

**FEDERAL AVIATION ADMINISTRATION (FAA)
MISSION SUPPORT SERVICES
AERONAUTICAL INFORMATION SERVICES**

ORS DIGITAL OBSTACLE FILE (DOF)

DOF_README.PDF FILE

Revision 1 – January 14, 2008

DOF format changes due to ORS Implementation

Revision 1.1 – February 8, 2009

Obstacles are sorted by latitude within each state or country &
the addition of individual data files

Revision 1.2 – July 26, 2009

Increase the AGL HT field to 5 digits

Revision 1.3 September 22, 2016

Add new country codes in the Caribbean area

Revision 1.4 Spring 2017

Change to the obstacle type field length

New obstacle types added

Country code change for 3 countries

Revision 1.5 November 21, 2017

Updated Obstacle Data Team Contact Information

FOR THE DOF, THE ZIP FILE RECEIVED WITH THIS DELIVERY INCLUDES:

1. **DOF_README.PDF** - This file provides an overview of the new Obstacle Repository System (ORS) formatted Digital Obstacle File (DOF) and the format for the data files.
2. **DOF.DAT** - One file containing digital obstacle data within all of the FAA Regions plus some areas of Canada, Mexico, the Caribbean, the Bahamas, and Pacific Areas.
3. **CHG.DAT** - A change list reflecting actions taken since the last currency date, in an uncompressed file format.
4. **57** - Separate files for each of the U.S. States plus the District of Columbia, Canada, Mexico, Puerto Rico, the Bahamas, the Caribbean and Pacific Areas.
5. **CHKALL_DOF.EXE** - A program for checking the data integrity on the main DOF file and DOF change file. The state files as a subset do not include the data integrity code.
6. **DAI_DATCHK.EXE** – A program for checking the data integrity of the individual data files.

IMPORTANT NOTE

**FOR EVERY DOF DELIVERY,
BEFORE DOWNLOADING THE FILES AND FOLDERS TO YOUR COMPUTER,
CHECK THE EFFECTIVE DATES FOR THE DATA AND**

DELETE ALL FILES AND FOLDERS FROM ANY PREVIOUS CYCLE.

DOF CONTACT INFORMATION

**FOR CONCERNS WITH EITHER THE PROGRAM OR THE DATA
INCLUDED WITH THE DOF, PLEASE CONTACT:**

Federal Aviation Administration (FAA)
Aeronautical Information Services
Obstacle Data Team
1305 East-West Highway
Silver Spring, MD 20910-3281
9-AJV-532-OBSTData-REQ@faa.gov

INSTRUCTIONS FOR VIEWING THE DATA FILES:

The DOF data files are ASCII text files and can be viewed in the editor or word processor of your choice. They are designed to be viewed with a non- proportional font, such as Courier New.

When viewing the files in Microsoft Notepad (or other editors), turn Word Wrap off. Word Wrap is turned on and off (in Notepad) by selecting it on the Edit Menu. Also (in Notepad), from the Edit menu, select Set Font, choose the font Courier New and the text size you want. You can adjust how much of the file is viewable both horizontally and vertically by changing the size of the font and the size of the window.

In word processors, set the font for the entire file to Courier New with the text size you want. If the lines of the file do not fit and wrap to the next line, make the left and right margins smaller and/or the font size smaller. For the data files with long lines, in addition to adjusting the margins and font size, change the orientation from portrait to landscape.

ERROR CHECKING:

Included in each DOF package are programs for checking the integrity of the data files. The programs are:

DOF - DAI_DATCHK.EXE
- CHKALL_DOF.EXE

CHECKING THE INTEGRITY OF INDIVIDUAL FILES: DAI_DATCHK

To check the integrity of the data, double click on "DAI_DATCHK.EXE" in the folder that contains the data file you want to check. This will open up an MS-DOS window. Type the name of a data file, including the extension, (e.g. DOF.DAT, CHG.DAT) then press "Enter". A complete list of DOF data files is listed in DOF_README.PDF. Please refer to these lists. An example: Running DAI_DATCHK on DOF.DAT will scan the DOF data file and display a message stating the number of errors detected. If any data errors occur, they will be listed in a file called "DATCHK_REPORT.TXT". This file will be put in your systems temporary directory, which is defined by the environment variable TEMP. You will be given an option to view this file. If errors do occur, print out this file and call the phone number for data errors listed in the section DOF CONTACT INFORMATION.

(NOTE: If the location of the DATCHK program and the data files are not the same, you will need to enter the path name.)

Repeat this process to scan each additional data file.

CHECKING INTEGRITY OF ALL DOF FILES: CHKALL_DOF

- After downloading the data and programs to your PC, double click on "CHKALL_DOF.EXE". CHKALL_DOF will run the DAI_DATCHK program on every DOF file. After all of the files have been checked, a message will display the results. If any data errors occur, they will be listed in a file called "DOF_DATCHK_REPORT.TXT". This file will be put in your systems temporary directory, which is defined by the environment variable TEMP. You will be given an option to view this file. If errors do occur, print out this file and call the phone number for data errors listed in the section DOF CONTACT INFORMATION.

(NOTE: The CHKALL_DOF and DAI_DATCHK programs must be in the same folder as the DOF data files that are to be checked.)

CAUTION

The Digital Obstacle File contains only obstruction data for those man-made objects which affect domestic aeronautical charting products and does not purport to indicate the presence of all obstructions which may be encountered.

NOTE

In the interest of air safety, the Digital Obstacle File depicts both "verified" and "unverified" obstruction data. A verified obstruction is indicated by an "O" in the Verification Status field. This data has either been reviewed by the FAA's Aeronautical Information Services (AIS), Obstacle Data Team (ODT) or has been taken from airport survey data. Verified obstacles have been assigned an accuracy code, indicating the reliability of its vertical height and horizontal position. An unverified obstruction is indicated by a "U" in the Verification Status field. This data is considered unreliable because its position and height have not been verified by the ODT.

Be cautious when using unverified data.

List of DOF Data Files:

Entire DOF - Digital Obstacle File (DOF)
DOF.DAT

State Files - Individual Files for each U.S. State and the District of Columbia

01-AL.DAT
02-AK.DAT
04-AZ.DAT
05-AR.DAT
06-CA.DAT
08-CO.DAT
09-CT.DAT
10-DE.DAT
11-DC.DAT
12-FL.DAT
13-GA.DAT
15-HI.DAT
16-ID.DAT
17-IL.DAT
18-IN.DAT
19-IA.DAT
20-KS.DAT
21-KY.DAT
22-LA.DAT
23-ME.DAT
24-MD.DAT
25-MA.DAT
26-MI.DAT
27-MN.DAT
28-MS.DAT

29-MO.DAT
30-MT.DAT
31-NE.DAT
32-NV.DAT
33-NH.DAT
34-NJ.DAT
35-NM.DAT
36-NY.DAT
37-NC.DAT
38-ND.DAT
39-OH.DAT
40-OK.DAT
41-OR.DAT
42-PA.DAT
44-RI.DAT
45-SC.DAT
46-SD.DAT
47-TN.DAT
48-TX.DAT
49-UT.DAT
50-VT.DAT
51-VA.DAT
53-WA.DAT
54-WV.DAT
55-WI.DAT
56-WY.DAT

Selected Countries or U.S. Territories - Bahamas, Canada, Puerto Rico and Mexico

Bahamas.DAT
Canada.DAT
PuertoRico.DAT
Mexico.DAT

Pacific Area – Countries included within the Pacific Area

Pacific.DAT

Caribbean Area – Countries included within the Caribbean Area

Caribbean.DAT

Change List - Change List - Actions taken since last currency date

CHG.DAT

DIGITAL OBSTACLE FILE

FOREWORD

The Digital Obstacle File (DOF) is a listing of verified and unverified obstacles in the U.S. with limited coverage of the Pacific, the Caribbean, Canada, Mexico, and the Bahamas. The obstacles are assigned unique alphanumeric identifiers and are listed in order by ascending latitude within each state or country. The DOF digital product is updated every 56 days.

Included with the DOF delivery is a CHANGE LIST reflecting changes that occurred during the eight week period. This file is ordered by ascending file number. The file formats are included on the following pages.

Included within the DOF delivery are separate files that break the main file down into individual files for the 50 U.S. states, District of Columbia, Puerto Rico, Mexico, Canada, Pacific Area, and the Caribbean Area. These files adhere to the DOF format with the exception being that they do not contain a data integrity check code.

SPECIAL NOTICE

Important Information on the Horizontal Datum

The World Geodetic System 1984 (WGS 84) is used as the horizontal datum for all DOF data. All obstacle data has been converted to WGS 84 as of November 19, 2007.

OAS NUMBER

All obstacles are assigned a unique number based on state or country. The OAS_NUMBER consists of a two-digit code, a dash, and a six-character number.

FORMAT FOR DATA IN THE DIGITAL OBSTACLE FILES

NOTE: The following pages describe the format for headers and data in the Digital Obstacle File.

THE DOF FORMAT

The currency date header appears on line 1, in columns 3-26, followed by a 3-line header. Lines 2 and 3 are column headers for the obstacle detail lines. Line 4 contains 127 "-" characters.

There is a DATCHK code at the end of every line within the main DOF file.

The data for each obstacle is in the following format:

Column	Data Element	Description
----- 1-2	----- ORS Code	----- State 01 - Alabama 02 - Alaska 04 - Arizona 05 - Arkansas 06 - California 08 - Colorado 09 - Connecticut 10 - Delaware 11 - DC 12 - Florida 13 - Georgia 15 - Hawaii 16 - Idaho 17 - Illinois 18 - Indiana 19 - Iowa 20 - Kansas 21 - Kentucky 22 - Louisiana 23 - Maine 24 - Maryland 25 - Massachusetts 26 - Michigan 27 - Minnesota 28 - Mississippi 29 - Missouri 30 - Montana 31 - Nebraska 32 - Nevada 33 - New Hampshire

34 - New Jersey
35 - New Mexico
36 - New York
37 - North Carolina
38 - North Dakota
39 - Ohio
40 - Oklahoma
41 - Oregon
42 - Pennsylvania
44 - Rhode Island
45 - South Carolina
46 - South Dakota
47 - Tennessee
48 - Texas
49 - Utah
50 - Vermont
51 - Virginia
53 - Washington
54 - West Virginia
55 - Wisconsin
56 - Wyoming

North America

CA - Canada
MX - Mexico
PR - Puerto Rico
BS - Bahamas

Caribbean Area

AG - Antigua and Barbuda
AI - Anguilla
NL - Netherlands Antilles (formerly AN)
AW - Aruba
CU - Cuba
DM - Dominica
DO - Dominican Republic
GP - Guadeloupe
HN - Honduras
HT - Haiti
JM - Jamaica
KN - St. Kitts and Nevis
KY - Cayman Islands
LC - Saint Lucia
MQ - Martinique
MS - Montserrat
TC - Turks and Caicos Islands
VG - British Virgin Islands
VI - Virgin Islands

Pacific Area

- AS - American Samoa
- FM - Federated States of Micronesia
- GU - Guam
- KI - Kiribati
- MH - Marshall Islands
- QM - Midway Islands (formerly MI)
- MP - Northern Mariana Islands
- PW - Palau
- RU - Russia
- TK - Tokelau
- QW - Wake Island (formerly WQ)
- WS - Samoa

Column	Data Element	Description
3	"-"	
4-9	Obstacle Number	Identifier of obstacle
10	Blank	
11	"O" or "U"	Verification Status "O": verified "U": unverified
12	Blank	
13-14	Country Identifier	
15	Blank	
16-17	State Identifier	State
18	Blank	
19-34	City Name	City
35	Blank	
36-37	Latitude Degrees	Geographical Coordinates
38	Blank	
39-40	Latitude Minutes	"
41	Blank	

42-46	Latitude Seconds	"
47	Latitude Hemisphere	"
48	Blank	
49-51	Longitude Degrees	"
52	Blank	
53-54	Longitude Minutes	"
55	Blank	
56-60	Longitude Seconds	"
61	Longitude Hemisphere	"
62	Blank	
63-80	Obstacle Type	
81	Blank	
82	Quantity	
83	Blank	
84-88	AGL HT	Above Ground Level Height (Feet)
89	Blank	
90-94	AMSL HT	Above Mean Sea Level Height (Feet)
95	Blank	
96	Lighting	Type of Lighting

"R": Red
 "D": Medium intensity White Strobe & Red
 "H": High Intensity White Strobe & Red
 "M": Medium Intensity White Strobe
 "S" : High Intensity White Strobe
 "F" : Flood
 "C" : Dual Medium Catenary
 "W": Synchronized Red Lighting
 "L" : Lighted (Type Unknown)
 "N": None
 "U": Unknown

- 97 Blank
- 98 Horizontal Accuracy
- 99 Blank
- 100 Vertical Accuracy

HORIZONTAL		VERTICAL	
Code	Tolerance	Code	Tolerance
1	+/-20'	A	+/-3'
2	+/-50'	B	+/-10'
3	+/-100'	C	+/-20'
4	+/-250'	D	+/-50'
5	+/-500'	E	+/-125'
6	+/-1000'	F	+/-250'
7	+/-1/2 NM	G	+/-500'
8	+/-1 NM	H	+/-1000'
9	Unknown	I	Unknown

101 Blank

102 Mark Indicator Type of Marking

"P": Orange or Orange and White Paint
"W": White Paint Only
"M": Marked
"F": Flag Marker
"S": Spherical Marker
"N": None
"U": Unknown

103 Blank

104-117 FAA Study Number

118 Blank

119 Action: A, C, D, Add, Change, Dismantle

120 Blank

121-127 Julian Date Date of Action

128 Blank

129-134 DATCHK Code Data Integrity Code

THE CHANGE LIST FORMAT

Lines 1 - 3 are column headers for the detail lines. Line 4 Contains 130 "-" characters.

There is a DATCHK code at the end of every line in the file. The data for each change is in the following format:

Column -----	Data Element -----	Description -----
1-9	Action	DISMANTLE, OLD, NEW, ADD, REMOVE
10	Blank	
11-12	ORS Code	(See DOF Format)
13	"-"	
14-19	Obstacle Number	"
20	Blank	
21	"O" or "U"	"
22	Blank	
23-24	Country Identifier	
25	Blank	
26-27	State Identifier	
28	Blank	
29-44	City Name	"
45	Blank	
46-47	Latitude Degrees	"
48	Blank	
49-50	Latitude Minutes	"
51	Blank	
52-56	Latitude Seconds	"
57	Latitude Hemisphere	"

58	Blank	
59-61	Longitude Degrees	"
62	Blank	
63-64	Longitude Minutes	"
65	Blank	
66-70	Longitude Seconds	"
71	Longitude Hemisphere	"
72	Blank	
73-90	Obstacle Type	"
91	Blank	
92	Quantity	"
93	Blank	
94-98	AGL HT	"
99	Blank	
100-104	AMSL HT	"
105	Blank	
106	Lighting	"
107	Blank	
108	Horizontal Accuracy	"
109	Blank	
110	Vertical Accuracy	"
111	Blank	
112	Mark Indicator	"
113	Blank	
114-127	FAA Study Number	"

128	Blank	
129	Action: A, C, D, R	Add, Change, Dismantle, Remove
130-136	Julian Date	Date of Action
137	Blank	
138-143	DATCHK Code	Data Integrity code