

# **Instructions for Adding the MSRC B737 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 MSRC B737 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 MSRC B737. Lastly, this document outlines a short and simple procedure you can follow to create a new platform for the B737 where you can enter the operational characteristics listed on the B737 Capability Form into your local version of the EDSP Calculator.

# DISPERSANT AIRCRAFT CAPABILITY FORM

<b>PLATFORM</b>
<b>Boeing 737-500</b>
Operator: <b>Dynamic Aviation, Inc.</b> OSRO: <b>Marine Spill Response Corp.</b>



Photo compliments of the Marine Spill Response Corporation

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

		Unit	U.S. Regulatory Calculation Values	Data Source 1-2-3	Range	Reference(s)
<b>AIRCRAFT PARAMETERS</b>						
<b>1</b>	Swath Width	feet	<b>100</b>	<b>1</b>	<b>75-125</b>	Dynamic Aviation Group, Inc. spray test Apr 11
	a. Application (gallons per acre)	gpa	<b>5</b>	<b>1</b>	<b>1-10</b>	Dynamic Aviation Group, Inc. spray test Apr 11
	b. Altitude	feet	<b>175</b>	<b>1</b>	<b>150-200</b>	Dynamic Aviation Group, Inc. spray test Apr 11
	c. Application Speed	knots	<b>175</b>	<b>1</b>	<b>155-195</b>	Dynamic Aviation Group, Inc. spray test Apr 11
	d. Pump Rate (gallons per minute)	gpm	<b>180</b>	<b>1</b>	<b>120-250</b>	Dynamic Aviation Group, Inc. static spray test Apr 8
	e. Boom Pressure (pounds/square inch)	psi	<b>30</b>	<b>1</b>	<b>30</b>	Dynamic Aviation Group, Inc. static spray test Apr 8
<b>2</b>	Transit Speed at Altitude From Base to Staging Airport	knots feet	<b>430 37,000</b>	<b>1</b>	<b>400-430 37,000</b>	Dynamic Aviation Group, Inc. field test
<b>3</b>	Transit Speed at Altitude Staging Airport to/from spill	knots feet	<b>275 10,000</b>	<b>1</b>	<b>250-300 10,000</b>	Dynamic Aviation Group, Inc. field test

4	Dispersant Spraying Reposition Speed	knots	175	1	150-200	Dynamic Aviation Group, Inc. field test
5	Time to Fully Load Dispersant Tank	min	30	1	20-40	Dynamic Aviation Group, Inc. timed exercise
6	Time to Fully Load Fuel Tanks	min	30	1	20-40	Dynamic Aviation Group, Inc. operator exercise
7	Load Dispersant & Fuel simultaneously (Yes/No)	----	YES	1	YES	Dynamic Aviation Group, operator See Other Comments below *5-*6
8	Time to Make U-turn (Turn 180 degrees)	min	2.00	1	1.5-3.0	Dynamic Aviation Group, Inc. operator measured exercise flight paths
9*	Dispersant Payload Maximum	gal	4,125	1	4,125	Dynamic Aviation Group, Inc. operator
10	Fuel with maximum dispersant payload	lbs	28,000	1	28,000	Dynamic Aviation Group, Inc. operator
11	Approach Distance for spraying	nm	3.00	1	2.50-4.00	Dynamic Aviation Group, Inc. operator measured exercise paths
12	Departure Distance for spraying	nm	1.00	1	.50-2.00	Dynamic Aviation Group, Inc. operator measured exercise paths
13	Taxi Time Take-Off	min	15	1	15	Dynamic Aviation Group, Inc. operator
14	Taxi Time Landing	min	15	1	10-15	Dynamic Aviation Group, Inc. operator
15	On-site Check-In/Safety Time	min	15	1	15	Dynamic Aviation Group, Inc. operator
<b>CASCADE PARAMETERS*</b>						
16	Take-off with * <b>Maximum Payload and Maximum Take-off Weight</b> (assume no wind and <b>VFR</b> fuel reserve)					
	a. Maximum Flight Time	hours	5.4	2		Dynamic Aviation Group, Inc. operator
	b. Maximum Flight Range	nm	2,310	2		Dynamic Aviation Group, Inc. operator
	c. Optimal Altitude (Transit Reposition Flight)	feet	37,000	2		Dynamic Aviation Group, Inc. operator
	d. True Air Speed	knots	430	2		Dynamic Aviation Group, Inc. operator
	e. Fuel Consumption (Cruise)	lbs/hour	5,000	2		Dynamic Aviation Group, Inc. operator
17	Take-Off with * <b>Maximum Fuel and No Payload</b> (assume no wind and <b>VFR</b> fuel reserve)					
	a. Maximum Flight Time	hours	5.7	2		Dynamic Aviation Group, Inc. operator
	b. Maximum Flight Range	nm	2,450	2		Dynamic Aviation Group, Inc. operator
	c. Optimal Altitude (Transit Reposition Flight)	feet	37,000	2		Dynamic Aviation Group, Inc. operator
	d. True Air Speed	knots	430	2		Dynamic Aviation Group, Inc. operator
	e. Fuel Consumption	lbs/hour	5,000	2		Dynamic Aviation Group, Inc. operator
18	Staging area briefing	min	45	1	30-60	Exercise observation

AIRPORT PARAMETERS						
19	Runway length - <b>Minimum</b> (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	7,400'	1	7,400'	Dynamic Aviation Group, Inc. operator
20	Runway weight restrictions for maximum aircraft weight	lbs	133,500	1	133,500	Dynamic Aviation Group, Inc. operator. Aircraft maximum weight

### Adding the MSRC B737 as a New Platform

You can enter the MSRC B737 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 “MSRC B737” in the platform name data field and then
- d. Enter the appropriate input values from the included Dispersant Aircraft Capability Form for the B737 into the “New Platform” Menu
- e. Click on “Save”

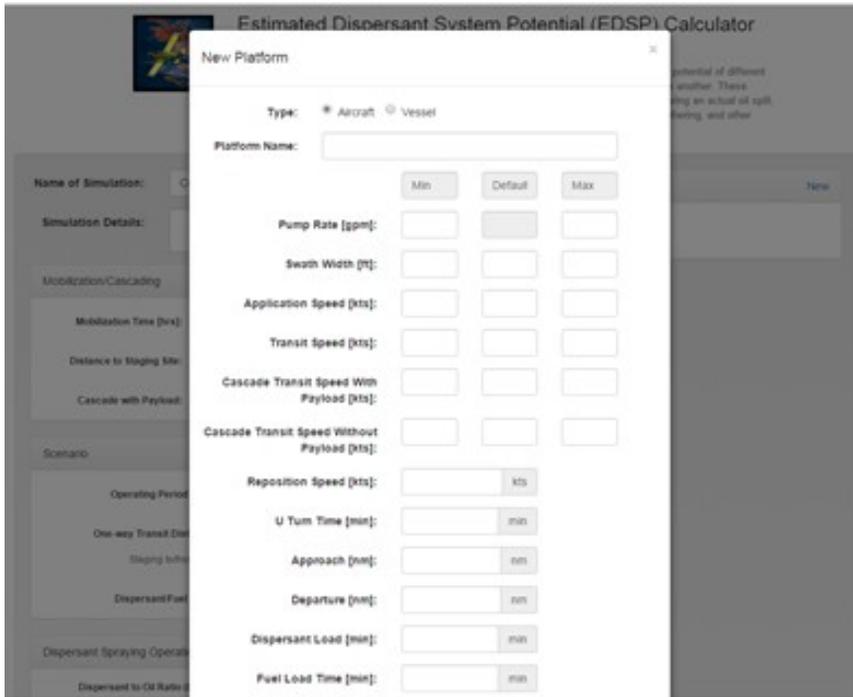


Figure New Platform Menu

After you click on “Save”, your version of the EDSP Calculator should now contain the B737 as an available platform that can be chosen at the bottom of the aircraft picklist. The values you entered for the B737 should look like the screenshot on the following page:

**Estimated Dispersant System Potential (EDSP) Calculator v-160302**  
DMP2 Revision 1

The ERSF, EBSP, 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:**

**Simulation Details:**

**Mobilization/Cascading**

Mobilization Time [hrs]:

Distance to Staging Site:

Cascade with Payload:  Yes  No

**Scenario**

Operating Period [hrs]:

One-way Transit Distance:

Staging to/from spill

Dispersant/Fuel Load:  Simultaneous  Separate

**Dispersant Spraying Operations** Edit

Dispersant to Oil Ratio (DOR): 1:20

Dosage: 5 gal/acre

Average Spray Pass Length:

Pass Type:  Bidirectional  Unidirectional

**Effective Daily Application Capacity (EDAC)**

Set EDAC:  Yes  No

**Platform** New Edit Save As Delete

Type:  Aircraft  Vessel

Aircraft:

**Platform - Mobilization/Staging**

	Min	Value Applied	Max
Taxi + Take Off/Landing [min]:	15	min	
Cascade Transit Speed [kts]:	430	430	430
Max Range No Payload [nm]:	2450	nm	
Max Range With Payload [nm]:	2310	nm	
Payload [gal]:	4125	gal	
Dispersant Load [min]:	30	min	
Fuel Load Time [min]:	30	min	

**Platform - Sortie Operations**

Transit Speed [kts]:	250	300	350
Application Speed [kts]:	155	175	195
Approach [nm]:	3	nm	
Pump Rate [gpm]:	120	Calculated	250
Swath Width [ft]:	75	100	125
Departure [nm]:	1	nm	
Reposition Speed [kts]:	175	kts	
U Turn Time [min]:	2	min	
Max Sortie Time [hr]:	5.4	hr	