

SECTION 1-04

PERFORMANCE

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NOTE:

Items marked with an asterisk (*) may not be present in this manual.

INTRODUCTION

This section presents takeoff, approach and landing performance information.

For determination of the takeoff and landing limiting weights, the performance data as presented in the approved Airplane Flight Manual (AFM) or Runway Analysis Software must be used.

NOISE LEVELS

The following Effective Perceived Noise Levels comply with RBHA 36, 14 CFR Part 36, and ICAO Annex 16 Volume I, Chapter 3.

The values below are stated for reference conditions of standard atmosphere pressure at sea level, 25°C ambient temperature, 70% relative humidity, and zero wind.

Takeoff and sideline noise levels were established for the EMB-145 equipped with two Rolls-Royce AE3007A, AE3007A1, AE3007A1/1, AE3007A1P or AE3007A1E engines or EMB-135 equipped with two Rolls-Royce AE3007A3 or AE3007A1/3 engines, at the MTOW (Maximum Takeoff Weight) related to each model, V_2 climb speed, flaps 9°, and all engines with maximum takeoff power setting. The takeoff power cutback procedure was used.

Approach noise levels were established from a 3° glide slope at the MLW (Maximum Landing Weight) associated to each airplane model, V_{REF45} , and flaps 45°.

No determination has been made by the Airworthiness Authority that the noise levels in this manual are or should be acceptable or unacceptable for operation at, into, or out of any airport.

AIRPLANE OPERATIONS MANUAL



NOISE LEVEL IN EPNdb				
Airplane	Noise Level	CONDITION		
		Sideline	Takeoff	Approach
All	Maximum Allowable	94.0	89.0	98.0
EMB-145 EP model	Actual	85.0	80.1	92.6
EMB-145 ER model	Actual	85.1	79.8	92.6
EMB-145 EU model	Actual	85.1	79.2	92.6
EMB-145 MK model	Actual	85.1	79.2	92.5
EMB-145 LU model	Actual	84.9 (5)(6)	81.0	92.5
EMB-145 LR model (1)	Actual	84.9 (2)(5)(6)	81.0 (2) (3)	92.5
EMB-145 MP model	Actual	85.0	80.1	92.5
EMB-145 XR model	Actual	86.9	81.2	91.6
ERJ-140 ER (EMB-135 KE model)	Actual	84.3	79.7	92.4
ERJ-140 LR (EMB-135 KL model)	Actual	84.2	80.4	92.4
EMB-135 ER model	Actual	84.4 (4)	78.6 (4)	92.3
EMB-135 LR model	Actual	84.3	79.4	92.3

NOTE: 1) Noise levels applicable to airplanes with MTOW of 22000 kg.

2) For airplanes with MTOW of 21450 kg, the actual noise level for takeoff condition is 80.5 EPNdb and for sideline condition is 85.0 EPNdb.

3) For airplanes with MTOW of 22600 kg the actual noise level for takeoff condition is 81.6 EPNdb.

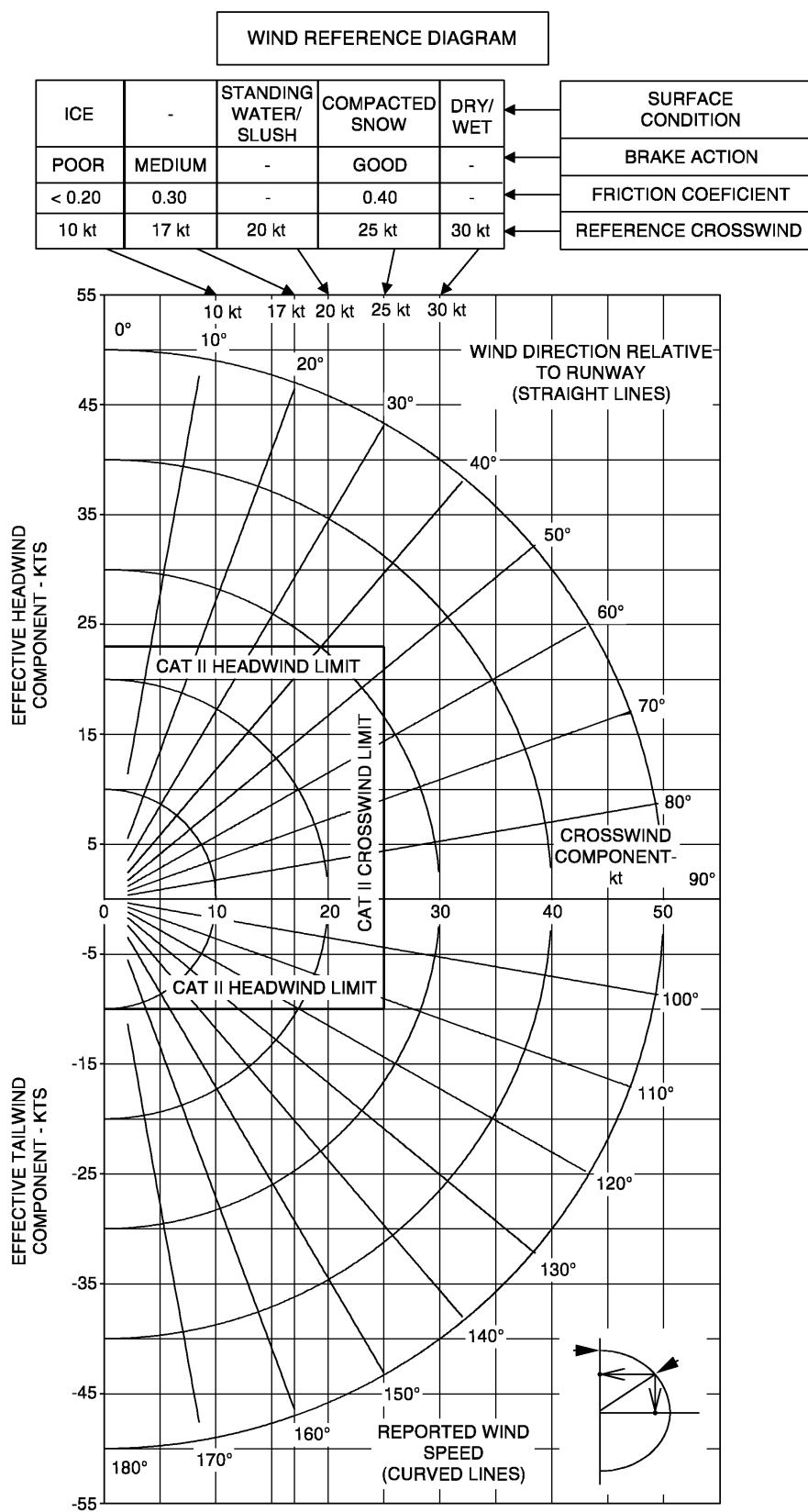
4) For airplanes Post-Mod. SB 145-53-0028 or equipped with an equivalent modification factory incorporated, the actual noise level for Sideline condition is 84.3 EPNdB, and for Takeoff is 79.1 EPNdB.

- 5) For airplanes Post-Mod. SB 145-53-0065 or equipped with an equivalent modification factory incorporated, the actual noise level for Sideline condition is 85.0 EPNdB and for Takeoff condition is 80.5 EPNdB.
- 6) For airplanes Post-Mod. SB 145-53-0066 or equipped with an equivalent modification factory incorporated, the actual noise level for Sideline condition is 84.9 EPNdB.



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WIND AND ALTITUDE CONVERSION



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DECEMBER 20, 2002

USE

Enter the chart with the reported wind velocity and the relative angle to the runway, to read the wind component parallel to the runway and the crosswind.

EXAMPLE

Given:

Wind velocity 20 kt
Wind direction 60°

Determine:

Wind component parallel to the runway 10 kt
Crosswind..... 17.5 kt

ALTIMETER SETTING TO STATION PRESSURE

QNH TO PRESSURE ALTITUDE

QNH		CORRECTION TO ELEVATION FOR PRES. ALT. (FT)
in Hg	hPa	
28.81 to 28.91	976 to 979	1000
28.92 to 29.02	980 to 983	900
29.03 to 29.12	984 to 986	800
29.13 to 29.23	987 to 990	700
29.24 to 29.34	991 to 994	600
29.35 to 29.44	995 to 997	500
29.45 to 29.55	998 to 1001	400
29.56 to 29.66	1002 to 1004	300
29.67 to 29.76	1005 to 1008	200
29.77 to 29.87	1009 to 1012	100
29.88 to 29.97	1013 to 1015	0
29.98 to 30.08	1016 to 1019	-100
30.09 to 30.19	1020 to 1022	-200
30.20 to 30.30	1023 to 1026	-300
30.31 to 30.41	1027 to 1030	-400
30.42 to 30.52	1031 to 1034	-500
30.53 to 30.63	1035 to 1037	-600
30.64 to 30.74	1038 to 1041	-700
30.75 to 30.85	1042 to 1045	-800
30.86 to 30.96	1046 to 1048	-900
30.97 to 31.07	1049 to 1052	-1000

Example: Elevation = 2000 ft
 QNH = 29.60 in Hg
 Correction = 300 ft
 Pressure Altitude = 2300 ft

QFE TO STATION PRESSURE

QFE		PRESSURE ALTITUDE (ft)	QFE		PRESSURE ALTITUDE (ft)
in Hg	hPa		in Hg	hPa	
31.01	1050	-989	25.55	865	4313
30.86	1045	-856	25.40	860	4468
30.71	1040	-723	25.25	855	4625
30.57	1035	-589	25.10	850	4781
30.42	1030	-454	24.96	845	4939
30.27	1025	-319	24.81	840	5097
30.12	1020	-184	24.66	835	5257
29.98	1015	-48	24.51	830	5417
29.83	1010	89	24.36	825	5579
29.68	1005	227	24.21	820	5740
29.53	1000	364	24.07	815	5903
29.38	995	503	23.92	810	6065
29.23	990	641	23.77	805	6230
29.09	985	781	23.62	800	6394
28.94	980	921	23.48	795	6561
28.79	975	1062	23.33	790	6727
28.64	970	1202	23.18	785	6895
28.50	965	1344	23.03	780	7063
28.35	960	1486	22.89	775	7233
28.20	955	1630	22.74	770	7402
28.05	950	1773	22.59	765	7574
27.91	945	1918	22.44	760	7745
27.76	940	2062	22.30	755	7920
27.61	935	2208	22.15	750	8095
27.46	930	2353	22.00	745	8269
27.32	925	2500	21.85	740	8442
27.17	920	2647	21.71	735	8619
27.02	915	2796	21.56	730	8796
26.87	910	2944	21.41	725	8975
26.73	905	3094	21.26	720	9154
26.58	900	3243	21.12	715	9335
26.43	895	3394	20.97	710	9516
26.28	890	3545	20.82	705	9699
26.14	885	3698	20.67	700	9882
25.99	880	3850	20.53	695	10068
25.84	875	4004	20.38	690	10253
25.69	870	4157	20.19	685	10439

GEOMETRIC HEIGHT TO PRESSURE HEIGHT

Pressure altimeters are calibrated to indicate true altitude under International Standard Atmosphere (ISA) conditions. Any deviation from ISA will therefore result in an erroneous reading on the altimeter. In the case when the temperature is higher than ISA the true altitude will be higher than the figure indicated by the altimeter, and the true altitude will be lower when the temperature is lower than ISA. The altimeter error may be significant under conditions of extremely cold temperature (ICAO PANS-OPS Vol I 3.5.4.5.2).

AERODROME TEMP. (°C)	HEIGHT ABOVE THE ELEVATION OF THE ALTIMETER SETTING SOURCE (feet)							
	(ft)	200	300	400	500	600	700	800
0	0	20	20	20	20	20	20	40
-10	20	20	40	40	40	40	60	60
-20	20	40	40	60	80	80	80	100
-30	40	60	60	80	100	120	120	140
-40	40	60	80	100	140	160	160	180
-50	60	80	100	140	160	200	200	220

AERODROME TEMP. (°C)	HEIGHT ABOVE THE ELEVATION OF THE ALTIMETER SETTING SOURCE (feet)							
	(ft)	900	1000	1500	2000	3000	4000	5000
0		40	40	60	80	120	160	200
-10		80	80	120	160	240	320	400
-20		100	120	180	240	360	500	620
-30		160	160	260	340	500	680	860
-40		200	220	320	440	660	880	1100
-50		240	280	400	540	820	1100	1380

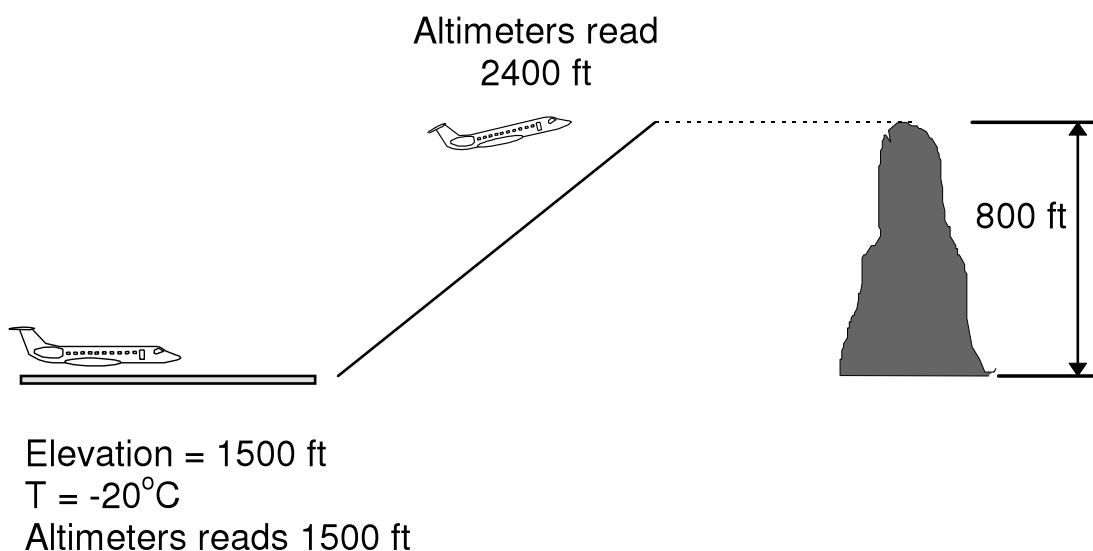
NOTE: The tables above are based on aerodrome elevation of 2000 ft; however, they can be used operationally at any aerodrome.

Example:

Airport elevation: 1500 ft
Airport Temperature -20°C
Obstacle Height above airport elevation 800 ft
Altimeter adjusted to airport QNH (on ground altimeter reads 1500 ft).

Enter table with 800 ft and -20°C and read 100 ft.

So, when the airplane reaches the obstacle geometric height, the altimeter will read $1500 + 800 + 100 = 2400$ ft



THRUST SETTING TABLES

Thrust settings tables are presented for various pressure altitudes and static air temperatures, with engine bleed closed or open, and anti-ice on or off.

The tables present the following data:

- N1 for T/O-1 mode.
- N1 for ALT T/O-1 mode.
- N1 for go-around (T/O-1 mode).
- N1 for maximum continuous thrust (CON mode).

T/O-1: It is the maximum permissible thrust at takeoff for existing conditions of temperature and pressure altitude. This rating is time limited to a 5 minutes.

ALT T/O-1: It is an engine rating lower than the takeoff thrust, intended for engine life extension (due to lower turbine temperatures). It is also time limited to 5 minutes. In case of engine failure the FADEC will command the operating engine to T/O-1 mode.

GO AROUND (T/O-1): It is the maximum permissible thrust during go around. The amount of thrust is the same as for the takeoff case, but the N1 are different because the effect of the airplane's airspeed during go around is taken into consideration.
Go-around thrust is also time-limited to 5 minutes.

MAXIMUM CONTINUOUS THRUST (CON): It is the maximum permissible thrust for continuous use.
Maximum Continuous Thrust is to be used whenever pilot judgment indicates it is necessary for safety reasons (1 engine inoperative, severe icing, etc).



N1 FOR T/O-1 MODE

ANTI-ICE OFF

AIRSPEED: 0 KCAS

ROLLS-ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C										
	-54	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5
-1000	74.8	75.5	76.4	77.2	78.0	78.8	79.6	80.4	81.2	82.0	82.8
0	75.5	76.1	77.0	77.8	78.7	79.5	80.3	81.1	81.9	82.7	83.5
1000	76.5	77.2	78.0	78.9	79.7	80.6	81.4	82.2	83.0	83.8	84.6
2000	77.5	78.2	79.1	80.0	80.8	81.7	82.5	83.3	84.1	84.9	85.7
3000	78.5	79.2	80.1	81.0	81.8	82.7	83.5	84.4	85.2	86.0	86.8
4000	79.5	80.2	81.1	82.0	82.8	83.7	84.6	85.4	86.2	87.1	87.9
5000	80.4	81.1	82.0	82.9	83.8	84.7	85.6	86.4	87.3	88.1	88.9
6000	80.9	81.7	82.6	83.5	84.4	85.2	86.1	87.0	87.8	88.7	89.5
7000	81.4	82.2	83.1	84.0	84.9	85.8	86.7	87.5	88.4	89.2	90.1
8000	82.0	82.7	83.6	84.6	85.5	86.3	87.2	88.1	89.0	89.8	90.7
9000	82.5	83.3	84.2	85.1	86.0	86.9	87.8	88.7	89.6	90.4	91.3
10000	83.1	83.9	84.8	85.7	86.6	87.5	88.4	89.3	90.2	91.1	91.9
11000	83.2	83.9	84.9	85.8	86.7	87.6	88.5	89.4	90.3	91.1	92.0
12000	83.3	84.0	84.9	85.9	86.8	87.7	88.6	89.5	90.4	91.2	92.1
13000	83.5	84.3	85.2	86.2	87.1	88.0	88.9	89.8	90.7	91.5	92.4
14000	84.0	84.8	85.8	86.7	87.6	88.5	89.4	90.3	91.2	92.1	93.0
15000	84.6	85.3	86.3	87.2	88.2	89.1	90.0	90.9	91.8	92.7	93.5
16000	84.6	85.3	86.3	87.2	88.2	89.1	90.0	90.9	91.8	92.7	93.5

N1 FOR T/O-1 MODE

ANTI-ICE OFF

AIRSPEED: 0 KCAS

ROLLS-ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C										
	0	5	10	15	20	25	30	35	40	45	50
-1000	83.6	84.3	85.1	85.8	86.6	87.3	88.0	88.8	89.5	90.2	90.3
0	84.2	85.0	85.8	86.5	87.3	88.0	88.8	89.5	90.2	90.9	90.8
1000	85.4	86.2	86.9	87.7	88.5	89.2	90.0	90.7	91.4	91.4	90.1
2000	86.5	87.3	88.1	88.9	89.7	90.4	91.2	91.9	92.0	91.0	90.2
3000	87.7	88.5	89.2	90.0	90.8	91.6	92.3	92.7	91.8	91.0	90.4
4000	88.7	89.5	90.3	91.1	91.9	92.7	93.2	93.1	91.8	91.0	90.7
5000	89.8	90.6	91.4	92.2	93.0	93.8	93.7	92.7	91.9	91.0	-
6000	90.3	91.2	92.0	92.8	93.6	94.0	93.3	92.6	91.7	91.2	-
7000	90.9	91.7	92.6	93.4	94.2	94.3	93.2	92.4	91.6	91.4	-
8000	91.5	92.4	93.2	94.0	94.5	94.4	93.1	92.3	91.6	-	-
9000	92.2	93.0	93.8	94.6	94.9	93.7	92.9	92.2	91.8	-	-
10000	92.8	93.6	94.5	94.5	93.2	92.2	91.5	90.9	-	-	-
11000	92.9	93.7	94.5	94.5	93.0	92.1	91.4	91.0	-	-	-
12000	92.9	93.8	94.6	94.6	92.8	92.0	91.3	91.2	-	-	-
13000	93.3	94.1	94.7	94.5	92.6	91.9	91.3	-	-	-	-
14000	93.8	94.7	94.9	93.4	92.5	91.7	91.4	-	-	-	-
15000	94.4	95.2	95.1	93.2	92.4	91.5	-	-	-	-	-
16000	94.1	94.1	92.7	91.7	90.9	90.3	-	-	-	-	-

N1 FOR ALT T/O-1 MODE

ANTI-ICE OFF

AIRSPEED: 0 KCAS

ROLLS-ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C										
	-54	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5
-1000	72.3	72.9	73.7	74.6	75.3	76.1	76.9	77.7	78.4	79.2	79.9
0	72.9	73.5	74.3	75.1	75.9	76.7	77.5	78.3	79.1	79.8	80.6
1000	73.7	74.4	75.2	76.1	76.9	77.7	78.5	79.2	80.0	80.8	81.6
2000	74.6	75.3	76.1	77.0	77.8	78.6	79.4	80.2	81.0	81.8	82.5
3000	75.6	76.2	77.1	77.9	78.8	79.6	80.4	81.2	82.0	82.8	83.6
4000	76.6	77.2	78.1	79.0	79.8	80.6	81.5	82.3	83.1	83.9	84.7
5000	77.5	78.3	79.1	80.0	80.8	81.7	82.5	83.4	84.2	85.0	85.8
6000	78.0	78.7	79.6	80.5	81.3	82.2	83.0	83.9	84.7	85.5	86.3
7000	78.5	79.2	80.1	81.0	81.8	82.7	83.5	84.4	85.2	86.0	86.8
8000	78.9	79.6	80.5	81.4	82.2	83.1	84.0	84.8	85.6	86.5	87.3
9000	79.3	80.1	80.9	81.8	82.7	83.6	84.4	85.3	86.1	86.9	87.8
10000	79.7	80.5	81.4	82.2	83.1	84.0	84.8	85.7	86.5	87.4	88.2
11000	80.1	80.8	81.7	82.6	83.5	84.4	85.3	86.1	87.0	87.8	88.6
12000	80.5	81.2	82.1	83.0	83.9	84.8	85.7	86.5	87.4	88.2	89.0
13000	80.9	81.7	82.6	83.5	84.4	85.2	86.1	87.0	87.8	88.7	89.5
14000	81.4	82.1	83.1	84.0	84.9	85.7	86.6	87.5	88.3	89.2	90.0
15000	81.9	82.6	83.6	84.5	85.4	86.3	87.1	88.0	88.9	89.7	90.6
16000	82.6	83.3	84.3	85.2	86.1	87.0	87.9	88.8	89.6	90.5	91.4

N1 FOR ALT T/O-1 MODE

ANTI-ICE OFF

AIRSPEED: 0 KCAS

ROLLS-ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C										
	0	5	10	15	20	25	30	35	40	45	50
-1000	80.7	81.4	82.2	82.9	83.6	84.3	85.0	85.7	86.4	87.1	87.3
0	81.3	82.1	82.8	83.5	84.3	85.0	85.7	86.4	87.1	87.7	87.5
1000	82.3	83.1	83.8	84.5	85.3	86.0	86.7	87.4	88.1	88.1	86.9
2000	83.3	84.1	84.8	85.6	86.3	87.0	87.8	88.5	88.6	87.7	87.1
3000	84.3	85.1	85.9	86.6	87.4	88.1	88.9	89.2	88.4	87.8	87.3
4000	85.5	86.2	87.0	87.8	88.5	89.3	89.8	89.1	88.5	87.8	87.6
5000	86.6	87.4	88.2	88.9	89.7	90.3	90.2	89.1	88.5	87.9	-
6000	87.1	87.9	88.7	89.5	90.2	90.6	89.7	89.1	88.5	88.0	-
7000	87.6	88.4	89.2	90.0	90.8	90.8	89.7	89.0	88.3	88.2	-
8000	88.1	88.9	89.7	90.5	91.0	90.3	89.6	88.9	88.3	-	-
9000	88.6	89.4	90.2	91.0	91.2	90.2	89.5	88.8	88.5	-	-
10000	89.0	89.8	90.6	91.4	91.3	90.1	89.4	88.6	-	-	-
11000	89.4	90.3	91.1	91.5	90.6	90.0	89.3	88.8	-	-	-
12000	89.9	90.7	91.5	91.5	90.5	89.9	89.2	89.0	-	-	-
13000	90.4	91.2	91.8	91.1	90.5	89.8	89.1	-	-	-	-
14000	90.9	91.7	92.0	91.1	90.4	89.7	89.3	-	-	-	-
15000	91.4	92.2	92.1	91.0	90.3	89.5	-	-	-	-	-
16000	92.2	92.5	91.5	90.8	90.1	89.6	-	-	-	-	-

N1 FOR GO-AROUND

ANTI-ICE OFF

AIRSPEED: 100 KCAS

ROLLS-ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C										
	-54	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5
-1000	74.9	75.6	76.4	77.2	78.1	78.9	79.7	80.5	81.3	82.1	82.8
0	75.5	76.2	77.1	77.9	78.7	79.5	80.4	81.2	82.0	82.8	83.5
1000	76.5	77.2	78.1	78.9	79.7	80.6	81.4	82.2	83.0	83.8	84.6
2000	77.5	78.2	79.1	79.9	80.8	81.6	82.5	83.3	84.1	84.9	85.7
3000	78.4	79.2	80.0	80.9	81.8	82.6	83.5	84.3	85.1	86.0	86.8
4000	79.4	80.1	81.0	81.9	82.8	83.6	84.5	85.3	86.2	87.0	87.8
5000	80.4	81.1	82.0	82.9	83.8	84.6	85.5	86.4	87.2	88.0	88.9
6000	80.8	81.5	82.5	83.4	84.2	85.1	86.0	86.9	87.7	88.6	89.4
7000	81.3	82.0	82.9	83.8	84.7	85.6	86.5	87.4	88.2	89.1	89.9
8000	81.8	82.5	83.4	84.4	85.3	86.1	87.0	87.9	88.8	89.6	90.5
9000	82.3	83.1	84.0	84.9	85.8	86.7	87.6	88.5	89.4	90.2	91.1
10000	82.9	83.6	84.6	85.5	86.4	87.3	88.2	89.1	90.0	90.8	91.7
11000	83.0	83.8	84.7	85.6	86.5	87.4	88.3	89.2	90.1	91.0	91.8
12000	83.1	83.9	84.8	85.8	86.7	87.6	88.5	89.4	90.2	91.1	92.0
13000	83.5	84.2	85.2	86.1	87.0	87.9	88.8	89.7	90.6	91.5	92.3
14000	84.0	84.8	85.8	86.7	87.6	88.5	89.4	90.3	91.2	92.1	93.0
15000	84.6	85.4	86.3	87.3	88.2	89.1	90.0	90.9	91.8	92.7	93.6
16000	84.6	85.4	86.3	87.3	88.2	89.1	90.0	90.9	91.8	92.7	93.6

N1 FOR GO-AROUND

ANTI-ICE OFF

AIRSPEED: 100 KCAS

ROLLS-ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C										
	0	5	10	15	20	25	30	35	40	45	50
-1000	83.6	84.4	85.1	85.9	86.6	87.3	88.1	88.8	89.5	90.2	90.5
0	84.3	85.1	85.8	86.6	87.3	88.1	88.8	89.5	90.3	90.9	90.7
1000	85.4	86.2	87.0	87.7	88.5	89.2	90.0	90.7	91.4	91.5	89.9
2000	86.5	87.3	88.1	88.8	89.6	90.4	91.1	91.9	92.0	90.9	90.0
3000	87.6	88.4	89.2	90.0	90.7	91.5	92.3	92.6	91.7	90.9	90.3
4000	88.6	89.5	90.3	91.0	91.8	92.6	93.1	93.0	91.8	91.0	90.6
5000	89.7	90.5	91.3	92.1	92.9	93.7	93.6	92.6	91.8	91.0	-
6000	90.2	91.0	91.9	92.7	93.5	93.9	93.2	92.5	91.7	91.2	-
7000	90.7	91.6	92.4	93.2	94.0	94.1	93.2	92.4	91.6	91.4	-
8000	91.3	92.1	93.0	93.8	94.4	94.2	93.1	92.3	91.6	-	-
9000	91.9	92.8	93.6	94.4	94.6	93.6	92.9	92.1	91.8	-	-
10000	92.5	93.4	94.2	94.2	93.1	92.2	91.5	90.8	-	-	-
11000	92.7	93.5	94.4	94.4	92.9	92.0	91.4	90.9	-	-	-
12000	92.8	93.7	94.5	94.5	92.6	91.9	91.3	91.1	-	-	-
13000	93.2	94.1	94.6	94.4	92.4	91.8	91.2	-	-	-	-
14000	93.8	94.7	94.9	93.3	92.4	91.7	91.4	-	-	-	-
15000	94.4	95.3	95.1	93.0	92.3	91.5	-	-	-	-	-
16000	94.3	94.2	92.6	91.6	90.9	90.4	-	-	-	-	-

N1 FOR GO-AROUND

ANTI-ICE OFF

AIRSPEED: 150 KCAS

ROLLS-ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C											
	-54	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	
-1000	74.8	75.5	76.3	77.2	78.0	78.8	79.6	80.4	81.2	82.0	82.8	
0	75.4	76.1	77.0	77.8	78.7	79.5	80.3	81.1	81.9	82.7	83.5	
1000	76.4	77.1	78.0	78.8	79.7	80.5	81.3	82.1	82.9	83.7	84.5	
2000	77.4	78.1	79.0	79.8	80.7	81.5	82.4	83.2	84.0	84.8	85.6	
3000	78.4	79.1	80.0	80.8	81.7	82.6	83.4	84.2	85.1	85.9	86.7	
4000	79.3	80.1	81.0	81.8	82.7	83.6	84.4	85.3	86.1	87.0	87.8	
5000	80.3	81.1	82.0	82.9	83.7	84.6	85.5	86.3	87.2	88.0	88.9	
6000	80.7	81.5	82.4	83.3	84.2	85.1	85.9	86.8	87.6	88.5	89.3	
7000	81.2	81.9	82.8	83.7	84.6	85.5	86.4	87.2	88.1	88.9	89.8	
8000	81.6	82.4	83.3	84.2	85.1	86.0	86.9	87.7	88.6	89.4	90.3	
9000	82.1	82.9	83.8	84.7	85.6	86.5	87.4	88.2	89.1	90.0	90.8	
10000	82.6	83.4	84.3	85.2	86.1	87.0	87.9	88.8	89.7	90.5	91.4	
11000	82.7	83.5	84.4	85.3	86.2	87.1	88.0	88.9	89.8	90.6	91.5	
12000	82.8	83.6	84.5	85.4	86.3	87.2	88.1	89.0	89.9	90.7	91.6	
13000	83.1	83.9	84.8	85.7	86.7	87.6	88.5	89.3	90.2	91.1	92.0	
14000	83.7	84.5	85.4	86.3	87.3	88.2	89.1	90.0	90.9	91.7	92.6	
15000	84.3	85.1	86.0	86.9	87.9	88.8	89.7	90.6	91.5	92.4	93.2	
16000	84.3	85.0	86.0	86.9	87.8	88.8	89.7	90.6	91.5	92.3	93.2	

N1 FOR GO-AROUND

ANTI-ICE OFF

AIRSPEED: 150 KCAS

ROLLS-ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C										
	0	5	10	15	20	25	30	35	40	45	50
-1000	83.5	84.3	85.1	85.8	86.5	87.3	88.0	88.7	89.4	90.2	90.4
0	84.2	85.0	85.8	86.5	87.3	88.0	88.7	89.5	90.2	90.8	90.6
1000	85.3	86.1	86.9	87.6	88.4	89.1	89.9	90.6	91.4	91.3	89.7
2000	86.4	87.2	88.0	88.8	89.5	90.3	91.0	91.8	91.9	90.7	89.8
3000	87.5	88.3	89.1	89.9	90.7	91.4	92.2	92.5	91.6	90.8	90.1
4000	88.6	89.4	90.2	91.0	91.8	92.6	93.1	93.0	91.7	90.8	90.5
5000	89.7	90.5	91.3	92.1	92.9	93.7	93.6	92.5	91.7	90.9	-
6000	90.1	91.0	91.8	92.6	93.4	93.8	93.1	92.4	91.6	91.1	-
7000	90.6	91.4	92.3	93.1	93.9	94.0	93.0	92.3	91.5	91.3	-
8000	91.1	92.0	92.8	93.6	94.2	94.1	93.0	92.2	91.5	-	-
9000	91.7	92.5	93.3	94.2	94.4	93.5	92.8	92.0	91.7	-	-
10000	92.2	93.1	93.9	94.0	92.9	92.2	91.5	90.7	-	-	-
11000	92.3	93.2	94.0	94.1	92.8	92.0	91.3	90.8	-	-	-
12000	92.4	93.3	94.1	94.1	92.5	91.8	91.1	91.0	-	-	-
13000	92.8	93.7	94.2	94.0	92.3	91.7	91.1	-	-	-	-
14000	93.5	94.3	94.5	93.0	92.2	91.6	91.3	-	-	-	-
15000	94.1	94.9	94.8	92.7	92.1	91.4	-	-	-	-	-
16000	94.0	94.0	92.4	91.4	90.8	90.4	-	-	-	-	-

N1 FOR GO-AROUND

ANTI-ICE OFF

AIRSPEED: 200 KCAS

ROLLS-ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C										
	-54	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5
-1000	74.6	75.2	76.1	76.9	77.7	78.5	79.3	80.1	80.9	81.7	82.5
0	75.2	75.9	76.7	77.6	78.4	79.2	80.0	80.8	81.6	82.4	83.2
1000	76.2	76.9	77.8	78.6	79.5	80.3	81.1	81.9	82.7	83.5	84.3
2000	77.3	78.0	78.9	79.7	80.6	81.4	82.2	83.1	83.9	84.7	85.5
3000	78.3	79.0	79.9	80.8	81.6	82.5	83.3	84.2	85.0	85.8	86.6
4000	79.3	80.0	80.9	81.8	82.7	83.6	84.4	85.3	86.1	86.9	87.8
5000	80.4	81.1	82.0	82.9	83.8	84.6	85.5	86.3	87.2	88.0	88.9
6000	80.7	81.5	82.4	83.3	84.2	85.0	85.9	86.8	87.6	88.5	89.3
7000	81.1	81.8	82.8	83.7	84.5	85.4	86.3	87.2	88.0	88.9	89.7
8000	81.5	82.3	83.2	84.1	85.0	85.9	86.7	87.6	88.5	89.3	90.2
9000	82.0	82.7	83.6	84.5	85.4	86.3	87.2	88.1	89.0	89.8	90.7
10000	82.4	83.1	84.1	85.0	85.9	86.8	87.7	88.5	89.4	90.3	91.1
11000	82.4	83.2	84.1	85.0	85.9	86.8	87.7	88.6	89.5	90.3	91.2
12000	82.5	83.2	84.2	85.1	86.0	86.9	87.8	88.6	89.5	90.4	91.2
13000	82.8	83.5	84.4	85.4	86.3	87.2	88.1	88.9	89.8	90.7	91.5
14000	83.3	84.1	85.0	85.9	86.8	87.7	88.6	89.5	90.4	91.3	92.1
15000	83.8	84.6	85.5	86.5	87.4	88.3	89.2	90.1	91.0	91.9	92.7
16000	83.7	84.5	85.4	86.4	87.3	88.2	89.1	90.0	90.9	91.7	92.6

N1 FOR GO-AROUND

ANTI-ICE OFF

AIRSPEED: 200 KCAS

ROLLS-ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C										
	0	5	10	15	20	25	30	35	40	45	50
-1000	83.2	84.0	84.7	85.5	86.2	87.0	87.7	88.4	89.1	89.8	89.8
0	83.9	84.7	85.5	86.2	87.0	87.7	88.4	89.2	89.9	90.6	90.3
1000	85.1	85.9	86.7	87.4	88.2	88.9	89.7	90.4	91.1	91.1	89.3
2000	86.3	87.1	87.8	88.6	89.4	90.1	90.9	91.6	91.8	90.5	89.4
3000	87.4	88.2	89.0	89.8	90.6	91.3	92.1	92.5	91.5	90.5	89.7
4000	88.6	89.4	90.2	91.0	91.7	92.5	93.1	92.9	91.5	90.6	90.2
5000	89.7	90.5	91.3	92.1	92.9	93.7	93.6	92.4	91.6	90.7	-
6000	90.1	91.0	91.7	92.6	93.4	93.8	93.0	92.3	91.5	91.0	-
7000	90.5	91.4	92.2	93.0	93.8	93.9	93.0	92.3	91.5	91.3	-
8000	91.0	91.8	92.7	93.5	94.1	94.0	92.9	92.2	91.5	-	-
9000	91.5	92.3	93.2	94.0	94.2	93.5	92.8	92.0	91.7	-	-
10000	92.0	92.8	93.7	93.8	92.8	92.2	91.5	90.7	-	-	-
11000	92.0	92.9	93.7	93.7	92.7	92.0	91.2	90.7	-	-	-
12000	92.1	92.9	93.7	93.8	92.4	91.7	91.0	90.9	-	-	-
13000	92.4	93.2	93.8	93.7	92.2	91.6	91.0	-	-	-	-
14000	93.0	93.8	94.1	92.8	92.1	91.4	91.1	-	-	-	-
15000	93.6	94.4	94.3	92.5	91.9	91.3	-	-	-	-	-
16000	93.5	93.5	92.1	91.3	90.6	90.2	-	-	-	-	-

N1 FOR MAXIMUM CONTINUOUS MODE

ANTI-ICE OFF

AIRSPEED: 100 KCAS

ROLLS ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C												
	-65	-60	-54	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5
0	71.2	72.1	73.1	73.7	74.6	75.4	76.2	77.0	77.8	78.5	79.3	80.1	80.8
2000	72.9	73.8	74.9	75.5	76.4	77.2	78.0	78.8	79.6	80.4	81.2	82.0	82.8
4000	74.8	75.7	76.8	77.5	78.4	79.2	80.1	80.9	81.7	82.5	83.4	84.2	85.0
6000	76.3	77.2	78.3	79.0	79.9	80.7	81.6	82.4	83.3	84.1	84.9	85.8	86.6
8000	77.1	78.0	79.1	79.9	80.8	81.6	82.5	83.4	84.2	85.1	85.9	86.7	87.6
10000	77.9	78.9	80.0	80.7	81.6	82.5	83.4	84.2	85.1	85.9	86.8	87.6	88.4
12000	78.7	79.7	80.8	81.5	82.4	83.3	84.2	85.1	86.0	86.8	87.7	88.5	89.4
14000	79.6	80.6	81.7	82.5	83.4	84.3	85.2	86.1	86.9	87.8	88.7	89.6	90.4
16000	80.6	81.5	82.7	83.4	84.4	85.3	86.2	87.1	88.0	88.9	89.7	90.6	91.5
18000	81.7	82.7	83.8	84.6	85.6	86.5	87.4	88.3	89.2	90.1	91.0	91.9	92.7
20000	83.5	84.5	85.7	86.4	87.4	88.4	89.3	90.2	91.2	92.1	93.0	93.9	94.3
22000	84.2	85.2	86.4	87.2	88.2	89.1	90.1	91.0	92.0	92.9	93.8	94.2	93.2
24000	85.0	86.0	87.2	88.0	89.0	89.9	90.9	91.9	92.8	93.7	94.3	93.4	92.6
26000	85.8	86.8	88.0	88.8	89.8	90.8	91.7	92.7	93.7	94.3	94.1	92.8	92.0
28000	86.6	87.6	88.8	89.7	90.7	91.6	92.6	93.6	94.3	94.2	93.0	92.2	91.5
30000	87.4	88.5	89.7	90.5	91.5	92.5	93.5	94.3	94.2	93.1	92.4	91.7	90.9
32000	88.3	89.3	90.6	91.4	92.4	93.4	94.2	94.1	93.2	92.6	91.9	91.0	90.7
34000	89.2	90.3	91.5	92.3	93.4	94.1	94.1	93.3	92.8	92.0	91.2	90.7	-
36000	90.1	91.2	92.5	93.3	94.0	93.8	93.4	92.9	92.2	91.3	90.6	-	-
37000	90.1	91.2	92.5	93.3	94.2	94.0	94.0	93.2	92.5	91.5	90.8	-	-

N1 FOR MAXIMUM CONTINUOUS MODE

ANTI-ICE OFF

AIRSPEED: 100 KCAS

ROLLS-ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C										
	0	5	10	15	20	25	30	35	40	45	50
0	81.6	82.3	83.1	83.8	84.5	85.2	85.9	86.6	87.3	88.0	87.8
2000	83.6	84.3	85.1	85.8	86.6	87.3	88.0	88.8	88.9	88.0	87.2
4000	85.7	86.5	87.3	88.1	88.8	89.6	90.1	89.4	88.8	88.1	87.9
6000	87.4	88.2	89.0	89.7	90.5	90.8	90.0	89.4	88.8	88.3	-
8000	88.4	89.2	90.0	90.8	91.3	90.6	90.0	89.3	88.7	-	-
10000	89.3	90.1	90.9	91.6	91.5	90.4	89.7	89.0	-	-	-
12000	90.2	91.0	91.8	91.9	90.9	90.2	89.5	89.3	-	-	-
14000	91.2	92.1	92.3	91.4	90.8	90.0	89.7	-	-	-	-
16000	92.3	92.7	91.9	91.2	90.5	90.0	-	-	-	-	-
18000	93.3	93.1	91.5	90.9	90.3	-	-	-	-	-	-
20000	93.0	92.0	91.4	90.8	-	-	-	-	-	-	-
22000	92.3	91.6	91.0	90.8	-	-	-	-	-	-	-
24000	91.8	91.1	90.8	-	-	-	-	-	-	-	-
26000	91.3	90.8	-	-	-	-	-	-	-	-	-
28000	90.8	-	-	-	-	-	-	-	-	-	-
30000	-	-	-	-	-	-	-	-	-	-	-
32000	-	-	-	-	-	-	-	-	-	-	-
34000	-	-	-	-	-	-	-	-	-	-	-
36000	-	-	-	-	-	-	-	-	-	-	-
37000	-	-	-	-	-	-	-	-	-	-	-

N1 FOR MAXIMUM CONTINUOUS MODE

ANTI-ICE OFF

AIRSPEED: 150 KCAS

ROLLS ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C												
	-65	-60	-54	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5
0	71.2	72.1	73.1	73.8	74.6	75.4	76.2	77.0	77.8	78.6	79.3	80.1	80.9
2000	73.0	73.9	74.9	75.6	76.4	77.3	78.1	78.9	79.7	80.5	81.3	82.1	82.9
4000	74.9	75.8	76.9	77.6	78.5	79.3	80.2	81.0	81.8	82.6	83.5	84.3	85.1
6000	76.3	77.3	78.3	79.0	79.9	80.8	81.7	82.5	83.4	84.2	85.0	85.8	86.6
8000	77.2	78.1	79.2	79.9	80.8	81.7	82.6	83.4	84.3	85.1	86.0	86.8	87.6
10000	78.0	78.9	80.0	80.8	81.7	82.6	83.4	84.3	85.2	86.0	86.9	87.7	88.5
12000	78.8	79.7	80.8	81.6	82.5	83.4	84.3	85.1	86.0	86.9	87.7	88.6	89.4
14000	79.6	80.6	81.7	82.4	83.3	84.2	85.1	86.0	86.9	87.8	88.6	89.5	90.3
16000	80.4	81.3	82.5	83.2	84.2	85.1	86.0	86.9	87.8	88.6	89.5	90.4	91.2
18000	81.3	82.3	83.5	84.2	85.2	86.1	87.0	87.9	88.8	89.7	90.6	91.5	92.3
20000	83.1	84.1	85.2	86.0	87.0	87.9	88.9	89.8	90.7	91.6	92.5	93.4	93.9
22000	83.9	84.9	86.1	86.9	87.9	88.8	89.8	90.7	91.7	92.6	93.5	94.1	94.0
24000	84.8	85.8	87.0	87.8	88.8	89.8	90.7	91.7	92.6	93.5	94.2	94.1	92.6
26000	85.7	86.7	87.9	88.7	89.7	90.7	91.7	92.6	93.6	94.2	94.1	92.8	92.0
28000	86.6	87.7	88.9	89.7	90.7	91.7	92.7	93.6	94.2	93.7	93.0	92.3	91.4
30000	87.7	88.7	89.9	90.8	91.8	92.8	93.8	94.3	93.7	93.1	92.4	91.6	90.7
32000	88.7	89.8	91.1	91.9	92.9	93.9	94.3	93.8	93.2	92.6	91.7	90.7	90.4
34000	89.9	91.0	92.3	93.1	94.1	94.2	93.7	93.3	92.7	91.9	90.8	90.3	-
36000	91.2	92.3	93.6	94.0	93.9	93.8	93.4	92.9	92.1	91.0	90.1	-	-
37000	90.8	91.9	93.2	94.0	94.1	94.1	93.7	93.2	92.4	91.2	90.3	-	-

N1 FOR MAXIMUM CONTINUOUS MODE

ANTI-ICE OFF

AIRSPEED: 150 KCAS

ROLLS ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C										
	0	5	10	15	20	25	30	35	40	45	50
-1000	81.0	81.7	82.4	83.1	83.9	84.6	85.3	86.0	86.7	87.3	87.6
0	81.6	82.4	83.1	83.8	84.5	85.3	86.0	86.7	87.4	88.0	87.8
1000	82.6	83.4	84.1	84.9	85.6	86.3	87.0	87.8	88.5	88.4	86.8
2000	83.6	84.4	85.2	85.9	86.7	87.4	88.1	88.8	89.0	87.9	87.0
3000	84.7	85.5	86.3	87.0	87.8	88.5	89.3	89.7	88.8	88.0	87.3
4000	85.8	86.6	87.4	88.2	88.9	89.7	90.2	89.5	88.8	88.1	87.7
5000	87.0	87.7	88.5	89.3	90.1	90.7	90.6	89.6	88.9	88.2	-
6000	87.4	88.2	89.0	89.8	90.6	90.9	90.1	89.5	88.9	88.4	-
8000	88.4	89.2	90.0	90.8	91.3	90.6	90.1	89.4	88.8	-	-
10000	89.4	90.2	91.0	91.7	91.6	90.6	89.9	89.1	-	-	-
12000	90.2	91.1	91.9	91.9	91.0	90.3	89.6	89.4	-	-	-
14000	91.2	92.0	92.2	91.4	90.8	90.1	89.8	-	-	-	-
16000	92.1	92.6	91.9	91.3	90.6	90.1	-	-	-	-	-
18000	93.2	93.1	91.6	91.0	90.4	-	-	-	-	-	-
20000	93.7	92.0	91.4	90.8	-	-	-	-	-	-	-
22000	92.3	91.6	91.0	90.8	-	-	-	-	-	-	-
24000	91.8	91.2	90.8	-	-	-	-	-	-	-	-
26000	91.3	90.8	-	-	-	-	-	-	-	-	-
28000	90.7	-	-	-	-	-	-	-	-	-	-
30000	-	-	-	-	-	-	-	-	-	-	-
32000	-	-	-	-	-	-	-	-	-	-	-
34000	-	-	-	-	-	-	-	-	-	-	-
36000	-	-	-	-	-	-	-	-	-	-	-
37000	-	-	-	-	-	-	-	-	-	-	-

N1 FOR MAXIMUM CONTINUOUS MODE

ANTI-ICE OFF

AIRSPEED: 200 KCAS

ROLLS ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C												
	-65	-60	-54	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5
0	71.1	72.0	73.0	73.6	74.5	75.3	76.1	76.9	77.7	78.4	79.2	80.0	80.7
2000	73.1	74.0	75.0	75.7	76.5	77.4	78.2	79.0	79.8	80.6	81.4	82.2	83.0
4000	75.0	75.9	77.0	77.7	78.6	79.4	80.3	81.1	81.9	82.8	83.6	84.4	85.2
6000	76.4	77.3	78.4	79.1	80.0	80.9	81.8	82.6	83.5	84.3	85.1	85.9	86.8
8000	77.3	78.2	79.3	80.0	80.9	81.8	82.7	83.5	84.4	85.2	86.1	86.9	87.7
10000	78.1	79.1	80.2	80.9	81.8	82.7	83.6	84.4	85.3	86.2	87.0	87.8	88.7
12000	78.8	79.8	80.9	81.6	82.5	83.4	84.3	85.2	86.1	86.9	87.8	88.6	89.5
14000	79.6	80.5	81.7	82.4	83.3	84.2	85.1	86.0	86.9	87.8	88.6	89.5	90.3
16000	80.2	81.2	82.3	83.1	84.0	84.9	85.8	86.7	87.6	88.5	89.3	90.2	91.1
18000	80.9	81.9	83.0	83.8	84.7	85.7	86.6	87.5	88.4	89.3	90.1	91.0	91.8
20000	82.3	83.3	84.4	85.2	86.2	87.1	88.0	89.0	89.9	90.8	91.7	92.5	93.4
22000	83.3	84.3	85.5	86.2	87.2	88.1	89.1	90.0	90.9	91.8	92.8	93.6	93.5
24000	84.3	85.3	86.5	87.3	88.3	89.3	90.2	91.2	92.1	93.0	93.8	93.7	92.5
26000	85.5	86.5	87.7	88.5	89.5	90.5	91.4	92.4	93.3	93.9	93.8	92.7	92.0
28000	86.5	87.5	88.7	89.5	90.5	91.5	92.5	93.5	94.0	93.4	92.8	92.2	91.3
30000	87.7	88.7	90.0	90.8	91.8	92.8	93.8	94.2	93.5	92.9	92.3	91.4	90.4
32000	89.1	90.2	91.4	92.3	93.3	94.3	94.3	93.5	92.9	92.3	91.4	90.4	90.1
34000	89.6	90.6	91.9	92.7	93.8	94.1	93.5	93.0	92.3	91.5	90.5	89.9	-
36000	90.0	91.1	92.3	93.2	93.8	93.4	92.9	92.3	91.5	90.5	89.7	-	-
37000	90.0	91.1	92.3	93.2	94.1	94.0	93.1	92.4	91.6	90.6	89.9	-	-

N1 FOR MAXIMUM CONTINUOUS MODE

ANTI-ICE OFF

AIRSPEED: 200 KCAS

ROLLS-ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C										
	0	5	10	15	20	25	30	35	40	45	50
0	81.5	82.2	83.0	83.7	84.4	85.1	85.8	86.5	87.2	87.8	87.6
2000	83.7	84.5	85.2	86.0	86.7	87.5	88.2	88.9	89.1	87.8	86.6
4000	86.0	86.7	87.5	88.3	89.0	89.8	90.2	89.6	88.9	88.0	87.6
6000	87.6	88.4	89.1	89.9	90.7	91.0	90.2	89.7	88.9	88.5	-
8000	88.5	89.4	90.1	90.9	91.4	90.7	90.2	89.6	89.1	-	-
10000	89.5	90.3	91.1	91.8	91.7	90.7	90.1	89.4	-	-	-
12000	90.3	91.1	91.9	92.0	91.1	90.5	89.8	89.6	-	-	-
14000	91.2	92.0	92.2	91.5	90.9	90.2	89.9	-	-	-	-
16000	91.9	92.5	91.9	91.3	90.6	90.2	-	-	-	-	-
18000	92.7	92.8	91.6	91.0	90.4	-	-	-	-	-	-
20000	93.4	92.0	91.4	90.8	-	-	-	-	-	-	-
22000	92.3	91.6	90.9	90.7	-	-	-	-	-	-	-
24000	91.8	91.1	90.7	-	-	-	-	-	-	-	-
26000	91.2	90.6	-	-	-	-	-	-	-	-	-
28000	90.4	-	-	-	-	-	-	-	-	-	-
30000	-	-	-	-	-	-	-	-	-	-	-
32000	-	-	-	-	-	-	-	-	-	-	-
34000	-	-	-	-	-	-	-	-	-	-	-
36000	-	-	-	-	-	-	-	-	-	-	-
37000	-	-	-	-	-	-	-	-	-	-	-

N1 FOR T/O-1 MODE

ANTI-ICE ON

AIRSPEED: 0 KCAS

ROLLS-ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C										
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
-1000	78.3	79.2	80.0	80.8	81.6	82.4	83.2	84.0	83.6	84.3	85.1
0	79.0	79.8	80.6	81.5	82.3	83.1	83.9	84.7	84.2	85.0	85.8
1000	80.0	80.9	81.7	82.6	83.4	84.2	85.0	85.8	85.4	86.2	86.9
2000	81.1	82.0	82.8	83.7	84.5	85.3	86.2	87.0	86.5	87.3	88.1
3000	82.1	83.0	83.9	84.7	85.6	86.4	87.2	88.1	87.6	88.4	89.2
4000	83.1	84.0	84.9	85.7	86.6	87.4	88.3	89.1	88.7	89.5	89.5
5000	84.1	85.0	85.9	86.7	87.6	88.5	89.3	90.2	89.8	90.5	89.5
6000	84.6	85.5	86.4	87.3	88.2	89.0	89.9	90.7	90.3	90.1	89.1
7000	85.1	86.0	86.9	87.8	88.7	89.6	90.4	91.3	90.6	89.8	88.8
8000	85.7	86.6	87.5	88.4	89.3	90.2	91.0	91.8	90.0	89.3	88.4
9000	86.3	87.2	88.1	89.0	89.9	90.8	91.6	91.1	89.3	88.7	88.0
10000	86.9	87.8	88.7	89.6	90.5	91.4	90.9	89.1	87.5	87.1	86.7
11000	86.9	87.9	88.8	89.7	90.6	90.9	90.4	88.8	87.3	87.0	86.6
12000	87.0	87.9	88.9	89.8	90.7	90.5	88.8	88.6	87.1	86.9	86.6
13000	87.3	88.2	89.2	90.1	90.5	90.1	88.6	88.4	87.0	86.8	86.5
14000	87.8	88.8	89.7	90.5	90.2	88.6	88.4	88.3	87.0	86.8	86.2
15000	88.4	89.3	90.2	90.2	89.9	88.4	88.3	88.3	87.0	86.9	85.9
16000	88.4	89.3	90.1	89.7	88.1	87.7	87.5	87.3	85.8	85.2	84.1

N1 FOR ALT T/O-1 MODE

ANTI-ICE ON

AIRSPEED: 0 KCAS

ROLLS-ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C										
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
-1000	75.7	76.5	77.3	78.1	78.9	79.6	80.4	81.2	80.7	81.4	82.2
0	76.3	77.1	77.9	78.7	79.5	80.3	81.0	81.8	81.3	82.1	82.8
1000	77.2	78.0	78.8	79.6	80.4	81.2	82.0	82.8	82.3	83.1	83.8
2000	78.1	78.9	79.7	80.6	81.4	82.2	83.0	83.8	83.3	84.1	84.8
3000	79.1	79.9	80.7	81.6	82.4	83.2	84.0	84.8	84.3	85.1	85.9
4000	80.1	80.9	81.8	82.6	83.5	84.3	85.1	85.9	85.5	86.2	87.0
5000	81.1	82.0	82.9	83.7	84.5	85.4	86.2	87.0	86.6	87.4	88.1
6000	81.6	82.5	83.3	84.2	85.0	85.9	86.7	87.5	87.1	87.9	88.7
7000	82.1	83.0	83.8	84.7	85.5	86.4	87.2	88.0	87.6	88.4	89.2
8000	82.5	83.4	84.3	85.2	86.0	86.9	87.7	88.5	88.1	88.9	89.4
9000	83.0	83.8	84.7	85.6	86.5	87.3	88.1	89.0	88.6	89.4	89.3
10000	83.4	84.3	85.2	86.0	86.9	87.7	88.6	89.4	89.0	89.8	89.2
11000	83.8	84.7	85.6	86.4	87.3	88.2	89.0	89.8	89.4	89.7	88.8
12000	84.2	85.1	86.0	86.8	87.7	88.6	89.4	90.3	89.9	89.3	88.5
13000	84.6	85.5	86.4	87.3	88.2	89.0	89.9	90.7	89.8	89.0	88.3
14000	85.1	86.0	86.9	87.8	88.7	89.6	90.4	91.3	89.6	88.9	88.2
15000	85.6	86.5	87.4	88.3	89.2	90.1	90.9	91.3	89.4	88.7	88.1
16000	86.3	87.3	88.2	89.1	90.0	90.8	91.7	91.3	89.4	88.7	88.0

N1 FOR GO-AROUND

ANTI-ICE ON

AIRSPEED: 100 KCAS

ROLLS-ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C										
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
-1000	78.4	79.2	80.0	80.9	81.7	82.5	83.3	84.1	83.6	84.4	85.1
0	79.0	79.9	80.7	81.5	82.4	83.2	84.0	84.8	84.3	85.1	85.8
1000	80.0	80.9	81.7	82.6	83.4	84.2	85.0	85.8	85.4	86.2	87.0
2000	81.1	81.9	82.8	83.6	84.5	85.3	86.1	86.9	86.5	87.3	88.1
3000	82.1	82.9	83.8	84.7	85.5	86.3	87.2	88.0	87.6	88.4	89.2
4000	83.0	83.9	84.8	85.7	86.5	87.4	88.2	89.0	88.6	89.5	89.8
5000	84.0	84.9	85.8	86.7	87.5	88.4	89.3	90.1	89.7	90.5	89.8
6000	84.5	85.4	86.3	87.2	88.1	88.9	89.8	90.6	90.2	90.5	89.5
7000	85.0	85.9	86.8	87.7	88.5	89.4	90.3	91.1	90.7	90.2	89.2
8000	85.5	86.4	87.3	88.2	89.1	90.0	90.8	91.7	90.6	89.7	88.8
9000	86.1	87.0	87.9	88.8	89.7	90.6	91.4	91.6	89.8	89.1	88.4
10000	86.6	87.6	88.5	89.4	90.3	91.2	91.5	89.7	88.0	87.5	86.9
11000	86.8	87.7	88.6	89.5	90.4	91.3	91.0	89.3	87.7	87.3	86.9
12000	86.9	87.8	88.7	89.7	90.6	91.1	89.4	89.0	87.5	87.2	86.9
13000	87.3	88.2	89.1	90.0	90.9	90.6	89.0	88.9	87.4	87.2	86.8
14000	87.8	88.8	89.7	90.6	90.6	89.1	88.9	88.8	87.4	87.3	86.5
15000	88.4	89.3	90.3	90.5	90.3	88.7	88.7	88.7	87.4	87.4	86.2
16000	88.4	89.3	90.3	90.3	88.6	88.3	88.1	87.8	86.3	85.8	84.5

N1 FOR GO-AROUND

ANTI-ICE ON

AIRSPEED: 150 KCAS

ROLLS-ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C											
	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
-1000	77.5	78.3	79.2	80.0	80.8	81.6	82.4	83.2	84.0	83.5	84.3	85.1
0	78.1	79.0	79.8	80.6	81.5	82.3	83.1	83.9	84.7	84.2	85.0	85.8
1000	79.1	80.0	80.8	81.7	82.5	83.3	84.1	85.0	85.8	85.3	86.1	86.9
2000	80.1	81.0	81.8	82.7	83.5	84.4	85.2	86.0	86.8	86.4	87.2	88.0
3000	81.1	82.0	82.9	83.7	84.6	85.4	86.3	87.1	87.9	87.5	88.3	89.1
4000	82.1	83.0	83.9	84.8	85.6	86.5	87.3	88.2	89.0	88.6	89.4	89.8
5000	83.1	84.0	84.9	85.8	86.7	87.5	88.4	89.2	90.1	89.7	90.5	89.9
6000	83.5	84.4	85.3	86.2	87.1	88.0	88.8	89.7	90.5	90.2	90.6	89.6
7000	83.9	84.9	85.8	86.7	87.5	88.4	89.3	90.2	91.0	90.6	90.3	89.3
8000	84.4	85.3	86.2	87.1	88.0	88.9	89.8	90.7	91.5	90.8	89.8	88.9
9000	84.9	85.9	86.8	87.7	88.6	89.5	90.3	91.2	91.9	90.0	89.2	88.4
10000	85.4	86.4	87.3	88.2	89.1	90.0	90.9	91.7	90.0	88.2	87.6	86.9
11000	85.5	86.5	87.4	88.3	89.2	90.1	91.0	91.4	89.6	87.9	87.3	86.8
12000	85.6	86.6	87.5	88.4	89.3	90.2	91.1	89.8	89.3	87.6	87.2	86.7
13000	86.0	86.9	87.8	88.7	89.6	90.5	91.1	89.4	89.1	87.5	87.1	86.6
14000	86.5	87.5	88.4	89.3	90.3	91.1	89.4	89.1	88.9	87.4	87.1	86.4
15000	87.1	88.1	89.0	90.0	90.9	90.7	89.1	88.9	88.8	87.4	87.2	86.1
16000	87.1	88.1	89.0	89.9	90.6	88.9	88.5	88.2	87.9	86.3	85.7	84.5

N1 FOR GO-AROUND

ANTI-ICE ON

AIRSPEED: 200 KCAS

ROLLS-ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C										
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
-1000	78.1	78.9	79.7	80.5	81.3	82.1	82.9	83.7	83.2	84.0	84.7
0	78.7	79.5	80.4	81.2	82.0	82.8	83.6	84.4	83.9	84.7	85.5
1000	79.8	80.6	81.5	82.3	83.1	83.9	84.8	85.6	85.1	85.9	86.7
2000	80.9	81.7	82.6	83.4	84.3	85.1	85.9	86.7	86.3	87.1	87.8
3000	81.9	82.8	83.7	84.5	85.4	86.2	87.0	87.9	87.4	88.2	89.0
4000	83.0	83.9	84.7	85.6	86.5	87.3	88.1	89.0	88.6	89.4	89.8
5000	84.0	84.9	85.8	86.7	87.6	88.4	89.3	90.1	89.7	90.5	89.9
6000	84.4	85.3	86.2	87.1	88.0	88.8	89.7	90.5	90.1	90.7	89.7
7000	84.8	85.7	86.6	87.5	88.4	89.2	90.1	91.0	90.5	90.5	89.5
8000	85.2	86.1	87.0	87.9	88.8	89.7	90.6	91.4	91.0	90.1	89.0
9000	85.7	86.6	87.5	88.4	89.3	90.2	91.0	91.9	90.3	89.4	88.5
10000	86.1	87.1	88.0	88.9	89.8	90.6	91.5	90.4	88.5	87.7	87.0
11000	86.2	87.1	88.0	88.9	89.8	90.7	91.6	89.9	88.1	87.4	86.7
12000	86.2	87.1	88.1	89.0	89.8	90.7	90.2	89.6	87.8	87.2	86.6
13000	86.5	87.4	88.4	89.3	90.2	91.0	89.7	89.3	87.5	87.0	86.4
14000	87.1	88.0	88.9	89.8	90.7	89.9	89.4	89.0	87.4	86.9	86.2
15000	87.6	88.6	89.5	90.4	91.3	89.5	89.2	88.9	87.3	86.9	85.9
16000	87.5	88.5	89.4	90.3	89.2	88.7	88.2	87.8	86.1	85.4	84.4

N1 FOR MAXIMUM CONTINUOUS MODE

ANTI-ICE ON

AIRSPEED: 100 KCAS

ROLLS-ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C										
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
0	76.5	77.3	78.1	78.9	79.7	80.5	81.3	82.1	81.6	82.3	83.1
2000	78.3	79.2	80.0	80.8	81.6	82.4	83.2	84.0	83.6	84.3	85.1
4000	80.4	81.2	82.0	82.9	83.7	84.6	85.4	86.2	85.7	86.5	85.8
6000	81.9	82.7	83.6	84.5	85.3	86.1	87.0	87.8	87.1	86.4	85.6
8000	82.8	83.7	84.5	85.4	86.3	87.1	88.0	88.8	86.9	86.2	85.4
10000	83.6	84.5	85.4	86.3	87.1	88.0	88.8	89.0	86.9	86.0	85.0
12000	84.5	85.4	86.3	87.2	88.0	88.9	88.8	88.0	86.0	85.2	84.4
14000	85.4	86.3	87.3	88.1	89.0	88.8	88.1	87.5	85.5	84.8	83.9
16000	86.4	87.3	88.3	89.2	89.1	88.5	87.9	87.2	85.3	84.4	83.1
18000	87.6	88.6	89.5	89.9	89.3	88.5	87.7	86.9	84.7	83.4	82.1
20000	89.5	90.5	91.2	90.4	89.1	87.7	86.3	84.8	83.1	82.7	81.7
22000	90.3	90.8	90.1	89.1	87.8	86.5	85.2	84.5	82.8	82.1	81.3
24000	90.4	89.8	89.0	87.9	86.7	85.5	84.7	84.1	82.3	81.7	81.4
26000	89.5	88.8	87.9	87.0	86.0	85.0	84.3	83.7	82.0	81.6	-
28000	88.6	87.9	87.1	86.3	85.5	84.6	83.7	83.4	81.9	-	-
30000	87.7	87.1	86.4	85.8	84.9	84.1	83.5	82.9	-	-	-
32000	87.0	86.5	86.0	85.3	84.5	83.6	82.8	82.5	-	-	-
34000	86.4	86.0	85.4	84.7	83.9	82.9	82.4	-	-	-	-
36000	85.9	85.5	84.9	84.1	83.1	82.3	-	-	-	-	-
37000	85.7	85.2	84.5	83.6	82.6	81.9	-	-	-	-	-

N1 FOR MAXIMUM CONTINUOUS MODE

ANTI-ICE ON

AIRSPEED: 150 KCAS

ROLLS ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C										
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
0	76.5	77.4	78.2	79.0	79.8	80.5	81.3	82.1	81.6	82.4	83.1
2000	78.4	79.3	80.1	80.9	81.7	82.5	83.3	84.1	83.7	84.4	85.2
4000	80.4	81.3	82.1	83.0	83.8	84.7	85.5	86.3	85.8	86.6	86.1
6000	81.9	82.8	83.7	84.5	85.4	86.2	87.1	87.9	87.3	86.6	85.9
8000	82.8	83.7	84.6	85.5	86.3	87.2	88.0	88.8	87.2	86.4	85.6
10000	83.7	84.6	85.5	86.4	87.2	88.1	88.9	89.6	87.4	86.4	85.4
12000	84.5	85.4	86.3	87.2	88.1	88.9	89.4	88.6	86.5	85.6	84.6
14000	85.4	86.3	87.2	88.1	89.0	89.2	88.5	87.8	85.7	84.9	84.0
16000	86.2	87.1	88.1	89.0	89.3	88.7	88.0	87.4	85.4	84.5	83.2
18000	87.2	88.2	89.1	90.0	89.4	88.6	87.8	87.0	84.8	83.5	82.2
20000	89.1	90.0	91.0	90.5	89.2	87.9	86.5	85.1	83.3	82.8	81.7
22000	90.0	90.9	90.2	89.2	88.0	86.7	85.4	84.7	82.9	82.1	81.2
24000	90.5	89.9	89.1	88.0	86.8	85.5	84.7	84.3	82.5	81.7	81.4
26000	89.6	88.9	88.0	87.0	86.0	85.1	84.4	83.8	82.0	81.6	-
28000	88.7	87.9	87.2	86.3	85.5	84.6	83.8	83.5	82.0	-	-
30000	87.8	87.2	86.5	85.8	85.0	84.2	83.6	83.0	-	-	-
32000	87.1	86.6	86.1	85.3	84.5	83.7	82.9	82.6	-	-	-
34000	86.5	86.1	85.5	84.8	83.9	82.9	82.4	-	-	-	-
36000	86.1	85.7	85.0	84.2	83.0	82.1	-	-	-	-	-
37000	85.9	85.4	84.7	83.7	82.6	81.8	-	-	-	-	-

N1 FOR MAXIMUM CONTINUOUS MODE

ANTI-ICE ON

AIRSPEED: 200 KCAS

ROLLS ROYCE AE3007A1 ENGINES

Pressure Altitude (ft)	Static Air Temperature - °C										
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
0	76.4	77.2	78.0	78.8	79.6	80.4	81.2	82.0	81.5	82.2	82.9
2000	78.5	79.3	80.2	81.0	81.8	82.6	83.4	84.2	83.7	84.5	85.2
4000	80.6	81.4	82.3	83.1	83.9	84.8	85.6	86.4	86.0	86.7	86.4
6000	82.0	82.9	83.8	84.6	85.5	86.3	87.2	88.0	87.6	86.9	86.2
8000	83.0	83.8	84.7	85.6	86.4	87.3	88.1	89.0	87.4	86.7	85.9
10000	83.8	84.7	85.6	86.5	87.4	88.2	89.1	89.9	87.8	86.8	85.7
12000	84.6	85.5	86.4	87.3	88.1	89.0	89.9	89.1	86.9	85.9	84.9
14000	85.4	86.3	87.2	88.1	89.0	89.6	88.8	88.0	86.0	85.1	84.1
16000	86.1	87.0	87.9	88.8	89.4	88.8	88.1	87.4	85.5	84.5	83.3
18000	86.8	87.7	88.7	89.6	89.3	88.5	87.8	87.0	84.8	83.6	82.3
20000	88.3	89.2	90.1	90.3	89.1	87.9	86.7	85.4	83.4	82.5	81.5
22000	89.3	90.3	90.1	89.1	87.9	86.7	85.5	84.7	82.8	81.9	81.0
24000	90.4	89.9	89.0	87.9	86.7	85.5	84.7	84.2	82.3	81.5	81.1
26000	89.5	88.9	87.9	86.9	85.9	85.0	84.4	83.8	81.9	81.5	-
28000	88.7	87.9	87.1	86.2	85.3	84.6	83.9	83.5	81.9	-	-
30000	87.9	87.2	86.4	85.6	84.9	84.1	83.5	82.8	-	-	-
32000	87.2	86.6	85.9	85.2	84.4	83.6	82.7	82.4	-	-	-
34000	86.6	86.0	85.4	84.6	83.8	82.8	82.2	-	-	-	-
36000	86.1	85.5	84.7	83.9	82.8	82.0	-	-	-	-	-
37000	85.8	85.2	84.3	83.5	82.4	81.6	-	-	-	-	-



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