

AL.12 August 1975.

PART 8 USEFUL INFORMATION & MISCELLANEOUS

LIST OF FIGURES

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1. 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).

2. 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 I for the heaviest aircraft, to VII for the lightest aircraft.

3. 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 5.

4. 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 the 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. (eg. 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).

5. Figures 8.1 & 8.2 provide 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 right hand side of Figures 8.1 and 8.2 provides this information.

6. Ram temperature

The table on Fig. 8.3 gives the IAS to which the aircraft should be restricted to avoid exceeding the quoted ram temperature. These restrictions are imposed to prevent overheating of certain components.

Note...

R.A.F. limitations as given in Pilot's Notes must not be exceeded.

7. **Level flight wing incidence**

Fig. 8.4 gives the variation of the aircraft wing chord line to the direction of motion against mach number and altitude for steady level flight. It is reasonable to assume that the incidence is proportional to normal acceleration.

Note...

The horizontal fuselage datum is 2° below the wing chord line.

Example

From Fig. 8.4 wing incidence at 1.2M, 40,000 ft equals 4° , thus incidence at 3g equals 12° .

Load Condition		Unladen	Max Landing	Max Take - Off
All Up Weight (lb)		25 800	34 500	36 000
Tyre Pressure (lbf/in ²)		290	290	290
Classification	ESWL (lbf)	11 800	15 850	16 300
	LCG	V	V	V
	LCN	19	25	26

ESWL - Equivalent Single Wheel Load
 LCG - Load Classification Group of Pavement
 LCN - Load Classification Number of Pavement
 lbf/in² - Pound force per square inch

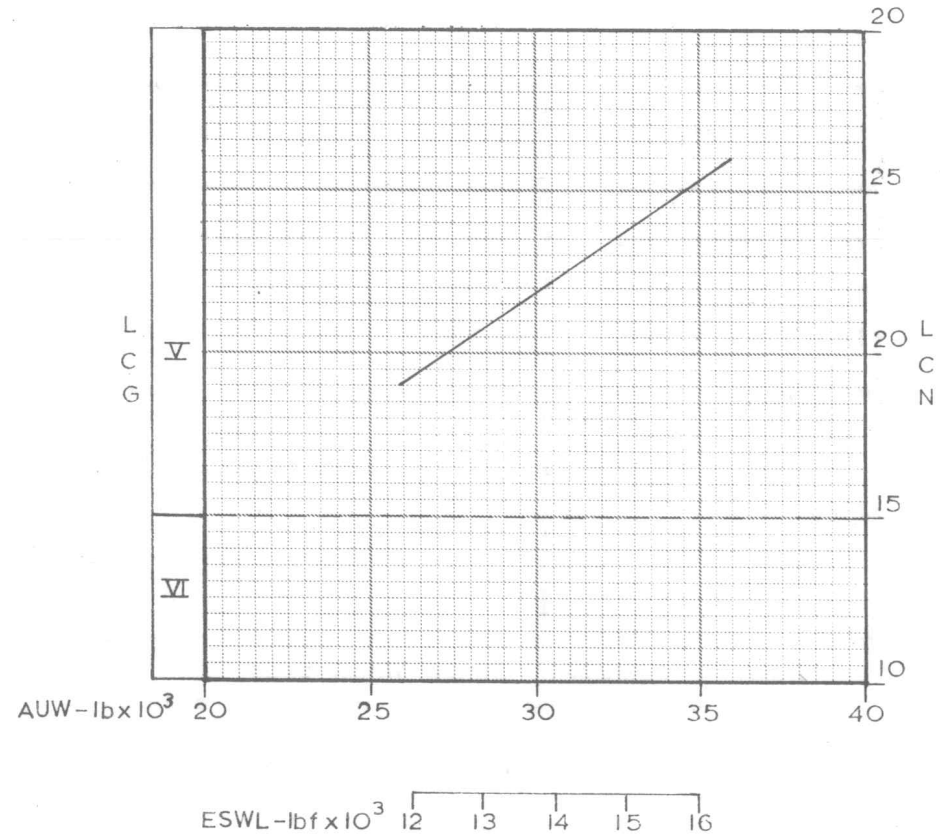


FIG. 8-1 AIRCRAFT LOAD CLASSIFICATION (F.MK.3)

Load Condition		Unladen	Max Landing	Max Take - Off
All Up Weight (lb)		26 500	34 500	37 000
Tyre Pressure (lbf/in ²)		290	290	290
Classification	ESWL (lbf)	11 950	15 600	16 600
	LCG	V	V	V
	LCN	19	25	27

ESWL - Equivalent Single Wheel Load
 LCG - Load Classification Group of Pavement
 LCN - Load Classification Number of Pavement
 lbf/in² - Pound force per square inch

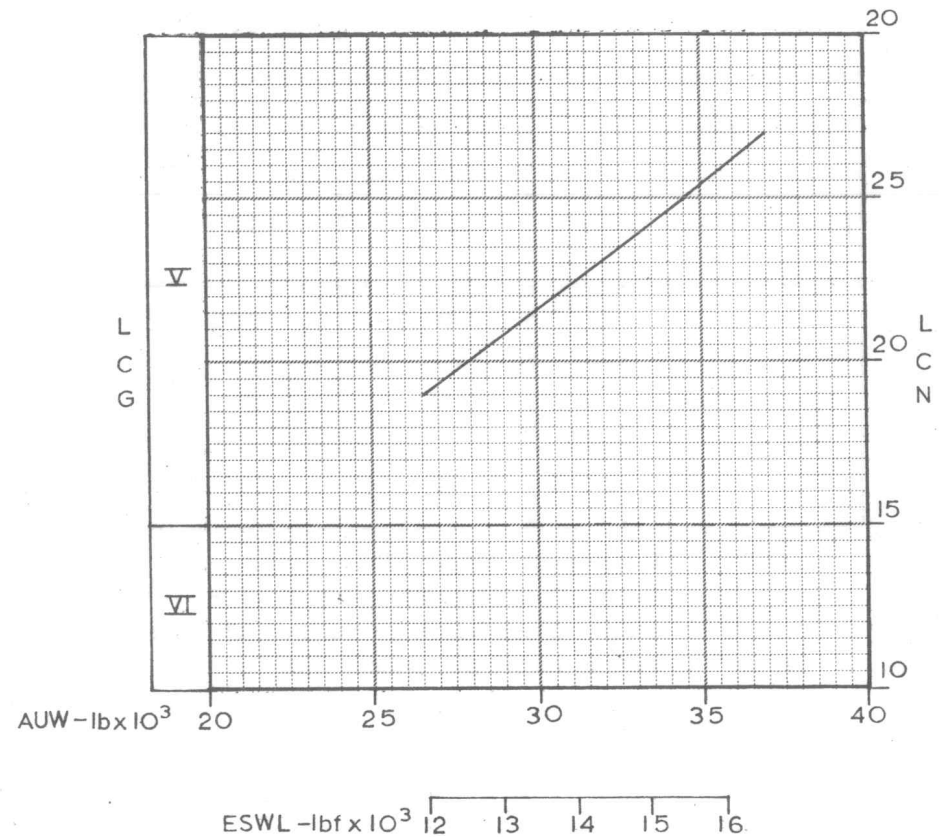


FIG. 8.2 AIRCRAFT LOAD CLASSIFICATION (T.MK.5)

RAM TEMPERATURE 50°C

Height Ft.	OAT -°C														Knots -IAS
	-85	-75	-65	-55	-45	-35	-25	-15	-5	+5	+15	+25	+35	+45	
S.L.	-	-	-	-	-	-	-	-	670	595	515	425	315	185	}
10,000	-	-	-	-	-	-	700	640	575	505	435	360	-		
20,000	-	-	-	-	695	645	595	540	485	425	-	-	-		
30,000	-	-	670	630	585	540	495	445	-	-	-	-	-		
36,000	670	635	600	560	520	475	-	-	-	-	-	-	-		

RAM TEMPERATURE 60°C

Height Ft.	OAT -°C														Knots -IAS
	-85	-75	-65	-55	-45	-35	-25	-15	-5	+5	+15	+25	+35	+45	
S.L.	-	-	-	-	-	-	-	-	-	660	585	510	420	320	}
10,000	-	-	-	-	-	-	-	690	625	560	495	430	-		
20,000	-	-	-	-	-	690	640	585	530	470	-	-	-		
30,000	-	-	695	650	610	570	525	480	-	-	-	-	-		
36,000	-	660	620	580	545	505	-	-	-	-	-	-	-		

RAM TEMPERATURE 70°C

Height Ft.	OAT -°C														Knots -IAS
	-85	-75	-65	-55	-45	-35	-25	-15	-5	+5	+15	+25	+35	+45	
S.L.	-	-	-	-	-	-	-	-	-	715	650	575	500	415	}
10,000	-	-	-	-	-	-	-	-	670	615	550	485	-		
20,000	-	-	-	-	-	-	665	620	565	515	-	-	-		
30,000	-	-	-	680	640	600	560	515	-	-	-	-	-		
36,000	-	680	640	605	570	530	-	-	-	-	-	-	-		

FIG 8.2 LIGHTNING MK.3 AND MK.5 RAM TEMPERATURES

AL 12

30,000 LB

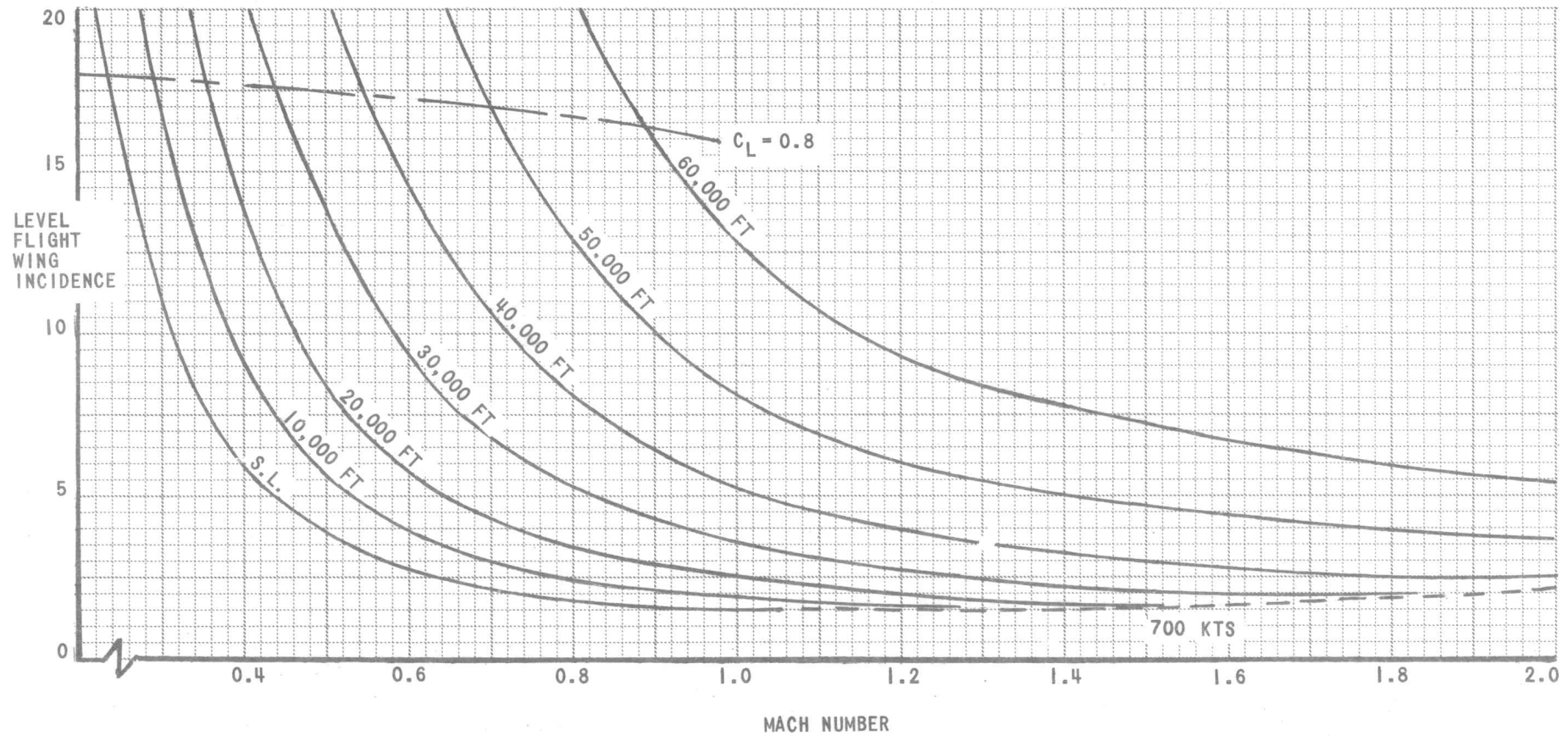


FIG. 8.3 LEVEL FLIGHT WING INCIDENCE

Restricted

Restricted