NATIONAL TRANSPORTATION SAFETY BOARD
Office of Research and Engineering
Washington, D.C. 20594

May 12, 2006

Aircraft Performance Group Accident Site Factual

I. ACCIDENT

NTSB Number:	DCA06MA009
Description:	Runway Overrun
Location:	Chicago Midway Airport, Chicago, Illinois
Date:	December 8, 2005
Time:	1914 CST
Aircraft:	Boeing 737-7H4, N471WN
Operator:	Southwest Airlines Co.

II. GROUP

Chairman	Kevin J. Renze, Ph.D. National Transportation Safety Board Vehicle Performance Division, RE-60
Member	Brian Gleason Southwest Airlines Co. Director of Flight Operations Technical
Member	Captain John Gadzinski Southwest Airlines Pilot Association Air Safety Committee
Member	Don Stimson Aerospace Engineer Airplane & Flight Crew Interface Branch, ANM-111 FAA Transport Standards Staff
Member	John D. Anderson Accident/Incident Investigation Aerodynamics Engineering, MS 67-FH The Boeing Company

SUMMARY

On December 8, 2005, 1914 Central Standard Time, Southwest Airlines flight 1248, a Boeing B-737-7H4 registered as N471WN, overran runway 31C at Chicago Midway International Airport in Chicago, Illinois, during the landing rollout. The airplane departed the end of the runway, rolled through a blast fence, a perimeter fence, and onto a roadway. Instrument meteorological conditions prevailed at the time. The airplane was substantially damaged. The flight was conducted under 14 CFR Part 121 of the Federal Aviation Regulations (FARs) and had departed from the Baltimore/ Washington International Thurgood Marshall Airport, Maryland.

The on-scene aircraft performance investigative activities commenced on the morning of December 9, 2005. The aircraft performance group[1] was formed on the same afternoon, commenced group activities on December 10, and concluded the on-scene investigation on December 12, 2005.

1.0 Accident Site Survey

Evidence from the accident site, overrun area, and departure runway were documented on December 9-10, 2005. The airplane was located just south of the intersection of S. Central Avenue and W. 55th street and slightly left of the S. Central Avenue centerline. The airplane nose was located at latitude N41° 47' 32.6992, longitude W87° 45' 44.5311. The aircraft heading was approximately 333° true.

A three-view drawing of the Boeing 737-700W is included in Attachment 1. The Chicago Midway International Airport layout plan, ramp areas, and runway dimension data are documented in Attachment 2.

1.1 Witness Marks

Witness marks were documented by means of sketches, photographs, tape measurements, professional survey, and handheld GPS measurements. Witness marks included ground scars; tire rutting in soil; tire tracking through snow; damage to the blast fence and ILS antenna at the roll out end of runway 31C; damage to the northwest corner of the airport perimeter fence; and damage to the leading edge, leading edge devices, and engine nacelles of the airplane. The professional survey data are documented in the Structures Group Chairman's Factual Report. Global Positioning System (GPS) data were collected with a handheld Garmin eTrex Vista device and are included in Attachment 3, Table A3.

[1] The FAA and Boeing representatives joined the aircraft performance group after the on-scene phase of the investigation was completed.

1.2 Photographic Evidence

The airplane ground track and witness mark evidence is documented in part by the photographs presented in Figures 1-4. Aerial views of the accident site and airplane ground track are shown in Figures 1-2. Damage to the blast fence, ILS antenna, and airport perimeter fence is documented in Figures 3-4 from a ground level, runway 31C centerline viewpoint looking toward the roll out end of runway 31C.

Figure 1: Aerial view of N471WN and airplane ground track from roll out end of runway 31C.

1.3 Site Sketches

Sketches of the blast fence, airport perimeter fence, airplane leading edges, curb damage on the airport perimeter road, landing gear ruts, and the approach end of runway 31C are available in Attachment 4.

Figure 2: Aerial view of N471WN and airplane ground track from approach end of runway 13C.


Figure 3: Centerline view of blast fence and accident site looking toward the roll out end of runway 31C (dated 12/09/05, 1:16PM CST).

Figure 4: Close up of blast fence with N471WN and MDW airport perimeter fence in background looking toward the roll out end of runway 31C (dated 12/09/05, 1:16PM CST).

2.0 Runway Data

Runway 31C surface vehicle friction measurement logs and instrumented runway surface data logs were provided by the Midway Operations Center in hardcopy format. Runway surface data were collected for the timeframe two hours prior to the accident through one hour following the accident. The logs of friction and airfield data are documented in the Survival Factors Group Chairman's Factual Report. An example of the runway surface status display available in the Midway Operations Center is illustrated in Figure 5.

3.0 Radar Data

Radar data from the FAA-maintained ASR-9 radar in Oak Forest, Illinois (identifier QXM), were obtained in CDR file format from the Air Traffic Control group chairman. Data for beacon code 0510 were processed to extract time, altitude, range, and azimuth data for flight 1248. The QXM radar antenna is located at latitude N41° 37.290', longitude W87° 46.169' at an elevation of 669.7 feet. The magnetic variation is 2° west. The radar data for flight 1248 are presented in Attachment 5, Table A5.

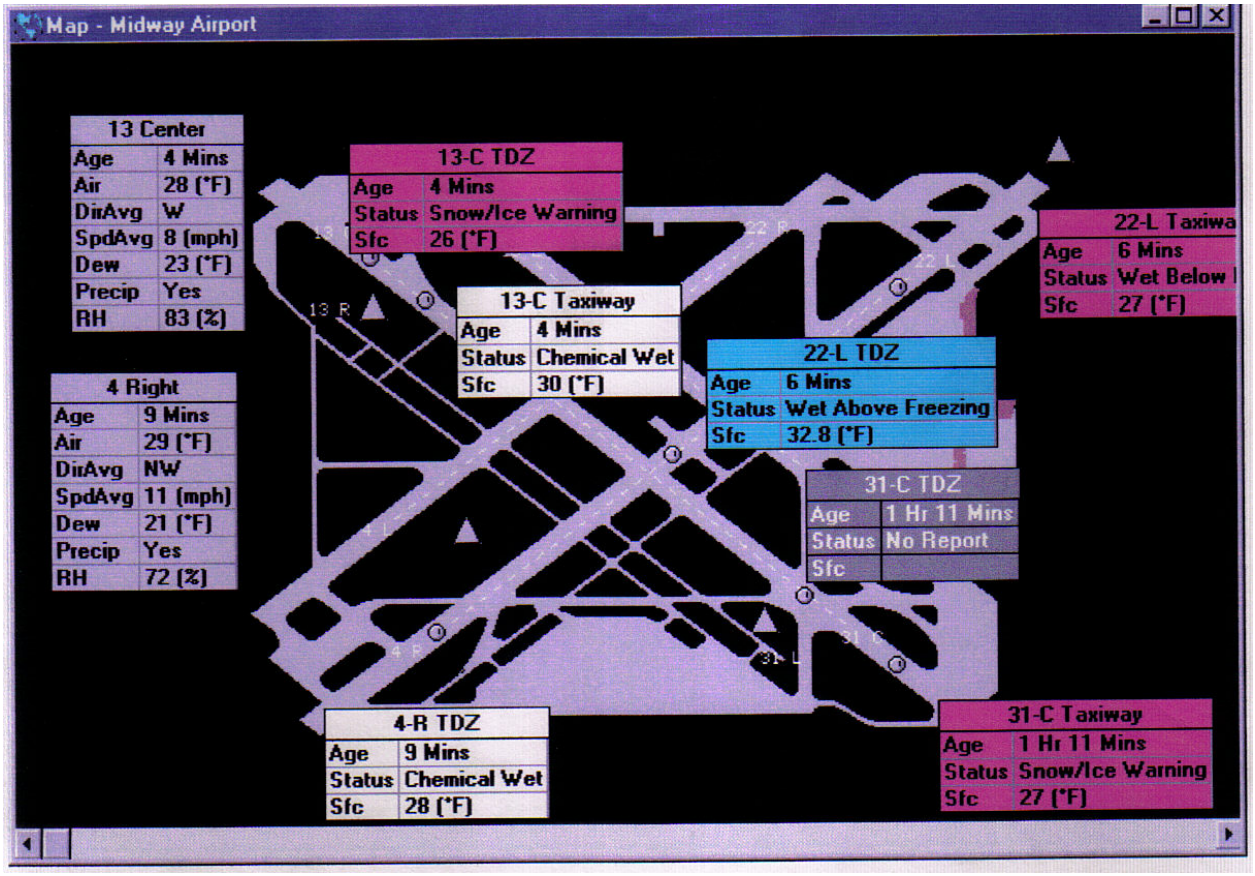


Figure 5: Example runway surface status display available in the Midway Operations Center.

4.0 Weight and Balance

General weight and balance reference documents, general formulas, adjusted weight tables for fuel and passengers, passenger location data, and center of gravity limits are contained in Attachment 6. The Electronic Loading Summary and Loading Schedule for flight 1248, a copy of the manual Loading Schedule, and the fuel tickets at origin are attached. Following the accident, 1646 gallons of fuel were reported offloaded from N471WN. The flight release and flight weather packet for flight 1248 are documented in the Meteorology Factual Report, Attachment 1.

The passenger layout diagram from Southwest Airlines (LOPA SWA D6-38808-1) is presented in addition to an excerpt from the Southwest Airlines Adjusted Weight Loading System Substantiation Report (D043A670-SWA1C), which documents the development of curtailments and the final operational center of gravity envelope. Excerpts from the Boeing Weight and Balance Control and Loading Manual (D043A570-SWA1) define the certified weight and center of gravity limits, fuel tank quantities and balance arms, interior arrangement, and cargo compartment limits.

5.0 ACARS Data

A listing of the raw ACARS messages in the ARINC 620 format which were sent to or received from aircraft N471WN during flight 1248 are included in Attachment 7.

6.0 Onboard Performance Computer

The Onboard Performance Computer (OPC) was retrieved from N471WN on December 9, 2005 and found to be in the "suspend" mode. The OPC is a Fujitsu Stylistic 2300 computer. The Landing Output screen displayed when the OPC was "resumed" on December 9, 2005 at about 7:10 PM CST is illustrated in Figure 6.

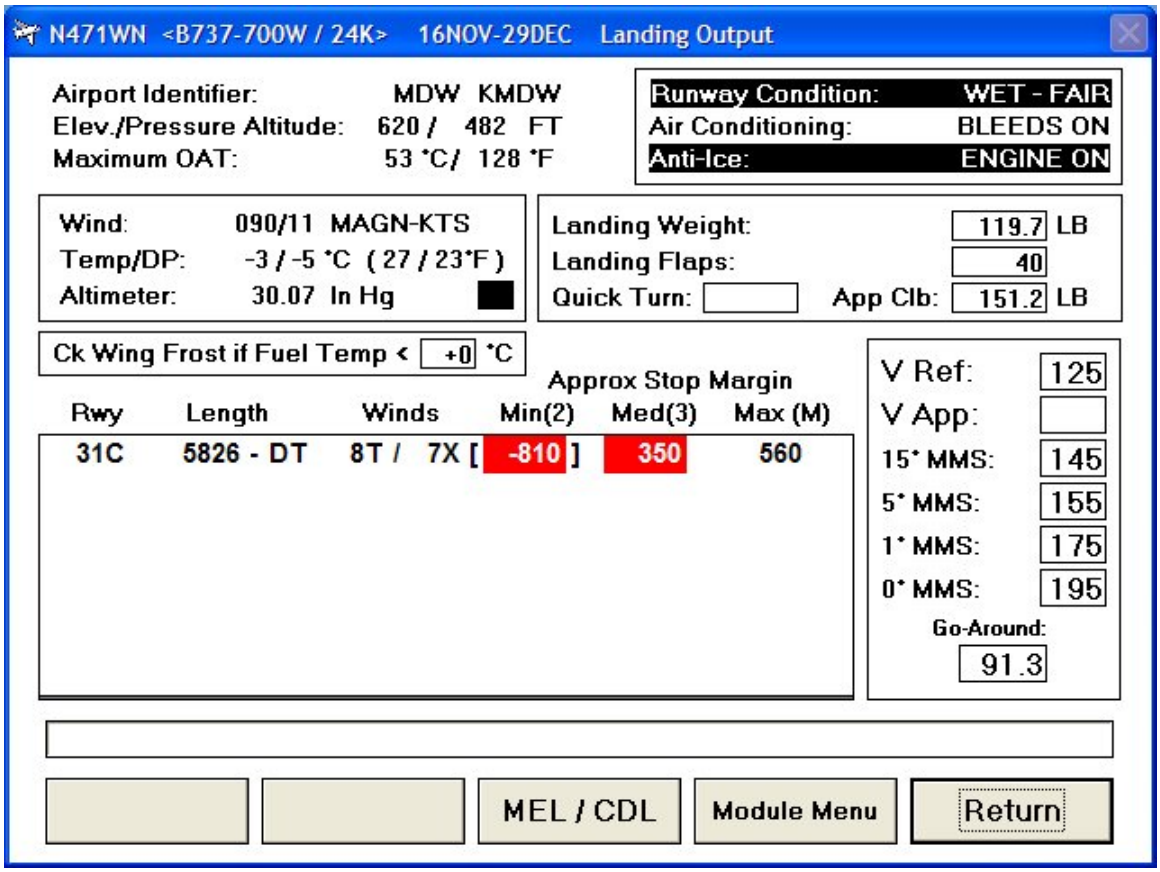


Figure 6: Landing output screen displayed when the flight 1248 OPC was "resumed."

A replication of the Landing Input screen that was found on the N471WN OPC is presented in Figure 7. The Landing Input screen was retrieved by pressing the "Return" button located in the lower right-hand corner of the Landing Output screen.

The OPC consists of two primary programs: The user interface, and the calculation program. A binary file (OPSSAVE.DAT) is used to transfer information between the two programs and is located in the C:\OPSWIN directory on the computer.

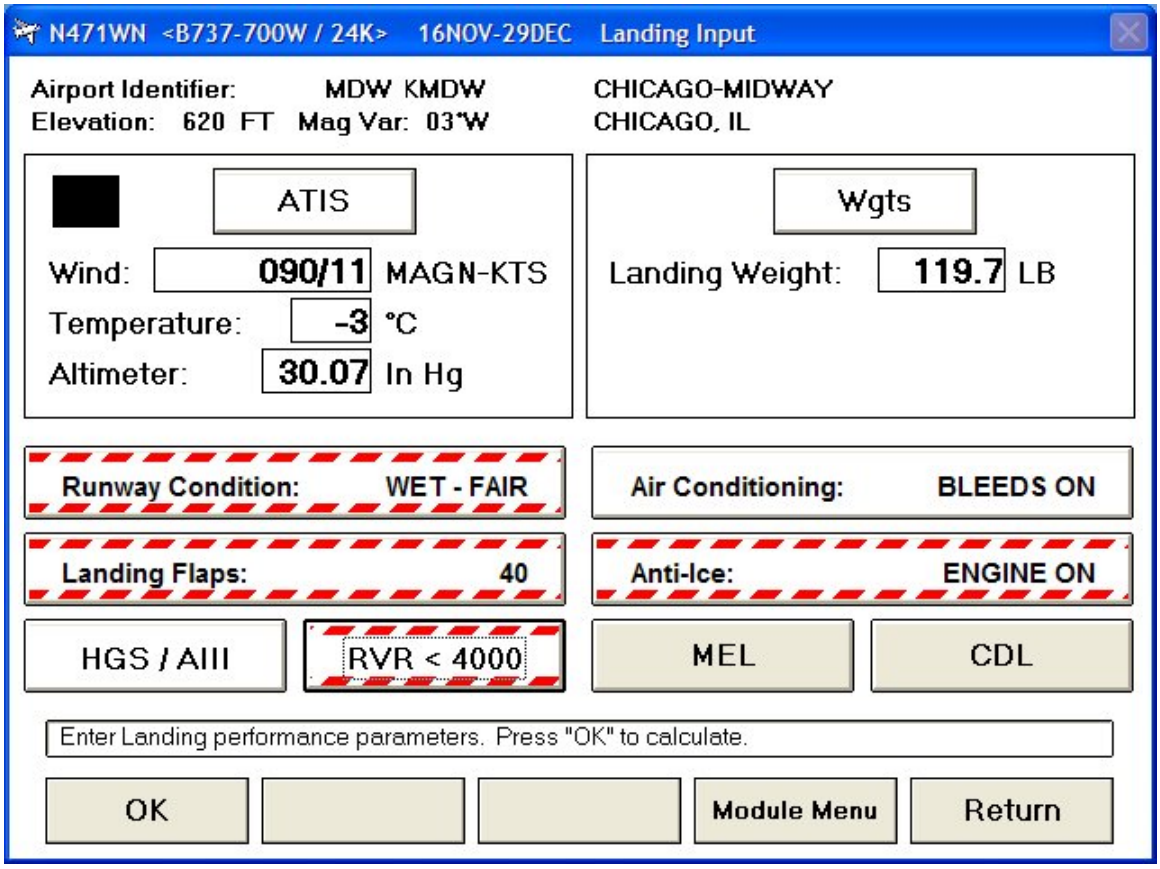


Figure 7: Replication of the Landing Input screen found on the N471WN OPC.

The OPSSAVE.DAT file was copied from the N471WN OPC via a PCMCIA card. An external program was subsequently used to read out the content of the copied OPSSAVE.DAT file. The contents of the OPSSAVE.DAT file from the N471WN OPC are documented in Attachment 8. The timestamp of the N471WN OPSSAVE.DAT file was December 8, 2005 at 7:59 PM.

A brief calibration test was conducted at 5:20 PM on December 9, 2005, at which time the OPC clock displayed a time of December 9, 2005 at 6:25 PM. Based on these data, the OPC clock was approximately 1:05 ahead of the local time and the flight 1248 flight crew last used the OPC to calculate the landing output data displayed in Figure 6 at approximately 6:54 PM CST on December 8, 2005.

The approximate landing distances that were calculated by the OPC for a WET-FAIR runway condition were as follows:

Auto Brake Setting	Total Landing Distance, ft	Stop Margin, ft
2	6630	-810
3	5470	350
Max	5260	560

The Total Landing Distance includes a touchdown distance of 1500 ft from the end of the displaced threshold, plus the calculated autobrake ground roll distance. The Stop Margin is the difference between the displaced threshold landing distance and the Total Landing Distance.

7.0 MDW Approach Charts

Runway 31C approach charts and terminal areas are included in Attachment 9.

8.0 Midway Communications Center Surveillance Cameras

The aircraft performance group video review was conducted using native video equipment installed at the Midway Communications Center (MCC) and the naked eye. Aircraft of interest observed included (in order of landing) SWA 321, SWA 2947, SWA 1830, Citation 565CC, Gulfstream 603KF, and SWA 1248 (the accident aircraft). Video content of aircraft taxiing may contain data useful to address questions regarding snow accumulation rate or airframe contamination.

8.1 Video Surveillance System

A list of surveillance camera identifiers and descriptions is contained in Attachment 10. The following MCC video surveillance system characteristics were noted:

1. Cameras are generally located on terminal building walls approximately 30 feet above the ramp.
2. In general, no MCC cameras are purposefully positioned or oriented to monitor MDW runway operations.
3. Cameras automatically return to a pre-programmed position, orientation, and magnification when an alarm signal activates.
4. Cameras can be remotely manipulated from two MCC and at least one police unit location.
5. The NICE system recorded frame rate is 15 frames/second.
6. The system software is based on the Windows NT operating system.
7. The data time on video from a specific camera is based on the system logger time, and is not necessarily synchronized with outside time sources.
8. Magnetic tape backup with automated 30 day archive/data retention schedule.
9. Video formats available include the NICE proprietary format with time stamp, AVI, and other codecs.

8.2 Video Camera Content

The video content for those cameras identified to most likely contain a field of view of runway 31C is summarized below. The term “stationary” in this context refers to a

camera whose position, orientation, and magnification remained constant throughout the observed event.

Camera 42
Generally pointed towards gate B1. Moved to view accident at time 19:05:08. No significant data noted.

Camera 60
Stationary. Lights of possible arriving aircraft observed at times 19:03:09 and 19:03:12 in upper right of frame.

Camera 81
Stationary. Unusable for runway viewing. Visibility limited to end of terminal ramp. Usable for time correlation of taxiing aircraft. Two aircraft observed taxiing in to ramp area, one parking near camera at B8. Some visible snow accumulation on aircraft wing and fuselage as aircraft parks at gate B8.

Camera 59
Stationary. Located at end of Bravo concourse. Contains distant view of 31C approach path. Observed five of six aircraft of interest on approach, including the accident aircraft.

Camera 50
Stationary. Pointing towards terminal. Captured primarily concourse “A”. No aircraft observed.

Camera 58
Stationary. Observed aircraft taxiing on 13L back to terminal, aircraft observed departing 4R. Perspective may show first responder activity. Accident site in field of view, but not visible.

Camera 117
Stationary. Long distance view of 31C-13C. No significant data visible.

Camera 45
Looking left towards concourse “A”. Camera moves to the right, then back left. View of B737-700 pulling into gate B8.

Camera 37
Short range view of concourse “B”. Camera moved at 18:56:20 to an unusable view.

Camera 26
Stationary. Able to observe aircraft on short approach crossing the airport boundary, as illustrated in Figure 8. Time hacks recorded in reference to stationary jetway sign.

Flight Number	*Time*
SWA 321	18:49:21
SWA 2947	18:51:13
SWA 1830	18:52:50
Citation 565CC	18:57:22
Gulfstream 603KF	18:59:09
SWA 1248	19:01:49

Camera 28
Repositioned, stopped at view of ATA Airlines marked gate A10 looking towards 31C. Camera view is then stationary observation of five of six aircraft of interest (including accident aircraft) during approach flare. Citation 565CC not observed.

Camera 47
Stationary. Focused on gate “B2”. No significant data noted.

Camera 54 (labeled 114)
Stationary. Camera situated between gates B15 and B17 looking at 31C. Aircraft observed taxiing on 13L. Several aircraft rollouts briefly visible on 31C.

Flight Number	*Time*
SWA 2947	18:51:32
SWA 1830	18:53:11
Citation 565CC	Taxi back observed
Gulfstream 603KF	Not observed
SWA 1248	19:02:08

8.3 Video Data Request

Table 1 summarizes flight arrival data identified during the on-scene video review. Video data copies were requested from the following MCC cameras: 26, 28, 37, 42, 45, 47, 50, 54, 58, 59, 60, 81, and 117 from 18:45 to 19:15 local time on December 8, 2005. In addition, video data copies from the same camera set and date were requested between 18:30 and 19:30 local time for permanent archive by the Department of Aviation Operations. Video content from camera 26 was requested in both AVI and NICE proprietary format.

Additional video requests were made for the video content from the camera located on the ATA hangar and all Chicago Police and MDW Airport Fire Fighting first responder vehicles equipped with operating cameras. These requests produced no additional video data.

8.4 Video Evidence of Aircraft Contamination

While viewing the MDW Communication Center (MCC) surveillance videos, it was noted that Camera 45 showed an aircraft pulling into gate B8 and a clear view of

snow accumulating on the aircraft while parked at the gate. Camera 37 also showed the aircraft coming to a stop at the gate. The aircraft has been identified as N795SW, flight 2920, arriving from Kansas City (MCI).

The ACARS messages from N795SW, showed an ON time of 0052 and an IN time of 0105. The ACARS IN event is triggered by the opening of any door on the aircraft. Therefore, the aircraft had been on the ground approximately 13 minutes when it arrived at the gate and the door was opened. Camera 37 showed aircraft N795 stop at the gate at 18:54:09 video time.

ACARS ON Message

QU DALACWN
.DDLXCXA 090053
M23
FI WN2920/AN N795SW
DT DDL MDW 090053 M74A
- ONN01
MCI,MDW,**0052**,10.2

ACARS IN Message

QU DALACWN
.DDLXCXA 090105
M24
FI WN2920/AN N795SW
DT DDL MDW 090105 M76A
- INN01
MCI,MDW,**0105**, 9.7

9.0 MDW Obstruction Data

Runway 13C-31C elevation and obstacle clearance data are available in Attachment 11.

10.0 Department of Aviation Memorandum

A memorandum from Michael Conway to Alberto Rodriguez, dated December 9, 2005 regarding the SWA flight 1248 accident is documented in Attachment 12.

Figure 8: Images extracted from camera 26 recorded video illustrating position of 6 aircraft landing at MDW in a 13 minute window prior to the accident. Note that camera 26 position, orientation, and magnification were constant.

Table 1: MCC Surveillance Video Data Summary

Flight Number	Last Track on Radar ATC Time 1	Time to next aircraft event (ATC radar reference)	Camera 26 Time over Jetway Sign	Camera 54 Rollout 31C	Camera 59 Airborne on Approach
SWA 321	19:00:49.3	1:51	18:49:21	18:49:43	18:50:36-48
SWA 2947	19:02:40.1	1:37	18:51:13	18:51:32	18:52:33-38
SWA 1830	19:04:17.0	4:27	18:52:50	18:53:11	18:54:10
Citation 565CC	19:08:44.4	1:51	18:57:22	(note 3)	not observed
Gulfstream 603KF	19:10:35.1	2:41	18:59:09	not observed	19:00:30
SWA 1248	19:13:16.6		19:01:49	19:02:08 (note 4)	19:03:10

Notes:
1. Localizer reported lost at 19:13:48.8
2. Log number 1211801 used as reference for surveillance video time
3. Rollout not seen, observed turning onto taxiway at 18:57
4. Rollout observed for approximately 1-200 feet before being obscured (noted as aircraft passed HIRL's)

Camera log time references:
Log 1211802 is approximately 10 minutes ahead of ATC radar track time, used as baseline for subsequent camera logs
Log 1211801 is approximately 2:31 ahead of ATC radar track time

Camera	Location	Log Number	Time Offset from ATC Radar Track data (minutes)	
28	Gate A10	1211801	-12:31	
117	Gate A2/A3	1371001	-8:56	
37	Gate A1	1211801	-12:31	
45	South Ramp B8	1211801	-12:31	
59	Gate B24	1211802	-10:00	
60	Gate B20	1211802	-10:00	
81	FAA Tower Ramp	1211802	-10:00	
26	Gate A4A/A4B	1211801	-12:31	
58	Gate B19	1211802	-10:00	
54/114	Gate B15/B17	1211801	-12:31	
50	Gate B12	1211801	-12:31	labeled -26/empty
47	Gate B2/B3	1211801	-12:31	

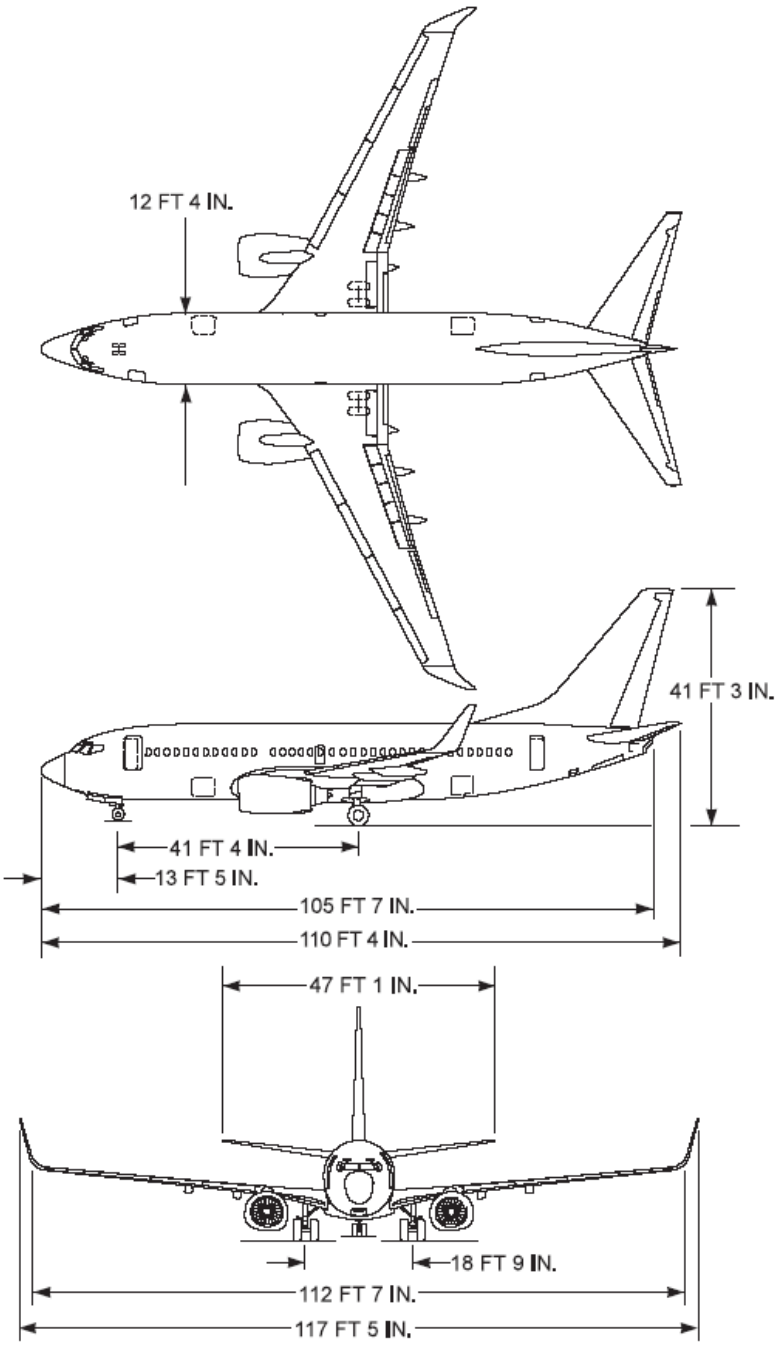
Cameras Not Used	Reason
151	Not recorded
149	Not recorded
57	Not Available
150	Not recorded
42	Moved after accident

Attachment 1: Boeing 737-700W General Arrangement

AIRPLANE DIMENSIONS

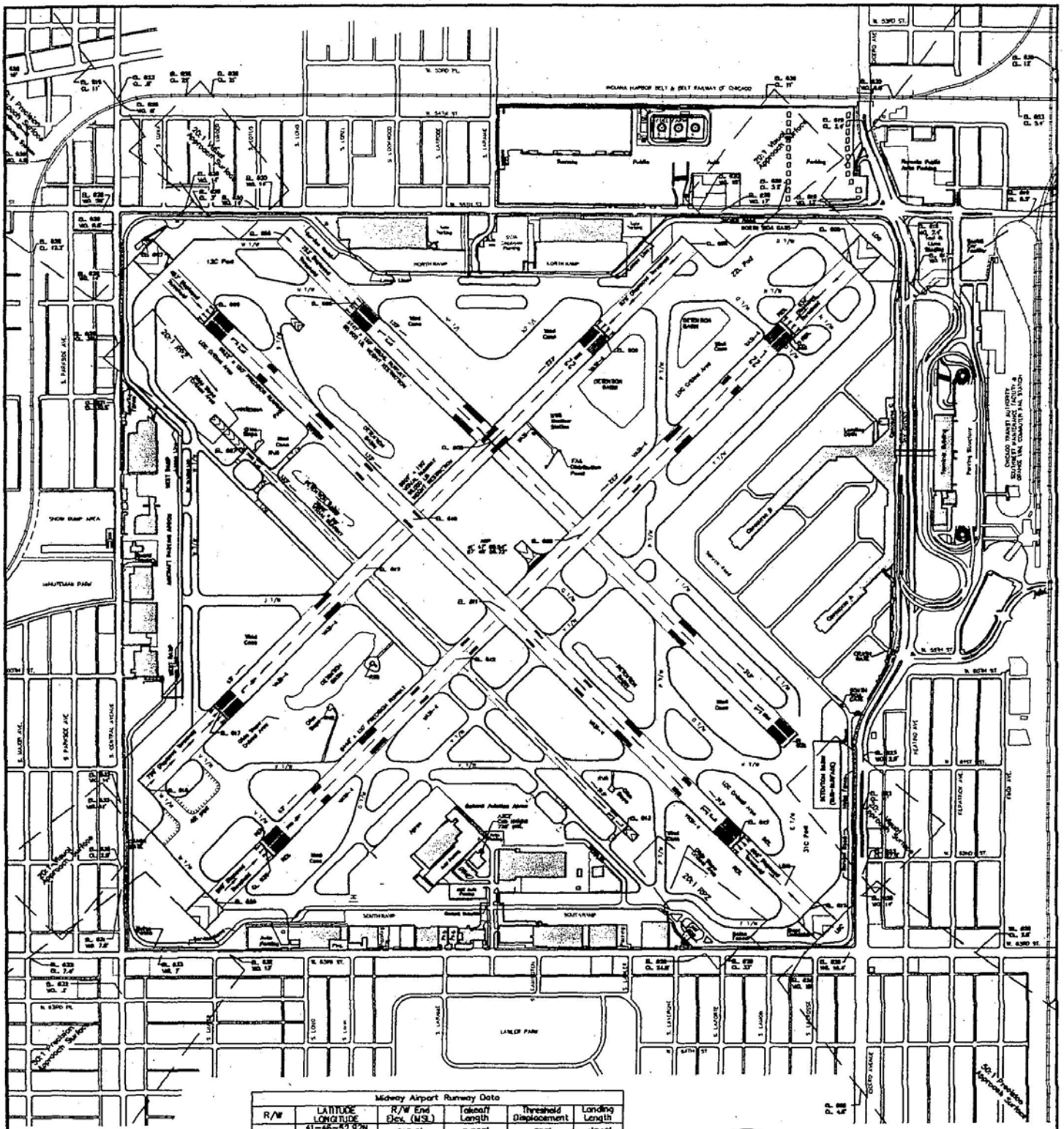
GENERAL ARRANGEMENT AND PRIMARY DIMENSIONS

The following figure shows the 737-700 general arrangement and primary dimensions for a configuration with winglets.



APPLICABLE CONFIGURATIONS
F, G, H, J, K

Attachment 2: MDW Airport Layout Plan



Midway Airport Runway Data

R/W	LATITUDE LONGITUDE	R/W End Elev. (MSL)	Takeoff Length	Threshold Displacement	Landing Length
4L	41-46-52.02N 87-45-40.29W	618.5'	5,507'	758'	4'749'
4R	41-46-44.98N 87-45-33.90W	619.8'	6,446'	518'	5,928'
13L	41-47-32.35N 87-45-28.58W	608.2'	5,141'	752'	4,389'
13C	41-47-28.86N 87-45-39.85W	607.1'	6,522'	463'	6,059'
13R	41-47-17.05N 87-45-31.70W	607.1'	3,858'	n/a	3,859'
22L	41-47-31.19N 87-44-35.01W	605.3'	6,446'	834'	5,612'
22R	41-47-32.42N 87-44-50.27W	605.3'	5,509'	878'	4,629'
31L	41-46-50.78N 87-44-56.79W	613.0'	3,858'	n/a	3,859'
31C	41-46-45.27N 87-44-37.47W	611.7'	6,522'	698'	5,826'
31R	41-46-57.34N 87-44-39.35W	608.2'	5,141'	n/a	5,141'

0 500' 1,000'

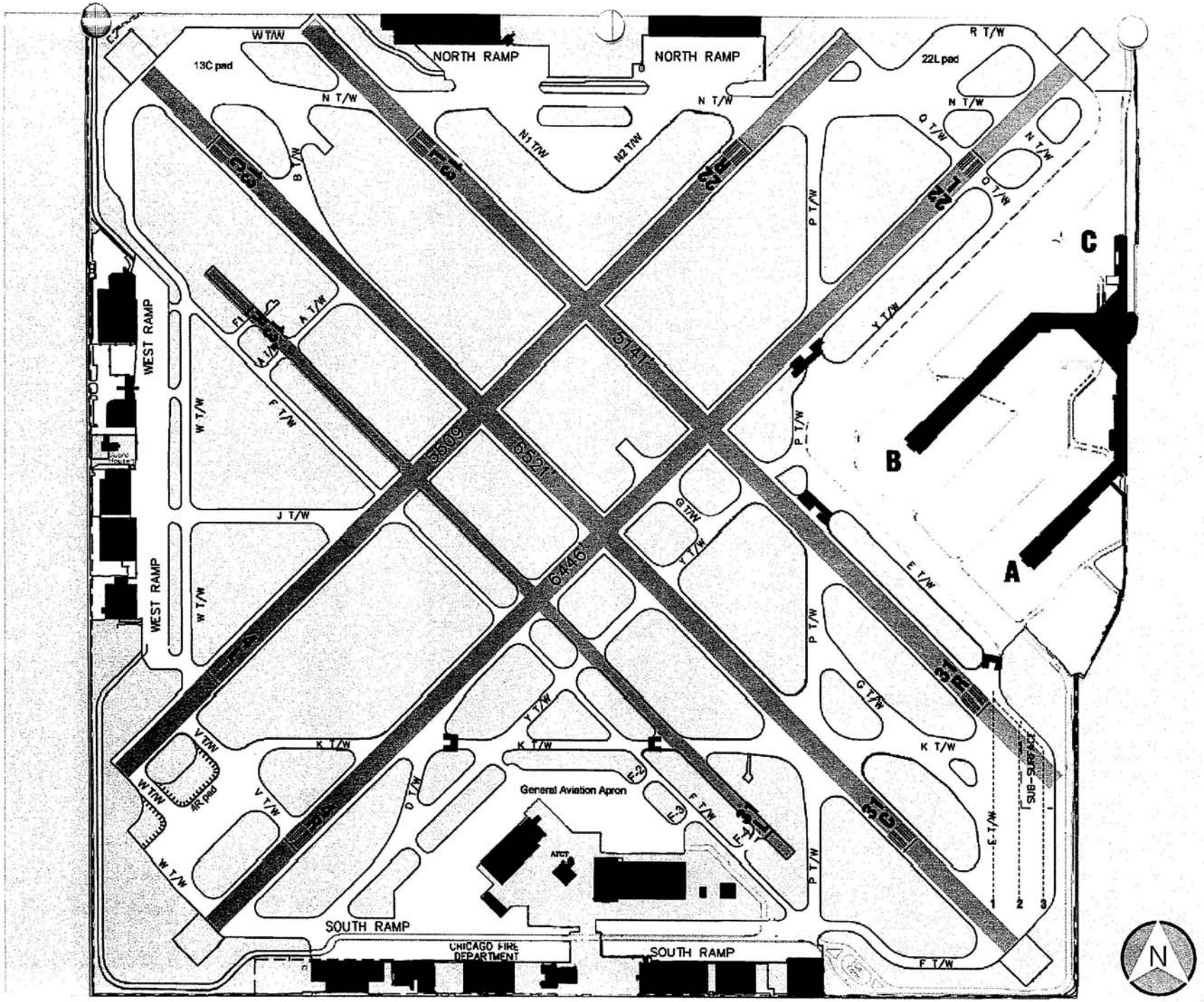
GRAPHIC SCALE IN FEET

Original Date: Mar 23, 1989
Revision Date: June 22, 2005

5/6/05
FAA Approval

Chicago Midway International Airport Airport Certification Manual	Landrum&Brown	EXISTING AIRPORT LAYOUT PLAN	Exhibit 2

FileName: W:\MDW\Cert Manual\Ex 02 - Ex ALP.dwg Date: 06/23/05 LTscale: 0.0 Tab: Layout1


NORTH RAMP
NORTH RAMP
13C pad
22L pad
WEST RAMP
WEST RAMP
SOUTH RAMP
SOUTH RAMP
General Aviation Apron
CHICAGO FIRE DEPARTMENT
ATCT
5141'
5509'
6521'
6446'
A
B
C
N

Runway Data

R/W	Latitude Longitude	R/W End Elev. (MSL)	Take Off Length	Threshold Displacement	Landing Length
4L	41-46-52.92 87-45-40.29	617	5,509'	758'	4,751'
4R	41-46-44.98 87-45-33.55	620	6,446'	518'	5,928'
13L	41-47-32.35 87-45-28.58	606	5,141'	753'	4,389'
13C	41-47-29.66 87-45-39.85	609	6,521'	462'	6,059'
13R	41-47-17.05 87-45-31.70	607	3,859'	N/A	3,859'
22L	41-47-31.19 87-44-35.01	606	6,446'	634	5,812'
22R	41-47-32.42 87-44-50.27	606	5,509'	880	4,629'
31L	41-46-50.78 87-44-54.79	613	3,859'	N/A	3,859'
31C	41-46-45.27 87-44-37.47	612	6,521'	696'	5,826'
31R	41-46-57.34 87-44-39.39	609	5,141'	N/A	5,141'

Attachment 3: GPS Data

Table A3: GPS Data Collected

Sample	Latitude	Longitude	Description	Photo
1	N41° 47' 33.0413	W87° 45' 44.9495	Jet way Door- Fwd	
2	N41° 47' 32.6992	W87° 45' 44.5311	Nose	
3	N41° 47' 32.1842	W87° 45' 44.8444	Left Wing Tip	
4	N41° 47' 32.2048	W87° 45' 43.9994	Empennage	
5	N41° 47' 32.8052	W87° 45' 43.5801	Right Wing Tip	
6	N41° 47' 33.0597	W87° 45' 44.6058	Nose	
7	N41° 47' 31.8268	W87° 45' 42.8673	Ground scar	
8	N41° 47' 32.3018	W87° 45' 43.5518	Curb scar (pictures of cement wall)	0102,3
9	N41° 47' 31.4058	W87° 45' 43.7479	SW side of perimeter fence	0111
10	N41° 47' 31.5517	W87° 45' 43.7346	Stanchion	0111
11	N41° 47' 31.7160	W87° 45' 43.7616	Stanchion	0111
12	N41° 47' 31.8650	W87° 45' 43.7449	Stanchion	0111
13	N41° 47' 32.0276	W87° 45' 43.7561	Broken Fence	0111
14	N41° 47' 32.1877	W87° 45' 43.7603	Broken Fence	0111
15	N41° 47' 32.3147	W87° 45' 43.7659	Broken Fence	0111
16	N41° 47' 32.4602	W87° 45' 43.7754	Broken Fence	0111
17	N41° 47' 32.6314	W87° 45' 43.7809	Broken Fence	0111
18	N41° 47' 32.8323	W87° 45' 43.7822	Broken Fence	0111
19	N41° 47' 32.8885	W87° 45' 43.7908	Broken Fence	0111
20	N41° 47' 33.0576	W87° 45' 43.7930	Broken Fence	0111
21	N41° 47' 33.2485	W87° 45' 43.6011	Non-broken fence points	
22	N41° 47' 33.3108	W87° 45' 43.5054	Non-broken fence points	
23	N41° 47' 33.4387	W87° 45' 43.4273	Non-broken fence points	
24	N41° 47' 33.6198	W87° 45' 43.3574	Non-broken fence points	
25	N41° 47' 33.0670	W87° 45' 42.9638	Curb North	
26	N41° 47' 32.8859	W87° 45' 43.1492	Curb North	
27	N41° 47' 32.6851	W87° 45' 43.2960	Curb North	
28	N41° 47' 32.4980	W87° 45' 43.4127	Curb North	
29	N41° 47' 32.2160	W87° 45' 43.4908	Curb North	
30	N41° 47' 31.9864	W87° 45' 43.5638	Curb North	
31	N41° 47' 31.7405	W87° 45' 43.6084	Curb North	
32	N41° 47' 31.5040	W87° 45' 43.6050	Curb North	
33	N41° 47' 31.5311	W87° 45' 43.2166	Curb South	
34	N41° 47' 31.7735	W87° 45' 43.2089	Curb South	
35	N41° 47' 31.9795	W87° 45' 43.1604	Curb South	
36	N41° 47' 32.2297	W87° 45' 43.0758	Curb South	
37	N41° 47' 32.4323	W87° 45' 42.9329	Curb South	
38	N41° 47' 32.6829	W87° 45' 42.7076	Curb South	
39	N41° 47' 32.8821	W87° 45' 42.4274	Curb South	
40	N41° 47' 32.9919	W87° 45' 42.2338	Curb South	
41	N41° 47' 32.0740	W87° 45' 43.5827	Curb witness mark, 56" wide	0109

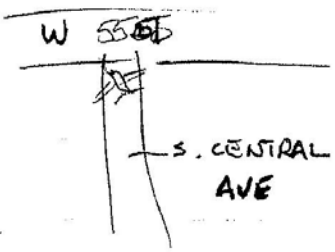
42	N41° 47' 32.3568	W87° 45' 43.5707	Curb witness mark 87" wide	0110
43	N41° 47' 32.1842	W87° 45' 43.3818	Witness mark (small red paint left of gouge in concrete	3893
44	N41° 47' 31.6512	W87° 45' 42.6128	Witness mark, center of left main	0112,5
45	N41° 47' 31.2337	W87° 45' 42.3390	Center of localizer concrete support structure	0113
46	N41° 47' 31.2762	W87° 45' 42.2729	Center of localizer concrete support structure	0113
47	N41° 47' 31.3598	W87° 45' 42.1592	Center of localizer concrete support structure	0113
48	N41° 47' 31.4002	W87° 45' 42.1060	Center of localizer concrete support structure	0113
49	N41° 47' 31.4860	W87° 45' 41.9768	Center of localizer concrete support structure	0113
50	N41° 47' 31.5615	W87° 45' 41.9137	Center of localizer concrete support structure	0113
51	N41° 47' 31.7405	W87° 45' 42.4896	Right main gear witness mark on grass	0114
52	N41° 47' 31.6178	W87° 45' 41.5472	Blast fence (non-broken at base)	
53	N41° 47' 31.5156	W87° 45' 41.6772	Blast fence (non-broken at base)	
54	N41° 47' 31.4508	W87° 45' 41.7592	Blast Fence (broken at base)	0117
55	N41° 47' 31.3736	W87° 45' 41.8416	Blast Fence (broken at base)	
56	N41° 47' 31.1929	W87° 45' 42.0875	Blast Fence (broken at base)	0118
57	N41° 47' 31.1187	W87° 45' 42.2210	Blast fence (non-broken at base)	
58	N41° 47' 31.0697	W87° 45' 42.2879	Blast fence (non-broken at base)	
59	N41° 47' 30.9509	W87° 45' 42.4501	Blast fence (non-broken at base)	
60	N41° 47' 29.0265	W87° 45' 40.9541	Blue Light	
61	N41° 47' 29.2016	W87° 45' 40.7086	Orange Lights	
62	N41° 47' 29.2943	W87° 45' 40.6241	Orange Lights	
63	N41° 47' 29.3737	W87° 45' 40.5245	Orange Lights	
64	N41° 47' 29.4342	W87° 45' 40.4318	Orange Lights	
65	N41° 47' 30.2080	W87° 45' 39.4499	Orange Lights	
66	N41° 47' 30.3170	W87° 45' 39.3688	Orange Lights	
67	N41° 47' 30.3801	W87° 45' 39.2783	Orange Lights	
68	N41° 47' 30.4625	W87° 45' 39.1860	Orange Lights	
69	N41° 47' 30.6277	W87° 45' 38.9418	Blue Light	
70	N41° 47' 28.7738	W87° 45' 38.4624	Centerline Runway Marking	
71	N41° 47' 29.1690	W87° 45' 39.0079	Centerline Runway Marking	
72	N41° 47' 28.9034	W87° 45' 38.7882	Rubber witness mark	
73	N41° 47' 31.0835	W87° 45' 41.8420	Left edge of runway pavement	
74	N41° 47' 31.8426	W87° 45' 43.3067	Perimeter road curb, paint and scoring 45" wide	0122
75	N41° 47' 32.1971	W87° 45' 43.1471	Perimeter road curb paint and scoring 10" wide	0123
76	N41° 47' 32.1907	W87° 45' 43.3999	Perimeter road possible nose track witness mark	3897
77	N41° 47' 32.1533	W87° 45' 43.3878	Perimeter road possible nose track witness mark	3898
78	N41° 47' 32.1134	W87° 45' 43.3162	Perimeter road possible nose track witness mark	3899
79	N41° 46' 45.8722	W87° 44' 36.6592	REIL 31C Approach end (red lights)	
80	N41° 46' 45.7653	W87° 44' 36.7699	REIL 31C Approach end (red lights)	
81	N41° 46' 45.6996	W87° 44' 36.8437	REIL 31C Approach end (red lights)	
82	N41° 46' 45.6155	W87° 44' 36.9390	REIL 31C Approach end (red lights)	
83	N41° 46' 45.8211	W87° 44' 36.8695	31C App end Right pavement edge	
84	N41° 46' 45.2821	W87° 44' 37.5433	31C App end Centerline of displaced threshold	3934
85	N41° 46' 44.7508	W87° 44' 38.2183	31C App end Left pavement edge	
86	N41° 46' 44.6092	W87° 44' 38.1909	REIL 31C Approach end (red lights)	
87	N41° 46' 44.6847	W87° 44' 38.0960	REIL 31C Approach end (red lights)	

88	N41° 46' 44.7645	W87° 44' 37.9763	REIL 31C Approach end (red lights)	
89	N41° 46' 44.8237	W87° 44' 37.9119	REIL 31C Approach end (red lights)	
90	N41° 46' 45.2876	W87° 44' 37.5291	31C Centerline Displaced Threshold	3934
91	N41° 46' 46.8468	W87° 44' 39.7062	31C Centerline Displaced Threshold	3934
92	N41° 46' 49.5757	W87° 44' 43.5201	31C Centerline Displaced Threshold	3934
93	N41° 46' 49.2045	W87° 44' 45.2277	Green displaced threshold lights 31C App	3934
94	N41° 46' 49.2977	W87° 44' 45.1341	Green displaced threshold lights 31C App	3934
95	N41° 46' 49.3685	W87° 44' 45.0436	Green displaced threshold lights 31C App	3934
96	N41° 46' 49.4380	W87° 44' 44.9462	Green displaced threshold lights 31C App	3934
97	N41° 46' 49.4822	W87° 44' 44.8457	Green displaced threshold lights 31C App	3934
98	N41° 46' 50.0379	W87° 44' 44.1720	31C displaced threshold centerline	3934
99	N41° 46' 50.5607	W87° 44' 43.4875	Green displaced threshold lights 31C App	3934
100	N41° 46' 50.6276	W87° 44' 43.3879	Green displaced threshold lights 31C App	3934
101	N41° 46' 50.7160	W87° 44' 43.2840	Green displaced threshold lights 31C App	3934
102	N41° 46' 50.7757	W87° 44' 43.2029	Green displaced threshold lights 31C App	3934
103	N41° 46' 50.8448	W87° 44' 43.1102	Green displaced threshold lights 31C App	3934
104	N41° 46' 50.7070	W87° 44' 43.8432	31C runway marking right	3935
105	N41° 46' 50.1813	W87° 44' 44.4728	31C runway marking center	3935
106	N41° 46' 49.7315	W87° 44' 45.0895	31C runway marking left	3935
107	N41° 46' 50.7160	W87° 44' 46.4847	31C runway marking left	3935
108	N41° 46' 51.2130	W87° 44' 45.8474	31C runway marking center	3935
109	N41° 46' 51.6988	W87° 44' 45.1981	31C runway marking right	3935
110	N41° 46' 51.4979	W87° 44' 46.2491	31C "C" marking bottom	3935
111	N41° 46' 51.9292	W87° 44' 46.8361	31C "C" marking top	3935
112	N41° 46' 52.5734	W87° 44' 46.3293	31C right pavement edge	3935
113	N41° 46' 52.1674	W87° 44' 46.8649	31C "1" marking bottom	3935
114	N41° 46' 52.5820	W87° 44' 47.4631	31C "1" marking top	3935
115	N41° 46' 52.2764	W87° 44' 47.8429	31C "3" marking top	3935
116	N41° 46' 51.8563	W87° 44' 47.2666	31C "3" marking bottom	3935
117	N41° 46' 51.5241	W87° 44' 47.7151	31C left pavement edge	3935
118	N41° 46' 52.2374	W87° 44' 47.2378	31C centerline marking bottom	
119	N41° 46' 53.6858	W87° 44' 49.2767	31C centerline marking top	
120	N41° 46' 53.9557	W87° 44' 48.9407	31C runway stripe bottom	
121	N41° 46' 54.1823	W87° 44' 48.6673	31C runway stripe bottom	
122	N41° 46' 54.6505	W87° 44' 49.4265	31C runway stripe top	
123	N41° 46' 54.4441	W87° 44' 49.6939	31C runway stripe top	
124	N41° 46' 53.9256	W87° 44' 50.3513	31C runway stripe top	
125	N41° 46' 53.7184	W87° 44' 50.5432	31C runway stripe top	
126	N41° 46' 53.2287	W87° 44' 49.8690	31C runway stripe bottom	
127	N41° 46' 53.4295	W87° 44' 49.6149	31C runway stripe bottom	
128	N41° 46' 55.5225	W87° 44' 51.8727	31C centerline marking bottom	
129	N41° 46' 56.3280	W87° 44' 53.0142	31C centerline marking top	
130	N41° 46' 56.5838	W87° 44' 54.7596	31C left pavement edge	
131	N41° 46' 56.6310	W87° 44' 54.6506	31C touchdown zone marking	3937
132	N41° 46' 56.8778	W87° 44' 54.3549	31C touchdown zone marking	3937
133	N41° 46' 57.3825	W87° 44' 53.7043	31C touchdown zone marking	3937

134	N41° 46' 57.5966	W87° 44' 53.4189	31C touchdown zone marking	3937
135	N41° 46' 57.6494	W87° 44' 53.3709	31C right pavement edge	
136	N41° 46' 58.6403	W87° 44' 54.8321	31C right pavement edge	
137	N41° 46' 58.5798	W87° 44' 54.9145	31C touchdown zone marking	3938
138	N41° 46' 58.3438	W87° 44' 55.2076	31C touchdown zone marking	3938
139	N41° 46' 57.8490	W87° 44' 55.8398	31C touchdown zone marking	3938
140	N41° 46' 57.6271	W87° 44' 56.1235	31C touchdown zone marking	3938
141	N41° 46' 57.5859	W87° 44' 56.1488	31C left pavement edge	
142	N41° 46' 59.4583	W87° 44' 57.4470	31C centerline stripe	
143	N41° 47' 0.4260	W87° 44' 58.7799	31C centerline stripe	
144	N41° 47' 0.0964	W87° 44' 59.3271	31C touchdown zone marking	3939
145	N41° 47' 0.2479	W87° 44' 59.1314	31C touchdown zone marking	3939
146	N41° 47' 0.7561	W87° 44' 58.4915	31C touchdown zone marking	3939
147	N41° 47' 0.8552	W87° 44' 58.3327	31C touchdown zone marking	3939
148	N41° 47' 1.4878	W87° 44' 58.8190	31C right pavement edge	
149	N41° 47' 1.3118	W87° 44' 59.0447	31C touchdown zone marking	3940
150	N41° 47' 1.1912	W87° 44' 59.1790	31C touchdown zone marking	3940
151	N41° 47' 0.6973	W87° 44' 59.8382	31C touchdown zone marking	3940
152	N41° 47' 0.5655	W87° 44' 59.9850	31C touchdown zone marking	3940
153	N41° 47' 0.4200	W87° 45' 0.1326	31C left pavement edge	
154	N41° 47' 33.0447	W87° 45' 44.8101	Fire Hydrant (under nose of aircraft)	3941
155	N41° 47' 33.8700	W87° 45' 44.3290	Center of intersection 55th and Central Ave	

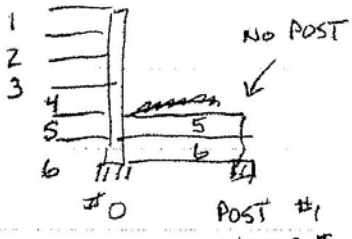
Attachment 4: Site Sketches

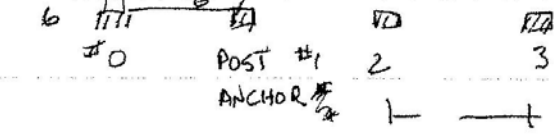
S. CENTRAL AVE W. 55 ST



PERIMETER FENCE TOWARD 310°

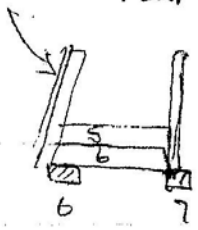
6 PANELS HIGH



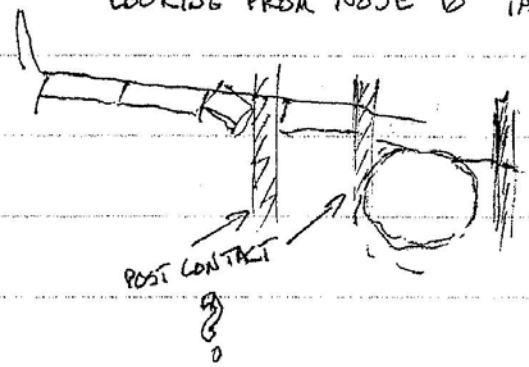


16 FT ON CENTER

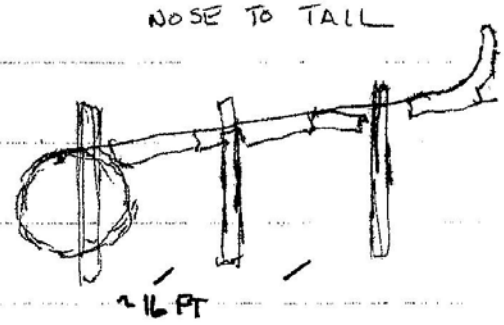
CONTACT/WITNESS
R. WING L.E IN LINE WITH POST BENT O.B REAR FLAP CANOE



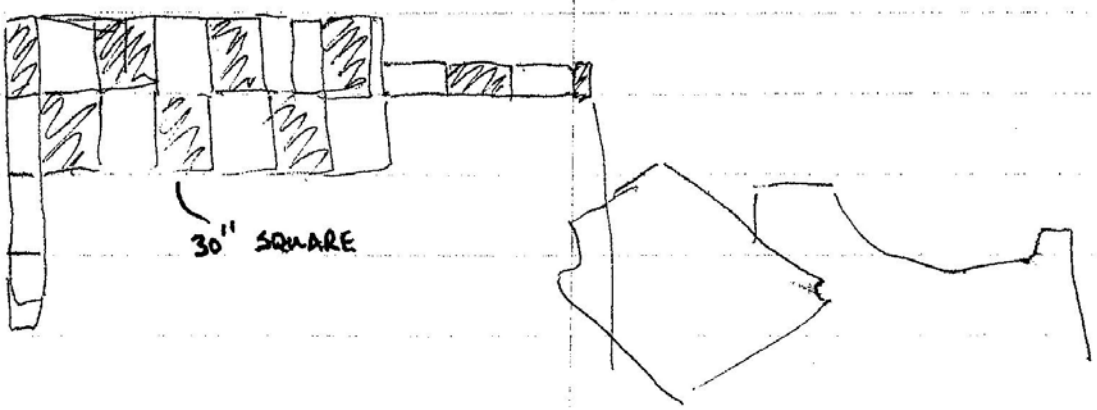
R.H. WING
LOOKING FROM NOSE TO TAIL

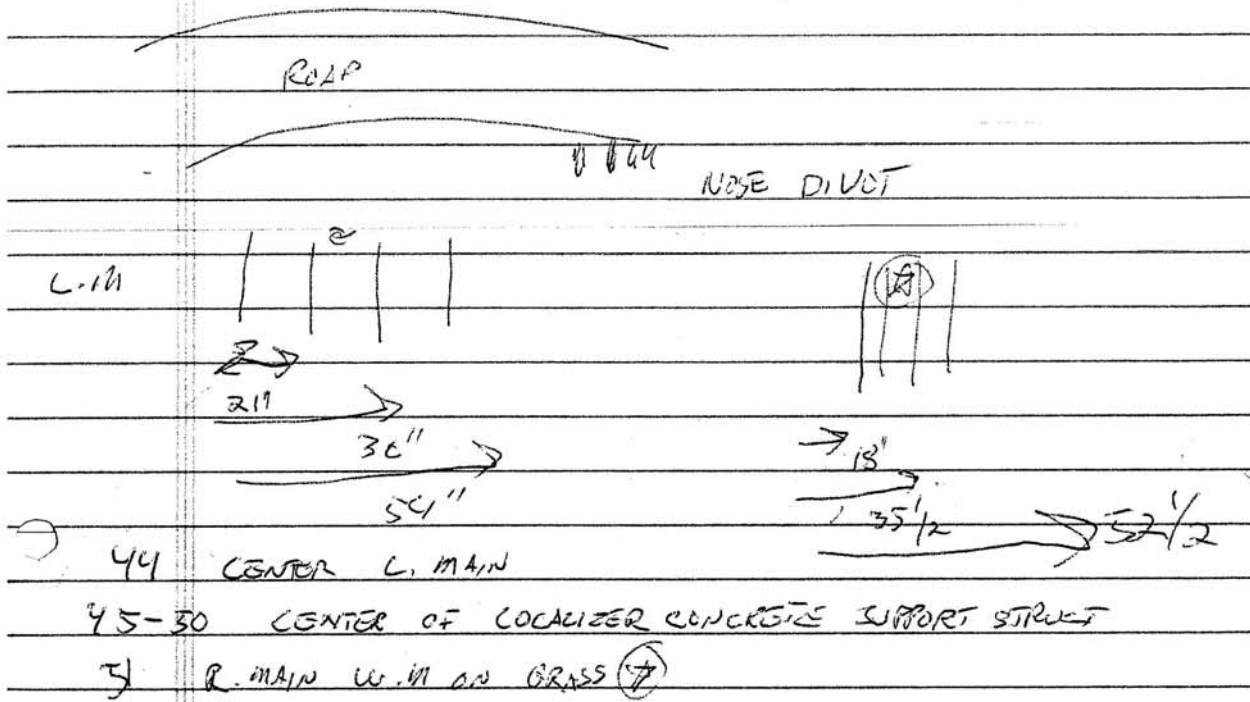


L.H. WING
NOSE TO TAIL



LEFT BLAST SHIELD

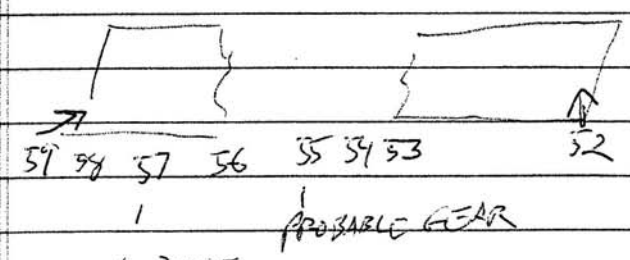


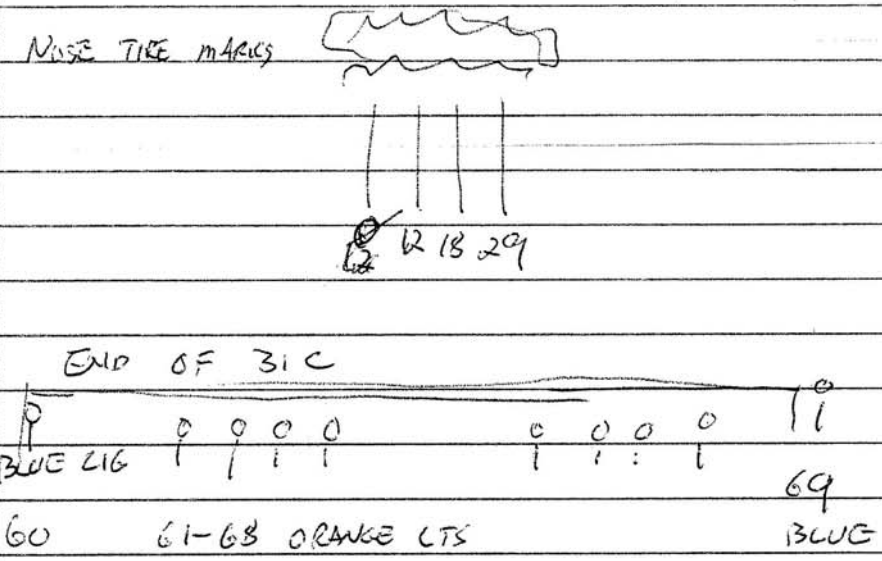


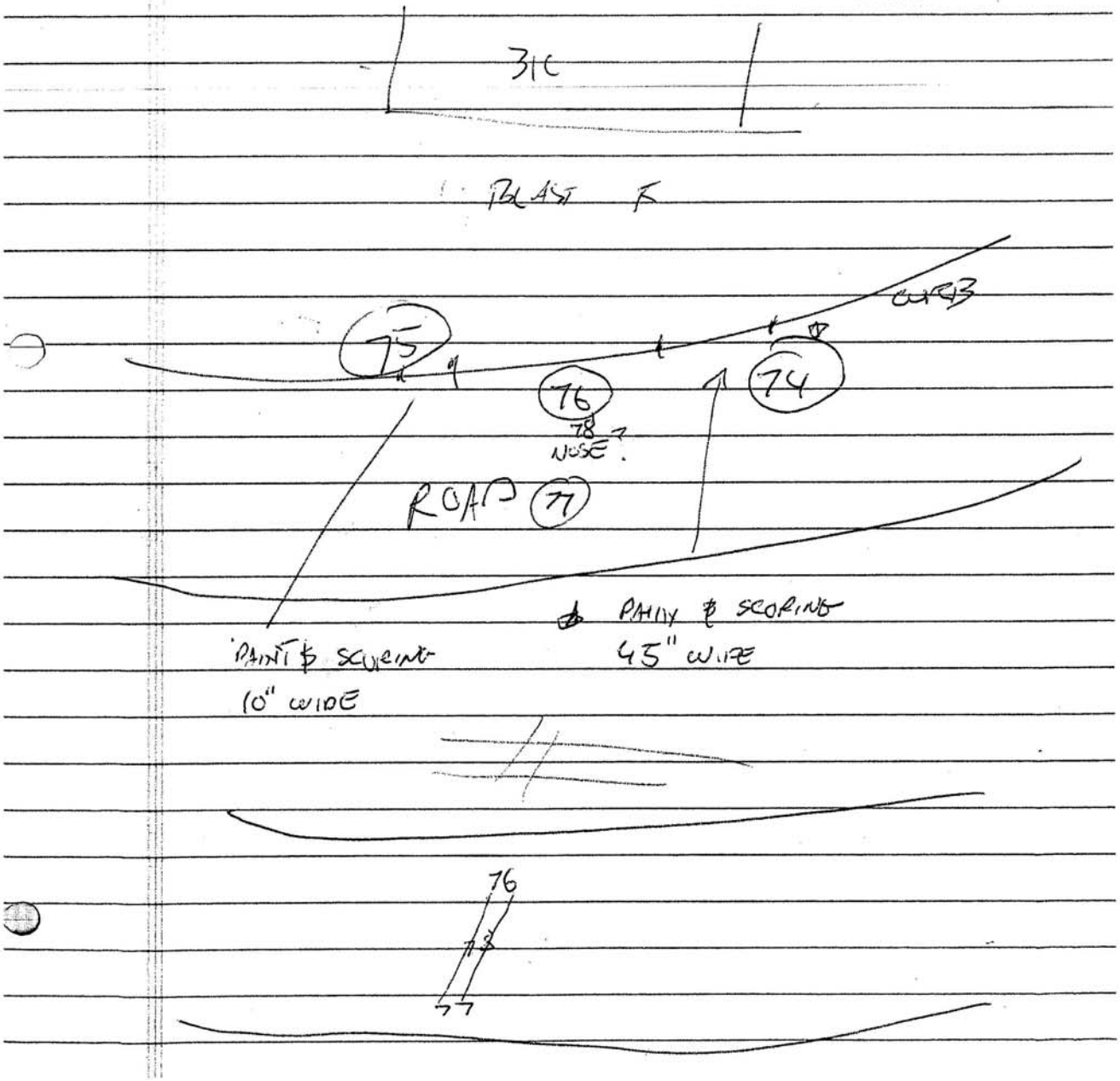
44 CENTER L. MAIN

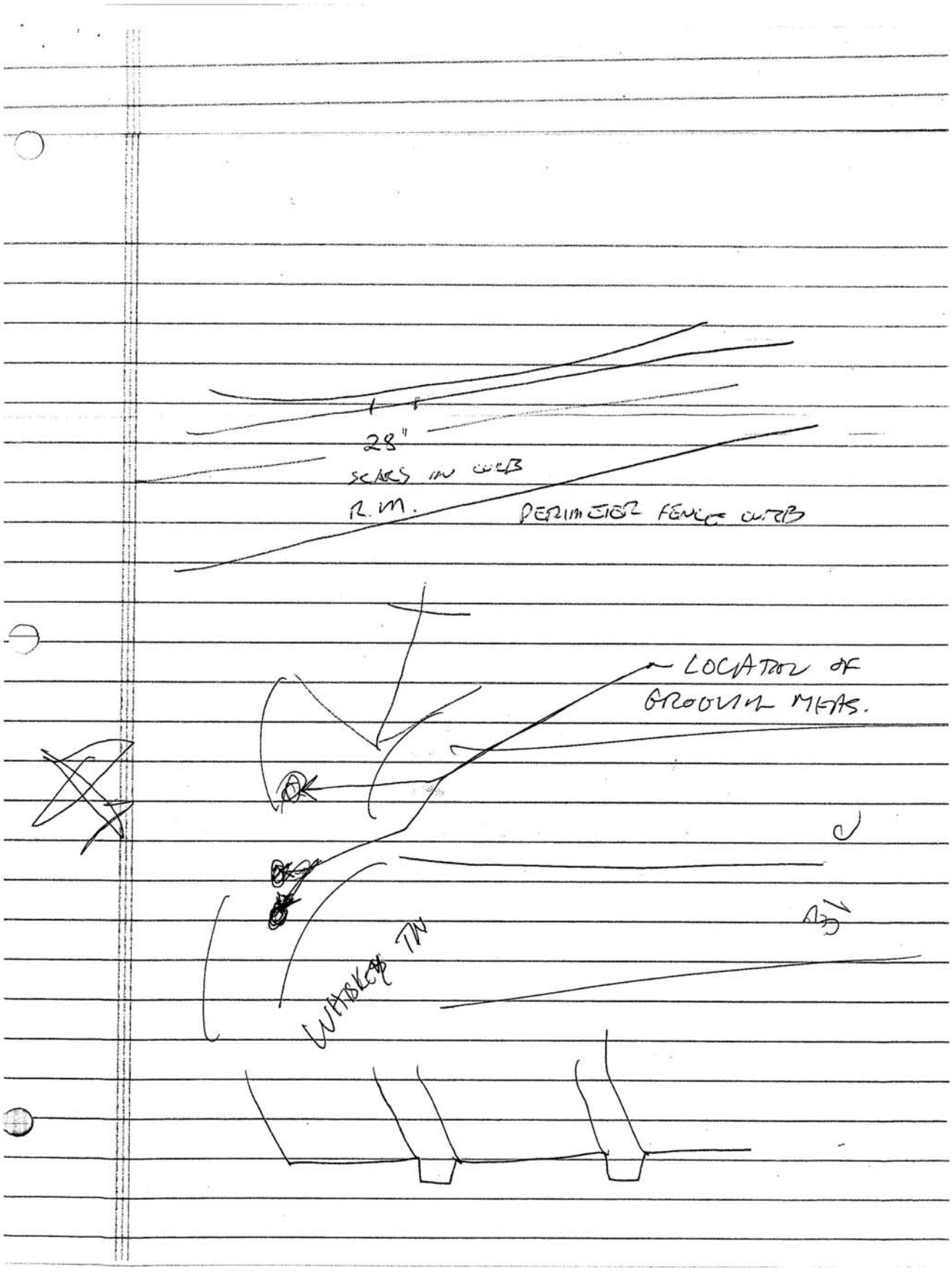
45-50 CENTER OF LOCALIZER CONCRETE SUPPORT STRUCT

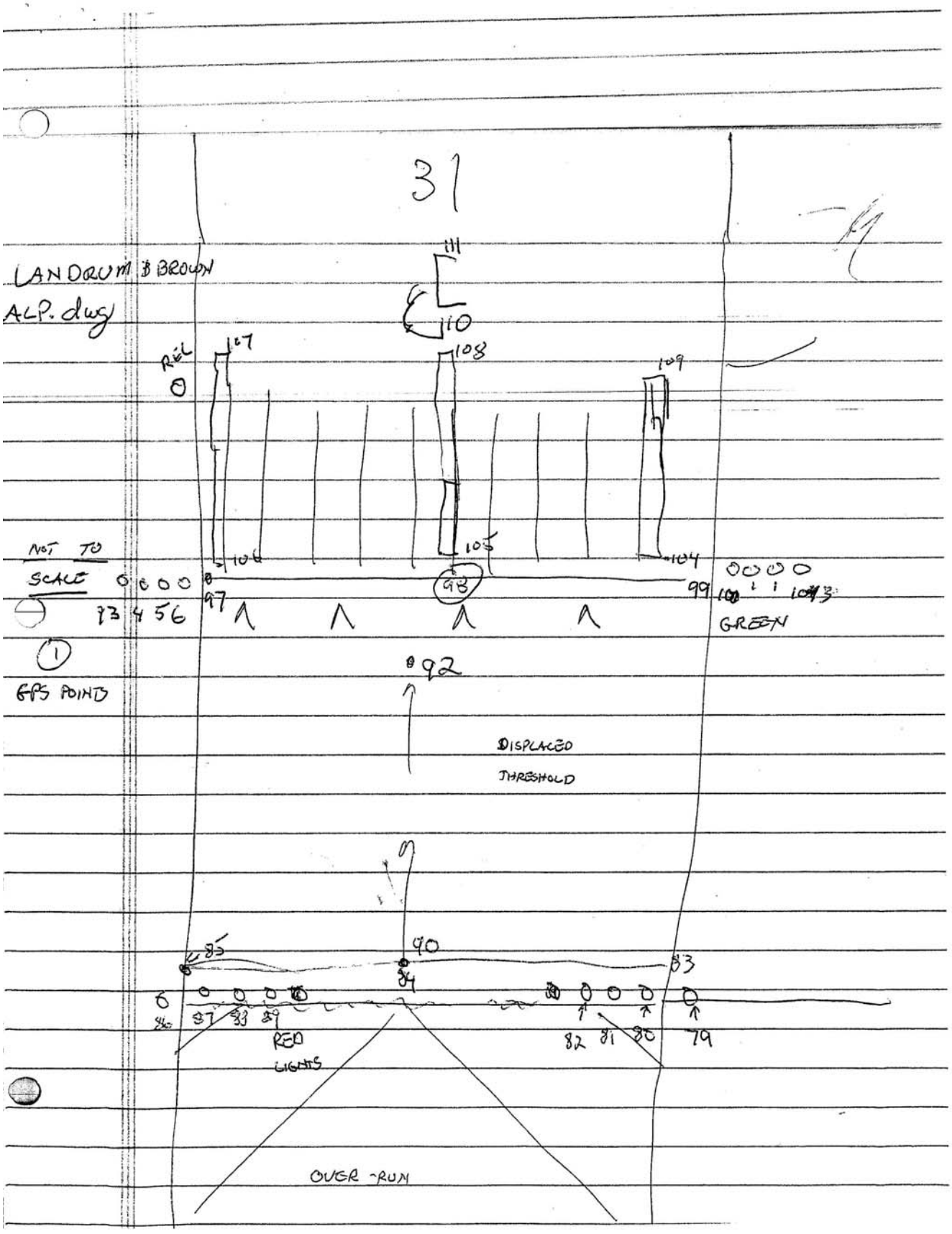
51 R. MAIN W.M ON GRASS




NOSE TIRE MARKS
12 18 29
END OF 31C
BLUE LIG
60
61-68 ORANGE LTS
69
BLUE
70 TOP 11 CENTERLINE
72 - RUBBER TRACER MIC
73 C.M.M EDGE OF PVMT


3|C
BLAST F
CURB
75
76
78
NOSE?
74
ROAD 77
PAINT & SCRIBE
10" WIDE
PAINT & SCORING
45" WIDE
76
78
77


28"
SCARS IN CURB
R.M.
PERIMETER FENCE CURB
LOCATION OF
GROUND MEAS.
WHEELSTOP TYP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LANDRUM & BROWN
ALP.dwg
REL
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104
NOT TO
SCALE
1 2 3 4 5 6
GPS POINT
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99
100
GREEN
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DISPLACED
THRESHOLD
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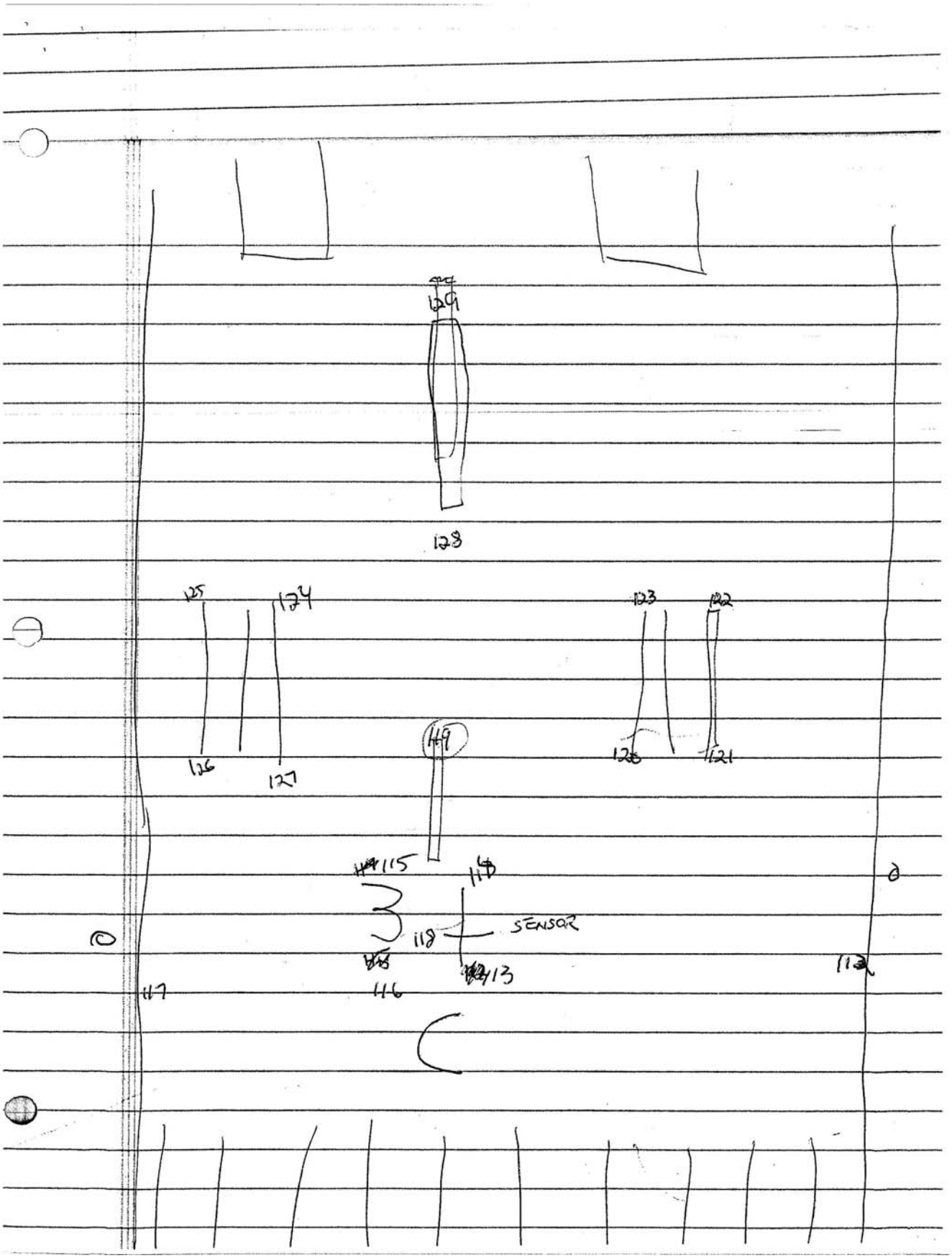
84
85
83
97
93
89
RED
LIGHTS
82
81
80
79
OVER-RUN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SENSOR
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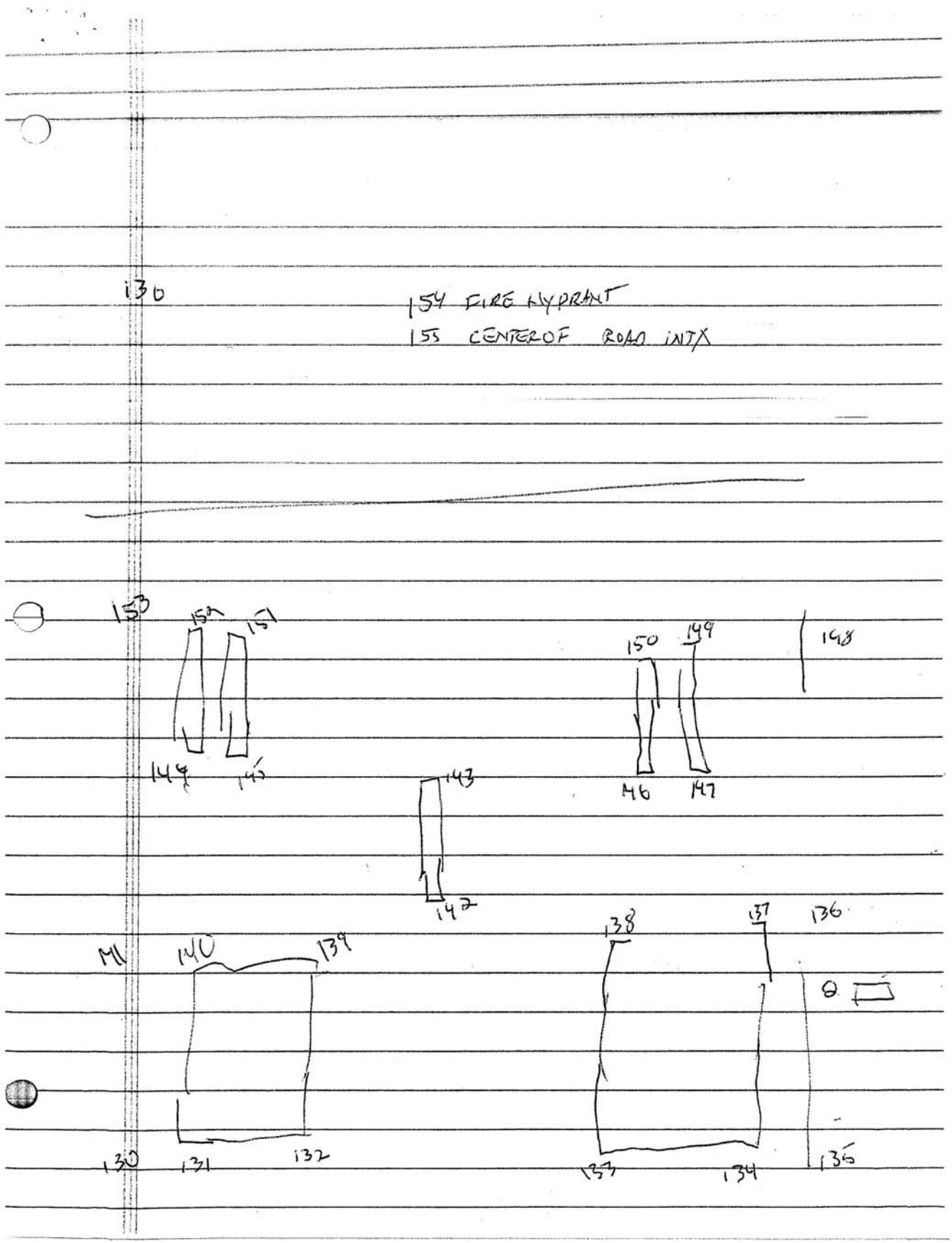
130
154 FIRE HYDRANT
155 CENTER OF ROAD INTX
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Attachment 5: Flight 1248 Radar Data

Table A5: Radar data for flight 1248

SAMPLE	HOURS	MINUTES	SECONDS	ALTITUDE (FT)	RANGE (NM)	ACP (COUNTS)
1	1	0	0.63	6900	31.64	1533
2	1	0	5.25	6900	31.66	1527
3	1	0	9.75	6900	31.69	1521
4	1	0	14.37	6900	31.72	1514
5	1	0	18.87	6900	31.73	1508
6	1	0	23.61	6900	31.77	1501
7	1	0	28.23	6900	31.8	1496
8	1	0	32.73	6900	31.83	1490
9	1	0	37.47	6900	31.88	1485
10	1	0	41.97	6900	31.92	1478
11	1	0	46.59	6900	31.95	1472
12	1	0	51.21	6900	32	1466
13	1	0	55.83	6900	32.05	1460
14	1	1	0.36	6900	32.05	1454
15	1	1	5.07	6900	32	1448
16	1	1	9.48	6900	31.97	1443
17	1	1	14.22	6900	31.92	1436
18	1	1	18.84	6900	31.88	1431
19	1	1	23.46	6900	31.83	1425
20	1	1	27.96	6800	31.8	1418
21	1	1	32.7	6800	31.77	1413
22	1	1	37.32	6700	31.73	1407
23	1	1	41.73	6600	31.7	1400
24	1	1	46.56	6600	31.67	1394
25	1	1	51.18	6500	31.66	1388
26	1	1	55.59	6400	31.64	1382
27	1	2	0.21	6400	31.63	1375
28	1	2	4.83	6300	31.59	1369
29	1	2	9.61	6200	31.56	1362
30	1	2	14.23	6200	31.47	1356
31	1	2	18.85	6100	31.34	1351
32	1	2	23.47	6000	31.2	1344
33	1	2	28.09	5900	31.05	1339
34	1	2	32.71	5900	30.89	1333
35	1	2	37.33	5900	30.73	1327
36	1	2	41.83	5900	30.53	1322
37	1	2	46.33	5900	30.3	1318
38	1	2	51.07	5900	30.05	1315
39	1	2	55.81	5900	29.75	1313
40	1	3	0.43	5900	29.45	1312
41	1	3	4.93	5900	29.16	1312
42	1	3	9.55	5900	28.86	1313
43	1	3	14.17	5900	28.56	1313
44	1	3	18.79	5900	28.28	1314

45	1	3	23.29	5900	27.97	1315
46	1	3	27.91	5900	27.69	1316
47	1	3	32.65	5900	27.39	1316
48	1	3	37.27	5900	27.09	1317
49	1	3	42.01	5900	26.8	1318
50	1	3	46.51	5900	26.5	1318
51	1	3	51.13	5900	26.22	1319
52	1	3	55.75	5900	25.92	1320
53	1	4	0.13	5900	25.63	1321
54	1	4	4.87	5900	25.34	1322
55	1	4	9.37	5900	25.05	1322
56	1	4	13.99	5900	24.75	1322
57	1	4	18.73	5900	24.45	1321
58	1	4	23.23	5900	24.16	1320
59	1	4	27.97	5900	23.86	1319
60	1	4	32.59	5900	23.56	1318
61	1	4	37.21	5900	23.27	1317
62	1	4	41.83	5800	22.97	1317
63	1	4	46.57	5700	22.67	1314
64	1	4	51.07	5600	22.36	1313
65	1	4	55.69	5500	22.06	1311
66	1	5	0.31	5500	21.77	1309
67	1	5	4.72	5400	21.47	1307
68	1	5	9.55	5300	21.17	1305
69	1	5	13.96	5200	20.88	1300
70	1	5	18.58	5100	20.58	1297
71	1	5	23.41	5100	20.3	1293
72	1	5	27.82	5000	20.02	1290
73	1	5	32.44	4900	19.72	1285
74	1	5	37.06	4800	19.44	1281
75	1	5	41.68	4800	19.16	1277
76	1	5	46.3	4700	18.88	1273
77	1	5	50.92	4600	18.59	1268
78	1	5	55.54	4600	18.33	1263
79	1	6	0.16	4500	18.05	1258
80	1	6	4.78	4400	17.78	1251
81	1	6	9.28	4400	17.52	1246
82	1	6	14.02	4300	17.25	1241
83	1	6	18.52	4200	16.97	1235
84	1	6	23.14	4100	16.69	1228
85	1	6	27.76	4100	16.42	1222
86	1	6	32.38	4000	16.14	1216
87	1	6	37.12	3900	15.88	1209
88	1	6	41.62	3900	15.59	1203
89	1	6	46.03	3900	15.31	1196
90	1	6	50.77	3900	15.03	1190
91	1	6	55.48	3900	14.75	1183
92	1	6	59.89	3900	14.48	1176

93	1	7	4.63	3900	14.2	1169
94	1	7	9.13	3900	13.94	1161
95	1	7	13.87	3900	13.69	1153
96	1	7	18.49	3900	13.44	1145
97	1	7	22.99	3900	13.19	1137
98	1	7	27.61	3900	12.95	1128
99	1	7	32.23	3900	12.73	1120
100	1	7	36.85	3900	12.52	1111
101	1	7	41.59	3900	12.3	1102
102	1	7	45.97	3900	12.09	1093
103	1	7	50.71	3900	11.91	1084
104	1	7	55.21	3900	11.7	1074
105	1	7	59.83	3900	11.53	1065
106	1	8	4.33	3900	11.34	1056
107	1	8	9.07	3900	11.16	1046
108	1	8	13.69	3900	10.97	1037
109	1	8	18.19	3900	10.8	1026
110	1	8	22.72	3900	10.61	1015
111	1	8	27.55	3900	10.42	1004
112	1	8	32.05	3900	10.25	992
113	1	8	36.58	3900	10.08	979
114	1	8	41.2	3900	9.91	966
115	1	8	45.82	3900	9.73	952
116	1	8	50.23	3900	9.58	938
117	1	8	55.06	3900	9.42	922
118	1	8	59.47	3900	9.27	906
119	1	9	4.09	3800	9.13	891
120	1	9	8.71	3800	8.97	874
121	1	9	13.42	3800	8.84	857
122	1	9	17.95	3700	8.72	839
123	1	9	22.57	3700	8.59	821
124	1	9	27.19	3600	8.47	803
125	1	9	31.57	3500	8.36	784
126	1	9	36.31	3400	8.25	764
127	1	9	40.69	3400	8.14	743
128	1	9	45.43	3300	8.05	724
129	1	9	50.17	3200	7.97	703
130	1	9	54.67	3200	7.89	684
131	1	9	59.29	3100	7.84	664
132	1	10	3.91	3100	7.8	644
133	1	10	8.32	3000	7.75	626
134	1	10	12.94	2900	7.72	606
135	1	10	17.56	2900	7.69	588
136	1	10	22.18	2800	7.67	570
137	1	10	26.8	2700	7.66	552
138	1	10	31.3	2700	7.64	534
139	1	10	35.83	2600	7.64	516
140	1	10	40.54	2500	7.64	499

141	1	10	45.28	2500	7.66	481
142	1	10	49.69	2400	7.66	464
143	1	10	54.4	2300	7.67	447
144	1	10	58.93	2300	7.69	432
145	1	11	3.55	2200	7.72	415
146	1	11	8.17	2100	7.75	399
147	1	11	12.79	2000	7.8	383
148	1	11	17.41	2000	7.84	367
149	1	11	21.91	1900	7.89	353
150	1	11	26.53	1800	7.94	338
151	1	11	30.91	1800	8	322
152	1	11	35.65	1700	8.05	309
153	1	11	40.27	1600	8.11	294
154	1	11	44.89	1600	8.17	280
155	1	11	49.51	1500	8.23	268
156	1	11	54.13	1400	8.3	254
157	1	11	58.75	1400	8.36	242
158	1	12	3.37	1300	8.45	228
159	1	12	7.78	1300	8.53	215
160	1	12	12.28	1200	8.61	204
161	1	12	17.02	1100	8.69	193
162	1	12	21.64	1100	8.78	179
163	1	12	26.35	1000	8.86	168
164	1	12	30.88	900	8.95	157
165	1	12	35.5	900	9.03	147
166	1	12	40.12	800	9.14	135
167	1	12	44.74	800	9.23	127
168	1	12	49.24	700	9.33	116
169	1	12	53.98	600	9.44	106
170	1	12	58.39	600	9.53	97

Attachment 6: Weight & Balance

Loading Summary - BWI

Inbound	Outbound
Flight: 1546	Flight: 1248
From: SAN	To: MDW
Aircraft: N471WN	Aircraft: N471WN
Gate: B14	Gate: B14
Agent: CK	Agent: CK
Agent 2:	Agent 2:
Fuel In: 7.3	Fuel Out: 23.7

Scheduled Flight on Thursday, December 08, 2005

Total Passengers: 98

LTE: 115 Delay: 115

Description: Holding; HD07 ATC gate hold for Weather Enroute or at Destination Station; HOLDING FOR WEATHER IN MDW; SNOWING AND DE-ICING GOING ON

Crew Information

	Dest	Thru to	Status
Captain: B. SUTHERLAND			
Observer 1:			
Observer 2:			
Fourth Crew:			

-- Flight Remarks --

TZ#: D: X PAX: B:

891LBS FRT

-- Outbound Passenger Need Remarks --

Law Enforcement Officer Dest: MDW Qty: 2

Cargo Information

FWD Hold				AFT Hold			
BAGS		FRT C/M A/M		BAGS		FRT C/M A/M	
Qty	Wt.	Qty	Wt.	Qty	Wt.	Qty	Wt.
52	0	0	0	1	0	69	193

Outbound

Dest	Trans		Qty	Wt.	Unit
Bin: A					
MDWxLAS		Bags	9		
MDWxSJC		Bags	3		
MDWxSLC		Bags	5		
MDWxSLC		Bags-Heavy	1		
Bin: C					
MDW		Bags	16		
MDWxLIT		Bags	3		
MDWxOAK		Bags	3		
MDWxSAN		Bags	7		
MDWxSEA		Bags	5		
Bin: D					
MDWxLAS		Airmail	2	15	lbs
MDWxPDX		Airmail	1	8	lbs
MDWxSLC		Airmail	65	159	lbs
Bin: F					
MDWxABQ		Airmail	1	11	lbs
MDWxABQ		Bags	1		

A6.2

Southwest Airlines 700 Loading Schedule

Revision Number: 0

Flight Number: 1248	Agent Name (Print First and Last): Kirk Wynne	Captain Name(Print 1st Initial and Last): B. SUTHERLAND	
Destination: MDW	Agent Employee Number: E48713	Remarks: Ground Ops COPY	
Station: BWI	Sch. Arrival: 15:25	Sch. Departure: 15:55	
Aircraft Tail Number: N471WN	Fuel In: 7.3		
Date: 12/8/2005	Gallons Added: 2431	Pounds Added: 16288	

1st OBS	Dest.	2nd OBS	Dest.	4th Crew Member	Dest.

TTL Pax	FWD			AFT		
	STD Bags	HVY Bags	A/F/C Weight	STD Bags	HVY Bags	A/F/C Weight
98	55	1	0	12	2	100

❶ OPERATIONAL EMPTY WEIGHT

OEW	84661
1st Observer	0
2nd Observer	0
4th Crew Member	0
	84661

7
0
0
3 Child Weights

PLANNED FUEL

Minimum 23.7
Maximum 23.7
Fuel Out 23.7 − 0.6 (Taxi) = 23.1

GUIDELINES

❶ Use the adjusted Operating Empty Weight as designated on the Dispatch Release.

❷ Ensure Zero Fuel Weight and Balance and Takeoff Weight and Balance index unit limits have been confirmed.

❸ Ensure that the MZFW and MAX ATOG have not been exceeded.

❹ *Loading Rule - Ensure that at least one half of the passenger complement is seated AFT of the overwing exits to utilize the balance limits shown.*

NOTE:

Use the exact adjusted weight for each item as shown in the Tables. **(Do Not Interpolate)**

Fill Wing Tanks (Mains) Then Center Section Tank.

The OPC will calculate the recommended stabilizer trim setting to use for takeoff. This value should not be compared to the index unit balance limits.

AIRPLANE WEIGHT AND BALANCE LIMITS

	WEIGHT
Total PAX Weight	19100
Total FWD Hold Weight	1705
Total AFT Hold Weight	599
Operational Weight	84661
Zero Fuel Wt	106065
ADJUSTMENTS	
Revised ZFW	
ADJUSTMENTS	
Revised ZFW	
ADJUSTMENTS	-300
Revised ZFW	105765
ADJUSTMENTS	
Revised ZFW	
ADJUSTMENTS	
Revised ZFW	
Fuel Weight Wing	17292
Center	6004
Takeoff Wt	129061
ADJUSTMENTS	
Revised TOW	
MAX ATOG	129000 ❸

TOW exceeds Planned TOW by 3361 lbs.

GSC to ISC - Breach of Security: Yes ◯ No ◉ Resolved ◯

Captain Verbally Advised? Yes ◯ N/A ◉

INDEX UNIT BALANCE LIMITS

ZERO FUEL WEIGHT AND BALANCE ❷

	Normal	Loading Rule ❹
103600 - 105799	54 to 73	54 to 78

MZFW 120500 ❸

TAKEOFF WEIGHT AND BALANCE ❷

	Normal	Loading Rule ❹
127000 - 130799	51 to 79	51 to 84

N471WN

Flt: 1248

B. SUTHERLAND

Does Loading Rule Apply? No ◉ Yes ◯ ❹

Action Taken? N/A ◉ Yes ◯

Southwest Airlines — Loading Schedule — 700

Flight Number	Agent Name (Print First and Last)	Captain Name (Print 1st Initial and Last)	Wheelchair(s)-BYO Dest.
			#
Destination	**Agent Employee Number**	**Infant Items to Jetbridge Dest.**	**Wheelchair(s) to Jetbridge Dest.**
		#	#
Station	**Sch. Arrival / Sch. Departure**	**Assistive Devices to Jetbridge Dest.**	**Remarks**
		#	
Aircraft Tail Number	**Fuel In**	**Unaccompanied Minors Dest.**	
N		#	
Date	**Gallons Added**	**Delay Code/Minutes**	
/ /			

1st OBS	Dest.	MR SA	2nd OBS	Dest.	MR SA	4th Crew Member	Dest.	MR SA

Load Code	FWD Hold Bags/Weight					AFT Hold Bags/Weight				
	Bags	A/F	C/M	A/M	TTL	Bags	A/F	C/M	A/M	TTL
THRU										
LOCAL										
Thru Pax				Weight					Weight	
TTL Pax	Bags			Equiv. Pieces		Bags			Equiv. Pieces	
	TTL PCS					TTL PCS				

OPERATIONAL EMPTY WEIGHT

1 OEW	
1st Observer + 201	
2nd Observer + 201	
4th Crew Member + 100	
ADJUSTMENT (+ON) (-OFF)	
ADJUSTMENT (+ON) (-OFF)	
ADJUSTMENT (+ON) (-OFF)	

PLANNED FUEL

Minimum _____

Maximum _____

Fuel Out _____ — _____ = _____ (Taxi)

FINAL ADJUSTMENT (+ON) (-OFF)

AIRPLANE WEIGHT AND BALANCE LIMITS

	WEIGHT
Total PAX Weight	
Total FWD Hold Weight	
Total AFT Hold Weight	
Operational Weight	
Zero Fuel Wt	
ADJUSTMENTS	
Revised ZFW	
ADJUSTMENTS	
Revised ZFW	
ADJUSTMENTS	
Revised ZFW	
Fuel Weight Wing	
Center	
Takeoff Wt	
ADJUSTMENTS	
Revised TOW	
MAX ATOG	3

TOW exceeds Planned TOW by 5,000 lbs?

No ◯ Yes ◯

If Yes, Dispatch Notified ◯

GSC to ISC - Breach of Security: Yes ◯ No ◯

Resolved ◯

Captain Verbally Advised? Yes ◯ N/A ◯

INDEX UNIT BALANCE LIMITS

ZERO FUEL WEIGHT AND BALANCE 2

	Normal	Loading Rule 4
Below - 84999	63 to 67	63 to 72
85000 - 87999	62 to 68	62 to 73
88000 - 91499	61 to 69	61 to 74
91500 - 96499	59 to 70	59 to 75
96500 - 98499	57 to 71	57 to 76
98500 -100999	56 to 71	56 to 76
101000 -102999	55 to 72	55 to 77
103000 -105499	54 to 72	54 to 78
105500 -108999	53 to 73	53 to 78
109000 -111999	52 to 74	52 to 79
112000 -115999	50 to 75	50 to 80
116000 - 117999	51 to 76	51 to 81
118000 - 120500	53 to 77	53 to 82

MZFW 3

TAKEOFF WEIGHT AND BALANCE 2

	Normal	Loading Rule 4
84000 - 87999	63 to 68	63 to 73
88000 - 91499	61 to 69	61 to 74
91500 - 96499	59 to 70	59 to 75
96500 - 98499	57 to 71	57 to 76
98500 -100999	56 to 71	56 to 76
101000 -102999	55 to 72	55 to 77
103000 -105499	54 to 72	54 to 78
105500 -108999	53 to 73	53 to 78
109000 -111999	52 to 74	52 to 79
112000 -115999	50 to 75	50 to 80
116000 -117999	51 to 76	51 to 81
118000 - 122999	53 to 77	53 to 82
123000 -126999	52 to 78	52 to 83
127000 -131999	51 to 79	51 to 84
132000 -136999	50 to 80	50 to 85
137000 -141499	49 to 81	49 to 86
141500 -142999	50 to 80	50 to 86
143000 -144499	51 to 80	51 to 85
144500 -145999	52 to 79	52 to 84
146000 -147499	53 to 78	53 to 83
147500 -148999	54 to 77	54 to 82
149000 -150499	55 to 76	55 to 81
150500 -151999	56 to 75	56 to 80
152000 -152999	57 to 75	57 to 80
153000 -153499	57 to 74	57 to 79
153500 -153799	60 to 72	60 to 77
153800 -153999	62 to 70	62 to 75
154000 -154299	64 to 68	64 to 73
154300 -154500	66	66 to 72

Does Loading Rule Apply? No ◯ Yes ◯ 4

Action Taken? N/A ◯ Yes ◯

GUIDELINES

1. Use the adjusted Operating Empty Weight as designated on the Dispatch Release.
2. Ensure Zero Fuel Weight and Balance **and** Takeoff Weight and Balance index unit limits have been confirmed.
3. Ensure that the MZFW and MAX ATOG have not been exceeded.
4. *Loading Rule - Ensure that at least one half of the passenger complement is seated AFT of the overwing exits to utilize the balance limits shown.*

NOTE:

- Use the exact adjusted weight for each item as shown in the Tables. **(Do Not Interpolate)**
- Fill Wing Tanks (Mains) Then Center Section Tank.
- The OPC will calculate the recommended stabilizer trim setting to use for takeoff. This value should not be compared to the index unit balance limits.

Agent Full Signature

LOADED ITEM ADJUSTED WEIGHT TABLE / WEIGHT VALUES ARE ADJUSTED TO INCLUDE INDEX UNITS

PASSENGERS (195)

NO.	WT.	NO.	WT.	NO.	WT.	NO.	WT.
1	200	36	7000	71	13800	106	20700
2	400	37	7200	72	14000	107	20900
3	600	38	7400	73	14200	108	21100
4	800	39	7600	74	14400	109	21300
5	1000	40	7800	75	14600	110	21500
6	1200	41	8000	76	14800	111	21600
7	1400	42	8200	77	15000	112	21800
8	1600	43	8400	78	15200	113	22000
9	1800	44	8600	79	15400	114	22200
10	2000	45	8800	80	15600	115	22400
11	2100	46	9000	81	15800	116	22600
12	2300	47	9200	82	16000	117	22800
13	2500	48	9400	83	16200	118	23000
14	2700	49	9600	84	16400	119	23200
15	2900	50	9800	85	16600	120	23400
16	3100	51	9900	86	16800	121	23600
17	3300	52	10100	87	17000	122	23800
18	3500	53	10300	88	17200	123	24000
19	3700	54	10500	89	17400	124	24200
20	3900	55	10700	90	17600	125	24400
21	4100	56	10900	91	17700	126	24600
22	4300	57	11100	92	17900	127	24800
23	4500	58	11300	93	18100	128	25000
24	4700	59	11500	94	18300	129	25200
25	4900	60	11700	95	18500	130	25400
26	5100	61	11900	96	18700	131	25500
27	5300	62	12100	97	18900	132	25700
28	5500	63	12300	98	19100	133	25900
29	5700	64	12500	99	19300	134	26100
30	5900	65	12700	100	19500	135	26300
31	6000	66	12900	101	19700	136	26500
32	6200	67	13100	102	19900	137	26700
33	6400	68	13300	103	20100		
34	6600	69	13500	104	20300		
35	6800	70	13700	105	20500		

PASSENGERS (190)

NO.	WT.	NO.	WT.	NO.	WT.	NO.	WT.
1	200	36	6800	71	13500	106	20100
2	400	37	7000	72	13700	107	20300
3	600	38	7200	73	13900	108	20500
4	800	39	7400	74	14100	109	20700
5	1000	40	7600	75	14300	110	20900
6	1100	41	7800	76	14400	111	21100
7	1300	42	8000	77	14600	112	21300
8	1500	43	8200	78	14800	113	21500
9	1700	44	8400	79	15000	114	21700
10	1900	45	8600	80	15200	115	21900
11	2100	46	8700	81	15400	116	22000
12	2300	47	8900	82	15600	117	22200
13	2500	48	9100	83	15800	118	22400
14	2700	49	9300	84	16000	119	22600
15	2900	50	9500	85	16200	120	22800
16	3000	51	9700	86	16300	121	23000
17	3200	52	9900	87	16500	122	23200
18	3400	53	10100	88	16700	123	23400
19	3600	54	10300	89	16900	124	23600
20	3800	55	10500	90	17100	125	23800
21	4000	56	10600	91	17300	126	23900
22	4200	57	10800	92	17500	127	24100
23	4400	58	11000	93	17700	128	24300
24	4600	59	11200	94	17900	129	24500
25	4800	60	11400	95	18100	130	24700
26	4900	61	11600	96	18200	131	24900
27	5100	62	11800	97	18400	132	25100
28	5300	63	12000	98	18600	133	25300
29	5500	64	12200	99	18800	134	25500
30	5700	65	12400	100	19000	135	25700
31	5900	66	12500	101	19200	136	25800
32	6100	67	12700	102	19400	137	26000
33	6300	68	12900	103	19600		
34	6500	69	13100	104	19800		
35	6700	70	13300	105	20000		

FORWARD HOLD

PCS.	WT.	PCS.	WT.	PCS.	WT.
4	100	52	1605	104	3109
8	201	56	1705	108	3209
10	301	60	1805	110	3310
12	401	64	1906	112	3410
16	501	68	2006	116	3510
20	602	70	2106	120	3611
24	702	72	2206	124	3711
28	802	76	2307	128	3811
30	903	80	2407	132	4012
32	1003	84	2507	136	4112
36	1103	88	2608	140	4212
40	1204	90	2708	144	4313
44	1304	92	2808	147	4413
48	1404	96	2908		
50	1504	100	3009		

AFT HOLD

PCS.	WT.	PCS.	WT.	PCS.	WT.	PCS.	WT.	PCS.	WT.
4	100	52	1596	104	3093	152	4590	204	6086
8	199	56	1696	108	3193	156	4689	208	6186
10	299	60	1796	110	3292	160	4789	210	6286
12	399	64	1896	112	3392	164	4889	212	6386
16	499	68	1995	116	3492	168	4989	216	6485
20	599	70	2095	120	3592	170	5088	220	6585
24	698	72	2195	124	3692	172	5188	224	6685
28	798	76	2295	128	3791	176	5288	228	6784
30	898	80	2395	130	3891	180	5388	230	6884
32	998	84	2494	132	3991	184	5487	233	6984
36	1098	88	2594	136	4091	188	5587		
40	1197	90	2694	140	4190	190	5687		
44	1297	92	2794	144	4290	192	5787		
48	1397	96	2893	148	4390	196	5887		
50	1497	100	2993	150	4490	200	5986		

FUEL ON BOARD (Fuel Density = 6.7 LB/GAL.)

WING FUEL

WT.	WT.	WT.	WT.	WT.	WT.
1000	4000	7000	9999	12997	15994
1200	4200	7200	10199	13197	16194
1400	4400	7400	10399	13397	16393
1600	4600	7600	10599	13597	16593
1800	4800	7800	10799	13796	16793
2000	5000	8000	10998	13996	16992
2200	5200	8200	11198	14196	17192
2400	5400	8400	11398	14396	17292
2600	5600	8599	11598	14596	
2800	5800	8799	11798	14795	
3000	6000	8999	11998	14995	
3200	6200	9199	12198	15195	
3400	6400	9399	12398	15395	
3600	6600	9599	12598	15594	
3800	6800	9799	12797	15794	

CENTER FUEL

WT.	WT.	WT.	WT.	WT.	WT.	WT.	WT.	WT.	WT.
100	3002	6004	9006	12008	15010	18012	21014	24015	27018
200	3202	6204	9206	12208	15210	18212	21214	24216	27218
400	3402	6404	9406	12408	15410	18412	21414	24416	27418
600	3602	6604	9606	12608	15610	18612	21614	24616	27618
800	3802	6805	9807	12808	15810	18812	21814	24816	27818
1001	4003	7005	10007	13009	16010	19012	22014	25016	28018
1201	4203	7205	10207	13209	16211	19212	22214	25216	28218
1401	4403	7405	10407	13409	16411	19413	22414	25416	28419
1601	4603	7605	10607	13609	16611	19613	22615	25617	28619
1801	4803	7805	10807	13809	16811	19813	22815	25817	28819
2001	5003	8005	11007	14009	17011	20013	23015	26017	
2201	5203	8205	11207	14209	17211	20213	23215	26217	
2402	5404	8406	11408	14409	17411	20413	23415	26417	
2602	5604	8606	11608	14610	17611	20613	23615	26617	
2802	5804	8806	11808	14810	17812	20813	23815	26817	

SWA HDQ 7FM
HDQ COPY

SOUTHWEST AIRLINES **FUEL TICKET 8751338**

STATION	FLIGHT NO	AIRCRAFT NO	DATE
BWI	1248	471	12.8.05

MIN. FUEL 21.3 LBS / MAX 21.3 LBS

PLANNED FUEL 21.3 LBS (Agent) 6.5

FUEL TYPE ☑ JET A ☐ OTHER

AGENTS SIGNATURE

TANKS	ARRIVAL FOB	PLANNED FUEL	DEPARTURE FOB
ONE	3.7	8.6	8.6
TWO	3.7	8.6	8.6
CENTER	0	4.1	4.1
TOTAL	7.4	21.3	21.3

INOPERATIVE GAUGE READINGS

TANKS	STICK USED	STICK READING	ACTUAL FUEL
ONE			
TWO			

EQUIPMENT NO. 10343 GATE NO. B14

METER NO.		METER READING
	END	9850633
	START	9848593

DELIVERED GALLONS 2090

NET GALLONS

FUELERS SIGNATURE

WN-201C (REV. 8/01)

Aircraft Services International Group
Baltimore/Washington International Airport
Baltimore, MD 21240-9972
(410) 859-4000 FAX (410) 859-5186

Aircraft Service Record 211501

CUSTOMER COPY

DATE: 12-8-5	CUSTOMER: SWA	GA ☐	FLIGHT NO: 1248
A/C TYPE: 737	TAIL NBR: 491	ORIGIN: BWI	DESTINATION:

Jet A (1) ☒	Jet A w/Additive (2) ☐	100 LL (3) ☐	Auto (4) ☐
Bonded Jet (5) ☐	Diesel (6) ☐	Oil ☐	Other

Transfer From: To:				Other (11)	
FOB (1) ☐	Preload (2) ☐	Recirc. (3) ☐	Ballast (4) ☐	Callback (5) ☐	
Defuel (6) ☐	Refuel (7) ☒	Incp Gauge (8) ☐	A/C Swap (9) ☐	GSE (10) ☐	

Services Requested: METER NUMBER AVIATION 1
SALE NUMBER 6172

Meter 2		Meter 1
TIME START Finish	12/08/05 15:34	
TIME END	12/08/05 15:42:11	
START COUNT	0 GALLONS	
END GROSS COUNT	2090 GALLONS	
GROSS DELIVERY	2090 GALLONS	
START TOTALIZER	9848543 GALLONS	
END TOTALIZER	9850633 GALLONS	

Meter 2 **Start** Meter 1

TOTAL GALLONS: 2090

Supplier:	Unit:	Location:	
FUELER: GS	NBR: 10343	ON A/C:	OFF A/C:

Received by: (Customer) X

DID YOU SECURE OIL/FUEL CAPS AND PANELS?

Aircraft Services International Group
Baltimore/Washington International Airport
Baltimore, MD 21240-9972
(410) 859-4000 FAX (410) 859-5186

Aircraft Service Record 211502

CUSTOMER COPY

DATE: 12-8-5	CUSTOMER: SWA	GA ☐	FLIGHT NO: 1248
A/C TYPE: 737	TAIL NBR: 491	ORIGIN: BWI	DESTINATION:

Jet A (1) ☒	Jet A w/Additive (2) ☐	100 LL (3) ☐	Auto (4) ☐
Bonded Jet (5) ☐	Diesel (6) ☐	Oil ☐	Other

Transfer From: To:				Other (11)	
FOB (1) ☐	Preload (2) ☐	Recirc. (3) ☐	Ballast (4) ☐	Callback (5) ☐	
Defuel (6) ☐	Refuel (7) ☒	Incp Gauge (8) ☐	A/C Swap (9) ☐	GSE (10) ☐	

Services Requested: SALE NUMBER 6172

Meter 2		Meter 1
TIME START Finish	12/08/05 15:42	
START COUNT	0 GALLONS	
END GROSS COUNT	341 GALLONS	
GROSS DELIVERY	341 GALLONS	
START TOTALIZER	9850633 GALLONS	
END TOTALIZER	9850974 GALLONS	

Meter 2 **Start** Meter 1

TOTAL GALLONS: 341

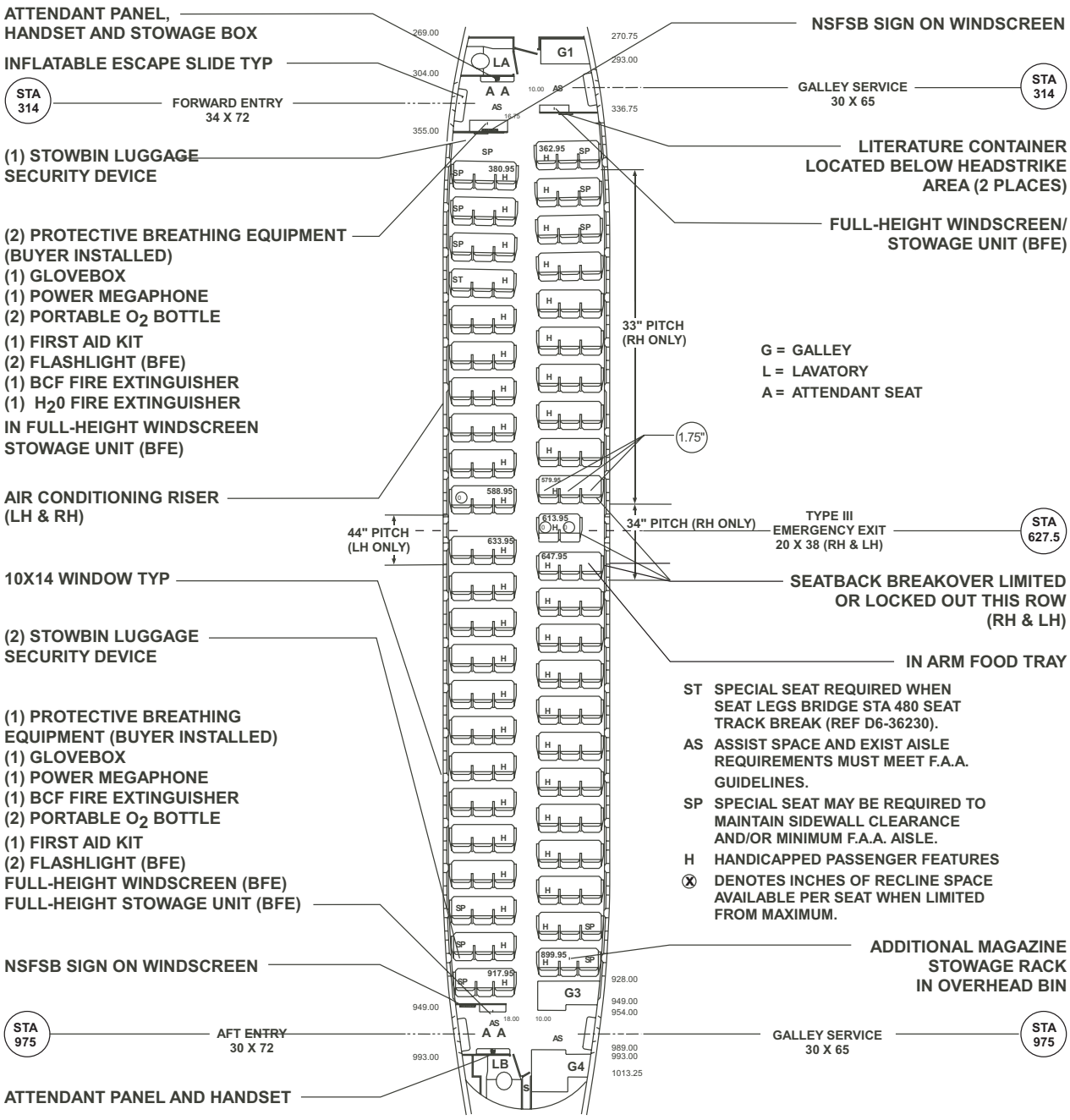
Supplier:	Unit:	Location:	
FUELER: GS	NBR: 10343	ON A/C:	OFF A/C:

Received by: (Customer) X

DID YOU SECURE OIL/FUEL CAPS AND PANELS?

To: Karen

From: Karen X4289
Fuel Mgmt



INTERIOR ARRANGEMENT

137 TOURIST CLASS PASSENGERS – 32 INCH PITCH (TYPICAL)
YA106-YA149

Figure 01-4a

1.4 Introduction - (continued)

4. To calculate ARM or % MAC:

$$\%\ MAC = \frac{(ARM - 627.1)}{1.558} \quad \text{or} \quad ARM = (\%\ MAC)(1.558) + 627.1$$

where 627.1 is the leading edge of the Mean Aerodynamic Chord in inches and 1.558 is the length of the Mean Aerodynamic Chord in inches per 1% MAC.

5. The formula for calculating the Adjusted Weight for airplane Operating Empty Weight (O.E.W.) is as follows:

$$\text{Adjusted O.E.W.} = \text{Roundoff O.E.W.} + \left[\, 6.0 + \frac{[\text{Actual O.E.W.} \times (\text{Datum} - \text{Arm})]}{(130000\ \text{LB}) \times (6.5\ \text{IN})} \,\right] \times 10$$

6. The formula for calculating the Adjusted Weight for Load Item is as follows:

$$\text{Adjusted Weight} = \text{Roundoff Load Item Weight} + \left[\frac{[\text{Actual Load Item Wt.} \times (\text{Datum} - \text{Arm})]}{(130000\ \text{LB}) \times (6.5\ \text{IN})} \right] \times 10$$

7. The formula for calculating the Index Unit is as follows:

$$\text{Index Unit} = \left[\, 6.0 + \frac{[\text{Actual Weight} \times (\text{Datum} - \text{Arm})]}{(130000\ \text{LB}) \times (6.5\ \text{IN})} \,\right] \times 10$$

8. Brief description of the above formulas:

Roundoff Weight = Roundoff airplane Operational Empty Weight or Load Item Weight is the actual weight roundoff either up or down to the nearest 100 LB., so the weight is always within 50 LB. of the actual weight. For example actual weight as 75078 LB is roundoff as 75100 LB. or actual weight as 75012 is roundoff as 75000 LB.

1.4 Introduction - (continued)

9. Actual Weight = is the real weight of the airplane Operational Empty Weight or Load Item weight.

Datum = 661.1 Inches. The datum is calculated at 6.0 nose up average trim setting (21.8 % MAC) which is equal to 661.1 inches i.e. [Arm = 1.558 x (%MAC) + (627.1 inches)]

10. Arm = is the Balance Arm in inches of the airplane Operational Empty Weight or the Load Item(Payload).

11. 6.0 = the average Stabilizer Trim Unit is 6.0 at 21.8 % MAC with flaps 1 & 5 (Refere to Special Southwest Stabilizer Trim Schedule, page 1-9)

12. 130000 LB = is the average Takeoff Weight.

13. 6.5 IN = the change in balance arm for one Trim Unit. For example one Trim Unit between 5.5 and 6.5 equals a change in % MAC of 4.2 (23.8 - 19.6 = 4.2 % MAC) coverting this to Balance Arm as follows:
Arm = (% MAC x 1.558) i.e. (4.2 x 1.558) = 6.5 IN.

Criteria on which the system is based:

a. 137 All Tourist Passengers Interior (Refer to Section 1.3, item 1). The passenger location data is shown in Section 4.5

b. Passenger weight of 180 LB, and 185 LB each including carry-on baggage, per Southwest Airlines request.

c. Recommended fuel loading and usage procedures (Refer to Section 1.3, item 1).

d. Nominal Fuel Density of 6.7 LB/GAL. (Refer to Section 1.3, item 1).
Fuel density range from 6.5 LB/GAL. to 7.1 LB/GAL.

e. Maximum fuel quantity (Refer to Section 1.3, item 1):

Full Wing Tanks - 2576 GAL.
Full Center Tank - 4299 GAL.

3.7 Adjusted Weight Table (continued)

TABLE 3-6 Wing Tanks 1+2 (Ref.Sec. 1.3, item 1)

WT. (LB)	ADJ.WT. (LB)	WT. (LB)	ADJ.WT. (LB)	WT. (LB)	ADJ.WT. (LB)
1000	1000	7600	7600	14200	14196
1200	1200	7800	7800	14400	14396
1400	1400	8000	8000	14600	14596
1600	1600	8200	8200	14800	14795
1800	1800	8400	8400	15000	14995
2000	2000	8600	8599	15200	15195
2200	2200	8800	8799	15400	15395
2400	2400	9000	8999	15600	15594
2600	2600	9200	9199	15800	15794
2800	2800	9400	9399	16000	15994
3000	3000	9600	9599	16200	16194
3200	3200	9800	9799	16400	16393
3400	3400	10000	9999	16600	16593
3600	3600	10200	10199	16800	16793
3800	3800	10400	10399	17000	16992
4000	4000	10600	10599	17200	17192
4200	4200	10800	10799	17259	17292
4400	4400	11000	10998		
4600	4600	11200	11198		
4800	4800	11400	11398		
5000	5000	11600	11598		
5200	5200	11800	11798		
5400	5400	12000	11998		
5600	5600	12200	12198		
5800	5800	12400	12398		
6000	6000	12600	12597		
6200	6200	12800	12797		
6400	6400	13000	12997		
6600	6600	13200	13197		
6800	6800	13400	13397		
7000	7000	13600	13597		
7200	7200	13800	13796		
7400	7400	14000	13996		

Tanks 1+2 = 2576 Gallons (17259 LB)

3.7 Adjusted Weight Table (continued)

TABLE 3-7 Center Section Tank (Ref.Sec. 1.3, item 1)

WT. (LB)	ADJ.WT. (LB)	WT. (LB)	ADJ.WT. (LB)	WT. (LB)	ADJ.WT (LB)	WT. (LB)	ADJ.WT (LB)
1000	1001	8200	8205	15400	15410	22600	22615
1200	1201	8400	8406	15600	15610	22800	22815
1400	1401	8600	8606	15800	15810	23000	23015
1600	1601	8800	8806	16000	16010	23200	23215
1800	1801	9000	9006	16200	16211	23400	23415
2000	2001	9200	9206	16400	16411	23600	23615
2200	2201	9400	9406	16600	16611	23800	23815
2400	2402	9600	9606	16800	16811	24000	24015
2600	2602	9800	9807	17000	17011	24200	24216
2800	2802	10000	10007	17200	17211	24400	24416
3000	3002	10200	10207	17400	17411	24600	24616
3200	3202	10400	10407	17600	17611	24800	24816
3400	3402	10600	10607	17800	17812	25000	25016
3600	3602	10800	10807	18000	18012	25200	25216
3800	3802	11000	11007	18200	18212	25400	25416
4000	4003	11200	11207	18400	18412	25600	25617
4200	4203	11400	11408	18600	18612	25800	25817
4400	4403	11600	11608	18800	18812	26000	26017
4600	4603	11800	11808	19000	19012	26200	26217
4800	4803	12000	12008	19200	19212	26400	26417
5000	5003	12200	12208	19400	19413	26600	26617
5200	5203	12400	12408	19600	19613	26800	26817
5400	5404	12600	12608	19800	19813	27000	27018
5600	5604	12800	12808	20000	20013	27200	27218
5800	5804	13000	13009	20200	20213	27400	27418
6000	6004	13200	13209	20400	20413	27600	27618
6200	6204	13400	13409	20600	20613	27800	27818
6400	6404	13600	13609	20800	20813	28000	28018
6600	6604	13800	13809	21000	21014	28200	28218
6800	6805	14000	14009	21200	21214	28400	28419
7000	7005	14200	14209	21400	21414	28600	28619
7200	7205	14400	14409	21600	21614	28803	28819
7400	7405	14600	14610	21800	21814		
7600	7605	14800	14810	22000	22014		
7800	7805	15000	15010	22200	22214		
8000	8005	15200	15210	22400	22414		

Center Tank = 4299 Gallons (28803 LB)

4.5 Seating Variation Allowance - (continued)

Passenger Location Data

137 Passengers (LOPS - 377 - 0049 - T)					
No. of ROW (RHS)	Pass. Per Row	Balance Arm (IN)	No. of Row (LHS)	Pass. Per Row	Balance Arm (IN)
1	3	291	1	3	310
2	3	324	2	3	342
3	3	357	3	3	374
4	3	390	4	3	406
5	3	423	5	3	438
6	3	456	6	3	470
7	3	489	7	3	502
8	3	522	8	3	534
9	3	555	9	3	566
10	3	588	10	3	598
11	2	622	11	3	642
12	3	656	12	3	674
13	3	688	13	3	706
14	3	720	14	3	738
15	3	752	15	3	770
16	3	784	16	3	802
17	3	816	17	3	834
18	3	848	18	3	866
19	3	880	19	3	898
20	3	912	20	3	930
21	3	944	21	3	962
22	3	976	22	3	994
23	3	1008	23	3	1026

Total 137 Passengers at Balance Arm	660.8
Passenger Row 1 thru 11 Centroid	463.6
Passenger Row 12 thru 23 Centroid	841.0
Fwd Load Rule Fwd Compart Centroid	373.7
Fwd Load Rule Aft Compart Centroid	736.9
Overwing Exit Centroid	627.5

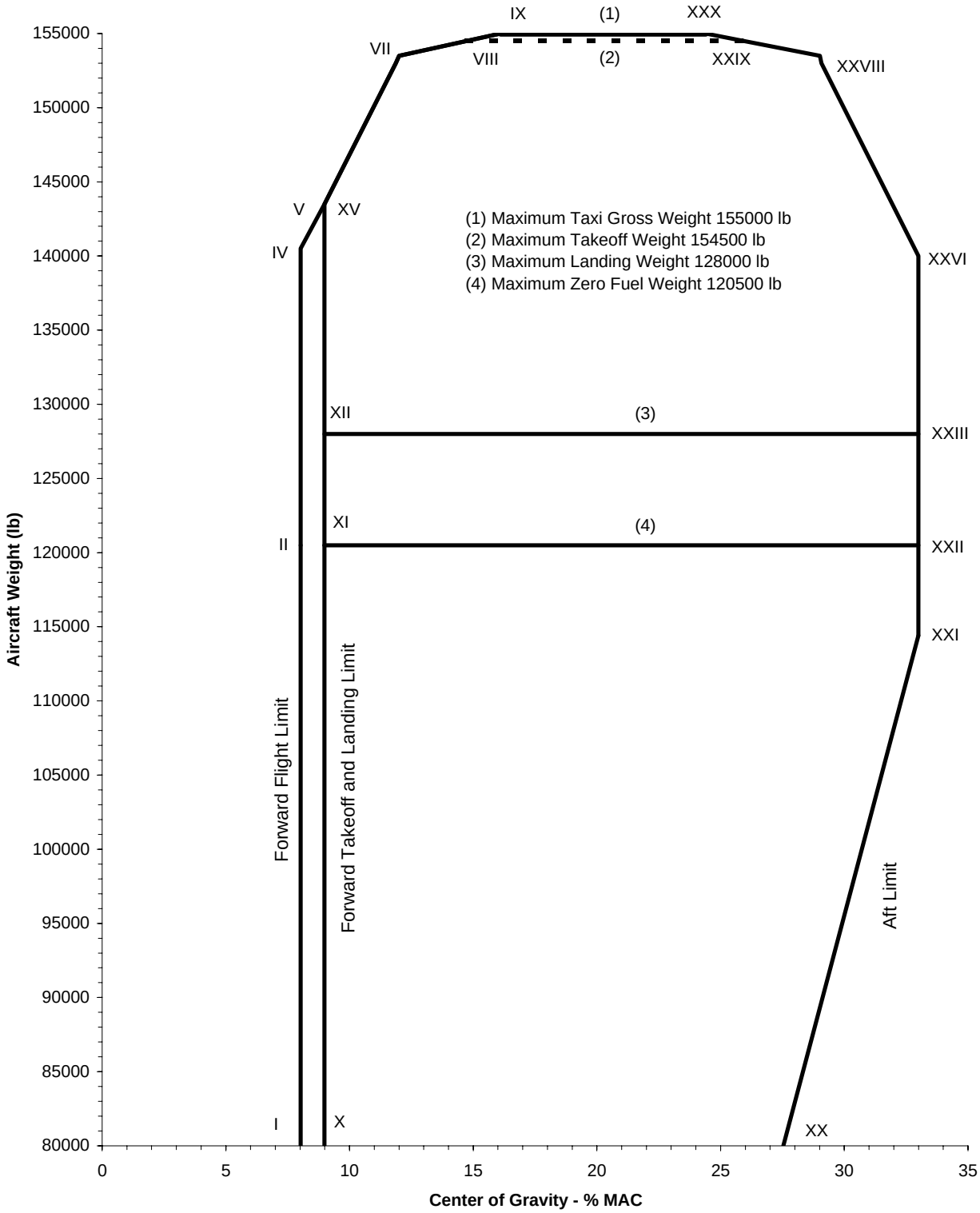
5.1 Center of Gravity Limits

Center of Gravity Limits

POINT	WEIGHT (LB)	ARM (IN)	MOMENT (LB-IN) 1000	C.G. (%MAC)
Forward Flight Limits				
I	80000	639.6	51168	8.0
II	120500	639.6	77072	8.0
III	139000	639.6	88904	8.0
IV	140500	639.6	89864	8.0
V	143500	641.1	91998	9.0
VI	153000	645.6	98777	11.9
VII	153500	645.8	99130	12.0
VIII	154500	650.1	100433	14.7
IX	155000	652.2	101088	16.1
Forward Takeoff and Landing Limits				
X	80000	641.1	51288	9.0
XI	120500	641.1	77253	9.0
XII	128000	641.1	82061	9.0
XIII	138500	641.1	88792	9.0
XIV	139000	641.1	89113	9.0
XV	143500	641.1	91998	9.0
XVI	153000	645.6	98777	11.9
XVII	153500	645.8	99130	12.0
XVIII	154500	650.1	100433	14.7
XIX	155000	652.2	101088	16.1
Aft Limits				
XX	80000	670.0	53600	27.5
XXI	114400	678.5	77620	33.0
XXII	120500	678.5	81759	33.0
XXIII	128000	678.5	86848	33.0
XXIV	138500	678.5	93972	33.0
XXV	139000	678.5	94312	33.0
XXVI	140000	678.5	94990	33.0
XXVII	153000	672.4	102877	29.1
XXVIII	153500	672.3	103198	29.0
XXIX	154500	667.5	103129	25.9
XXX	155000	665.1	103093	24.4

NOTE: These points are shown graphically on the next page.

5.1 Center of Gravity Limits - (continued)



5.3 Summary of Curtailed Limits

Summary of Curtailed Limits

POINT	WEIGHT (LB)	ARM (IN)	MOMENT (LB-IN) 1000	C.G. (%MAC)	INDEX UNIT
Zero Fuel Check at Forward Flight Limit					
Az	84500	641.8	54236	9.5	79.3
A	89180	652.2	58161	16.1	69.4
B	120500	648.9	78193	14.0	77.4
Zero Fuel Check at Forward Takeoff and Landing Limit					
Cz	84500	641.6	54215	9.3	79.5
C	89180	652.6	58195	16.3	69.0
D	120500	648.8	78184	13.9	77.5
Check at Forward Flight Limit					
Ez	84500	641.8	54236	9.5	79.3
E	89180	652.2	58161	16.1	69.4
F	120500	648.9	78193	14.0	77.4
G	139000	647.7	90025	13.2	82.1
H	140500	647.6	90985	13.1	82.5
J	143500	648.9	93119	14.0	80.7
K	153000	652.9	99898	16.6	74.8
L	153500	653.1	100251	16.7	74.5
M	154500	657.3	101554	19.4	66.9
N	155000	659.4	102209	20.7	63.1
Takeoff Check at Forward Takeoff and Landing Limit					
Oz	84500	641.1	54173	9.0	80.0
O	89180	651.5	58104	15.7	70.1
P	120500	648.8	78184	13.9	77.5
Q	128000	648.4	82992	13.7	79.3
R	138500	647.8	89723	13.3	81.8
S	139000	647.8	90044	13.3	81.9
T	143500	647.6	92929	13.2	82.9
U	153000	651.7	99708	15.8	77.0
W	153500	651.9	100061	15.9	76.8
Y	154500	656.1	101364	18.6	69.2
Z	155000	658.2	102019	20.0	65.3

NOTE: Most restrictive points are shown graphically in Section 7.

5.3 Summary of Curtailed Limits - (continued)

Summary of Curtailed Limits (continued)

POINT	WEIGHT (LB)	ARM (IN)	MOMENT (LB-IN) 1000	C.G. (%MAC)	INDEX UNIT
Zero Fuel Check at Aft Limit					
AAz	84500	669.6	56583	27.3	51.5
AA	89180	660.4	58899	21.4	60.7
AB	114400	669.3	76566	27.1	48.9
AC	120500	667.0	80371	25.6	51.6
Takeoff Check at Aft Takeoff and Landing Limit					
ADz	84500	669.6	56583	27.3	51.5
AD	89180	660.4	58899	21.4	60.7
AE	114400	669.3	76566	27.1	48.9
AF	120500	666.5	80310	25.3	52.3
AG	128000	667.2	85399	25.7	50.8
AH	138500	668.0	92523	26.3	48.6
AI	139000	668.1	92863	26.3	48.5
AJ	140000	668.2	93541	26.3	48.3
AK	153000	662.9	101428	23.0	56.7
AL	153500	662.9	101749	23.0	56.8
AM	154500	658.1	101680	19.9	65.4
AN	155000	655.8	101644	18.4	69.8

NOTE: Most restrictive points are shown graphically in Section 7.

6.1 Center of Gravity Limits

Center of Gravity Limits

POINT	WEIGHT (LB)	ARM (IN)	MOMENT (LB-IN) 1000	C.G. (%MAC)
Forward Flight Limits				
I	80000	639.6	51168	8.0
II	120500	639.6	77072	8.0
III	139000	639.6	88904	8.0
IV	140500	639.6	89864	8.0
V	143500	641.1	91998	9.0
VI	153000	645.6	98777	11.9
VII	153500	645.8	99130	12.0
VIII	154500	650.1	100433	14.7
IX	155000	652.2	101088	16.1
Forward Takeoff and Landing Limits				
X	80000	641.1	51288	9.0
XI	120500	641.1	77253	9.0
XII	128000	641.1	82061	9.0
XIII	138500	641.1	88792	9.0
XIV	139000	641.1	89113	9.0
XV	143500	641.1	91998	9.0
XVI	153000	645.6	98777	11.9
XVII	153500	645.8	99130	12.0
XVIII	154500	650.1	100433	14.7
XIX	155000	652.2	101088	16.1
Aft Limits				
XX	80000	670.0	53600	27.5
XXI	114400	678.5	77620	33.0
XXII	120500	678.5	81759	33.0
XXIII	128000	678.5	86848	33.0
XXIV	138500	678.5	93972	33.0
XXV	139000	678.5	94312	33.0
XXVI	140000	678.5	94990	33.0
XXVII	153000	672.4	102877	29.1
XXVIII	153500	672.3	103198	29.0
XXIX	154500	667.5	103129	25.9
XXX	155000	665.1	103093	24.4

NOTE: These points are shown graphically on the next page.

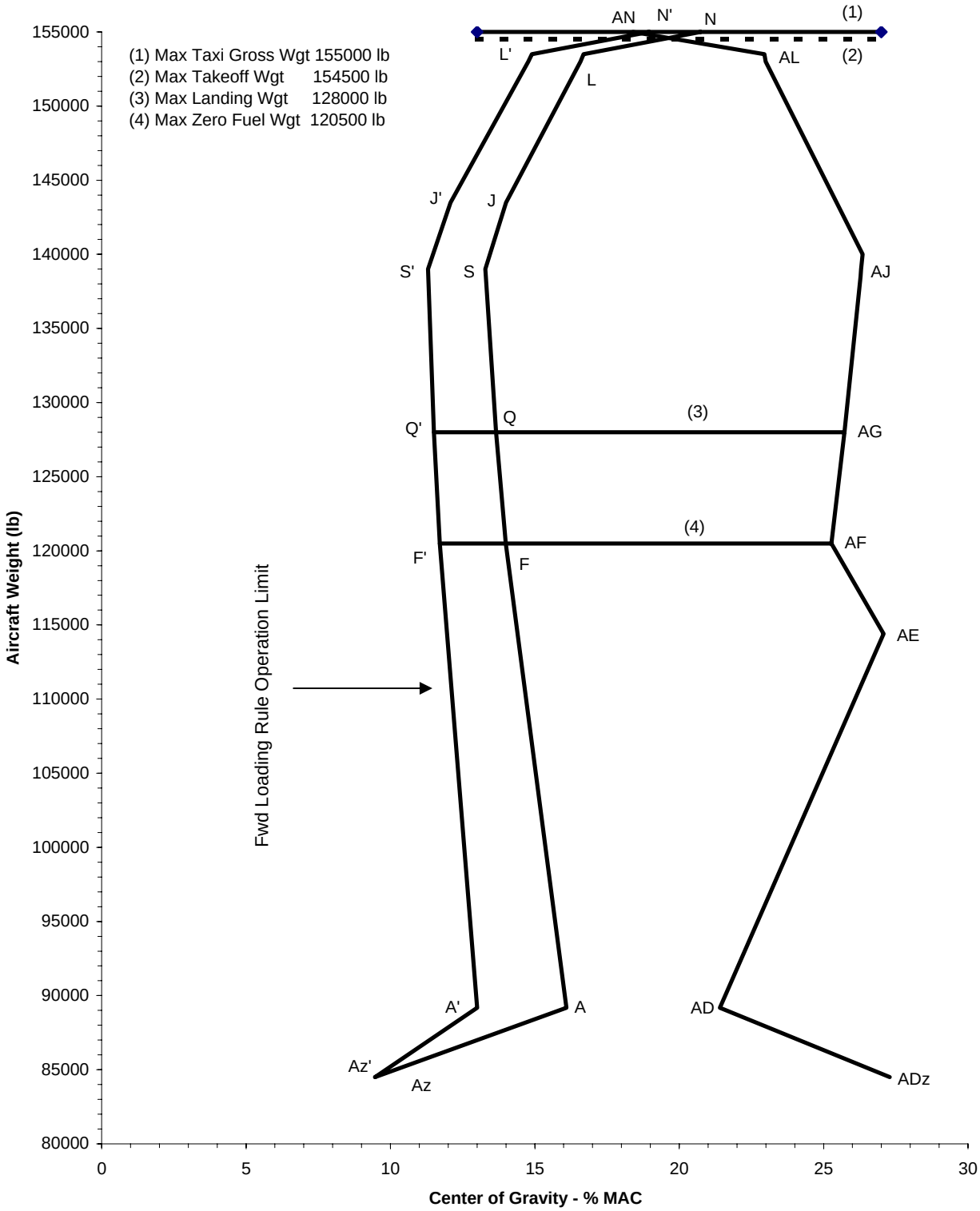
6.4 Summary of Curtailed Limits

Summary of Curtailed Limits

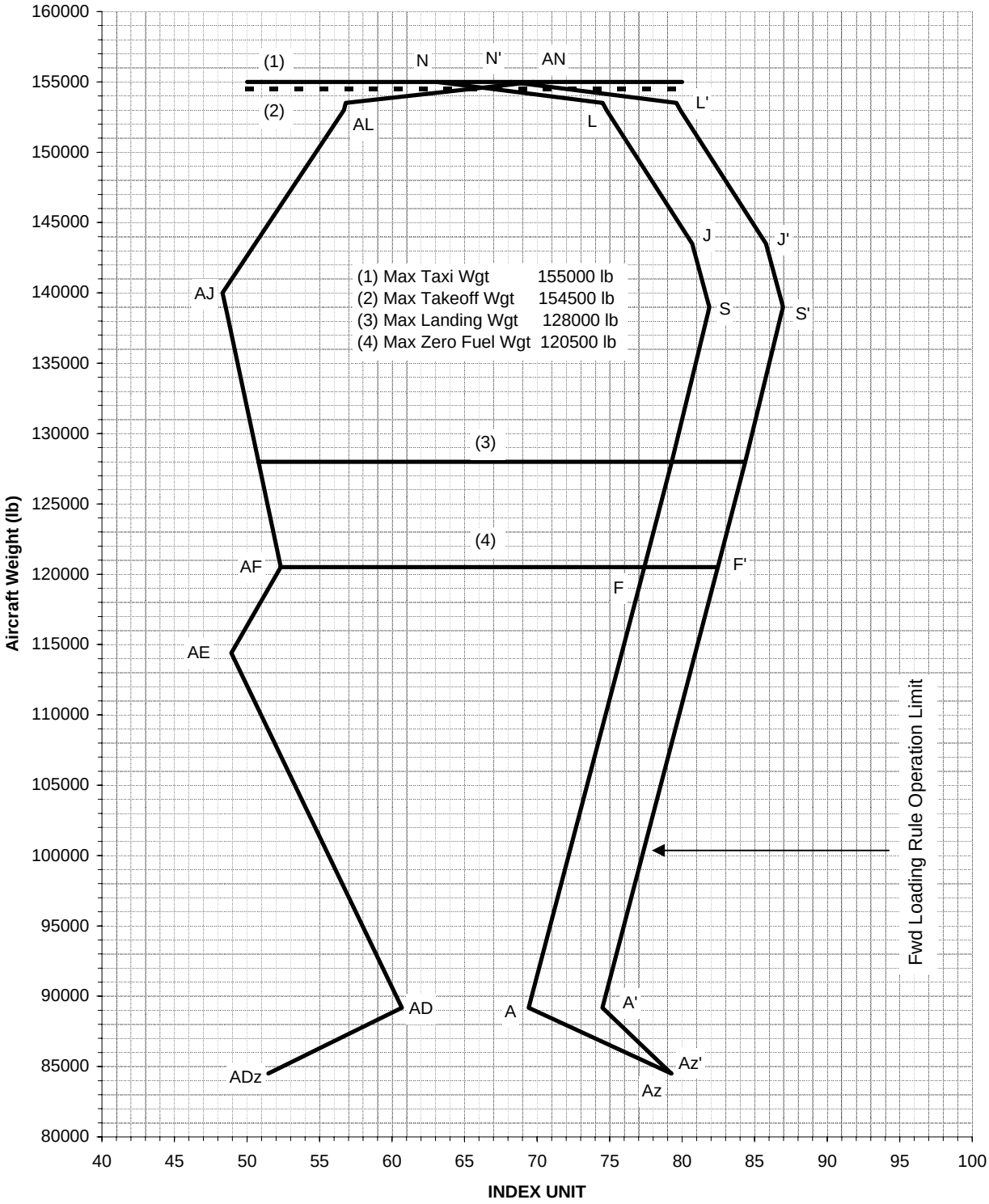
POINT	WEIGHT (LB)	ARM (IN)	MOMENT (LB-IN) 1000	C.G. (%MAC)	INDEX UNIT
Zero Fuel Check at Forward Flight Limit					
Az'	84500	641.8	54236	9.5	79.3
A'	89180	647.4	57732	13.0	74.5
B'	120500	645.3	77764	11.7	82.5
Zero Fuel Check at Forward Takeoff and Landing Limit					
Cz'	84500	641.6	54215	9.3	79.5
C'	89180	647.7	57766	13.3	74.1
D'	120500	645.3	77755	11.7	82.6
Check at Forward Flight Limit					
Ez'	84500	641.8	54236	9.5	79.3
E'	89180	647.4	57732	13.0	74.5
F'	120500	645.3	77764	11.7	82.5
G'	139000	644.6	89596	11.2	87.2
H'	140500	644.5	90556	11.2	87.6
J'	143500	645.9	92690	12.1	85.8
K'	153000	650.1	99469	14.8	79.9
L'	153500	650.3	99822	14.9	79.6
M'	154500	654.5	101125	17.6	72.0
N'	155000	656.6	101780	19.0	68.2
Takeoff Check at Forward Takeoff and Landing Limit					
Oz'	84500	641.1	54173	9.0	80.0
O'	89180	646.7	57675	12.6	75.2
P'	120500	645.3	77755	11.7	82.6
Q'	128000	645.0	82563	11.5	84.4
R'	138500	644.7	89294	11.3	86.8
S'	139000	644.7	89615	11.3	87.0
T'	143500	644.6	92500	11.2	88.0
U'	153000	648.9	99279	14.0	82.1
W'	153500	649.1	99632	14.1	81.9
Y'	154500	653.3	100935	16.8	74.3
Z'	155000	655.4	101590	18.2	70.4

Note: Most restrictive points are shown graphically in Section 7.

7.1 Center of Gravity - % MAC Grid



7.2 Index Units Grid



AIRPLANE CONFIGURATION (Continued)

LINE NUMBER	SERIAL NUMBER	VARIABLE NUMBER	REGISTRY NUMBER	CONFIGURATION					
1040	32452	YA118	N421LV	E	B[6]	F[3]	K[7]		
990	32453	YA113	N416WN	E	B[6]	F[3]	K[7]		
1313	32454	YA131	N434WN	E	B[6]	F[3]	K[7]		
1328	32455	YA132	N435WN	E	B[6]	F[3]	K[7]		
1342	32456	YA133	N436WN	E	B[6]	F[3]	K[7]		
1365	32459	YA139	N442WN	E	B[6]	F[3]	K[7]		
1480	32462	YA152	N455WN	B	K[3]				
1484	32463	YA153	N456WN	B	K[3]				
1499	32464	YA157	N460WN	B	K[3]				
1510	32465	YA158	N461WN	B	K[3]				
1513	32466	YA159	N462WN	B	K[3]				
1515	32467	YA160	N463WN	B	K[3]				
1517	32468	YA161	N464WN	B	K[3]				
1427	32469	YA146	N449WN	E	B[6]	F[3]	K[7]		
1429	32470	YA147	N450WN	E	B[6]	F[3]	K[7]		
1535	32471	YA168	N471WN	B	K[3]				
1570	32472	YA180	N483WN	K[3]					
1577	32473	YA182	N485WN	K[3]					
1545	32474	YA172	N475WN	K[3]					
1549	32475	YA173	N476WN	K[3]					
1591	32476	YA187	N490WN	K[3]					
1616	32477	YA190	N493WN	K[3]					
1626	32478	YA193	N496WN	K[3]					
1628	32479	YA194	N497WN	K[3]					
1633	32480	YA195	N498WN	K[3]					
1636	32481	YA196	N499WN	K[3]					
1638	32482	YA197	N200WN	K[3]					
1656	32483	YM251	N203WN	K[3]					
1683	32484	YM257	N209WN	K[3]					
1708	32485	YM260	N212WN	K[3]					
1721	32486	YM262	N214WN	K[3]					
1723	32487	YM263	N215WN	K[3]					
1735	32488	YM264	N216WR	K[3]					
1741	32489	YM266	N218WN	K[3]					
1744	32490	YM267	N219WN	K[3]					
1756	32491	YM268	N220WN	K[3]					
1799	32492	YM271	N223WN	K[3]					
1801	32493	YM272	N224WN	K[3]					
1822	32494	YM274	N226WN	K[3]					

APPLICABLE CONFIGURATIONS
All

AIRPLANE CONFIGURATION (Continued)

LINE NUMBER	SERIAL NUMBER	VARIABLE NUMBER	REGISTRY NUMBER	CONFIGURATION					
1717	34217	YM261	N213WN	K[3]					
1737	34232	YM265	N217JC	K[3]					
1776	34259	YM269	N221WN	K[3]					
1780	34290	YM270	N222WN	K[3]					
1820	34333	YM273	N225WN	K[3]					
1831	34450	YM275	N227WN	K[3]					

CONFIGURATION QUALIFICATIONS

[1] Upon incorporation of Boeing Service Bulletin 737-31-1165 (Indicating and Recording System - Central Display System - Change Common Display System Software, Change the Fuel Quantity Indicating System, and Change Engines Operational Thrust).

[2] Upon incorporation of Boeing Service Bulletin 737-34-1595 (Navigation - Flight Management Computer System - Operational Program Configuration Software Change - Engine Operational Thrust Rating Change).

[3] Upon incorporation of Aviation Partners Boeing Supplemental Type Certificate ST00830SE (Winglets), dated July 30, 2004. This data is included for informational purposes only and will not be kept up to date. Refer to the STC for current data and revision level.

[4] Upon incorporation of Boeing Service Bulletin 737-34-1595 and Aviation Partners Boeing Supplemental Type Certificate ST00830SE.

[5] Upon incorporation of Boeing Service Bulletin 737-31-1165 and Aviation Partners Boeing Supplemental Type Certificate ST00830SE.

[6] Upon incorporation of Boeing Service Bulletin 737-71-1500 (Power Plant CFM56-3 - General - Change Operational Thrust from CFM56-7B22 to CFM56-7B24).

[7] Upon incorporation Aviation Partners Boeing Supplemental Type Certificate ST00830SE, and Boeing Service Bulletin 737-71-1500.

[8] Upon incorporation of Boeing Service Bulletin 737-31-1165, and Boeing Service Bulletin 737-71-1500.

[9] Upon incorporation of Boeing Service Bulletin 737-31-1165, Aviation Partners Boeing Supplemental Type Certificate ST00830SE, and Boeing Service Bulletin 737-71-1500.

[10] Upon incorporation of Boeing Service Bulletin 737-34-1595, and Boeing Service Bulletin 737-71-1500.

[11] Upon incorporation of Boeing Service Bulletin 737-34-1595, Aviation Partners Boeing Supplemental Type Certificate ST00830SE, and Boeing Service Bulletin 737-71-1500.

APPLICABLE CONFIGURATIONS
All

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS

CERTIFIED WEIGHT LIMITS - MTW 155000 LB (70306 KG)

The Maximum Certified Gross Weights and Center of Gravity Limits are shown graphically on pages 2 & 3. These Center of Gravity Limits are for taxi, takeoff, flight and landing unless otherwise specified, and are the absolute limits which must not be exceeded by the airplane center of gravity in any taxi, takeoff, flight, or landing configuration.

CERTIFIED GROSS WEIGHTS			
		LB	KG
Maximum Taxi Weight	(MTW)	155000	70306
Maximum Takeoff Weight	(MTOW)	154500	70080
Maximum Landing Weight	(MLW)	128000	58059
Maximum Zero Fuel Weight	(MZFW)	120500	54657
Minimum Flight Weight	(MFW)	77400	35108

LIMITATIONS

The following limitations must be met in order to use the certified gross weight and center of gravity limits:

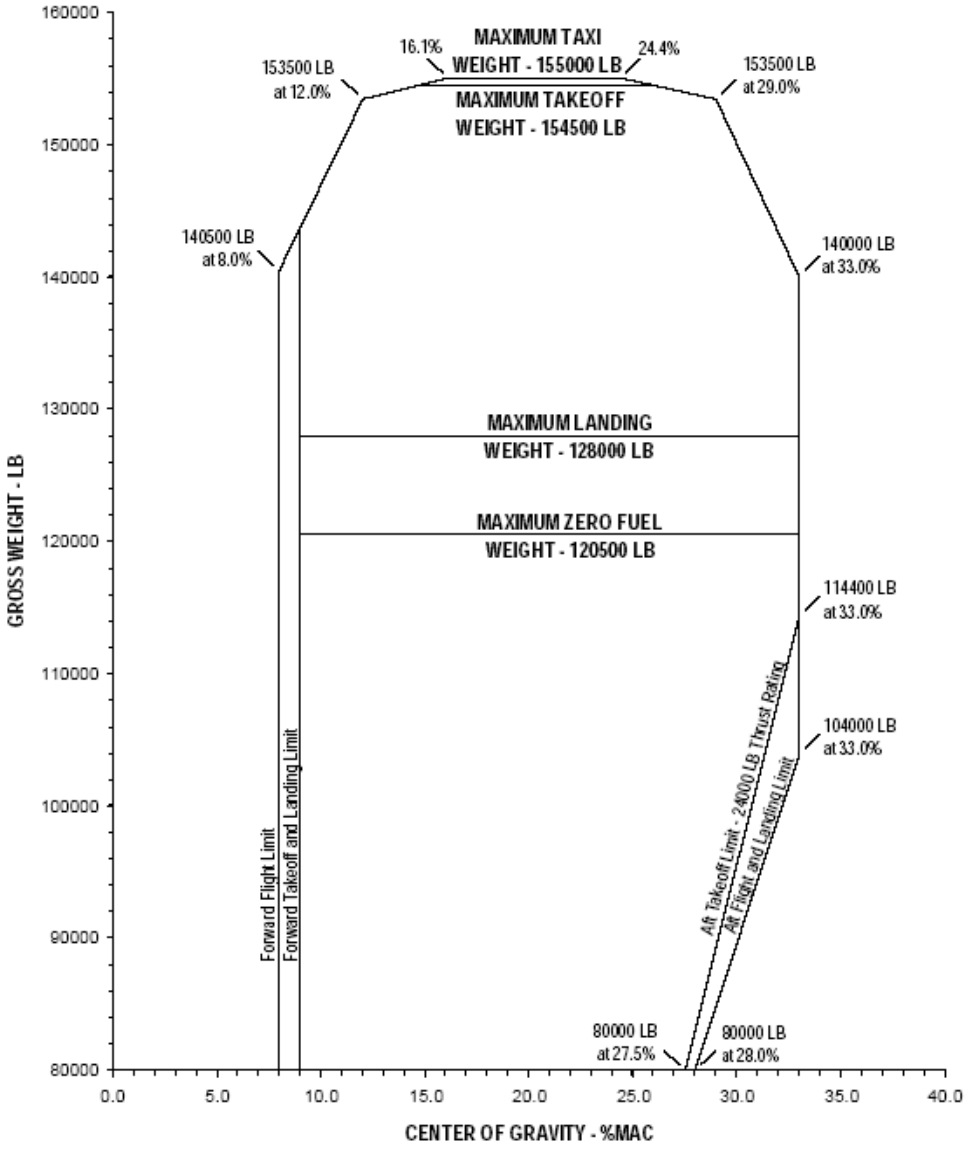
- Minimum Tire Size Required
  - Nose Gear - 27x7.75-15/12 Ply Rating or 27x7.75R15/12 Ply Rating
  - Main Gear - H43.5x16-21/26 Ply Rating
- Refer to the Airplane Maintenance Manual Section 12-15-51 for minimum tire pressure requirements.

APPLICABLE CONFIGURATIONS
A, B, G, K

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 155000 LB, MLW 128000 LB, MZFW 120500 LB

The following diagram represents the certified Center of Gravity Limits in English units:



WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
A, B, G, K

FUEL TANK QUANTITIES AND BALANCE ARMS

COMBINED MAIN TANKS 1 AND 2 IN U.S. GALLONS

The following table provides usable, gauged fuel data in U.S. gallons. For each of the volumes listed, the volume is split equally between Main Tank 1 and Main Tank 2 (for example, the 100 gallon entry represents 50 gallons in Main Tank 1 and 50 gallons in Main Tank 2, each at B.A. 656.8).

U.S. GALLONS

COMBINED MAIN TANKS 1 & 2	
VOLUME U.S. GAL.	B.A. IN.
100	656.8
200	656.6
300	656.9
400	657.7
500	658.5
600	659.4
700	660.2
800	661.1
900	662.0
1000	663.0
1100	663.9
1200	665.2
1300	666.9
1400	668.5
1500	670.4

COMBINED MAIN TANKS 1 & 2	
VOLUME U.S. GAL.	B.A. IN.
1600	672.3
1700	674.5
1800	676.8
1900	679.3
2000	681.8
2100	684.6
2200	687.5
2300	690.6
2400	693.8
2500	697.3
2576	700.2

APPLICABLE CONFIGURATIONS
All

FUEL TANK QUANTITIES AND BALANCE ARMS

CENTER TANK IN U.S. GALLONS

The following table provides usable, gauged fuel data in U.S. gallons.

U.S. GALLONS

CENTER TANK	
VOLUME U.S. GAL.	B.A. IN.
100	610.1
200	609.7
300	608.7
400	607.3
500	606.3
600	605.7
700	605.2
800	605.0
900	604.8
1000	604.8
1100	604.7
1200	604.7
1300	604.8
1400	604.8
1500	604.9
1600	605.0
1700	605.2
1800	605.3
1900	605.4
2000	605.6
2100	605.7
2200	605.8
2300	605.9
2400	606.1
2500	606.2

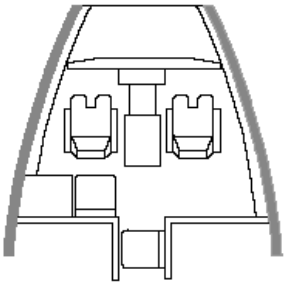
CENTER TANK	
VOLUME U.S. GAL	B.A. IN.
2600	606.3
2700	606.4
2800	606.4
2900	606.5
3000	606.6
3100	606.7
3200	606.7
3300	606.8
3400	606.8
3500	606.8
3600	606.7
3700	606.6
3800	606.5
3900	606.3
4000	606.2
4100	605.9
4200	605.7
4299	605.4

APPLICABLE CONFIGURATIONS
All

INTERIOR ARRANGEMENT - MAIN DECK

FLIGHT DECK

The flight crew balance arms are defined as 7 IN. in front of the Seat Reference Point (SRP). The SRP is defined as the intersection of the seat bottom and the seat back. The crew locations represent the crew seated at takeoff positions.



FLIGHT CREW (TWO OBSERVERS)	
LOCATION	B.A. IN.
Captain	150
First Officer	150
First Observer	185
Second Observer	178

APPLICABLE CONFIGURATIONS
Refer to the Interior Effectivity section of this manual to correlate certified Passenger Arrangements with specific aircraft serial numbers.

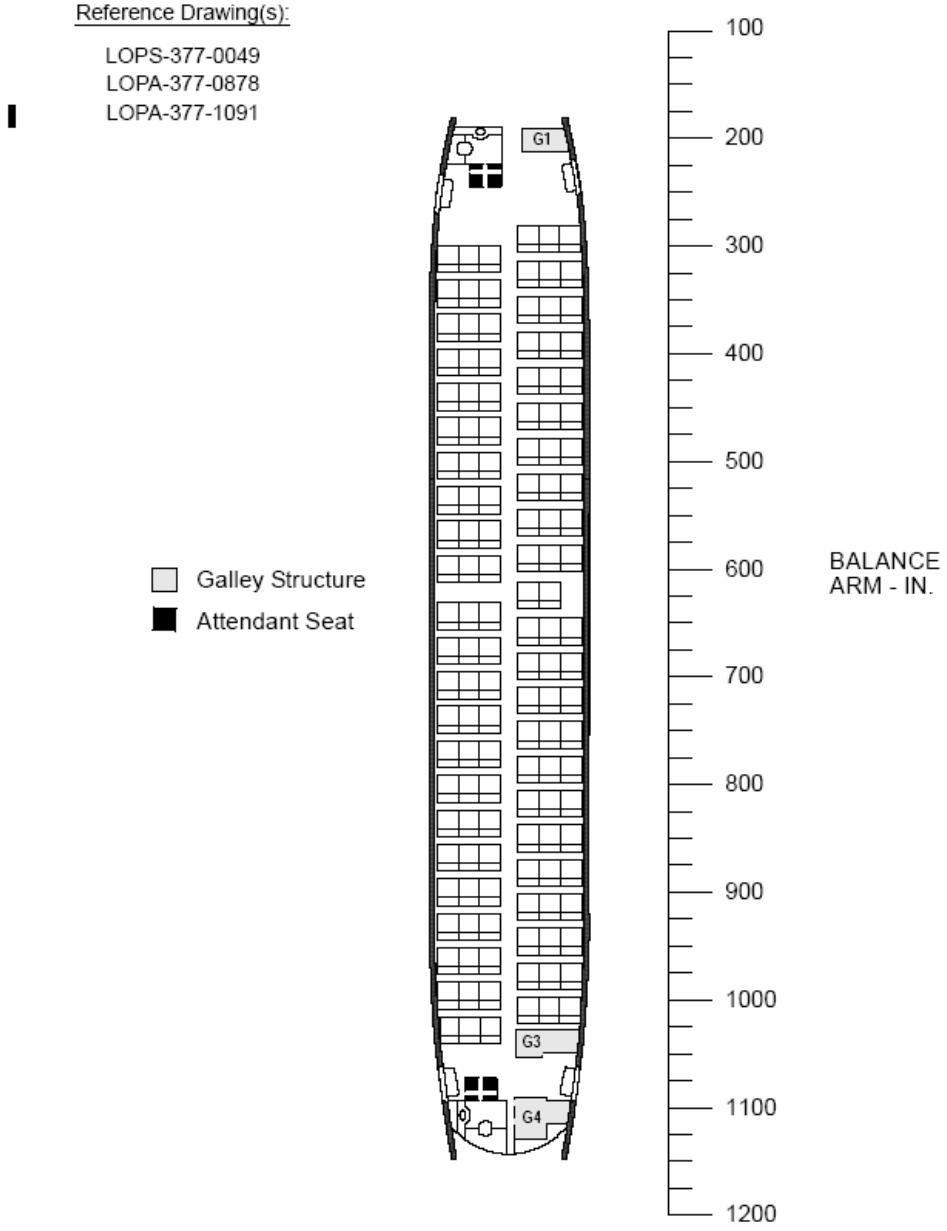
INTERIOR ARRANGEMENT - MAIN DECK (Continued)

MAIN CABIN - 137Y ARRANGEMENT

The main cabin 137Y arrangement shown below is the basis for the subsequent passenger and cabin crew center of gravity data, and the maximum allowable galley loads data.

Reference Drawing(s):

LOPS-377-0049
LOPA-377-0878
LOPA-377-1091



APPLICABLE CONFIGURATIONS
Refer to the Interior Effectivity section of this manual to correlate certified Passenger Arrangements with specific aircraft serial numbers.

INTERIOR ARRANGEMENT - MAIN DECK (Continued)

Passenger Locations

The center of gravity of each passenger location for the main cabin arrangement on page 2 is listed in the following table. The class designations are as follows: First Class (F), Business Class (C) and Tourist Class (Y). Unless otherwise noted, the passenger balance arms are defined as 8 IN. behind the forward seat pin, relative to the seat. The balance arms represent the passengers seated in an upright position.

CLASS	ROW	PASSENGERS			
		LEFT		RIGHT	
		NO.	B.A. IN.	NO.	B.A. IN.
Y	1	3	310	3	291
	2	3	342	3	324
	3	3	374	3	357
	4	3	406	3	390
	5	3	438	3	423
	6	3	470	3	456
	7	3	502	3	489
	8	3	534	3	522
	9	3	566	3	555
	10	3	598	3	588
	11	3	642	2	622
	12	3	674	3	656
	13	3	706	3	688
	14	3	738	3	720
	15	3	770	3	752
	16	3	802	3	784
	17	3	834	3	816
	18	3	866	3	848
	19	3	898	3	880
	20	3	930	3	912
	21	3	962	3	944
	22	3	994	3	976
	23	3	1026	3	1008

Cabin Crew Locations

The cabin crew balance arms are defined as 7 IN. in front of the Seat Reference Point (SRP). The SRP is defined as the intersection of the seat bottom and the seat back. The cabin crew locations represent the crew seated at takeoff positions for the main cabin arrangement shown on page 2.

CABIN CREW			
GENERAL LOCATION	NUMBER OF ATTENDANTS		B.A. IN.
	LEFT	RIGHT	
Fwd Entry Door	2		234
Aft Entry Door	2		1083

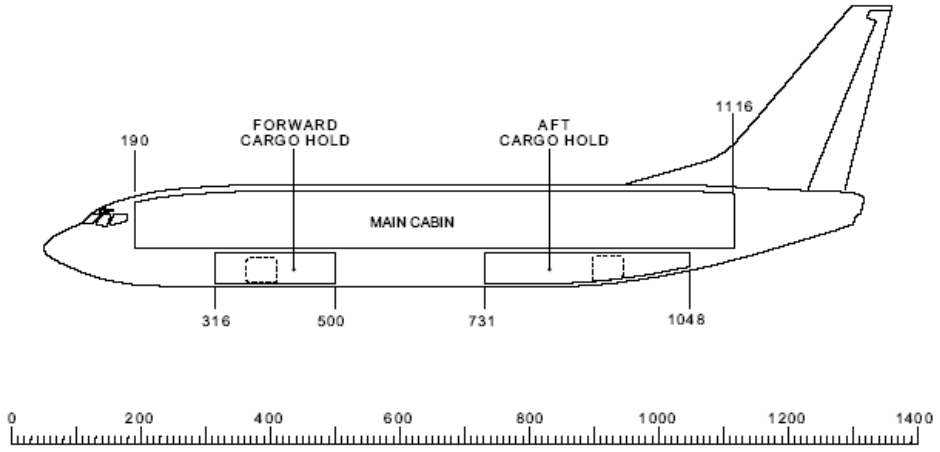
APPLICABLE CONFIGURATIONS
Refer to the Interior Effectivity section of this manual to correlate certified Passenger Arrangements with specific aircraft serial numbers.

CARGO COMPARTMENTS - LOAD LIMITS

MAXIMUM ALLOWABLE WEIGHTS

This section provides main deck and lower deck cargo compartment loading. These values are the maximum allowable weights that can be sustained by the basic monocoque structure.

The following illustration shows the configuration of the cargo compartments. Both the forward and aft cargo compartments use bulk loading at 12 LB/CU FT (5.4 KG/CU FT), and have the cargo door net installed.



Three basic structural limitations that must be observed when loading payload are compartment, linear loading, and floor loading limitations. Maximum allowable compartment weights, and maximum allowable linear and floor loading are provided in the following table:

MAXIMUM ALLOWABLE WEIGHT						
COMPARTMENT	TOTAL WEIGHT		FLOOR LOADING			
	LB	KG	LB/IN.	KG/IN.	LB/SQ FT	KG/SQ FT
Main Cabin			41.4[a]	18.8[a]	100.0	45.3
Forward Cargo Hold	4424[b]	2006[b]				
B.A. 316 to B.A. 358	1218	552	29.0	13.1	150.0	68.0
B.A. 358 to B.A. 415	741	336	13.0	5.8	150.0	68.0
B.A. 415 to B.A. 500	2465[b]	1118[b]	29.0[b]	13.1[b]	150.0	68.0
Aft Cargo Hold	6998[b]	3174[b]				
B.A. 731 to B.A. 892	5313[b]	2409[b]	33.0[b]	14.9[b]	150.0	68.0
B.A. 892 to B.A. 949	798	361	14.0	6.3	150.0	68.0
B.A. 949 to B.A. 1048	887	402	9.0	4.0	150.0	68.0

[a] The main cabin floor loading includes the weight of passengers, passenger seats, and passenger carry-on baggage stowed under the seats.

[b] Weights will change if a STC cargo loading system is installed. See STC holder for data.

APPLICABLE CONFIGURATIONS
B, D, E, F, J, K

Attachment 7: Flight 1248 ACARS Messages

DATE_TIME	MESSAGE_TYPE	MESSAGE_TEXT	DEPARTURE	DESTINATIO
2005/12/08 20:14:45	In Report	┌QU DALACWN .DDLXCXA 082014 ┐M24 FI WN1546/AN N471WN DT DDL BWI 082014 M63A - INN01 SAN,BWI,2014, 7.4 └	KSAN,SAN	KBWI,BWI
2005/12/08 20:26:15	Weather Request	┌QU DALACWN .DDLXCXA 082026 ┐M31 FI WN0/AN N471WN DT DDL BWI 082026 M66A - WXR03 BWI,A000000 └	KSAN,SAN	KBWI,BWI

2005/12/08 20:26:15 D-ATIS Report Uplink KSAN,SAN KBWI,BWI

┌QU DDLXCXA
.DALACWN 082026
┐M41
AN N471WN/FI WN0
- WRD01, BWI D-ATIS E
BWI ATIS INFO E 1954Z.
00000KT 10SM BKN160
BKN250 00/M12 A3061
(THREE ZERO SIX ONE).
ARR ACFT EXP VISUAL
APCH RWY 33L, RWY 33R.
DEPG RWYS 33R, 28.
SIMUL APCHS ARE BEING
CONDUCTED TO PARL RWYS.
NOTAMS... RWY 22 CLSD.
TWY R CLSD BTN RWY 33L
AND TWY P. TEMPORARY
CRANE 308 MSL 1.29 NM
SE OF RWY 33L. BIRD
ACTIVITY VICINITY ARPT.
USE CAUTION WHILE
TAXIING NEAR THE
INTERSECTION OF TWYS E
AND P, DUE TO THE CLOSE
PROXIMITY OF RWY 10/28.
ALL TURBOJET ACFT ON
VISUAL APPROACH ARE
EXPECTED TO. MAINTAIN
3000 OR ABOVE UNTIL 10
DME FROM BALTIMORE.
...ADVS you have INFO

2005/12/08 20:40:02 Weather Request

┌QU DALACWN
.DDLXCXA 082039
┐M31
FI WN1248/AN N471WN
DT DDL BWI 082039 M70A
- WXR03
MDW,A000000
└

2005/12/08 20:40:02 Out.Datis Weather Report Uplink

┌QU DDLXCXA
.DALACWN 082040
┐M41
AN N471WN/FI WN1248
- WRD01, MDW D-ATIS K
MDW ATIS INFO K 2007Z
Special. 09009KT 1/2SM
SN BKN007 OVC019
M04/M09 A3026 (THREE
ZERO TWO SIX). ILS Rwy
4R Apch in use. Lndg
and depg rwys 4. Also
depg rwy 13C. All Fixed
wing departures ctc cd
on 121.85. VFR
departures indc typ,
fld lctn, and reqstd
hdg. READBACK ALL RWY
HOLD SHORT
INSTRUCTIONS. ...ADVS
you have INFO K.
└

2005/12/08 21:00:06 Weather Request

┌QU DALACWN
.DDLXCXA 082100
┐M31
FI WN1248/AN N471WN
DT DDL BWI 082100 M73A
- WXR03
MDW,A000000
└

2005/12/08 21:00:06 D-ATIS Report Uplink

┌QU DDLXCXA
.DALACWN 082100
┐M41
AN N471WN/FI WN1248
- WRD01, MDW D-ATIS M
MDW ATIS INFO M 2053Z.
08008KT 1/4SM SN FZFG
VV002 M05/M07 A3021
(THREE ZERO TWO ONE).
ILS Rwy 31C Apch in
use. Lndg and depg rwys
31. Also depg rwy 4R.
All Fixed wing
departures ctc cd on
121.85. VFR departures
indc typ, fld lctn, and
reqstd hdg. READBACK
ALL RWY HOLD SHORT
INSTRUCTIONS. ...ADVS
you have INFO M.
└

2005/12/08 21:15:01 Weather Request

┌QU DALACWN
.DDLXCXA 082114
┐M31
FI WN1248/AN N471WN
DT DDL BWI 082114 M76A
- WXR03
MDW,A000000
└

2005/12/08 21:15:01 D-ATIS Report Uplink

┌QU DDLXCXA
.DALACWN 082115
┐M41
AN N471WN/FI WN1248
- WRD01, MDW D-ATIS M
MDW ATIS INFO M 2053Z.
08008KT 1/4SM SN FZFG
VV002 M05/M07 A3021
(THREE ZERO TWO ONE).
ILS Rwy 31C Apch in
use. Lndg and depg rwys
31. Also depg rwy 4R.
All Fixed wing
departures ctc cd on
121.85. VFR departures
indc typ, fld lctn, and
reqstd hdg. READBACK
ALL RWY HOLD SHORT
INSTRUCTIONS. ...ADVS
you have INFO M.
└

2005/12/08 21:20:36 Weather Request

┌QU DALACWN
.DDLXCXA 082120
┐M31
FI WN1248/AN N471WN
DT DDL BWI 082120 M79A
- WXR03
BWI,D000000
└

2005/12/08 21:20:36 D-ATIS Report Uplink

┌QU DDLXCXA
.DALACWN 082120
┐M41
AN N471WN/FI WN1248
- WRD01, BWI D-ATIS G
BWI ATIS INFO G 2054Z.
10003KT 10SM FEW120
BKN160 BKN250 00/M12
A3058 (THREE ZERO FIVE
EIGHT). ARR ACFT EXP
VISUAL APCH RWY 10, RWY
15L. DEPG RWYS 15R,
15L. SIMUL APCHS ARE
BEING CONDUCTED TO
CONVERGING RWYS.
NOTAMS... RWY 22 CLSD.
TWY R CLSD BTN RWY 33L
AND TWY P. TEMPORARY
CRANE 308 MSL 1.29 NM
SE OF RWY 33L. BIRD
ACTIVITY VICINITY ARPT.
USE CAUTION WHILE
TAXIING NEAR THE
INTERSECTION OF TWYS E
AND P, DUE TO THE CLOSE
PROXIMITY OF RWY 10/28.
ALL TURBOJET ACFT ON
VISUAL APPROACH ARE
EXPECTED TO. MAINTAIN
3000 OR ABOVE UNTIL 10
DME FROM BALTIMORE.

2005/12/08 21:39:15 Weather Request

┌QU DALACWN
.DDLXCXA 082139
┐M31
FI WN1248/AN N471WN
DT DDL BWI 082139 M83A
- WXR03
MDW,A000000
└

2005/12/08 21:39:15 D-ATIS Report Uplink

┌QU DDLXCXA
.DALACWN 082139
┐M41
AN N471WN/FI WN1248
- WRD01, MDW D-ATIS N
MDW ATIS INFO N 2053Z.
08008KT 1/4SM SN FZFG
VV002 M05/M07 A3021
(THREE ZERO TWO ONE).
ILS Rwy 31C Apch in
use. Lndg and depg rwys
31. Also depg rwy 4R.
ALL RUNWAYS CLOSED
EXCEPT FOUR RIGHT AND
THREE ONE CENTER. All
Fixed wing departures
ctc cd on 121.85. VFR
departures indc typ,
fld lctn, and reqstd
hdg. READBACK ALL RWY
HOLD SHORT
INSTRUCTIONS. ...ADVS
you have INFO N.
└

2005/12/08 21:49:39 Weather Request

┌QU DALACWN
.DDLXCXA 082149
┐M31
FI WN1248/AN N471WN
DT DDL BWI 082149 M86A
- WXR03
MDW,A000000
└

2005/12/08 21:49:39 D-ATIS Report Uplink

┌QU DDLXCXA
.DALACWN 082149
┐M41
AN N471WN/FI WN1248
- WRD01, MDW D-ATIS N
MDW ATIS INFO N 2053Z.
08008KT 1/4SM SN FZFG
VV002 M05/M07 A3021
(THREE ZERO TWO ONE).
ILS Rwy 31C Apch in
use. Lndg and depg rwys
31. Also depg rwy 4R.
ALL RUNWAYS CLOSED
EXCEPT FOUR RIGHT AND
THREE ONE CENTER. All
Fixed wing departures
ctc cd on 121.85. VFR
departures indc typ,
fld lctn, and reqstd
hdg. READBACK ALL RWY
HOLD SHORT
INSTRUCTIONS. ...ADVS
you have INFO N.
└

2005/12/08 21:55:20 Weather Request

┌QU DALACWN
.DDLXCXA 082155
┐M31
FI WN1248/AN N471WN
DT DDL BWI 082155 M89A
- WXR03
IND,A000000
└

2005/12/08 21:55:20 Out.Datis Weather Report Uplink

┌QU DDLXCXA
.DALACWN 082155
┐M41
AN N471WN/FI WN1248
- WRD01, IND D-ATIS X
IND ATIS INFO X 2129Z
Special. 09012KT 1/4SM
+SN FZFG VV003 M03/M04
A3012 (THREE ZERO ONE
TWO). ILS RWY 5L APCH
IN USE. NOTAMS... RWYS
23L AND 5R CLSD, RWYS
14 AND 32 CLSD. BA
ADZYS in EFCT. HIWAS.
IND ARPT DEICING PLAN
IN PROGRESS. ...ADVS
you have INFO X.
└

2005/12/08 22:02:07 Weather Request

┌QU DALACWN
.DDLXCXA 082202
┐M31
FI WN1248/AN N471WN
DT DDL BWI 082202 M92A
- WXR03
MDW,A000000
└

2005/12/08 22:02:08 D-ATIS Report Uplink

┌QU DDLXCXA
.DALACWN 082202
┐M41
AN N471WN/FI WN1248
- WRD01, MDW D-ATIS O
MDW ATIS INFO O 2153Z.
08011KT 1/2SM SN FZFG
VV003 M04/M06 A3016
(THREE ZERO ONE SIX).
ILS Rwy 31C Apch in
use. Lndg and depg rwys
31. Also depg rwy 4R.
ALL RUNWAYS CLOSED
EXCEPT FOUR RIGHT AND
THREE ONE CENTER. All
Fixed wing departures
ctc cd on 121.85. VFR
departures indc typ,
fld lctn, and reqstd
hdg. READBACK ALL RWY
HOLD SHORT
INSTRUCTIONS. ...ADVS
you have INFO O.
└

2005/12/08 22:02:15 Weather Request

┌QU DALACWN
.DDLXCXA 082202
┐M31
FI WN1248/AN N471WN
DT DDL BWI 082202 M95A
- WXR03
BWI,D000000
└

2005/12/08 22:02:16 D-ATIS Report Uplink

┌QU DDLXCXA
.DALACWN 082202
┐M41
AN N471WN/FI WN1248
- WRD01, BWI D-ATIS H
BWI ATIS INFO H 2154Z.
13006KT 10SM FEW120
BKN150 OVC250 M02/M11
A3057 (THREE ZERO FIVE
SEVEN). ARR ACFT EXP
VISUAL APCH RWY 10, RWY
15L. DEPG RWYS 15R,
15L. SIMUL APCHS ARE
BEING CONDUCTED TO
CONVERGING RWYS.
NOTAMS... RWY 22 CLSD.
TWY R CLSD BTN RWY 33L
AND TWY P. TEMPORARY
CRANE 308 MSL 1.29 NM
SE OF RWY 33L. BIRD
ACTIVITY VICINITY ARPT.
USE CAUTION WHILE
TAXIING NEAR THE
INTERSECTION OF TWYS E
AND P, DUE TO THE CLOSE
PROXIMITY OF RWY 10/28.
ALL TURBOJET ACFT ON
VISUAL APPROACH ARE
EXPECTED TO. MAINTAIN
3000 OR ABOVE UNTIL 10
DME FROM BALTIMORE.

2005/12/08 22:02:23 Out.Dispatch to Pilot FreeText

┌QU DDLXCXA
.DALACWN 082202
┐M40
AN N471WN/FI WN1248
- FTX01,DISPATCH MSG
LATEST
31C BRAF
RVR 4500
└

2005/12/08 22:49:35 Out Report 02 KBWI,BWI KMDW,MDW

```
┌QU DALACWN
.DDLXCXA 082249
┐M21
FI WN1248/AN N471WN
DT DDL BWI 082249 M01A
- OUT02
BWI,MDW,2249,24.0,16.6,2248
└
```

2005/12/08 22:54:05 APU Performance KBWI,BWI KMDW,MDW

```
┌QU DALACWN
.DDLXCXA 082253
┐DFD
FI WN1248/AN N471WN
DT DDL BWI 082253 D07A
- 74901,471,B737-700,051208,WN1248,BWI,MDW,1859,SW7028
22.53.47,TA,3533,-0446,045.0,.150,031.3,031.3,N3910.6,W07640.3,129640
00933,02012,06725
22.50.50,0455,099.8,1.01,-0448,000.5,266,078,00014,2A92B,00000,00000
22.50.32,0465,099.8,0.89,-0447,000.3,266,078,0001E,2A925,00000,00000
22.53.47,0326,099.8,1.09,-0446,031.3,266,077,XXXXX,2A018,00000,00000
:

└
```

2005/12/08 22:54:25 Weather Request KBWI,BWI KMDW,MDW

```
┌QU DALACWN
.DDLXCXA 082254
┐M31
FI WN1248/AN N471WN
DT DDL BWI 082254 M02A
- WXR03
MDW,A000000
└
```

2005/12/08 22:54:26 D-ATIS Report Uplink KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 082254
┐M41
AN N471WN/FI WN1248
- WRD01, MDW D-ATIS P
MDW ATIS INFO P 2253Z.
09012KT 3/4SM -SN BR
BKN004 OVC009 M03/M05
A3012 (THREE ZERO ONE
TWO). ILS Rwy 31C Apch
in use. Lndg and depg
rwys 31. Also depg rwy
4R. ALL RUNWAYS CLOSED
EXCEPT FOUR RIGHT AND
THREE ONE CENTER. All
Fixed wing departures
ctc cd on 121.85. VFR
departures indc typ,
fld lctn, and reqstd
hdg. READBACK ALL RWY
HOLD SHORT
INSTRUCTIONS. ...ADVS
you have INFO P.
└

2005/12/08 22:55:41 Weather Request KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 082255
┐M31
FI WN1248/AN N471WN
DT DDL BWI 082255 M05A
- WXR03
MDW,00000F0
└

2005/12/08 22:55:41 Out.Field Condition Report KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 082255
┐M40
AN N471WN/FI WN1248
- WFC01,MDW FIELD CON
MDW
TAXIWAY 2240Z
BRAK: WET-FAIR
RMKS: FLIGHT 1901
WN RAMP AREA 2240Z
BRAK: WET-FAIR
RMKS: FLIGHT 1901
31C 2240Z
CMNT: WET SNOW
CLTR: NO CLUTTER
BRAK: WET-FAIR
RMKS: FLIGHT 1901 PER FLIGHT FAIR TO POOR.

└

2005/12/08 22:58:04 Taxi Start Report KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 082258
┐M26
FI WN1248/AN N471WN
DT DDL BWI 082258 M08A
- TXI01
BWI,MDW,2257,23.8
└

2005/12/08 22:58:47 Off Report KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 082258
┐M22
FI WN1248/AN N471WN
DT DDL BWI 082258 M09A
- OFF01
BWI,MDW,2258,23.9
└

2005/12/08 23:00:10 Engine Takeoff KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 082300
┐DFD
FI WN1248/AN N471WN
DT DDL BWI 082300 D08A
- 74302,471,B737-700,051208,WN1248,BWI,MDW,1859,SW7028
22.59.54,CL,3899,01956,201.5,.315,-06.1,-00.9,N3907.8,W07640.7,130096
2384,000.0
089.64,094.0,727.6,8023,071.4,11.4,56,060,183,07.24,087.3,000.4
089.89,094.2,722.6,8055,071.8,12.4,58,061,195,07.23,091.1,000.3
1.24,1.38,0.01,0.03,347,006,0335.3,000.0,018CE,00000,00201
0.10,0.14,0.01,0.05,011,089,0340.3,000.0,018CE,00000,00201
1100000011
OPEN,NORM,CLSD,ON-,OFF,OFF
OPEN,NORM,ON-,OFF
:

└

2005/12/08 23:02:33 Climb Out Notification KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 082302
┐M32
FI WN1248/AN N471WN
DT DDL BWI 082302 M10A
- CLB01
BWI,MDW,N39.1954,W 76.892
└

2005/12/08 23:06:37 Turbulence Summary KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 082306
┐DFD
FI WN1248/AN N471WN
DT DDL BWI 082306 D09A
- 05201,471,B737-700,051208,WN1248,BWI,MDW,1859,SW7028
23.05.38,CR,4243,16446,324.3,.657,-15.8,006.3,N3910.3,W07712.9,128920
001.41,001,4100,FLAPS-UP
23.05.28,16402,325.8,.659,01.06,00.98,00,00000000,00000000,00000000
23.05.29,16404,323.8,.655,01.02,00.97,00,00000000,00000000,00000000
23.05.30,16402,323.1,.654,01.00,00.92,00,00000000,00000000,00000000
23.05.31,16405,324.7,.657,01.01,00.97,00,00000000,00000000,00000000
23.05.32,16406,322.4,.652,01.06,01.03,00,00000000,00000000,00000000
23.05.33,16399,322.8,.652,01.13,01.05,00,00000000,00000000,00000000
23.05.34,16400,323.0,.653,01.14,01.07,00,00000000,00000000,00000000
23.05.35,16406,324.2,.656,01.19,01.09,00,00000000,00000000,00000000
23.05.36,16412,324.4,.656,01.15,01.03,00,00000000,00000000,00000000
23.05.37,16427,322.1,.652,01.20,01.05,00,00000000,00000000,00000000
23.05.38,16446,324.3,.657,01.36,01.05,00,00000000,00000000,00000000
23.05.39,16463,322.9,.654,01.16,01.06,00,00000000,00000000,00000000

2005/12/08 23:31:06 Weather Request KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 082331
┐M31
FI WN1248/AN N471WN
DT DDL PIT 082331 M12A
- WXR03
SLC,A000000
└

2005/12/08 23:31:08 D-ATIS Report Uplink KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 082331
┐M41
AN N471WN/FI WN1248
- WRD01, SLC D-ATIS R
SLC ATIS INFO R 2256Z.
35005KT 10SM FEW150
SCT200 M04/M13 A3034
(THREE ZERO THREE
FOUR). PARL ILS RY 34L,
RY 34R, ILS RY 35, OR
VISUAL APCHs IN USE.
NOTICES TO AIRMEN. BIRD
ACTIVITY. HAZD WX FOR
SLC AREA. CAUTION ALL
ACFT. THE SLC9
DEPARTURE IS A RADAR
VECTOR DEPARTURE.
EXPECT VECTORS ON
COURSE, WITH DEP
CONTROL. ...ADVS you
have INFO R.
└

2005/12/08 23:33:06 Weather Request KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 082333
┐M31
FI WN1248/AN N471WN
DT DDL PIT 082333 M15A
- WXR03
MDW,A000000
└

2005/12/08 23:33:07 D-ATIS Report Uplink KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 082333
┐M41
AN N471WN/FI WN1248
- WRD01, MDW D-ATIS R
MDW ATIS INFO R 2316Z
Special. 08010KT 1/2SM
SN FZFG BKN002 OVC009
M03/M05 A3011 (THREE
ZERO ONE ONE). ILS Rwy
31C Apch in use. Lndg
and depg rwys 31. Also
depg rwy 4R. NOTAMS...
Rwy 4R, 22L Clsd, Rwy
31R, 13L Clsd, Rwy 4L,
22R Clsd, Rwy 31L, 13R
Clsd. All Fixed wing
departures ctc cd on
121.85. VFR departures
indc typ, fld lctn, and
reqstd hdg. READBACK
ALL RWY HOLD SHORT
INSTRUCTIONS. ...ADVS
you have INFO R.
└

2005/12/08 23:38:32 Weather Request KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 082338
┐M31
FI WN1248/AN N471WN
DT DDL PIT 082338 M18A
- WXR03
MDW,0M000F0
└

2005/12/08 23:38:32 Out.Field Condition Report KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 082338
┐M40
AN N471WN/FI WN1248
- WFC01,MDW FIELD CON
MDW
TAXIWAY 2330Z
BRAK: WET-POOR
RMKS: FLIGHT 1320
WN RAMP AREA 2330Z
BRAK: WET-POOR
RMKS: FLIGHT 1320
31C 2330Z
CMNT: WET SNOW
CLTR: NO CLUTTER
BRAK: WET-POOR
RMKS: FLIGHT 1320 BIS 1/4 MILE

└

2005/12/08 23:38:33 Out.Metar Weather Report Uplink KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 082338
┐M41
AN N471WN/FI WN1248
- WRM01,MDW METAR
SPECI KMDW 082316Z COR
08010KT 1/2SM SN FZFG
BKN002 OVC009 M03/M05
A3011 RMK AO2 R31C/3500
SNINCR 2/5 P0000
└

2005/12/08 23:43:08 ETA Report 02 KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 082343
┐M27
FI WN1248/AN N471WN
DT DDL PIT 082343 M22A
- ETA02
BWI,MDW,0050,18.4,N39.3855,W 81.300
└

2005/12/08 23:46:10	Freetext Downlink		KBWI,BWI	KMDW,MDW

┌QU DALACWN
.DDLXCXA 082346
┐M30
FI WN1248/AN N471WN
DT DDL PIT 082346 M23A
- FTD01
BWI,MDW
OK WHAT IS MDW STATUS
FOR 0050 ETA
└

2005/12/08 23:47:16	Out.Dispatch to Pilot FreeText		KBWI,BWI	KMDW,MDW

┌QU DDLXCXA
.DALACWN 082347
┐M40
AN N471WN/FI WN1248
- FTX01,DISPATCH MSG
NOT GOOD...BACK TO YOU IN A MIN...
└

2005/12/08 23:49:21	Weather Request		KBWI,BWI	KMDW,MDW

┌QU DALACWN
.DDLXCXA 082349
┐M31
FI WN1248/AN N471WN
DT DDL PIT 082349 M25A
- WXR03
STL,A000000
└

2005/12/08 23:49:22 D-ATIS Report Uplink KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 082349
┐M41
AN N471WN/FI WN1248
- WRD01, STL D-ATIS Z
STL ATIS INFO Z 2251Z.
29014KT 5SM -SN BR
BKN023 BKN045 BKN250
M07/M11 A3025 (THREE
ZERO TWO FIVE). ILS RY
30R, ILS RY 24 APCH IN
USE, DEPG RY 30L.
NOTAMS... TWY T CLSD.
ACFT TAXI WITH
TRANSPONDER ON. BA
ADZYS in EFCT. Bird
Advisories in effect.
ALL AC USE EXTREME
CAUTION FOR IN
ADVERTANT ALIGNMENT TO
NEW RWY CONSTRUCTION
WEST OF AIRPORT. USE
CAUTION FOR PERSONNEL
AND EQUIP ADJ TO RWYS
AND TWYS. STL DEICING
PROCEDURE, ARE IN
EFFECT. ...ADVS you
have INFO Z.
┘

2005/12/08 23:50:18 Weather Request KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 082350
┐M31
FI WN1248/AN N471WN
DT DDL PIT 082350 M29A
- WXR03
MCI,A000000
┘

2005/12/08 23:50:18 D-ATIS Report Uplink KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 082350
┐M41
AN N471WN/FI WN1248
- WRD01, MCI D-ATIS U
MCI ATIS INFO U 2253Z.
28007KT 10SM CLR
M12/M17 A3036 (THREE
ZERO THREE SIX).
ARRIVALS EXPECT VISUAL
APCH Rwy 1R, 1L. SIMUL
APPROACHES IN USE.
NOTAMS... RWY 9, 27
CLSD. . TAXIWAY ECHO
CLOSED. TAXIWAY ALPHA
CLOSED. TAXIWAY JULIET
CLOSED. TAXIWAY ALPHA
TWO CLOSED. MEW
READINGS UNAVAILABLE.
SNOW REMOVAL IN
PROGRESS ON TAXIWAYS
AND RAMPS. BA ADZYS in
EFCT. MIGRATORY
WATERFOWL IN THE KANSAS
CITY AREA. ...ADVS you
have INFO U.
└

2005/12/08 23:53:28 Weather Request 03 KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 082353
┐M31
FI WN1248/AN N471WN
DT DDL PIT 082353 M33A
- WXR03
IND,A000000
└

2005/12/08 23:53:29 D-ATIS Report Uplink KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 082353
┐M41
AN N471WN/FI WN1248
- WRD01, IND D-ATIS F
IND ATIS INFO F 2344Z
Special. 14010KT 1/4SM
SN FZFG BKN004 OVC017
M03/M04 A3003 (THREE
ZERO ZERO THREE). ILS
RWY 5R APCH IN USE.
NOTAMS... RWYS 23R AND
5L CLSD, RWYS 14 AND 32
CLSD. BA ADZYS in EFCT.
HIWAS. IND ARPT DEICING
PLAN IN PROGRESS.
...ADVS you have INFO
F.
└

2005/12/08 23:54:46 Weather Request 03 KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 082354
┐M31
FI WN1248/AN N471WN
DT DDL PIT 082354 M36A
- WXR03
IND,00000F0
└

2005/12/08 23:54:46 Out.Field Condition Report KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 082354
┐M40
AN N471WN/FI WN1248
- WFC01,IND FIELD CON
IND
TAXIWAY 2011Z
BRAK: WET-GOOD
RMKS: ALL RWY'S TW'S T/O AND RAMPS ARE NOW 10% COVERED WITH
LIGHT DRY SNOW. FRICTION 80/80/80
WN RAMP AREA 2011Z
BRAK: WET-GOOD
RMKS: ALL RW'YS TWY'S T/O AND RAMPS ARE NOW 10% COVERED WITH
LIGHT DRY SNOW. FRICTION 80/80/80
05R 2011Z
CMNT: WET SNOW
CLTR: NO REPORT
BRAK: WET-GOOD
RMKS: ALL RWY'S TWY'S T/O AND RAMPS ARE NOW 10% COVERED WITH
LIGHT DRY SNOW. FRICTION 80/80/80
14 2011Z
CMNT: WET SNOW
CLTR: NO REPORT
BRAK: WET-GOOD
RMKS: ALL RWY'S TWYS T/O AND RAMPS ARE NOW 10% COVERED WITH
LIGHT DRY SNOW . FRICTION 80/80/80
23R 2011Z
CMNT: WET SNOW
CLTR: NO REPORT
BRAK: WET-GOOD
RMKS: ALL RWYS, TWY'S T/O AND RAMPS ARE NOW 10% COVERED WITH

2005/12/08 23:58:18 Weather Request KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 082358
┐M31
FI WN1248/AN N471WN
DT DDL PIT 082358 M41A
- WXR03
MDW,A000000
└

2005/12/08 23:58:18 D-ATIS Report Uplink KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 082358
┐M41
AN N471WN/FI WN1248
- WRD01, MDW D-ATIS S
MDW ATIS INFO S 2353Z.
10009KT 1/4SM SN FZFG
VV001 M03/M04 A3009
(THREE ZERO ZERO
NINER). ILS Rwy 31C
Apch in use. Lndg and
depg rwys 31. Also depg
rwy 4R. NOTAMS... Rwy
4R, 22L Clsd, Rwy 31R,
13L Clsd, Rwy 4L, 22R
Clsd, Rwy 31L, 13R
Clsd. All Fixed wing
departures ctc cd on
121.85. VFR departures
indc typ, fld lctn, and
reqstd hdg. READBACK
ALL RWY HOLD SHORT
INSTRUCTIONS. ...ADVS
you have INFO S.
└

2005/12/08 23:59:04 Weather Request 03 KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 082359
┐M31
FI WN1248/AN N471WN
DT DDL PIT 082359 M44A
- WXR03
MDW,00000F0
└

2005/12/08 23:59:04 Out.Field Condition Report KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 082359
┐M40
AN N471WN/FI WN1248
- WFC01,MDW FIELD CON
MDW
TAXIWAY 2330Z
BRAK: WET-POOR
RMKS: FLIGHT 1320
WN RAMP AREA 2330Z
BRAK: WET-POOR
RMKS: FLIGHT 1320
31C 2330Z
CMNT: WET SNOW
CLTR: NO CLUTTER
BRAK: WET-POOR
RMKS: FLIGHT 1320 BIS 1/4 MILE

└

2005/12/09 00:00:47 Out.Dispatch to Pilot FreeText KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 090000
┐M40
AN N471WN/FI WN1248
- FTX01,DISPATCH MSG
COMPANY REPORTS BRA FAIR AFTER PLOWING.
ALOHA. JJ
└

2005/12/09 00:01:31 Freetext Downlink KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 090001
┐M30
FI WN1248/AN N471WN
DT DDL PIT 090001 M48A
- FTD01
BWI,MDW
HOW BOUT RVR 31C
THX
└

2005/12/09 00:02:10 Out.Dispatch to Pilot FreeText KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 090002
┐M40
AN N471WN/FI WN1248
- FTX01,DISPATCH MSG
RIGHT NOW ITS UP AT 5500 BUT ITS FLUX PRETTY RAPIDLY...
└

2005/12/09 00:02:51 Freetext Downlink KBWI,BWI KMDW,MDW

```
┌QU DALACWN
.DDLXCXA 090002
┐M30
FI WN1248/AN N471WN
DT DDL PIT 090002 M50A
- FTD01
BWI,MDW
THX A BUNCH
└
```

2005/12/09 00:04:05 ETA Report 02 KBWI,BWI KMDW,MDW

```
┌QU DALACWN
.DDLXCXA 090004
┐M27
FI WN1248/AN N471WN
DT DDL PIT 090004 M51A
- ETA02
BWI,MDW,0049,16.4,N40.3583,W 83.613
└
```

2005/12/09 00:11:48 Weather Request KBWI,BWI KMDW,MDW

```
┌QU DALACWN
.DDLXCXA 090011
┐M31
FI WN1248/AN N471WN
DT DDL DAY 090011 M52A
- WXR03
MDW,000N000
└
```

2005/12/09 00:11:49 Out.Notam Weather Report Uplink KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 090011
┐M41
AN N471WN/FI WN1248
- WRN01,MDW NOTAM 1/1
MDW 12/042 MDW 13C
ILS MM DCMSND WEF
0412200901
MDW 12/017 MDW 4R/
22L CLSD
MDW 12/016 MDW 13R/
31L CLSD
MDW 12/015 MDW 13L/
31R CLSD
MDW 12/014 MDW 4L/
22R CLSD
MDW 12/013 MDW TMPA
SEE ATCCC MSG TIL
0512090359
MDW 12/008 MDW 31C
KEDZI NDB/ILS LO DCMSND
MDW 11/032 MDW TOWER
883 (289 AGL) 5.5 ESE
LGTS OTS (ASR
1063456)TIL 0512101500
└

2005/12/09 00:17:06 Out.Turbulence Plot Uplink KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 090017
┐M40
AN N471WN/FI WN1248
- TPU01,TP NE47 CODE3
TP NE47 090006Z
1.NY PA NJ OH IN WI SMI DTW EKY WKY WV VA
2.MSN PXV SIE MSS
LGT/MDT TURBC-CODE 3
44N089W 37N088W
39N073W 44N075W
ALTS 180 THRU 320
FEW REPTS HIT/MISS ABV
FL320 WORST TURB
MOSTLY BLO FL300
3.VALID 090006/090600Z
4.CANCEL NE46
5.COMMENT NONE
└

2005/12/09 00:24:35 Weather Request KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 090024
┐M31
FI WN1248/AN N471WN
DT DDL DAY 090024 M57A
- WXR03
MDW,A000000
└

2005/12/09 00:24:35 D-ATIS Report Uplink KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 090024
┐M41
AN N471WN/FI WN1248
- WRD01, MDW D-ATIS T
MDW ATIS INFO T 2353Z.
10009KT 1/4SM SN FZFG
VV001 M03/M04 A3009
(THREE ZERO ZERO NINER)
RMK AO2 SLP207
R31C/3000FT SNINCR 3/9
4/009 P0000 60000 11033
21056 56040. ILS Rwy
31C Apch in use. Lndg
and depg rwys 31. Also
depg rwy 4R. NOTAMS...
Rwy 4R, 22L Clsd, Rwy
31R, 13L Clsd, Rwy 4L,
22R Clsd, Rwy 31L, 13R
Clsd. All Fixed wing
departures ctc cd on
121.85. VFR departures
indc typ, fld lctn, and
reqstd hdg. READBACK
ALL RWY HOLD SHORT
INSTRUCTIONS. ...ADVS
you have INFO T.
└

2005/12/09 00:31:53 Turbulence Summary KBWI,BWI KMDW,MDW

```
┌QU DALACWN
.DDLXCXA 090031
┐DFD
FI WN1248/AN N471WN
DT DDL ORD 090031 D11A
-  05201,471,B737-700,051209,WN1248,BWI,MDW,1859,SW7028
00.30.55,DC,9355,14222,263.4,.516,-18.5,-05.0,N4131.1,W08610.6,120680
000.60,001,4100,FLAPS-UP
00.30.45,14576,264.1,.520,01.17,00.96,00,00000000,00000000,00000000
00.30.46,14545,265.1,.521,01.05,00.83,00,00000000,00000000,00000000
00.30.47,14519,258.8,.509,01.14,00.87,00,00000000,00000000,00000000
00.30.48,14480,261.0,.513,01.03,00.82,00,00000000,00000000,00000000
00.30.49,14441,265.9,.523,01.13,00.98,00,00000000,00000000,00000000
00.30.50,14402,265.9,.522,01.10,00.91,00,00000000,00000000,00000000
00.30.51,14374,262.9,.514,00.97,00.86,00,00000000,00000000,00000000
00.30.52,14339,266.7,.522,01.11,00.97,00,00000000,00000000,00000000
00.30.53,14302,265.8,.520,01.06,00.95,00,00000000,00000000,00000000
00.30.54,14270,266.3,.521,01.10,00.87,00,00000000,00000000,00000000
00.30.55,14222,263.4,.516,01.18,00.60,00,00000000,00000000,00000000
00.30.56,14195,270.3,.527,01.17,00.81,00,00000000,00000000,00000000
```

2005/12/09 00:32:07 In Range Report 02 KBWI,BWI KMDW,MDW

```
┌QU DALACWN
.DDLXCXA 090032
┐M27
FI WN1248/AN N471WN
DT DDL ORD 090032 M62A
-  INR02
BWI,MDW,0051,15.0,N41.4895,W 86.291
└
```

2005/12/09 00:37:31 Holding Report KBWI,BWI KMDW,MDW

```
┌QU DALACWN
.DDLXCXA 090037
┐M30
FI WN1248/AN N471WN
DT DDL ORD 090037 M63A
-  HLD01
LUCIT
14.7,0055,10000
PLOWING
└
```

2005/12/09 00:38:01 Out.Dispatch to Pilot FreeText KBWI,BWI KMDW,MDW

```
┌QU DDLXCXA
.DALACWN 090038
┐M40
AN N471WN/FI WN1248
-  FTX01,DISPATCH MSG
COPY...STANDBY...
└
```

2005/12/09 00:39:17 Weather Request KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 090039
┐M31
FI WN1248/AN N471WN
DT DDL ORD 090039 M65A
- WXR03
IND,A000000
└

2005/12/09 00:39:17 D-ATIS Report Uplink KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 090039
┐M41
AN N471WN/FI WN1248
- WRD01, IND D-ATIS G
IND ATIS INFO G 0002Z
Special. 14008KT 1/4SM
SN FZFG VV005 M03/M03
A3003 (THREE ZERO ZERO
THREE). ILS RWY 5R APCH
IN USE. NOTAMS... RWYS
23R AND 5L CLSD, RWYS
14 AND 32 CLSD. BA
ADZYS in EFCT. HIWAS.
IND ARPT DEICING PLAN
IN PROGRESS. ...ADVS
you have INFO G.
└

2005/12/09 00:39:57 Weather Request KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 090039
┐M31
FI WN1248/AN N471WN
DT DDL ORD 090039 M66A
- WXR03
IND,00T0000
└

2005/12/09 00:39:59 Out.TAF Weather Report Uplink KBWI,BWI KMDW,MDW

```
┌QU DDLXCXA
.DALACWN 090039
┐M41
AN N471WN/FI WN1248
-  WRT01,IND TAF
TAF KIND 082335Z 090024
10012KT 1 1/2SM -SN
SCT006 OVC015 TEMPO
0003 3/4SM -SN OVC006
   FM0300 25014KT 3SM
-SN OVC018
   FM0700 25015KT P6SM
BKN020
   FM1400 25010KT P6SM
BKN035
   FM2000 23007KT P6SM
SCT035
└
```

2005/12/09 00:40:31 Communication Service Message KBWI,BWI KMDW,MDW

```
┌QU DALACWN
.DDLXCXA 090040
┐SVC
-  UP INTERCEPT NO STATION TO                231

QU DDLXCXA
.DALACWN 090039
M41
AN N471WN/FI WN1248
-  WRD01, IND D-ATIS G
IND ATIS INFO G 0002Z
Special. 14008KT 1/4SM
SN FZFG VV005 M03/M03
A3003 (THREE ZERO ZERO
THREE). ILS RWY 5R APCH
IN USE. NOTAMS... RWYS
23R AND 5L CLSD, RWYS
14 AND 32 CLSD. BA
ADZYS in EFCT. HIWAS.
IND ARPT DEICING PLAN
IN PROGRESS. ...ADVS
you have INFO G.

ORDCV   1
└
```

2005/12/09 00:40:31 D-ATIS Report Uplink KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 090040
┐M41
AN N471WN/FI WN1248
- WRD01, IND D-ATIS G
IND ATIS INFO G 0002Z
Special. 14008KT 1/4SM
SN FZFG VV005 M03/M03
A3003 (THREE ZERO ZERO
THREE). ILS RWY 5R APCH
IN USE. NOTAMS... RWYS
23R AND 5L CLSD, RWYS
14 AND 32 CLSD. BA
ADZYS in EFCT. HIWAS.
IND ARPT DEICING PLAN
IN PROGRESS. ...ADVS
you have INFO G.
└

2005/12/09 00:42:09 Weather Request KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 090042
┐M31
FI WN1248/AN N471WN
DT DDL ORD 090042 M73A
- WXR03
STL,A000000
└

2005/12/09 00:42:09 D-ATIS Report Uplink KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 090042
┐M41
AN N471WN/FI WN1248
- WRD01, STL D-ATIS B
STL ATIS INFO B 0009Z
Special. 28017KT 9SM
SCT025 M08/M13 A3029
(THREE ZERO TWO NINER).
ILS RY 30R, ILS RY 24
APCH IN USE, DEPG RY
30L. NOTAMS... TWY T
CLSD. ACFT TAXI WITH
TRANSPONDER ON. BA
ADZYS in EFCT. Bird
Advisories in effect.
ALL AC USE EXTREME
CAUTION FOR IN
ADVERTANT ALIGNMENT TO
NEW RWY CONSTRUCTION
WEST OF AIRPORT. USE
CAUTION FOR PERSONNEL
AND EQUIP ADJ TO RWYS
AND TWYS. STL DEICING
PROCEDURE, ARE IN
EFFECT. ...ADVS you
have INFO B.
└

2005/12/09 00:44:24 Out.Dispatch Diversion Planning KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 090044
┐M40
AN N471WN/FI WN1248
- DVP01,DIVERT PLAN
MDW,STL,8.5,----,3.5,JJ,0045,ACARS ME AT 9.5
└

2005/12/09 00:45:32 Diversion Planning Response KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 090045
┐M30
FI WN1248/AN N471WN
DT DDL ORD 090045 M78A
- DVC01
MDW,STL,8.5,----, 3.5,JJ ,0045,ACARS ME AT 9.5,A
└

2005/12/09 00:45:50 Weather Request KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 090045
┐M31
FI WN1248/AN N471WN
DT DDL ORD 090045 M79A
- WXR03
DTW,A000000
└

2005/12/09 00:45:52 D-ATIS Report Uplink KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 090045
┐M41
AN N471WN/FI WN1248
- WRD01, DTW D-ATIS W
DTW ATIS INFO W 0035Z
Special. 07007KT 1
1/2SM -SN OVC014
M03/M07 A3022 (THREE
ZERO TWO TWO). SIMUL
ILS APCH IN USE RWY 4L
AND RWY 3R. DEPG RWY
4R, RWY 3L . NOTAMS...
RWY 27L, 9R CLSD, RWY
27R, 9L CLSD. LGT TO
MOD, RIME ICING
REPORTED IN THE DTW
AREA. BA ADZYS IN EFCT.
LCL DEICE PROC IN EFCT.
GATE HOLD PROC IN EFCT
FOR ATL, MDW, ORD, CVG.
...ADVS you have INFO
W.
└

2005/12/09 00:50:52 Engine Stable Cruise KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 090050
┐DFD
FI WN1248/AN N471WN
DT DDL ORD 090050 D12A
- 74102,471,B737-700,051208,WN1248,BWI,MDW,1859,SW7028
23.44.48,CR,6591,39001,244.3,.790,-60.8,-34.3,N3928.1,W08129.3,123971
5000,13.7
087.00,090.7,615.2,2356,0063,15.0,40,098,001.3
087.09,090.8,614.0,2362,0063,16.0,43,097,001.2
1.00,1.55,0.06,0.03,013,031,0107.4,-00.0,018CE,00000,00001
0.13,0.13,0.06,0.01,098,110,0108.5,-00.0,018CE,00000,00001
0000000000
OPEN,NORM,CLSD,ON-,OFF,OFF
OPEN,NORM,ON-,OFF
339.6,285.8,013.4,-060.7,000.116,00.024,00.992,00.480
-00.8,000.2,002.7,005.6,18240,23840,129560,00.8
002.3,-00.3,000.4,001.7,-00.6
002.3,000.8,000.7,-00.5
:

└

2005/12/09 00:52:48 D-ATIS Report Uplink KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 090052
┐M41
AN N471WN/FI WN1248
- WRD01, MDW D-ATIS U
MDW ATIS INFO U 0024Z
Special. 09011KT 3/4SM
-SN BR OVC003 M03/M04
A3007 (THREE ZERO ZERO
SEVEN). ILS Rwy 31C
Apch in use. Lndg and
depg rwys 31. Also depg
rwy 4R. NOTAMS... Rwy
31R, 13L Clsd, Rwy 4L,
22R Clsd, Rwy 31L, 13R
Clsd. All Fixed wing
departures ctc cd on
121.85. VFR departures
indc typ, fld lctn, and
reqstd hdg. READBACK
ALL RWY HOLD SHORT
INSTRUCTIONS. ...ADVS
you have INFO U.
└

2005/12/09 00:52:48	Weather Request 03		KBWI,BWI	KMDW,MDW

┌QU DALACWN
.DDLXCXA 090052
┐M31
FI WN1248/AN N471WN
DT DDL ORD 090052 M82A
- WXR03
MDW,A000000
└

2005/12/09 01:04:01	Weather Request		KBWI,BWI	KMDW,MDW

┌QU DALACWN
.DDLXCXA 090103
┐M31
FI WN1248/AN N471WN
DT DDL ORD 090103 M85A
- WXR03
MDW,A000000
└

2005/12/09 01:04:02	D-ATIS Report Uplink		KBWI,BWI	KMDW,MDW

┌QU DDLXCXA
.DALACWN 090104
┐M41
AN N471WN/FI WN1248
- WRD01, MDW D-ATIS V
MDW ATIS INFO V 0053Z.
10011KT 1/2SM SN FZFG
BKN004 OVC014 M03/M05
A3006 (THREE ZERO ZERO
SIX). ILS Rwy 31C Apch
in use. Lndg and depg
rwys 31. Also depg rwy
4R. NOTAMS... Rwy 31R,
13L Clsd, Rwy 4L, 22R
Clsd, Rwy 31L, 13R
Clsd. All Fixed wing
departures ctc cd on
121.85. VFR departures
indc typ, fld lctn, and
reqstd hdg. READBACK
ALL RWY HOLD SHORT
INSTRUCTIONS. ...ADVS
you have INFO V.
└

2005/12/09 01:23:31 Out.Dispatch to Pilot FreeText KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 090123
┐M40
AN N471WN/FI WN1248
- FTX01,DISPATCH MSG
CAN WE HELP
└

2005/12/09 01:24:46 Communication Service Message KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 090124
┐SVC
- UP INTERCEPT NO STATION TO 231

QU DDLXCXA
.DALACWN 090123
M40
AN N471WN/FI WN1248
- FTX01,05QD-9W65XZ2-S
5W0ZL:ZX:F9

ORDCV 1
└

2005/12/09 01:24:46 Out.Dispatch to Pilot FreeText KBWI,BWI KMDW,MDW

┌QU DDLXCXA
.DALACWN 090124
┐M40
AN N471WN/FI WN1248
- FTX01,DISPATCH MSG
CAN WE HELP
└

2005/12/09 01:25:59 Communication Service Message KBWI,BWI KMDW,MDW

┌QU DALACWN
.DDLXCXA 090125
┐SVC
- UP INTERCEPT NO STATION TO 231

QU DDLXCXA
.DALACWN 090124
M40
AN N471WN/FI WN1248
- FTX01,03 KF9OX53M:FQ
5OUM0HM3HJ9

ORDCV 1
└

Attachment 8: Onboard Performance Computer Data

Contents of OPSSAVE.DAT file from N471WN Onboard Performance Computer

Timestamp of OPSSAVE.DAT is 12/8/05 at 7:59 PM
Corrected timestamp of file is 12/8/05 at 6:54 PM CST

```
Control Record:
 CTFUEL    = ______
 CAFUEL    = ______
 CTOGW     = 129000
 CTOCG     = 6.1
 CLMTOW    = ______
 CLGW      = 119700
 ATYPE     = B737X-24
 WBCODE    = 01
 CODE5(1)  =
 KPOINT    =    392
 IOPT      =      3
 IENTRY    =      0
 IERROR    =      0
 ILOOK     =      3
 IOPSYS    =      0
 KAPT      =    281 (MDW)
 ICURR     =      8
 KCURR     =  -1398
 MODE1     =      1
 IBUG      =      0
 ICOLOR    =      1
 IMATRX    =      0
 KTCG      =      0
 KZCG      =      0
 IHR       =     19
 IMN       =     59
 ISC       =     13
 IHS       =      0
 LCOLOR    =      T
 MATRIX    =      F
 WBFLG     =      T
 RECFLG    =      F     F     T     F
 RECWB     =      T
 DISFLG    =      F
 WBOFLG    =      F
 WBFAV     =      -.90000
 TMX       =   -999.00000
 ZCGMIN    =       .00000
 ZCGMAX    =       .00000
 ZCG       =       .00000
 TCGMIN    =       .00000
 TCGMAX    =       .00000
 TCG       =       .00000
 ERRVAL    =       .00000
 STAMP     = 758604.00000
 PALTAP    =    481.55100
 TMAXAP    =    127.78020
 PALT      =    482.00000
```

```
TDEGF     =     26.60000
TDEGC     =     -3.00000
RTOGW     =       .00000
FLPDEL    =    999.00000
RDMTOW    = 999999.00000
RAMTOW    = 999999.00000
TWMAX     =    -10.00000
CWMAX     =     10.00000

MEL Inputs:
IMEL(1) =    1   1   1   1   1   0   0   0   0   0   0   0   0   1

CDL Inputs:
IMSNG( 1) =    0   0   0   0   0   0   0   0   0   0
IMSNG(11) =    0   0   0   0   0   0   0   0   0   0
IMSNG(21) =    0   0   0   0   0   0   0   0   0   0
IMSNG(31) =    0   0   0   0   0   0   0   0   0   0
IMSNG(41) =    0   0   0   0   0   0   0   0   0   0
IMSNG(51) =    0   0   0   0   0   0   0   0   0   0
IMSNG(61) =    0   0   0   0   0   0   0   0   0   0
IMSNG(71) =    0   0   0   0   0   0   0   0   0   0
IMSNG(81) =    0   0   0   0   0   0   0   0   0   0
IMSNG(91) =    0   0   0   0   0   0   0   0   0   0
```

```
Takeoff Inputs:
CDUM6     = N471WN
RDUM      = 758604.00000
KAPTX(2)  =     295 (BWI)
KSRWY(3, 1)=  -1473 (04       )     KSRWY(3,21)=  -1446 (         )
KSRWY(3, 2)=  -1474 (10       )     KSRWY(3,22)=  -1447 (         )
KSRWY(3, 3)=  -1475 (10  F1   )     KSRWY(3,23)=  -1448 (         )
KSRWY(3, 4)=  -1476 (10  G    )     KSRWY(3,24)=  -1449 (         )
KSRWY(3, 5)=  -1477 (15R      )     KSRWY(3,25)=  -1450 (         )
KSRWY(3, 6)=  -1478 (15R H    )     KSRWY(3,26)=      0 (         )
KSRWY(3, 7)=  -1479 (15R F    )     KSRWY(3,27)=      0 (         )
KSRWY(3, 8)=  -1480 (22       )     KSRWY(3,28)=      0 (         )
KSRWY(3, 9)=  -1481 (28       )     KSRWY(3,29)=      0 (         )
KSRWY(3,10)=   1482 (28  B    )     KSRWY(3,30)=      0 (         )
KSRWY(3,11)=  -1483 (28  U1   )     KSRWY(3,31)=      0 (         )
KSRWY(3,12)=  -1484 (28  04/22)     KSRWY(3,32)=      0 (         )
KSRWY(3,13)=  -1485 (33L      )     KSRWY(3,33)=      0 (         )
KSRWY(3,14)=  -1486 (33L T    )     KSRWY(3,34)=      0 (         )
KSRWY(3,15)=  -1440 (         )     KSRWY(3,35)=      0 (         )
KSRWY(3,16)=  -1441 (         )     KSRWY(3,36)=      0 (         )
KSRWY(3,17)=  -1442 (         )     KSRWY(3,37)=      0 (         )
KSRWY(3,18)=  -1443 (         )     KSRWY(3,38)=      0 (         )
KSRWY(3,19)=  -1444 (         )     KSRWY(3,39)=      0 (         )
KSRWY(3,20)=  -1445 (         )     KSRWY(3,40)=      0 (         )
NSRWY(2)    =    14
COAT(2)     =  -2
CWIND(2)    =    130/06
CBARO(2)    = 30.57
KPTEMP(2)   =     2
KPWVEL(2)   =     1
KPALTM(2)   =     1
ISYS(6)     =      1
ISYS(7)     =      1
ISYS(8)     =      1
ISYS(9)     =      1
ISYS(10)    =      1
ISYS(17)    =      1
CDUM(1)     = ______
CDUM(2)     = __._
CDUM(3)     = 136700
```

Takeoff Outputs:

```
 RWYNUM    = 28
 RWLINP    =  10002.00000
 WIND      =     -5.00000
 CRWIND    =      3.00000
 PALT      =   -450.00000
 ELEV      =    146.00000
 WMXOUT(1) = 154500.00000
 CODE5(1)  = STRUC
 V1(1)     =    128.70600
 V1(2)     =    128.70600
 VR        =    128.70600
 V2        =    132.72030
 VOUT(1)   =       .00000      .00000   147.72030   179.72040      .00000
 VOUT(6)   =    199.72040      .00000      .00000      .00000
 DSTOUT(1) =   3015.00000
 DSTOUT(2) =   3015.00000
 CODE2(1)  = MC
 CODE2(2)  =
 FLEX        =    131.00000
 FLPOUT(1)   =      5.00000
 FLPOUT(2)   =      5.00000
 STAB        =      6.10000
 DUMP        =       .00000
 CLNUP       =   1146.00000
 WMXOUT(2)   = 132632.00000
 CODE5(2)    = OBS05
 PWRSET(1,1)  =   90.64  83.71    .00    .00  89.31    .00    .00
 PWRSET(1,2)  =   90.64  83.71    .00    .00  89.31    .00    .00
 PWRSET(1,3)  =     .00    .00    .00    .00    .00    .00    .00
 PWRSET(1,4)  =     .00    .00    .00    .00    .00    .00    .00
 ISELDB      =      1
 PITCH(1)    =     13.81078
 PITCH(2)    =     18.04566
 VRW         =       .00000
 APREPR      =       .00000
```

```
Operational Landing Inputs:
 CDUM6       = N471WN
 RDUM        = 758604.00000
 KAPTX(3)  =     281 (MDW)
 KSRWY(3, 1)=  -1388 (04L      )     KSRWY(3,21)=      0 (          )
 KSRWY(3, 2)=  -1390 (04R      )     KSRWY(3,22)=      0 (          )
 KSRWY(3, 3)=  -1391 (13C      )     KSRWY(3,23)=      0 (          )
 KSRWY(3, 4)=  -1392 (13L      )     KSRWY(3,24)=      0 (          )
 KSRWY(3, 5)=  -1393 (22L      )     KSRWY(3,25)=      0 (          )
 KSRWY(3, 6)=  -1396 (22R      )     KSRWY(3,26)=      0 (          )
 KSRWY(3, 7)=   1397 (31C      )     KSRWY(3,27)=      0 (          )
 KSRWY(3, 8)=  -1398 (31R      )     KSRWY(3,28)=      0 (          )
 KSRWY(3, 9)=      0 (         )     KSRWY(3,29)=      0 (          )
 KSRWY(3,10)=      0 (         )     KSRWY(3,30)=      0 (          )
 KSRWY(3,11)=      0 (         )     KSRWY(3,31)=      0 (          )
 KSRWY(3,12)=      0 (         )     KSRWY(3,32)=      0 (          )
 KSRWY(3,13)=      0 (         )     KSRWY(3,33)=      0 (          )
 KSRWY(3,14)=      0 (         )     KSRWY(3,34)=      0 (          )
 KSRWY(3,15)=      0 (         )     KSRWY(3,35)=      0 (          )
 KSRWY(3,16)=      0 (         )     KSRWY(3,36)=      0 (          )
 KSRWY(3,17)=      0 (         )     KSRWY(3,37)=      0 (          )
 KSRWY(3,18)=      0 (         )     KSRWY(3,38)=      0 (          )
 KSRWY(3,19)=      0 (         )     KSRWY(3,39)=      0 (          )
 KSRWY(3,20)=      0 (         )     KSRWY(3,40)=      0 (          )
 NSRWY(3)    =     8
 COAT(3)     =    -3
 CWIND(3)    =    090/11
 CBARO(3)    = 30.07
 KPTEMP(3)   =     2
 KPWVEL(3)   =     1
 KPALTM(3)   =     1
 ISYS(11)    =  3
 ISYS(12)    =  3
 ISYS(13)    =  2
 ISYS(14)    =  1
 ISYS(15)    =  2
 ISYS(16)    =  1
 CDUM1       = 119700
```

Operational Landing Outputs:

```
 RWYNUM    = 31C
 RWLINP    =   5826.00000
 WIND      =     -8.00000
 CRWIND    =      7.00000
 PALT      =    482.00000
 ELEV      =    620.00000
 CODE2(1)  =
 CODE2(2)  = DT
 DSTOUT(1) =   6630.00000
 DSTOUT(2) =   5470.00000
 DSTOUT(3) =   5260.00000
 VREF      =    124.94850
 VAPP      =    129.94850
 VOUT(1)   =    144.95700
 VOUT(2)   =    154.95700
 VOUT(3)   =    174.95700
 VOUT(4)   =    194.95700
 VOUT(5)   =       .00000
 VOUT(6)   =       .00000
 VOUT(7)   =       .00000
 VOUT(8)   =       .00000
 VOUT(9)   =       .00000
 PWRSET(1) =       .00000
 PWRSET(2) =     91.26371
 PWRSET(3) =       .00000
 PWRSET(4) =       .00000
 CODE5(1)  =
 PITCH(1)  =     -1.00000
 PITCH(2)  =     -1.00000
 WXMOUT(1) = 151212.00000
 WMXOUT(2) = 160691.00000
 TWMAX     =    -10.00000
 CWMAX     =     10.00000
```

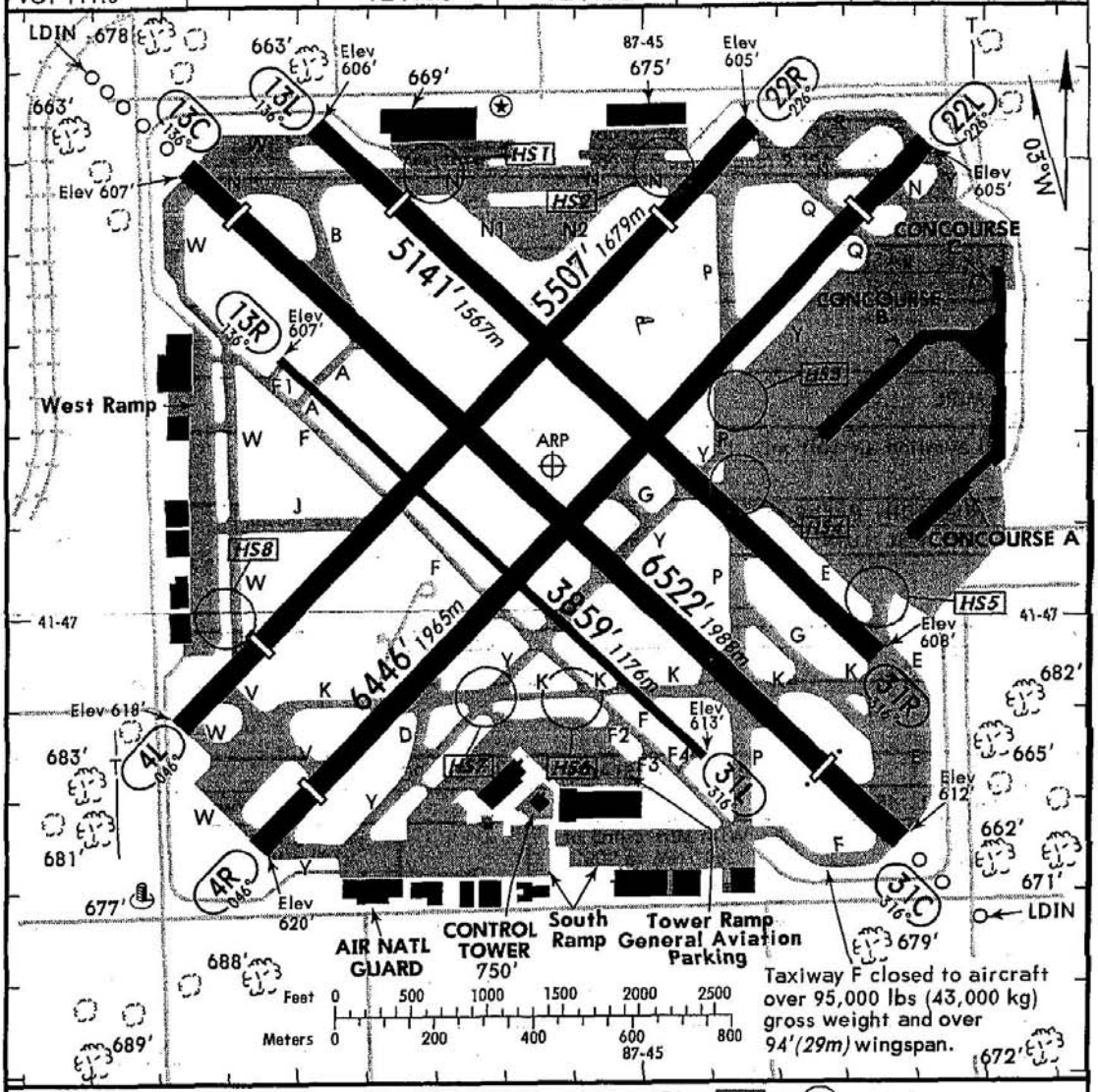
Attachment 9: MDW Approach Charts

KMDW/MDW
Apt Elev 620'
N41 47.2 W087 45.1

JEPPESEN
26 AUG 05 (10-9) Eff 1 Sep

CHICAGO, ILL
-MIDWAY INTL

D-ATIS	ACARS:	MIDWAY	Ground	Tower	CHICAGO Departure (R)	
132.75	D-ATIS	Clearance (Cpt)				
VOT 111.0	PDC	121.85	121.65	118.7	118.4	126.05



RUNWAY INCURSION HOT SPOTS HS1

For information only, not to be construed as ATC instructions

HS1 When approaching Runway 13L from November Taxiway, pilots should be aware of the following:
1. The taxiway is not the standard 90° angle to the runway.
2. Runway 13L has a displaced threshold.

HS2 When approaching Runway 22R from November Taxiway, the pilot should be aware of the following:
1. The taxiway is not the standard 90° angle to the runway.
2. Runway 22R has a displaced threshold.

HS3 & HS4 When approaching Runway 22L or 31R from Papa Taxiway, the pilot should be aware of the following:
1. The hold bar for 22L is 180' from the runway and the hold bar for 31R is 200' from the runway instead of the standard 257'.

HS5 When approaching Runway 31R on Echo Taxiway from A Concourse area, pilots should be aware that the hold bar is immediately adjacent to the A Concourse apron.

HS6 If right turn onto Foxtrot Taxiway from Kilo taxiway is missed, the hold bar for Runway 31L is directly after Foxtrot Taxiway intersection.

HS7 When approaching Runway 4R from Kilo Taxiway, pilots should be aware that the hold bar for the runway is directly after the Yankee Taxiway intersection and before the Delta Taxiway intersection.

HS8 When approaching Runway 4L from Whiskey Taxiway, the pilot should be aware of the following:
1. The taxiway is not the standard 90° angle to the runway.
2. Runway 4L has a displaced threshold.

CHANGES: None.

GENERAL

Birds in vicinity of airport.

ADDITIONAL RUNWAY INFORMATION

RWY			USABLE LENGTHS LANDING BEYOND Threshold	Glide Slope	TAKE-OFF	WIDTH
4R	HIRL CL REIL PAPI-L (angle 3.40°) grooved RVR		5928' 1807m	4888' 1490m		150' 46m
22L	HIRL CL REIL PAPI-R (angle 3.00°) grooved		5812' 1771m			
4L	MIRL VASI	grooved	4749' 1447m			150' 46m
22R	MIRL VASI-L	grooved	4629' 1411m			
13R ❶ 31L	MIRL					60' 18m
13C	HIRL LDIN PAPI-R(angle 3.0°)	grooved RVR	6059' 1847m	5188' 1581m		150' 46m
31C	HIRL REIL LDIN VASI-L	grooved RVR	5826' 1776m	4925' 1501m		
13L	MIRL	grooved	4389' 1338m			150' 46m
31R						

❶ General aviation aircraft only, 12,500 lbs or less.

TAKE-OFF & OBSTACLE DEPARTURE PROCEDURE

	Rwys 4L, 4R, 13C		Rwy 31R			Rwy 13L		
	Adequate Vis Ref	STD	With Mim climb of 260'/NM to 900' Adequate Vis Ref	STD	Other	With Mim climb of 270'/NM to 900' Adequate Vis Ref	STD	Other
1 & 2 Eng	RVR 16 or 1/4	RVR 50 or 1	1/4	1	300-1	1/4	1	300-1
3 & 4 Eng		RVR 24 or 1/2		1/2			1/2	

	Rwy 31C			Rwy 22L			Rwy 22R			Rwys 13R, 31L
	With Mim climb of 320'/NM to 900' Adequate Vis Ref	STD	Other CEIL-VIS	With Mim climb of 340'/NM to 900' Adequate Vis Ref	STD	Other	With Mim climb of 420'/NM to 900' Adequate Vis Ref	STD	Other	
1 & 2 Eng	RVR 16 or 1/4	RVR 50 or 1	300-1	1/4	1	300-1	1/4	1	300-1	300-1
3 & 4 Eng		RVR 24 or 1/2	RVR 50 or 1		1/2			1/2		

OBSTACLE DP

Rwys 4L/R: Northbound departures (360° clockwise 080°), climbing right turn to 2400', on 100° heading before proceeding on course. Rwys 22L/R, 31L/C/R, 13L/C/R: Climb rwy heading to 1300' before turning.

FOR FILING AS ALTERNATE

	Precision	VOR DME RNAV Rwy 22L	RNAV (GPS) All Rwys	Other
A	600-2	800-2	NA	800-2
B				
C				
D		800-2 1/4		

AMEND 9

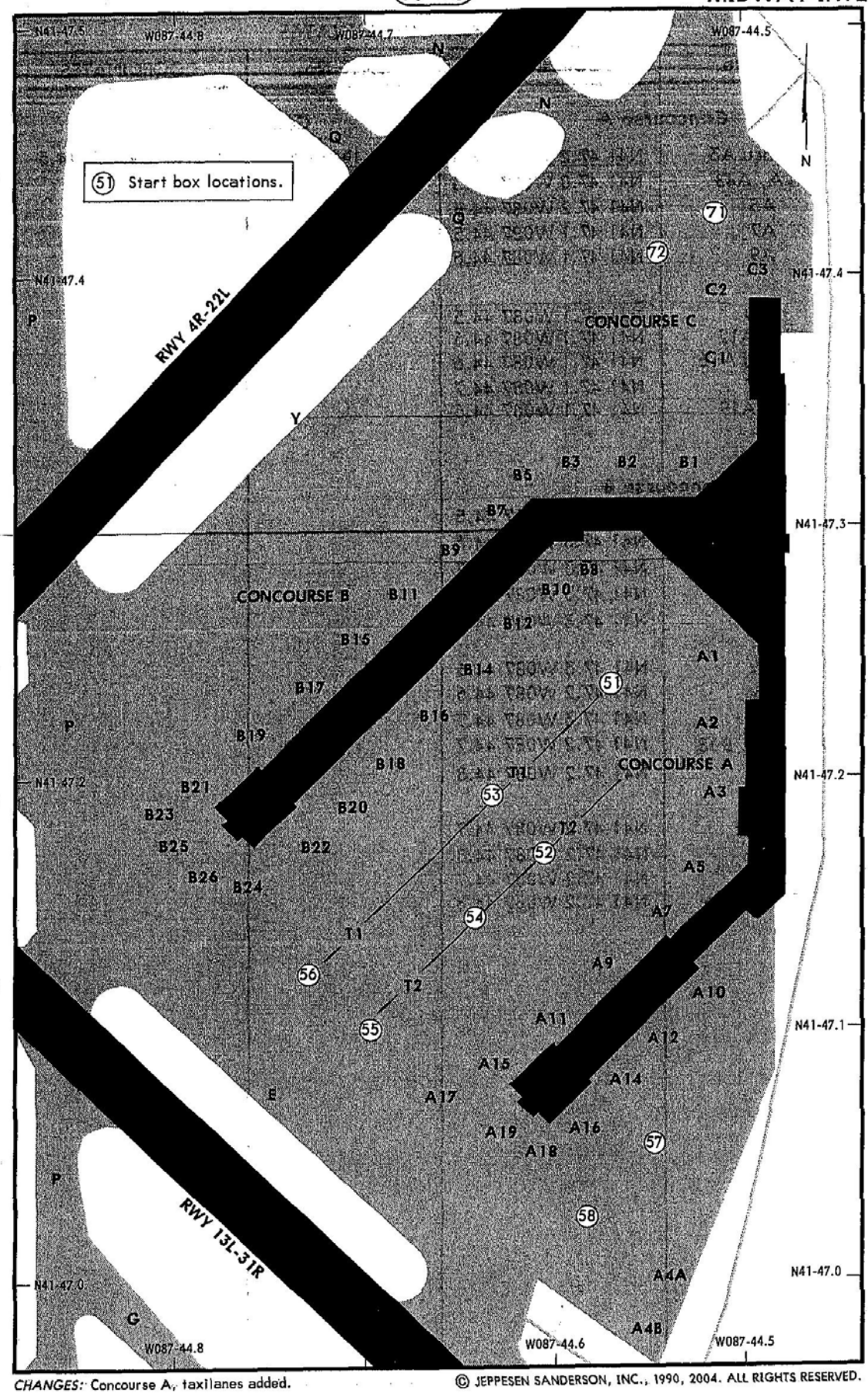
CHANGES: Rwy 4L lighting.

KMDW/MDW

JEPPESEN

18 JUN 04 (10-9C)

CHICAGO, ILL
-MIDWAY INTL

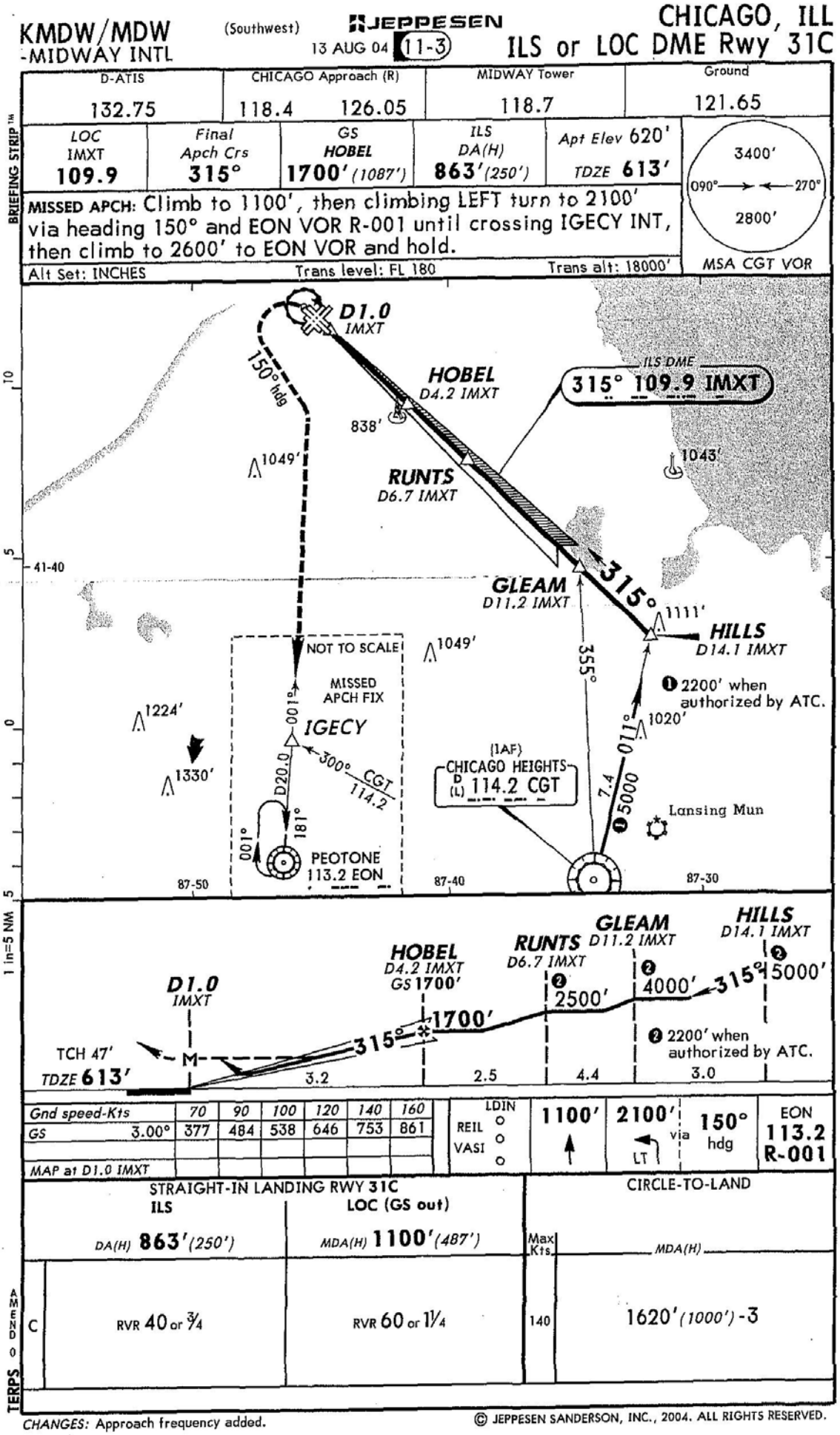


CHANGES: Concourse A, taxilanes added.

PARKING SPOT COORDINATES

GATE No.	COORDINATES	GATE No.	COORDINATES
Concourse A		**Concourse C**	
A1 thru A3	N41 47.2 W087 44.5	C1 thru C3	N41 47.4 W087 44.5
A4A, A4B	N41 47.0 W087 44.5		
A5	N41 47.2 W087 44.5		
A7	N41 47.1 W087 44.5		
A9	N41 47.1 W087 44.6		
A10	N41 47.1 W087 44.5		
A11, A12	N41 47.1 W087 44.6		
A14 thru A16	N41 47.1 W087 44.6		
A17	N41 47.1 W087 44.7		
A18, A19	N41 47.1 W087 44.6		
Concourse B			
B1	N41 47.3 W087 44.5		
B2, B3, B5, B7, B8	N41 47.3 W087 44.6		
B9	N41 47.3 W087 44.7		
B10	N41 47.3 W087 44.6		
B11	N41 47.3 W087 44.7		
B12	N41 47.3 W087 44.6		
B14	N41 47.2 W087 44.6		
B15	N41 47.3 W087 44.7		
B16, B17, B18	N41 47.2 W087 44.7		
B19	N41 47.2 W087 44.8		
B20	N41 47.2 W087 44.7		
B21	N41 47.2 W087 44.8		
B22	N41 47.2 W087 44.7		
B23 thru B26	N41 47.2 W087 44.8		

CHANGES: Concourse A gates added.


KMDW/MDW
-MIDWAY INTL
(Southwest)
JEPPESEN
13 AUG 04
11-3
CHICAGO, ILL
ILS or LOC DME Rwy 31C
D-ATIS
132.75
CHICAGO Approach (R)
118.4
126.05
MIDWAY Tower
118.7
Ground
121.65
LOC
IMXT
109.9
Final
Apch Crs
315°
GS
HOBEL
1700' (1087')
ILS
DA(H)
863' (250')
Apt Elev 620'
TDZE 613'
3400'
090°
270°
2800'
MSA CGT VOR
MISSED APCH: Climb to 1100', then climbing LEFT turn to 2100' via heading 150° and EON VOR R-001 until crossing IGECY INT, then climb to 2600' to EON VOR and hold.
Alt Set: INCHES
Trans level: FL 180
Trans alt: 18000'
D1.0
IMXT
150° hdg
HOBEL
D4.2 IMXT
ILS DME
315° 109.9 IMXT
838'
1049'
RUNTS
D6.7 IMXT
1043'
41-40
GLEAM
D11.2 IMXT
315°
1111'
HILLS
D14.1 IMXT
NOT TO SCALE
MISSED APCH FIX
001°
IGECY
1049'
355°
2200' when authorized by ATC.
1224'
1330'
D20.0
300°
CGT
114.2
181°
100°
(IAF)
CHICAGO HEIGHTS
D
(L) 114.2 CGT
7.4
011°
1020'
5000'
Lansing Mun
PEOTONE
113.2 EON
87-50
87-40
87-30
1 in=5 NM
D1.0
IMXT
HOBEL
D4.2 IMXT
GS 1700'
RUNTS
D6.7 IMXT
GLEAM
D11.2 IMXT
HILLS
D14.1 IMXT
2500'
4000'
315°
5000'
1700'
2200' when authorized by ATC.
TCH 47'
TDZE 613'
3.2
2.5
4.4
3.0
Gnd speed-Kts 70 90 100 120 140 160
GS 3.00° 377 484 538 646 753 861
MAP at D1.0 IMXT
LDIN
REIL
VASI
1100'
2100'
LT
via
150°
hdg
EON
113.2
R-001
STRAIGHT-IN LANDING RWY 31C
ILS
DA(H) 863' (250')
LOC (GS out)
MDA(H) 1100' (487')
CIRCLE-TO-LAND
Max Kts
MDA(H)
C
RVR 40 or 3/4
RVR 60 or 1 1/4
140
1620' (1000') -3
AMEND TERPS
CHANGES: Approach frequency added.
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KMDW/MDW
-MIDWAY INTL

SOUTHWEST
-HGS ONLY

SOUTHWEST
20 MAY 05 (11-7)

CHICAGO, ILL
ILS Z Rwy 31C

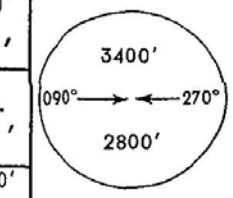
D-ATIS	CHICAGO Approach (R)	MIDWAY Tower	Ground
132.75	118.4 126.05	118.7	121.65

LOC IMXT	Final Apch Crs	GS	ILS DA(H)	Apt Elev 620′
109.9	315°	HOBEL 1700′ (1087′)	817′ (204′)	TDZE 613′

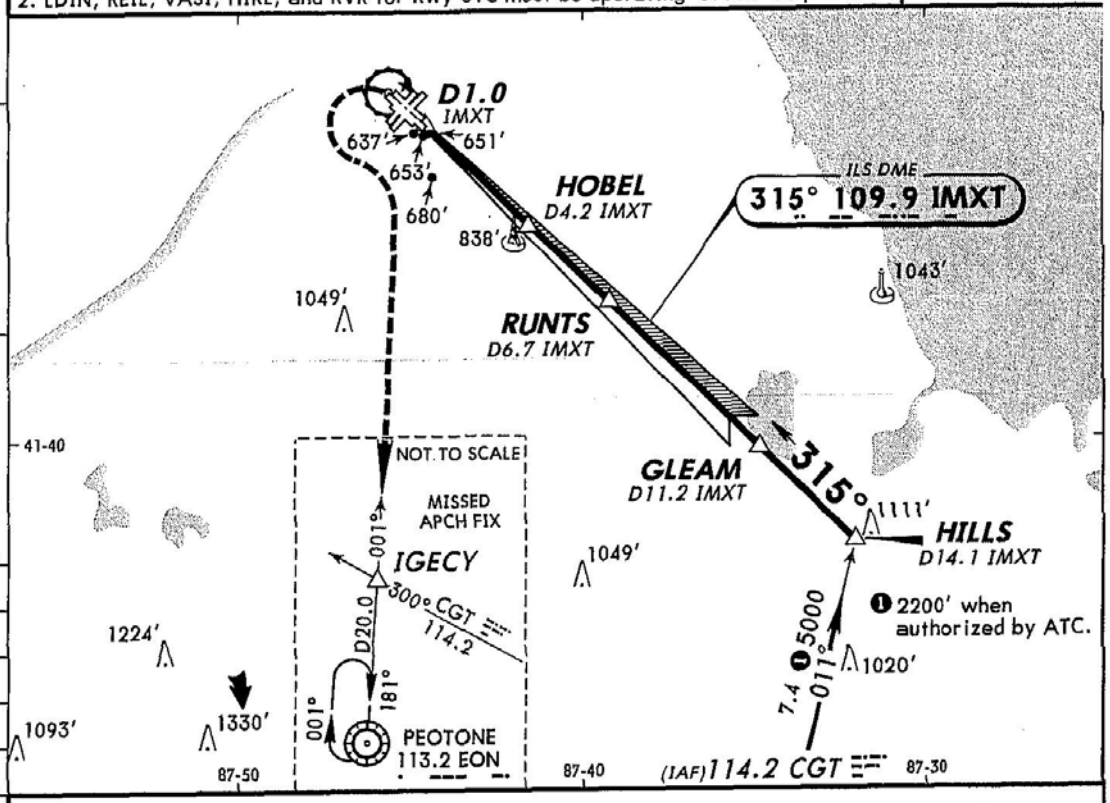
MISSED APCH: Climb to 1100′, then climbing LEFT turn to 2100′ via heading 150° and EON VOR R-001 until crossing IGECY INT, then climb to 2600′ to EON VOR and hold.

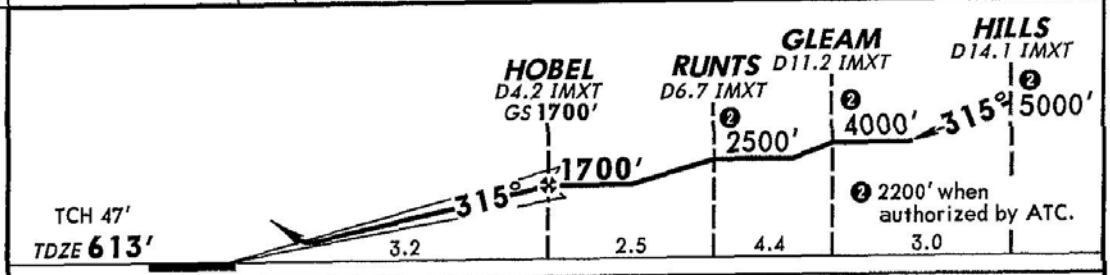
Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. Special Aircrew and Aircraft Certification Required - HGS meets this requirement.
2. LDIN, REIL, VASI, HIRL, and RVR for Rwy 31C must be operating 3. DME required.



MSA CGT VOR





Gnd speed-Kts	70	90	100	120	140	160
GS 3.00°	377	484	538	646	753	861
MAP at D1.0 IMXT						

LDIN
REIL
VASI

1100′

2100′ LT via 150° hdg and EON 113.2 R-001

HGS ONLY

STRAIGHT-IN LANDING RWY 31C
ILS
DA(H) 817′ (204′)
FULL

C RVR 30 or 5/8

CHANGES: Reissue.

Attachment 10: MDW Surveillance Cameras

CAMERA	DESCRIPTION	CAMERA	DESCRIPTION
1	BMA CONV. BLT1 WEST WALL	48	AF GATE B5 & B7
2	BMA CONV. BLT2 WEST WALL	49	AF GATE B9 & B11
3	BMA CONV. BLT1 WEST WALL	50	AF GATE B12
4	BMA CAROUSEL #4 N/W END	54	AF GATE B15 & B17
5	BMA CAROUSEL #3 S/W END	55	AF GATE B16
6	BMA CAROUSEL #4 S/W END	56	AF GATE B18
7	BMA CONV. BLT3 EAST WALL	57	AF GATE B21 & B23
8	BMA CAROUSEL #3 N/W END	58	AF GATE B19
9	BMA CAROUSEL #2 S/W END	59	AF GATE B24
10	BMA CONV. BLT4 EAST WALL	60	AF GATE B20
11	BMA CONV. BLT4 EAST WALL	61	LL SOUTH RDWY CENTER LANE
12	BMA CONV. BLT5 EAST WALL	62	LL SOUTH RDWY INNER LANE
13	BMA CONV. BLT5 EAST WALL	63	LL CENTER RSWY DOOR #2
14	MECH RM DOOR TT2-003B	64	LL INNER RDWY DOOR #2
15	BMA CONV. BLT7 WEST WALL	65	LL CENTER RDWY DOOR #4
16	BMA CONV. BLT8 WEST WALL	66	LL INNER RDWY DOOR #4
17	BMA CAROUSEL #1 WEST SIDE	67	UL SOUTH END RDWY CAM
18	BMA CONV. BLT8 WEST WALL	68	UL NORTH END RDWY CAM
19	BMA CAROUSEL #2 N/W END	69	PEDWAY BRIDGE CICERO AVE
20	BMA CONV. BLT6 EAST WALL	72	H&R PLANT DOCK PARKING LOT
21	BMA CAROUSEL #1 EAST SIDE	73	59TH STREET CICERO GATE
22	REV. BLDG VESTIBULE	75	INNER CONC. HALLWAY
25	TAXI STAGING LOT	76	INNER CONCESSION EXIT
26	AF GATE A4A/A4B	77	DOOR 140B STAIRWAY INSIDE
27	AF GATE A7	78	DOOR 140B OUTSIDE
28	AF GATE A6 *	79	CICERO WLKWY EX DOOR 140B
29	REV. BLDG PHONE ROOM	~~80~~	AF GATE F6
30	REV. BLDG CASHIER COUNTER	81	FAA TOWER RAMP
31	AF GATE A5	82	MCC HALLWAY
~~32~~	AF GATE A3	83	NORTH SIDA GATE - OUTSIDE CAM
~~35~~	AF BTWN GATES A2	84	NORTH SIDA GATE INSIDE CAM
36	REV. BLDG CASHIER COUNTER	~~85~~	EAST SIDE OF CHECKPOINT
37	AF BY GATE A1	86	ELV 1601 CONCESSION ENT
38	CHECKPOINT EAST SIDE	87	CONCESSION DOCK GATE B16
39	CHECKPOINT WEST SIDE	88	???
40	INNERSTICHUAL AREA	89	PKNG GARAGE WLKWY TO CTA
41	CHECKPOINT WEST SIDE	90	FA-PED-U-NORTH EXIT
42	AF GATE B1	91	CTA PED N/E DURESS
43	AF GATE C1	92	CTA PED UL N/W DURESS
44	AF BY GATE C3	93	CTA ELV SE UL DURESS
45	SOUTH RAMP	94	CTA ELV S/E LL
46	AF GATE B8 *	95	CTA PED STWY & ESCALATOR
47	AF BTWN GATES B2 AND B3	97	FIS EXIT RAMP / DOOR 110A

CAMERA	DESCRIPTION	CAMERA	DESCRIPTION
98	GATE A3 FIS EXIT RAMP	148	LANE 13
99	FIS RAMP DOOR 124B	149	SOUTH SIDA GATE
100	FIS ENT RAMP TO INS CHKPT	150	AF GATE A14
101	INS CHECKPOINT AREA SOUTH	151	AF GATE A11 / A15
102	INS CHECKPOINT AREA NORTH	152	AF GATE 10 & 12
103	SO. USC BAGGAGE CLAIM CKPT	153	CONS. DOOR BTWN DOCK & ELV.
104	FIS BAGGAGE BELT / OUTSIDE	154	CONS. DOOR ML-11-132D
105	NORTH INS HOLDROOM	156	LANE 14
106	SOUTH INS HOLDROOM	157	PTZ CKPT ENT
108	NO. USC BAGGAGE CLAIM CKPT	158	PTZ CKPT ROLL GATE
109	TEMP CANOPY 4	159	CHKPT / LANE 7
110	USC HALLWAY EXIT	160	CHKPT / LANE 4
111	INS HALLWAY EXIT	1	
112	USC HALLWAY EXIT	2	
113	INS HALLWAY EXIT	3	
114	FIS BAGGAGE RECHECK AREA	4	
115	AF GATE A1	5	
116	AF GATE A2	6	
117	AG RAMP BTWN GATES A2 & A3	7	
118	AF GATE A3		
119	JETWAY RAMP GATE A2 SO. END		
120	JETWAY RAMP GATE A2 NO. END		
121	SO. JTWY RAMP BTWN G-A2 & A3		
122	NO. JTWY RAMP BTWN G-A2 & A3		
~~123~~	JETWAY GATE A3		
~~124~~	FIS RAMP NORTH		
125	INS COMM ROOM		
129	CHKPT / LANE 1		
130	CHKPT / LANE 2		
131	CHKPT / LANE 3		
133	CHKPT / LANE 5		
134	CHKPT / LANE 6		
136	CHKPT / LANE 8		
137	CHKPT / LANE 9		
138	CHKPT / LANE 10		
139	CHKPT / LANE 11		
140	INSIDE OVERVIEW		
141	OUTSIDE OVERVIEW		
143	PED. BRIDGE NORTH		
144	PED. BRIDGE NORTH - CNTR		
145	PED. BRIDGE SOUTH - CNTR		
146	PED. BRIDGE SOUTH		

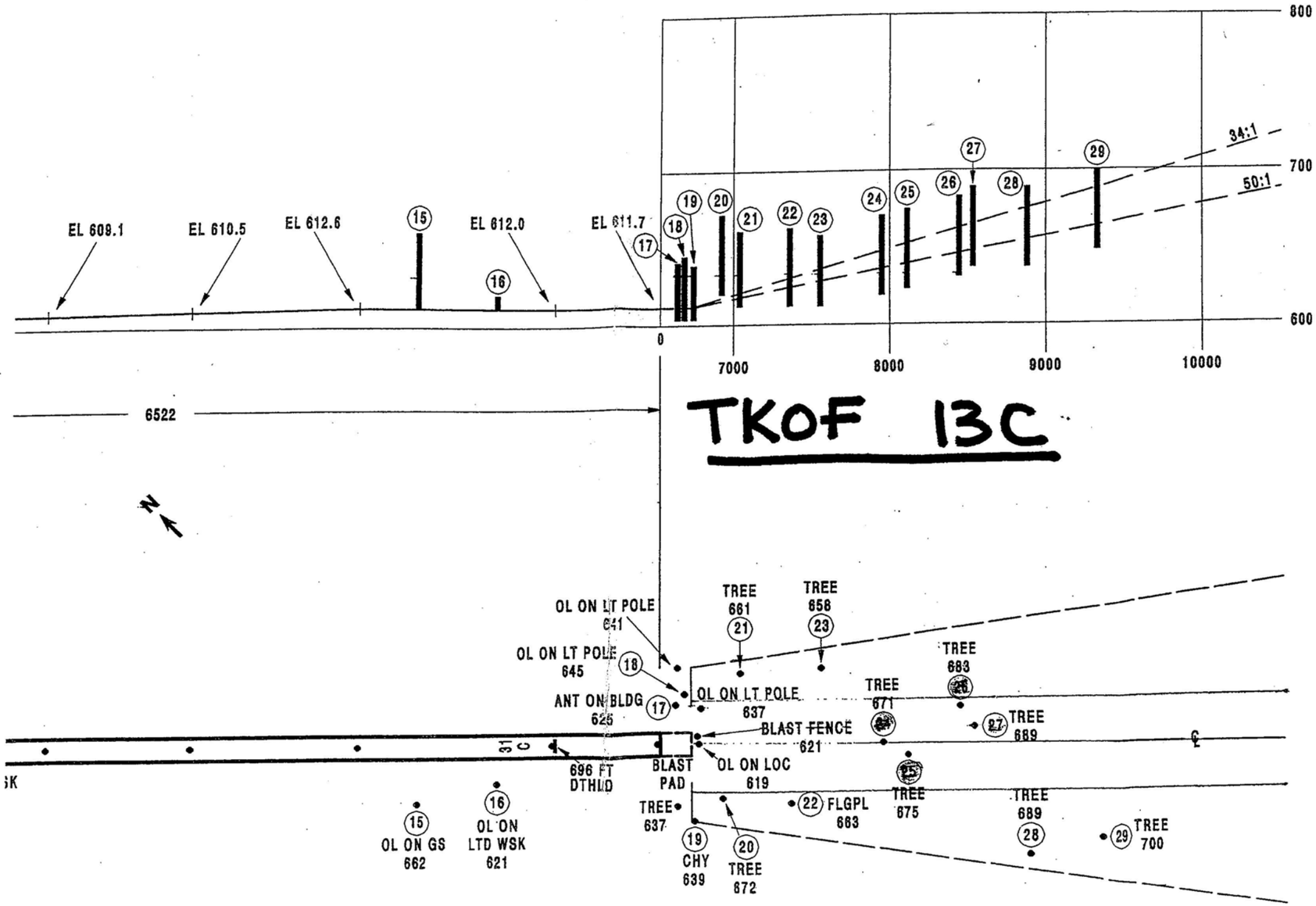
Attachment 11: MDW Obstruction Data

PRELIMINARY COI

U= LT POLE 637'

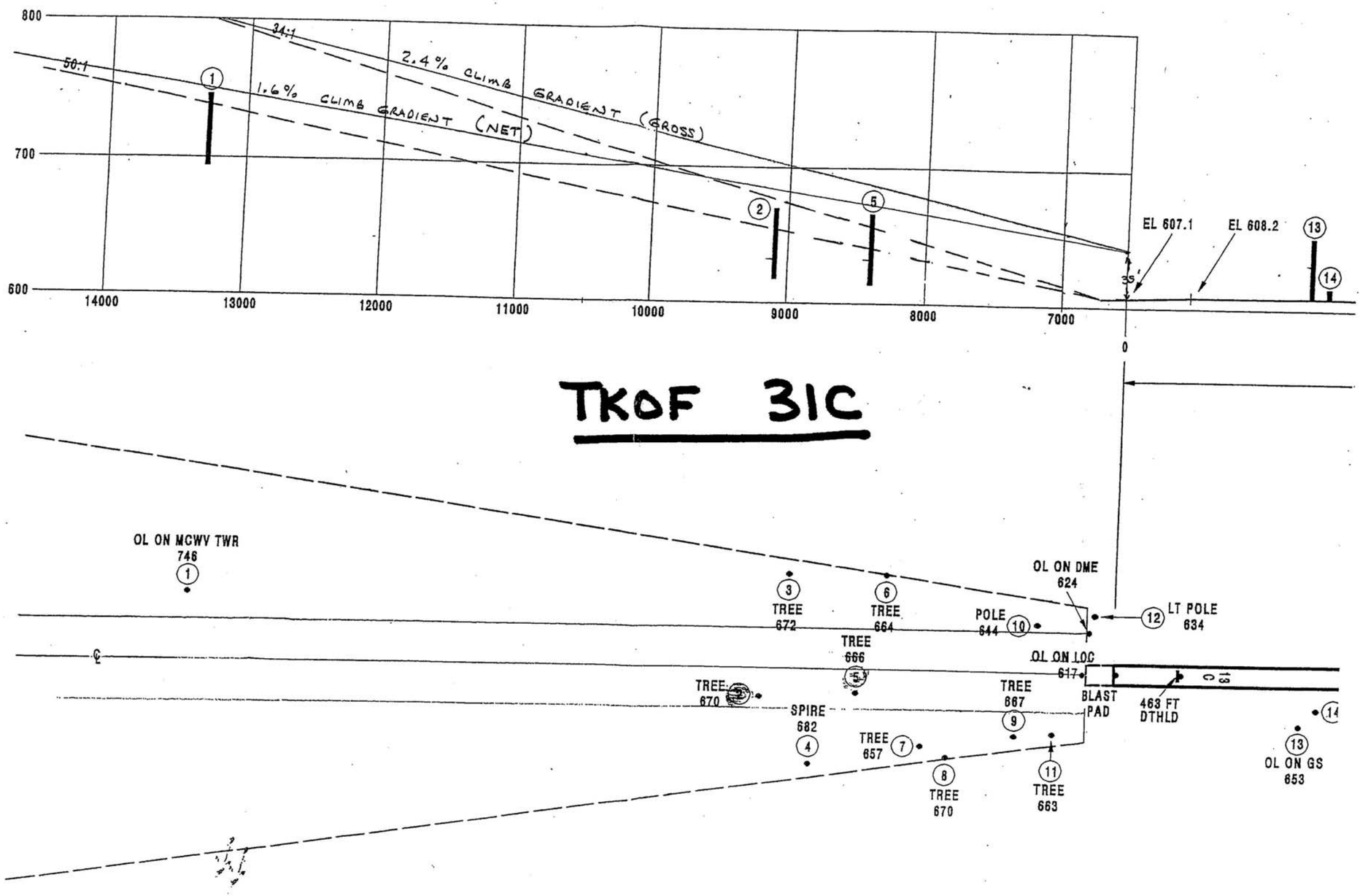
CC = TREE 672'
DD = TREE 659'

6/5/03


800
700
600
0
7000
8000
9000
10000
34:1
50:1
EL 608.1
EL 610.5
EL 612.6
EL 612.0
EL 611.7
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
6522
TKOF 13C
N
OL ON LT POLE
641
OL ON LT POLE
645
ANT ON BLDG
625
TREE
661
TREE
658
TREE
683
TREE
671
OL ON LT POLE
637
BLAST FENCE
621
TREE
689
OL ON LOC
619
696 FT
DTHLD
BLAST
PAD
31 C
TREE
637
22 FLGPL
663
TREE
675
TREE
689
29 TREE
700
OL ON GS
662
OL ON
LTD WSK
621
CHY
639
TREE
672

6/6/05

#2


800
700
600
14000
13000
12000
11000
10000
9000
8000
7000
0
3:1
50:1
2.4% CLIMB GRADIENT (GROSS)
1.6% CLIMB GRADIENT (NET)
1
2
5
13
14
EL 607.1
EL 608.2
35'
TKOF 31C
OL ON MCWV TWR
746
1
3
TREE
672
6
TREE
664
POLE
644
10
OL ON DME
624
12
LT POLE
634
TREE
666
5
OL ON LOC
617
TREE
670
5
SPIRE
682
4
TREE
657
7
8
TREE
670
TREE
667
9
11
TREE
663
BLAST
PAD
463 FT
DTHLD
13
OL ON GS
653
13
C

NGS FORM-292

AERONAUTICAL DATA SHEET
NATIONAL GEODETIC SURVEY

DATE GENERATED: 07/02/2003

PROJECT NUMBER: 81
ARPT IDENTIFIER: MDW
ARPT NAME: CHICAGO MIDWAY AIRPORT
CITY: CHICAGO
STATE: ILLINOIS
ARPT ELEVATION: 619.8
DISTANCE FROM RWY END: 4R+163
AIRPORT REFERENCE POINT LATITUDE: 414709.5 LONGITUDE: -874508.7

SITE NUMBER: 04507.A
SURVEY DATE: 10/22/2002
HORIZONTAL DATUM: NAD83
VERTICAL DATUM: NAVD88
ATCT FLOOR ELEV: 726.0
DECLINATION: 2.8W

RUNWAY INFORMATION

RUNWAY: 4L/22R LENGTH: 5507 WIDTH: 150 SURFACE TYPE: SPECIALLY PREPARED HARD SURFACE - PAVED

RUNWAY END DATA GEODETIC						DISPLACED THRESHOLD DATA			
RWY	LATITUDE	LONGITUDE	ELEV	AZ (N)	TDZE	LENGTH	LATITUDE	LONGITUDE	ELEV
4L	414652.9238	-874540.2920	618.5	432755	617.1	758	414658.3573	-874533.4114	617.1
22R	414732.4084	-874450.2801	605.3	2232828	613.5	878	414726.1122	-874458.2567	605.7

PROFILE DATA

DISTANCES FROM APPROACH END 4L

DISTANCE	ELEV
0	618.5
758	617.1
2219	611.0
2719	609.1
3504	607.2
4629	605.7
5507	605.3

DISTANCES FROM APPROACH END 22R

DISTANCE	ELEV
0	605.3
878	605.7
2004	607.2
2789	609.1
3289	611.0
4749	617.1
5507	618.5

RUNWAY: 4R/22L LENGTH: 6446 WIDTH: 150 SURFACE TYPE: SPECIALLY PREPARED HARD SURFACE - PAVED

RUNWAY END DATA — DISPLACED THRESHOLD DATA

GEODETIC

RWY	LATITUDE	LONGITUDE	ELEV	AZ (N)	TDZE	LENGTH	LATITUDE	LONGITUDE	ELEV
4R	414644.9759	-874533.5410	619.8	432808	619.0	518	414648.6912	-874528.8358	619.0
22L	414731.1862	-874435.0024	605.3	2232847	610.7	634	414726.6419	-874440.7605	606.0

PROFILE DATA

DISTANCES FROM APPROACH END 4R

DISTANCE	ELEV
0	619.8
163	619.8
518	619.0
2449	611.5
2949	610.5
3735	608.1
5812	606.0
6446	605.3

DISTANCES FROM APPROACH END 22L

DISTANCE	ELEV
0	605.3
634	606.0
2711	608.1
3497	610.5
3997	611.5
5928	619.0
6283	619.8
6446	619.8

RUNWAY: 13C/31C LENGTH: 6522 WIDTH: 150 SURFACE TYPE: SPECIALLY PREPARED HARD SURFACE - PAVED

RUNWAY END DATA — DISPLACED THRESHOLD DATA

GEODETIC

RWY	LATITUDE	LONGITUDE	ELEV	AZ (N)	TDZE	LENGTH	LATITUDE	LONGITUDE	ELEV
13C	414729.6614	-874539.8424	607.1	1333309	610.5	463	414726.5129	-874535.4172	608.2
31C	414645.2628	-874437.4576	611.7	3133350	612.7	696	414649.9984	-874444.1098	612.0

PROFILE DATA

DISTANCES FROM APPROACH END 13C

DISTANCE	ELEV
0	607.1
463	608.2
2533	609.1
3458	610.5

DISTANCES FROM APPROACH END 31C

DISTANCE	ELEV
0	611.7
696	612.0
1982	612.6
3064	610.5

DISTANCES FROM APPROACH END 13C

DISTANCE	ELEV
4540	612.6
5826	612.0
6522	611.7

DISTANCES FROM APPROACH END 31C

DISTANCE	ELEV
3989	609.1
6059	608.2
6522	607.1

RUNWAY: 13L/31R LENGTH: 5141 WIDTH: 150 SURFACE TYPE: SPECIALLY PREPARED HARD SURFACE - PAVED

RUNWAY END DATA

GEODETIC RWY	LATITUDE	LONGITUDE	ELEV	AZ (N)	TDZE
13L	414732.3348	-874528.5767	606.2	1333142	608.2
31R	414657.3513	-874439.3758	608.2	3133214	609.0

DISPLACED THRESHOLD DATA

LENGTH	LATITUDE	LONGITUDE	ELEV
752	414727.2171	-874521.3777	605.7

PROFILE DATA

DISTANCES FROM APPROACH END 13L

DISTANCE	ELEV
0	606.2
752	605.7
2100	607.2
3025	608.1
5141	608.2

DISTANCES FROM APPROACH END 31R

DISTANCE	ELEV
0	608.2
2116	608.1
3041	607.2
4389	605.7
5141	606.2

RUNWAY: 13R/31L LENGTH: 3858 WIDTH: 60 SURFACE TYPE: SPECIALLY PREPARED HARD SURFACE - PAVED

RUNWAY END DATA

GEODETIC RWY	LATITUDE	LONGITUDE	ELEV	AZ (N)	TDZE
13R	414717.0457	-874531.6901	607.1	1333328	611.5
31L	414650.7786	-874454.7864	613.0	3133353	613.0

DISPLACED THRESHOLD DATA

LENGTH	LATITUDE	LONGITUDE	ELEV

DISTANCES FROM APPROACH END 13R

DISTANCE	ELEV
0	607.1
1207	611.0
2132	611.5
3858	613.0

DISTANCES FROM APPROACH END 31L

DISTANCE	ELEV
0	613.0
1727	611.5
2652	611.0
3858	607.1

DATE GENERATED: 07/02/2003

PROJECT NUMBER: 81
ARPT IDENTIFIER: MDW
ARPT NAME: CHICAGO MIDWAY AIRPORT
CITY: CHICAGO
STATE: ILLINOIS

SITE NUMBER: 04507.A
SURVEY DATE: 10/22/2002
HORIZONTAL DATUM: NAD83
VERTICAL DATUM: NAVD88

NAVIGATIONAL AID INFORMATION

ELECTRONIC		LATITUDE	LONGITUDE	ELEV	OFFSET DISTANCE	ALONG CNTRLN DISTANCE
ASR	(QXM)	413717.3815	-874610.1182	669.7		
DME	(13C/31C)	414733.1222	-874538.7840	619.7		
GS	(4R)	414658.8079	-874523.2876	612.0		
GS	(4R) PP	414656.0929	-874519.4612	614.8	399L	1551
GS	(13C)	414717.9295	-874530.4441	607.0		
GS	(13C) PP	414720.5792	-874527.0779	608.5	370R	1334
GS	(31C)	414653.4841	-874456.0940	610.9		
GS	(31C) PP	414656.1332	-874452.7282	612.6	370L	1597
LOC	(4R)	414733.3372	-874432.2767	604.9		300
LOC	(13C)	414643.5712	-874435.0929	611.9		248
LOC	(31C)	414731.2830	-874542.1289	605.1		239
LOM	(4R)	414308.3391	-875011.0475			30387
MM	(13C)	414754.8906	-874614.5736			3667
OM	(13C)	415059.7489	-875032.5505			30716
OM	(31C)	414429.4369	-874122.8106			20166

VISUAL		LATITUDE	LONGITUDE
ALS	(13C)		
APBN		414733.4253	-874515.3078
PAPI	(4R) (UNC)		
PAPI	(13C)		
REIL	(4R)		
REIL	(22L)		
REIL	(31C)		
VASI	(4L)		
VASI	(4R)		
VASI	(22L)		
VASI	(22R)		
VASI	(31C)		

DATE GENERATED: 07/02/2003

PROJECT NUMBER: 81
ARPT IDENTIFIER: MDW
ARPT NAME: CHICAGO MIDWAY AIRPORT
CITY: CHICAGO
STATE: ILLINOIS

SITE NUMBER: 04507.A
SURVEY DATE: 10/22/2002
HORIZONTAL DATUM: NAD83
VERTICAL DATUM: NAVD88

OBSTRUCTION INFORMATION

4L BV

OBJECT	LATITUDE	LONGITUDE	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
RD(N)	414734.54	-874450.54	1A	620		2	3	0	-5651	-4893	163L	14
FENCE	414734.29	-874452.58	1A	616		-2	-1	-4	-5526	-4768	*258L	10
OL ON AMOM	414719.09	-874502.28	1A	630		12	13	10	-3904	-3146	*268R	23
OL ON LTD WSK	414703.76	-874531.23	1A	621		3	4	1	-1268	-510	*256L	6
TREE	414652.62	-874543.37	1A	655		37	38	35	183	940	149L	36
OL ON FENCE	414651.52	-874542.11	1A	630		12	13	10	198	956	3L	11
TREE	414650.15	-874547.04	1A	686		68	69	66	555	1313	178L	50
LT POLE	414646.74	-874542.61	1A	653		35	36	33	575	1333	*303R	16
TREE	414645.66	-874546.43	1A	672		54	55	52	853	1611	168R	20
TREE	414644.45	-874545.24	1A	675		57	58	55	881	1638	*318R	23
TREE	414645.53	-874550.84	1A	674		56	57	54	1093	1851	65L	11
TREE	414642.89	-874550.63	1A	677		59	60	57	1276	2034	130R	4
TREE	414634.76	-874559.32	1A	679		61	62	59	2326	3084	218R	-46
TREE	414629.57	-874602.93	1A	686		68	69	66	2896	3654	381R	-67
ROD ON BLDG	414625.98	-874615.79	1A	700		82	83	80	3830	4588	76L	-100

22R BV

OBJECT	LATITUDE	LONGITUDE	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
OL ON FENCE	414651.52	-874542.11	1A	630		25	16	10	-5705	-4827	3R	11
TREE	414652.62	-874543.37	1A	655		50	41	35	-5690	-4812	149R	36
OL ON LTD WSK	414703.76	-874531.23	1A	621		16	7	1	-4239	-3361	*256R	6
OL ON AMOM	414719.09	-874502.28	1A	630		25	16	10	-1604	-725	*268L	23
FENCE	414734.29	-874452.58	1A	616		11	2	-4	19	897	*258R	10
RD(N)	414734.54	-874450.54	1A	620		15	6	0	143	1022	163R	14
POLE ON BLDG	414735.69	-874450.08	1A	630		25	16	10	251	1130	217R	22
LT POLE	414734.43	-874445.94	1A	633		28	19	13	375	1253	98L	19
LT POLE	414734.86	-874441.82	1A	639		34	25	19	621	1500	*294L	13

22R BV (CONTINUED)

OBJECT	LATITUDE	LONGITUDE	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
TREE	414741.79	-874432.58	1A	671	66	57	51		1611	2490	319L	-5
TREE	414745.54	-874427.45	1A	679	74	65	59		2154	3032	340L	-24
TREE	414749.01	-874429.62	1A	670	65	56	50		2296	3174	20R	-40
TREE	414747.93	-874427.98	1A	667	62	53	47		2302	3181	145L	-44
TREE	414748.36	-874423.80	1A	661	56	47	41		2551	3430	345L	-62

4R PIR

OBJECT	LATITUDE	LONGITUDE	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
LT POLE	414728.31	-874429.09	1A	639	19	20	19		-6543	-6025	*526R	34
LT POLE	414734.70	-874439.18	1A	639	19	20	19		-6486	-5968	474L	34
OL ON LTD WSK	414723.67	-874449.98	1A	624	4	5	4		-5114	-4595	300L	17
OL ANT	414702.22	-874518.92	1A	652	32	33	32		-2029	-1511	397L	39
ROD ON OL GS	414658.81	-874523.29	1A	660	40	41	40		-1551	-1032	399L	45
OL ON LTD WSK	414649.84	-874522.80	1A	627	7	8	7		-917	-399	252R	10
VENT ON OL BLDG	414643.04	-874526.13	1A	666	46	47	46		-244	274	*543R	46
LT POLE	414641.13	-874529.53	1A	648	28	29	28		73	591	488R	28
LT POLE	414640.91	-874531.87	1A	648	28	29	28		211	730	375R	28
LT POLE	414644.73	-874542.10	1A	653	33	34	33		464	983	453L	28
TREE	414636.93	-874533.78	1A	689	69	70	69		604	1122	547R	61
TREE	414644.45	-874545.24	1A	675	55	56	55		649	1167	*606L	46
CHY ON BLDG	414642.29	-874543.45	1A	677	57	58	57		714	1232	358L	47
TREE	414637.75	-874537.87	1A	672	52	53	52		756	1275	266R	41
TREE	414638.22	-874543.32	1A	659	39	40	39		1006	1525	67L	23
TREE	414638.04	-874545.65	1A	664	44	45	44		1141	1659	183L	26
TREE	414634.15	-874545.78	1A	672	52	53	52		1433	1951	80R	28
TREE	414636.67	-874551.21	1A	667	47	48	47		1531	2050	393L	21
TREE	414631.31	-874545.54	1A	678	58	59	58		1629	2147	292R	29
TREE	414630.76	-874551.75	1A	671	51	52	51		1994	2512	11L	16
TREE	414634.76	-874559.32	1A	679	59	60	59		2094	2612	706L	22
TREE	414629.57	-874602.93	1A	686	66	67	66		2664	3182	543L	17
ROD ON BLDG	414625.98	-874615.79	1A	700	80	81	80		3598	4116	1000L	12
TK	414616.68	-874612.32	1A	728	108	109	108		4100	4618	162L	30

22L PIR

OBJECT	LATITUDE	LONGITUDE	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
LT POLE	414641.13	-874529.53	1A	648		43	37	28	-6519	-5885	488L	28
VENT ON OL BLDG	414643.04	-874526.13	1A	666		61	55	46	-6202	-5568	*543L	46
OL ON LTD WSK	414649.84	-874522.80	1A	627		22	16	7	-5528	-4895	252L	10
ROD ON OL GS	414658.81	-874523.29	1A	660		55	49	40	-4895	-4261	399R	45
OL ANT	414702.22	-874518.92	1A	652		47	41	32	-4417	-3783	397R	39
OL ON LTD WSK	414723.67	-874449.98	1A	624		19	13	4	-1332	-698	300R	17
LT POLE	414734.70	-874439.18	1A	639		34	28	19	40	674	474R	34
LT POLE	414728.31	-874429.09	1A	639		34	28	19	97	731	*526L	34
OL ON POLE	414729.93	-874428.90	1A	634		29	23	14	226	860	423L	28
OL LT POLE	414734.75	-874435.40	1A	627		22	16	7	241	875	270R	21
OL ON BLAST FENCE	414733.48	-874432.91	1A	613		8	2	-7	278	912	45R	6
OL ON LOC	414733.34	-874432.28	1A	614		9	3	-6	300	934	0R	6
LT POLE	414737.63	-874431.73	1A	639		34	28	19	644	1277	269R	24
LT POLE	414735.43	-874427.40	1A	638		33	27	18	708	1342	123L	23
POLE	414737.00	-874427.26	1A	644		39	33	24	830	1464	21L	26
TREE	414741.79	-874432.58	1A	671		66	60	51	905	1539	606R	51
TREE	414742.48	-874428.28	1A	669		64	58	49	1180	1814	417R	44
TREE	414736.22	-874415.72	1A	657		52	46	37	1374	2008	*709L	29
TREE	414745.54	-874427.45	1A	679		74	68	59	1447	2081	585R	49
TRANSIT AUTHORITY TRAIN	414737.67	-874415.68	1A	649		44	38	29	1483	2117	611L	18
TREE	414743.73	-874423.05	1A	660		55	49	40	1545	2179	217R	28
TREE	414745.17	-874424.01	1A	674		69	63	54	1600	2234	370R	41
TREE	414748.36	-874423.80	1A	661		56	50	41	1845	2479	580R	23
TREE	414748.94	-874401.85	1A	671		66	60	51	3032	3666	585L	9
OL ANT ON BLDG	415244.01	-873810.20	1A	2324	1731	1719	1713	1704	43021	43655	678R	699
OL ANT ON BLDG	415306.67	-873717.55	2A	1780	1195	1175	1169	1160	47428	48062	628L	44

13C PIR

OBJECT	LATITUDE	LONGITUDE	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
OL ON LT POLE	414646.50	-874433.00	1A	645		38	34	25	-6680	-6218	324L	33
OL ON LT POLE	414648.06	-874431.87	1A	641		34	30	21	-6634	-6172	497L	30
TREE	414641.64	-874440.08	1A	637		30	26	17	-6631	-6169	403R	25
ANT ON BLDG	414646.39	-874434.19	1A	625		18	14	5	-6623	-6160	254L	13
OL ON LT POLE	414649.07	-874433.11	1A	643		36	32	23	-6495	-6033	*506L	31

13C PIR (CONTINUED)

OBJECT	LATITUDE	LONGITUDE	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
OL ON LTD WSK	414650.82	-874449.95	1A	621		14	10	1	-5448	-4986	245R	9
OL ON GS	414653.48	-874456.09	1A	662		55	51	42	-4925	-4463	370R	49
OL ON LTD WSK	414717.94	-874528.16	1A	616		9	5	-4	-1459	-996	250R	7
OL ON GS	414717.93	-874530.44	1A	653		46	42	33	-1334	-872	370R	44
LT POLE	414733.73	-874537.25	1A	634		27	23	14	142	604	434L	27
OL ON DME	414733.12	-874538.78	1A	624		17	13	4	183	646	309L	17
OL ON LOC	414731.28	-874542.13	1A	617		10	6	-3	239	701	0R	9
TREE	414729.49	-874548.29	1A	663		56	52	43	452	915	453R	50
POLE	414736.15	-874542.04	1A	644		37	33	24	573	1036	361L	29
TREE	414731.15	-874551.00	1A	667		60	56	47	716	1179	473R	50
TREE	414733.28	-874557.20	1A	670		63	59	50	1205	1668	641R	43
TREE	414735.15	-874558.28	1A	657		50	46	37	1395	1857	560R	26
TREE	414746.15	-874549.38	1A	664		57	53	44	1674	2136	712L	27
TREE	414741.25	-874559.38	1A	666		59	55	46	1881	2344	169R	25
SPIRE	414739.68	-874607.32	1A	682		75	71	62	2207	2669	699R	34
TREE	414750.97	-874556.10	1A	672		65	61	52	2379	2841	714L	21
TREE	414745.68	-874606.27	1A	670		63	59	50	2568	3031	205R	15
OL ON MCWV TWR	414819.35	-874639.96	1A	746		139	135	126	6766	7228	508L	7

31C PIR

OBJECT	LATITUDE	LONGITUDE	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
OL ON DME	414733.12	-874538.78	1A	624		12	11	4	-6705	-6010	309R	17
LT POLE	414733.73	-874537.25	1A	634		22	21	14	-6664	-5968	434R	27
OL ON GS	414717.93	-874530.44	1A	653		41	40	33	-5188	-4492	370L	44
OL ON LTD WSK	414717.94	-874528.16	1A	616		4	3	-4	-5063	-4368	250L	7
OL ON GS	414653.48	-874456.09	1A	662		50	49	42	-1597	-901	370L	49
OL ON LTD WSK	414650.82	-874449.95	1A	621		9	8	1	-1074	-378	245L	9
OL ON LT POLE	414649.07	-874433.11	1A	643		31	30	23	-27	669	*506R	31
ANT ON BLDG	414646.39	-874434.19	1A	625		13	12	5	101	796	254R	13
TREE	414641.64	-874440.08	1A	637		25	24	17	109	805	403L	25
OL ON LT POLE	414648.06	-874431.87	1A	641		29	28	21	112	808	497R	30
OL ON LT POLE	414646.50	-874433.00	1A	645		33	32	25	158	854	324R	33
CHY	414640.22	-874439.90	1A	639		27	26	19	218	913	498L	27
BLAST FENCE	414644.03	-874434.74	1A	621		9	8	1	235	931	51R	8

31C PIR (CONTINUED)

OBJECT	LATITUDE	LONGITUDE	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
OL ON LOC	414643.57	-874435.09	1A	619		7	6	-1	248	943	1L	6
OL ON LT POLE	414645.13	-874432.89	1A	637		25	24	17	260	955	229R	24
TREE	414640.00	-874436.84	1A	672		60	59	52	401	1097	354L	56
TREE	414645.04	-874428.35	1A	661		49	48	41	515	1211	459R	43
TREE	414637.05	-874436.74	1A	660		48	47	40	612	1308	*565L	40
TREE	414644.69	-874425.29	1A	680		68	67	60	708	1403	*593R	58
FLGPL	414636.78	-874432.94	1A	663		51	50	43	840	1536	386L	39
TREE	414641.74	-874423.05	1A	658		46	45	38	1037	1733	494R	29
TREE	414635.58	-874423.72	1A	671		59	58	51	1430	2126	7R	35
TREE	414633.88	-874422.92	1A	675		63	62	55	1593	2288	76L	35
TREE	414633.84	-874416.84	1A	683		71	70	63	1929	2625	239R	37
TREE	414632.29	-874417.18	1A	689		77	76	69	2019	2714	108R	41
TREE	414623.95	-874421.42	1A	689		77	76	69	2367	3063	726L	34
TREE	414621.77	-874416.34	1A	700		88	87	80	2799	3494	620L	37

13L BV

OBJECT	LATITUDE	LONGITUDE	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
OL ON WSK	414700.78	-874448.69	1A	623		17	15	3	-4391	-3639	235R	15
OL ON LTD WSK	414727.32	-874516.75	1A	615		9	7	-5	-999	-247	249L	9
LT POLE	414734.27	-874527.39	1A	637		31	29	17	70	822	204L	31
TREE	414734.94	-874526.98	1A	644		38	36	24	94	846	*275L	38
TREE	414734.56	-874532.65	1A	653		47	45	33	379	1131	49R	37
TREE	414735.39	-874535.18	1A	655		49	47	35	575	1328	120R	30
TREE	414739.48	-874535.97	1A	646		40	38	26	905	1657	139L	5
TREE	414739.61	-874539.77	1A	652		46	44	32	1122	1874	50R	0
POLE	414742.37	-874544.05	1A	651		45	43	31	1550	2302	71R	-23
TREE	414747.23	-874542.33	1A	667		61	59	47	1794	2546	376L	-19
TREE	414746.15	-874549.38	1A	664		58	56	44	2106	2858	71R	-38
TREE	414747.77	-874549.35	1A	664		58	56	44	2217	2969	49L	-43
TREE	414750.97	-874556.10	1A	672		66	64	52	2811	3563	69R	-65

31R BV

OBJECT	LATITUDE	LONGITUDE	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
TREE	414734.94	-874526.98	1A	644	36	35	24	-5235			*275R	38
LT POLE	414734.27	-874527.39	1A	637	29	28	17	-5211			204R	31
OL ON LTD WSK	414727.32	-874516.75	1A	615	7	6	-5	-4142			249R	9
OL ON WSK	414700.78	-874448.69	1A	623	15	14	3	-750			235L	15
OL ON LT	414657.00	-874433.24	1A	633	25	24	13	362			*294R	16
TREE	414656.02	-874431.71	1A	643	35	34	23	514			*302R	19
OL ON POLE	414654.93	-874430.51	1A	642	34	33	22	656			285R	11
OL ON LT POLE	414649.07	-874433.11	1A	643	35	34	23	922			280L	-2
OL ON LT POLE	414648.06	-874431.87	1A	641	33	32	21	1061			290L	-10
TREE	414649.24	-874429.00	1A	663	55	54	43	1136			54L	8
TREE	414651.82	-874424.78	1A	671	63	62	51	1187			*356R	14
TREE	414647.38	-874429.53	1A	655	47	46	35	1236			217L	-5
TREE	414650.16	-874425.15	1A	675	67	66	55	1283			215R	12
TREE	414645.04	-874428.35	1A	661	53	52	41	1464			328L	-11
TREE	414644.69	-874425.29	1A	680	72	71	60	1656			194L	-1
TREE	414641.74	-874423.05	1A	658	50	49	38	1986			293L	-40
TREE	414633.84	-874416.84	1A	683	75	74	63	2877			*549L	-59

13R AV

OBJECT	LATITUDE	LONGITUDE	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
OL ON GS	414653.48	-874456.09	1A	662	55	50	42	-3598			*130L	49
OL ON GS	414717.93	-874530.44	1A	653	46	41	33	-7			*130L	46
TREE	414725.29	-874544.89	1A	647	40	35	27	1300			84R	-15
TREE	414725.75	-874548.02	1A	662	55	50	42	1504			214R	-10
TREE	414727.36	-874549.87	1A	662	55	50	42	1718			192R	-20
TREE	414729.49	-874548.29	1A	663	56	51	43	1780			47L	-23
TREE	414731.15	-874551.00	1A	667	60	55	47	2044			27L	-32
TREE	414733.28	-874557.20	1A	670	63	58	50	2533			141R	-54
TREE	414735.15	-874558.28	1A	657	50	45	37	2722			60R	-76
TREE	414741.25	-874559.38	1A	666	59	54	46	3209			331L	-92
SPIRE	414739.68	-874607.32	1A	682	75	70	62	3534			199R	-92
TREE	414745.68	-874606.27	1A	670	63	58	50	3895			295L	-122

31L AV

OBJECT	LATITUDE	LONGITUDE	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
OL ON GS	414717.93	-874530.44	1A	653	40	40	33	-3852			*130R	46
OL ON GS	414653.48	-874456.09	1A	662	49	49	42	-261			*130R	49
LT POLE	414641.75	-874443.66	1A	644	31	31	24	1241			82L	-21
TREE	414641.64	-874440.08	1A	637	24	24	17	1445			98R	-39
CHY	414640.22	-874439.90	1A	639	26	26	19	1554			3R	-42
TREE	414637.66	-874440.44	1A	654	41	41	34	1703			213L	-34
TREE	414638.03	-874439.35	1A	645	32	32	25	1737			129L	-45
TREE	414640.00	-874436.84	1A	672	59	59	52	1737			147R	-18
TREE	414637.05	-874436.74	1A	660	47	47	40	1949			65L	-40
FLGPL	414636.78	-874432.94	1A	663	50	50	43	2176			114R	-48
TREE	414633.88	-874422.92	1A	675	62	62	55	2929			*425R	-74
TREE	414623.95	-874421.42	1A	689	76	76	69	3703			225L	-99
TREE	414621.77	-874416.34	1A	700	87	87	80	4135			120L	-109

ARP HCT

OBJECT	LATITUDE	LONGITUDE	A	ELEV	AGL	HAA	MAG BEARING	DISTANCE	PNTR
OL ON AMOM	414719.09	-874502.28	1A	630	10		2924	1086	21
OL ON LTD WSK	414703.76	-874531.23	1A	621	1		25359	1803	6
OL ON GS	414717.93	-874530.44	1A	653	33		30011	1855	45
ANT ON OL ATCT	414648.77	-874508.60	1A	757	137		18235	2098	55
LT	414704.09	-874441.22	1A	635	15		10732	2153	5
ANT ON OL BLDG	414712.30	-874440.26	1A	725	105		8518	2173	43
HGR	414731.60	-874520.45	1A	669	49		34106	2408	46
OL ON HGR	414732.43	-874458.46	1A	675	55		2116	2447	41
OL ON HGR	414701.83	-874539.55	1A	667	47		25426	2463	2
FENCE	414734.29	-874452.58	1A	616	-4		2844	2791	9
OL ON HGR	414644.20	-874451.12	1A	661	41		15519	2887	8
OL ON LT	414700.30	-874432.33	1A	663	43		11129	2909	8
TREE	414734.94	-874526.98	1A	644	24		33432	2924	34
OL ON LT	414657.00	-874433.24	1A	633	13		11801	2970	12
VENT ON OL BLDG	414643.04	-874526.13	1A	666	46		20902	2987	40
TREE	414655.24	-874543.32	1A	653	33		24359	2994	23
TREE	414737.01	-874526.46	1A	665	45		33701	3093	29
TREE	414656.02	-874431.71	1A	643	23		11845	3117	16

ARP HCT (CONTINUED)

OBJECT	LATITUDE	LONGITUDE	A	ELEV	AGL HAA	MAG BEARING	DISTANCE	PNTR
LT	414722.53	-874431.35	1A	661	41	6748	3122	12
TREE	414725.29	-874544.89	1A	647	27	30302	3174	28
LT POLE	414734.86	-874441.82	1A	639	19	4113	3277	15
TREE	414653.53	-874547.48	1A	669	49	24359	3353	19
LT POLE	414641.75	-874443.66	1A	644	24	14846	3390	20
OL ON LT POLE	414649.07	-874433.11	1A	643	23	13016	3398	30
TREE	414725.75	-874548.02	1A	662	42	30142	3403	25
LT POLE	414646.74	-874542.61	1A	653	33	23055	3450	16
TREE	414638.31	-874529.57	1A	681	61	20924	3531	35
LT POLE	414728.31	-874429.09	1A	639	19	6024	3554	30
TREE	414727.36	-874549.87	1A	662	42	30254	3605	28
TREE	414649.24	-874429.00	1A	663	43	12705	3641	18
TREE	414647.38	-874429.53	1A	655	35	12949	3717	33
TREE	414644.45	-874545.24	1A	675	55	23018	3754	41
TREE	414650.01	-874551.03	1A	675	55	24112	3765	16
TREE	414651.82	-874424.78	1A	671	51	12104	3778	13
TREE	414739.61	-874539.77	1A	652	32	32507	3851	13
ANT ON OL TWR	414717.55	-874418.87	1A	762	142	8036	3862	-8
TREE	414637.66	-874440.44	1A	654	34	14912	3870	12
TREE	414638.03	-874439.35	1A	645	25	14752	3885	15
TREE	414637.05	-874436.74	1A	660	40	14624	4081	40
TREE	414644.69	-874425.29	1A	680	60	13010	4138	55
TREE	414642.89	-874550.63	1A	677	57	23230	4165	16
POLE	414742.37	-874544.05	1A	651	31	32358	4272	15
TREE	414736.22	-874415.72	1A	657	37	5849	4839	24
TREE	414747.77	-874549.35	1A	664	44	32419	4948	12
TREE	414747.93	-874427.98	1A	667	47	4112	4965	24
TREE	414749.01	-874429.62	1A	670	50	3918	4976	3
OL ON BLDG	414627.68	-874433.62	1A	678	58	15040	4999	-16
SPIRE	414739.68	-874607.32	1A	682	62	30719	5390	-88
TREE	414745.68	-874606.27	1A	670	50	31249	5695	-100
TREE	414623.95	-874421.42	1A	689	69	14457	5839	-81
TREE	414621.77	-874416.34	1A	700	80	14324	6252	-69
ROD ON BLDG	414625.98	-874615.79	1A	700	80	23153	6727	-70
TK	414818.00	-874620.38	1A	756	136	32444	8807	23
ANT ON BLDG	414514.09	-874350.58	1A	794	174	15555	13096	24

AERONAUTICAL DATA IS AVAILABLE ON THE INTERNET AT HTTP://WWW.NGS.NOAA.GOV.

ADDITIONAL INFORMATION ON DATA STANDARDS CAN BE FOUND IN FAA NO. 405, "STANDARDS FOR AERONAUTICAL SURVEYS AND RELATED PRODUCTS".

AN ASTERISK "*" INDICATES THAT THIS OBJECT IS OUTSIDE, BUT WITHIN 50 FEET, OF THE OBSTRUCTION IDENTIFICATION SURFACE.

Attachment 12: Dept. of Aviation Memorandum

DEPARTMENT OF AVIATION

MEMORANDUM

Date: December 9, 2005

To: Alberto Rodriguez, Chief Airport Operations Supervisor

From: Michael Conway, Airport Operations Supervisor II

RE: SWA Flight 1248 Accident - 12/8/05

Approximately 1915 hrs, I received the radio call that an aircraft had gone off the end of Runway 31C. I was at the depressed roadway between the "B" and "C" concourses.

I programmed the Bowmonk Friction Tester enroute and proceeded onto the runway.

I noticed that the freshest, most visible set of tire tracks started approximately 500 feet Northwest of the "K" taxiway intersection.

The main tracks appeared normal, straight and were approximately ten feet on each side of where the centerline should be. The markings were obscured by snow. At no point, did I notice any wavering or errant travel.

The tracks continued in this manner past the "B" hyspeed turn-off.

Approximately twenty to thirty feet before the end of pavement, the tracks changed from a normal appearance to wide scrub marks on either side of the centerline. The tracks displaced the thin layer of snow (approximately 1/8") to reveal bare pavement.

The tracks were indiscernible after they entered the blast pad area.

There was heavy snowfall at the time and the tracks were being covered with a thin layer of snow. There was no time to photograph them as the snow and wind began to cover them quickly.

The last Bowmonk friction reading I took immediately after the runway had been broomed and deiced had an average of "67".

The Bowmonk reading at the end of my inspection, after the incident, revealed an average friction reading of "40".