

EMPIRE COMMUNICATIONS.

Paper read by A. H. Ashbolt, Esq., Agent General for Tasmania, at the 6th Annual Meeting of the Institution, at The Engineers' Club, Coventry Street, W.1, on 24th March, 1924. Mr. W. O. Manning in the Chair.

The CHAIRMAN said :—

I am sure that the Institution has every cause for congratulation in having induced Mr. Ashbolt to give a paper on " Empire Communications." In a large Empire such as ours there is no more important subject than the communication between its different parts. There are few people more qualified than Mr. Ashbolt to inform us on the subject of the way in which airships can be used for this purpose, and I therefore have very much pleasure in now calling upon Mr. Ashbolt to read his paper.

MR. ASHBOLT said :

It has been suggested that I should outline some of the necessities for speeding up our Imperial connections and possibilities of airships in this direction. As some of those present may remember, it was my conception in May, 1921, that the material assets together with the personnel and vast experience gained during the War at a cost of about £40,000,000 should not be scrapped, as then determined by the Air Ministry of the day, but utilised by the British and Dominion Governments as the nucleus for the establishment of an Imperial Airship Service to link up the Motherland with her scattered Empire. That these efforts succeeded in preventing the break-up of our principal airports, and disposal of existing ships, plant and machinery as scrap, is some satisfaction, but I much regret the long delay that has since ensued, the result of which is that so much of the personnel has been dispersed, and it will be difficult to get them together again. However, out of the crash of my proposals a scheme of private enterprise with Government support was evolved by Commander Burney, whose proposals are now under consideration by the Labour Government in succession to the Conservative Government that had practically come to agreement with Commander Burney for the immediate establishment of a line between London and India as the first link in the Imperial chain. Unfortunately, there are still inhabitants of this wonderful old motherland of our Empire who still ask—Where is the necessity for spending money we can ill afford in trying to save a few days between England, and, say, Australia, when steamships have so improved and wireless on the point of vast expansion? Also, if it

be decided that communication must be sped up—are airships the best means to bring same about? Can airships be run regularly, safely, and on a commercial basis? It is my duty in the time at my disposal to try and answer those questions.

In the first place, steamship communication with Australia, New Zealand, and several other parts of the Empire is to-day no quicker than 30 years ago. In fact, to Australia, it is a day slower, notwithstanding the fact that the steamers of to-day are larger, more luxurious and better equipped. The economic speed of the ordinary steam-driven vessel has been reached on this route and cannot be materially improved without a considerable increase in the rates for passengers and cargo. Wireless will undoubtedly help bridge the existing gap, but it does not permit of the personal contact and visual evidence of the other fellow's atmosphere which is so essential to complete understanding. It must never be forgotten either that the War produced a revolution in Great Britain, quite as great as the French revolution of 1789, and the present-day revolutions of Germany and Russia. The extension of the franchise in recognition of their war services to practically all adults has made it possible for any section of the community correctly forecasting the pulse of the people to become our Constitutional rulers instead of the previously recognised class of rulers who only differed as to the shibboleths guarding their hereditary rights. With this recognition of the individual, also came recognition of the rights of the great overseas Dominions, and the necessity for consultation with these independent States within the British Empire upon all matters of common interest. Time, and not distance, therefore, becomes the unit of intercourse and the great fact that, if our Empire is to speak to the nations of the World with one voice, we can only do so if it be possible to get together quickly, thrash out our differences of opinion, and agree upon policies that will be for the good of the Empire as a whole rather than for any particular unit. Such an ideal is impossible with present communications and any delay in speeding these up must add to the detriment of the Empire. It is my firm belief that every £1,000 saved by delay to-day will cost us many thousands in the near future, hence the necessity for spending money that is admittedly hard to find. But even so, the bulk of such expenditure will provide work for British workmen, reducing the defiling cost of doles and enabling our workmen to give of their best instead of sinking into further depths of despair. Then in more detail is the undoubted fact that up to the War period British manufacturers had the World as buyers for their manufactures and to pay for our imports (largely foodstuffs), great Britain exported not less than one-third of her total manufactures. To-day, however, the position is infinitely worse, as with a considerably reduced World purchasing power the manufacturing capacity of Great Britain (if working full time) is probably almost double that of 1913 and to pay our huge indebtedness these largely increased plants should be kept fully employed. As, however, most other nations are endeavouring to provide work for their own manufactures, either increasing the tariff wall, by licence or prohibition, it is gradually being

brought home to England that her best buyers and the only markets capable of immediate expansion are her own Dominions. At the same time these Dominion markets are being intensely cultivated by foreign interest and if Great Britain is to hold her present percentage of this trade, let alone increase it, her manufacturers must get considerably closer to the Dominion buyers than they have bothered to do in the past. With his own big local market requiring personal attention it is difficult in most, and impossible in many, cases, for the principal with existing communications to spend the time overseas necessary to obtain the intimate knowledge of his customers and their peculiarities, without which he cannot obtain the maximum amount of their orders. In the reverse way the same hampering conditions prevent many Dominion buyers obtaining personal knowledge of Great Britain, her conditions and individuals. Then, in addition to the political and commercial interests referred to, is the third fact that neither our political nor commercial stability is worth three years' purchase unless our Services are in a position to say and enforce "Hands off" if any envious nation attempts to take from us that which is ours. The last war showed the possibility that control of the air may in any future war be easily the dominating and determining factor. Now I don't want to open a controversy as to whether Great Britain should concentrate on aeroplanes or airships. Personally, I believe that for Military purposes the aeroplane is an easy first, but for the Navy, the position is reversed, and we have the authority of Lord Jellicoe himself for recording his belief that one good airship is worth half-a-dozen cruisers for reconnaissance work, the protection of trade routes and our mercantile fleets. To my mind aeroplanes and airships are complementary to each other both for commercial and Service purposes, and the establishment of Imperial Airship Services over the long distances to connect up our Empire will provide the training ground and the personnel which will be wanted within five minutes of any future declaration of war if such should at any time unfortunately materialise.

Well established commercial air services will be as valuable in the future as our Mercantile Marine has been in the past for providing trained men at a moment's notice. It should be a term of any contract arranged for such commercial services, whether aeroplane or airship, that craft, stations, plant and personnel should, in time of need, revert to the State upon terms equitable to both sides.

My next question as to airships being the best means to speed up over long distances, their safety and commercial prospects, can be answered to some extent by the experience of the past, notwithstanding the losses of R.38 and the Dixmude. The primary reason for both disasters is the same, viz., structural weakness through both ships being built to obtain maximum ceilings and then asked to do work for which they were not intended. Everything was sacrificed to lightness and it is certain and obvious that striving after maximum lightness would not be attempted for vessels built for commercial running and more particularly so, as for naval work (in case of war) extreme height is not required and a boat built for long distance com-

munications would be almost ideal for reconnaissance work, escorting mercantile fleets, and as aeroplane carriers. The running cost of a cruiser for similar work to cover the same area would be seventy times that of the airship. Transference of this class of work to airships would appreciably reduce naval expenditure. For long distance communications they are at present the only craft capable of sustained voyages at greatly increased speeds over steamships: An airship of 150 tons displacement, carrying no cargo, would have a range of 1,500 miles at 80 miles per hour, greater than any existing steamship could cover without re-fuelling even at 20 m.p.h. As a matter of fact, an airship has a greater range of action at high speed than any mechanical appliance yet devised. As to their ability to run to time-table there is little doubt on this point provided ground organisation is sound and the meteorological arrangements complete. A full knowledge of the World's air currents is essential and once these are charted and the movements of gales and storms wirelessed to the airship there is no reason why a ship should be caught in any disturbance and a good navigator would utilise the regular trade winds and the outskirts of a storm to help him on his way. The question of safety will for a few years loom largely in the mind of the intending traveller and it will be advisable that all new airships should err on the side of strength and stability until practical experience over a long period enables our designers to know, and not to theorise upon, the stresses set up by aerodynamic conditions over such a length of ship, under varying atmospheric pressures. The risk of fire will be reduced to almost nil by using heavy oil as fuel instead of petrol, whilst the use of such heavy oil, or even kerosene and hydrogen, will appreciably reduce the fuel costs, the former by approximately 75 per cent. and the latter by 33 per cent. as against petrol.

On the commercial prospects it is impossible to be as definite, but it may be safely said that the introduction of the mooring mast, as conceived by Major Scott, had made airships a commercial proposition, but it will have to be fully tried out before investors are satisfied on this point. By the aid of an experimental mast it has been proved:—That a ship can ride out in gales up to 60 m.p.h. even with hail and snow squalls in addition.

That a ship can leave a mast in winds of 40 m.p.h.

That a ship can berth at a mast in winds of 32 m.p.h.

That a ship can have its ordinary running repairs done whilst moored at a mast.

And there is no doubt that with a properly equipped and full-sized mast these figures will be considerably improved upon. The big cost of huge docking sheds is consequently reduced to a minimum, but even so the cost of the ground organisation of an Empire Service to run one or two ships only will amount to very large figures and until the whole proposition is fully tested out under ordinary time-table conditions, it will be difficult to get commercial interests to undertake the full responsibility of what might be termed the first two years' experimental period. Figures have been produced to show possible commercial results; I myself am responsible for some of these esti-

mates, but such are without the foundation of fact and are forecasts, and so do not carry weight with financial houses. To-day I do not propose to go into this question but would advise those interested to make a careful study of the position as detailed by Major Scott in his paper of July 29th, 1923, read before the International Air Congress, in London.

In the interests of the Empire, therefore, it will be necessary that the Government take a hand during this period either by close association with commercial interests in the form of guaranteeing portions of the capital and by subsidy or by taking all risks themselves. Knowing how close the late Government was to agreement with Commander Burney, I was very gratified to hear, by the reply made on February 18th, 1924, by Mr. Leach, the Under-Secretary for Air, to the question of Sir Samuel Hoare, the late Minister for Air, "that the present Government intimated their decision that there was no change in the policy of the late Ministry as regards air defence, and that they were also anxious to foster Civil Aviation, and that they were vitally interested in the subject of airships, and would do all they could to encourage and foster that branch of aviation."

With this declaration I must close by urging the Government to act quickly and put an end to the intolerable delay and procrastination of the past three years. We cannot let our Empire drift and the time has now come when our Empire trade must be quickly developed to its maximum. Airships can be a big factor in that development and simultaneously strengthen our Navy whilst decreasing its cost.

Since I wrote out these few words I have had interviews with the Secretary for Air and with other members of the Cabinet, and I am assured by them that they are keenly interested in the subject of speeding up air communications. They have definitely decided not to drop airships, but the method by which they will get the support of the Government is not yet determined. They, however, gave me the most definite assurance that they would as soon as possible get on with the matter, and when they have made up their minds as to how to support airships, they will then be prepared to give a supplementary measure regarding the proposals which have been before them for three years. I can only hope that definite proposals will soon be put forward before the House and duly sanctioned.

DISCUSSION.

COMMANDER BOOTHBY :—I think we all agree with Mr. Ashbolt's remarks as to the possibilities of a service to India, and if the route is properly surveyed first, there is no doubt that it would be a success. I do think that the Air Ministry should do as the Admiralty has done, and put a survey party on to the