DISPERSANT AIRCRAFT CAPABILITY FORM

PLATFORM

CESSNA C208 GRAND CARAVAN

Operator: **Air Reconnaissance, Lt.**
OSRO: **United Kingdom**

Photo from Cessna web site: http://grandcaravan.cessna.com/

DATA SOURCE LEGEND

1. **(Black):** **Indicates the data are based on documented field trials or is a fixed design value**
2. **(Blue):** **Indicates the data are based on limited field observations or operator's stated practice or stated value (little or no documentation)**
3. **(Red):** **Indicates the data are based on reasonable calculations or performance of comparable systems**

		Unit	U.S. Regulatory Calculation Values	Data Source 1-2-3	Range	Reference(s)
	AIRCRAFT PARAMETERS					
1	Swath Width	feet	**65**	**3**	**50-90**	**Estimate from Air Reconnaissance, Ltd**
	a. Application (gallons per acre)	gpa	**5**	**3**	**1-10**	**Estimate from Air Reconnaissance, Ltd.**
	b. Altitude	feet	**25**	**3**	**15-50**	**Estimate from Air Reconnaissance, Ltd.**
	c. Application Speed	knots	**140**	**3**	**130-160**	**Estimate from Air Reconnaissance, Ltd.**
	d. Pump Rate (gallons per minute)	gpm	**-----**	**3**	**15-260**	**Estimated from typical spray systems**
	e. Boom Pressure (pounds/square inch)	psi	**-----**	**3**	**15-45**	**Estimated from typical spray systems**
2	Transit Speed at Altitude From Base to Staging Airport	knots feet	**185 <10,000**	**3**	**185-220 <10,000**	**Estimate from Air Reconnaissance, Ltd.**
3	Transit Speed at Altitude Staging Airport to/from spill	knots feet	**185 <10,000**	**3**	**185-220 <10,000**	**Estimate from Air Reconnaissance, Ltd.**

4	Dispersant Spraying Reposition Speed	knots	**185**	**3**	**130-185**	**Estimate from Air Reconnaissance, Ltd.**
5	Time to Fully Load Dispersant Tank	min	**5**	**3**	**5-45**	**Estimate from Air Reconnaissance, Ltd.**
6	Time to Fully Load Fuel Tanks	min	**5**	**3**	**5-45**	**Estimate from Air Reconnaissance, Ltd.**
7	Load Dispersant & Fuel simultaneously (Yes/No)	-----	**YES**	**3**	**YES**	**Estimated from similar aircraft operations. See below 5*-6***
8	Time to Make U-turn (Turn 180 degrees)	min	**1.0**	**3**	**1.0-1.5**	**Estimate from similar aircraft**
9	Dispersant Payload Maximum	gal	**250**	**3**	**250-300**	**Estimate from similar aircraft**
10	Fuel with maximum dispersant payload	lbs	**1,400**	**1**	**1,400**	**Air Reconnaissance, Ltd.**
11	Approach Distance for spraying	nm	**0.5**	**3**	**0.5-1.0**	**Estimate from similar aircraft operations**
12	Departure Distance for spraying	nm	**0.3**	**3**	**0.3-1.0**	**Estimate from similar aircraft operations**
13	Taxi Time Take-Off	min	**3**	**3**	**2-15**	**Estimate from similar aircraft operations**
14	Taxi Time Landing	min	**3**	**3**	**2-15**	**Estimate from similar aircraft operations**
15	On-site Check-In/Safety Time	min	**10**	**2**	**5-15**	**Exercise observation**
	CASCADE PARAMETERS*					
16	Take-off with **Maximum Payload and Maximum Take-off Weight** (assume no wind and **VFR** fuel reserve)					
	a. Maximum Flight Time	hours	**2.4**	**3**	**2.0-3.0**	**Estimate from Air Reconnaissance, Ltd.**
	b. Maximum Flight Range	nm	**450**	**3**	**300-555**	**Estimate from Air Reconnaissance, Ltd.**
	c. Optimal Altitude	feet	**10,000**	**3**	**10,000**	**Estimate from Air Reconnaissance, Ltd.**
	d. True Air Speed	knots	**185**	**3**	**150-185**	**Estimate from Air Reconnaissance, Ltd.**
	e. Fuel Consumption	lbs/ hour	**-----**	**-----**	**-----**	**------**
17	Take-Off with **Maximum Fuel and No Payload** (assume no wind and **VFR** fuel reserve)					
	a. Maximum Flight Time	hours	**10.2**	**3**	**8.6-10.2**	**Estimate from Air Reconnaissance, Ltd.**
	b. Maximum Flight Range	nm	**1,900**	**3**	**1,290-2,040**	**Estimate from Air Reconnaissance, Ltd.**
	c. Optimal Altitude	feet	**18,000**	**3**	**18,000**	**Estimate from Air Reconnaissance, Ltd.**
	d. True Air Speed	knots	**185**	**3**	**150-200**	**Estimate from Air Reconnaissance, Ltd.**
	e. Fuel Consumption	lbs/ hour	**-----**	**-----**	**-----**	**-----**
18	Staging area briefing	min	**45**	**2**	**30-60**	**Exercise Observation**

	AIRPORT PARAMETERS					
19	Runway length - **Minimum** (For take-off at maximum gross weight assuming sea level, 90^{o} F, no wind using a balanced field concept, i.e., go, no go speed)	feet	**2,600**	**3**	**2,600**	**Estimate from Air Reconnaissance, Ltd.**
20	Runway weight restrictions for maximum aircraft weight	lbs	**9,500**	**3**	**9,500**	**Estimate from Air Reconnaissance, Ltd.**
	OTHER COMMENTS					
5*-6*	The time to load dispersants and fuel are stand alone times independent of each other. If item 7 indicates that fuel and dispersants can be loaded simultaneously, then the longer of fuel or dispersant load time is used in the capability calculations. If item 7 indicates fuel and dispersants can NOT be loaded simultaneously, then the times are added together to calculate the aircrafts capability. To load simultaneously depends upon the airport, aircraft, and support crew. The loading times depend upon the loading system i.e., 5000 tank truck, 55 gallon drums or other means and the pumping system used. The time shown in items 5 and 6 is for loading from a tank truck which is standing by ready to commence loading when the aircraft comes to a stop in the loading area, i.e. the fastest loading time possible.					
*	**Cascade Parameters**: The aircraft's calculated capability when cascading uses the same fuel loading and taxi times for dispersant operations as listed in items 6, 13 and 14.					