



EMS
Brüel & Kjær

Baltimore/Washington International Thurgood
Marshall Airport

Airport Noise and Operations Monitoring System

EMS Bruel & Kjaer - Environment Management Solutions

Largest global provider of flight track and noise monitoring solutions

Worked with Federal Aviation Administration on SWIM program rollout

Taking Quality and Environment seriously, ISO9001 and ISO14001 certified and California Title 21 Compliant



Global leader, with regional and local presence

More than 300 clients globally

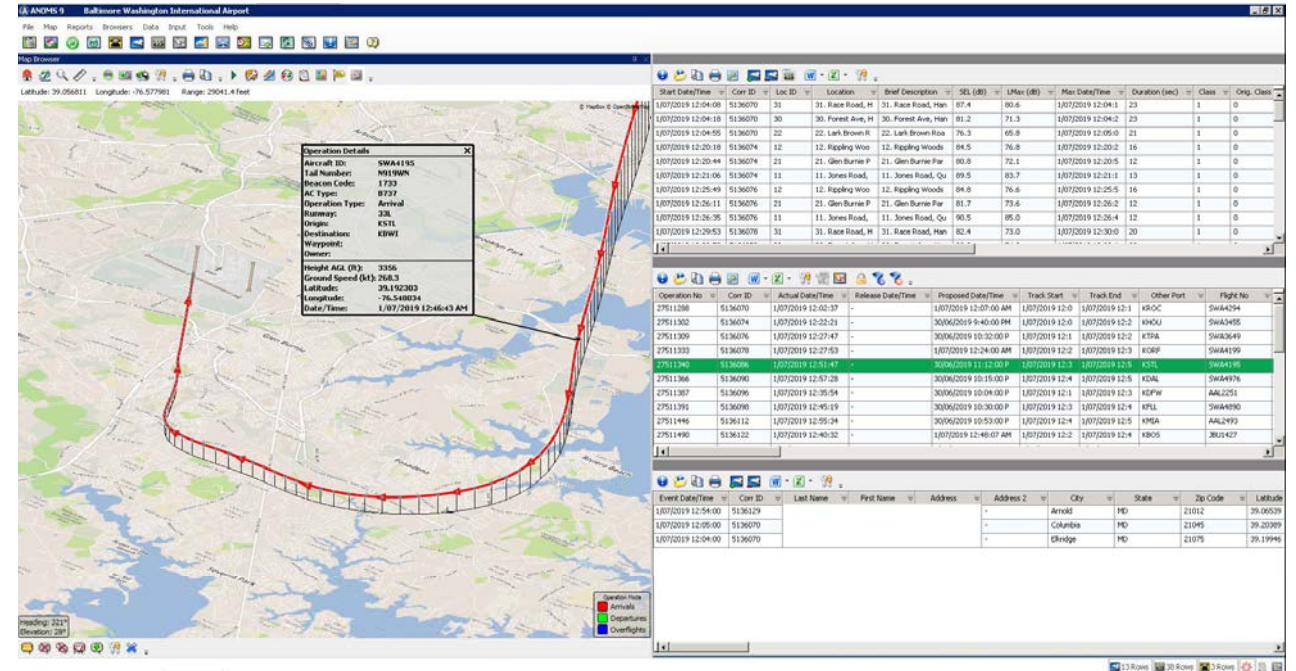
Established 1990,
Headquarters in
Melbourne, Australia

North American
Headquarters
Sacramento, California

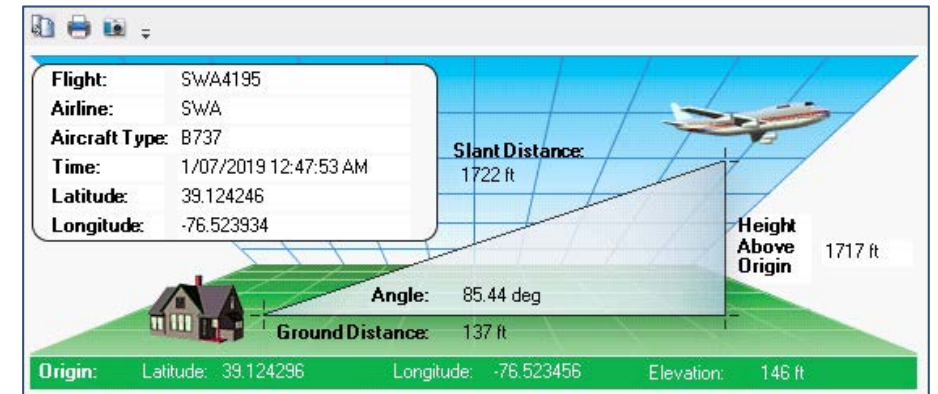
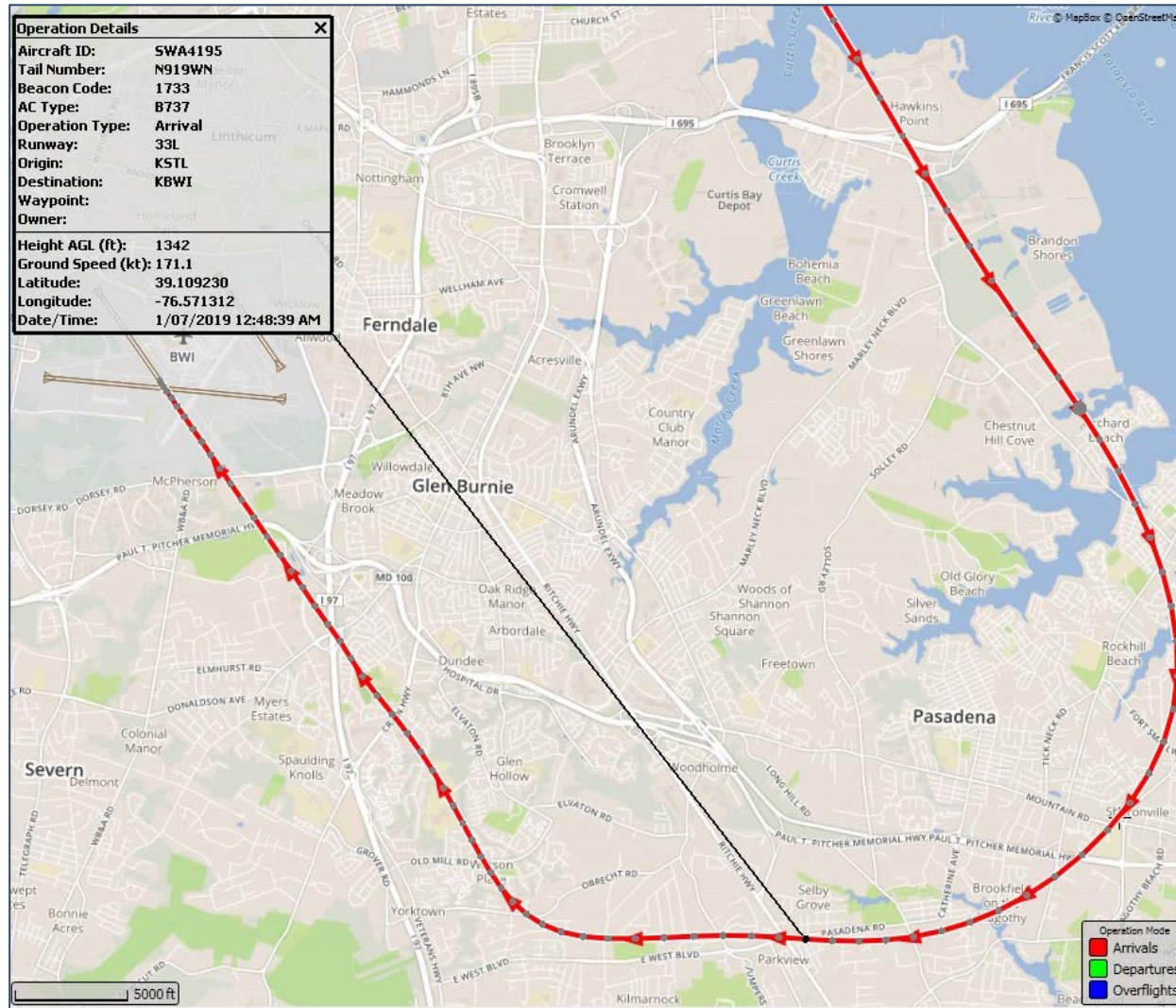
Noise and Operations Monitoring System

- Airport Noise and Operations Monitoring System- ANOMS

- Permanent and portable noise monitoring locations
- Noise data integrated with FAA radar data
- Software solution to analyze flight tracks, noise complaints and noise levels
- WebTrak Public Replay



Noise and Operations Monitoring - Radar Data



Noise and Operations Monitoring - Event Correlation

ANDMS 9 - Baltimore Washington International Airport

File Map Reports Browsers Data Input Tools Help

Complaints Browser

Map Browser

Latitude: 39.310266 Longitude: -76.644566 Range: 52320.6 feet

Operation Details

Aircraft ID: SWA4195
 Tail Number: N919WN
 Beacon Code: 1733
 AC Type: B737
 Operation Type: Arrival
 Runway: 33L
 Origin: KSTL
 Destination: KBWI
 Waypoint:
 Owner:

Height AGL (ft): 7195
 Ground Speed (kt): 305.2
 Latitude: 39.310266
 Longitude: -76.644566
 Date/Time: 1/07/2019 12:44:59 AM

Heading: 37°
 Elevation: 26°

Start Date/Time	Corr ID	Loc ID	Location	Brief Description	SEL (dB)	LMax (dB)	Max Date/Time	Duration (sec)	Class	Orig. C
1/07/2019 12:04:08	5136070	31	31. Race Road, H	31. Race Road, Han	87.4	80.6	1/07/2019 12:04:11	23	1	0
1/07/2019 12:04:18	5136070	30	30. Forest Ave, H	30. Forest Ave, Han	81.2	71.3	1/07/2019 12:04:12	23	1	0
1/07/2019 12:04:55	5136070	22	22. Lark Brown R	22. Lark Brown Roa	76.3	65.8	1/07/2019 12:05:00	21	1	0
1/07/2019 12:20:18	5136074	12	12. Rippling Woo	12. Rippling Woods	84.5	76.8	1/07/2019 12:20:12	16	1	0
1/07/2019 12:20:44	5136074	21	21. Glen Burnie P	21. Glen Burnie Par	80.8	72.1	1/07/2019 12:20:5	12	1	0
1/07/2019 12:21:06	5136074	11	11. Jones Road,	11. Jones Road, Qu	89.5	83.7	1/07/2019 12:21:1	13	1	0
1/07/2019 12:25:49	5136076	12	12. Rippling Woo	12. Rippling Woods	84.8	76.6	1/07/2019 12:25:5	16	1	0
1/07/2019 12:26:11	5136076	21	21. Glen Burnie P	21. Glen Burnie Par	81.7	73.6	1/07/2019 12:26:2	12	1	0
1/07/2019 12:26:35	5136076	11	11. Jones Road,	11. Jones Road, Qu	90.5	85.0	1/07/2019 12:26:4	12	1	0
1/07/2019 12:29:53	5136078	31	31. Race Road, H	31. Race Road, Han	82.4	73.0	1/07/2019 12:30:0	20	1	0

Operation No	Corr ID	Actual Date/Time	Release Date/Time	Proposed Date/Time	Track Start	Track End	Other Port	Flight No
27511288	5136070	1/07/2019 12:02:37	-	1/07/2019 12:07:00 AM	1/07/2019 12:0	1/07/2019 12:1	KROC	SWA4294
27511302	5136074	1/07/2019 12:22:21	-	30/06/2019 9:46:00 PM	1/07/2019 12:0	1/07/2019 12:2	KHOU	SWA3455
27511309	5136076	1/07/2019 12:27:47	-	30/06/2019 10:32:00 P	1/07/2019 12:1	1/07/2019 12:2	KTPA	SWA3649
27511333	5136078	1/07/2019 12:27:53	-	1/07/2019 12:24:00 AM	1/07/2019 12:2	1/07/2019 12:3	KORF	SWA4199
27511340	5136086	1/07/2019 12:51:47	-	30/06/2019 11:12:00 P	1/07/2019 12:3	1/07/2019 12:5	KSTL	SWA4195
27511366	5136090	1/07/2019 12:57:28	-	30/06/2019 10:15:00 P	1/07/2019 12:4	1/07/2019 12:5	KDAL	SWA4976
27511387	5136096	1/07/2019 12:35:54	-	30/06/2019 10:04:00 P	1/07/2019 12:1	1/07/2019 12:3	KDFW	AAL2251
27511391	5136098	1/07/2019 12:45:19	-	30/06/2019 10:30:00 P	1/07/2019 12:3	1/07/2019 12:4	KFLL	SWA4890
27511446	5136112	1/07/2019 12:55:34	-	30/06/2019 10:53:00 P	1/07/2019 12:4	1/07/2019 12:5	KMIA	AAL2493
27511490	5136122	1/07/2019 12:40:32	-	1/07/2019 12:48:07 AM	1/07/2019 12:2	1/07/2019 12:4	KBOS	JBU1427

Shape: Hemisphere
 Radius: 7000 feet
 Height: 50000 feet
 Remove non-selected

13 Rows 38 Rows 3 Rows

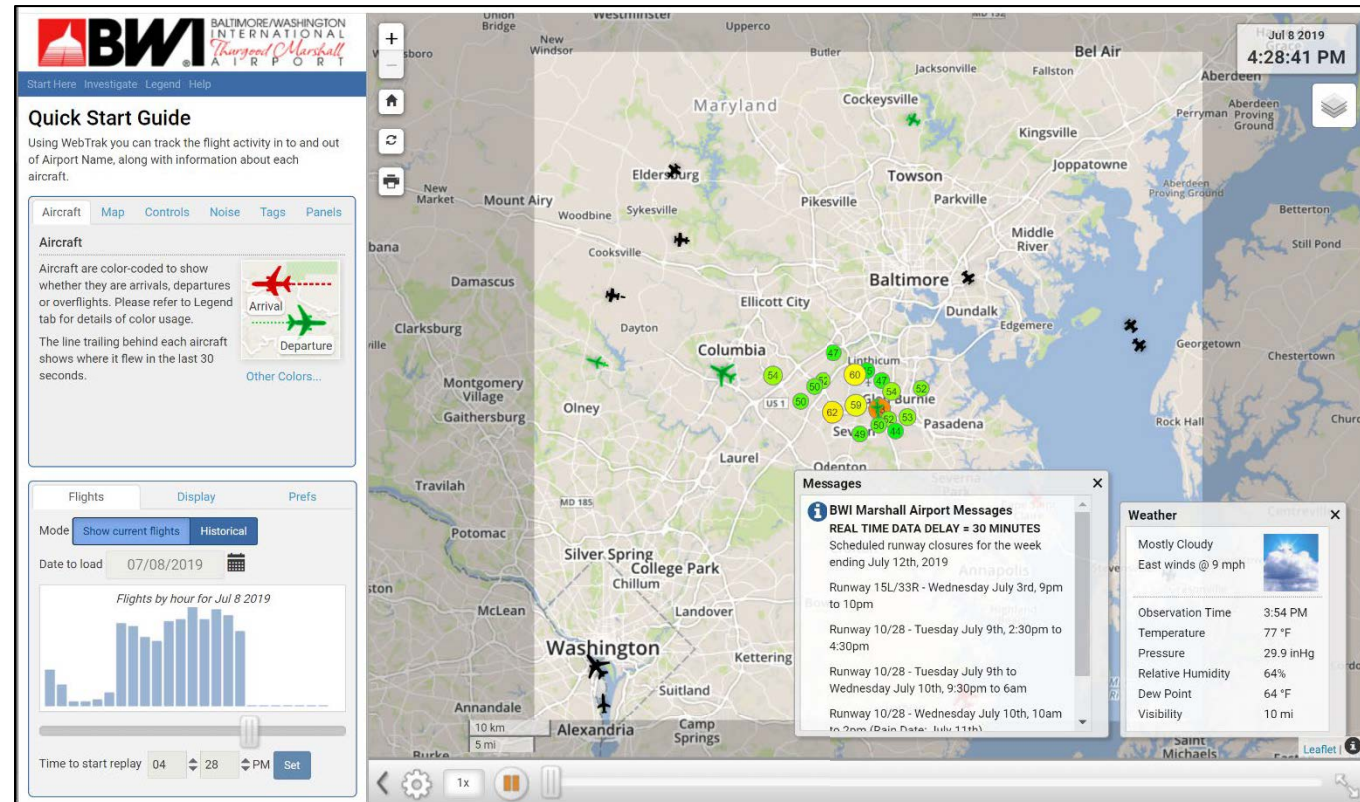
EN 6:31 PM 2/07/2019

WebTrak Public Replay

- Baltimore/Washington Public Flight Tracking and Inquiry Tool

- Real-time and historic flight tracks
- Noise levels and aircraft correlation
- Point of closest approach to your residence
- Airport Messages/Weather Information

– <http://webtrak.emsbk.com/bwi>



WebTrak Public Replay

BWI BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Start Here Investigate Legend Help

Quick Start Guide

Using WebTrak you can track the flight activity in to and out of Airport Name, along with information about each aircraft.

Aircraft Map Controls Noise Tags Panels

Aircraft

Aircraft are color-coded to show whether they are arrivals, departures or overflights. Please refer to Legend tab for details of color usage.

The line trailing behind each aircraft shows where it flew in the last 30 seconds.

Other Colors...

Arrival (Red dashed line with red arrow)
Departure (Green dotted line with green arrow)

Flights Display Prefs

Mode: Show current flights Historical

Date to load: 07/08/2019

Flights by hour for Jul 8 2019

Time to start replay: 04:28 PM

Messages

BWI Marshall Airport Messages
REAL TIME DATA DELAY = 30 MINUTES
Scheduled runway closures for the week ending July 12th, 2019


- Runway 15L/33R - Wednesday July 3rd, 9pm to 10pm
- Runway 10/28 - Tuesday July 9th, 2:30pm to 4:30pm
- Runway 10/28 - Tuesday July 9th to Wednesday July 10th, 9:30pm to 6am
- Runway 10/28 - Wednesday July 10th, 10am to 2pm (Rain Date: July 11th)

Weather

Mostly Cloudy
East winds @ 9 mph

Observation Time: 3:54 PM
Temperature: 77 °F
Pressure: 29.9 inHg
Relative Humidity: 64%
Dew Point: 64 °F
Visibility: 10 mi

WebTrak Public Replay



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Other Colors...

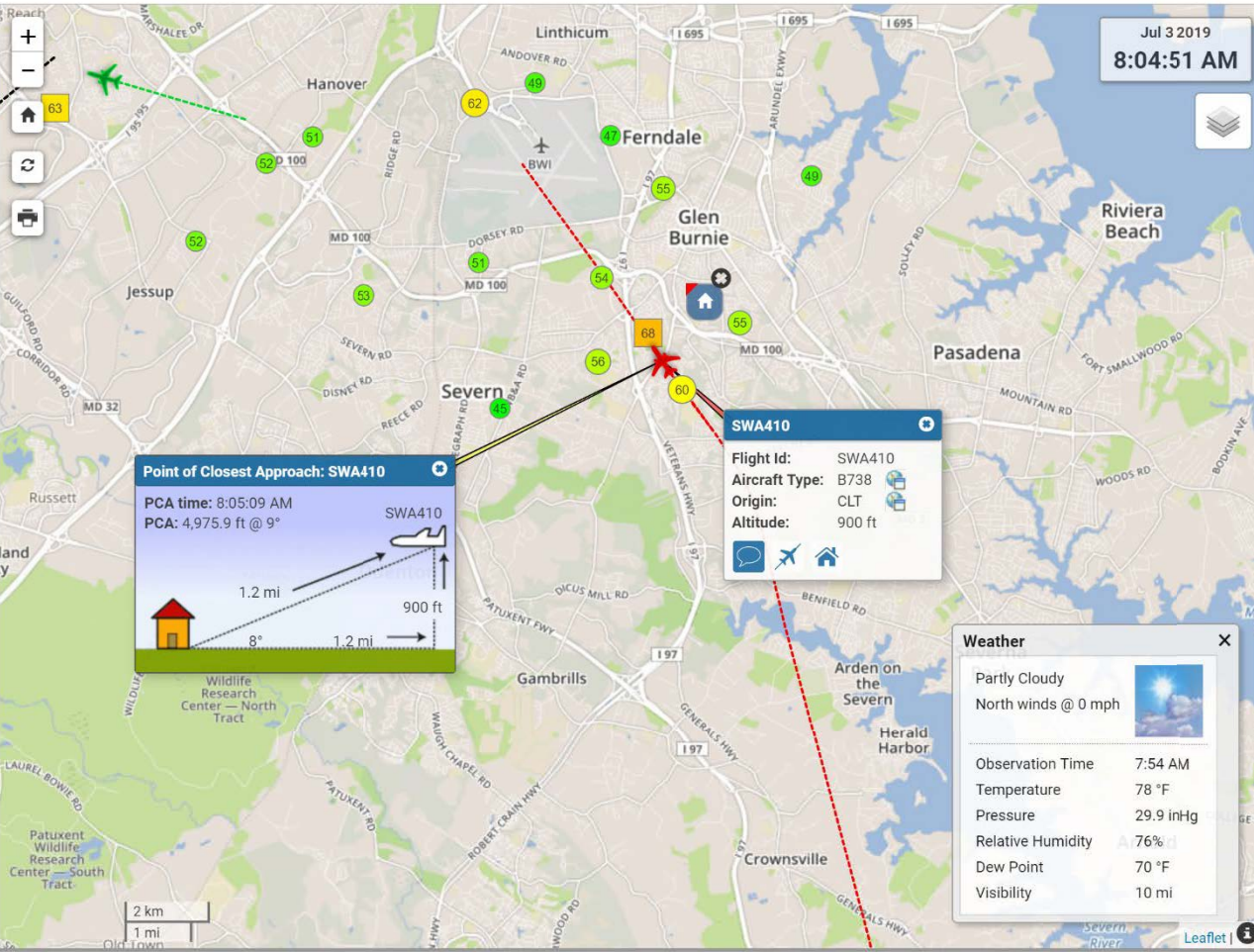
Flights Display Prefs

Mode Show current flights Historical

Date to load 07/03/2019

Flights by hour for Jul 3 2019

Time to start replay 08 04 AM Set



Jul 3 2019
8:04:51 AM

Point of Closest Approach: SWA410

PCA time: 8:05:09 AM
PCA: 4,975.9 ft @ 9°

1.2 mi
900 ft
8°
1.2 mi

SWA410

Flight Id: SWA410
Aircraft Type: B738
Origin: CLT
Altitude: 900 ft

Weather

Partly Cloudy
North winds @ 0 mph

Observation Time: 7:54 AM
Temperature: 78 °F
Pressure: 29.9 inHg
Relative Humidity: 76%
Dew Point: 70 °F
Visibility: 10 mi

WebTrak Public Replay

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Arrival Departure Other Colors...

Flights Display Prefs

- Smoother Aircraft Movement
- Aircraft Info tags
- Noise Monitors
- Message Window
- Weather Panel

Flight Id: NGF1863
Airports: K1B1 → BWI
Aircraft Type: C182
Altitude: 4,000 ft
Jul 3 2019
8:11:46 AM

Flight Id: UAL1797
Airports: EWR → TPA
Aircraft Type: A320
Altitude: 32,000 ft

Flight Id: SWA278
Airports: CHS → BWI
Aircraft Type: B737
Altitude: 800 ft

Tail Number: N497A
Airports: → GAI
Aircraft Type: BE55
Altitude: 6,400 ft

Flight Id: SWA635
Airports: BWI → JAX
Aircraft Type: B737
Altitude: 4,500 ft

Tail Number: N828DC
Airports: GAI → ESN
Aircraft Type: C208
Altitude: 1,400 ft

Tail Number: N78ER
Airports: KW00 →
Aircraft Type: C172
Altitude: 900 ft
Altitude: 400 ft

Weather

Partly Cloudy
North winds @ 0 mph

Observation Time: 7:54 AM
Temperature: 78 °F
Pressure: 29.9 inHg
Relative Humidity: 76%
Dew Point: 70 °F
Visibility: 10 mi

WebTrak Public Replay

BWI BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

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Other Colors...

Arrival (Red dashed line with red arrow)
Departure (Green dashed line with green arrow)

Flights Display Prefs

Mode: Show current flights Historical

Date to load: 07/02/2019

Flights by hour for Jul 2 2019

Time to start replay: 08:10 AM

Weather: A Few Clouds, West winds @ 6 mph, Observation Time: 7:54 AM, Temperature: 75 °F, Pressure: 29.9 inHg, Relative Humidity: 66%, Dew Point: 63 °F, Visibility: 10 mi

Map showing flight activity around Baltimore and Washington, D.C. on July 2, 2019 at 8:10:14 AM. The map displays various aircraft icons (arrivals in red, departures in green) and their flight paths. A weather widget is visible in the bottom right corner.

WebTrak Public Replay

BWI BALTIMORE/WASHINGTON INTERNATIONAL AIRPORT
Thurgood Marshall

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Arrival Departure Other Colors...

Flights Display Prefs

Mode Show current flights Historical

Date to load 07/02/2019

Flights by hour for Jul 2 2019

Time to start replay 08 10 AM Set

SWA278

Flight Id: SWA278
Aircraft Type: B737
Origin: CHS
Altitude: 2000 ft

Weather

A Few Clouds
West winds @ 6 mph

Observation Time: 7:54 AM
Temperature: 75 °F
Pressure: 29.9 inHg
Relative Humidity: 66%
Dew Point: 63 °F
Visibility: 10 mi

WebTrak Public Replay

MDOT MAA Aircraft Noise Complaint Form

Please use the following form to report your noise complaint to the MDOT MAA. For your convenience, noise complaints may also be submitted to maanoiseabatement@bwairport.com, or via the Noise Hotline at 410-859-7021.

Airport (required) Select the airport you are complaining about	Baltimore/Washington International Thurgood Marshall Airport ▾ Choose one...
Title	Choose one... ▾
First name (required)	<input type="text"/>
Last name (required)	<input type="text"/>
Suffix	<input type="text"/>
Address (required)	<input type="text"/>
City (required)	<input type="text"/>
State (required)	Choose one... ▾
Zip code (required)	<input type="text"/>
Contacts (at least one required)	Email <input type="text"/>
	Home phone <input type="text"/>
	Mobile phone <input type="text"/>
	Work phone <input type="text"/>
Disturbance date (required)	Jul ▾ 8 ▾ 2019 ▾
Disturbance time (required)	8 AM ▾ : 13 ▾
Nature of Complaint	Choose one... ▾
Comments and Additional Information	<input type="text"/>
Response Requested	No ▾

QUESTIONS?