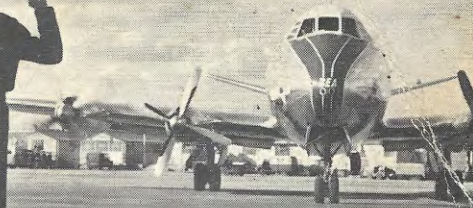


The NEW COMPLETE GUIDE

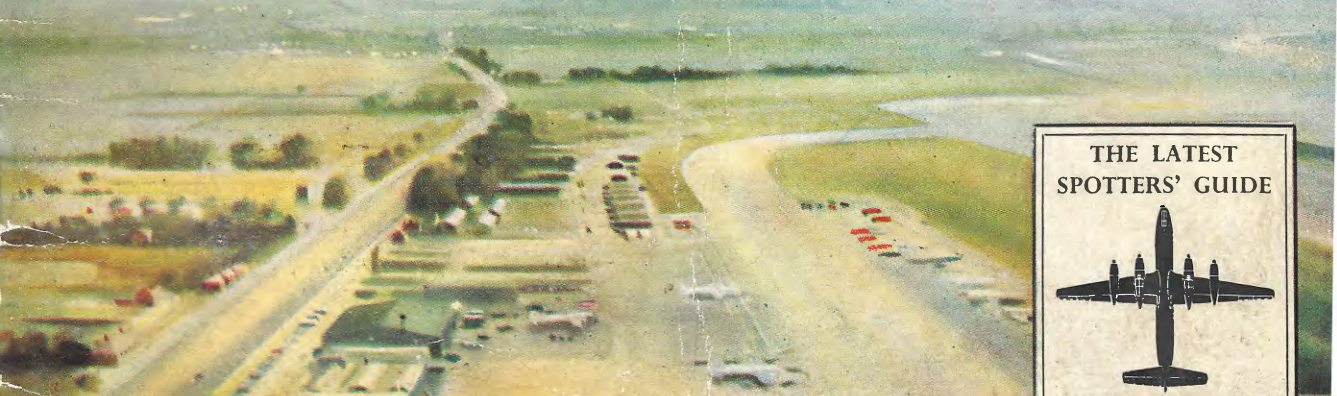
LONDON AIRPORT



By SIR MILES THOMAS

2/6

Over 110 ILLUSTRATIONS



THE LATEST
SPOTTERS' GUIDE



REGISTRATIONS
OF OVER
600 AIRCRAFT

HOW THE AIRPORT OPERATES • RADAR AIR CONTROL SYSTEMS
AIRLINE HISTORY • FUTURE AIRLINERS • A/C SILHOUETTES

Airline History

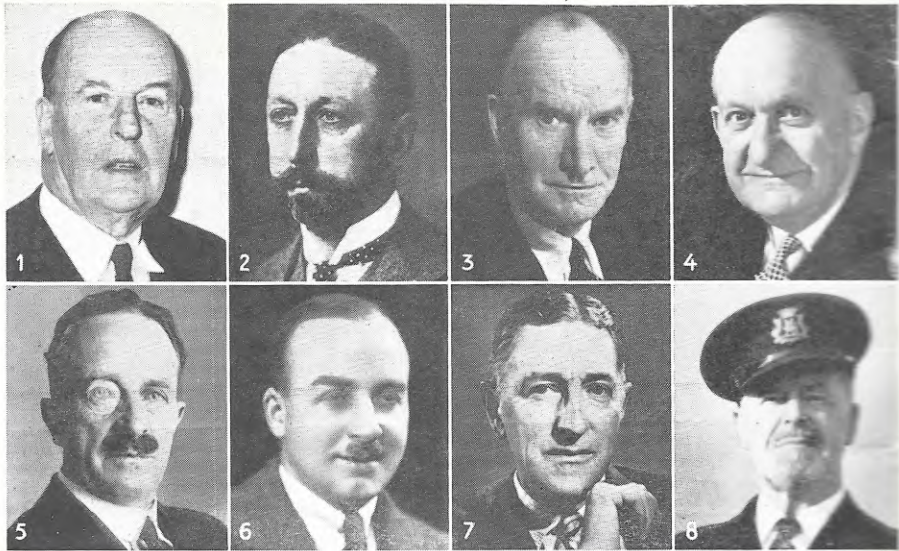
THE WORLD'S FIRST DAILY AIR SERVICES

TO Britain falls the honour of having inaugurated the first international passenger air services. The momentous day was 25th August, 1919. Two companies in healthy competition began operations that gusty summer morning

One, the Aircraft Transport and Travel Company, was founded by Mr. George Holt Thomas whose Aircraft Manufacturing Company had built thousands of World War I aircraft. At 9 a.m. the first converted D.H.4. of the A.T. & T. Co., piloted by the late Capt. Bill Lawford, left Hounslow for Paris. This de Havilland aircraft was powered by a single 360 h.p. Rolls-Royce Eagle engine and had a top speed of 130 m.p.h. One passenger, a newspaper reporter, was carried in addition to the freight. Soon after noon a D.H.16 of the same company took off for Paris with two passengers. The loading of one of the early flights is seen above.

Meanwhile, at near-by Cricklewood, the London to Paris service of the Handley Page Transport Company was starting. A "special" was flown that day—regular daily services started a week later. Its fleet consist of civil versions of the 0/400 Handley Page heavy bomber, the "bloody paralysers" of the then recently ended war. Driven by two Rolls-Royce 360 h.p. Eagle engines, these, the earliest multi-engined airliners, had a top speed of 87 m.p.h. Eleven passengers, mostly newspaper men, were carried on the first Handley Page London to Paris flight.

In 1924 the four British private airlines which had weathered the economic hazards of early commercial aviation were merged into the State supported Imperial Airways. Some years later another independent concern, British Airways, was given a subsidy to fly certain European routes. In 1940 these two organisations were combined by Act of Parliament and the British Overseas Airways Corporation was born. In 1945, another State airline, British South American Airways, evolved from the independent British Latin American Airways, but four years later this too, was merged with B.O.A.C. The other State airline, British European Airways, dates from 1946 in which year it was formed from the European division of B.O.A.C.



SOME PIONEERS OF BRITISH CIVIL AVIATION

Above are featured some of the personalities who have made British air history. (1) LORD BRABAZON OF TARA, holder of the first pilot's certificate granted by the Royal Aero Club, and winner in 1909 of the *Daily Mail* prize for the first circular flight of one mile in a British machine. (2) GEORGE HOLT THOMAS, who from 1906 devoted his money and energies to aviation. He organised air displays, laid out one of the earliest aerodromes inside the Brooklands motor racing track in Surrey, and later founded the Aircraft Manufacturing Co., and the first daily air service. (3) SIR GEOFFREY DE HAVILLAND, creator of the long line of D.H. civil and military aircraft. He was associated with Mr. Holt Thomas. (4) SIR FREDERICK HANDLEY PAGE, pioneer airman and aircraft builder, pioneer airline operator, too. (5) SIR SEFTON BRANCKER, who promoted British commercial aviation from 1919. He advocated the merging of British private airlines into the State-owned Imperial Airways in 1924. (6) SIR ALAN COBHAM, a World War I pilot, who entered civil aviation in 1919. He made unnumberable "first" flights, blazed air trails on many Empire routes and pioneered refuelling in the air. (7) SIR HUDSON FYSH, who surveyed and established air routes in Australia from 1919. He helped found Qantas Empire Airways of which he is now chairman and managing director. (8) CAPTAIN O. P. ("Opie") JONES, most famous British airline pilot. Started with Instone Air Line in 1922 and by the time he retired as B.O.A.C.'s senior pilot in 1955, he had made 300 Atlantic crossings, 6,000 channel crossings and flown 21,000 hours on 100 different aircraft types.

THE FRONT COVER PICTURE is of a Viscount 800 over London Airport North. It is reproduced by kind permission of Vickers-Armstrong (Aircraft) Ltd.



The airside face of the South-East Passenger Building at London Airport. On the tarmac are four Viscounts 700—three of B.E.A. and one of Air France. In the background is the Control Tower.

THE NEW COMPLETE GUIDE TO LONDON AIRPORT

BY SIR MILES THOMAS, D.F.C.

ONE summer morning in 1919 a small single-engined aeroplane bumped across a field near Hounslow, about 15 miles west of London, and climbed away southwards towards the English Channel. The date was 25th August, and the aircraft, a converted D.H.4 bomber of World War I, was inaugurating the first international passenger air service in the world, between London and Paris. There was one passenger in the confined and noisy compartment behind the pilot, and the wood and fabric aeroplane also carried some newspapers, a consignment of leather, several brace of grouse, and a few jars of Devonshire cream. The spot from which this historic flight was made lies close to the London Airport of today, the great and still-growing global air terminal from which the giant descendants of that little wood and wire aeroplane of 1919 wing their way along the trade routes of the skies.

With an aircraft arrival or departure every two minutes in peak periods, London has one of the busiest air terminals in the world. Its runways and aircraft stands present a spectacular scene of activity which has led to it becoming a great attraction for the general public. An average of 10,000 people visit the public enclosure on summer Sundays, and on one notable Bank Holiday there were over 20,000 visitors.

The present site was originally selected for an R.A.F. aerodrome during World War II. The area already had long aeronautical associations because it included the Great West Aerodrome, also known as Heathrow, which had been used by the Fairey Aviation Company from 1930. Work on the new airfield was started in May, 1944, but with the end of the war it was no longer required by the R.A.F. and the ambitious project was taken over by the Ministry of Civil Aviation.

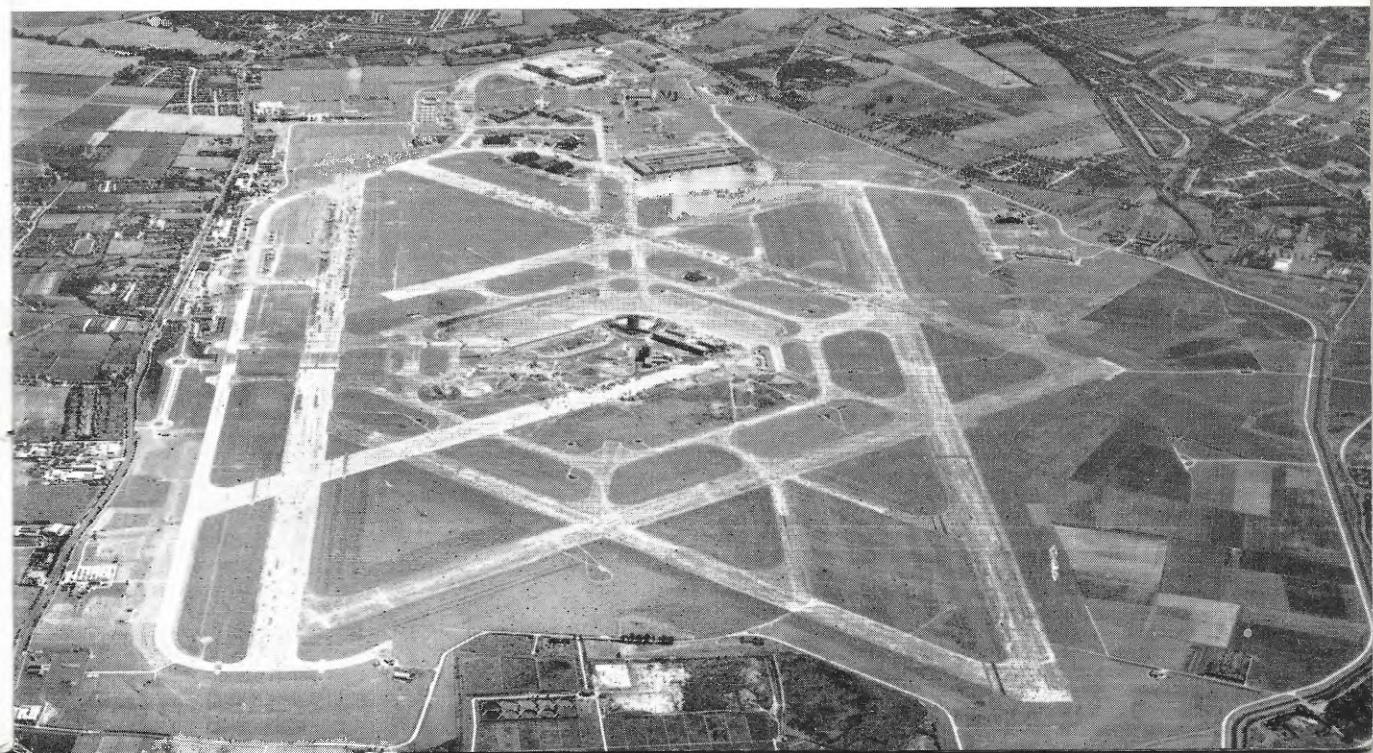
Airline operators, including B.O.A.C., moved from the wartime terminal at Hurn during 1946—the first commercial aircraft to use the new London Airport did so, appropriately, on 1st January that year. At first Customs, immigration and other departments were housed in marquees and caravans, but temporary single-storey buildings were in use for passenger handling before the end of the year, and the immense constructional task of developing the world's finest civil air terminal began.

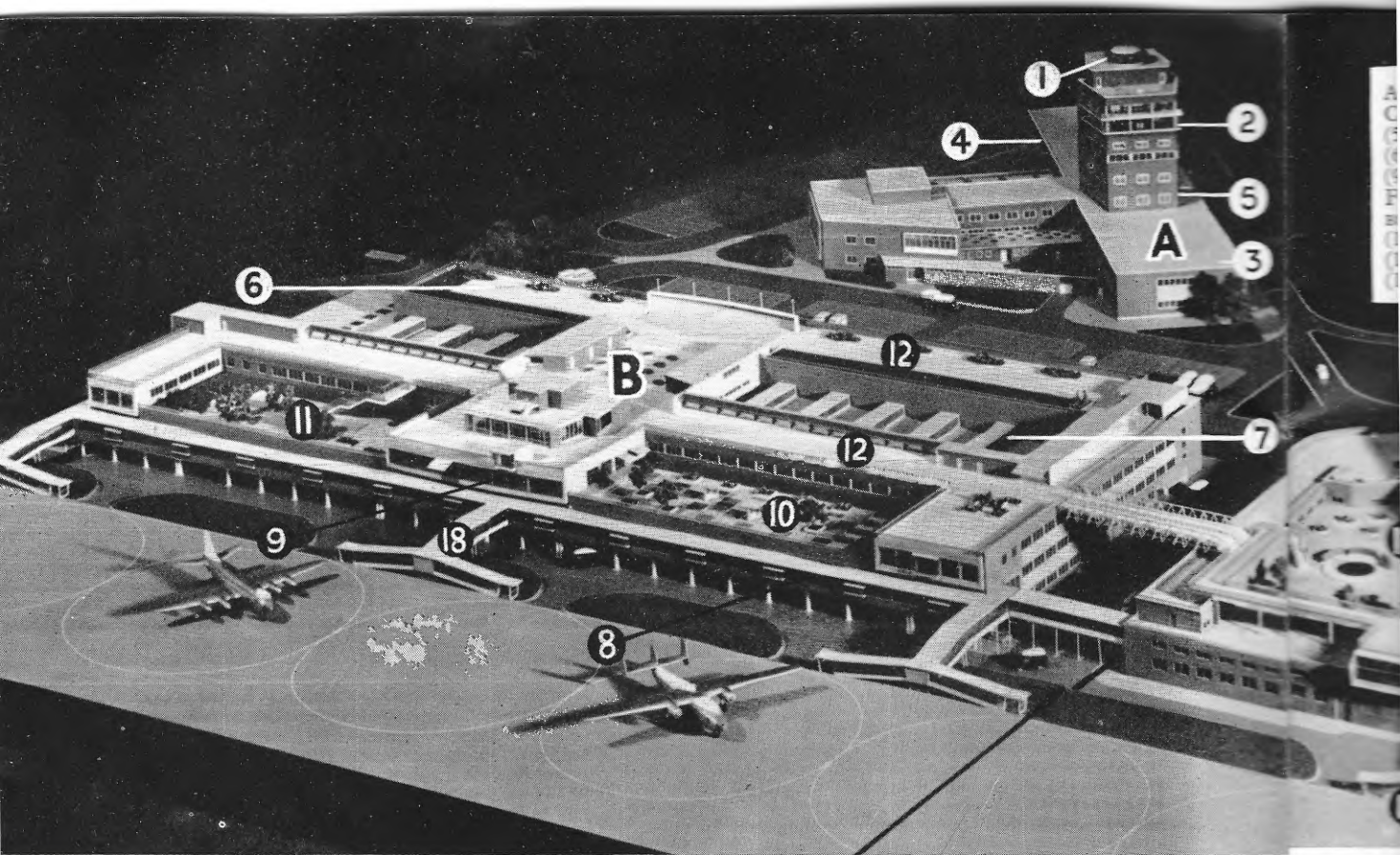
The original plan for the R.A.F. station was based on a triangular layout of three runways, but this was extended by the superimposition of a second triangle giving two long parallel runways in each of three directions. Aircraft can, therefore, land and take-off simultaneously on parallel runways.

The Airport encompasses an area of $4\frac{1}{4}$ square miles. The work of laying out the runways and taxi-

THE APPROACH CONTROL ROOM

In the Approach Control room on the sixth floor of the London Airport tower, a team of Air Traffic Controllers maintain a continuous surveillance on the comings and goings of the airliners using the Airport. They work in watches, maritime fashion, under a Watch Supervisor, whose desk is equipped with a miniature switchboard so that immediate contact may be made with all other operational departments. Part of his team can be seen in the centre illustration checking the alignment of their radar tubes while the controller in the top picture has before him a rack of flight progress slips similar to those used at the regional Control Centre. The tower in which they are working can just be discerned in the centre of the vast network of runways, taxiways and marshalling aprons sprawling across the pilot's-eye view of London Airport below. The aerial picture was taken from beyond the Airport's western boundary with the main east-west runways, each nearly two miles in length, stretching away towards the east and London itself; also standing out quite clearly is the 13-mile perimeter road which encircles the whole Airport. The Bath road is on the left, the Great South Western Road is one the right.





AIR TRAFFIC CONTROL SYSTEM

distance routes to America, Africa, the Middle and Far East and Australia, and B.E.A. which operates services to Europe and within the British Isles. Leading independent companies also have bases there.

Three maintenance areas have been selected along the south-eastern and southern boundaries and "outside" the runway pattern. The first, adjacent to the Great South-West Road, is occupied by two unique structures used by B.O.A.C. and B.E.A. The B.O.A.C. headquarters building is of reinforced concrete throughout and incorporates under one roof four massive hangars, an enormous engineering workshop 800 feet long and 90 feet wide, and four storeys of offices housing most of the Corporation's training, operations, supplies and administrative departments. The B.E.A. Engineering Base, built of pre-stressed concrete, has five hangar pens in each arm of a U-shaped layout with workshops,

stores and offices in the connecting block. There are also several temporary steel hangars in the No. 1 maintenance area.

The second area is earmarked for use by foreign operators and independent British companies. It has a large permanent steel hangar used by Pan American Airways, and a novel three-bay hangar constructed mainly of aluminium, now used as an engineering base for Hunting-Clan Air Transport and Airwork Ltd. The third maintenance area is not yet developed. Other permanent buildings include an up-to-the-minute telephone exchange, appropriately named SKYport, and an animal hostel, run by the R.S.P.C.A., to attend to the needs of the large volume of livestock, ranging literally from tropical fish to elephants, which passes through the Airport.

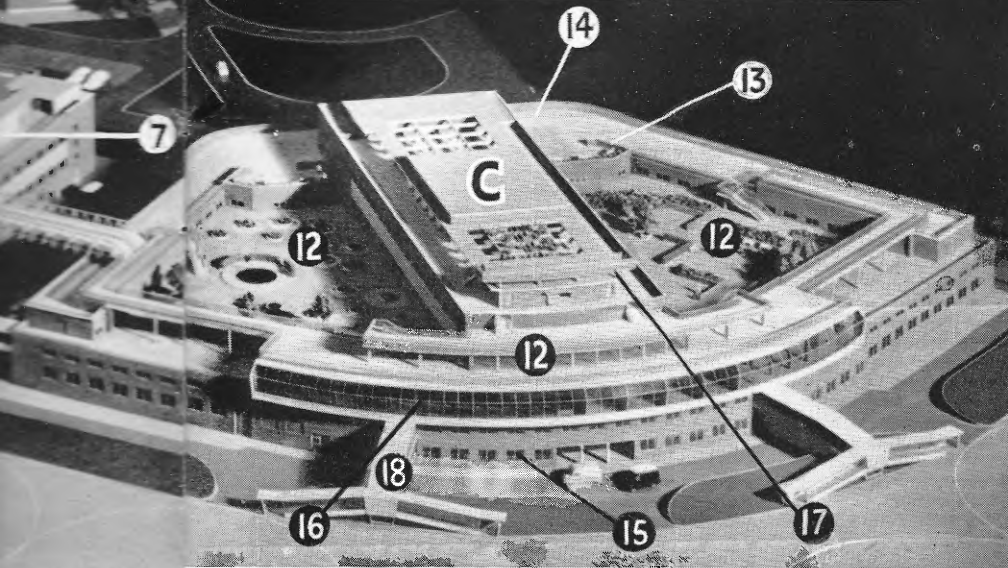
The large number of airliners flying into and out of London Airport throughout the day and night

necessitates an effective system of air traffic control to ensure safety and punctuality. The pilots of these airliners need various aids to help them land and take-off throughout the 24 hours.

The system of air traffic control is very similar to that used on railways and on roads. But the "signals," "points," "traffic lights" and "road signs" used by the point-duty men of the airways are elaborate forms of electronic equipment working within precise limits of accuracy. The traffic control equipment at London Airport is the most modern in the world and the pilots of many nationalities have the utmost confidence in the men and instruments that guide their aircraft safely on to the runways in weather which a few years ago would have stopped flying.

The control exercised from the tower at London Airport is confined to arriving and departing aircraft operating within a few miles of the

A CONTROL BUILDING : (1) Aerodrome Control ; (2) Approach Control ; (3) Telecommunications Wing ; (4) Medical Unit ; (5) Administration. **B SOUTH-EAST PASSENGER BUILDING :** (6) Main Concourse ; (7) Customs Hall ; (8) Airside Gallery ; (9) Passenger Restaurant ; (10) Waving Base (Passengers' Friends) ; (11) Beer Garden (General Public). **C QUEEN'S BUILDING :** (12) Roof Gardens and Terraces (General Public) ; (13) Exhibition Hall ; (14) News Cinema ; (15) Airline Offices ; (16) Restaurant (General Public) ; (17) Telescope Platform ; (18) Passenger Gates leading to the Apron.



PASSENGERS' ARRIVAL

Most air journeys from central London begin at the several airways terminals (B.O.A.C. near Victoria Station for long distance routes; B.E.A. at Waterloo for Continental routes), from whence passengers are taken the 15 miles to London Airport in comfortable motor coaches. In the photograph below coaches are seen discharging passengers at the magnificent South East Passenger Building. Once inside the building a passenger's progress begins at the reception desk. Here passengers who have come direct to the airport have their tickets checked and baggage weighed (above). Porters transfer luggage to scales and thence to the conveyor belt of the channel set aside for the particular flight. Passengers are then carried to the main concourse by one of a dozen escalators.



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PRE-FLIGHT PREPARATIONS

Whilst passengers are passing through the departure formalities, the last preparations for the flight are being made. A tremendous amount of work involving specialists in many trades and crafts has gone on behind the scenes. The delicious dinner that will be served soon after leaving London Airport has been prepared in kitchens below the Passenger Building, placed in special containers and loaded on the aircraft, later to be heated by the electric ovens in the galley. The stewardess has checked a quantity of tableware and cutlery, glasses, magazines, first-aid equipment and the like, not forgetting cigarettes and drinks for the bar. Meanwhile, the aircraft itself has been brought to the high pitch of efficiency essential to the safety standards now demanded in civil aviation; here one of the four Dart turbine engines of a Viscount receives attention from engineers at the B.E.A. base. Between them, the two British air corporations employ nearly 5,000 maintenance staff at London Airport. Another vital factor in the safe operation of a modern airliner is pre-flight briefing. The captain and crew can be seen in the briefing room working out the details of their flight plan. Besides calculating the load plan of their aircraft to ensure a correct "trim", such items as the best route to follow and altitude to fly in prevailing weather conditions, fuel requirements and alternative landing points must be decided, and a meteorological forecast obtained.

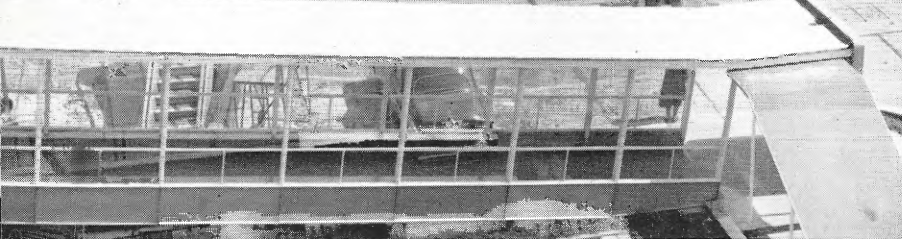


RADAR WONDERS

runways. To obtain a picture of the overall pattern of air traffic control we must first turn to a huddle of buildings by the Bath Road, near the north-west corner of the airfield, where the striking orange and white radar scanners maintain a steady rate of revolutions as they probe the skies over south-east England, presenting the radar controllers with a plan picture of aircraft flying in the area. This is the Southern Air Traffic Control Centre, one of three main centres which together direct and assist air movements over the United Kingdom. The Southern A.T.C.C., therefore, although situated on London Airport, has wider responsibilities, and its sphere of influence extends not only over the whole of Southern England and South Wales, but from the vicinity of the Dutch coast in the east and out to the Fastnet Rock in the Atlantic in the west.

Radar is the heart and soul of the Centre. Recent developments of this great invention enable the controllers to speed-up the flow of traffic by handling greater numbers of aircraft in a congested air space than would be possible if they were unable to "see" the movements of the individual aeroplanes and had to allow a comparatively lengthy time interval to elapse between the passage of airliners over any particular point in the airways system. The spacious Control Room at the Centre is the scene of intensive but quiet and orderly activity.

Special lighting enables the controllers to watch their cathode-ray tubes without distraction, and other members of the team to work in normal room light. This result has been achieved by using fluorescent tubes of blue, green and red, which together give a whitish light. Because this light is deficient in yellow it does not interfere with the viewing of radar "blips" which are seen through amber filters. Radar information is presented on desk-mounted consoles, very similar to table television sets. Most of the electronic equipment associated with these displays is housed in a large area immediately beneath the Control Room. Some of the controllers use a short-range display which enables them to see aircraft almost as soon as they are airborne from London Airport and they subsequently "hand the aircraft over" to the long-range radar controllers. The maximum range of this equipment is 130 miles but the



PASSENGERS' DEPARTURE

A passenger's progress through the South East Passenger Building ends with a short walk down a covered way to the waiting aircraft. He will find that his luggage has been put on board. If his aircraft is at an outer stand he will be taken by motor coach. In the top two pictures a flight to Paris in an Elizabethan class airliner is about to begin. Meanwhile inbound flights have touched down every few minutes. In the photograph below a B.E.A. receptionist waits at the entrance to Channels 11 and 12 to escort passengers through the brief Immigration and Customs formalities to the coaches waiting at the land-side of the building.



AIR LANES

controllers can arrange their displays so that they observe only that section of the surrounding air space for which they are responsible. Communication between controllers and aircraft is by Very High Frequency radio-telephony, the messages travelling over land-lines from the Centre to a number of transmitting stations reaching from Suffolk to Cornwall, and thence to the aircraft.

All airliners arriving or departing at London Airport are directed along specific "air-lanes" depending on the destination or point of departure. For instance, southbound traffic for Paris or Rome is instructed to follow the appropriate lane in that direction, and the main artery—comparable with a trunk road—is known as Airway Amber One. The main airway for traffic coming in from these places is Airway Amber Two which crosses the English coast near Dungeness. Airliners flying to or from Amsterdam and Scandinavia and from Brussels and Germany are routed over Clacton. The airliners come under the control of the Centre from the time they cross the boundaries of its area until they are handed over to London Airport control authorities at the radio ranges near Epsom and Watford or, if they are over-flying on the Paris/Manchester route, for instance, until they reach Daventry, where they are handed over to the adjacent Northern Area Control Centre. The Centres receive advance notification of incoming flights, with details of height, destination and other relevant information, from whichever Air Traffic Control Area the aircraft is coming. In the case of outgoing flights the advance details are received from the aerodrome of departure. This information, together with aircraft R/T reports at fixed points on the airways, enables the controllers to identify the various "blips" representing aircraft on their radar screens. Departing airliners are given a "clearance" before take-off notifying them of the route they are to follow and the height at which they are to fly.

The following example illustrates how the work of the Air Traffic Control and the London Airport control authorities is integrated. A B.O.A.C. service from the Far East makes its last port of call at Rome, and flies northwards across France towards the English Channel. It comes in along Airway Amber Two, and as it leaves the area controlled



The airside face of the new Queen's Building. Intended mainly for sightseers, it contains roof gardens, and children's playgrounds, an observation platform, restaurants, a cinema and an exhibition hall. In the non-public section of the building are airline offices, crew briefing and rest-rooms and a miniature television studio for interviews

TALKDOWN PROCEDURE

by Paris the pilot is instructed to alter his radio to the frequency of the Southern Air Traffic Control Centre. As he flies over Abbeville in northern France the pilot calls the Centre and gives his height and estimated time of arrival over Lydd in Kent.

The Centre acknowledges and passes a time check and the barometric altimeter pressure setting in use. This ensures that all aircraft flying in the area will have their clocks synchronised and their altimeters working on the same basic data so that there can be no errors due to inaccurate timing or incorrect height-keeping. When he passes over the radio beacon at Lydd the pilot again reports by radio to the Centre, and sets course for the next radio facility marking the way to the radio range at Epsom in Surrey. Depending on traffic conditions he will be given permission to start descending at a particular point, and a height at which to arrive over the radio range at Epsom. All this time

the controllers will have been watching his progress in relation to other aircraft in the vicinity and, if necessary, sending instructions for changes in course or height. As he approaches Epsom the pilot is told to switch to the radio frequency of London Approach, and this is the point at which control passes from the Control Centre to the Airport's Approach Control. Had the aircraft flown to London from a different direction it might have been directed to the radio range at Watford where the changeover from Control Centre to Approach Control would take place.

London Approach Control is situated near the top of the tower in the Central Area, and is equipped with radar consoles similar to those in the Control Centre. The task of the Approach and radar controllers is to maintain the flow of aircraft in orderly sequence from the radio ranges at Epsom and Watford towards the runways.

When low cloud or fog restrict the pilot's vision, he usually makes his approach with the assistance of an electronic landing aid, known as Instrument Landing System (ILS). This system presents the pilot with information on height and direction through the medium of pointers on an instrument in the cockpit.

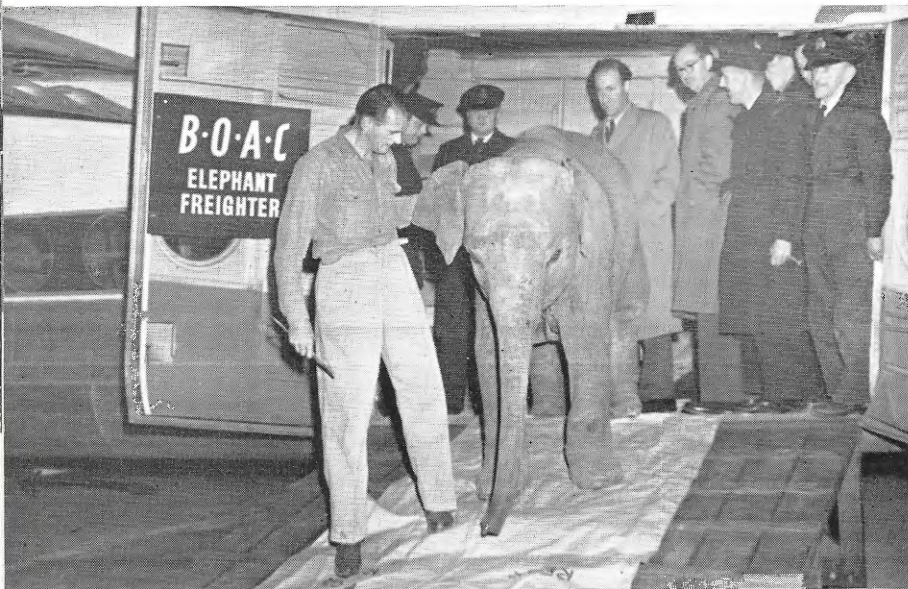
Another landing aid is the Precision Approach Radar "talkdown" system. The Precision Talkdown Controller sits in the control tower near the radar approach controllers in order to simplify the procedure of handing over when the aircraft is at a position about seven miles from the runway at an altitude of 1,500 ft. This is where the talkdown begins and the controller, watching the movements of the aircraft on radar screens, calmly and quietly issues instructions over the RT which enable the pilot to bring the aircraft down at the correct rate of descent and on an accurate heading to an altitude of some 250 ft. at a point



THE AIRSIDE GALLERY AND WAVING BASE

The visitor to London arriving by air cannot fail to be impressed by his first glimpse from the airside of the South-East Passenger Building, seen above. From the Marshalling Apron, with its 60-foot tall floodlighting towers, he will pass up one of the ramps to the airside gallery, which runs along the whole face of the building. If friends have come to meet him, they will doubtless have watched his arrival from the wide open verandah known as the "Waving Base" shown below.





FREIGHT—FROM ELEPHANTS TO RACING CARS

The carriage of freight by air grows year by year, and in 1956 over 55,000 tons of freight and mail passed through London Airport. Much is carried in the freight holds of passenger liners, like the B.O.A.C. Stratocruiser shown in the first illustration, but several airlines run special types of aircraft for freighting purposes. An example of this is the B.O.A.C. York—pictured centre—off-loading a cargo of elephants from Bangkok. There is an R.S.P.C.A. staff and specially equipped hostel for the care of animal passengers. The variety of freight carried is never-ending—from insects and snakes to minute electric motor parts and mammoth printing presses. Below one of the famous Ferrari team of racing cars and its equipment is about to be loaded through the large doors of a Hunting-Clan York air freighter.



PILOTS' AIDS

400 yards from the end of the runway. The landing is then completed visually. When an airliner is approaching with the aid of ILS, its progress is also followed on radar screens by the Precision Talkdown Controller but he does not issue any instructions to the pilot unless his help is needed.

In the glass "penthouse" atop the Tower is the Aerodrome Control. The functions of this department are divided between the Air Controller and the Ground Controller whose titles indicate their spheres of responsibility. From the tower they have an uninterrupted panorama of the runways and taxi-tracks and an unobstructed view of the sky in all directions. In good visibility the Air Controller takes over from Approach Control when the aircraft is making its run-in towards the Airport. When the weather deteriorates, and ILS and PAR approaches are being made, he takes over when the aircraft has landed. He is concerned with the movement on the runways of aircraft actually landing or taking-off.

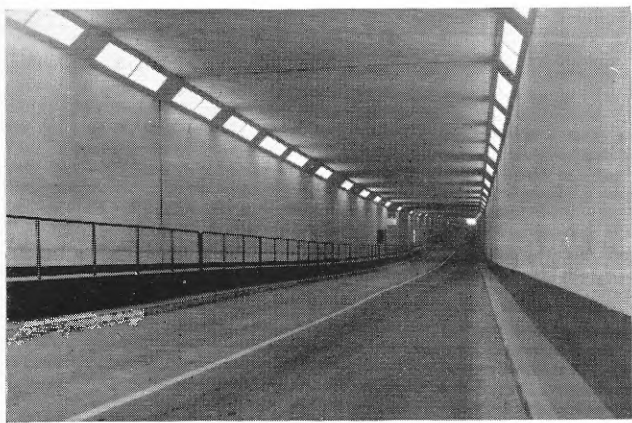
In the case of an arriving service he hands over to the Ground Controller when the airliner has finished its landing run and is clear of the runway. The Ground Controller has been notified in advance of the parking bay to which the aircraft is to go, and he advises the pilot of the route to be followed to reach it. As an additional aid to the pilot at night-time and in dull weather, the Ground Controller can illuminate the selected route with a line of flush green lights which run through the centre of all taxi-ways. Precise control of aircraft and vehicles is maintained by the use of a "block" system under which the pattern of runways and taxi-tracks is divided into about a hundred sections with lines of red lights, called stop-bars, at the entrance to each block. No aircraft may move into the next section while the stop-bar is illuminated. In bright daylight, pilots are guided along the correct route by powerful white indicator lights on diagrammatic signboards.

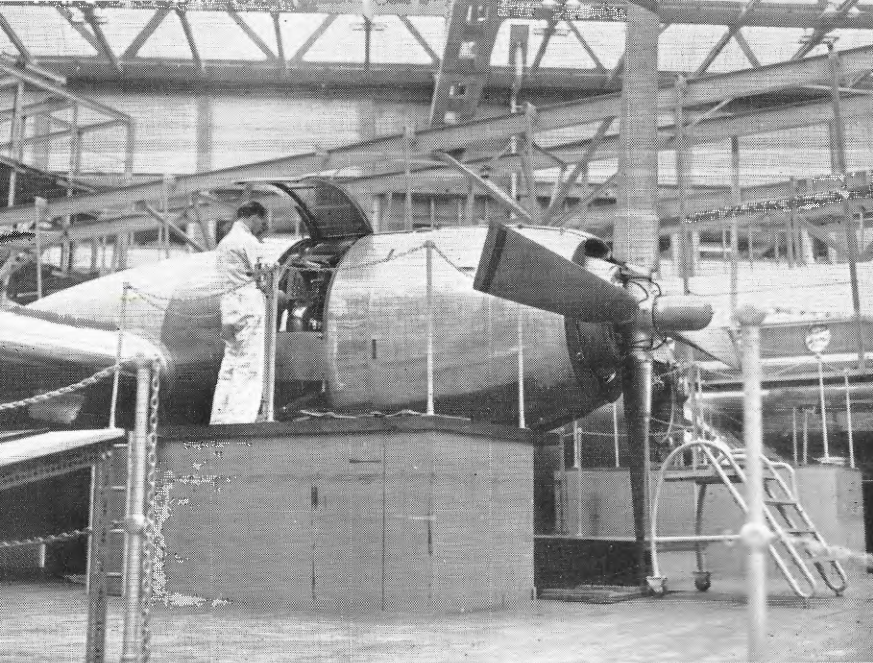
In their penthouse the Air and Ground Controllers have a special type of radar called an Airfield Surface Movement Indicator which shows them a picture of the runways and roads with "blips" giving the position of moving aircraft and vehicles. This equipment is of particular value when visibility is limited,



THE TUNNEL: THE NORTH APRON

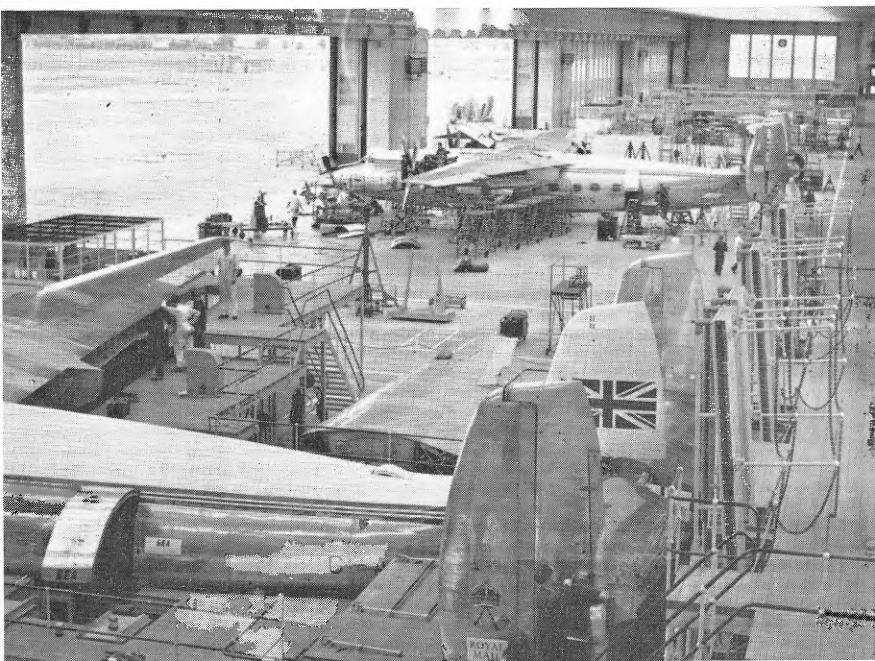
The tunnel which gives access to London Airport Central is in itself a considerable engineering feat. Its shallow depth and the gravel sub-soil precluded boring in the conventional manner; it was therefore necessary to cut a trench half a mile long and some 30 feet deep and build the shell of the tunnel in it, later compacting the gravel around it and re-laying the main runway overhead. The tunnel is 2,060 feet in length, with an overall width of 86 feet, separated into footpaths, cycle-tracks and two 20-foot wide carriage ways. The fluorescent lighting is specially graded, and forced-draught ventilation is provided. Eventually passengers on long-distance services will also use the tunnel, but for the present, flights to and from points outside Europe are handled at London Airport North, the original temporary terminal. From here long-distance airlines like B.O.A.C. run services to America, Africa, the Middle and Far East and Australia. Below a Britannia and a DC-7C, two of the latest types of long-haul aircraft, are seen with attendant service vehicles on the North Marshalling Apron.





AN ARMY OF MAINTENANCE MEN

Away to the east of the airfield in No. 1 Maintenance Area, a small army of men work round the clock maintaining the fleets of airliners. In the 800 feet long by 90 feet wide Engineering Hall of the B.O.A.C. Headquarters Building various types of engines are overhauled. In another part of the building a maintenance dock for complete overhauls of Britannia airliners has been built. Above is seen part of the dock. The engineer working on one of the turbo-prop engines stands on a power-operated platform which, at the press of a button, can be adjusted to any required level. The sister Corporation, B.E.A., are equally proud of their maintenance facilities. In their hangars they too have developed maintenance docks for both Elizabethan and Viscount aircraft—the former is shown in the foreground below. Each dock consists of a continuous platform at varying levels which can be moved into position to surround the whole aircraft, and electricity, compressed air, lubricants, water and telephones are available at strategic points.



RUNWAY LIGHTS

and the application of radar to movements on the ground is additional to the normal R/T facilities which enable the Ground Controller to speak direct to the pilots of taxiing aircraft, and also to the drivers of vehicles. Cars, vans and coaches habitually moving on the Airport are fitted with radio. Another fascinating piece of equipment in the glass cupola at the summit of the tower is the huge bank of switchgear controlling all the aerodrome lighting, and the "mimic", which is a special diagram of the Airport and its approaches showing by means of miniature lamps which of the many lighting systems is in operation at any moment.

A "location" beacon, flashing alternately white and green, is situated two miles east-north-east of the Airport and it is sufficiently powerful to be seen from an aircraft 30 miles away on a clear night. There is also an "identification" beacon, of lesser intensity, inside the Airport boundary. It flashes in green the Morse code for "VA". At night-time the approaches at either end of the two east-west runways are strikingly signposted by "line-and-bar" lighting which helps to guide the pilot in his approach to the end of the runway. This system was devised by Mr. E. S. Calvert of the Royal Aeronautical Establishment at Farnborough.

The Calvert system employs a straight line of lights 3,000 feet long leading directly to the end of the runway, and at intervals of 500 feet there are cross-bars of lights at right angles. The cross-bars become progressively shorter as they approach the runway so that the pattern as seen from the air can be said to resemble a funnel with the wide mouth towards the approaching aircraft and the neck at the beginning of the runway. An additional guide to the distance from touch-down is provided by the arrangement of lights along the centre line. The first 1,000 feet has triple lights, the next 1,000 feet is of double lights, and the remaining 1,000 feet, nearest the runway, of single lights. In bad weather at night or in poor visibility during the day the lights can be switched to a peak brilliancy of 80,000 candle-power, directed in line with the beam of the radio aid. In better visibility red omni-directional lights of lower power are used.

Each runway is defined by rows of white lights inset some way from the edge of the concrete and a line



THE ENGINEERING BASES

The buildings in which the two great British Corporations have their headquarters are themselves of great interest. The B.O.A.C. Headquarters Building covers an area of over $8\frac{1}{2}$ acres, and includes four hangar pens, two of which can be seen in the picture at the top of the page; there are four storeys of office accommodation, and between the backs of each pair of hangars is the huge Engineering Hall. In order to achieve an unobstructed entrance of over 300 feet, the hangar entrances are built on the cantilever principle, and each of the eight counterpoise blocks consists of some 1,100 tons of solid concrete. The B.E.A. Engineering Base is claimed to be the largest pre-stressed concrete structure in Europe; it is about 1,000 feet long, and has five hangar pens in each of two arms, each with a door aperture 150 feet wide and 30 feet high. Several airlines have their own radio systems at London Airport which enable their headquarters staffs to control work on the tarmac. Below a B.E.A. officer is seen reporting to headquarters via a R/T equipped van.

GLOBAL JUNCTION

of green lights at each end. The main runway lights are let into the concrete and the domed covers project only a short distance above the surface so that they present no obstacle to aircraft wheels. The lights along the last 2,000 feet of runway are fitted with "cautionary" yellow filters as an indication to pilots of the distance they have travelled on the ground. The runway lighting normally operates at 30 per cent of maximum power but the intensity of both the approach lights and the runway lights may be varied in changing weather conditions or on request to suit individual pilots. A sodium flare-path is also available should the normal lighting become obscured by snow.

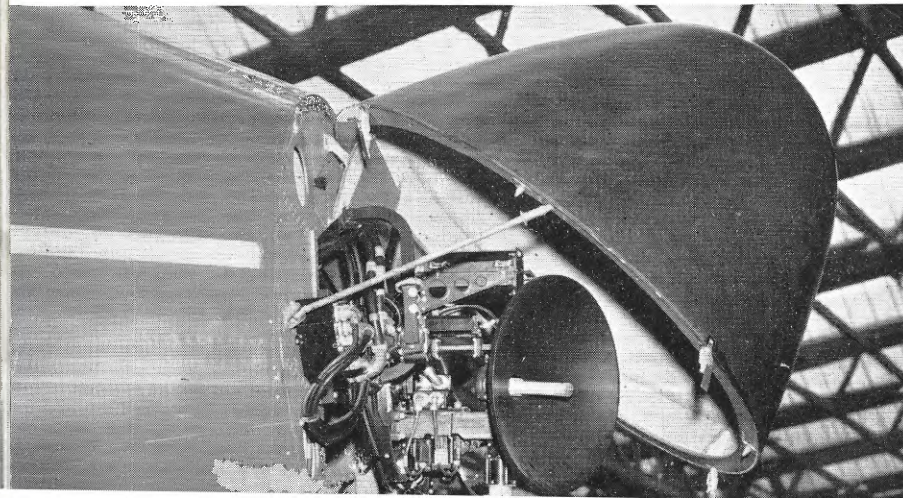
London Airport is a major junction on the intricate web of global air routes. The services of over thirty different airline operators of many nationalities provide fast and frequent services, bringing London within a few hours' travelling time of most capitals. Airliners of varying types and sizes, proudly bearing the colourful emblems of their parent companies, stand wing-tip to wing-tip on the busy parking aprons.

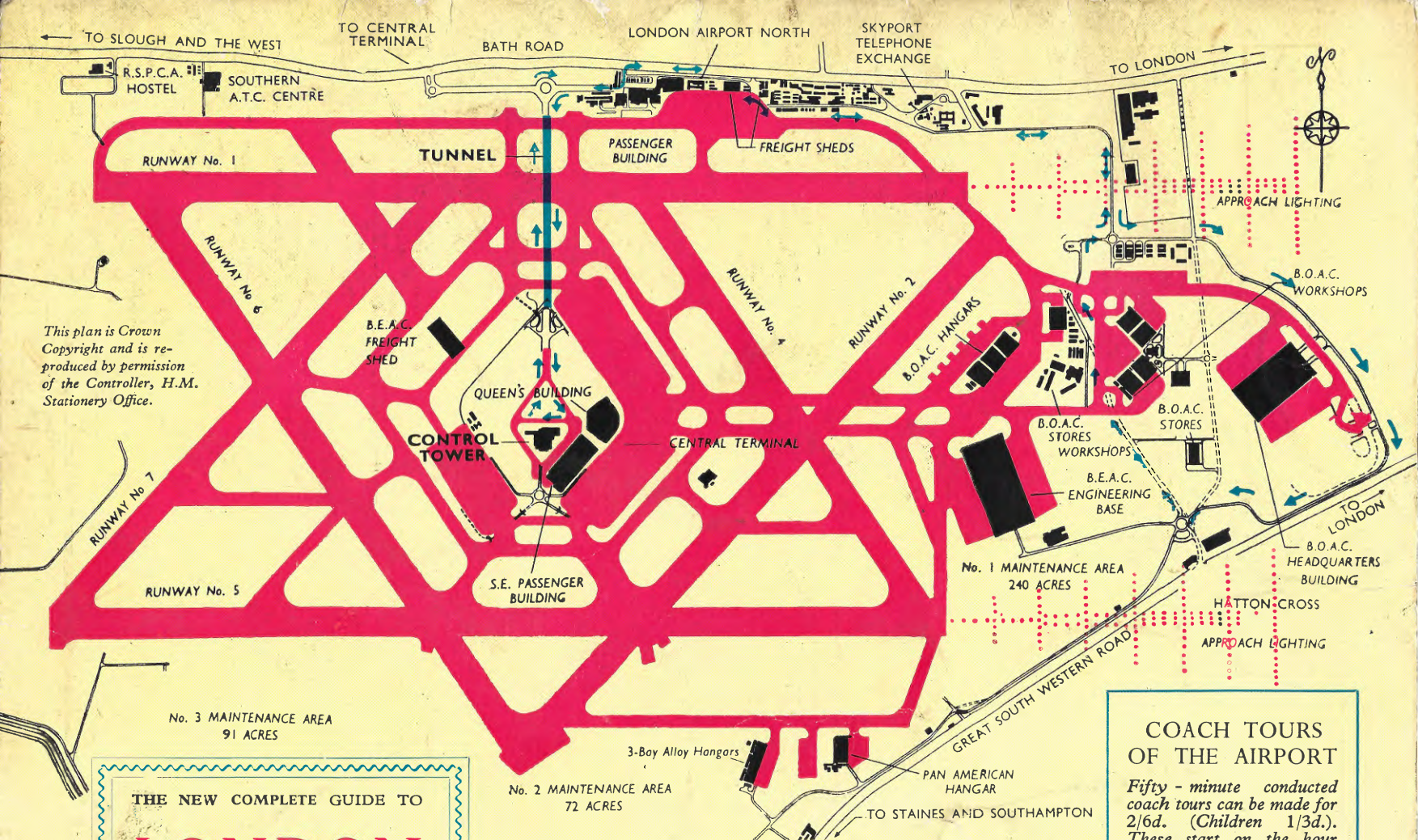
Day and night the airliners come and go with their precious "payloads" of passengers, mail and cargo. Sometimes there are diplomats, politicians, film stars, famous sporting personalities or other prominent people whose travels attract the press photographers and newsreel cameramen to the aircraft steps. But the vast majority of air passengers today are people whose lives do not bring them into the public eye, people who fly on business or pleasure because air travel is quick, comfortable and convenient.

Over three million passengers a year now pass through London Airport, and the cheaper tourist fares are bringing air transport within the reach of increasing numbers of people. By 1960 the Airport will be capable of handling annually more than five million passengers and many thousands of tons of mail and cargo. Air transport has made fantastic progress since that day in 1919 when the single-engined D.H.4 took-off from Hounslow Heath. The future holds the prospect of even greater achievement for this virile and expanding industry, and London Airport, Britain's No. 1 international air terminal, will play an increasingly important role in the exciting years ahead.

THE COCKPIT OF A TURBO-PROP AIRLINER

The photograph above shows the cockpit of a B.E.A. Viscount 800. The captain is on the left, the second pilot on the right. Each has before him a duplicate set of instruments for controlling the aircraft in flight. In the centre is the engine panel. Here are revolution counters, oil pressure and temperature indicators, torque meters, jet pipe temperature and flow gauges for each engine. The second pilot has his left hand on one set of engine throttles. Below these are undercarriage, flap, and auto pilot controls. The roof panel carries the engine master switches and a number of other switches for controlling cabin pressure, generator power, cabin and cockpit heating etc. The bottom photograph is of the cloud and collision warning radar in the nose of a B.O.A.C. Britannia. This equipment enables the pilot to avoid turbulent conditions ahead and is an additional safety aid in congested air lanes.





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THE NEW COMPLETE GUIDE TO

LONDON AIRPORT

★
THIS IS ONE OF THE PITKIN
"PRIDE OF BRITAIN" BOOKS

Spectators are welcomed at London Airport. The Roof Gardens of the new buildings at the Central Terminal are open from 10 a.m. until dusk or later—the Airport at night is an enthralling sight—every day (2/- adults, at weekends 2/6; 1/- children). At certain periods a Ground Enclosure is open at similar hours (adults 6d., children 3d.). Parks are available for coaches and private vehicles. The Restaurant and Snack Bars offer catering to suit all tastes and pockets, and there are licensed bars and shops. Special arrangements for organised parties of visitors can be made on written application to the Airport Commandant, Ministry of Transport and Civil Aviation, London Airport.

COACH TOURS OF THE AIRPORT

Fifty-minute conducted coach tours can be made for 2/6d. (Children 1/3d.). These start on the hour from the Enclosures and the route taken is shown by the green arrows in the map above. An official guide gives a commentary. Visitors can purchase their tickets on arrival from the booking offices in the Enclosures for any specified tour later in the day.