

Instructions for Adding the OSRL B727 Jet Aircraft to the EDSP Calculator

The EDSP Calculator contains an internal database of spray platforms and their operational characteristics, such as transit speeds, dispersant payloads, etc. These platforms have been tested and vetted regarding their operational characteristics, and the listed default values for these platform operational inputs are already accepted and approved for use by BSEE and the USCG in the EDSP Calculator. The operational characteristics for the OSRL B727 jet aircraft were not available when the DMP2 database was being refreshed, and therefore are not contained in the current version of the EDSP Calculator. The EDSP Calculator, however, was built to enable users to add new platforms to the database as new spray systems are developed.

The EDSP Calculator contains the operational characteristics for each listed spray system in both the platform pull down menu, as well as in PDF/Word documents called Dispersant Aircraft Capability Forms (there currently are no vessel-based capability forms). These forms contain detailed information regarding the aircraft performance parameters as well as information about the sources of the data. The data in the form column labeled "U.S. Regulatory Calculation Values" was used to populate the DMP2/EDSP Calculator database with input values. These values are used by the Calculator's algorithms to calculate EDSP and EDAC. The following two pages contain the Dispersant Aircraft Capability Form for the OSRL B727. Lastly, this document outlines a short and simple procedure you can follow to create a new platform for the B727 where you can enter the operational characteristics listed on the B727 Capability Form into your local version of the EDSP Calculator.

DISPERSANT AIRCRAFT CAPABILITY FORM

PLATFORM

B727



Photo compliments of

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

		Unit	U.S. Regulatory Calculation Values	Data Source 1-2-3	Range	Reference(s)
AIRCRAFT PARAMETERS						
1	Swath Width	feet	110	2		
	a. Application (gallons per acre)	gpa	5	1		
	b. Altitude	feet	150ft HT	2		Operator OMB
	c. Application Speed	knots	150 IAS	2		Operator OMB
	d. Pump Rate (gallons per minute)	gpm	132-316.8	1		
	e. Boom Pressure (pounds/square inch)	psi	>14	1		Variable depending on flow rate, and config
2	Transit Speed at Altitude From Base to Staging Airport	knots feet	460 TAS 36000FT	2		Operator OMB
3	Transit Speed at Altitude	knots	400TAS	2		Operator OMB

	Staging Airport to/from spill	feet	30000FT			
4	Dispersant Spraying Reposition Speed	knots	170 IAS	2		Operator OMB
5	Time to Fully Load Dispersant Tank	min	30	3		DOA
6	Time to Fully Load Fuel Tanks	min	30	3		Operator
7	Load Dispersant & Fuel simultaneously (Yes/No)	-----	Yes			DOA
8	Time to Make U-turn (Turn 180 degrees)	min	4	2		
9	Dispersant Payload Maximum	gal	3960	1		
10	Fuel with maximum dispersant payload	lbs	47930	2		
11	Approach Distance for spraying	nm	4	2		Operator OMB
12	Departure Distance for spraying	nm	4	2		Operator OMB
13	Taxi Time Take-Off	min	10	3		
14	Taxi Time Landing	min	10	3		
15	On-site Check-In/Safety Time	min	60	2		Please clarify?
16	Take-off with Maximum Payload and Maximum Take-off Weight (assume no wind and IFR fuel reserve)					
	a. Maximum Flight Time	hours	3.61	1		Excl. 1 hour reserve
	b. Maximum Flight Range	nm	1625	1		
	c. Optimal Altitude	feet	34000	1		
	d. True Air Speed	knots	450	1		
	e. Fuel Consumption	lbs/hour	10433	1		
17	Take-Off with Maximum Fuel and No Payload (assume no wind and IFR fuel reserve)					
	a. Maximum Flight Time	hours	4.2	1		Excl. 1 hour reserve
	b. Maximum Flight Range	nm	1900	1		
	c. Optimal Altitude	feet	35000	1		
	d. True Air Speed	knots	450	1		
	e. Fuel Consumption	lbs/hour	10384	1		
18	Staging area briefing	min	45	3		
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	9274	1		AFM supplement, over 35 ft obstacle.
20	Runway weight restrictions for maximum aircraft weight	lbs	n/a			
OTHER COMMENTS						

Adding the OSRL B727 as a New Platform

You can enter the OSRL B727 into your locally saved version of the EDSP Calculator by the following method:

- a. In the EDSP Calculator, click on “New” in the Platform Menu Box
- b. Select “Aircraft” in the “New Platform” Dialogue Box and click on “Save”
- c. Enter “OSRL B727” in the platform name data field and then
- d. Enter the appropriate input values from the included Dispersant Aircraft Capability Form for the B727 into the “New Platform” Menu
- e. Click on “Save”

Estimated Dispersant System Potential (EDSP) Calculator

New Platform

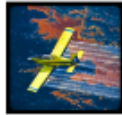
Type: Aircraft Vessel

Platform Name:

	Min	Default	Max
Pump Rate [gpm]:	<input type="text"/>	<input type="text"/>	<input type="text"/>
Swath Width [ft]:	<input type="text"/>	<input type="text"/>	<input type="text"/>
Application Speed [kts]:	<input type="text"/>	<input type="text"/>	<input type="text"/>
Transit Speed [kts]:	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cascade Transit Speed With Payload [kts]:	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cascade Transit Speed Without Payload [kts]:	<input type="text"/>	<input type="text"/>	<input type="text"/>
Reposition Speed [kts]:	<input type="text"/>	<input type="text"/>	<input type="text"/>
U Turn Time [min]:	<input type="text"/>	<input type="text"/>	<input type="text"/>
Approach [nm]:	<input type="text"/>	<input type="text"/>	<input type="text"/>
Departure [nm]:	<input type="text"/>	<input type="text"/>	<input type="text"/>
Dispersant Load [min]:	<input type="text"/>	<input type="text"/>	<input type="text"/>
Fuel Load Time [min]:	<input type="text"/>	<input type="text"/>	<input type="text"/>

Figure New Platform Menu

After you click on “Save”, your version of the EDSP Calculator should now contain the B727 as an available platform that can be chosen at the bottom of the aircraft picklist. The values you entered for the B727 should look like the screenshot on the following page:



Estimated Dispersant System Potential (EDSP) Calculator v-160302

DMP2 Revision 1

The ERSF, EBSF, and EDSP Calculators are intended as planning tools for estimating the potential of different oil spill response systems to mitigate (recover, burn or disperse) discharged oil relative to one another. These planning tools are NOT intended to be used as models for calculating system performance during an actual oil spill, which is affected by many factors such as the distribution of oil on the water surface, oil weathering, and other ambient onscene conditions which are not included in these Calculators.

Name of Simulation: <input type="text"/>	Platform New Edit Save As Delete																																				
Simulation Details: <input type="text"/>	Type: <input checked="" type="radio"/> Aircraft <input type="radio"/> Vessel																																				
Mobilization/Cascading	Aircraft: <input type="text" value="OSRL B727"/>																																				
Mobilization Time [hrs]: <input type="text" value="0"/>	Platform - Mobilization/Staging																																				
Distance to Staging Site: <input type="text"/> nm ▾	<table border="1"><thead><tr><th></th><th>Min</th><th>Value Applied</th><th>Max</th></tr></thead><tbody><tr><td>Taxi + Take Off/Landing [min]:</td><td>10</td><td>min</td><td></td></tr><tr><td>Cascade Transit Speed [kts]:</td><td>480</td><td>480</td><td>480</td></tr><tr><td>Max Range No Payload [nm]:</td><td>1900</td><td>nm</td><td></td></tr><tr><td>Max Range With Payload [nm]:</td><td>1825</td><td>nm</td><td></td></tr><tr><td>Payload [gal]:</td><td>3960</td><td>gal</td><td></td></tr><tr><td>Dispersant Load [min]:</td><td>30</td><td>min</td><td></td></tr><tr><td>Fuel Load Time [min]:</td><td>30</td><td>min</td><td></td></tr></tbody></table>		Min	Value Applied	Max	Taxi + Take Off/Landing [min]:	10	min		Cascade Transit Speed [kts]:	480	480	480	Max Range No Payload [nm]:	1900	nm		Max Range With Payload [nm]:	1825	nm		Payload [gal]:	3960	gal		Dispersant Load [min]:	30	min		Fuel Load Time [min]:	30	min					
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Cascade with Payload: <input type="radio"/> Yes <input checked="" type="radio"/> No	Platform - Sortie Operations																																				
Scenario	<table border="1"><tbody><tr><td>Transit Speed [kts]:</td><td>400</td><td>400</td><td>400</td></tr><tr><td>Application Speed [kts]:</td><td>150</td><td>150</td><td>150</td></tr><tr><td>Approach [nm]:</td><td>4</td><td>nm</td><td></td></tr><tr><td>Pump Rate [gpm]:</td><td>132</td><td>Calculated</td><td>318</td></tr><tr><td>Swath Width [ft]:</td><td>110</td><td>110</td><td>110</td></tr><tr><td>Departure [nm]:</td><td>4</td><td>nm</td><td></td></tr><tr><td>Reposition Speed [kts]:</td><td>170</td><td>kts</td><td></td></tr><tr><td>U Turn Time [min]:</td><td>4</td><td>min</td><td></td></tr><tr><td>Max Sortie Time [hr]:</td><td>3.6</td><td>hr</td><td></td></tr></tbody></table>	Transit Speed [kts]:	400	400	400	Application Speed [kts]:	150	150	150	Approach [nm]:	4	nm		Pump Rate [gpm]:	132	Calculated	318	Swath Width [ft]:	110	110	110	Departure [nm]:	4	nm		Reposition Speed [kts]:	170	kts		U Turn Time [min]:	4	min		Max Sortie Time [hr]:	3.6	hr	
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Operating Period [hrs]: <input type="text" value="12"/>																																					
One-way Transit Distance: <input type="text"/> nm ▾																																					
Staging to/from spill																																					
Dispersant/Fuel Load: <input checked="" type="radio"/> Simultaneous <input type="radio"/> Separate																																					
Dispersant Spraying Operations Edit																																					
Dispersant to Oil Ratio (DOR): 1:20																																					
Dosage: 5 gal/acre																																					
Average Spray Pass Length: <input type="text" value="4"/> nm ▾																																					
Pass Type: <input checked="" type="radio"/> Bidirectional <input type="radio"/> Unidirectional																																					
Effective Daily Application Capacity (EDAC)																																					
Set EDAC: <input type="radio"/> Yes <input checked="" type="radio"/> No																																					

[Calculate](#)