I was on short leave ex-India—with only six weeks in England. It was May and a gloriously fine English spring, and I had to be back at duty in Meerut on May 20. I decided to stay in England to the last moment and return to India as quickly as possible compatible with comfort. I considered the best way would be to go by rail to Rome and thence fly by Imperial Airways. It may be thought why not go all the way by air from Southampton? There were two reasons in my mind—one, that although I had been in the air many times, the longest flight I had ever undertaken was from Croydon to Paris in 1920—and from my recollection of that flight I came to the conclusion that flying all the way from Southampton to Karachi might end in boredom and fatigue with the trip before I arrived at my destination. The second reason was that by going by rail to Rome I saved a few pounds—perhaps not sufficient to be worthy of much consideration. The time factor was of small consideration, being thirty hours or so longer by the rail to Rome route than by rail to Southampton thence by air.

I left London at 9 a.m. on Friday, May 13—to those who are superstitious an inauspicious day!—arrived Paris, Gare de Nord, at 16.00 hours—drove straight to the Gare de Lyons and caught the Rome train leaving there at 17.30 hours, travelling ordinary second class. This was quite comfortable. I arrived at Rome at 18.00 hours on Saturday, May 14, and spent the night in Rome. On Sunday morning a visit to the air agent of the Imperial Airways in Piazza "Dell' Esedra," soon had everything arranged. My baggage was very perfunctorily weighed and then put into a comfortable limousine car. The weight of baggage allowed by Imperial Airways is 221 pounds including one's personal weight—I had with some difficulty reduced my total weight of self and baggage to 234 pounds but no notice was taken of the few pounds overweight.

I left the agency office, the sole passenger in the car, at 12 noon for Lago di Bracciano, about twenty miles from Rome, the landing place for Imperial Airways flying boats. This lake is very picturesque and beautiful on a fine day, several miles in length and breadth and surrounded by low hills. I was told by the local inhabitants that it was very cold and desolate and frequently very wild in winter time. There is a small hotel, very rough and ready, at which one can obtain lunch or simple refreshments. I was met by an Imperial Airways officer of the ground organization staff, who took over my baggage and informed me the plane might be
late. Much to my disappointment he told me I must hand over my camera to be sealed and kept in bond for the part of the journey over Italy and the Mediterranean, as photography of any kind was not allowed anywhere between Lago di Bracciano and Alexandria. This, I think, is an Italian restriction agreed to by the British authorities with regard to the Eastern Mediterranean. The flying boat “Ceres” was due at Bracciano at about 13.00 hours—it did not arrive till about 16.00 hours—three hours late. The west bound craft from Brindisi arrived at almost the same moment and both landed at about 100 yards or so from the small jetty within a few minutes of each other, an impressive sight. The local organization was all ready and immediately a launch with the Customs, passport and police officials with the local Imperial Airways officer put out to the flying boats. The motor barge loaded with petrol also put out. Embarkation of passenger and baggage, inspection of all other passenger passports, and refuelling took under half an hour—and the “Ceres” took the air again at 16.30 hours for Brindisi. The arrival of the plane three hours late at Bracciano was not a good augury for the rest of the journey. However, I soon found out from the other passengers the reason of the delay. The weather over France had been so bad that the Captain had decided to fly right round the west coast of France via St. Nazaire instead of by the direct route across the Continent to Marseilles. I also heard that the trip from the English Channel to Marseilles had been a very bad one—the weather being heavy with low cloud, strong winds and rain necessitated low flying below the cloud and consequently very bad “bumping”—most of the passengers had been airsick and had a very unpleasant trip. I was pleased I had decided to train to Rome.

We took off from Bracciano in perfect weather though later than schedule.

There were at this stage five other passengers; all had come from Southampton. A Frenchman who was going all the way to Karachi, thence to the Khyber Pass, on business connected with some cement-making machinery; an Anglican bishop going to Alexandria, thence on to the Sudan: a lady who was going to Tiberias, there to be met by her husband for a short holiday, and then to Bahrein where he was employed in an oil company there. The other two passengers were both Imperial Airways officers, one a pilot going to Bangkok to take over duty there, and the other an engineer who was due to go to Karachi.

The crew consisted of the Captain who is chief pilot, the first officer who is second pilot, the wireless officer, the flight clerk who deals with the mail, passenger tickets, passports, etc., corresponding roughly to a purser in a ship, and lastly the steward who supervises passengers’ and crews’ food on board. The whole crew is changed every two days on the trip, thus the crew from Southampton is changed at Alexandria and the
crew from Alexandria at Karachi. Each crew has two days rest before taking on another flying boat.

The flying boat "Ceres" was one of the fleet of twenty-eight at that time in use by Imperial Airways. It is fitted with four engines, and is capable of a maximum speed of 200 miles an hour. The total weight with passengers and load is over 18 tons. The maximum permissible load is 3,500 kilogrammes (about 3½ tons) which may be passengers or mail. The seating accommodation appeared to be for twenty-eight passengers, but several seats had been dismantled to make more space, and owing to the great increase in mail now carried, the number of passengers actually taken is less and varies with the amount of mail.

The inside is extremely comfortable. The seats consist of very well upholstered lounge chairs with metal frames, the angle of which can be easily adjusted by levers operated by the passenger as he sits in the seat. The position thus can be varied from an upright sitting position to a low recumbent one. These seats are in pairs on one side of the cabin and single on the other side, with a gangway between the sides. Thus two out of each three seats are actually beside a window. Each seat has a folding table in front of it, and is also provided with a rug for cold weather. Above is a tube ventilator which can be controlled from the seat, connecting with a warming and cooling system from the engine-room, providing warm air for cold weather and cold air for hot.

The front portion of the fuselage, and the extreme tail end are set apart for baggage and/or mail, with doors which can be locked. Next behind the forward baggage portion is the main entrance, with a door on either side. In this part of the body the flight clerk has his table, cupboard, etc., constituting a small office.

Between this and the main passengers' accommodation is a passage on one side of which is the steward's pantry, wash-up, etc., and on the other side two lavatories. Behind this passage is the main passengers' saloon or cabin, divided into two compartments. These compartments are more or less similar, but the passengers are permitted to smoke in the rear compartment but not in the forward one.

Before starting my journey I must admit to feeling qualms of nervousness as to how it would feel in a crash to be shut inside the plane and unable to get out. However I was soon relieved to observe that there are two emergency though narrow exits in the roof with ladders leading up to them — also every window can be kicked or punched open if necessary; they are specially constructed with this purpose in view. There are, in addition, three ordinary doorways. Thus one should never be trapped inside in the event of an emergency provided one is capable of moving. Certain meals are provided on board and others at hotels at the stopping-places. The meals provided on board are excellent, though facilities are
very limited. All food has to be put on at the previous landing-place in thermos flasks. There is no means of heating food or water on board, not even of boiling a kettle—a prevention against danger of fire, of course—even all hot water for washing-up purposes has to be put on in flasks. But in spite of these difficulties meals were excellent. Here is one dinner menu—hot soup, Sea of Galilee fish, grilled steak and vegetables, custard ice; and a breakfast—grape fruit, bacon and scrambled eggs, rolls and marmalade or jam, tea or coffee. Drinks can be obtained from the Steward at any time by those who want them.

After the first fifteen minutes or so in the air, one does not realize that one is flying. The noise is remarkably slight considering the four powerful engines. This is one of the greatest improvements since the early days of flying to Paris in 1920. Conversation can be quite easily and comfortably maintained in the cabin. In 1920 this was quite impossible. The idea of speed or movement is quite lost as soon as one is 500 feet or so up. Although averaging 150 to 170 miles per hour everything below looks stationary with an extraordinary atmosphere of peace. It is only when near the ground or taking off or landing that the speed is realized and everything appears to be racing past.

The landing speed of these machines is about seventy miles per hour, and with a weight of 18 tons, one realizes that the slightest error of judgment of height or in flattening out too soon or too late on the part of the pilot may be disastrous. The wings are fitted with a device to lessen the landing speed and diminish the risk of stalling if the speed falls too low on approaching or taking off. This device consists of mechanism whereby the rear section of the wing is mechanically tilted in relation to the rest of the wing, having the double effect of increasing the lift on the forepart of the plane and acting as a brake by increasing the wind resistance.

Leaving Lago di Bracciano we quickly rose to about 1,000 feet—we soon passed over the river Tiber, leaving Rome to the south. One could now see why the Tiber was always referred to in the Latin classics as the yellow Tiber. There was almost an ochre tinge about its putty coloured appearance from the air. We then headed for the Sabine Hills east of Rome, taking the shortest route to Brindisi. The plane was nearly three hours late at Bracciano and there was no possibility of making up this time before night. We could not expect to reach Brindisi, 314 miles, much before sunset. As we approached the Sabine Hills we ran into stormy weather and our Captain decided to climb over the storm clouds to avoid head winds. We steadily climbed above the clouds until we reached about 16,000 feet and the ground was quite lost below the cloud bank. At this altitude it became very cold, the windows became coated on the inside with moisture, which soon froze to solid ice. Our rugs became very
necessary. This was the only time during the whole period of flying that I felt any discomfort, not from air sickness, but from the altitude. It was a feeling of restlessness or shortness of breath, a feeling that I was not anxious to go any higher. It did not last more than five minutes and one soon got adjusted to the height. 12,000 feet or so is high enough for most landsmen to climb up to so rapidly. We soon passed over the Sabine Hills and the storm clouds, and coming down to about 2,000 feet, the Italian country towards the East coast appeared very peaceful and sunny. The coast was soon visible and our route took us parallel with it to Brindisi. A perfect landing was made in the harbour at about 18.15 hours. All the passengers were taken ashore in a motor boat, passports were examined and the flying boat refuelled. Cups of tea were given us at the examination shed. Subsequently I heard that a rapid consultation was held between the officers of the "Ceres" and those of the Imperial Airways ground staff as to the advisability of continuing to Athens, the next lap, that night. On receipt of good weather reports it was decided to do so, but the Imperial Airways engineer, who was travelling as a passenger, was, much to his disappointment, left behind at Brindisi owing to our total weight being, with him, more than our Captain was prepared to carry on a night flight over the route to Athens, some parts of this route passing over mountain ranges or through somewhat narrow passes between them. We took off just as the sun set, heading straight out to sea in the direction

"Ceres." Moonlight on the Shatt-al-Arab.

K. Comyn 59
From Rome to Karachi by Air

of Corfu across the straits of Otranto. As the coast of Italy faded, so did darkness set in. For nearly an hour we were flying in what appeared, from the passengers' cabin, complete darkness: one could see nothing below, above or on either side. Then we began to approach groups of islands in the Ionian sea off the coast of Greece, but all we could see were the navigation lights on the various headlands. Leaving the island of Cephalonia to the south we approached the Gulf of Patras, between the Peloponnese and the mainland of Greece. By this time a full moon had risen in a perfectly clear sky and as it gradually rose above the Eastern horizon it showed up the mountain ranges in silhouette on each side and lit up the sea below us. Proceeding up the Gulf of Patras and then the Gulf of Corinth, flying now fairly low, probably less than 1,000 feet, the scenery was beautiful in the extreme; on either shore here and there were towns and hamlets lit up by electric light, the bigger towns showed distinctly water fronts and quays with the town steeply sloped away from the front towards the mountain behind.

Flying over the Isthmus of Corinth and then the Saronic gulf with the Peloponnese to the west and Attica to the east we soon arrived at the Port of Athens, 369 miles from Brindisi, at about 21.30 hours. Here we stayed the night. After the usual customs and passport inspection, which did not take long, our baggage was sorted, such as we required for the night being packed into a large autobus, the remainder being left in the Imperial Airways shed. We drove into the city of Athens to the Hotel Grand Bretagne. Here after a bath an excellent dinner was served at 22.15 hours. This hotel is one of the most up-to-date I have been in, each bedroom being equipped with a splendid bathroom, and modern furniture, extensive cupboards built into the wall, etc. Our night here was a short one for we were called at 04.15 hours, a light breakfast of tea and rolls at 05.00 hours and left the hotel again by autobus at 05.30 hours.

We were soon aboard the "Ceres" again and took off at 06.00 hours, just as the sun was rising above the horizon. Soon after we left Athens we were over open sea and left land behind us. We were supplied with a good breakfast on board and the weather was good. At about 08.30 hours the steward came through and said we had better adjust our safety belts as we were approaching Crete and it might be "bumpy" there. Each seat has a safety strap belt which one can adjust quickly and which secures one firmly in the seat. As we flew over a belt of land between mountain ranges in Crete we met sudden gusts of headwind creating air pockets and various air currents. I was very glad to experience this for without such experience one could never believe it possible that a machine weighing 18 tons could be thrown about in the air, up, down and sideways, just as a cork is flung about on a whirlpool of water. This, however, did not last long, ten or fifteen minutes later we came down and landed in Mirabell
Bay, Crete. Here the sea was very choppy and landing and taking off were decidedly exciting. We took off after refuelling, a matter of thirty minutes, and again had considerable bumping until we were clear of Crete. From here to Alexandria was one of the most beautiful periods of the journey. The weather was perfect, the sky clear, the sea looking as blue as only the Eastern Mediterranean can look when calm—we were flying at about 2,000 feet and with no appreciable movement, the machine was so steady. Presently we met thin fleecy white clouds over which we passed with glimpses of blue sea through the gaps. At that height with nothing but sea and sky it is difficult to realize one is moving; on the contrary one has the illusion that one is stationary and the sea below, like a sheet of blue Venetian glass, fluted into minute ridges, is slowly moving. It is one of the most beautiful sights, this combination of brilliant sapphire blue sea below and the silvery fleecy clouds reflecting the sun upwards making them look like pure white cotton wool. Far below us from time to time could be seen our shadow just like a tiny hornet, now on the surface of the sea, now showing up more darkly on the white cloud. Soon, however, we were to say good-bye to this beautiful scene. As we approached Alexandria and the Egyptian coast the sea assumed a leaden hue due mainly to the silt coming down from the Nile and also the backwash from the shore belt.

(To be continued.)

Current Literature.

Crowden, Dr. G. P., and Angus, T. C. The Control of Indoor Environment by Air Conditioning with special reference to the Tropics. Journal of Institute of Heating and Ventilating Engineers.

A long paper of considerable interest to Europeans in the tropics, based on a detailed lecture given at the London School of Hygiene and Tropical Medicine.

Advances in studies on air-conditioning are rapidly making possible attainment of indoor environment compatible with comfort irrespective of outdoor conditions. The physical ability to maintain body temperature at a practical constant is well known; but not so well known is the mechanism to face wide variations, or the extent to which control and thermal comfort are influenced by external factors. With only slight variations the human body produces 400 B.Th.U. of heat per hour when resting, rising to five or six times more at heavy work.

But seeing that body temperature remains constant there must be heat transference to and from solid surroundings.