The Era of Universal Flying

Future Method of Transportation

THANKS to radio and the accuracy thereby given to aerial navigation, we will be able in the future to fly from New Zealand to London in very quick time, is the prediction made by Captain H. Findlay, N.Z.P.A.F., O.C. Wigram Aerodrome, in the course of a very comprehensive and interesting talk given from 3YA. The recent remarkable flight from San Francisco to Australia and the prospective flight of the Southern Cross to New Zealand give a special interest to this talk which is reproduced in our columns in response to a number of requests.

IN to-night's talk on aviation I propose to attempt the difficult, but fascinating task of dipping in to the future. Before the war the great majority of people in the world had never seen an aeroplane, still less did they believe that aeroplanes could be of use to the general public. But the old order has changed and the aeroplane has proved its worth and many people have already flown in them. Consequently one has the advantage of addressing listeners who at any rate agree that flying has a future. It is a curious thing that in transport vehicles there seems to be some relationship between minutes and miles in round figures. Our fastest liners travel at or about two minutes to the mile. A mile a minute seems to be the high water mark for long distance run by train. One hundred and twenty miles an hour or two miles a minute is the aim for the cruising speed of the present day commercial aircraft, and 180 m.p.h. or three miles a minute for the modern single-seater fighters.

In the last Schneider trophy race a speed of 300 m.p.h., or five miles a minute, was attained. Now it is almost an axiom, at any rate in the early days of any method of locomotion that the record speed of to-day is the ordinary travelling speed of to-morrow.

Possible Developments.

BUT this holds good only up to a point for there is obviously a limit of speed which can only be reached by specially built or specially tuned vehicles. For instance no one would imagine that the 200 m.p.h. achieved by Major Seagrave recently will be the ordinary travelling speed of a motor-car. Flying is still so young compared with motoring, that it is quite reasonable to imagine that 300 miles per hour is not anything like, or near the limit of flying speed as 200 m.p.h. is to the limit of motoring speed. In fact, scientists tell us that if we can reach a height of 40,000 or 50,000 feet, the air is so thin that it offers practically no head resistance and almost any speed can be attained. This would entail an airtight compartment fed with oxygen and maintained at atmospheric pressure for pilot and passengers, and altogether it sounds a most uncomfortable form of locomotion, so that I think most people would be content to travel at a mere five miles a minute within seeing distance of the ground.

Therefore I propose to leave out the possibilities of this purely hypothetical scientific aircraft and confine our prophecies to what we know can actually be done. Mr. Mitchell, the designer of the seaplane which won the Schneider trophy for England, has stated that he can see several ways in which the speed of this machine can be improved. Consequently we may anticipate with every confidence speeds of 360 m.p.h., or six miles a minute, as a quite possible record speed. Anyway, we can look to something around 240 m.p.h. as a reasonable travelling speed for aircraft of the future, whether civil or military. Of course, these calculations are based on the assumption that we shall still be using the ordinary internal combustion engine as we know it to-day, but it is quite feasable that some entirely new form of power plant may be discovered in the future.

An internal combustion turbine is one possibility, and it is possible that there may be a wireless distribution of power, and we could then pick up this power from a central broadcasting station as easily as we pick up the concerts from 3YA.

The Existing Engine.

HOWEVER, again we shall leave out of our discussion these possible developments, and confine ourselves to the use of the existing four or two-stroke engine. When flying began seriously some eighteen years ago, aero engines weighed anything between 4 and 8lb. per horse-power. To-day they are down to 1lb. per horse-power, and there appears to be every prospect of getting them down to even less than this. This in itself would greatly facilitate high speed flying. I am not suggesting that within the next few years 240 m.p.h. is going to be the ordinary touring speed of aeroplanes. But we know that if it is worth while we can produce machines which will do 240 m.p.h., and do it with the utmost reliability. Let us consider what is going to make it worth while. For the past five years an air mail has been operating between New York and San Francisco, a distance of 3000 miles, with about 90 per cent. regularity and averaging just on 100 miles an hour. And this has been done with old machines of war-time design.

Now take the relatively small distance in our own country. The distance from the Bluff to Auckland by air is about 830 miles; so given the 240 m.p.h. machine, this could be accomplished in 3½ hours.

Photo Andrews.

CAPTAIN H. FINDLAY.

Dunedin to Christchurch in 45 minutes, Christchurch to Wellington in well under the hour, and Wellington to Auckland in an hour and a half.

It is not necessary for me to dwell on the countless prospects thus opened up. But striking as this elimination of distance appears in a small country like ours, the results in the larger countries such as Australia and Canada and on the

London in 50 Hours.

WHEREAS here it would mean a saving of hours or even days in these larger areas the saving in time would amount to weeks compared with the present system of transport. For instance, if we had a proper relay of machines and pilots and an adequately-lighted airway (which will assuredly come) we could reach London in 50 hours, or allowing for meals and changing over of machines, say 2½ days.

Naturally we shall have trans-oceanic air services some day, and this will, of course, be done with big flying-boats. We shall probably come back to quite an old idea in which the wings, engines, and tail of the flying boat will be built as one unit, the hull being a seaworthy motor-boat which is clamped to it. This is quite a feasable engineering proposition, and has the advantage that when the machine reaches the terminal harbour it can alight on the water, moor its wing and tail unit to buoys and the boat hull can then proceed up to the dock to unload and reload passengers and freight.

Future Methods.

THIS, I imagine, will be the future method of transportation between here and Australia, and if our estimated speed of 240 m.p.h. is maintained, the trip will take about five hours, which would bring Sydney closer to Christchurch than, say, Blenheim, is under present conditions. Thus it will be quite possible to leave New Zealand one day, transact business in Sydney, and return the following day. So much for high speeds of the future, but we must have reasonable safety before we can expect people to travel by air as a habit.

In my talk a fortnight ago I endeavoured to show that with the development of multi-engined machines, slotted wings, and a properly-equipped airway, organised commercial flying is at least as safe as motoring, and with continual improvements we shall get greater and greater reliability. This question of the comparative safety of modern flying cannot be stressed too much, as the impression that flying is unduly dangerous is the biggest hurdle which has to be overcome before the aeroplane is accepted as an ordinary vehicle of transport. Having achieved speed and safety, there is really no limit to the future prospects of flying.

The history of all other methods of transport will repeat itself.

Safety will increase the number of people who want to fly, and the increase in the number of people who want to fly will provide the necessary stimulus to produce more machines, and this in turn will reduce the cost of manufacture. The cost of a light aeroplane in England at present is £600, but when there is sufficient demand to warrant mass production they should be produced at £200 or £300 or even cheaper. Then will come the dawn of the era of universal flying.

Possibilities—Not Prophecies.

NOW these are not wild prophecies but actual possibilities which could be achieved within a year or two could sufficient interest be stimulated to warrant the best brains and enough capital being used to this end. That universal flying will come in time is hardly a matter of doubt, but the inevitable prejudices and lethargy which always impedes the development of new ideas will first have to be overcome, and the extraordinary interest displayed in aeronautical matters to-day shows that this is now being done. I think that the next ten years will see such an advance in flying that all our old ideas of transportation will be revolutionised.

In conclusion I will venture to suggest that all city, county and borough councils who would keep ahead of the time and make provision for the future should set aside sites for aerodromes forthwith. If this is not done now it will be difficult to obtain suitable sites for an aerodrome near the towns concerned, as the value of the property will increase and the ground itself will be built over. In the future, cities and towns without an aerodrome will be as handicapped as they would be to-day without railway or shipping facilities.

To Blenheim belongs the honour of having the first municipally owned aerodrome in New Zealand, but I feel sure that other local bodies will soon see the wisdom of this example and thus provide a network of aerodromes throughout the country.

WELLINGTON RADIO SOCIETY

GENERAL MEETING

THE Amateur Radio Society of Wellington held a general meeting in the Dominion Farmers' Institute on Wednesday evening, June 20. Mr. Byron Brown, the newly-elected president, occupied the chair, and there were about two-dozen members present. Mr. J. Ball, editor-announcer for 2YA, Wellington, was in attendance on special invitation. The following donations were acknowledged:—Mr. Byron Brown, £5 5s.; Mr. D. A. Aiken, £2 2s.; Captain C. J. Foster, £1 1s.; Mr. S. George Nathan, £1 1s.

The acting honorary secretary, Mr. Jones, read a copy of a congratulatory cablegram sent on behalf of the society to Mr. Warner, radio operator on the trans-Pacific aeroplane Southern Cross during the great flight from San Francisco to Sydney.

Interference.

The secretary reported that a good deal of interference was being caused in and around Wellington by at least three people who were practising amateur transmission in Wellington without having first obtained a license. He had been in communication with the Post and Telegraph Department officials on the subject, and the latter, he said, were fully alive to the situation. Drastic action would be taken against amateur transmitters who were operating during New Zealand broadcasting hours.

More 2YA Features.

A letter was received from the Radio Broadcasting Company stating that arrangements were being made to test the possibilities of a relay from a Wellington theatre. The company reported that it had not been able to come to a satisfactory arrangement for the broadcasting of organ music from the Wellington Town Hall.

With regard to the society's request that the Sunday night sessions be extended till 10 o'clock, the Broadcasting Company replied that on such occasions when matter particularly suitable for broadcasting was available arrangements would be made to continue the Sunday night sessions until 10 o'clock. The secretary of the society stated that he had personally urged the use of high-class gramophone items on conclusion of the Sunday night concert relays, one of which on the previous Sunday had concluded at 9.20 o'clock.

The meeting passed a resolution renewing the Society's request to the Broadcasting Company that the Sunday night sessions be continued until 10 o'clock.

Inspection of Sets.

The Society lately asked the P. and T. Department to arrange if possible for the inspection of licensees' receiving sets at their homes to ascertain whether neutralised sets are correctly neutralised, with a view to reducing the howling valve nuisance around Wellington. A letter was read from the secretary of the General Post Office stating that the practicability of the suggestion was being investigated, and a report would be furnished in due course. Instances had been reported in the Press in which neutralised sets were definitely, incorrectly neutralised, and were potent instruments of interferenec with other listeners, and the committee of the Society after careful deliberation, considered that the only practical method of locating such trouble-causers was for radio inspectors to visit the homes of licensees and test their sets. If a set were found not to be neutralised correctly the owner could be promptly served with a printed warning that unless the set were properly neutralised within a stated period action would be taken under the Government regulations.

Is There Distortion.

A general discussion ensued on the subject of whether there was distortion in the transmission by 2YA, Wellington. Mr Byron Brown stated that reception of 2YA at his home in Otaki was of excellent tone, free from distortion, and of tremendous volume. Others residing in and around Wellington reported diversely. Some asserted that distortion was only slight and occasional, others alleged it was rather frequent and severe, and some said distortion was apparent only in the case of vocal duets, trios, etc. One member stated that he was informed that there was one good microphone in the studio, and that the others were faulty, and inclined to blast.

Mr Ball, editor-announcer at 2YA, said that the microphones were not faulty, but differed in characteristics. The differences of the microphones were corrected in the studios by placing the vocalist nearer or further from the microphone, as the case demanded.

The Exponential Horn.

One listener reported to the meeting that he had devoted nine months to careful experimentation in tone reproduction, and had built an exponential horn according to the most approved design. He found that at times there was slight distortion from 2YA occasionally, but his experience led him to believe that 90 per cent. of the complaints regarding distortion were due to the listeners sets. It was pointed out by one member that distortion in reception could be caused by power-line leakages, X-ray, and violet ray equipment, amateur transmission, battery-chargers of the vibratory type, etc. The overloading of the detector valve was also a cause of distortion.

A Listeners' Query.

Uproarious laughter was caused by one member, who resides about one mile and a quarter from 2YA, Wellington, complaining in all seriousness that he had to move his tuning dial "fully half an inch" before he could cut out 2YA. What he wanted to know was "Why, if a station is supposed to be on a certain point on a dial, the dial has to be moved fully half an inch before the station can be cut out. It's not right, and I'd like to know the reason why."

It was explained to the member that owing to his proximity to so powerful a station he was exceedingly fortunate to be able to drop that station in only a half an inch movement of his dial. The field of the station was so powerful that owing to its proximity shock excitation and the power of the side bands of the carrier wave always rendered it exceedingly difficult to tune out the station without a wide movement of the tuning dial of a receiving set. In fact, many sets in Wellington would bring in 2YA right around the dials. This disability, however, quickly decreased the further the receiving set was away from 2YA. The breadth of tuning would decrease in exact proportion to the square of the distance the receiving set was away from 2YA.

Concert to be Organised.

A proposal by Mr. R. L. Jones to organise a concert under the auspices of the society for transmission from 2YA, Wellington, was adopted with thanks, provided that all requirements of the Broadcasting Company regarding auditions, etc., are complied with and that any fees required by the performers shall be paid by the company.

The Secretaryship.

The acting-secretary, Mr. Jones, asked to be relieved of his post. No one, however, would undertake the duties of secretaryship, so Mr. Jones agreed to continue as acting-secretary until the next meeting.

The membership roll of the society was reported to stand at about 330.

Short-wave Receivers.

Mr. J. Ball, editor-announcer for 2YA, Wellington, stated that the Broadcasting Company, with the permission of the Harbour Board, was erecting a short-wave receiving station on the board's property on Mount Victoria, for the purpose of picking up and rebroadcasting whatever short-wave transmissions were available from overseas. An endeavour would be made to relay the ringside description or reports of the world's championship fight in New York next month between Tunney and Heeney.