

OBSTRUCTION DATA SHEET

**ODS 5640
MARSHALL MUNICIPAL - RYAN FIELD
MARSHALL, MINNESOTA**

DIGITIZED FROM

**OC 5640
SURVEYED SEPTEMBER 1991
1ST EDITION**



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OBSTRUCTION DATA SHEET

The Obstruction Data Sheet (ODS) provides digital obstruction and runway data for use in aircraft arrival and departure planning. This information has been obtained using field survey and photogrammetric methods by the Photogrammetry Branch of the National Ocean Service in accordance with Federal Aviation Regulations Part 77 (FAR-77), "Objects Affecting Navigable Airspace" and FAA Nr. 405, "Specifications - Airport Obstruction Chart and Related Products."

The ODS is a derivative of the Airport Obstruction Chart (OC). The source OC is indicated on the ODS cover. All objects, both obstructing and nonobstructing, that carry an elevation on the OC are listed in the ODS. The ODS (and OC) depict a representation of objects that existed at the time of the OC field survey.

ODS information is arranged as follows:

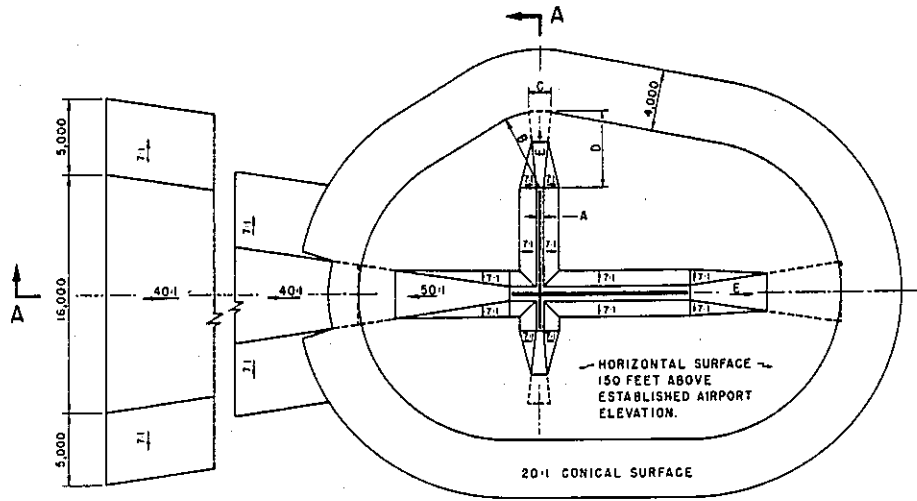
1. Objects located in FAR-77 approach (including supplemental approaches if present) or primary areas are listed with the associated runway (reference runway). For example, all objects in the Runway 9R approach or primary are listed with Runway 9R. Distances to these objects are computed from both the physical end and threshold of Runway 9R. Objects in the Runway 27L approach or primary are listed with Runway 27L. (Objects in the common 9R/27L primary area are listed with both runways.)
2. All objects not included in "1" above are listed with the Airport Reference Point (ARP).
3. Runway configuration and runway lengths, widths, and elevations are presented on the ODS last page.

The FAR-77 imaginary approach surfaces for which the obstruction surveys were performed are coded in the ODS as follows (see footnote 2 on page 3):

A(V) Utility runway - visual approach only
 A(NP) Utility runway - nonprecision instrument approach
 B(V) Nonutility runway - visual approach only
 C Nonutility runway - nonprecision instrument approach with
 visibility minimums greater than 3/4 mile
 D Nonutility runway - nonprecision instrument approach with
 visibility minimums as low as 3/4 mile
 PIR Precision instrument runway
 SUPLC ... Supplemental C underlying a B(V)

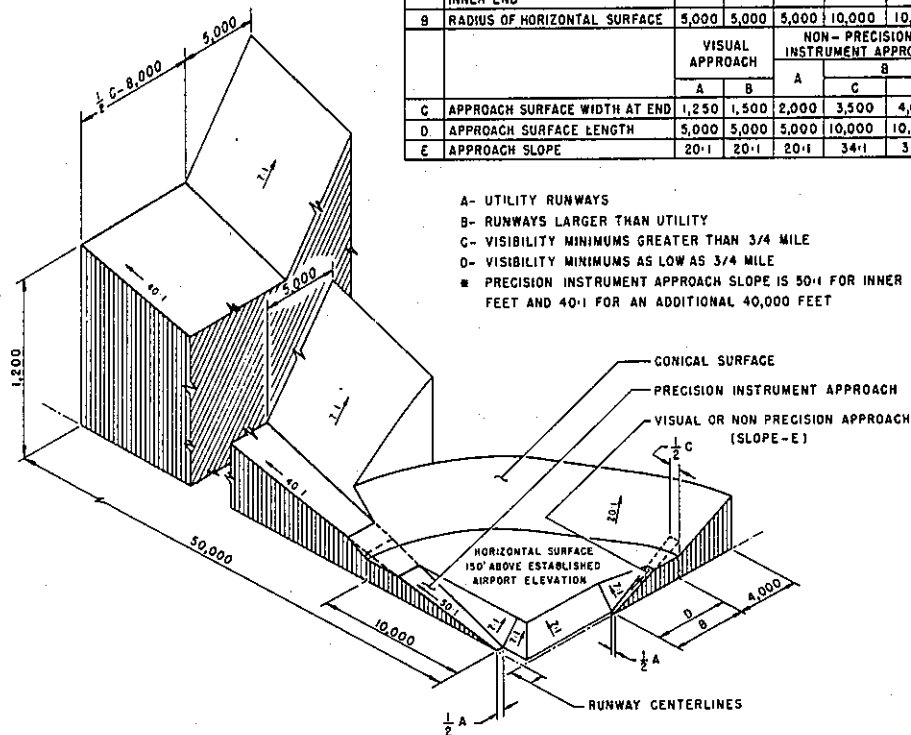
FAR-77 imaginary surface dimensions are defined on page 2 of this report.

Primary surface width is determined by the widest approach at the two approach/primary interfaces for that runway.



DIM	ITEM	DIMENSIONAL STANDARDS (FEET)					
		VISUAL RUNWAY		NON-PRECISION INSTRUMENT RUNWAY			PRECISION INSTRUMENT RUNWAY
		A	B	A	B	D	
A	WIDTH OF PRIMARY SURFACE AND APPROACH SURFACE WIDTH AT INNER END	250	500	500	500	1,000	1,000
B	RADIUS OF HORIZONTAL SURFACE	5,000	5,000	5,000	10,000	10,000	10,000
		VISUAL APPROACH		NON-PRECISION INSTRUMENT APPROACH			PRECISION INSTRUMENT APPROACH
		A	B	A	B	D	
C	APPROACH SURFACE WIDTH AT END	1,250	1,500	2,000	3,500	4,000	16,000
D	APPROACH SURFACE LENGTH	5,000	5,000	5,000	10,000	10,000	*
E	APPROACH SLOPE	20:1	20:1	20:1	34:1	34:1	*

- A- UTILITY RUNWAYS
- B- RUNWAYS LARGER THAN UTILITY
- C- VISIBILITY MINIMUMS GREATER THAN 3/4 MILE
- D- VISIBILITY MINIMUMS AS LOW AS 3/4 MILE
- * PRECISION INSTRUMENT APPROACH SLOPE IS 50:1 FOR INNER 10,000 FEET AND 40:1 FOR AN ADDITIONAL 40,000 FEET



ISOMETRIC VIEW OF SECTION A-A

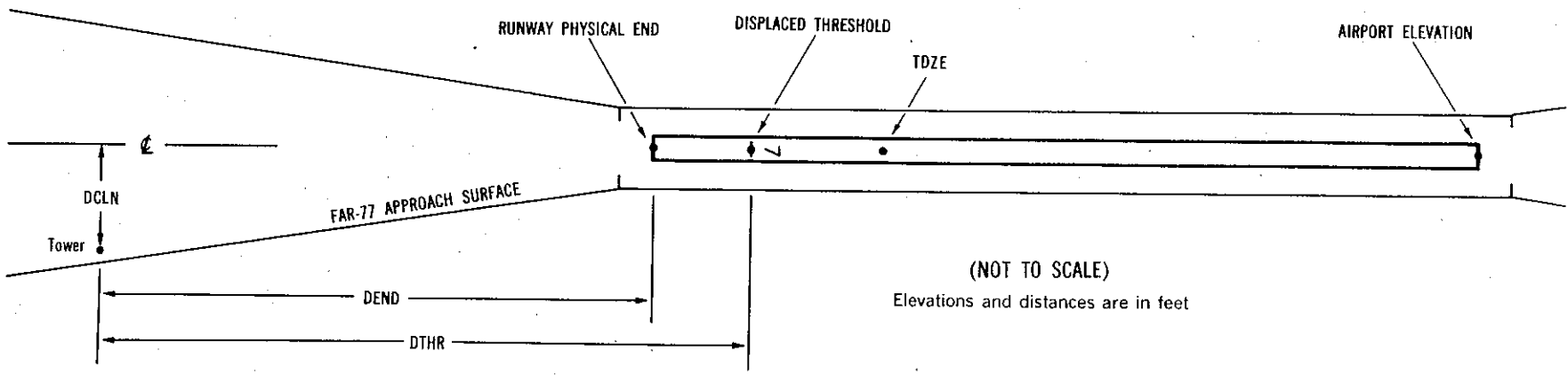
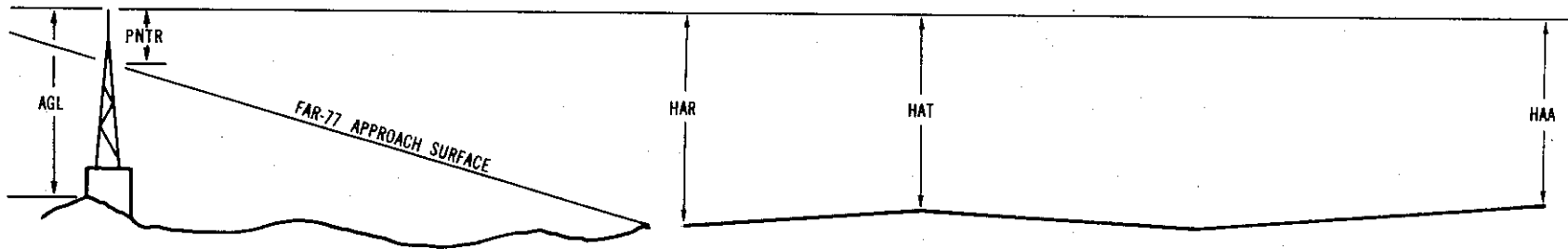
FAR-77 CIVIL AIRPORT
IMAGINARY SURFACES

ANNOTATION OF ODS DATA FORMAT

OC XXXX

AIRPORT ELEVATION XXXX

x ¹	x ²	XXXX/XXXX ³	XXXXXX.XXX ⁴	XXXXXXXX.XXX ⁴	XXXXXXX ⁵	XXXX/XXXX ⁶	XXXXXX.XXX ⁷	XXXXXXXX.XXX ⁷				
OBJECT	LAT	LONG	A ⁸	ELEV ⁹	AGL ¹⁰	HAR ¹¹	HAT ¹¹	HAA ¹¹	DEND ¹²	DTHR ¹²	DCLN ¹²	PNTR ¹³
XXXXXXXXXXXX	XXXXXX.XXX	XXXXXXXX.XXX	XX	XXXX	XXXX	XXX	XXX	XXX	XXXXX	XXXXX	XXXX	XXXX
XXXXXXXXXXXX	XXXXXX.XXX	XXXXXXXX.XXX	XX	XXXX	XXXX	XXX	XXX	XXX	XXXXX	XXXXX	XXXX	XXXX



EXPLANATION OF FOOTNOTES

- 1 Data block identifier. If a runway number is entered (reference runway), this data block will contain data pertinent to the reference runway and to objects in the FAR-77 approach and primary area of the reference runway. If ARP is entered, this data block will contain the ARP position and data relative to all objects not in an FAR-77 approach or primary area.
- 2 For the reference runway, the lowest FAR-77 approach surface for which an obstruction survey was performed. (More than one surface may be surveyed.)
- 3 Reference runway approach physical end elevation/touchdown zone elevation
- 4 Latitude and longitude of reference runway approach physical end
- 5 Reference runway geodetic azimuth reckoned clockwise from south
- 6 Reference runway displaced threshold elevation/touchdown zone elevation
- 7 Latitude and longitude of reference runway displaced threshold
- 8 Accuracy Code: Horizontal Vertical
 1 = 20 A = 2
 2 = 40 B = 5
 C = 20
- 9 Mean Sea Level (MSL) elevation at top of object. This value includes 15 feet added to noninterstate roads, 17 feet added to interstate roads, and 23 feet added to railroad tracks.
- 10 Height above ground level (AGL). AGLs are provided only for those objects appearing on the OC that are equal to, or greater than, 200 feet AGL. AGL accuracy is ± 10 feet.
- 11 HAA - Height above airport
 HAR - Height above reference runway approach physical end
 HAT - Height above reference runway touchdown zone elevation
- 12 DEND - Distance along reference runway centerline from point perpendicular to object to reference runway approach physical end
 DTHR - Distance along reference runway centerline from point perpendicular to object to reference runway threshold
 DCLN - Distance left (L) or right (R) of reference runway centerline as observed facing forward in a landing aircraft.
- A negative value for DEND or DTHR indicates object is in primary area on roll-out side of zero distance point.
- 13 PNTR - Penetration of indicated FAR-77 approach or primary surface (see footnote 2).

OC5640

AIRPORT ELEVATION 1180

2 A(V) 1179/1179 442645.875N 0954919.842W 2080025

OBJECT	LAT	LONG	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
ROAD (N)	442635.13	0954927.69	1A	1196		17	17	16	1228		8R	-34

20 A(V) 1170/1179 442713.816N 0954859.095W 0280040

OBJECT	LAT	LONG	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
ROAD (N)	442727.58	0954848.85	1A	1181		11	2	1	1579		2L	-58

12 PIR 1180/1180 442716.732N 0954952.334W 3095357

OBJECT	LAT	LONG	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
ROD ON OL ANEMOMETER	442701.60	0954916.10	1A	1213		33	33	33	-2999		510L	35
GROUND	442717.77	0954944.96	1A	1181		1	1	1	-343		424L	1
TREE	442727.24	0954957.72	1A	1216		36	36	36	982		565L	20
ROAD (N)	442727.50	0955010.40	1A	1198		18	18	18	1705		4R	-12

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AIRPORT ELEVATION 1180

30 C 1177/ 442644.716N 0954858.889W 1295435 1178/1178 442645.973N 09549 0.985W

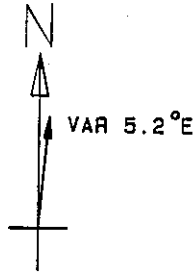
OBJECT	LAT	LONG	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
GROUND	442717.77	0954944.96	1A	1181		4	3	1	-4711	-4513	424R	1
ROD ON OL ANEMOMETER	442701.60	0954916.10	1A	1213		36	35	33	-2055	-1856	510R	35
GAS PUMP	442638.88	0954900.17	1A	1182		5	4	2	308	506	513L	2
ROAD (N)	442635.16	0954855.29	1A	1193		16	15	13	821	1020	575L	-2
POLE	442633.62	0954851.96	1A	1210		33	32	30	1107	1305	540L	6
ANTENNA ON BUILDING	442631.03	0954849.38	1A	1219		42	41	39	1418	1617	620L	6
LIGHT STANDARD	442639.86	0954839.02	1A	1210		33	32	30	1421	1619	548R	-3
TREE	442630.76	0954841.89	1A	1223		46	45	43	1853	2051	293L	-3
RAILROAD CROSSING GATE	442635.50	0954835.76	1A	1217		40	39	37	1886	2084	361R	-10
TREE	442632.54	0954836.12	1A	1232		55	54	52	2058	2256	114R	1
TREE	442624.60	0954823.49	1A	1260		83	82	80	3277	3476	85R	-8
TREE	442619.60	0954825.56	1A	1269		92	91	89	3486	3685	399L	-5

OC5640

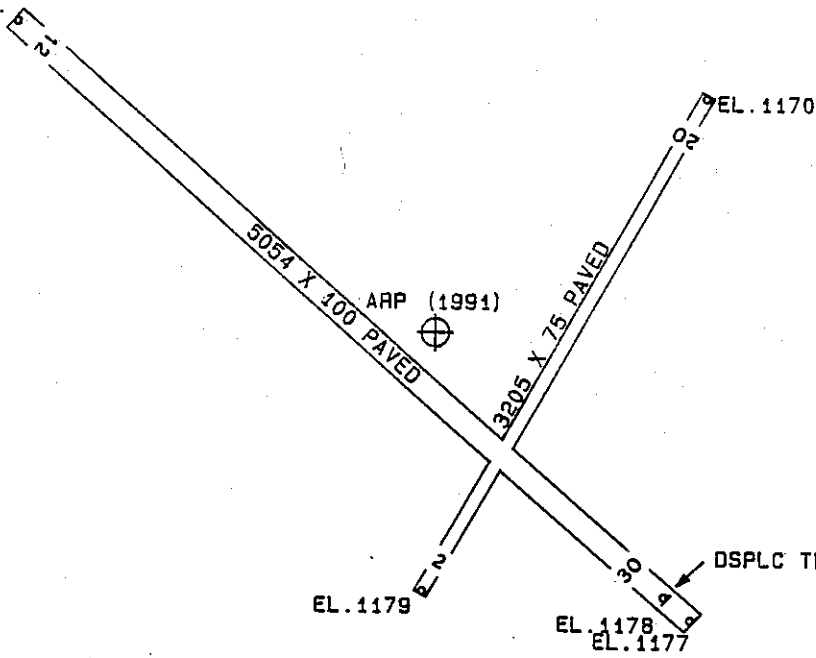
AIRPORT ELEVATION 1180

ARP 442700.384N 0954919.346W

OBJECT	LAT	LONG	A	ELEV	AGL	HAA	MAG BEARING	DISTANCE
DME ANTENNA	442654.68	0954928.27	1A	1209		29	223 2	868
TREE	442708.24	0954908.65	1A	1206		26	39 5	1111
OL ON WINDSOCK	442653.81	0954902.25	1A	1197		17	113 2	1408
LIGHT STANDARD	442644.52	0954912.50	1A	1210		30	157 37	1682
ROD ON AIRPORT BEACON	442638.97	0954908.84	1A	1242		62	155 26	2299
AMOM ON FLOODLIGHT POLE	442638.32	0954903.03	1A	1215		35	146 54	2529
TREE	442636.05	0954903.65	1A	1244		64	150 0	2714
POLE	442635.65	0954858.19	1A	1212		32	143 18	2938
FLOODLIGHT POLE	442640.76	0954836.53	1A	1225		45	117 25	3688
TREE	442727.32	0954954.57	1A	1220		40	311 41	3737
TREE	442729.39	0954954.98	1A	1248		68	313 27	3913
TREE	442712.62	0955013.46	1A	1259		79	282 20	4117
POLE	442718.65	0955010.97	1A	1205		25	291 5	4177
ANTENNA	442643.96	0954813.99	1B	1292		112	104 8	5024
ANTENNA	442701.95	0954740.27	1B	1336		156	83 31	7189
ANTENNA ON TANK	442648.64	0954728.50	1B	1319		139	93 12	8129
ELEVATOR	442730.57	0954731.78	1B	1330		150	63 24	8380
OL ON TANK	442728.76	0954704.40	1B	1308		128	68 26	10201



ARPT ELEV. 1180 FT.



TOUCHDOWN ZONE
RUNWAY ELEVATION

2	1179
20	1179
12	1180
30	1178

MARSHALL MUNICIPAL - RYAN FIELD
MARSHALL, MINNESOTA
(NOT TO SCALE)