

SOME ASPECTS OF AN ATTEMPT TO FLY ROUND THE WORLD.

Abstract of Paper read by Major W. T. Blake,
Associate Member, at a Meeting of the Insti-
tution, held at the Royal Society of Arts,
Adelphi, on 12th October, 1923. Mr. H. B.
Molesworth in the Chair.

MAJOR BLAKE said :—

On the death of Sir Ross Smith, who was to have attempted a flight round the world, the project of carrying out the flight myself first came to my mind.

I chose May 24th, Empire Day, as a suitable date on which to start the flight, the invited crew consisting of Captain Macmillan, a Scotsman, as pilot, Lieut.-Col. L. E. Broome, an Englishman, as kinematograph operator, and myself, an Irishman, as leader of the expedition, spare pilot and navigator.

Colonel Broome, who became the third member, left us in Marseilles in order to proceed to Japan, where his special knowledge in these regions was used in the organisation of the Pacific part of our route. He was replaced by Mr. Geoffrey Malins, who accompanied us as photographer.

It was my original intention to obtain an amphibian type of machine which could be used over the entire journey, but no suitable aircraft was available, so I had to abandon this idea, and arranged with the Aircraft Disposal Company to supply four machines to cover the four stages of the route, three of them being sent out to await us until we arrived at Calcutta, Vancouver and Halifax, or Quebec, respectively.

The machines to be used were a D.H.9 fitted with a 240 h.p. Siddeley "Puma" engine from London to Calcutta; a Fairey C.3 seaplane with a 360 h.p. Rolls-Royce Eagle VIII motor from Calcutta to Vancouver; a

second D.H.9 from Vancouver to Winnipeg, Chicago, New York, and Halifax; and an F.3 flying boat with two 360 h.p. Rolls-Royce Eagle VIII engines for the Atlantic crossing.

Our route was planned to lie through France, Italy, Greece and thence across the Mediterranean to Egypt, after which the R.A.F. mail route across the Arabian desert would be followed to Baghdad. From Baghdad our line lay through Basra and along the Persian Gulf to Karachi and across India via Naiserabad, Delhi, and Allahabad to Calcutta.

This was the end of our first stage. The Fairey seaplane was to have taken us to Rangoon, Bangkok, Saigon and along the China coast via Hongkong and Shanghai to Japan, after which we should have proceeded via the Kurile Islands to Petrapavlovsk in Kamschatka and thence along the Aleutian Isles and the Alaskan coast to Vancouver. Here we should pick up the third machine and continue to Regina, after which the proposed route was either to Detroit and Chicago and thence to New York before heading back to Canada and Halifax, or Quebec, where we were to find the F. boat for the Atlantic crossing. The Atlantic was to be crossed by an entirely new route. The F.3 boat had not a very large range, about 750 miles being her maximum. We therefore proposed crossing Labrador to Rigolet, and thence flying across the Davis Strait to Arzuk in Greenland, afterwards following the coast route to Univik, and thence across the Greenland sea to Reykjavik. From thence we were to continue to England via the Farøe and Orkney Isles. On this route our longest stretch was only about 630 miles—a flight of which the machine was capable.

In the desolate place of the Aleutian Islands and Lapland, Greenland and Iceland we had arranged for a vessel to proceed ahead of us with supplies which would be dumped at the landing spot, and as soon as we appeared in sight the vessel would hurry on to the next station, knowing our exact whereabouts. For our part, having given our escort sufficient time to make the journey we should then carry out the next stage. If we were overdue more than a few hours the boat was to turn back and search for us. By this method we were sure of our supply and sure of help in case of emergency. This again I think the safest method of carrying out such a flight.

Weather conditions *en route* presented several problems. As we were flying through the summer we, of course, anticipated great heat during a large portion of the journey. In India we had to contend with the monsoons, and I was advised by the Air Ministry before leaving England that no machine had ever attempted to cross India during the monsoons, and it was considered impossible for any aeroplane to do so. This difficulty we had, however, to face, and when the time came, despite heavy rainstorms and the hottest summer that had been experienced during living memory, we crossed India with comparatively little trouble from the climatic conditions. It was not always pleasant flying, in fact the reverse was usually the case, but we did not find it impossible to get on because of the weather. In the North Pacific fogs begin to form in spring, and in September about one day in two is so misty

that the Islands are completely shrouded in fog. A little later the weather settles down for the winter. It was our intention to reach the Aleutian Islands before the winter storms came and so get through by choosing clear days for the various stages. In the North Atlantic the problem we had to face was the danger from ice, which begins to drift South in September, and by the end of October renders many of the harbours ice-bound.

We duly got off on May 24th, less than three hours after our scheduled time of departure. Mechanics were working on our machine up to the last possible minute.

For this hurried departure I have been much criticised, but I was determined to get off on the date stated both for sentimental reasons and also because every day's delay made the undertaking more difficult. Despite the many criticisms offered I cannot trace any of our misfortunes to the hurried start. The only result was a two days' delay in Paris whilst the rigging of the tail plane was being altered.

Nothing very eventful happened until we reached Lyons, from which aerodrome we intended crossing the Alps to Turin. In the course of conversation I learnt from one of the French Flying Corps officers the whereabouts of various aerodromes, in case we needed them. Among other places he gave me as possessing an aerodrome was Marseilles.

When we left Lyons it was rather misty, and it looked somewhat doubtful whether we should be able to cross the Alps or not. We decided, however, to carry on through the fog as far as Chambéry, where there was an emergency landing ground which we could use in case of necessity. As we flew on the mountains grew higher and higher and the mist grew thicker and thicker until we could see that to attempt to cross a huge mountain barrier like the Alps was asking for trouble, so we turned South intending to fly down the Rhone valley as far as Avignon and then turn East for Nice where we could replenish our tanks before proceeding to Italy.

All went well as we drifted down the Rhone over Romans and Avignon, and so on to Aix-en-Provence. Here the engine suddenly began to run extremely badly, vibrating and losing revolutions. It became necessary for us to land as soon as possible. Marseilles was the nearest place where we had been told there was an aerodrome. I therefore passed a note up to Macmillan telling him to make for Marseilles, where we could land.

When we reached the city the engine was on its last legs and the only place in which to land was a small racecourse with a meeting in progress. A ditch across the ground caused a broken undercarriage and propeller.

Unfortunately the space was so small that though we had got into it it was impossible for us to fly out of it again, and there was nothing to be done except to dismantle the machine and carry it to Istres, the French military aerodrome some 65 kilos. to the West. Incidentally I may say that this was the aerodrome having been described to us at Lyons as at Marseilles.

Commandant Saqui Sanes, in command of the French Corps d'Aviation at Istres, was kindness itself. He sent over a lorry and mechanics to help

us dismantle our machine and take it to Istres. Unfortunately in the process of dismantling many of our raf wires were damaged and our machine was dropped on her nose through the tail being lifted too high, and afterwards fell through the rotten floor of the lorry. After being bumped about over 65 kilos. of the worst possible brand of French road she was in rather a bad state when we got her to Istres, and after more than three weeks' delay, during which time we made one start but had to return through continued engine trouble, a new aeroplane was sent out to us from England in order that the other might be repaired and sent out to Vancouver to await our arrival there.

Here I may say that the engine trouble was found to be due to large quantities of grit and cinders introduced into the oil tanks and sumps. Also fresh supplies of oil afterwards obtained from Marseilles were found to contain large quantities of sawdust and grit.

Brindisi again brought us misfortune. We left Naples on Sunday and after crossing the Appenines at a height of about 10,000 feet we came to Brindisi, and there found two aerodromes, neither of which had landing signs or wind indicators, and both of which looked thoroughly deserted. After flying about a quarter of an hour we decided to land in the aerodrome which was nearer to the town. We made a perfect landing, but as we turned to taxi in, the machine ran into a ditch which we could not see on account of the high grass which covered the aerodrome. Once again we crashed the undercarriage and the propeller, but a week sufficed to get a new airscrew sent out from England, and we were able to continue our flight to Athens.

We had intended to cross the Arabian desert direct from Amman to Ramadie, but Air Vice-Marshal Ellingham wished us to be escorted by a machine of the R.A.F.

We were to pick up our escort, a Vickers "Vernon," at Ziza, a spot on the fringe of the desert 30 miles south of Amman, Amman itself being dangerous for heavily-loaded machines like ours, there being a precipice at one end over which aeroplanes have been known to fall.

Even at dawn the "Vernon" had difficulty in rising, running about a mile before she finally got into the air with the terrific load of petrol and stores which she was carrying. We followed after her as she turned East, heading towards the hills and the open desert.

After a time it became obvious that the "Vernon" could not climb to any height, and to us, flying behind, and 1,000 feet above her, it seemed as though she was running along the ground. She had to nose about before she could find a place to get through the barrier of hills, but shortly after this was accomplished we picked up the narrow trail from Amman. At 1,000 feet we could hardly see the track, but as the duty of finding it devolved upon our escort we were not greatly concerned with this.

After flying about two hours our escort circled round and landed having lost the track. After a short consultation it was decided that Macmillan

should take Hilton, the pilot of the "Vernon," who was the only one of the party who had had experience of the route, and go up in the D.H.9 to look for the lost trail.

The mud-flat on which we had settled was a mile or more in length by about half-a-mile wide, being a perfectly level surface, and so hard that even the wheels of the heavy "Vernon" did not sink into the ground. It was cracked all over by the heat of the sun, but made an excellent landing-place. After rain probably the reverse would be the case. This part of the desert has these mud-flats at frequent intervals, and they form most useful aerodromes.

Hilton and Macmillan returned in about an hour's time having been successful in their quest, and we proceeded to take off once more and continue the journey.

By this time the heat was terrific. The "Vernon" could not get far above the ground, and indeed during the day carried away two of her wireless aerials by bumping them on the rocks.

We were now leading, it having been decided that we should find the trail and that Hilton should follow in order to verify the fact that we were keeping on the right path.

Suddenly Malins tapped me on the shoulder, and pointed behind. I saw the "Vernon" gliding to earth, and we swung round to rejoin her. This time we landed on landing ground "O," one of the emergency aerodromes which were prepared at intervals all across the desert.

One of the "Vernon's" engines had developed trouble with her oil system, and it had to be put right before we could proceed. A temporary mast was at once erected and an aerial connected to the top of the "Vernon," after which the wireless operator commenced to send out messages giving our position to Cairo and Baghdad.

Towards evening the "Vernon" made another attempt to go on, but on starting up her engines the oil-pressure was found to be still bad and she had to abandon the attempt. For our part we decided to push on, knowing that the "Vernon" would follow as soon as possible, or that help could reach her if necessary, whilst our supply of food and water was sufficiently limited to make it inadvisable to lose much time in that arid waste. We took on board more petrol from the "Vernon," and continued our journey as far as El Jid, approximately in the middle of the Arabian desert, where there was a well, the only one before we reached Ramadie, some 300 miles distant. Here we decided to land in order to fill up the radiator and replenish our water-bottles.

During the following morning we flew along over a comparatively smooth sandy part of the desert intersected by wadis.

The track was easy to follow here and we only lost it on two occasions when we picked it up once more by making a wide circle.

About fifty miles from Ramadie the engine gave a warning pop as the petrol in the tank on which it was running became exhausted. We switched

on to our last tank, though it was highly improbable that we should be able to get in before being forced to descend. The hour's flight looking for the lost track from the mud-flat and our many circlings to pick up the trail had caused us to fly a considerable distance more than if we had followed the direct route.

At landing-ground "I," near the bitumen pools some twenty miles from Ramadie, we had to descend, Macmillan being afraid that if we went on we might be forced to land in rough country and so crash the machine.

However, on landing, we decided that it would need about four gallons of petrol to get us into Ramadie, so we proceeded to drain all the tanks, taking the few pints which were left in each and emptying them into one of the gravity tanks by means of a whisky bottle. We managed to collect not quite four gallons and decided to push on. Flying low in order not to waste time by climbing, we just got in to Ramadie, the petrol giving out almost directly after we landed.

Whilst at Shaibah a most excellent piece of work was carried out for us by one of the Flight-Sergeants. Our radiator, though of the tropical variety, was not sufficiently large to cool the engine in that extreme climate, and across the desert and down through Mesopotamia the water had been only just under boiling point. Working continually throughout the day the Flight-Sergeant soldered on an additional 160 square inches of cooling surface, making a most excellent job of it and causing our temperature to be reduced from about 99°C. to about 77°C. After that we had no more trouble with our cooling.

On our journey to India we had one forced landing on the Persian Gulf due to darkness overtaking us before we could reach Bunder Abbas, but arrived at Karachi without accident. Our proposed route across India and all our arrangements had been supplied to the Air Ministry before leaving England in order that the Indian authorities might be advised, but all our arrangements were overruled on arrival by a definite order from Headquarters of the R.A.F. instructing us to proceed by a different route. I afterwards found that this was so that we could sign for petrol, etc., at Amballa (Headquarters, R.A.F.), our signatures at the various stations not being considered sufficient. We were instructed to proceed via Sukkur and Multan to Amballa, and at the last moment, owing to floods, this was changed, and we were told to go via Jacobabad and Lahore. On arrival at Jacobabad we found the petrol store empty and had to go on to Sibi, where we collected enough to carry us up to Quetta, our petrol pumps having gone wrong and our undercarriage having crashed at Sibi. From there we came back to Sibi and on to Lahore and Amballa, where the engine began to show signs of wear. The rubber connections had rotted, and pieces continuously flaked off choking carburetter, pumps and pipes. We made four attempts to leave Amballa and three times put back owing to the carburetter being choked. This same trouble brought us down at Delhi and again at Agra, where we obtained a new engine from the Mahrajah of Bhartpur. I retired with

appendicitis at this point but Macmillan and Malins carried on to Calcutta, thus completing our first stage.

The Fairey seaplane had been erected for us by Major Kemp and mechanics of the R.A.F., but the floats leaked. Nevertheless, owing to the urgency of matters, Macmillan and Malins got off, but were wrecked in the Bay of Bengal, off Chittagong, narrowly escaping with their lives.

Thus ended the first attempt to fly round the world. We received the greatest kindness and help from all the foreign nations on our route and from the R.A.F. I have nothing but the highest praise for the work of the Aircraft Disposal Co., who got our D.H.9 ready so quickly, whilst had it not been for the excellent piloting of Macmillan we should not have got as far as we did. Malins, in addition to his camera work, proved that he was a first-rate mechanic.

In conclusion I should like to express my appreciation of the work done for us by the Royal Air Force in Egypt, Palestine, Iraq and India, in particular for the loan of R.A.F. mechanics, who, at Calcutta, working under the supervision of Major Kemp, by permission of the Indian Air Board and the Air Officer Commanding in Egypt, erected the Fairey seaplane against our arrival. I would like to contradict the impression that I complained about this work. I have nothing but the deepest gratitude and praise for the work done under extremely difficult circumstances.

The R.A.F. carried us almost the whole way from Egypt to Calcutta.

DISCUSSION.

COLONEL BELAIEW.—Can the lecturer give us any information as to the possibilities of flying over the Sahara?

MAJOR BLAKE.—I think that would be largely a question of petrol supply. If you could fly out of the bumps there would probably be no great discomfort. You would want a machine suited to the climate, and a very reliable engine. Desert flying is not at all comfortable in hot weather, but in most cases it is not impossible. The Air Force track across the Arabian desert was made in case of forced landings. If the machine comes down on the track, all rescuing machines have to do is to follow the track until the stranded aeroplane is reached. If it was off the track it would be impossible to find it in the surrounding desert. I certainly think that the difficulties of desert flying are not insurmountable.

MR. HOWARD-FLANDERS.—At what height are the bumps over the desert washed out?