MISCELLANEOUS DATA

PART 8 MISCELLANEOUS

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LIST OF CHARTS

8.1. Notes on Flight Envelopes

Figure 8.1. shows the variation of maximum permissible speed with altitude as specified by the aircraft C.A. Release.

Figure 8.2. shows the variation of maximum permissible normal acceleration ('g') with Indicated Mach Number as specified by the aircraft C.A. Release. The limiting positive 'g' will not be attained at the lower speeds, particularly as altitude is increased, due to the prior onset of buffet and the stall.

8.2 Take-off and Landing Distance Nomogram

Figure 8.3. can be used to apply factors between 1.0. and 1.6. to the take-off and landing distances shown in Parts 2 and 7 respectively, and also to determine the factors between a fixed distance and a calculated take-off or land distance.

Example. To factor a distance of 4,200 ft. by 1.25, follow the diagonal line from the unfactored distance scale at 4,200 ft. to the intersection with the horizontal line from 1.25 on the factor scale. The factored distance is then read off the factored distance scale vertically above the intersection point, i.e. 5,250 ft. Alternatively the factor between given factored and unfactored distances may be determined opposite the intersection of the vertical line from the factored distance and the diagonal line from the unfactored distance.

8.3 Load Classification Groups

The Load Classification Groups (LCGs) of aircraft and aircraft pavements are determined by the Aircraft Pavements Branch, Directorate of Civil Engineering Development, Public Services Agency, Department of the Environment (DOE).

8.3.1 Aircraft Load Classification

The loading characteristics of an aircraft on a pavement are calculated from the all up weight, tyre pressure, and wheel arrangement of the aircraft. To simplify the relationship between aircraft and pavement classification each aircraft type is allocated a Load Classification Group or Groups, according to permissible variation in all up weight. LCGs vary from 1 for the heaviest aircraft, to VII for the lightest aircraft.

8.3.2 Pavement Load Classification

The bearing strength of a pavement is calculated from the total thickness of pavement construction and the bearing capacity of the sub-grade and is allocated an LCG, from I for the highest bearing strength, to VII for bearing strengths suitable only for light aircraft. Pavement LCGs are to be published in:

a, En-route Supplements

b. The Flight Information Publication "Planning", Section 1.

8.3.3 Application of LCGs

It is the responsibility of the officer authorising a flight and the captain of an aircraft to ensure that the aircraft LCG is compatible with the pavement LCGs of tbe airfields of intended operation. The following regulations are to apply to the operation of military aircraft:

a. Aircraft of a given LCG may operate without restriction on pavements of the same or a higher rated LCG. (eg Aircraft of LCG IV may be operated continuously on pavements of LCG I, II, III or IV).

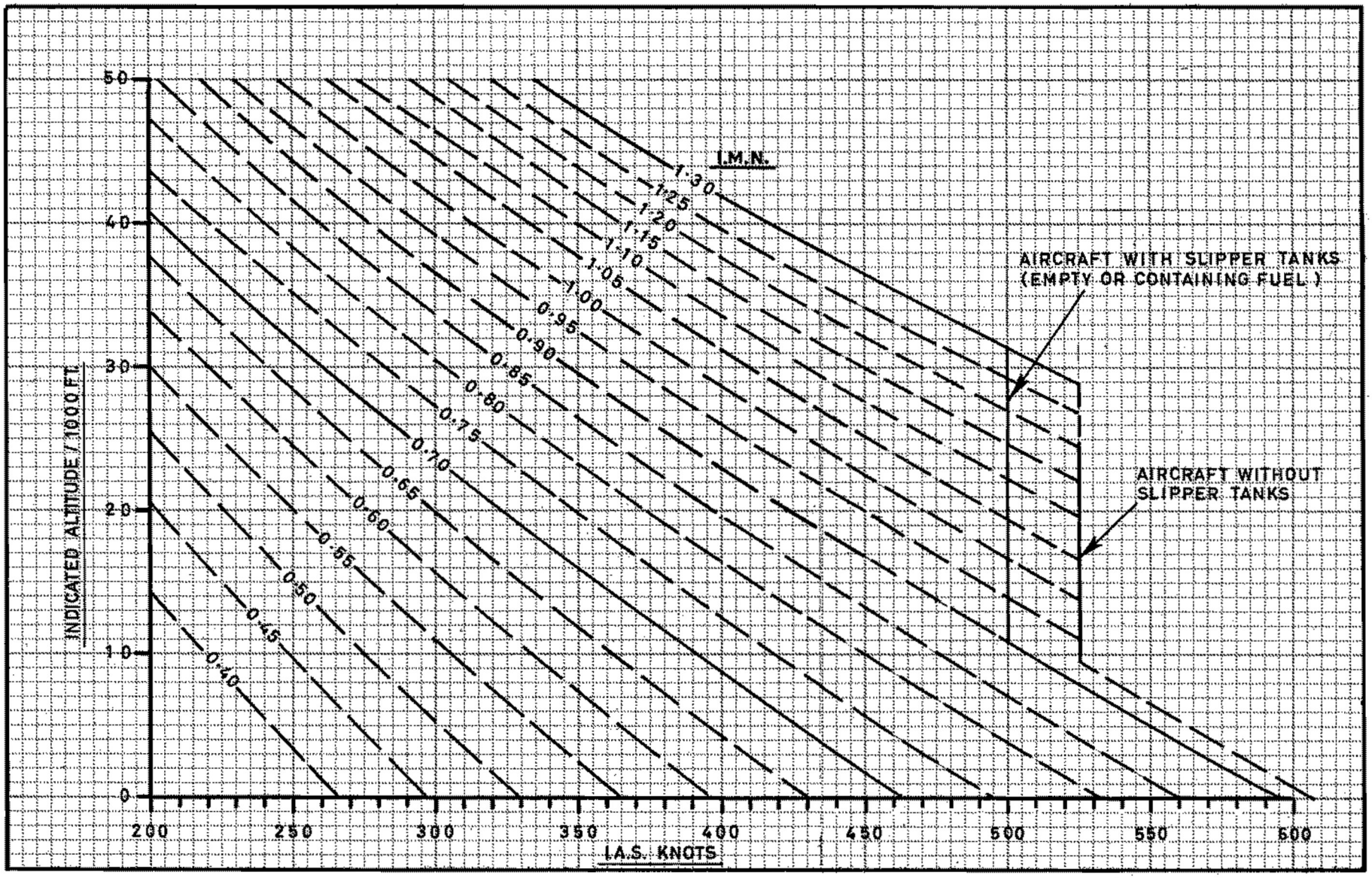
b. Aircraft of a given LCG may operate only on an occasional basis on pavements with an LCG rated one group lower than that of the aircraft. (e.g. Group IV aircraft may be operated only occasionally on pavements of LCG V). Such movements are to be made on a "prior permission only" basis.

c. Pavements rated two or more groups lower than that of a given aircraft may be operated on by that aircraft only in an emergency. (eg Group IV aircraft may be operated on pavements of LCG VI and VII only in an emergency).

8.3.4. Figure 8.4. provides LCG, LCN or ESWL data in tabular form for the scheduled tyre pressure. In addition when operators require to know the boundaries where LCG LCN or ESWL changes with variation in AUW, the curve on the lower part of Fig. 8.4. provides this information.

FIGURE 8. 1.

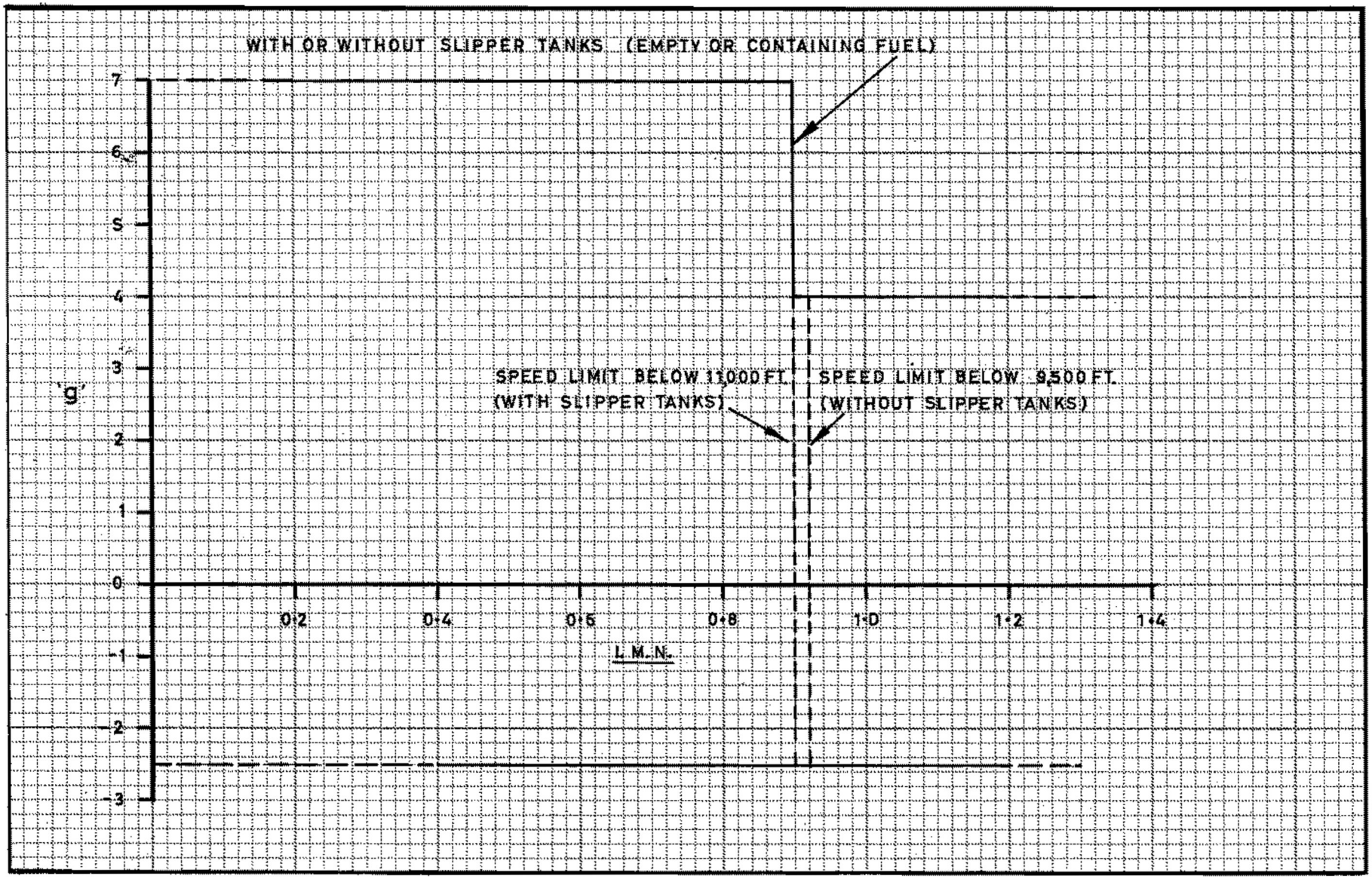
FLIGHT ENVELOPE
SPEED ~ ALTITUDE LIMITATION



RESTRICTED

DATA BASIS : C.A. RELEASE

FLIGHT ENVELOPE
'g' ~ SPEED LIMITATION



DATA BASIS: C.A. RELEASE

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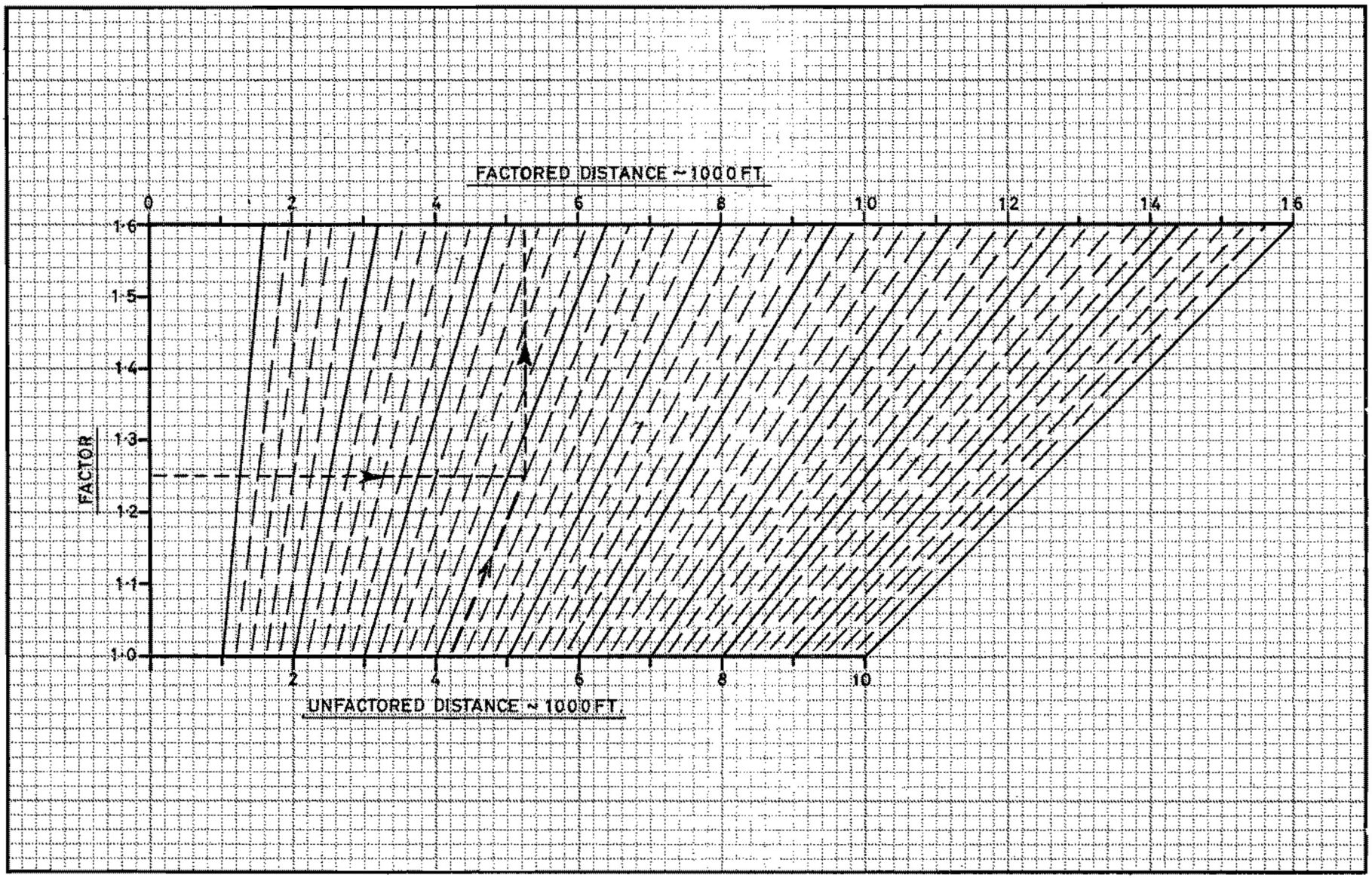
FIGURE 8.3.

TAKE-OFF AND LANDING DISTANCE NOMOGRAM



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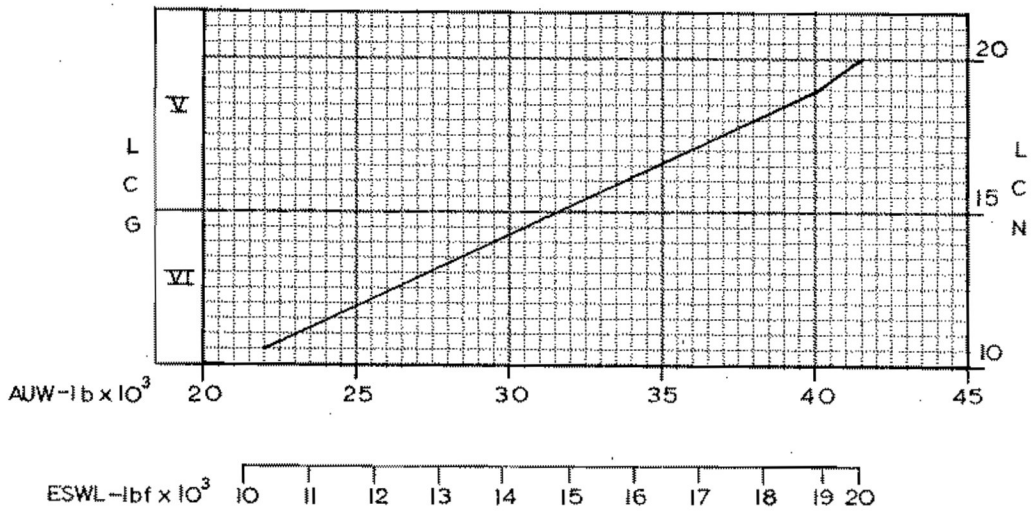
AP 101B-1801-16
GNAT T. MK.1 (1 x Orpheus 101)

FIGURE 8.4

AIRCRAFT LOAD CLASSIFICATION

Load Condition		Unladen	Max Landing	Max Take-Off
All Up Weight (lb)		22 050	40 000	41 500
Tyre Pressure (lbf/in^2)		86	86	86
Classification	ESWL (lbf)	10 350	18 800	19 500
	LCG	VI	V	V
	LCN	11	19	20



ESWL – Equivalent Single Wheel Load
LCG – Load Classification Group of Pavement
LCN – Load Classification Number of Pavement
lbf/in^2 – Pound force per square inch

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