

DISPERSANT AIRCRAFT CAPABILITY FORM

PLATFORM LOCKHEED HERCULES L-382 (L100 Series) & C-130 B, E & G with NIMBUS*

Operator: Safair
OSRO: Oil Spill Response, Ltd.



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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	100	3	75-125	Estimate from similar systems
	a. Application (gallons per acre)	gpa	9.0	3	8.0-15	Ayles Fernie Manufacturer
	b. Altitude	feet	50	3	50-125	Estimate from similar systems
	c. Application Speed	knots	145	2	140-150	L-382 and C130 operating requirements. See Other Comment 1c*
	d. Pump Rate (gallons per minute)	gpm	-----	3	51-612	Estimate from similar systems
	e. Boom Pressure (pounds/square inch)	psi	-----	3	12-45	Estimate from similar systems
2	Transit Speed at Altitude From Base to Staging Airport	knots feet	300 20,000	2	250-300 20,000	SAFAIR operator
3	Transit Speed at Altitude Staging Airport to/from spill	knots feet	250 <10,000	2	250-300 <10,000	SAFAIR operator

4	Dispersant Spraying Reposition Speed	knots	150	2	140-150	SAFAIR operator
5*	Time to Fully Load Dispersant Tank	min	45	2	30-90	SAFAIR operator
6*	Time to Fully Load Fuel Tanks	min	30	2	30-90	SAFAIR operator
7	Load Dispersant & Fuel simultaneously (Yes/No)	-----	Yes	1	Yes	See Other Comments 5*-6*
8	Time to Make U-turn (Turn 180 degrees)	min	1.75	2	1.25-2.0	USAFR, USCG, Lynden Air Cargo, and SAFAIR operators
9	Dispersant Payload Maximum	gal	3,170	1	3,170	Ayles-Fernie Manufacturer
10	Fuel with maximum dispersant payload	lbs	28,000	2	28,000	SAFAIR operator
11	Approach Distance for spraying	nm	1.0	2	1.0-2.0	SAFAIR operator
12	Departure Distance for spraying	nm	1.0	2	1.0-1.5	SAFAIR operator
13	Taxi Time Take-Off	min	15	2	10-30	Exercise observation C-130, Lynden Air Cargo and SAFAIR
14	Taxi Time Landing	min	15	2	10-30	Exercise observation C-130, Lynden Air Cargo and SAFAIR
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 IFR fuel reserve)					
	a. Maximum Flight Time	hours	4.0	2	4.0-4.5	Lynden Air Cargo and SAFAIR operators
	b. Maximum Flight Range	nm	1,200	2	1,200-1,350	Lynden Air Cargo and SAFAIR operators
	c. Optimal Altitude	feet	20,000	2	20,000-21,000	Lynden Air Cargo and SAFAIR operators
	d. True Air Speed	knots	300	2	275-300	Lynden Air Cargo and SAFAIR operators
	e. Fuel Consumption	lbs/hour	5,000	2	4,541-5,000	Lynden Air Cargo and SAFAIR operators
17	Take-Off with Maximum Fuel and No Payload (assume no wind and IFR fuel reserve)					
	a. Maximum Flight Time	hours	9	2	9-12	Lynden Air Cargo and SAFAIR operators. 12 hours is with external fuel tanks.
	b. Maximum Flight Range	nm	2,700	2	2,700-3,600	Lynden Air Cargo and SAFAIR operators
	c. Optimal Altitude	feet	24,000	2	22,000-27,000	Lynden Air Cargo and SAFAIR operators
	d. True Air Speed	knots	300	2	275-300	Lynden Air Cargo and SAFAIR operators
	e. Fuel Consumption	lbs/hour		2	3,500-5,000	Lynden Air Cargo and SAFAIR operators
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° F, no wind using a balanced field concept, i.e., go, no go speed)	feet	7,050	2	6,820-7,050	Lynden Air Cargo and SAFAIR operators
20	Runway weight restrictions for maximum aircraft weight	lbs	155,000	1	155,000	Lynden Air Cargo and SAFAIR operators
OTHER COMMENTS						
1c*	C-130 is limited to a flight speed of no more than 150 knots when operating with the ramp door opened which is required when using the NIMBUS system.					
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.					