several different methods of guiding an aircraft on to a runway by the use of radio and radar equipment—which can penetrate fog and give eyes to a pilot even in the thickest cloud.

A pilot approaching and landing at London Airport in bad visibility has the benefit of one of the most complete systems of navigational aids that has ever been devised. One of the types of radio aid which has been installed is the system called the Standard Beam Approach. The principle is that the pilot is provided with a specially designed wireless receiver which gives a continuous note when his aircraft is in line with the runway on which he is to land. If he goes off the correct track to the left or right, the tone becomes broken and, as the sound received on the left is different from that on the right, he knows which way he must turn in order to get back on to his course. He can tell how far he is from the runway by two 'marker' beacons which produce a different note in his receiver as he passes above them. The inner beacon is at the approach end of the runway, and the outer one is in line with the runway but about $2\frac{1}{2}$ miles away from it. After passing over the outer

beacon the pilot judges his rate of descent so as to bring his aircraft almost to ground level by the time he reaches the inner marker.

The Standard Beam Approach was one of the first kinds of radio navigational aid to be developed. Now obsolescent, it is being replaced by the Instrument Landing System. This has three instead of two marker beacons, and a 'glide path' to help the pilot to maintain the correct rate of descent. Instead of listening for a particular tone, he watches two radio-actuated needles, which enable him to keep in line with the runway and show him whether he is descending too fast or not fast enough. A lamp lights up in the aircraft as he passes above each marker beacon, and so tells him how far he is from the runway's end.



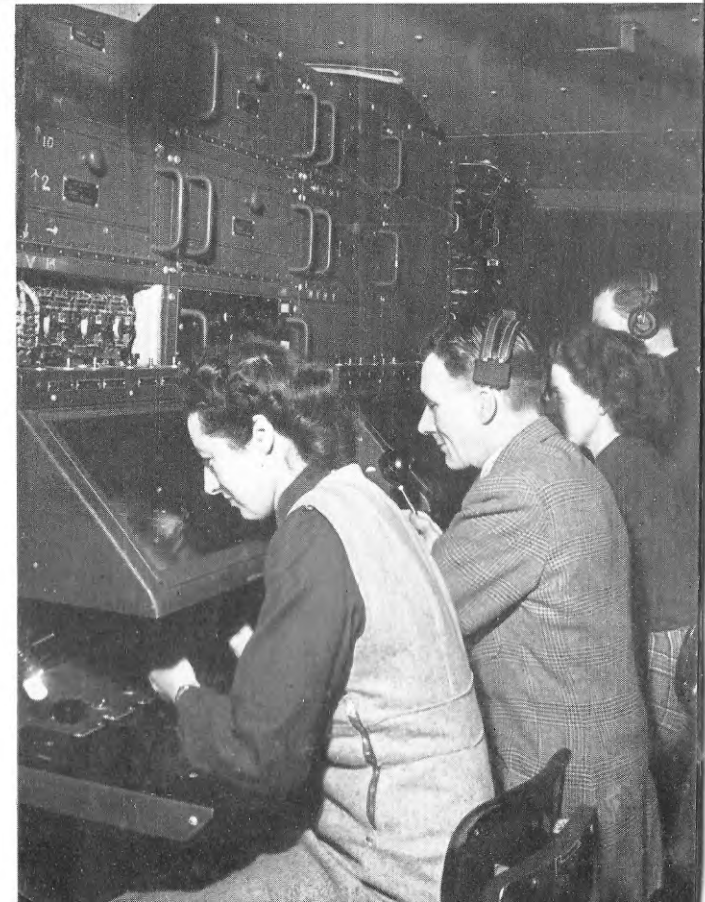
The rotating aerial head of the Airfield Control Radar equipment, which can locate aircraft 25 miles away from London Airport.

Another aid available to pilots at London Airport is Ground Controlled Approach—the 'talk down' system as it is often called. The special advantage of this system—which is a combination of radio and radar—is that the only instrument needed in the aircraft is a wireless receiver. With the help of a special mobile radar equipment at the airport, the G.C.A. Control Officer on the ground can tell the exact position of an approaching aircraft, and this makes it possible for him to give directions to the pilot until the runway is in sight.

These are the main types of navigational aid at London Airport, but not the only ones. Why are so many different systems provided? The explanation is that an aircraft can only use the system for which it is equipped, and it is likely to be a long time before it can be arranged for all aircraft to have a standardized type of equipment. Meanwhile, all these various aids are provided so that in bad weather any aircraft, whatever its equipment, can be helped to land safely and quickly at the new airport.

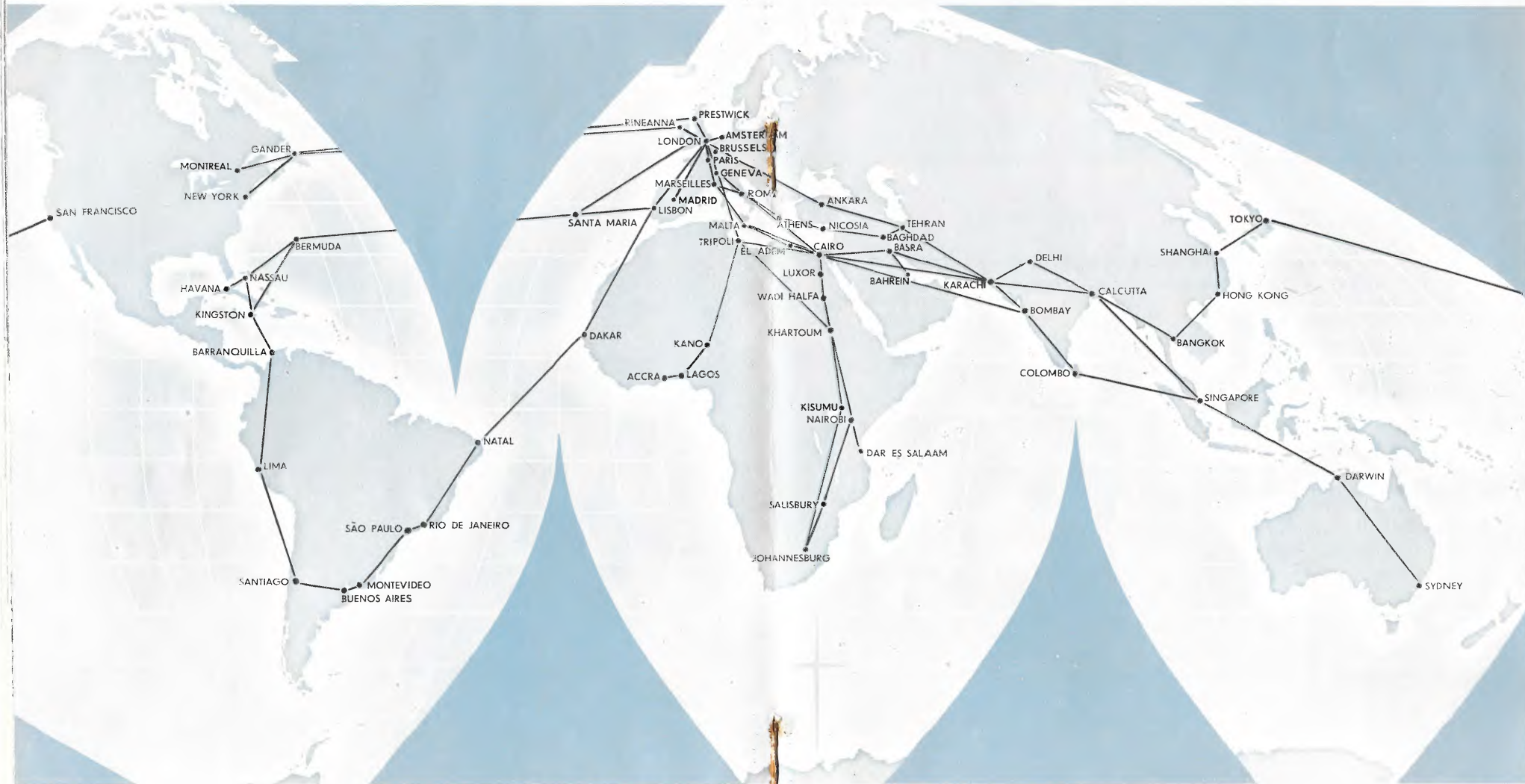


A part of the equipment used to help pilots to land. This is the Localizer Truck of the Instrument Landing System.



The Ground Controlled Approach team are 'talking down' a plane which is landing at London Airport in bad visibility.

LONDON AIRPORT — airport for the world



This map is based, by kind permission of John Bartholomew & Sons Ltd., on their projection of the same area.

This map shows the main direct air routes, foreign as well as British, from London Airport to other parts of the world. By changing planes and using internal services you can reach many places not shown here. From London Airport you can be in Brussels in 30 minutes, Paris in 85 minutes, and Madrid in just over three and a half hours.

Argentina sounds anything but near, yet 51 hours after you leave London Airport you can be in Buenos Aires. To New York it is a mere 16 hours. Within the British Empire London Airport is the jump-off for Johannesburg, the West Indies, Dar-es-Salaam, Canada and (only 91 hours away) Sydney.



AIRPORT FOR THE WORLD

London Airport is not only a vital link in the British airways system: it is also a key point in the services of many overseas airline companies. As well as being the chief United Kingdom base for two of the British airways corporations, it is regularly used by thirteen other great airlines, representing a dozen different nations.

When you are standing at the airport you can afford to forget the old idea that you are separated from the Continent by a troublesome Channel crossing, or that you are cut off from America by a long sea voyage. Air France with its 4-engine lines can take you to Paris in 85 minutes, and K.L.M., the Dutch airline company, runs a service to Amsterdam which takes not much more than one and a half hours. Sabena, the Belgian company, takes passengers to Brussels in 80 minutes, and the Spanish company, Iberia, runs a service which reaches Madrid in just over three and a half hours.

If you are planning a visit to the United States you can fly with British or foreign lines. Pan American World Airways can take you to New York in 16 hours. Or you may prefer the American Overseas Airlines system which also runs westward to Washington and New York, and eastward to Frankfurt and Berlin. You can travel by F.A.M.A. (Flota Aerea Mercante Argentina) to Buenos Aires in 51 hours, or to Rio de Janeiro by Panair do Brasil. There is a Trans-Canada Air Lines service to Canada, too, and British South American Airways liners fly regularly to the Azores, the West Indies and South America. But it is the British Overseas Airways Corporation which operates the longest flights of all from London Airport. Sydney can be reached in 91 hours. On this route B.O.A.C. works in co-operation with Qantas Empire Airways, the Australian airline company, and, in association with South African Airways, it also runs a service to Johannesburg. In addition to this, its aircraft fly to North America, and they call regularly at Cairo, Calcutta, Beirut, Tehran and other famous cities in the East.

All these airlines together make London Airport one of the most important centres in the world's long-distance air network. The careful planning and hard work which have gone towards the building up of the airport are already winning their reward.

DO YOU KNOW THESE PLANES?

Here are the answers to the quiz on pages 12-13.

- 1 TUDOR**

The British South American Airways Corporation operates the Mark IV version of this British airliner on its routes to Latin America. The Avro Tudor IV is powered by four Rolls-Royce Merlin engines, which give it a maximum speed of 346 m.p.h., and a maximum range of 3,930 miles. It can carry 28 passengers.
- 2 YORK**

This British aircraft, another Avro machine, is used by B.O.A.C. and B.S.A.A. Its four Rolls-Royce Merlin engines give it a top speed of 315 m.p.h. It has a maximum range of 2,700 miles, and seats up to 24 passengers.
- 3 CONSTELLATION**

The American Lockheed Constellation is used on some of the B.O.A.C. routes as well as by the two American airline companies which operate from London. It has also found favour with the Indian and Brazilian airline companies. The Constellation is powered by four Wright Duplex Cyclone engines, and can carry from 44 to 58 passengers. Its maximum speed is 352 m.p.h., and with full tanks it can fly over 5,000 miles.
- 4 DAKOTA**

Another American aircraft, the Douglas DC-3, or Dakota as it is often called, is used by the Belgian and Dutch airline companies, as well as by B.O.A.C. and the two American companies. Powered by two radial engines, it has a maximum speed of 230 m.p.h., and an extreme range of some 2,000 miles. It can carry 21 passengers.
- 5 LANCASTRIAN**

The British Avro Lancastrian flies on some of the B.O.A.C. and B.S.A.A. services from London Airport. It has four Rolls-Royce Merlin engines, a top speed of 315 m.p.h., and a maximum range of 4,100 miles. There is seating capacity for 13 passengers.
- 6 LANGUEDOC**

The SO 161 Languedoc is replacing other types on Air France routes. Its four Pratt and Whitney Twin Wasp engines give it a maximum speed of 273 m.p.h., its extreme range is about 2,000 miles, and it seats 33 passengers.
- 7 NORTH STAR**

Also known as the DC-4M, this Canadian-built aircraft is a development of the Skymaster, and is used by Trans-Canada Air Lines. With four Rolls-Royce Merlin engines it can fly at 345 m.p.h. Its maximum range is over 4,000 miles. The larger type can carry 40 passengers.
- 8 SKYMASTER**

The Douglas DC-4, often called the Skymaster, is used by the airline companies of several European countries, as well as by the Argentine company, South African Airways, and the American airlines. Its four Pratt and Whitney Twin Wasp engines give it a maximum speed of 274 m.p.h., and it has a range of 4,300 miles. It can seat 44 passengers. The DC-6 is similar but more powerful.

BRIEFING THE AIRMEN

A pilot who is starting on a flight which may take him across the world cannot just climb into his aircraft and fly off into the blue. Before he leaves, he must be in possession of details about the weather he is likely to meet, the best route to take, the conditions at the airport where he intends to land, and a great deal of other information. At London Airport there is a highly organized briefing service to meet his needs.

The Meteorological Office at the Airport gives an aircraft commander all the information he wants about weather conditions as far as his next landing point, or beyond. This includes details which he will need to know for the take-off, and information about the conditions at other aerodromes to which he may wish to return if he meets with difficulty after taking off. The aircraft commander also has to know about weather conditions for the flight, and he is told the direction and speed of the wind at different heights, so that he can pick his best route and altitude. Finally he must know about the weather at his destination and at a near-by aerodrome to which he could go if necessary. So that he can refer to it easily when he is in the air, the commander is given all this information in a 'forecast folder' in which clouds, rain, thunderstorms and so on, expected along the route which he will follow, are given in the form of pictures as well as in writing. The folder also includes weather charts and forecasts for aerodromes on the route.

The Met. Office has to draw upon many different sources of information in order to be able to give such a complete account of the weather to the airmen. For this purpose there are various instruments at the airport which make it possible for local weather conditions to be carefully observed. Similar observations are made at thousands of weather stations all over the world, by merchant ships at sea, and, in the Atlantic, by special weather-ships, operated under international agreement. Very valuable weather reports are also received from aircraft in flight, including special Meteorological Reconnaissance Aircraft. Through a world-wide organization for the exchange of all this information, the Met. Office at London Airport is able to show, on charts prepared every few hours, what the weather is like half way round the globe.

But weather is not an airman's only worry. He also has to know something about the organization of the aerodrome at which he proposes to land, about Traffic Control regulations, and about any danger areas on the route. There is a Briefing Unit at London Airport whose business it is to look after these problems. It tells the aircraft commander about



A B.O.A.C. air crew in the Ministry of Civil Aviation Briefing Room, before leaving for West Africa.

the arrangements for night and fog landings at his destination, and gives him details of the arrangements for receiving passengers there. It tells him what radio aids will be available to help him keep to his course, and provides information about wireless signals that are being used. For the benefit of aircraft bound for North America, crews are told the position and course of merchant ships in the Atlantic and the location of the weather-ships, and are given information which will enable them to get into touch with the ships.

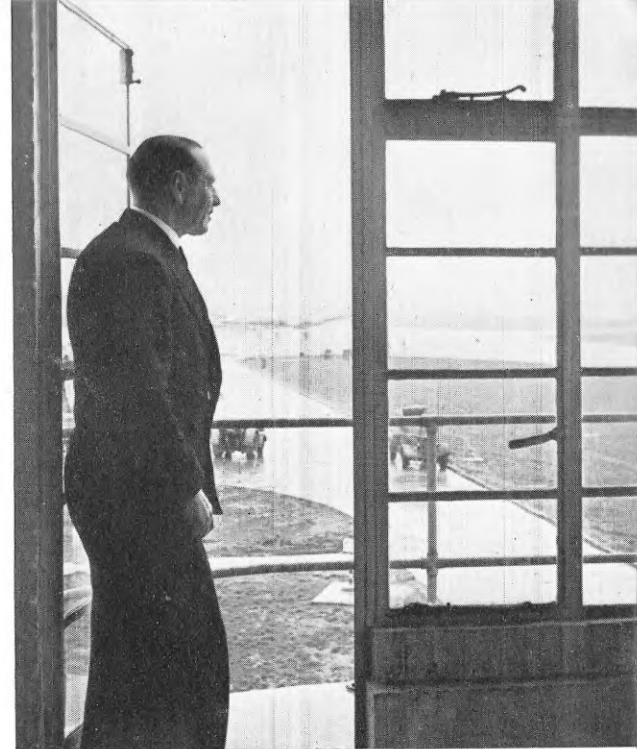
'Safety First' is the watchword of the briefing service at London Airport. That is why every possible precaution is taken to make sure that airmen are given all the information they need before they leave. That is why the Briefing Unit allows no aircraft to leave the airport until the efficiency of the operating crew and the complete airworthiness of their aeroplane have been checked. And that is why the Briefing Unit is available—free of charge—for 24 hours a day to every air crew using London Airport. No questions are asked about nationality or service when the safety of air travellers is at stake.

MEN AND GIRLS

in uniform

There is plenty for the staff to do at London Airport. To keep all the airport services running smoothly, men and women from a large number of different organizations give their time and their skill. The ground services are looked after by the Ministry of Civil Aviation, which is responsible for the general supervision of the airport. The airline companies provide the crews for their own aircraft, and see to overhauls and repairs. They also look after their passengers, and make sure that they pass on safely to the next stage of their journey. Then there are the Air Ministry officials, who staff the meteorological services, and supervise the constructional work at the airport.

The captain of this big team is the Aerodrome Commandant. Upon his shoulders rests the responsibility for the work of the airport staff and the efficiency of the airport services. In this work his first concern is the safety of the passengers and aircraft at the airport. He is assisted in his administrative work by the Airport Business Manager, who is responsible for the care of the airport in general,



Air Marshal Sir John D'Albiac, K.B.E., C.B., D.S.O., the Commandant of the airport.



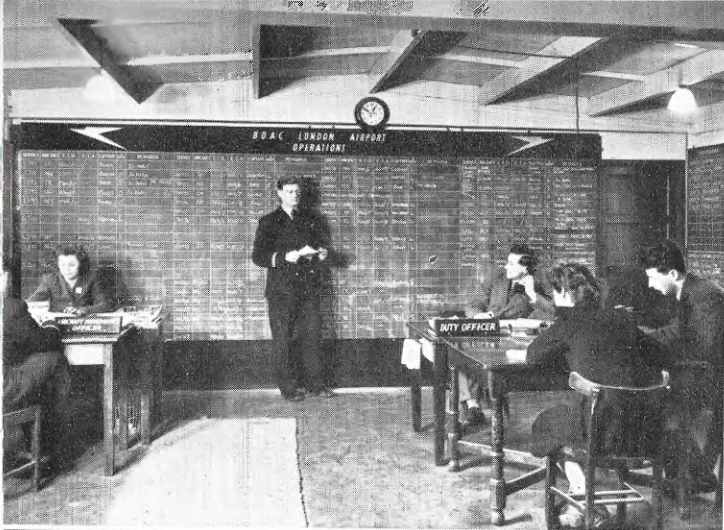
Two air traffic clerks check their list of passengers as another B.O.A.C. aircraft prepares to take off from the airport.



A B.O.A.C. air captain seen in the Constellation in which he made his 200th crossing of the North Atlantic.



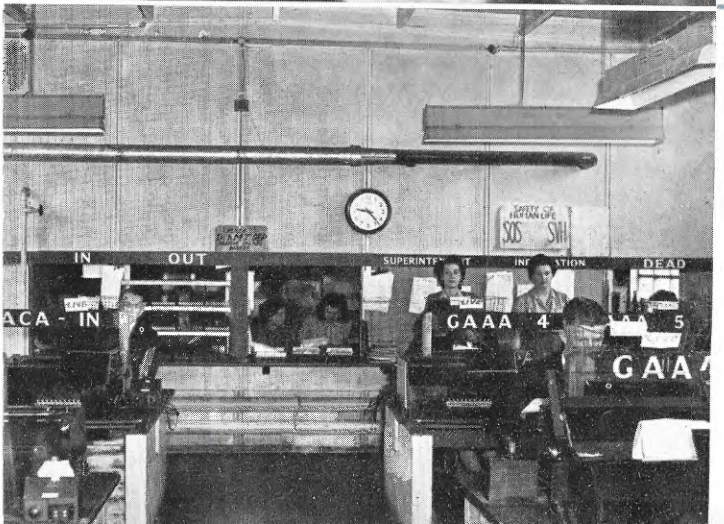
A broad smile from the B.O.A.C. Station Superintendent—the man responsible for all B.O.A.C. staff at the airport.



The B.O.A.C. Operations Room — control point for the movements of B.O.A.C. aircraft — is manned day and night.



A girl traffic clerk — one of the B.O.A.C. staff — checks a passenger's travel documents before he starts on his flight.



The Teleprinter Room at London's Airport. Messages go in the 'dead' trays when they have been transmitted.

as well as for important special organizations such as the Fire and Rescue Services. The Airport Manager sees to the 'marshalling' of aircraft. He also supervises the supply services, the duties of which include the issuing of more than 100,000 gallons of petrol every week, and is responsible for financial arrangements such as the collection of aircraft landing fees.

The main airline companies have to keep ground staff at the airport, too. To simplify the ground staff arrangements, the British Overseas Airways Corporation, in addition to its other duties, acts on behalf of several other companies. Its staff work under a Station Superintendent (who can be recognized by the four narrow gold bands on his sleeve). Acting on his behalf in operational matters, there is always a Duty Officer on the alert, who is especially responsible for supervising the movements of aircraft. Then there are the B.O.A.C. officials who look after the passengers when they have landed, or help them to prepare for their flight. Amongst the staff you will see many girls—girls who pride themselves (rightly, too) on their good looks as well as on their efficiency. They meet passengers as they leave the aircraft, show them through the health, immigration and customs formalities, and see them on their journey. Others look after passengers who are

Top left. A B.O.A.C. stewardess, photographed before she leaves London Airport with a full complement of passengers in her care.



Top right. A Pan American Airways air hostess on her way with a young passenger from London Airport to Brussels.



Bottom left. A girl traffic clerk weighs passengers and their luggage before they start on their flight from London Airport.



Bottom right. These passengers are 'taking it easy' on board a B.O.A.C. York which is carrying them to India.



starting on their voyage, and others again sit at reception desks, where they issue tickets, answer questions, and take messages for passengers and their friends. The same high standards of service are also set by the ground staff of the other airline companies.

What about the people who actually do the flying, and look after travellers when they are in the air? They are the aristocrats of civil aviation—the air crews. First, there are the pilots, most of whom can be picked out by the outspread wings on their uniforms. Then there are the other air crew men—navigators, engineers, radio operators, stewards—many of them wearing a half-wing on their tunics. You will see some of them wearing cool khaki-drill uniforms—a reminder that, in this air age, London is only a few hours' flying-time from the sweltering tropics. But it is not a case of 'men only' in the air crews. Girls as well as men fly with many of the services. There are stewardesses who, like the stewards, see to it that no plane leaves the airport without taking on board everything that will be needed for the passengers' comfort. They greet travellers as they climb into their aircraft, and during the flight they serve their meals, bring them their drinks, give them magazines to read, and do all they can to make it easy for them to enjoy their journey. The stewardesses take care of children travelling without grown-ups, and pay particular attention to old people and invalids. Like the rest of the airline and airport staff, they help to make air travel to and from London safe, quick and comfortable.

This B.S.A.A. stewardess was one of the first girls to fly with the South American service from London Airport.



AIRLINE COMPANIES

Each airline has its own special marking. Some of the symbols that you may see are shown here.

The letters painted on the side of an aircraft are for registration purposes—the letter or two letters before the stroke stand for the nationality. In the letters ZS-ABCD for example, ZS would show that it is a South African aircraft. The national lettering is shown with each symbol.



British Overseas Airways Corporation (B.O.A.C.) (G. for Great Britain)

British South American Airways (B.S.A.A.) (G. for Great Britain)



Pan American Airways (P.A.A.) (N.C. for the United States)

American Overseas Airlines (A.A.) (N.C. for the United States)



South African Airways (S.A.A.) (ZS. for South Africa)

Trans-Canada Air Lines (T.C.A.) (CF. for Canada)



Flota Aerea Mercante Argentina (F.A.M.A.) (LV. for the Argentine)

Air-India International (VT. for India)



Koninklijke Luchtvaart Maatschappij (K.L.M.) (PH. for the Netherlands)

Air France (F. for France)



Sabena (OO. for Belgium)

Iberia (EC. for Spain)



Qantas (Q.E.A.) (VH. for Australia)

Panair do Brasil (PP. for Brazil)



LIGHTS FOR THE AIRPORT

Not very long ago, night flying was looked upon as dangerous and was attempted only in an emergency. In those days airports and airline operators could pull down the blinds and try to forget about flying as soon as night fell. But nowadays the air services fly all through the night, and London Airport had to be equipped to meet the needs of a pilot who is landing or taking off in the darkness.

When an aircraft is on its course at night, it relies upon compass bearings and radio equipment to guide it. But, for landing or taking off, the pilot's job is made very much easier if he can see around him. This means that an efficient lighting system is needed at airports. The runway outline must be illuminated, and the pilot who is about to land must be directed on to the runway by a line of approach lights extending a considerable distance beyond the limits of the runways themselves. In addition, the taxiways must be lit, so that aircraft can find their way to the loading and unloading points—which themselves need to be floodlit.

At London Airport a scheme has been adopted which makes it possible for all the runways to be used at night in either direction. This means two separate sets of approach lights for each runway. The runways themselves are lit by lights flush with the surface. There are two types of lights on each runway. One is the type used by the R.A.F. during the war; these lights can be seen by the pilot only when he is actually approaching to land. The other lights are of a type which can be seen from all directions, and are

designed to help the pilot when he is circling round the airport. There are also beacons, so that a pilot can recognize the airport from a distance, and obstruction lights to warn him away from obstacles such as high buildings. On the taxiways, in addition to the necessary lighting, there is a system of traffic signals to guard against accidents.

A complicated lighting plan of this kind would be useless if it could not be effectively controlled. Some central control system had to be devised, by which the lighting of the runways and taxiways could be regulated according to the needs of the moment. The most difficult part of the problem resulted from the need to allow for changes of wind. It is essential that only one runway is lit up at any particular time—otherwise an approaching pilot would be hopelessly confused by the maze of lights. But a change in the wind makes it necessary to bring an aircraft in from a different direction, and the change-over needed in the



A York preparing to leave London Airport during the night, bound for South Africa.

lighting system must be carried out in a matter of seconds. A further complication came from the fact that London Airport had to be put into service whilst it was still being built. This meant that allowance had to be made for extending the control unit, section by section, as further runways were brought into use.

The control of the lighting network at London Airport presented some problems which had never been met before. A new type of equipment had to be devised to deal with them. So the Air Ministry Works Directorate went into the matter with Standard Telephones and Cables Limited, and the central control system was designed. It is now in operation from the Control Tower.

The whole lighting network of the airport can be regulated by using a few simple switches on a central control desk. A panel of small lights shows the Air Traffic Controller at a glance

exactly which parts of the airport are lit, and a warning light goes on if there is a fault in any part of the system. There is also a special arrangement for checking, which enables him to track down a fault in a matter of a few seconds. But perhaps the most ingenious feature of the control desk is the Runway Selection Switch. This makes it possible for the Air Traffic Controller, by turning this switch and operating one key, to extinguish the lights needed for one direction of approach and light up a completely different approach line, all by the same operation.

What about the size of the lighting system? It has been calculated that London Airport at night uses as much current as a medium-sized town. The system works from an 11,000-volt supply, and includes several hundred separate circuits. It extends over 16 square miles—but is controlled from a single desk measuring only a few square feet.



Loading freight on to a York before it leaves London bound for South Africa.

AIR CARGOES

London Airport does not deal with passengers only. A well-organized cargo service has also been built up, and a great deal of mail and freight passes along the runways every month. The airline companies and a number of forwarding agencies attend to cargo traffic at the airport. They look after all the details of loading outgoing cargo, and they unload incoming cargo, pass it through the customs, and supervise its dispatch by road, rail or air to its final destination.

The British Overseas Airways Corporation—which acts on behalf of many of the other airline companies, as well as dealing with its own traffic—handles more than 100 tons of freight every month. Imports arriving at the airport include such things as food from the Commonwealth and the United States, fruit from the Mediterranean, and dress materials from France. There are also sample consignments of rubber from Malaya, wool from Australia, and cotton and tea from India and Ceylon. These samples enable British brokers to judge the quality of the product and to arrange all the details of its sale before bulk consignments arrive by sea. Freight leaving the airport includes clothing, medical preparations, watches, fountain-pens and artificial



1



2



3



4

1 Urgent cargo being loaded. British goods can reach overseas customers from London Airport in a few hours.

2 Staff of the Export Freight Section checking the packages which will soon be leaving London by air.

3 Airmail being checked by specially trained staff as it leaves the airport.

4 This racehorse knows how to avoid seasickness! It will be in fine form after its journey by air.

jewellery. Gold and diamonds are exported in bulk with special precautions, and precautions—of a rather different kind—are also needed when the staff are dealing with bees, newly hatched chickens, and other livestock. Special loading machinery is used for heavy cargoes, such as power plant for India or aero-engines for America.

In addition to the freight service, there is the mail service. Every day several tons of air letters and air parcels are handled at London Airport, as well as large quantities of newspapers, press photos and news films. Special safeguards are taken in handling the mail, to make sure that letters are not torn or crushed. Each stage in the transit of an air letter is carefully controlled, and many of the operations are carried out by hand to protect it from damage.

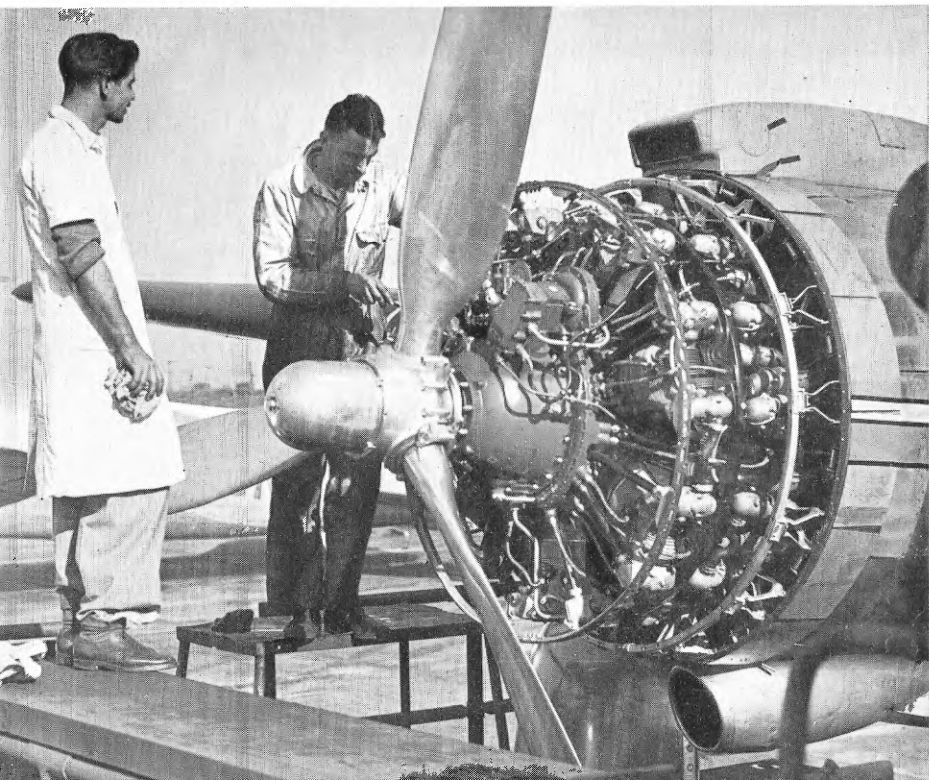
That is how the airport is bringing the rest of the world nearer to London. It is not only making it possible for travellers to move quickly to whichever country they choose. By acting as a great clearing house for international trade, it is helping to carry goods and deliver letters all over the world.

VISITORS ARE WELCOME

You do not need to have an airway ticket before you can make yourself at home at London Airport. In 1946 the main airports of Britain became public property, and the Ministry of Civil Aviation believes that the British people ought to be given every possible opportunity of getting to know their airports. That is why the Public Enclosure was opened at London Airport in the summer of 1947. The Enclosure very soon established itself as a good place at which to spend a summer day. Almost a quarter of a million people visited it between June and October in its first year, and preparations have been made to receive a still greater number of visitors this year.

It is not surprising that the Public Enclosure has been a success, and that it has been decided to open it every summer. The largest airliners in the world pass in front of you, only a few feet away from the Enclosure, and you see them taking off for New York or Buenos Aires or

Mechanics checking over one of the engines of a Pan American Airways Constellation at London Airport.



Aircraft of many nations can be seen from the enclosure. Here is an Air France plane.



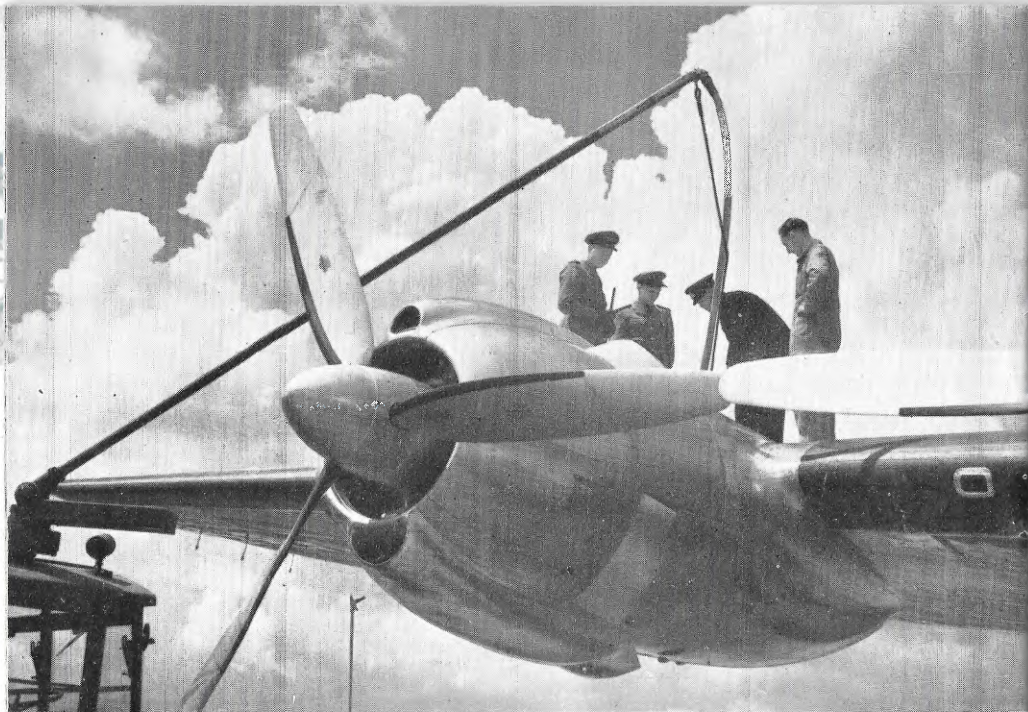
B.O.A.C. motor coaches like this carry passengers between London Airport and Airways Terminal, Victoria.



From the Public Enclosure visitors can see the world's great airliners taking off and landing.



Johannesburg or Sydney. You have a good view of the loading and unloading bays, and of passengers arriving and leaving. At the weekend there are conducted tours of the airport by motor-coach; these give you a close-up view of a great deal of the work that goes on inside a modern airport. Aircraft are also put on show at the week-end—you may be shown a Constellation or a Skymaster, or a military bomber, or possibly a helicopter. The aircraft is brought into an area close to the



You may see this. Engineers checking a plane, while refuellers fill the tanks ready for the next journey.

Enclosure, and members of the public are shown over it. There are loudspeakers, too, so that as aircraft land and take off a running commentary is broadcast on the type of aircraft, the route taken, and so on. Sometimes the Controller's voice is broadcast to the Enclosure as he 'talks down' an aircraft. During the afternoons gramophone music is relayed in the intervals between announcements, and, when you have seen enough of the aircraft, there are refreshments to be had in the tea pavilion. For the children, there are Shetland ponies to ride and a sandpit to play in.

On Sunday afternoons during the summer you will be able to go for a joy-ride in an aircraft. You can take off from Britain's largest airport, fly for about 15 minutes in a twin-engined air liner and then land again at the airport—all for £1.

These are some of the arrangements that have been made for your enjoyment at London Airport. If you are thinking of visiting it and want to make any inquiries, the Ministry of Civil Aviation Information Bureau will be glad to answer your questions. Its address is: Ariel House, Strand, London, W.C.2 (Telephone: Temple Bar 2466). The airport address is: The London Airport, Feltham, Middlesex, and the telephone number, Hounslow 7711.



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HOW TO GET TO LONDON AIRPORT



ROAD SERVICES

Bus nos. 81 (Hounslow to Windsor), 81a (Hounslow to Langley) and 224 (Uxbridge to Laleham) pass the entrance. Bus nos. 90.B (Kew to Yeading), 98 (Ruislip to Hounslow) and 222 (Uxbridge to Hounslow) pass near the airport. Green Line nos. 704 (Tunbridge Wells to Windsor) and 705 (Sevenoaks to Windsor) go through Central London and pass the entrance.

M·C·A

PREPARED BY THE CENTRAL OFFICE OF INFORMATION
FOR THE MINISTRY OF CIVIL AVIATION

PUBLISHED BY HIS MAJESTY'S STATIONERY OFFICE: LONDON
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1948