

DISPERSANT AIRCRAFT CAPABILITY FORM

PLATFORM
EMBRAER
EMB 110
Bandeirante

Operator: -----

OSRO: Oil Spill Response, Ltd



Photo from Oil Spill Response, Ltd. (OSRL)

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	60	3	50-80	Estimated value from comparable aircraft
	a. Application (gallons per acre)	gpa	5	3	1-10	Estimated value from comparable spray systems
	b. Altitude	feet	50	3	50-100	Estimated from comparable aircraft
	c. Application Speed	knots	120	2	120-150	See Comments*
	d. Pump Rate (gallons per minute)	gpm	-----	3	40-300	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	knots	200	3	200-220	Embraer specifications
	From Base to Staging Airport	feet	>10,000		>10,000	http://planecrashinfo.com

3	Transit Speed at Altitude Staging Airport to/from spill	knots feet	200 <10,000	3	200-220 <10,000	Embraer specifications http://planecrashinfo.com
4	Dispersant Spraying Reposition Speed	knots	160	3	160	Estimated from other systems
5	Time to Fully Load Dispersant Tank	min	15	3	15-60	Estimated from Embraer specifications
6	Time to Fully Load Fuel Tanks	min	10	3	10-60	Estimated from Embraer specifications
7	Load Dispersant & Fuel simultaneously (Yes/No)	----	Yes	3	Yes	Estimated. See Other Comments below 5* & 6*
8	Time to Make U-turn (Turn 180 degrees)	min	1.0	3	1.0-2.0	Estimated from comparable aircraft
9*	Dispersant Payload Maximum	gal	440	2	440	See Comments*
10	Fuel with maximum dispersant payload	lbs	2995	3	2995	Embraer specification www.skyquestinternational.com
11	Approach Distance for spraying	nm	1.0	3	1.0-2.0	Estimated values
12	Departure Distance for spraying	nm	1.0	3	1.0-1.5	Estimated values
13	Taxi Time Take-Off	min	10	3	10-30	Estimate from similar aircraft
14	Taxi Time Landing	min	10	3	10-30	Estimate from similar aircraft
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	3.9	3	3.9	Estimated from Embraer specifications
	b. Maximum Flight Range	nm	780	2	780- 878	See Comments*
	c. Optimal Altitude	feet	-----	-----	-----	-----
	d. True Air Speed	knots	200	2	200- 225	OSRL operator
	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	5.3	3	5.3	Estimate from Embraer specifications
	b. Maximum Flight Range	nm	1,060	3	1,060	http://planecrashinfo.com
	c. Optimal Altitude	feet	-----	-----	-----	-----
	d. True Air Speed	knots	200	2	200- 225	OSRL operator
	e. Fuel Consumption	lbs/ hour	-----	-----	-----	-----
18	Staging area briefing	min	45	3	30-60	Exercise observations

	AIRPORT PARAMETERS					
19	Runway length - Minimum (For take-off at maximum gross weight assuming sea level, 90° F, no wind using a balanced field concept, i.e., go, no go speed)	feet	5,000	3	5,000	Estimate from similar aircraft
20	Runway weight restrictions for maximum aircraft weight	lbs	12,500	3	12,500	Embraer specifications
	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.					
1d* & 9* & 16b*	IOSC-2005 paper “Case Study of Spill Responses Undertaken by and Practical Issues of Implementing a Tier 2 Aerial Dispersant and Surveillance Service in West and Central Africa” Simon Dewhirst, The Global Alliance, Oil Spill Response Ltd. Payload, endurance and range depend upon the weight of the dispersant per gallon. The calculations provided are for the heaviest dispersant, Corexit 9527, weighing 8.5 lbs/gallon.					