BOEING 727-200 D-15A ENGINES LONG RANGE CRUISE PROFILE

TOO HIGH — WIND ADVANTAGE REQUIRED — HECK CRUISE THRUST LIMIT EP
SECOND BEST ALTITUDE — FLYING TOWARDS OPTIMUM ALTITUD — CHECK CRUISE THRUST LIMIT EPR
FUEL ECONOMY ALTITUDE — IDEAL BRACKETING — OF OPTIMUM ALTITUDE
THIRD BEST ALTITUDE — STEP CLIMB REGION — CHECK EXACT WEIGHT
TOO LOW. STEP CLIMB — OR, WIND ADVANTAGE — REQUIRED

FLIGHT LEVEL	GROSS WEIGHT X 1000 LBS													EXACT STEP CLIMB WEIGHT DATA
	180	175	170	165	160	155	150	145	140	135	130	125	120	
	FUEL ECONOMY DESCENT KIAS VERSUS WEIGHT													
					287	281	275	269	264	259	254	250	247	
390														4,000 FEET STEP CLIMB
	MAX TAT AT WHICH AVERAGE EPR CAN BE SET →								-35	-21	-13	-7	-3	NOT APPLICABLE
	AVERAGE EPR. CHECK LIMIT EPR VERSUS TAT →								2.17	2.12	2.07	2.02	1.98	
	TOTAL FUEL FLOW LBS/HOUR AT ISA →								7971	7530	7161	6846	6573	OPTIMUM WEIGHT FOR ALTITUDE
	LBS FUEL REQUIRED TO FLY 1 NAM AT ISA →								17.50	16.56	15.78	15.13	14.54	119,600 LBS
	LONG RANGE CRUISE INDICATED AIRSPEED →								245	245	244	244	243	
	LONG RANGE CRUISE MACH NUMBER →								0.794	0.793	0.791	0.789	0.788	2,000 FEET STEP CLIMB
	LONG RANGE CRUISE TRUE AIRSPEED AT ISA →								455	455	454	453	452	NOT APPLICABLE
	G - LOAD BUFFET PROTECTION →								1.28G	1.33G	1.38G	1.43G	1.50G	
370														4,000 FEET STEP CLIMB
						-38	-24	-16	-10	-6	-2	1		NOT APPLICABLE
						2.18	2.13	2.09	2.04	2.00	1.96	1.93	1.90	
						8796	8340	7956	7620	7314	7041	6807	6588	OPTIMUM WEIGHT FOR ALTITUDE
						19.31	18.34	17.51	16.82	16.16	15.60	15.10	14.65	131,700 LBS
						257	257	256	256	255	254	254	253	
						0.794	0.793	0.792	0.790	0.789	0.787	0.786	0.784	2,000 FEET STEP CLIMB
						455	455	454	453	453	451	451	450	FL370 TO FL390 AT 124,100 LBS
						1.27G	1.31G	1.36G	1.41G	1.46G	1.52G	1.58G	1.65G	
350														4,000 FEET STEP CLIMB
			-34	-22	-15	-10	-5	-2	1	4				FL350 TO FL390 AT 130,000 LBS
			2.18	2.13	2.09	2.05	2.01	1.98	1.94	1.91	1.88	1.86	1.83	
			9627	9171	8781	8436	8115	7830	7572	7338	7125	6930	6723	OPTIMUM WEIGHT FOR ALTITUDE
			21.03	20.06	19.23	18.53	17.84	17.24	16.71	16.24	15.79	15.39	15.01	144,900 LBS
			269	269	268	268	267	267	266	266	265	264	263	
			0.794	0.793	0.792	0.790	0.789	0.788	0.786	0.784	0.783	0.781	0.777	2,000 FEET STEP CLIMB
			458	457	457	455	455	454	453	452	451	450	448	FL350 TO FL370 AT 136,300 LBS
			1.28G	1.31G	1.36G	1.40G	1.45G	1.50G	1.55G	1.61G	1.68G	1.74G	1.82G	
330							← OPTIMUM ALTITUDE. CRUISE CLIMB AT MACH 0.788							4,000 FEET STEP CLIMB
	-19	-13	-9	-5	-2	1	4	7	9					FL330 TO FL370 AT 144,100 LBS
	2.12	2.08	2.05	2.01	1.98	1.95	1.92	1.89	1.87	1.84	1.82	1.80	1.77	
	10026	9642	9297	8970	8682	8415	8175	7953	7743	7539	7323	7107	6867	OPTIMUM WEIGHT FOR ALTITUDE
	21.74	20.93	20.23	19.55	18.94	18.41	17.91	17.44	17.02	16.64	16.25	15.91	15.56	159,600 LBS
	281	281	280	280	279	279	278	278	277	276	274	272	268	
	0.793	0.792	0.790	0.789	0.788	0.786	0.785	0.784	0.782	0.779	0.775	0.768	0.759	2,000 FEET STEP CLIMB
	461	461	459	459	458	457	457	456	455	453	451	447	441	FL330 TO FL350 AT 151,600 LBS
	1.32G	1.36G	1.40G	1.45G	1.49G	1.54G	1.59G	1.65G	1.71G	1.78G	1.84G	1.91G	1.98G	
310														4,000 FEET STEP CLIMB
	-4	-2	1	3	6	8	10	12						FL310 TO FL350 AT 158,000 LBS
	2.01	1.98	1.95	1.92	1.90	1.87	1.85	1.83	1.81	1.79	1.76	1.74	1.72	
	9840	9546	9279	9033	8802	8589	8391	8178	7959	7731	7485	7230	6987	OPTIMUM WEIGHT FOR ALTITUDE
	21.25	20.65	20.12	19.61	19.13	18.72	18.31	17.94	17.57	17.22	16.87	16.54	16.22	174,700 LBS
	292	292	291	291	290	290	289	288	285	283	279	275	270	
	0.789	0.788	0.786	0.785	0.784	0.782	0.781	0.777	0.772	0.765	0.756	0.745	0.734	2,000 FEET STEP CLIMB
	463	462	461	461	460	459	458	456	453	449	444	437	431	FL310 TO FL330 AT 167,200 LBS
	1.46G	1.50G	1.54G	1.59G	1.64G	1.70G	1.75G	1.81G	1.88G	1.94G	2.01G	2.05G	2.10G	
290														4,000 FEET STEP CLIMB
	3	5	7	9	11	12	14	16						FL290 TO FL330 AT 173,800 LBS
	1.92	1.90	1.88	1.86	1.84	1.82	1.80	1.77	1.75	1.73	1.71	1.69	1.66	
	9912	9681	9465	9270	9057	8841	8619	8373	8115	7857	7602	7350	7086	OPTIMUM WEIGHT FOR ALTITUD
	21.33	20.86	20.45	20.05	19.67	19.30	18.96	18.61	18.26	17.89	17.55	17.22	16.84	191,300 LBS
	304	303	303	302	301	299	297	293	289	285	281	277	273	
	0.785	0.784	0.782	0.781	0.778	0.774	0.768	0.760	0.751	0.742	0.732	0.721	0.711	2,000 FEET STEP CLIMB
	465	464	463	462	460	458	455	450	444	439	433	427	421	NOT APPLICABLE
	1.60G	1.64G	1.69G	1.75G	1.80G	1.86G	1.91G	1.97G	2.03G	2.07G	2.12G	2.17G	2.22G	
FLIGHT LEVEL	180	175	170	165	160	155	150	145	140	135	130	125	120	ECREASE FUEL ECONOMY CLIMB KIA
	GROSS WEIGHT X 1,000 LBS													1 KNOT PER 1 DEGREE C ABOVE ISA
	307	306	305	303	302	300	298	297	295	294	292	291	289	NCREASE FUEL ECONOMY CLIMB KIAS
	FUEL ECONOMY CLIMB KIAS AT ISA VERSUS WEIGHT													2 KNOTS PER 1 DEGREE C BELOW ISA

WIND / ALTITUDE TRADE OFF USING FUEL FLOW RATIO AND GROUND SPEED (GS)

(FUEL FLOW AT CONTEMPLATED FL / FUEL FLOW AT PRESENT FL) X GS AT PRESENT FL = GS REQUIRED AT