19871010I1-FDIR

Error summary I871010 T.S. Floyd ODW#1

--Navigation : NO renavigation was done. I recommend none be done--terminal error was small, about 3nm.

--Radar altitude : RA was patched many times throughout the flight using a filtering technique that looked at the difference betweenn radar altitude and pressure altitude. These radar altitude spikes occured on each climb and descent. A particularly bad RA altitude glitch occured between 00:59:01 and 01:07:46, but you should see no discontinuity due to the fix.

--Temperature : At 22:42 a large spike occured in both total temperature instruments due to a big pulse of liquid water. You will see the surface pressure jump 20 mb during a 30-second period.

--Dew point : The dew point was very noisy and frequently exceeded the temperature during cloud penetrations. Use the dew point information with caution. A filtering algorithm may be of value here to smooth the data.

	Take off	Landing
Aircraft static pressure	1012.8mb	1011.6mb
Corrected tower pressure	1015.7mb	1013.0mb

FLT ID: 871010I	FM: KMIA	TO: KMIA
FLT NO: 01-88	BLK IN: 11/0340	ATA: 11/0334
ETD: 1800Z	BLK OUT: 1822Z	ATD: 1832Z
ETE: 9+30	BLK TIME: 9+18	FLT TIME: 9+02
SPONSOR ORG: HRD	PROGRAM: SYNOP FLOW	PURPOSE: T.S. FLOYD

ORD PERSONNEL

AC GUNNOE	SYS ENG GOLDSTEIN ✓
CP EILERS	DATA SYS LYNCH ✓
NAV ~~HENDERSON~~ - NO -	RADAR
FE ~~RICE~~ / KIRKPATRICK ✓	BT/ODW GONZALEZ ✓
RADIO NUNN ✓	CLD PHYS
FD BOGERT ✓	DOPPLER

PARTICIPATING SCIENTIST/VISITORS/ORD

LAST, FIRST NAME	ACTIVITY ON A/C	AFFILIATION
MARKS ✓		HRD
BLACK, P ✓		"
GAMACHE, J ✓		"
DORST, N. ✓		"
	12 S.O.B.	

PROPOSED/ACTUAL MISSION/REMARKS (RECCO, FIXES, STORM, PENET, NHOP #)

1) ENR T.S. FLOYD VCNTY 17N 83W SYNOP FLOW W/ 2 EYE PENTS/DROPS..

2) NO PMS ✓

3) A.F. POSIT @ 1827Z 16-55N 83-36W; MIN SLP 999; MAX WND 45 KT !

4) 500 mb EYE DISPLACED WNW of SFC CNTR 45-60NM..!

5) DP BAL @ 0022Z

6) 22,000' @ 0100Z; 0125Z; 0155Z

RA ↑↓ ≥ 0100Z..

[RA98 @ 222130 - 010800] fixed

LAND

MIA ALT 29.94/1013.0mb

1500' PS-930 SP-1011.8

Sfc PS-1012 SP-1013

T.O.

ALT 30.03/1016.0

CAL-LAB 1015.7

PS 1814.5 1000' 1013.9

SFC

FLT ID: 87/010I TIME OFF: 1832Z TIME ON:

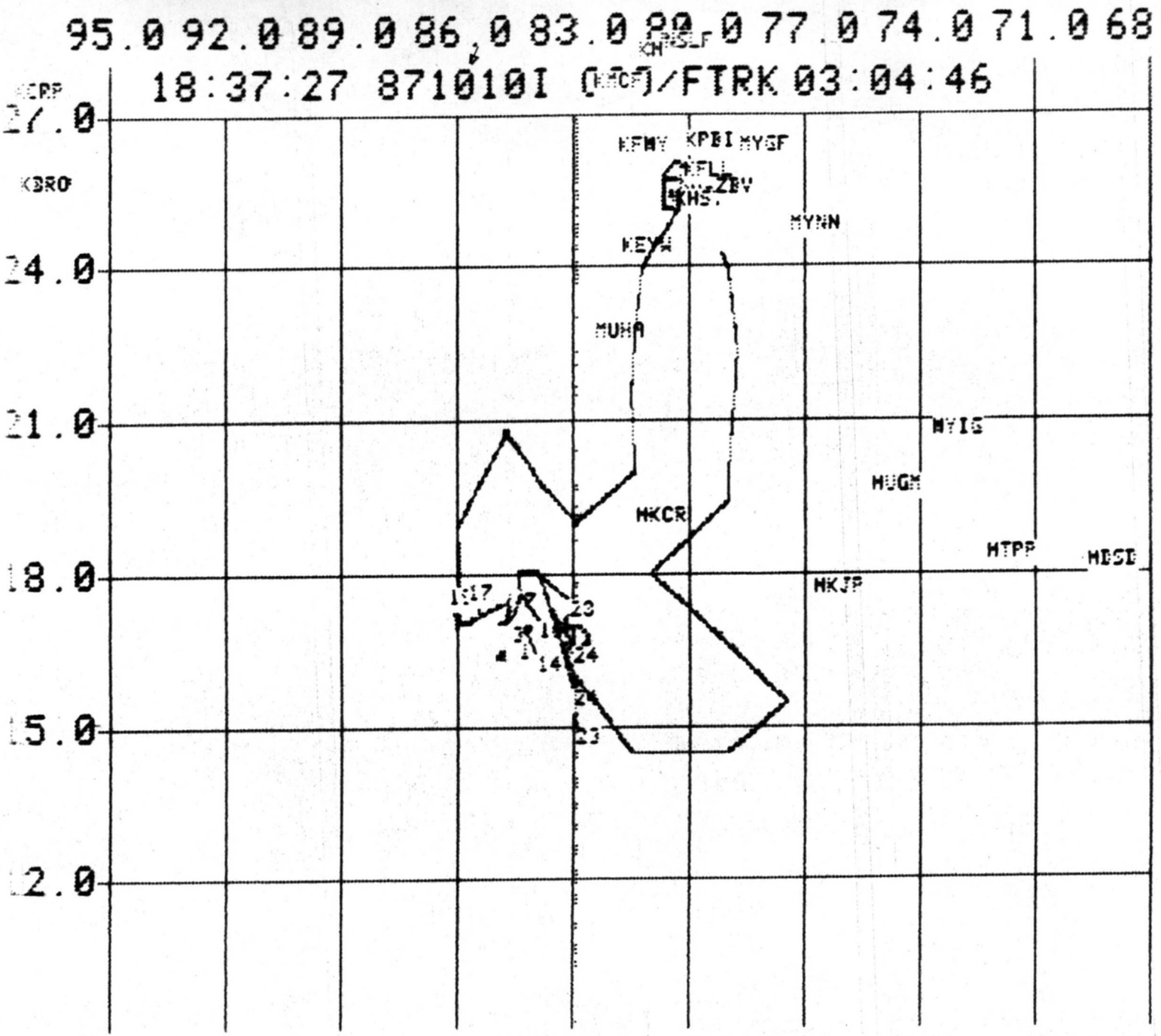
	A/C T/O	WX STN	A/C LAND	WX STN
PRESSURE	PS 1014.3 SP 1013.9 (1500')	1016.0 CAL = 1015.7		29.99 1013.0

	NO	DATA DISPOSITION/DATE/QUALITY
1/SEC FLT LVL TAPES	1	
FAST FLT LVL TAPES	Ø	
RADAR TAPES	1Ø	
DOPPLER TAPES	1Ø	
ODW CASSETTES	1Ø	
HARD COPIES	4	
AXBT	Ø	
AXCP	Ø	
ODW	25	

PHOTOGRAPHY

	FWD	LS	RS	VERT	
ON	✓	✓	✓		
OFF					
RATE					

REMARKS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18:37:27 871010I
/FTRK 03:04:46
27.0
24.0
21.0
18.0
15.0
12.0
KBRO
KFMY
KPBI
MYGF
ZBV
MYNN
KEYW
MUHA
MYIG
MUGM
MKCR
MTPP
MDSD
MKJP

NOAA FORM 59-4
(2-72)

87/010I T.S. Floyd

TIME(Z)	deg/min LAT	deg/min LONG	TRK	HDG	WD	KTS WS	PA	GA	TA	Td	SP	PS	PQ	
1850	24 44	80-37	216	218	324	01	4693	4957	-1.0	-0.2	101	561	60.2	
1923	22-31	81-26	186	186	158	15	5462	5746	-4.4	-5.6	039	508	75.0	
1940	21-17	81-30	176	176	159	20	5459	5750	-4.8	-7.8	066	508	69.2	DROP#1
1958	19-58	81-29	239	235	158	26	5456	5750	-3.9	-4.5	031	508	74.2	DROP#2 (Bad)
2012	19-22	82-25	236	231	160	30	5455	5740	-3.8	-3.9	027	508	77.1	
2029	19-25	83-24	311	310	152	30	5453	5730	-3.3	-5.0	011	508	64.5	DROP#3
2055	20-46	84-44	214	212	144	16	5449	5726	-3.6	-4.0	016	509	64.9	DROP#4
2111	19-45	85-28	215	214	110	13	5446	5720	5722	-3.4	-3.5	509	72.4	DROP#5
2124	18-54	86-01	176	177	006	14	5446	5717	-3.2	-3.9	004	509	80.4	DROP#6
2135	17-54	85-59	182	183	351	17	6119	6432	-7.0	-10.4	974	464	72.5	DROP#7
2155	17-09	85-32	067	066	345	11	6116	6422	-11.5	-7.3	089	464	64.1	DROP#8
2225	16-31	84-48	057	054	183	14	6112	6431	-7.0	-8.9	980	465	63.0	DROP#9
2239	16-55	84-29	272	271	146	18	6112	6431	-6.4	-10.3	975	465	71.1	DROP#10
2309	17-56	83-52	155	154	142	25	6120	6432	-6.6	-13.6	964	464	77.7	1
2322	17-01	83-28	157	159	163	26	6119	6431	-6.4	-9.8	964	464	75.4	DROP#11 Bad
2329	16-30	83-15												DROP#12
2337	15-57	82-57	132	136	162	24	6118	6431	-6.1	-9.1	954	464	77.4	DROP#13
0003	14-31	81-25	091	097										DROP#14
0013	14-30	80-35	091	095	171	16	6118	6431	-7.8	-8.0	996	464	76.3	
0019	14-30	80-02	090	093										DROP#15
0032	14-31	78-58	054	056	147	07	6119	6431	-7.9	-12.4	001	464	75.1	DROP#16
0053	15-33	77-33	298	299	136	05	6119	6431	-8.4	-11.3	010	464	73.7	DROP#17
0120	16-54	79-26	304	308	154	09	6736	7128	-11.5	-18.4	025	426	71.1	
0126	17-12	79-50	306	306	145	14	6734	7123	-11.8	-14.5	017	426	72.5	DROP#18
0142	18-03	80-56	049	055	164	23	6738	7120	-12.4	-12.6	038	426	74.2	DROP#19
0156	18-46	79-56	054	058	170	18	6736	7123	-12.9	-14.0	071	426	71.3	DROP#20
0209	19-28	79-00	360	014	154	13	6737	7126	-12.1	-15.4	041	426	70.4	DROP#21
0222	20-32	78-56	005	009	128	15	6735	7131	-11.3	-24.1	035	426	71.0	DROP#22
0251	23-02	78-52	357	353	166	15	6737	7125	-11.4	-13.0	024	426	73.5	DROP#23

☆U.S. GOVERNMENT PRINTING OFFICE: 1980—765-012/1119

NOAA FORM 58-49
(3-86)

I

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
OFFICE OF AIRCRAFT OPERATIONS

FLIGHT PLAN

1400 Z
PROPOSED T.O. 1800 Z
ACTUAL T.O. 1832

WAY POINT	TO	RTE	ALT	TAS	TC	W V DC	TH	VAR	MH	GS	ZONE DIST	TOTAL DIST	ZONE TIME / TOTAL TIME	PROPOSED ETA	ETA / ATA
1	25-48.2 80-17.6													1832	
2	Manatlion 24-42.7 81-05.7									240	80	80	+20 / +20	1852	
3	TADPO (FIR) 24-00.0 81-13.0 MIAA	R 448								290	43	123	+09 / +29	1901	1903 1903
4	VARDER UVR 23-05.5 81-22.6										55	178	+11 / +40	1912	1914 1916
5	Cayo L. D. Sur UCL 21-36.0 81-31.0										90	268	+19 / +59	1931	1936 1935
6	ATUVI (FIR) 20-00.0 81-25.0 MKJK										96	364	+20 / 1+19	1951	1955 1957
7	19-00.0 MHTG FIR 83-00.0										115	479	+24 / 1+43	2015	2021 2020
8	20-30.0 84-30.0										125	604	+26 / 2+09	2041	
9	~~19-00.0~~ 19-48 ~~86-00.0~~ 85-06										~~120~~ 54	~~724~~	~~+11~~ / 2+34		
1	~~17-00.0~~ 19.00 ~~86-00.0~~ 86-00										~~120~~ 70	844	~~+12~~ / 2+59		
2	~~17-00.0~~ 18-00 ~~82-30.0~~ 86-00										200	1044	+41 / 3+40		
3	~~17-40.0~~ 17-08 ~~83-00.0~~ 86-00										50	1094	+10 / 3+50		
4	~~17-00.0~~ 17.00 15 ~~83-00.0~~ ~~84-30~~ 82 FIR										100	1194	+21 / 4+11		
5	17-00 83-00 EYE										125	1319	+26 / 4+37		
6	~~18-00.0~~ 16-00 ~~86-30.0~~ 83-00										90	1409	+19 / 4+56	2336	2336 2336
7	~~13-00.0~~ 14-30 ~~77-30.0~~ 81-30										240	1649	+50 / 5+46		0003
8	~~15-30.0~~ 13-00 ~~77-30.0~~ 81-30										150	1759	+32 / 6+17		
9	~~18-00.0~~ 13-00 ~~81-00.0~~ 80-12										250	2009	+52 / 7+09		
	~~ALORA 19-27.0~~ ~~79-00.0~~										147	2156	+31 / 7+40		
	GONIS 20-00 ~~78-58~~										30	2186	+06 / 7+46		

SYS	BEGIN ALIGN TIME	NCS CONN	Ω AID	TIME OUT OF COARSE / ELAPSE ALIGN POST TIME	ALIGN STS 0-5	(1) TIME INTO NAV.	(2) TIME OUT NAV.	ΔT (2)(1)	TERMINAL ERRORS LAT	LONG	G S
	SIMONES ALEGRE URSUS						105 2331 37 2368 99 2467		+02 8+14		
INS 1		✓	X		1	1751	0341		+20	8+34	
INS 2 IMU		✓	X		1	✓					

130 2597 +27 9+01

ALIGN REMARKS:

OTHER REMARKS:

16-55
53-36

1727
8348

NOAA FORM 56-40
(3-86)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
OFFICE OF AIRCRAFT OPERATIONS

FLIGHT PLAN

11

PROPOSED T.O.

ACTUAL T.O. 1832 Z

WAY POINT	TO	RTE	ALT	TAS	TC	W/V DC	TH	VAR	MH	GS	ZONE DIST	TOTAL DIST	ZONE TIME / TOTAL TIME	PROPOSED ETA	ETA / ATA
X	1 13-00 79-00														
X	2 13-00 77-30														
X	3 ~~14-00~~ 14-30 ~~79-00~~ 79-00														0031
X	4 15-30 77-30										106	106	+22 / +22	0053	0053 / 0053
X	5 16-12 78-48														
X	6 17-06 79-48														
•	7 18-00 81-00										251	357	+54 / 1+16	0147	0143 / 0141
•	8 18-46 80-00														
•	9 19-27 79-00 ALORA										143	500	+31 / 1+47	0218	0209 / 0209
•	1 20-00 78-58 GONIS										33	533	+07 / 1+54	0225	0216 / 0216
•	2 21-~~00~~30 78-~~58~~														
•	3 21-39.7 USR 78-49.9 S. MOWLES										105	638	+22 / 2+16	0247	0235 / 0235
•	4 22-22.5 UPA 78-46.4 ALGERS										37	675	+08 / 2+24	0255	0243 / 0243
5	23-00.0 79-00.0														
•	5 24-00.0 79-01.0 URSUS										99	774	+21 / 2+45	0316	0302 / 0301
•	6 25-40.3 80-10.7 BSY ~~ALB~~										130	904	+28 / 3+13	0344	0323 / 0323
	7 25-98.2 80-17.6 MIA														

SYS	BEGIN ALIGN TIME	NCS CONN	Ω AID	TIME OUT OF COARSE / ELAPSE ALIGN POST TIME	ALIGN STS 0-5	(1) TIME INTO NAV.	(2) TIME OUT NAV.	ΔT (2)(1)	TERMINAL ERRORS LAT	LONG	G S
INS 1					1	1751	0341	9+50	0.0	-0.4	2
INS 2 IMU					1	✓		9+50	+2.7	+5.9	1

ALIGN REMARKS:

OTHER REMARKS:

9+50 (2345) 0415Z

A/C COMMANDER	NAVIGATOR	A/C NO.	MISSION NO.	TIME AIRBORNE	LOCATION	DATE	PROJ. NAME
GUNNOE	HENDERSON	N43RF	871010I	1832 Z	MIA	10 OCT 87	T/S FLOYD

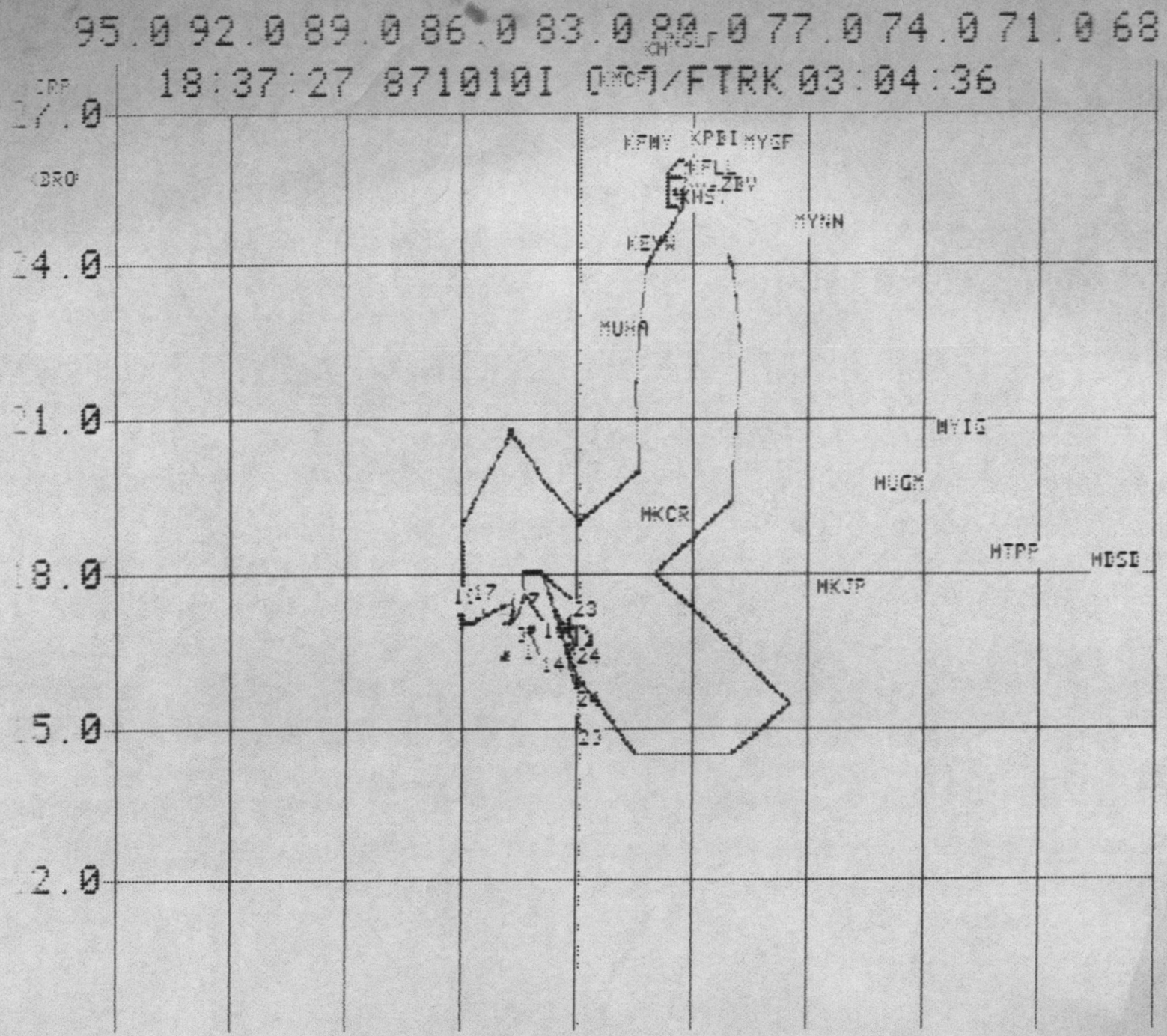
TIME OF ENTRY	POSITION	TYPE INE USED	INE #1 POSITION	LAT LON COR'S	INE #2 POSITION	LAT LON COR'S	ALT / GS	TH / TK	REMARKS
1751	25-48.2 80-17.6	4/1	25-48.2 80-17.6	ϕ	25-48.2 80-17.6	ϕ	X	X	BLOX
1938		9/1	21-21.2 81-30.3		21-21.1 81-29.4		18.0 251	176 176	
2000	19-54.0 81-36.0	2/1	19-54.3 81-36.2	-0.3 -0.2	19-54.0 81-35.3	ϕ +0.7	18.0 277	231 235	157°/39
2100	20-30.0 84-55.0	2/1	20-26.2 84-58.5	+3.8 -3.5	20-25.7 84-57.0	+4.3 -2.0	18.0 270	212 213	??? Cancun 283°/112
2202		9/1	17-21.4 85-03.4		17-21.2 85-01.6		20.0 282	068 067	
2213		9/1	16-58.1 84-47.8		16-57.7 84-46.0		20.0 272	191 188	△
2313		9/1	17-39.2 83-44.8		17-38.5 83-42.3		20.0 286	[illegible]	L/C (17-34.8 83-43.9)
0024		9/1	14-30.5 79-34.6		14-29.5 79-31.8		20.0 298	093 090	L/C (14-28.5 79-34.8)
0120		9/1	16-54.1 79-25.0		16-52.7 79-22.5		22.0 312	308 307	L/C (17-00.4 79-31.3)
0235	21-39.7 78-49.9	2/1	21-39.4 78-49.4	+0.3 +0.5	21-39.0 78-47.0	+0.7 +2.9	22.0 309	006 004	(USR) L/C (21-38.5 78-50.6)
0341	25-48.2 80-17.6	4/1	25-48.2 80-14.9	ϕ +2.7	25-48.6 80-11.7	-0.4 +5.9	X	X	BLOX / RGS #1 3 / #2 1

ATC CLEARANCE: ↗5.0 2176 SQ CAF
R150 R180 ↗16.0
R200 L180 ↗18.0

ENROUTE CLEARANCES: ~~↗~~ TADPO ↗20.0
↗22.0 SQ ~~4343~~
↘16.0 TO 29.9A

TYPE OF FIX: (1) DR (2) RADIO (3) CELESTIAL (4) VISUAL (5) LORAN (6) RADAR (7) DOPPLER - INERTIAL (8) OMEGA (9) INERTIAL (10) OMEGA - INERTIAL

19-83 1723 8333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/FTRK 03:04:36
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14.0
11.0
8.0
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2.0
KFMY
KPBI
MYGF
KFLL
ZBW
KMIA
MYNN
KEYW
MUHA
MYIG
MUGM
HKCR
MTPP
MDSD
MKJP
23
24
14