the D.H.50 can very rapidly be converted into a goods carrier, in which rôle its carrying capacity is extraordinarily good—approximately 1,100 lbs. of paying load being possible without exceeding the total loaded weight for which the machine's air-worthiness certificate is issued. This amount of paying load is additional to the weight of fuel carried, which is in the neighbourhood of 400 lbs. weight, or sufficient for more than 3½ hours' flying. Assuming a range of about 400 miles, the paying load of the D.H.50 is therefore approximately 4·6 lbs. per horse-power, and that at a cruising speed of 100 m.p.h. As a passenger-carrier we believe it is intended to hire out the D.H.50 at the usual fee charged for the D.H.9's, *i.e.*, 2*s*. per mile, so that the cost per passenger works out at 6*d*. per mile, which is certainly very reasonable indeed. What it amounts to is this: Assuming that four people wish to travel from London to Paris in a private aeroplane. The distance is approximately 240 miles, which, at 2*s*. per mile, works out at £24, or £6 per passenger, or about the same fare as that charged on the regular air lines. If goods be carried, and the full load of 1,100 lbs. assumed, the cost from London to Paris works out at 5½*d*. per lb. These figures are, of course, based upon the charges made when the machine is hired out by the de Havilland Hire Service, and may therefore be assumed to show a profit on the actual cost, which profit would be gained by any firm operating the machines on their own lines.

Mention has already been made of the seating accommodation in the cabin. Access is gained from the starboard side, the roof of the cabin being hinged along the port side. The passengers step up on the trailing edge of the lower right-hand plane, which is reinforced with three-ply for the purpose, and from there to a small step permanently mounted on the side of the fuselage. When the passengers have embarked the roof is closed down, the fastenings being within easy reach from inside as well, although a notice warns the occupants not to open the cabin while the machine is in flight. Ventilation is ensured in the simplest way possible, *i.e.*, by leaving the window on the starboard side without glass panes. Owing to the direction of the slip stream from the propeller this has been found quite feasible, and, in order to get rid of the very small amount of draught noticeable in the back seat, a small deflector is mounted outside the starboard window, adjustable by the passengers. From the cabin it is quite easy to converse with the pilot, whose cockpit is placed aft of the cabin, through a large-diameter tube of three-ply running aft from the cabin. The long exhaust pipe on the port side effectively silences the engine, and conversation in the cabin is easily possible during flight.

From the pilot's cockpit an exceptionally good view is obtained, and the coaming has been so shaped as to restrict his view as little as possible, while at the same time "streamlining" his head. The controls are of usual type, but fitted with ball bearings everywhere, as in all recent de Havilland machines, and the cables are in all instances arranged "straight through" so as to avoid taking them over pulleys. The consequence is that all control surfaces work remarkably easy, and even during flight the pilot can operate the joy-stick with his little finger.

The petrol tank is mounted above the top centre-section, and is given the shape of a thick, high-lift wing section. From it the fuel flows by gravity to the carburettors, through "Petroflex" tubing, and the tank is divided by a partition, two petrol cocks being, of course, provided, so that, although a petrol gauge is fitted the pilot need not worry much about its extreme accuracy, as he knows that when the main supply runs out he has, by turning on the supply in the smaller tank, sufficient petrol for one half-hour's flying. The two cocks are operated by cables from the port side of the cockpit.

A certain amount of unorthodoxy is found in the wing bracing, which at first sight looks rather incomplete. To begin with, there are no anti-lift wires in the inner bays. At first this looks alarming, but the reason for the omission at once becomes evident: by leaving out this wire access to the cabin is greatly facilitated, and as these particular wires are only loaded to any great extent on landing the incidence wires between the first pair of struts are probably well capable of transmitting the loads. Again, in the bracing of the centre section struts the right-hand set of wires has been omitted, the left-hand set being duplicated. As in the case of the anti-lift wires the reason is found in the problem of access to the cabin. The top centre-section has been covered with thick three-ply so as to transmit the stresses, and the upper ends of the centre-section rear struts are attached behind the rear spar, to specially strong beams used to reinforce the structure. Thus the omission of certain wires need cause no misgivings, although looking at first somewhat alarming.

The undercarriage is of the usual V-type, but with oleo gear. The first 6 ins. or so of the travel is taken by the oil, and is then assisted by rubber shock absorbers for the rest of the stroke. The tail skid is sprung and damped, as shown in the sketch, by rubber compression blocks. It is steerable and works in conjunction with the rudder, although springs are incorporated so that, should the skid jam, the rudder can still be operated.

The tail is of usual de Havilland form, and the tail plane is of the trimming type. It is operated by a horizontal T, as shown in a sketch, by cables and a lever in the cockpit. The action is, of course, much quicker than in the case of a worm type of trimming gear, and it has actually been found possible to control the machine on the trimming gear instead of on the elevator, although the latter is, of course, more effective. Thus it will be seen that the machine can be very quickly trimmed to meet any emergencies.

The main dimensions of the D.H.50 are shown on the accompanying scale drawings. The empty weight of the machine is 2,253 lbs. and the weight of fuel 394 lbs. The useful load, including pilot, is 1,253 lbs., giving a maximum permissible total loaded weight of 3,900 lbs., which is the weight covered by the machine's air-worthiness certificate. The wing loading is approximately the same as that of the D.H.9, and the power loading is 16.3 lbs. per h.p.

THE RELATIONS OF THE NAVY AND THE AIR FORCE

Recommendations of the National and Imperial Defence Committee

THE official report on the enquiry into the relations of the Navy and the Air Force by a special sub-committee of the National and Imperial Defence Committee has now been published (Cmd. 1938), and as the subject is one of very considerable importance we would recommend all interested to obtain from H.M. Stationery Office, Imperial House, Kingsway, W.C. 2, a copy of the report, the price of which is 6*d*. net. Considerations of space do not allow of publishing the entire report in FLIGHT, but below will be found a summary of the report, while Part III, which gives the recommendations of the Committee, is published in full.

A section of the Report contains some observations by the Main Committee on the term to be used in describing the status of naval officers serving in the Fleet Air Arm. The term "seconded" is not considered satisfactory, as the actual position of a naval officer seconded to the Air Service afloat differs from a seconded officer as the term has hitherto been understood. The Main Committee therefore would prefer the more general term "attached," and the first section of the Report defines the conditions of attachment, even to such detail as the uniform to be worn.

Part I of the Report of the Special Sub-Committee, which was composed of Lord Balfour, Lord Peel and Lord Weir and was instructed to "enquire into the relations of the Navy and the Air Force, as regards the control of Fleet air work," is devoted to a statement of the general problem. It is pointed out that the Sub-Committee have taken a great deal of evidence from witnesses representing both departments, and that, in addition, Lord Peel and Lord Weir, accompanied by Sir Maurice Hankey, Secretary of the Sub-Committee, paid a visit to the aerodromes in the neighbourhood of Portsmouth, and to the aircraft carriers "Argus" and "Eagle."

The Air Ministry view is briefly stated, as is also that of the Admiralty, and the Sub-Committee express the greatest sympathy with both points of view. They do not think that the present system can remain altogether unchanged; neither do they think it possible to sever completely from the air organisation responsible for home defence against air attack the air organisation which does work for the Fleet, and suggest that a course "somewhere between these two extremes" should be followed. Before describing their suggestions in detail the Sub-Committee give a brief sketch of the system now in course of development. This sketch forms Part II of the Report, and for fuller details than we are able to give, the official Report should be consulted. Following is a rough outline:—

Briefly the general system in force at present is as follows: