

# OBSTRUCTION DATA SHEET

ODS 6840  
LIBBY AIRPORT  
LIBBY, MONTANA

DIGITIZED FROM

OC 6840  
SURVEYED AUGUST 1986  
1ST EDITION



PREPARED AND DISTRIBUTED BY  
THE NATIONAL OCEAN SERVICE  
U.S. DEPARTMENT OF COMMERCE  
FOR THE FEDERAL AVIATION ADMINISTRATION

## 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:

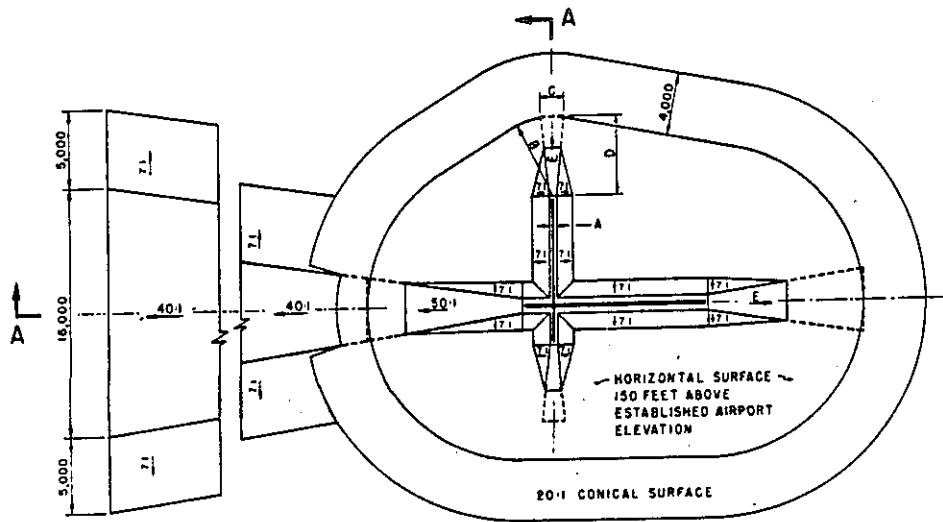
1. Objects located in FAR-77 approach (including supplemental approaches if present) or primary areas are listed with the associated runway (reference runway). For example, all objects in the Runway 9R approach or primary are listed with Runway 9R. Distances to these objects are computed from both the 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)

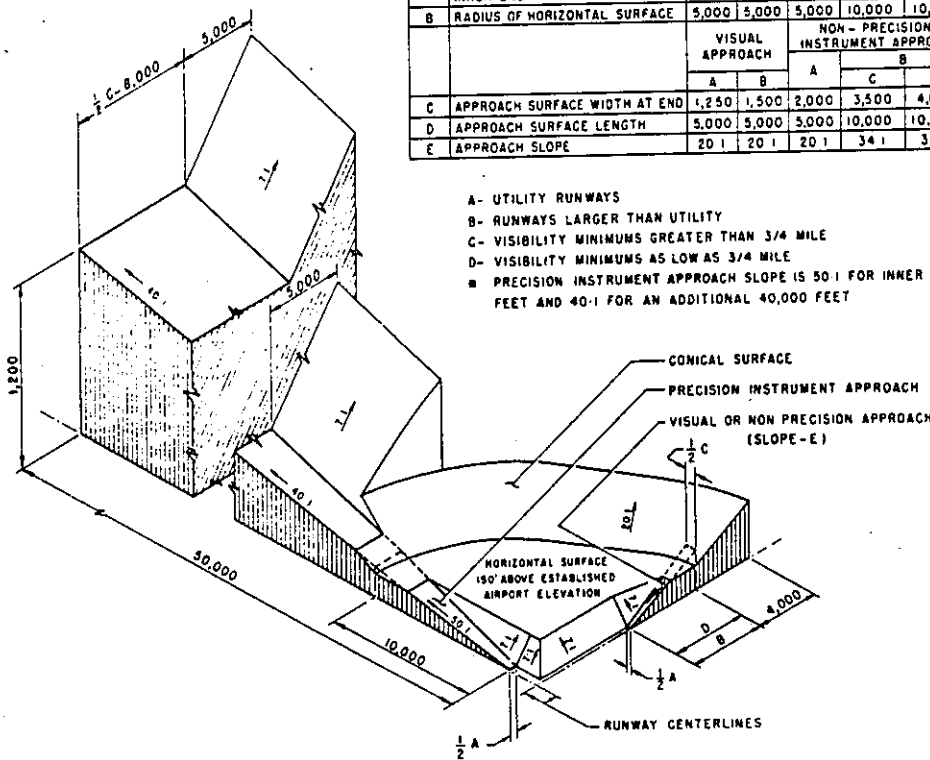
FAR-77 imaginary surface dimensions are defined on page 2 of this report.

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		
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
C	APPROACH SURFACE WIDTH AT END	VISUAL APPROACH		NON-PRECISION INSTRUMENT APPROACH		PRECISION INSTRUMENT APPROACH	
		A	B	A	B		
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

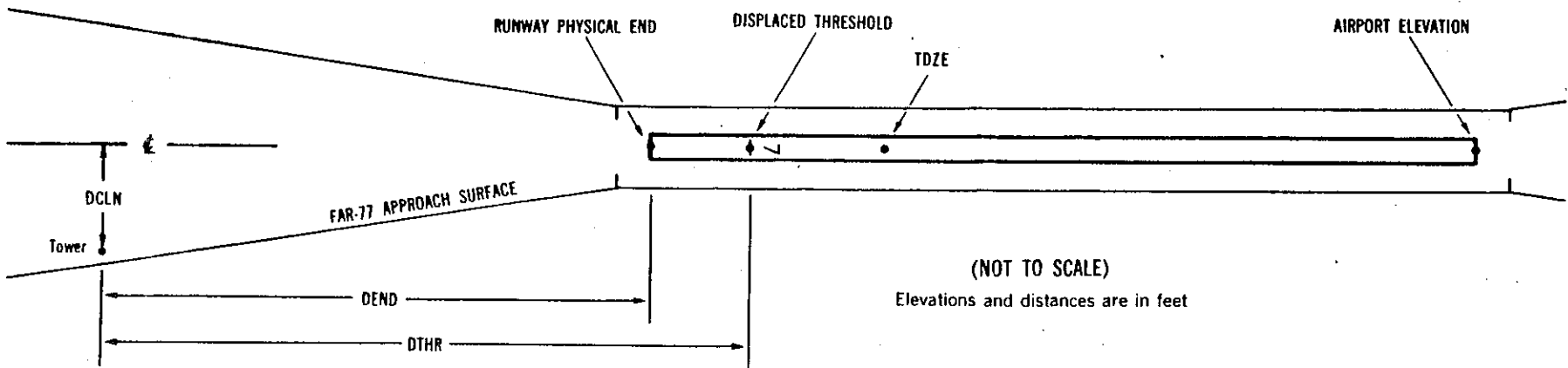
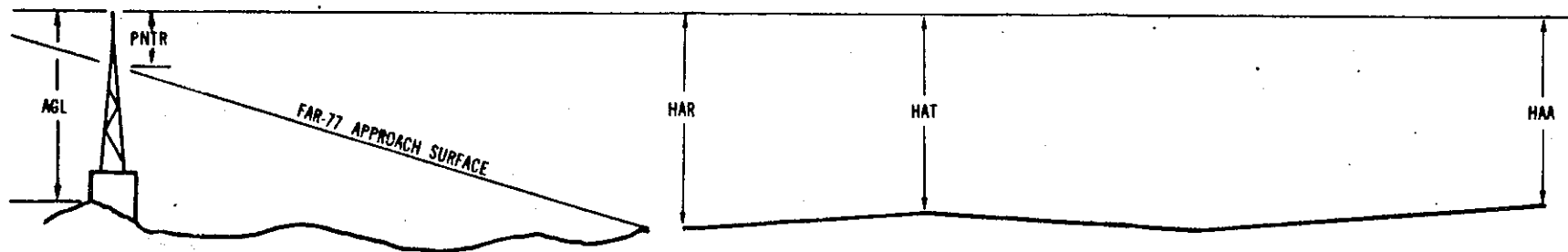
# ANNOTATION OF ODS DATA FORMAT

OC XXXX

AIRPORT ELEVATION XXXX

X <sup>1</sup>	X <sup>2</sup>	XXXX/XXXX <sup>3</sup>	XXXXXX.XXX <sup>4</sup>	XXXXXXXX.XXX <sup>4</sup>	XXXXXXXX <sup>5</sup>	XXXX/XXXX <sup>6</sup>	XXXXXX.XXX <sup>7</sup>	XXXXXXXX.XXX <sup>7</sup>				
OBJECT	LAT	LONG	A <sup>8</sup>	ELEV <sup>9</sup>	AGL <sup>10</sup>	HAR <sup>11</sup>	HAT <sup>11</sup>	HAA <sup>11</sup>	DEND <sup>12</sup>	DTHR <sup>12</sup>	DCLN <sup>12</sup>	PNTR <sup>13</sup>
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

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(NOT TO SCALE)  
Elevations and distances are in feet

## EXPLANATION OF FOOTNOTES

- <sup>1</sup> 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.
- <sup>2</sup> For the reference runway, the lowest FAR-77 approach surface for which an obstruction survey was performed. (More than one surface may be surveyed.)
- <sup>3</sup> Reference runway approach physical end elevation/touchdown zone elevation
- <sup>4</sup> Latitude and longitude of reference runway approach physical end
- <sup>5</sup> Reference runway geodetic azimuth reckoned clockwise from south
- <sup>6</sup> Reference runway displaced threshold elevation/touchdown zone elevation
- <sup>7</sup> Latitude and longitude of reference runway displaced threshold
- <sup>8</sup> Accuracy Code:
- |   | Horizontal | Vertical |
|---|------------|----------|
| 1 | = 20       | A = 2    |
| 2 | = 40       | B = 5    |
|   |            | C = 20   |
- <sup>9</sup> 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.
- <sup>10</sup> 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  $\pm 10$  feet.
- <sup>11</sup> HAA - Height above airport  
 HAR - Height above reference runway approach physical end  
 HAT - Height above reference runway touchdown zone elevation
- <sup>12</sup> 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.
- <sup>13</sup> PNTR - Penetration of indicated FAR-77 approach or primary surface (see footnote 2).

QC6840

AIRPORT ELEVATION 2601

14 A(V) 2582/2597 481725.867N 1152930.663W 3451519

OBJECT	LAT	LONG	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
SIGN	481639.89	1152911.01	1A	2610		28	13	9	-4844		100L	9
GROUND	481641.68	1152911.86	1A	2607		25	10	6	-4654		91L	6
BUSH	481643.11	1152915.23	1A	2606		24	9	5	-4456		93R	6
BUSH	481700.06	1152919.04	1A	2604		22	7	3	-2729		95L	8
GROUND	481727.48	1152933.17	1A	2583		1	-14	-18	201		123R	1
BUSH	481730.66	1152935.22	1A	2601		19	4	0	548		174R	2
TREE	481733.91	1152931.59	1A	2603		21	6	2	805		147L	-9
TREE	481749.71	1152942.57	1A	2646		64	49	45	2542		164R	-53

32 A(V) 2601/2601 481638.153N 1152911.852W 1651533

OBJECT	LAT	LONG	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
GROUND	481727.48	1152933.17	1A	2583		-18	-18	-18	-5201		123L	1
BUSH	481700.06	1152919.04	1A	2604		3	3	3	-2271		95R	8
BUSH	481643.11	1152915.23	1A	2606		5	5	5	-543		93L	6
GROUND	481641.68	1152911.86	1A	2607		6	6	6	-346		91R	6
SIGN	481639.89	1152911.01	1A	2610		9	9	9	-156		100R	9
TREE	481628.29	1152909.57	1A	2616		15	15	15	1006		105L	-25
TREE	481619.28	1152859.45	1A	2686		85	85	85	2063		325R	-8
TREE	481612.83	1152859.17	1A	2698		97	97	97	2700		177R	-28

OC6840

AIRPORT ELEVATION 2601

ARP 481702.010N 1152921.257W

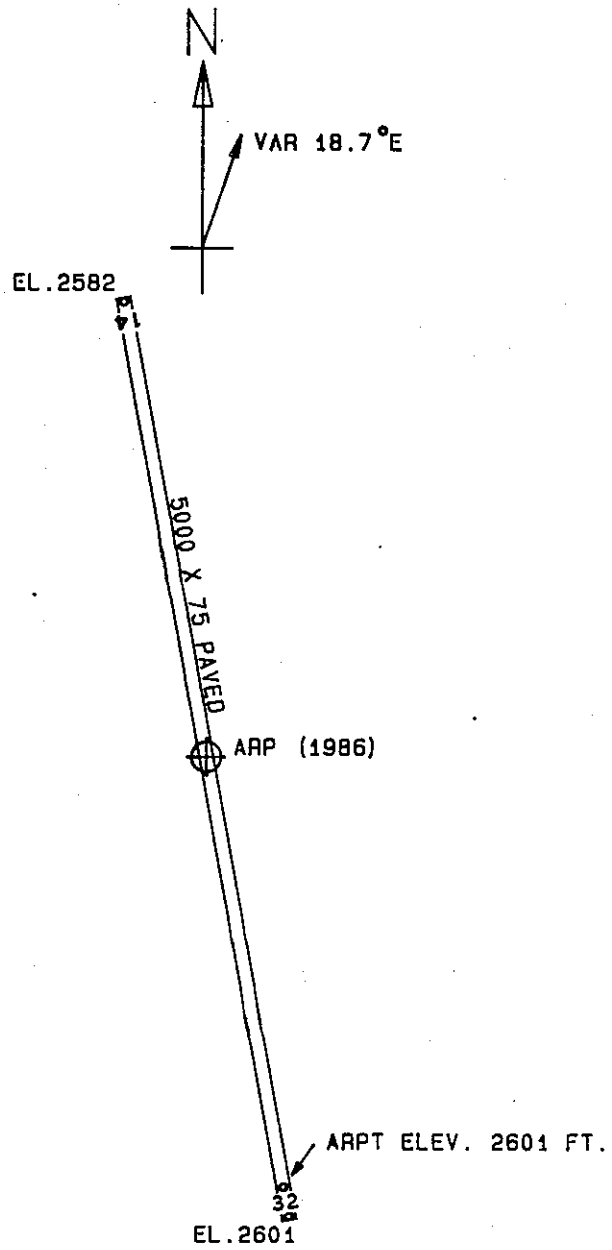
OBJECT	LAT	LONG	A	ELEV	AGL	HAA	MAG BEARING	DISTANCE
DL ON LTD WSK	481659.22	1152925.27	1A	2621		20	205 10	392
TREE	481703.69	1152913.49	1A	2648		47	53 17	552
TREE	481706.03	1152915.47	1A	2648		47	25 8	565
TREE	481708.23	1152916.58	1A	2643		42	7 56	706
ROD ON APT BCN	481701.93	1152910.81	1A	2649		48	71 57	707
TREE	481703.82	1152909.35	1A	2682		81	58 28	826
TREE	481712.51	1152917.27	1A	2660		59	355 31	1098
BUSH	481650.76	1152913.58	1A	2607		6	136 49	1253
TREE	481709.52	1152937.87	1A	2676		75	285 25	1357
TREE	481651.97	1152906.32	1A	2682		81	116 31	1434
TREE	481718.96	1152919.50	1A	2637		36	345 15	1722
TREE	481646.56	1152906.75	1A	2664		63	129 13	1848
BUSH	481644.57	1152912.10	1A	2608		7	141 59	1872
TREE	481643.13	1152925.74	1A	2680		79	170 18	1937
TREE	481645.75	1152904.15	1A	2674		73	126 14	2013
TREE	481723.48	1152920.05	1A	2660		59	343 27	2177
TREE	481724.11	1152922.23	1A	2633		32	339 37	2241
BRUSH PILE	481723.81	1152932.40	1A	2588		-13	322 28	2334
TREE	481641.49	1152903.05	1A	2683		82	130 39	2416
BRUSH PILE	481639.18	1152909.01	1A	2616		15	141 36	2458
TREE	481728.11	1152923.35	1A	2653		52	338 14	2649
TREE	481635.90	1152923.27	1A	2676		75	164 15	2650
TREE	481638.25	1152904.85	1A	2672		71	136 33	2651
TREE	481726.71	1152936.43	1A	2649		48	319 0	2705
TREE	481728.67	1152928.40	1A	2614		13	331 10	2745
TREE	481730.82	1152928.22	1A	2633		32	332 8	2958
TREE	481634.91	1152903.96	1A	2661		60	138 13	2986
TREE	481732.20	1152927.99	1A	2643		42	332 50	3094
TREE	481633.17	1152902.30	1A	2671		70	137 36	3191
TREE	481731.00	1152941.50	1A	2656		55	316 19	3241
TREE	481629.97	1152917.24	1A	2663		62	156 31	3258
TREE	481624.65	1152920.41	1A	2685		84	160 26	3787
TREE	481627.34	1152858.84	1A	2677		76	137 57	3827

AIRPORT ELEVATION 2601

ARP 481702.010N 1152921.257W

OBJECT	LAT	LONG	A	ELEV	AGL	HAA	MAG BEARING	DISTANCE
TREE	481741.79	1152942.02	1A	2635		34	322 6	4269
TREE	481726.41	1152828.33	1B	2900		299	36 39	4351
TREE	481617.98	1152914.17	1A	2681		80	155 10	4488
TREE	481702.42	1152808.07	1B	2993		392	70 48	4950
TREE	481630.86	1153024.53	1B	2762		161	214 54	5318
TREE	481759.96	1152837.12	1B	2980		379	8 14	6588
TREE	481734.85	1152754.71	1B	3790		1189	41 40	6733
TREE	481723.00	1152727.15	1B	4147		1546	55 53	8005
TREE	481610.72	1152724.40	1B	3244		643	104 37	9461
TREE	481828.17	1152823.47	1B	3622		1021	5 24	9566
TREE	481559.02	1152730.75	1B	3487		886	111 47	9830





TOUCHDOWN ZONE RUNWAY ELEVATION	
14	2597
32	2601

LIBBY AIRPORT  
LIBBY, MONTANA  
(NOT TO SCALE)