



## **British Load Classification Group/Load Classification Number (LCG/LCN) Pavement Strength Reporting System**

A number of airlines operate to airports that use a pavement rating system for runway strength reporting referred to as either 1) Load Classification Group (LCG) followed by a roman numeral (from I to VII), or 2) Load Classification Number (LCN) which is based on the Load Classification Group (LCG) system. Airports reporting their runway strength in the LCG system are primarily found in the following countries: Mongolia, Myanmar (Burma), Nigeria, South Africa, Turkey, United Kingdom, and Zimbabwe. All airports in the preceding countries with runways having their runway strengths reported as LCNs are assumed to be derived from the LCG system. Note, the US Military use of LCNs for documents such as the Automated Airfield Information File (AAFIF) is also based on the LCG system. The following information is provided to assist operators with determining the pavement strength allowable operating weights for their airplanes at these airports, as LCG / LCN values are not provided in Section 7 – Pavements of the respective Airplane Characteristics for Airport Planning documents available at [www.boeing.com/airports](http://www.boeing.com/airports).

The British LCG/LCN rating system is based on the original LCN system which was developed by ICAO in 1965, but makes no distinction between asphalt (flexible) and concrete (rigid) pavement. Since these two surfaces react to loads differently, LCG type LCNs are not considered to be a highly precise measure of pavement strength particularly for flexible pavements. The LCG system gives an LCN range that was developed by the UK Ministry of Defence for their military flight crews. The lower the LCG value, the higher the LCN range as shown in the following table.

<b>LCG</b>	<b>LCN Range</b>
	(Range based on the 1971 British LCG System)
I	101 - 120
II	76 - 100
III	51 - 75
IV	31 - 50
V	16 - 30
VI	11 - 15
VII	10 and under

The pavement strength-based allowable operating weights for various airplanes are shown in the Table I at both the LCG and at various LCG type LCN values. For the LCG rating system, only the highest weight for the indicated LCG category is shown, e.g., if the runway is rated as LCG III, then it would show the value for LCN 75. For example, an airport with an LCG IV can support a 717-200 at maximum ramp weight (MRW), but the 737-300 would be restricted to 122,400 pounds on that same runway. Although LCN values are typically plotted as a curve, for runways with LCN values not shown in Table I, linear interpolation can be used between the values shown to determine the approximate pavement strength based allowable operating weight.

The allowable gross weights listed in Table 1 show weights above maximum ramp weight (MRW) and below operating empty weights (OEW) for some airframes depending on the reported pavement strength rating. These allowable weights are based on airplanes with the maximum ramp weights (MRW) and operating empty weights (OEW) shown in Table 2.



**Table 1. Allowable Gross Weights for Each Airplane at the LCG/LCN Value**

(Weights shown are x1000 lbs)													(MRW – Maximum Ramp Weight / OEW – Operating Empty Weight)			
LCG	I		II			III			IV		V		VI		VII	
LCN	120	110	100	90	80	75	70	60	50	40	30	20	15	10		
707-120	MRW	MRW	MRW	MRW	MRW	MRW	MRW	299.0	253.0	198.5	153.0	<OEW	<OEW	<OEW		
707-320C	MRW	MRW	MRW	MRW	MRW	MRW	347.0	296.7	251.0	196.6	152.0	98.1	<OEW	<OEW		
717-200	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	116.3	93.2	70.3	47.2	<OEW	<OEW		
717-200HGW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	140.9	117.5	94.1	70.8	47.5	<OEW	<OEW		
720B	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	246.0	194.0	151.0	98.6	<OEW	<OEW		
727-100	MRW	MRW	MRW	MRW	MRW	MRW	180.2	153.8	130.0	102.0	78.0	<OEW	<OEW	<OEW		
727-200	MRW	MRW	MRW	MRW	210.1	196.8	183.6	157.1	130.5	104.4	78.1	<OEW	<OEW	<OEW		
737-100	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	131.0	103.3	80.0	51.8	<OEW	<OEW		
737-200	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	149.3	126.0	99.2	76.0	49.6	<OEW	<OEW	
737-200LP	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	143.2	115.4	90.0	59.1	<OEW	<OEW		
737-300	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	147.3	122.4	97.6	73.0	<OEW	<OEW	<OEW	
737-300LP	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	153.8	128.0	102.3	76.7	51.2	<OEW	<OEW	
737-400	MRW	MRW	MRW	MRW	MRW	MRW	170.6	145.8	121.3	96.8	72.5	48.4	<OEW	<OEW		
737-500	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	146.6	121.8	97.1	72.7	48.5	<OEW	<OEW	
737-600	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	156.1	129.4	103.0	77.0	<OEW	<OEW	<OEW	
737-700	MRW	MRW	MRW	MRW	MRW	MRW	179.0	152.7	126.5	100.8	75.3	<OEW	<OEW	<OEW		
737-800	MRW	MRW	MRW	MRW	MRW	186.7	173.8	148.0	122.8	97.8	<OEW	<OEW	<OEW	<OEW		
737-900	MRW	MRW	MRW	MRW	MRW	186.7	173.8	148.0	122.8	97.8	73.0	<OEW	<OEW	<OEW		
737BBJ	MRW	MRW	MRW	MRW	MRW	MRW	177.2	151.2	125.3	99.8	<OEW	<OEW	<OEW	<OEW		
737BBJ-2	MRW	MRW	MRW	MRW	MRW	MRW	177.6	151.4	125.4	99.9	<OEW	<OEW	<OEW	<OEW		
747-200	MRW	MRW	MRW	MRW	882.4	825.0	767.0	653.1	540.0	428.9	319.3	<OEW	<OEW	<OEW		
747-400	MRW	MRW	MRW	980.1	865.0	809.0	752.0	639.0	529.0	419.5	312.0	<OEW	<OEW	<OEW		
747-400ER	MRW	MRW	MRW	941.2	830.1	775.0	720.4	612.2	505.0	400.9	<OEW	<OEW	<OEW	<OEW		
747SP	MRW	MRW	MRW	MRW	MRW	MRW	768.3	654.6	541.0	430.5	320.0	<OEW	<OEW	<OEW		
757-200	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	276.5	230.4	184.5	138.7	<OEW	<OEW	<OEW	
757-300	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	306.1	261.6	217.5	174.2	130.6	<OEW	<OEW	<OEW
767-200	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	326.8	270.0	214.7	159.6	<OEW	<OEW	<OEW	
767-200ER	MRW	MRW	MRW	MRW	MRW	410.6	382.0	325.1	268.5	213.6	159.0	<OEW	<OEW	<OEW		
767-300	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	381.1	324.2	268.0	213.0	158.5	<OEW	<OEW	<OEW
767-300ER	MRW	MRW	MRW	MRW	436.7	408.0	379.2	322.6	267.0	211.6	157.6	<OEW	<OEW	<OEW		
767-400ER	MRW	MRW	MRW	475.0	419.1	391.6	364.3	309.6	256.0	203.2	<OEW	<OEW	<OEW	<OEW		
777-200	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	559.2	476.3	394.3	313.3	233.0	<OEW	<OEW	<OEW
777-200ER	MRW	MRW	MRW	713.0	629.3	586.4	546.8	465.1	383.5	305.0	<OEW	<OEW	<OEW	<OEW		
777-200LR	MRW	MRW	MRW	711.4	628.2	588.0	545.7	464.2	384.3	304.5	<OEW	<OEW	<OEW	<OEW		
777-300	MRW	MRW	MRW	703.2	620.8	580.0	539.3	459.0	379.0	<OEW	<OEW	<OEW	<OEW	<OEW		
777-300ER	MRW	MRW	786.6	714.3	630.4	580.0	547.5	465.6	379.0	<OEW	<OEW	<OEW	<OEW	<OEW		
DC10-10	MRW	MRW	MRW	MRW	MRW	457.0	424.1	359.1	295.6	233.3	<OEW	<OEW	<OEW	<OEW		
DC10-30/40	MRW	MRW	MRW	MRW	MRW	585.8	543.6	460.6	379.4	299.6	221.6	<OEW	<OEW	<OEW		
DC8-63/73	MRW	MRW	MRW	MRW	369.7	349.0	322.8	276.0	233.0	183.3	141.0	<OEW	<OEW	<OEW		
DC9-15	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	98.4	74.6	50.4	<OEW	<OEW	
DC9-21	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	119.6	96.0	72.6	48.9	<OEW	<OEW	
DC9-32	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	119.9	96.3	72.5	48.7	<OEW	<OEW	
DC9-41	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	MRW	117.4	93.9	70.8	47.5	<OEW	<OEW	



(Weights shown are x1000 lbs)							(MRW – Maximum Ramp Weight / OEW – Operating Empty Weight)							
LCG	I		II			III		IV		V		VI		VII
LCN	120	110	100	90	80	75	70	60	50	40	30	20	15	10
DC9-51	MRW	MRW	MRW	MRW	MRW	MRW	MRW	139.8	118.0	93.4	72.0	47.1	<OEW	<OEW
MD-11	MRW	MRW	MRW	664.0	584.0	544.6	504.6	427.6	351.5	277.6	<OEW	<OEW	<OEW	<OEW
MD-11ER	MRW	MRW	MRW	659.6	579.5	540.4	501.5	424.5	348.9	275.5	<OEW	<OEW	<OEW	<OEW
MD-81	MRW	MRW	MRW	MRW	MRW	MRW	MRW	141.9	118.2	94.6	71.0	<OEW	<OEW	<OEW
MD-82/88	MRW	MRW	MRW	MRW	MRW	MRW	MRW	163.6	140.0	116.5	93.0	69.8	<OEW	<OEW
MD-83	MRW	MRW	MRW	MRW	MRW	MRW	MRW	161.8	138.4	115.0	91.8	68.9	<OEW	<OEW
MD-87	MRW	MRW	MRW	MRW	MRW	MRW	MRW	164.0	140.4	116.8	93.3	70.0	<OEW	<OEW
MD-90-30	MRW	MRW	MRW	MRW	MRW	MRW	MRW	169.4	158.0	135.0	112.2	89.6	67.2	<OEW

**Table 2. Gross Weight Ranges for Each Airplane on Table 1**

(MRW – Maximum Ramp Weight / OEW – Operating Empty Weight)

Airplane	MRW (x1,000 LBS)	OEW (x1,000 LBS)	Airplane	MRW (x1,000 LBS)	OEW (x1,000 LBS)
707-120	258.0	127.5	767-200	317.0	174.0
707-320C	336.0	150.0	767-200ER	388.0	180.0
717-200	115.0	67.5	767-300	352.0	190.0
717-200HGW	122.0	70.0	767-300ER	409.0	200.0
720B	235.0	115.0	767-400ER	451.0	227.0
727-100	170.0	91.0	777-200	537.0	300.0
727-200	210.0	100.0	777-200ER	634.5	305.0
737-100	111.0	62.0	777-200LR	752.0	320.0
737-200	128.6	66.0	777-300	662.0	350.0
737-200LP	117.5	65.0	777-300ER	777.0	370.0
737-300	140.0	73.0	DC10-10	433.0	240.0
737-300LP	140.0	73.0	DC10-30/40	558.0	270.0
737-400	150.5	72.0	DC8-63/73	358.0	160.0
737-500	134.0	70.0	DC9-15	91.5	50.0
737-600	145.0	80.0	DC9-21	101.0	52.6
737-700	155.0	83.0	DC9-32	109.0	55.0
737-800	174.7	100.0	DC9-41	115.0	61.3
737-900	174.0	94.6	DC9-51	122.0	65.0
737BBJ	171.5	100.0	MD-11	628.0	300.0
737BBJ-2	174.7	100.3	MD-11ER	633.0	291.0
747-200	836.0	375.0	MD-81	141.0	77.9
747-400	877.0	390.0	MD-82/88	150.5	78.0
747-400ER	913.0	406.9	MD-83	161.0	79.7
747SP	703.0	325.0	MD-87	150.5	75.0
757-200	256.0	125.0	MD-90-30	157.0	88.0
757-300	273.5	142.0			

If further information is required, please contact the Airport Technology Group at the following email address: [AirportTechnology@boeing.com](mailto:AirportTechnology@boeing.com).