GRAND
CARAVAN

Flight Planning Guide

December 2010

Cessna
A Textron Company

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This Flight Planning Guide is published for the purpose of providing specific information for evaluating the performance of the Cessna Grand Caravan (Model 208B).

This guide is developed from data contained in the Cessna Grand Caravan Pilot's Operating Handbook and provides performance information based on an aircraft with the optional cargo pod installed. **This document is not to be used in place of the FAA approved Pilot's Operating Handbook.** The data included herein does not constitute an offer and is subject to change without notice.

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SPECIFICATIONS

General		
Certification Status	14 CFR Part 23	
Engine		
Manufacturer	Pratt & Whitney Canada	
Model	PT6A-114A	
Power Output at S.L.	675 shp	
Overhaul Interval (TBO)	3,600 hours	
Exterior Dimensions		
Length	41 ft 7 in	12.67 m
Height	15 ft 6 in	4.72 m
Wing Span	52 ft 1 in	15.88 m
Landing Gear Wheelbase	13 ft 4 in	4.06 m
Landing Gear Tread	11 ft 8 in	3.56 m
Cabin Dimensions		
Length	21 ft 4 in	6.50 m
Height	54 in	1.37 m
Width	64 in	1.63 m
Cabin Volume	427 ft^3	12.09 m^3
Accommodations		
Seating Capacity	11 - 14	
Baggage/Cargo Capacity		
Internal Volume	31.5 ft^3	0.89 m^3
Internal Weight	320 lb	145 kg
External Volume	111.5 ft^3	3.16 m^3
External Weight	1,090 lb	494 kg
Altitudes		
Certified Ceiling	25,000 ft	7,620 m

SPECIFICATIONS

Basic Performance		
Takeoff Distance, Sea Level, ISA, MTOW		
Ground Roll	1,405 ft	428 m
Distance to 50 ft	2,500 ft	762 m
Landing Distance, Sea Level, ISA, MLW		
Ground Roll	915 ft	279 m
Distance to 50 ft	1,740 ft	530 m
Rate of Climb	925 ft/min	282 m/min
Airspeed Limitations		
Maximum Operating Speed (V_{MO})	175 KIAS	324 km/hr
Maneuvering Speed (V_A)		
8,750 lb	148 KIAS	274 km/hr
7,500 lb	137 KIAS	254 km/hr
6,250 lb	125 KIAS	232 km/hr
Maximum Flap Extended Speed (V_{FE})		
UP – 10° Flaps	175 KIAS	324 km/hr
10° – 20° Flaps	150 KIAS	278 km/hr
20° – FULL Flaps	125 KIAS	232 km/hr
Certified Weights		
Maximum Ramp Weight	8,785 lb	3,985 kg
Maximum Takeoff Weight	8,750 lb	3,969 kg
Maximum Landing Weight	8,500 lb	3,856 kg
Maximum Fuel Capacity (6.7 lb/gal)	2,224 lb	1,009 kg
Base Empty Weight	4,694 lb	2,129 kg
Typically-Equipped Empty Weight	5,231 lb	2,373 kg
Payload		
Useful Payload and Fuel	3,554 lb	1,612 kg
Maximum Payload	3,269 lb	1,483 kg
Payload at Full Fuel	1,330 lb	603 kg

TAKEOFF PERFORMANCE

The Grand Caravan is certified to 14 CFR Part 23 Normal category rules. The takeoff distances reflected in the Pilot's Operating Handbook and this guide include both the ground roll and the distance to 50 feet above the surface. Flaps are in the takeoff position at 20°.

A paved, level, dry runway with zero wind is assumed.

TAKEOFF PERFORMANCE

SHORT FIELD TAKEOFF DISTANCE (in feet) – FLAPS 20°
Paved, Level, Dry Runway; Zero Wind

Elevation = Sea Level

Ambient Temp	Takeoff Weight			
	8,750 lb		8,300 lb	
°C / °F	Ground Roll	To 50 ft	Ground Roll	To 50 ft
-10 / 14	1,205	2,160	1,050	1,870
-5 / 23	1,243	2,228	1,085	1,925
0 / 32	1,280	2,295	1,120	1,980
5 / 41	1,323	2,363	1,155	2,038
10 / 50	1,365	2,430	1,190	2,095
15 / 59	1,405	2,500	1,225	2,155
20 / 68	1,445	2,570	1,260	2,215
25 / 77	1,490	2,645	1,298	2,278
30 / 86	1,535	2,720	1,335	2,340
35 / 95	1,580	2,795	1,375	2,405
40 / 104	1,625	2,870	1,415	2,470

Ambient Temp	Takeoff Weight			
	7,800 lb		7,300 lb	
°C / °F	Ground Roll	To 50 ft	Ground Roll	To 50 ft
-10 / 14	895	1,585	760	1,345
-5 / 23	925	1,633	783	1,383
0 / 32	955	1,680	805	1,420
5 / 41	985	1,728	830	1,460
10 / 50	1,015	1,775	855	1,500
15 / 59	1,045	1,825	883	1,540
20 / 68	1,075	1,875	910	1,580
25 / 77	1,108	1,925	935	1,623
30 / 86	1,140	1,975	960	1,665
35 / 95	1,173	2,028	988	1,710
40 / 104	1,205	2,080	1,015	1,755

TAKEOFF PERFORMANCE

SHORT FIELD TAKEOFF DISTANCE (in feet) – FLAPS 20°
Paved, Level, Dry Runway; Zero Wind

Elevation = 5,000 ft

Ambient Temp	Takeoff Weight			
	8,750 lb		8,300 lb	
°C / °F	Ground Roll	To 50 ft	Ground Roll	To 50 ft
-10 / 14	1,658	2,930	1,443	2,518
-5 / 23	1,715	3,026	1,491	2,599
0 / 32	1,773	3,123	1,540	2,680
5 / 41	1,830	3,223	1,590	2,764
10 / 50	1,888	3,323	1,640	2,848
15 / 59	1,949	3,071	1,693	2,636
20 / 68	2,010	2,820	1,745	2,425
25 / 77	2,113	3,001	1,833	2,574
30 / 86	2,215	3,183	1,920	2,723
35 / 95	2,381	3,463	2,059	2,946
40 / 104	2,548	3,743	2,198	3,170

Ambient Temp	Takeoff Weight			
	7,800 lb		7,300 lb	
°C / °F	Ground Roll	To 50 ft	Ground Roll	To 50 ft
-10 / 14	1,228	2,123	1,035	1,788
-5 / 23	1,269	2,189	1,070	1,841
0 / 32	1,310	2,255	1,105	1,895
5 / 41	1,351	2,325	1,140	1,951
10 / 50	1,393	2,395	1,175	2,008
15 / 59	1,438	2,466	1,211	2,068
20 / 68	1,483	2,538	1,248	2,128
25 / 77	1,554	2,671	1,308	2,235
30 / 86	1,625	2,805	1,368	2,343
35 / 95	1,739	3,033	1,459	2,521
40 / 104	1,853	3,260	1,550	2,700

TAKEOFF PERFORMANCE

SHORT FIELD TAKEOFF DISTANCE (in feet) – FLAPS 20°
Paved, Level, Dry Runway; Zero Wind

Elevation = 10,000 ft

Ambient Temp		Takeoff Weight			
		8,750 lb		8,300 lb	
°C /	°F	Ground Roll	To 50 ft	Ground Roll	To 50 ft
-10 /	14	2,335	4,090	2,025	3,490
-5 /	23	2,460	4,335	2,130	3,690
0 /	32	2,585	4,580	2,235	3,890
5 /	41	2,758	4,953	2,383	4,188
10 /	50	2,930	5,325	2,530	4,485
15 /	59	3,150	5,838	2,710	4,880
20 /	68	3,370	6,350	2,890	5,275
25 /	77	3,643	7,070	3,115	5,810
30 /	86	3,915	7,790	3,340	6,345

Ambient Temp		Takeoff Weight			
		7,800 lb		7,300 lb	
°C /	°F	Ground Roll	To 50 ft	Ground Roll	To 50 ft
-10 /	14	1,715	2,920	1,440	2,440
-5 /	23	1,803	3,080	1,513	2,568
0 /	32	1,890	3,240	1,585	2,695
5 /	41	2,010	3,473	1,683	2,880
10 /	50	2,130	3,705	1,780	3,065
15 /	59	2,278	4,008	1,900	3,298
20 /	68	2,425	4,310	2,020	3,530
25 /	77	2,605	4,705	2,163	3,830
30 /	86	2,785	5,100	2,305	4,130

CLIMB PERFORMANCE

TIME, FUEL, AND DISTANCE TO CLIMB*
ISA, Zero Wind

Pressure Altitude (ft)		Takeoff Weight (lb)			
		8,750	8,300	7,800	7,300
4,000	Min	5	4	4	3
	Lb	33	30	27	24
	NM	8	7	6	6
8,000	Min	9	8	8	7
	Lb	66	60	54	49
	NM	17	15	14	12
12,000	Min	15	14	12	11
	Lb	105	95	84	75
	NM	29	26	22	20
16,000	Min	23	21	18	16
	Lb	152	135	119	105
	NM	45	40	34	30
20,000	Min	36	31	27	23
	Lb	219	189	163	141
	NM	72	61	51	43
24,000	Min	75	54	42	34
	Lb	388	287	229	191
	NM	152	106	81	65

* Based on the climb starting from sea level.

CRUISE PERFORMANCE

CRUISE SPEED & FUEL FLOW

ISA

Pressure Altitude (ft)		Power Setting Max Cruise	Power Setting Max Endurance
2,000	KTAS	168	149
	lb/hr	432	358
4,000	KTAS	171	148
	lb/hr	426	340
6,000	KTAS	173	149
	lb/hr	415	325
8,000	KTAS	173	150
	lb/hr	398	312
10,000	KTAS	172	151
	lb/hr	378	304
12,000	KTAS	171	153
	lb/hr	358	297
14,000	KTAS	168	154
	lb/hr	336	288
16,000	KTAS	165	151
	lb/hr	315	273
18,000	KTAS	162	152
	lb/hr	295	270
20,000	KTAS	156	154
	lb/hr	275	270
22,000	KTAS	155	153
	lb/hr	255	253
24,000	KTAS	153	152
	lb/hr	158	236

DESCENT PERFORMANCE

TIME, FUEL, AND DISTANCE TO DESCEND
ISA, Zero Wind

Pressure Altitude (ft)	Time (min)	Fuel (gal)	Distance (nm)
4,000	5	24	14
8,000	10	48	28
12,000	15	71	43
16,000	20	95	59
20,000	25	113	75
24,000	30	131	91

* Based on descending to sea level.

LANDING PERFORMANCE

SHORT FIELD LANDING DISTANCE (in feet) – FLAPS 40°
Paved, Level, Dry Runway; Zero Wind

Elevation = Sea Level

Ambient Temp	Landing Weight 8,500 lb		8,000 lb	
°C / °F	Ground Roll	From 50 ft	Ground Roll	From 50 ft
-10 / 14	835	1,625	785	1,555
-5 / 23	850	1,648	800	1,578
0 / 32	865	1,670	815	1,600
5 / 41	883	1,693	830	1,620
10 / 50	900	1,715	845	1,640
15 / 59	915	1,740	860	1,663
20 / 68	930	1,765	875	1,685
25 / 77	948	1,788	890	1,708
30 / 86	965	1,810	905	1,730
35 / 95	980	1,833	920	1,750
40 / 104	995	1,855	935	1,770

Ambient Temp	Landing Weight 7,500 lb		7,000 lb	
°C / °F	Ground Roll	From 50 ft	Ground Roll	From 50 ft
-10 / 14	740	1,480	690	1,410
-5 / 23	753	1,500	703	1,430
0 / 32	765	1,520	715	1,450
5 / 41	780	1,543	728	1,468
10 / 50	795	1,565	740	1,485
15 / 59	808	1,585	753	1,505
20 / 68	820	1,605	765	1,525
25 / 77	835	1,625	778	1,545
30 / 86	850	1,645	790	1,565
35 / 95	865	1,665	805	1,583
40 / 104	880	1,685	820	1,600

LANDING PERFORMANCE

SHORT FIELD LANDING DISTANCE (in feet) – FLAPS 40°
Paved, Level, Dry Runway; Zero Wind

Elevation = 5,000 Feet

Ambient Temp	Landing Weight 8,500 lb		8,000 lb	
°C / °F	Ground Roll	From 50 ft	Ground Roll	From 50 ft
-10 / 14	1,003	1,868	945	1,785
-5 / 23	1,023	1,894	964	1,811
0 / 32	1,043	1,920	983	1,838
5 / 41	1,061	1,948	1,000	1,863
10 / 50	1,080	1,975	1,018	1,888
15 / 59	1,099	2,001	1,035	1,913
20 / 68	1,118	2,028	1,053	1,938
25 / 77	1,138	2,054	1,071	1,963
30 / 86	1,158	2,080	1,090	1,988
35 / 95	1,176	2,106	1,108	2,013
40 / 104	1,195	2,133	1,125	2,038

Ambient Temp	Landing Weight 7,500 lb		7,000 lb	
°C / °F	Ground Roll	From 50 ft	Ground Roll	From 50 ft
-10 / 14	888	1,698	828	1,615
-5 / 23	904	1,723	843	1,638
0 / 32	920	1,748	858	1,660
5 / 41	938	1,771	874	1,683
10 / 50	955	1,795	890	1,705
15 / 59	971	1,819	905	1,728
20 / 68	988	1,843	920	1,750
25 / 77	1,005	1,866	936	1,773
30 / 86	1,023	1,890	953	1,795
35 / 95	1,039	1,915	968	1,818
40 / 104	1,055	1,940	983	1,840

LANDING PERFORMANCE

SHORT FIELD LANDING DISTANCE (in feet) – FLAPS 40°
Paved, Level, Dry Runway; Zero Wind

Elevation = 10,000 Feet

Ambient Temp		Landing Weight 8,500 lb		8,000 lb	
°C /	°F	Ground Roll	From 50 ft	Ground Roll	From 50 ft
-10 /	14	1,215	2160	1140	2060
-5 /	23	1,238	2190	1163	2090
0 /	32	1,260	2220	1185	2120
5 /	41	1,283	2253	1208	2150
10 /	50	1,305	2285	1230	2180
15 /	59	1,328	2315	1250	2210
20 /	68	1,350	2345	1270	2240
25 /	77	1,375	2378	1293	2270
30 /	86	1,400	2410	1315	2300

Ambient Temp		Landing Weight 7,500 lb		7,000 lb	
°C /	°F	Ground Roll	From 50 ft	Ground Roll	From 50 ft
-10 /	14	1070	1960	1000	1860
-5 /	23	1093	1990	1018	1888
0 /	32	1115	2020	1035	1915
5 /	41	1135	2048	1055	1943
10 /	50	1155	2075	1075	1970
15 /	59	1175	2103	1095	1995
20 /	68	1195	2130	1115	2020
25 /	77	1215	2158	1133	2048
30 /	86	1235	2185	1150	2075

STALL SPEEDS

8,750 lb, KCAS			
	---------- Flap Position ----------		
Bank Angle	Up	20°	Full
0°	78	63	60
30°	84	68	64
45°	93	75	71
60°	110	89	85

MISSION PLANNING

CRITERIA

The following mission planning table provides flight time and fuel burn statistics for selected distances and altitudes.

Flight time represents the time for the climb, cruise and descent portion of the mission. No allowance has been added for taxi, takeoff, approach, or ATC procedures. Fuel burn represents the total amount of fuel consumed for taxi, takeoff, climb, cruise, and descent. 45 minute fuel reserves are considered in each case but are not included in the fuel burn figure.

The mission planning table reflects cruise climb, high-speed cruise, and high-speed descent schedules. Standard day conditions are assumed with zero wind enroute. The effects of wind can be determined from the wind correction factors table below. Apply the wind correction factor to the zero wind flight time and fuel burn to estimate the impact of wind.

Wind Correction Factors *								
Altitude / (ft)	True Airspeed (kt)	----------Headwinds (kt)---------- 75	50	25	0	----------Tailwinds (kt)---------- 25	50	75
5,000 /	172	1.77	1.41	1.17	1.00	0.87	0.77	0.70
10,000 /	172	1.77	1.41	1.17	1.00	0.87	0.77	0.70
15,000 /	167	1.82	1.43	1.18	1.00	0.87	0.77	0.69
20,000 /	156	1.93	1.47	1.19	1.00	0.86	0.76	0.68

* Wind Correction Factor is calculated as KTAS divided by the sum of KTAS ± wind component

MISSION PLANNING

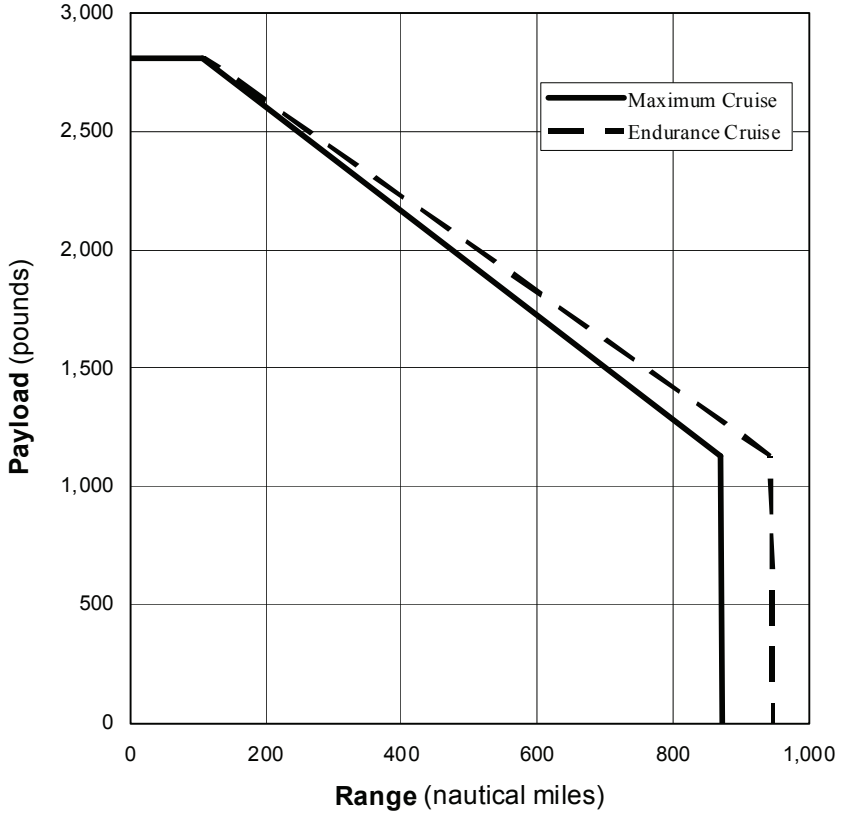
FLIGHT TIME & FUEL BURN FOR SELECTED DISTANCES

ISA, zero wind, 45 Minute Reserves

	Cruise Altitude (ft)							
	5,000		**10,000**		**15,000**		**20,000**	
Dist (nm)	Time (min)	Fuel (lb)	Time (min)	Fuel (lb)	Time (min)	Fuel (lb)	Time (min)	Fuel (lb)
100	0:38	284	0:39	272	0:41	272		
200	1:12	528	1:01	491	1:17	468	1:21	460
300	1:47	773	1:49	711	1:53	663	2:00	637
400	2:22	1,017	2:24	931	2:29	859	2:38	813
500	2:57	1,262	2:59	1,151	3:05	1,054	3:17	989
600	3:32	1,506	3:33	1,371	3:41	1,250	3:55	1,166
700	4:07	1,750	4:08	1,590	4:17	1,445	4:34	1,342
800	4:22	451	4:43	1,810	4:54	1,641	5:12	1,518
900					5:30	1,836	5:51	1,694
1,000							6:29	1,871
1,052							6:49	1,962

MISSION PLANNING

RANGE / PAYLOAD CAPABILITY
ISA, zero wind, 45 Minute Reserves



Assumptions:
Single Pilot
Cruise at 10,000 ft

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