

Enclosure.

EXAMINATION SITES FOR AIRSHIP-BASES IN DOMINIONS AND COLONIES.

Approximate Dates of Proposed Visits by Airship and Meteorological Officers of the Air Ministry.

Flight-Lieutenant S. Nixon, O.B.E., R.A.F.—Leave Liverpool by s.s. "Appam," January 19; arrive Freetown, January 29 (twelve days at Freetown); leave Freetown by s.s. "Abinsi," February 11; arrive Bathurst, February 13 (twenty days at Bathurst)*; leave Bathurst by s.s. "Ediba," March 5; arrive Las Palmas, March 10 (five days at Las Palmas); leave Las Palmas, "Llanstephen Castle," March 16; Tenerife; arrive Capetown, April 1 (twenty-three days in South Africa); leave Durban, April 24; arrive Mombasa, April 30 (fourteen days at Mombasa); leave Mombasa, May 14; arrive Durban, May 21.

Group Captain P. F. M. Fellowes, D.S.O., A.D.C., R.A.F., and Mr. M. A. Giblett.—Leave Southampton, "Armada Castle," May 6; arrive Capetown, May 23 (eighteen days in South Africa).

Group Captain Fellowes, Mr. Giblett, and Flight-Lieutenant Nixon.†—Leave Capetown, "Ascanius," June 10; arrive Perth, June 26 (four to six weeks in Australia and possibly New Zealand); leave Australia, August 12; arrive Colombo, August 22 (seven days in Ceylon); leave Ceylon, August 30; arrive Bombay, September 1 (four weeks in India, including visit to Karachi); leave Bombay, September 30; arrive Egypt, October 9 (one week in Egypt); leave Egypt, October 16; arrive England, October 23.

Air Ministry, 5th January, 1927.

TECHNICAL AND OPERATIONAL REQUIREMENTS OF SITE FOR AIRSHIP-BASE.

Weather Conditions.

1. The site should be selected so far as possible with a view to good weather conditions. There should be no hills or mountain-ranges within a distance of ten miles, as these are likely to cause disturbed currents, which may be troublesome when ballasting up or landing an airship. The local weather conditions are important, especially in selecting a site for a shed base with docking facilities, where an airship may have to be man-handled into the shed. They are not of so great consequence for an intermediate base with mooring-mast only, as the airship would always be flown from the mast and not handled on the ground. At the same time meteorological conditions in the vicinity might affect the regularity of a service: *i.e.*, a locality in which thunderstorms are prevalent would generally be unsuitable.

Altitude.

2. A commercial airship will normally fly at a height of 2,500–3,000 ft. While there is no difficulty in flying higher than this, every 1,000 ft. of height means a loss of about one-thirtieth of the total lift, and consequently diminishes the airship's carrying-capacity. It follows, therefore, that a site for an airship-base should be situated as near as possible at sea-level, since if an airship-base is situated 2,000 ft. above sea-level it would have less useful lift for freight. For the same reason the base should, if possible, not be sited so as to necessitate flying over mountain-ranges at the outset or in the early part of the journey, since ascent can only be made by reducing the load of the airship, which is uneconomic from the operating point of view. On the other hand, when an airship has been flying for some time and has used up a certain weight of fuel an increase of height can be gained without the same loss of useful load.

Area of Site.

3. A minimum area of about 600 acres is necessary for a shed and mooring-mast base, but a larger area up to 1,000 acres is preferable, in order to provide for future extensions—in particular, additional mooring-masts. A clear space of about 800 yards square (about 130 acres) will suffice for a base with one mast and without shed, provided that there are no buildings of greater height than 40 ft. within 300 yards of the aerodrome. As the space required for landing-operations at the mast is only about 100 acres, it is possible to use the remainder for grazing or other purposes.

4. All electric cables in the vicinity of a base should be laid under ground. The ground should be approximately level with good natural drainage and not subject to floods. Ditches should be covered over.

Water-supply.

5. There should be a plentiful supply of fresh water for ballast and general purposes. Salt water is not suitable, owing to its corrosive action on aluminium alloys. As an approximate estimate of the total requirements the following figures are given:—

For mooring-mast (ballasting, &c.)	..	..	..	50,000 gallons per day.
For general purposes	..	..	..	20,000 gallons per day.
For hydrogen production, assuming an output of 1,000,000 cubic feet per week—				
By water-gas process	..	..	..	20,000 gallons per day.
By electrolytic process	..	..	..	3/5,000 gallons per day.
By silicol process (temporary plant)	..	..	..	200,000 gallons on one day per week.
Average weekly total, say	..	..	..	700,000 gallons.

* The delay here is on account of obtaining passages.

† It may possibly be advisable for one of the party (Flight-Lieutenant Nixon) to visit possible sites for intermediate bases between Australia and India, or South Africa, on the way back from Australia.