

## ROBERT HOBART MAYO, O.B.E., M.A., *Fellow*

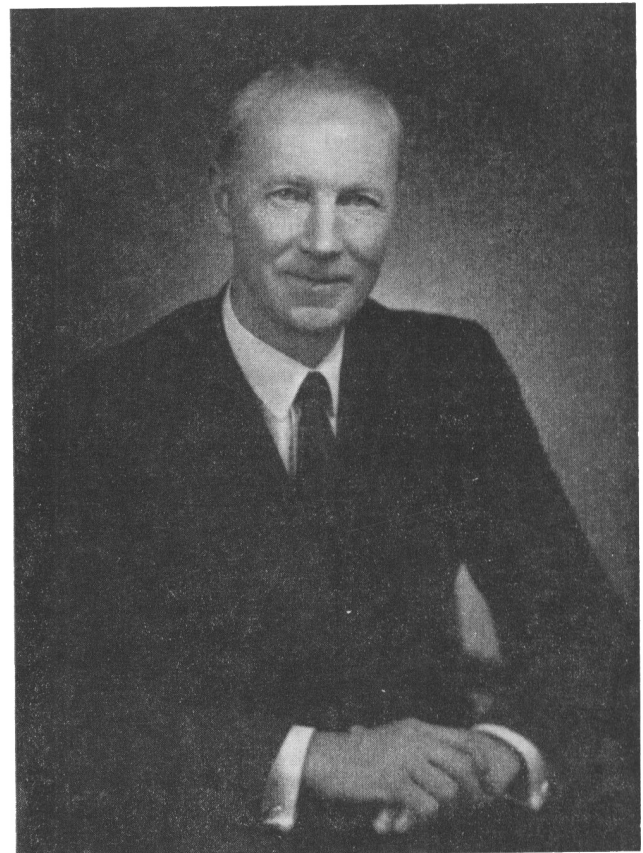
25th September 1890 - 26th February 1957

THE DEATH of Major Robert Hobart Mayo, O.B.E., *Fellow*, on 26th February 1957 at the relatively early age of 66, was a great loss to aviation. It is indeed a privilege to have the opportunity to pay tribute to a man whom I had grown to love and admire, for I had known Bob Mayo for well over forty years and during the greater part of that time I can claim to have known him intimately. He was an energetic and keen pioneer gifted with a quick and fertile brain—but that description alone would hardly do him justice.

To many of us who have been associated closely with the development of flying for a large number of years he seemed to be part of aviation itself, and without his personality and influence things would have been different, and different in a less pleasant way. It was not only his own personal contribution, great as that was, which counted. His infectious enthusiasm, his readiness to listen and be sympathetic to another's point of view, however much off the beam it might at first seem, and his kindly interest, inspired in others an enthusiasm which is, surely, an essential ingredient of success.

Bob Mayo's activities covered a wide field; educated at Perse School and Magdalene College, Cambridge, he was a brilliant student; he was Head of the Experimental Department, Royal Aircraft Factory, in 1914; he saw action in France with the Royal Flying Corps before he became a test pilot at Martlesham and from 1917-19 was Head of the Design (Aeroplane) Section of the Technical Department of the Air Ministry. After the war he became a designer and consultant. As a consulting aeronautical engineer he exerted a considerable influence on commercial flying, particularly on the aircraft operated by Imperial Airways and Instone Air Line between the wars, which culminated finally in the development of the "C" class flying boats with which the former blazed the trail of the Empire routes with such marked success. He was a most active member of the Royal Aeronautical Society, the Air League of the British Empire, the Royal Aero Club and other bodies. He was Chairman of the Air League of the British Empire in 1946 and Vice-President in 1957, Chairman of the Racing Records and Competitions Committee of the Royal Aero Club since 1949, Vice-President of the Federation Aeronautique Internationale and President d'Honneur of the Commission Sportive. He was also a former member of Council of the Institute of Transport.

Probably to many, Bob Mayo was best known for



Major R. H. Mayo.

*Hay Wrightson*

his work for sporting flying; not only British but international sporting flying owes much to him. He officiated at the 1929 Schneider Trophy Race and had served on the Racing, Records and Competitions Committee of the Royal Aero Club since 1934 and represented the Aero Club for many years on the F.A.I. He was one of the most authoritative members of the international Sporting Aviation Commission, serving as Chairman at one time, and was responsible for devising many of the regulations for various aeronautical contests and, also, for introducing a number of important modifications to the Code Sportive of the F.A.I.

But others are better equipped to tell of these things. To do so adequately would require the pages of a book

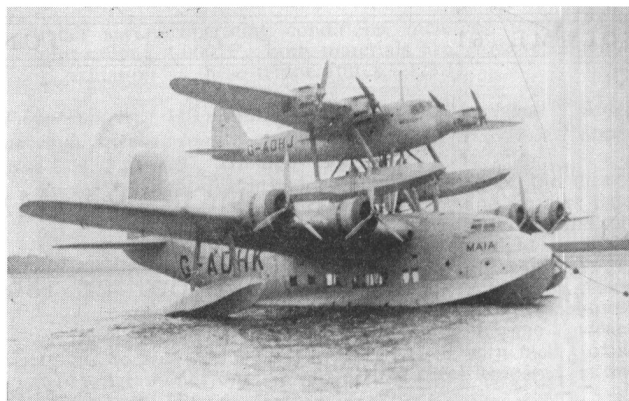
and I must limit myself to a short appreciation of a great man.

Since all the obituary notices I have read make reference to Mayo's connection with the aircraft which bore his name—the Short-Mayo Composite aeroplane—which I, with my co-pilot Harold Piper, had the satisfaction of flight testing, it may be considered fitting for me to tell a little of the inside story of that venture and of our close association in it. To be given the opportunity to do this in the *JOURNAL* of the Society gives me great pleasure.

Although the trials of the Composite were entirely successful, the process which, for a variety of reasons, took for those days the long time of ten months, was a testing time too for the nerves and tempers of all concerned. Virtually the testing of three prototypes was involved, each component separately, then the two combined, before the real purpose of the exercise, separation in flight, could be attempted. Here it is only fair to interpose that none of the delays was of a major nature but plenty of minor snags and difficulties had to be overcome—they were none-the-less very real ones. Our inability, for a month or two, to start all eight engines, some of which were of an experimental type having to be cranked by hand, in the two hours which tide conditions allowed us each day, was a most irritating experience. Another seemingly insuperable problem at first was to get an "inter-com" telephone that would function in the incredible noise. Then there were a number of indication lights, the purpose of which was to show that the separating forces and trim were in agreement with calculations. For long the lights indicated otherwise, but it was the lights that were in error, not the calculators. During the whole of that period Bob Mayo never showed the slightest sign of impatience, although he must have been on edge at the delay in proving the soundness of his latest idea. Instead, as was so typical of him, he confined himself to quiet encouragement and always dissuaded me from the temptation to take a chance.

Although perhaps the most publicised of Bob's works, to me the Composite was a very small part of his contribution to aviation. But lest it be thought that the idea was moribund from the start or was some sort of publicity stunt with, as things have turned out, only a limited future, I would like to make a few comments.

It may be that we are wiser now, but in 1937 one of the requirements for an airworthiness certificate was the ability to operate from small aerodromes, to "clear the sticks" as we said, in 600 metres. In other words, the designer was forced to design his aeroplane to suit the conditions. Now it would seem the conditions have to be altered to suit the limitations of the design. I suppose it is easier to design an aerodrome than an aeroplane, so this modern policy may be right, provided, of course, that money is available in sufficient quantity. But the fact remains that, using Mayo's idea the world distance record could be (and was) beaten without resource to breaking the, then strictly enforced, take-off regulations or the need for an expensive aerodrome.



The Short-Mayo Composite Aircraft which made its first separation flight in February 1938. The lower component, Maia, was basically an Empire flying boat with a loaded weight of 38,000 lb. and powered by four Bristol Pegasus X engines. The upper component, Mercury, a seaplane, was powered by four Napier-Halford Rapier V engines. In July 1938 Mercury set up a World's Distance record for seaplanes of 5,998 miles by flying from Dundee to Port Nolloth, South Africa, a record which still stands.

That the Composite was a flying boat-seaplane combination was quite immaterial and was so only for convenience. And all this before engines were endowed with fanciful short time powers for take-off and equipped with costly variable pitch propellers which enabled this power to be transformed so efficiently into thrust at the slower speeds.

No, in my view the idea was a perfectly sound one both technically and from an economic standpoint and had not the war been just around the corner, bringing with it a fantastic development of aviation in general, and high speed and heavy aircraft in particular, achieved it must be admitted at an incredible rate by the expenditure of a vast amount of money and effort, I think the Mayo Composite idea would have caught on commercially in a big way.

It is interesting to reflect what impact the jet engine would have had in these circumstances. It might well have been even more momentous.

I greatly miss a very good friend.

JOHN LANKESTER PARKER, *Fellow*.

*Sir George Dowty*, Hon.F.C.A.I., F.I.A.S., *Fellow*, writes:—

Bob Mayo, by which name he was known to all his personal friends, joined the Society, and was elected to full Fellowship on joining, in 1919.

He served as a Member of Council for a number of years from 1925-1931, 1933-1937, and again from 1943-1947; he was also a member of several of the Society's

Committees of Council over the years and was the Society's representative on the B.S.I. Aircraft Committee for nearly 20 years and on the Segrave Trophy Committee from 1946 until his death. But I make special reference to his splendid work on behalf of the Journal and Publications Committee where for many years we were closely associated. From the inception of this committee in 1944 he was always a keen and enthusiastic member. In the first days of this committee when great changes in the JOURNAL were under consideration—changes that many thought too revolutionary—he gave his full support to those changes and great encouragement to those who were later responsible for carrying out this work. All my colleagues on that committee would agree how much his services were appreciated.

Bob Mayo was unassuming and always kindly and helpful. His sound views and quiet persuasive manner endeared him to all his associates. Many years of co-operation leave me with a lasting impression of his value as a colleague, and leave me too with a happy appreciation of his human side.

His technical achievements were recognised by this Society when in 1939 he was awarded the Silver Medal of the Royal Aeronautical Society, and the citation for this award reads, "For his work leading to an advance in aeronautical design."

In the passing of Major Mayo the Society has lost one of its great members, and his colleagues have lost a good friend who will always be remembered with affection.

*J. Laurence Pritchard, Hon. Fellow, writes:—*

Major Mayo was a great friend of the Society, serving on its Council and Committees with that regularity of attendance which is often so difficult for voluntary workers on routine and rather dull Minutes. But he never failed to add something to the discussions or proposals. He was an active debater at the Society's lectures, and one who gave a number of significant lectures to the Society as well as to its Branches. He was here, there, and everywhere, at meetings, at formal and informal functions, and travelled widely on behalf of British aviation. His work on behalf of the Royal Aero Club alone would ensure him a niche in the Halls of Aeronautical Fame.

A quietly spoken man, he could hit out hard on occasion. He was very sound technically, and sloppy or ill-considered ideas often brought him to his feet in open debate. Nor was he afraid of attacking those quarters which might have been helpful to him.

On 29th November 1923 he lectured to the Society on "The Development of High Speed Aircraft." In the course of it Mayo intimated that all the world's records for speed and performance of aircraft had settled firmly into the grip of those nations whose technical control was not in the hands of the British Air Ministry. "British Air Policy has been fundamentally wrong since

the end of the war," he declared in his paper. "British Air Votes have not compared unfavourably with those of other nations, but the money has gone in every possible direction except those that matter—those of research and experiment." Mayo's attack on the Air Ministry gave a powerful lead to those who spoke in the ensuing discussion, Alec Ogilvie, Mervyn O'Gorman and others, which gave an impulse to the appointment, a year and a half later, of the first Director of Scientific Research at the Air Ministry, Mr. H. E. Wimperis.

When, in 1924, Lt. Col. Fell lectured on Light Aeroplane engine development, Mayo again expressed himself strongly. "I think the one thing which has been clearly demonstrated in the last three years is that the very small aeroplane and engine were quite useless from the practical point of view." In the debate he clashed with Captain Barnwell who believed in smaller engines than the lecturer. Mayo repeated his opinion in a lecture at Ipswich in March 1926. "In my view it is necessary to have at least 60-70 h.p. in order to obtain a reasonably good all-round machine. The latest machine of this type, which has met with considerable success, is the de Havilland Moth."

I often thought that Mayo's real strength was in presenting or arguing a technical case. He marshalled his facts clearly, and stated them shortly, and was not moved by strong and multitudinous opposition. I remember, as many members must, that remarkable and significant lecture given by Dr. Hele-Shaw and T. E. Beacham to the Society in April 1928 on their variable-pitch propeller. Hele-Shaw, who had been Professor of Engineering at Liverpool when Brearey was the Secretary of the Society (and indeed took the Chair at one of Brearey's lectures in the late 1880's) and had lectured on aviation before many of those at this lecture were born, was like a whale among minnows. The discussion was stormy and there were strong undercurrents of feeling. Officialdom was not in favour of the variable-pitch airscrew and talked much about its weight, its cost, its complication, and but little about what its value would be when well developed.

The opener of the discussion, an important figure in the airscrew world, declared "I am certainly not convinced that a strong case could be made for it in heavier-than-air craft . . . unless . . . one could obtain additional power from the engine of say, 1 h.p. for 2 lb. added weight, it would be better to put the extra weight into the engine and use a fixed pitch airscrew." Other official speakers followed in the same vein. Mayo stood up.

"Some of the criticisms made with regard to the weight were very misleading. Mr. Lynam, for instance, had suggested that for every 2 lb. of extra weight of the propeller one ought to get one extra h.p. and presumably he was basing this on the assumption that the weight of the power plant is as low as 2 lb. per h.p. . . . I have no knowledge of any power plant weighing as little as 2 lb. per h.p. . . . In order to obtain a true valuation of the merits of a V.P. propeller it is necessary to

consider the weight of the machine as a whole and not merely the weight of the engine . . . .”

In February 1927 Mayo had lectured to the Society on the Design of Commercial Aircraft from the operational point of view. It was an important paper at the time and drew a first class audience, for Mayo's reputation for talking air sense was high—and deservedly so. He was for many years, indeed, the leading consultant on commercial flying and from those who so wisely accepted his advice I hope that some day proper tribute will be paid to him, a tribute which cannot be fully paid in these present few pages.

There is not space here to quote much of Mayo's sound sense on aircraft design and use, but I think it should go on record that he lectured to the British Association on Trans-Atlantic Air Services in 1939. It was reprinted in the JOURNAL of the Society for that year, and is a first-class sober survey of the position at the time and the difficulties which lay ahead.

But I feel that Bob Mayo's greatest contribution is one which appears almost to have been forgotten. That contribution was one which did more to help the Society, when it was in the doldrums of financial waters, than anything which had happened in its previous long history.

Mayo was appointed European Representative of the Daniel Guggenheim Fund for the Promotion of Aeronautics. This Fund was founded in the twenties, with its headquarters in New York, to help aeronautical education, aeronautical science, and to help those who were concerned with air transport and aeronautical development generally.

It was through the help of Mayo, who at that time

was on the Council of the Society and knew its difficulties, that a grant was made of \$5,000 in 1926, followed by similar ones in 1927 and 1928, and one of \$10,000 in 1929. Mayo greatly assisted me in preparing the letters which would make a successful appeal to the Fund.

On 5th December 1929 I received a formal letter from him about the grants and in this letter he wrote that he had received a letter from Harry Guggenheim, Chairman of the Fund, of which the following was an extract: “I take great pleasure in informing you that a grant of \$10,000 was made to the Royal Aeronautical Society in order to enable that distinguished organisation to carry on for an additional two years that part of its work which has been financed in the past by the Fund.”

The greater part of the \$25,000 grant were used to enlarge the JOURNAL and to carry out the chief function of the Society, the dissemination of technical information.

On 9th December 1929 I wrote a formal letter from the Council to Mayo.

It first of all acknowledged the generous gift from the Fund and continued: “Now that you have returned to England the Council have instructed me to write to you and thank you for the very great efforts which you have always made on behalf of the Society with the Trustees of the Guggenheim Fund. The Council feel that much of the interest which the Trustees have shown in the Society has been due to the able way in which you have presented the Society's case and that it is largely due indeed to your own personal efforts that the Society is now in a position when it can push forward with the many projects which it has had in view during the past few years.”