

0A0 PERSONNEL

PARTICIPATING SCIENTIST/VISITORS/ORG

PROPOSED/ACTUAL	MISSION REMARKS (RECCO, FIXES, STORM, PENET, NHOP ^H)
TEAL 19 (AFRES)	RAISY TURNED OFF FOR ENTIRE FLT Use RA232 for entire flt
RAISY DAP - 3.5 on and roll out	NO TT3

Both DPT on package out. at 700 MB
due to ^{possible} power surge
DELAY due to bringing balloon
down to check ~~the~~ package.

-25 to -23
TD from AFRES
at 10K

143325
Bump
144822

163823z

PASS OVER BALLOON WITH N42RF

U.S. DEPT. COMM./NOAA/OAO - DATA SECTION WORK FORM NO.2 OAOWF2 FILE

FLT ID: 1951024 TIME OFF: 1111Z TIME ON: 1712Z

	A/C T/O	WX STN	A/C LAND	WX STN
PRESSURE	1020.0 1020.0	1019.8	1019.8	1020.0

NO DATA DISPOSITION/DATE/QUALITY

1/SEC FLT LVL TAPES

1

FAST FLT LVL TAPES

RADAR TAPES

DOPPLER TAPES

ODW CASSETTES

HARD COPIES

AXBT

AXCP

ODW

PHOTOGRAPHY

	FWD	LS	RS	VERT
ON				
OFF				
RATE				

REMARKS

NOAA • AOC • SED Flight Performance Log

Aircraft : N43RF

Project: Hurricane '95

Mission : Balloon Fly BySED Crew: Lynch, McMillianFlight ID : 95102AIPre-Flight: 9:30 Z

Take-Off: _____

Landing: 17:11:48

System			Pre-Flight	In-Flight	Post-Flight		
N A V	INE #1	Aligned to : <u>5</u>	<u>✓ TL</u>				
	INE #2	Aligned to : <u>0</u>	<u>✓ TL</u>				
	GPS		<u>✓ TL</u>		Lat	Long	GS
R A D A R	Nose		<u>✓ TL</u>				
	L/F	R/T SN :	<u>NU</u>				Mod Switch Off ?
	Tail	R&T SN : /	<u>NU</u>				Mod Switch Off ?
	ASAU's & RCU		<u>NU</u>				
P M S	MARS Data System		<u>NU</u>				# DATs :
	2DG-C	Ch 1/64: /	<u>NI</u>				
	2DG-P	Ch 1/64: /	<u>NI</u>				
	FSSP	Ref VDC:	<u>NI</u>				
	SEA Data System		<u>NU</u>				# DATs :
T E M P		Cal High	Cal Low			Cal High	Cal Low
	Temp #1	<u>30.2</u>	<u>-31.2</u>	<u>✓ TL</u>			
	Temp #2			<u>✓ TL</u>			
	Temp #3	(Starboard)		<u>NI</u>			
	Dewpoint #1			<u>✓ TL</u>			
	Dewpoint #2			<u>✓ TL</u>			
P R E S S	Attack Angle (AP/DAP)		<u>✓ TL</u>	<u>(3)</u>			
	Slip Angle (BP/DBP)		<u>✓ TL</u>				
	Differential (PQ1/PQ2/PQ3)		<u>✓ TL</u>				
	Absolute (PS1/PS2)		<u>✓ TL</u>				
	Radome Transducers		Plugs Out? <u>✓ TL</u>				
	Cabin Transducer (Station 5)		<u>✓ TL</u>				
F L T L V L	Apn-159	SN: <u>06-02A</u>	<u>✓ TL</u>				
	Apn-232	SN: <u>1699</u>	<u>✓ TL</u>				
	King Liquid Water		<u>NI</u>				
	J&W Liquid Water		<u>✓ TL</u>				
	Down PRT-5 (SST)		<u>✓ TL</u>				
	Side PRT-5 (CO ²)		<u>✓ TL</u>				
M I S C	RAMS Data System		<u>✓ STM</u>	<u>(2)</u>			# DATs :
	ASDL						
	Exterior Walk Around		<u>✓ TL</u>				
	Video	<u>(N) (L) (R) (D)</u>	<u>✓ TL</u>				
	AXBT		# on Board <u>NU</u>	# Dropped:		# Good	
	ODW		# on Board : <u>NU</u>	# Dropped :		# Good :	
U S E R	FCU	<u>-A-B-C-</u>	<u>✓ STM</u>				
	Charge Probe		<u>NU</u>				Accelerometers
	Field Mills <u>Lyman Alpha</u>						#1 (2 G) :
	Field Mills	<u>(L) (R) (U) (D)</u>	<u>✓ TL</u>				#2 (2.5 G) :
	Lawrence Water Collector		<u>NU</u>				#3 (3 G) :
	HRD Workstation		<u>NU</u>				#4 (3.5 G) :

Please Note any Discrepancies

[illegible]

NOAA • AOC • SED
N43RF DATA STATION LOG

Project : Hurricane '95 Mission : 951024I Flight ID : Fly By x 30
Operators : Lynch, McMillan
Take Off : _____ Landing : 17:11:48

RAMS DAT 1 On <u>(8)9</u> : <u>10:53</u>	RAMS DAT 1 Off: <u>17:19:28</u>	CPU Selected: <u>A</u> B
RAMS DAT 2 On [8 9]:	RAMS DAT 2 Off:	VCR's Used: <u>N Q R D</u>
RAMS DAT 3 On [8 9]:	RAMS DAT 3 Off:	
Printer On: <u>10:53</u>	Printer Off: <u>17:19:28</u>	
VCR's On: <u>10:54</u>	VCR's Off: <u>17:15</u>	VCR Count: <u>2710</u>
MARS DAT On:	MARS DAT Off:	
PMS DAT On:	PMS DAT Off:	

ASDL Messages							
Message	Time	Message	Time	Message	Time	Message	Time
R V S B		R V S B		R V S B		R V S B	
R V S B		R V S B		R V S B		R V S B	
R V S B		R V S B		R V S B		R V S B	
R V S B		R V S B		R V S B		R V S B	
R V S B		R V S B		R V S B		R V S B	
R V S B		R V S B		R V S B		R V S B	
R V S B		R V S B		R V S B		R V S B	
R V S B		R V S B		R V S B		R V S B	
R V S B		R V S B		R V S B		R V S B	
R V S B		R V S B		R V S B		R V S B	
R V S B		R V S B		R V S B		R V S B	
R V S B		R V S B		R V S B		R V S B	
R V S B		R V S B		R V S B		R V S B	

R = Recco V = Vortex S = Sonde B = AXBT

Data Station Operator Notes

AFHB 29.50 03.275
11:57:35 ASDL Comm. Pgm: Unknown error
AFLT1 * Runtime Error * 0601 040215
15:57:35, 16:27:35, 17:00:30

DATE : 10/25/95

TO : Chief, AOC Flight Operations

FROM : Pilot/Flight Director, Aircraft N43RF ON 1719Z BLOCKTIME

SUBJECT: Hazardous Duty OFF 1054Z 6:25

PURPOSE OF FLIGHT: INSTRUMENT CALIBRATION

Hazardous Duty Pay is required for flight made on 10/24/95
(DATE)

Request based on FLYING FORMATION WITH
N42RF; FLYING PAST BALLOON PACKAGE

Personnel on board authorized Hazard Pay:

MOORE

DAMIANO

LYNCH

McMILLAN

PILOT/FLIGHT DIRECTOR:

A. Barry Damiano

APPROVED: _____

DISAPPROVED: _____

CHIEF, AOC FLIGHT OPERATIONS: _____

N42 (JACK)

N43 (BARRY)

TEAL 19

SFC PRESSURE

115609Z

115746Z

120013Z

120331Z

120442Z

120632Z

121109Z

121240Z

121450Z

121806Z

121951Z

122149Z

122516Z

122638Z

122842Z

123300Z

123418Z

123610Z

124018Z

124152Z

124352Z

1020.9

124737Z

124917Z

125120Z

125531Z

125706Z

125917Z

2 Sec's

13.0m
42.382
42.389
42.392
42.395

50 SHEETS EYE LASH 5 SQUARE
100 SHEETS EYE LASH 5 SQUARE
200 SHEETS EYE LASH 5 SQUARE
100 RECYCLED WHITE 5 SQUARE
200 RECYCLED WHITE 5 SQUARE

240 KT
210 KT

Star National Brand

20
175

N42 (Jack)

N43 (Barry)

TEAL 19

SFC PRESSURE

①

13 55 52 Z

13 37 49 Z

13 36 15 Z

1021.9

②

14 03 40 Z

13 45 26 Z

13 43 52 Z

14 10 51 Z

13 53 19 Z

13 51 54 Z

14 00 18 Z

13 59 05 Z

14 08 04 Z

14 06 35 Z

17.1/10.0 TE.

14 17 59 Z

14 15 21 Z

14 13 50 Z

14 25 48 Z

14 22 26 Z

14 21 05 Z

14 33 12 Z

14 29 21 Z

14 28 04 Z

14 40 34 Z

14 37 12 Z

14 35 30 Z

14 47 51 Z

14 44 11 Z

14 42 44 Z

14 56 08 Z

14 52 41 Z

14 51 01 Z

-2 Sec's

42-301 100 SHEETS 15' X 5' 5' SQUARE
42-302 100 SHEETS 15' X 5' 5' SQUARE
42-303 100 SHEETS 15' X 5' 5' SQUARE
42-304 100 SHEETS 15' X 5' 5' SQUARE
42-305 100 SHEETS 15' X 5' 5' SQUARE
42-306 100 SHEETS 15' X 5' 5' SQUARE
42-307 100 SHEETS 15' X 5' 5' SQUARE
42-308 100 SHEETS 15' X 5' 5' SQUARE
42-309 100 SHEETS 15' X 5' 5' SQUARE
42-310 100 SHEETS 15' X 5' 5' SQUARE
42-311 100 SHEETS 15' X 5' 5' SQUARE
42-312 100 SHEETS 15' X 5' 5' SQUARE
42-313 100 SHEETS 15' X 5' 5' SQUARE
42-314 100 SHEETS 15' X 5' 5' SQUARE
42-315 100 SHEETS 15' X 5' 5' SQUARE
42-316 100 SHEETS 15' X 5' 5' SQUARE
42-317 100 SHEETS 15' X 5' 5' SQUARE
42-318 100 SHEETS 15' X 5' 5' SQUARE
42-319 100 SHEETS 15' X 5' 5' SQUARE
42-320 100 SHEETS 15' X 5' 5' SQUARE

National Brand
42-301 100 SHEETS 15' X 5' 5' SQUARE
42-302 100 SHEETS 15' X 5' 5' SQUARE
42-303 100 SHEETS 15' X 5' 5' SQUARE
42-304 100 SHEETS 15' X 5' 5' SQUARE
42-305 100 SHEETS 15' X 5' 5' SQUARE
42-306 100 SHEETS 15' X 5' 5' SQUARE
42-307 100 SHEETS 15' X 5' 5' SQUARE
42-308 100 SHEETS 15' X 5' 5' SQUARE
42-309 100 SHEETS 15' X 5' 5' SQUARE
42-310 100 SHEETS 15' X 5' 5' SQUARE
42-311 100 SHEETS 15' X 5' 5' SQUARE
42-312 100 SHEETS 15' X 5' 5' SQUARE
42-313 100 SHEETS 15' X 5' 5' SQUARE
42-314 100 SHEETS 15' X 5' 5' SQUARE
42-315 100 SHEETS 15' X 5' 5' SQUARE
42-316 100 SHEETS 15' X 5' 5' SQUARE
42-317 100 SHEETS 15' X 5' 5' SQUARE
42-318 100 SHEETS 15' X 5' 5' SQUARE
42-319 100 SHEETS 15' X 5' 5' SQUARE
42-320 100 SHEETS 15' X 5' 5' SQUARE

210 KTS

240 KTS

10/24/95

N 42

N 43

TEAL 19

SFC PRESSURE

130 KT\$

TEST $\rightarrow$

15 3409 Z

210 KTS
15 34 37 Z

1541 28 Z

15 4 3 ~~0~~ 5 7

1544 41 7

15 49 38 z

1549 ³⁸ ~~15~~ z

1551 20 Z

155437z

1555 55 z

15 57 52 2

140058 Z

1602 10 z

1404 04 Z

1021.8 m

14 07 12 z

140847 Z

16 10 21 7

16 13 30 2

16 14 57 z

14 16 27 Z

16 19 58 z

16 21 39 2

14 23 21 2

1626 31 E

1627 53 Z

16. 29 40 z

1633 09 z

1634.30 z

1636027

-2 Sec's

42-381	50 SHELS EYE CASE	5 SQUARE
42-382	100 SHELS EYE CASE	5 SQUARE
42-383	200 SHELS EYE CASE	5 SQUARE
42-382	100 RECYCLED WHITE	5 SQUARE
42-383	200 RECYCLED WHITE	5 SQUARE



NationalTM Brand

240
KT 5

I 951024

ALT (FT)	TIME	SPD		
10000	115746	180		Both Below package
	120442			208
	121240		FURTHER AWAY HORIZ	210
		210		
	121951		increasing airspeed at passing package	
	122638		204 KTS	
	123418		FURTHER AWAY COMPARED TO N42RF	
		240		
	124152		Good	
	124917		Good	
	125706		Good	
5000	133749	180		
	134526		Good	
	135319		Good	
	140018		Good	
	140804		Good	WS = 16 KTS
		210		
	141521			
	142226		Good	
	142921		Good	
		240		
	143712			
	144411			
	145241			
1000	153409	210	practice	
	154305	180		
	154938		Good	
	155555		Too much roll	
		210		
	160210			
	160847		changing speeds	
	161457			
		240		
	162139		Good	
	162753			
	163430			

T951024 Balloon FLY-134

RENAV INE 1

121500, -1.1, .6

131500, -.7, 1.3

141500, -1.3, .9

151500, -1.8, +2

161500, -2.2, 3.1

071500, -3, 3.5

~~NO~~ NO DATA CAPS

PL+RL

INE1

INE2

111300, 132600

MAJOR PQW problems

??

used RA232

BALLOON FLY-BY

FLIGHT #01 I951024

TYPE OF DATA

SENSOR OR OPTION

INE	1
Accelerometer	2
Temperature probe	1
Altitude change option (for vertical winds)	RA232
Static pressure	Rosemount fuselage
Dynamic pressure	Rosemount fuselage
Time source	Micro 99
Constants file	CO3960.CON

Notes:

There were no time/data gaps.

For the balloon passes, total temperature 2, TT2, was between .3° and .5° C cooler than TT1. TT1 was used to derive ambient temperature.

We do know that there was no dewpoint temperature output from the instrument package at 10000 feet, the highest altitude. Check your abstract Mike.

Downward spikes in radar altimeter output are a result of overflying land.

The aircraft INE positions were renavigated with respect to GPS.

SPECIAL NOTE!!! Locations 80, 81 and 82 of record five on the standard tape contain vertical ground, vertical air and vertical speeds, respectively, computed using Dave Jorgensen's vertical wind algorithm. It is recommended that these values be used for vertical wind analysis.

Mike this is a pretty clean data set. I only have some concerns about aircraft dewpoint temperature, but I believe that it should be within .5° C of the instrument package. We shall see.

	Takeoff	Landing
	-----	-----
Aircraft static pressure	1020.0mb	1019.4mb
Corrected tower pressure	1019.8mb	1020.0mb

Flight Meteorologist: A. Barry Damiano, (813) 828-3310 ext. 3073

I 951024

TIME	LAT	LONG	TRK	HD	WD	WS	PA	GA	TA	TD	SP	PS		PQ
111200	2752	8228	63	84	92	15	273	449	21.3	18.5	1020.2	962	CLR	72.8
112000	2817	8226	327	328	353	2	2934	3109	10.6	-7.9	1014.1	700.2	CLR	74.8
113100	2833	8255	327	328	198	4.5	3141	3346	8.4	-12.4	1017.3	688.6	CLR	73.2
114700	2922	8320	157	157	204	5.2	3138	3138	10.2	-11.9	1016.7	705.7	CLR	69.2

W 150145
150645

006 15 KTS

150131

S 150800
151300

BOX PATTEN IN

E 151430
151930

FORMATION WITH N42RF

N 152045
152545

152550

164600 2903 8304 156 156 0 10 1000 1111 16.3 11.8 1022.4 898.7 N42RF Fm 78.0



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Rockville, MD 20852-3019

OFFICE OF NOAA CORPS OPERATIONS

Aircraft Operations Center
P.O. Box 6829
Tampa, FL 33608

MEMORANDUM TO: Balloon Fly-By Participants

FROM: Barry Damiano / SPD, Richard McNamara / SED

SUBJECT: Horseshoe Beach Aerostat Fly-By 1995

DATE: October 10, 1995

The aerostat fly-by has been scheduled for October 18, 1995, with October 19 and 20 as alternate dates. The fly-by will be held at the Air Force Horseshoe Beach aerostat site (29° 30' N, 83° 16.25' W), north of Cedar Key. Two NOAA P-3 s and an Air Force Reserve C-130 aircraft will take part in the flight.

Science and Programming Division (SPD) will hold a briefing for Air Force and NOAA aircrews at MacDill AFB the afternoon before the flight. A second briefing will be held the morning of the fly-by, providing a balloon site and weather update and the final go/no go decision. The times and place for the meetings will be provided by SPD.

Once the aircraft arrive on site they will fly a race track pattern level with the package suspended 150 feet below the aerostat. Racetracks will be flown in a counter-clockwise direction with the aerostat always to the left of the aircraft. Aircraft separation within the racetrack will be done visually and coordinated by aircraft commanders. Aircraft will fly a true heading of approximately due north on the approach leg, passing between 400 and 600 feet from the aerostat. Racetracks will be flown at 700 mb (10,000 feet), 850 mb (5000 feet), and 980 mb (approx. 1000 feet). At each altitude each plane will make 3 passes at indicated airspeeds of 180, 210 and 240 knots (a total of nine passes per plane per altitude). Each plane should be straight and level with no changes in airspeed for 60 to 90 seconds before passing the package and 15 seconds after. The flight director of each plane is responsible for marking the time and other pertinent information of each pass.



Balloon Fly-By, October 10, 1995

Page 2

It takes approximately 30 minutes for the balloon to descend from one altitude to the next, allowing time for the aircraft to leave the site and perform intercomparison and calibration maneuvers. During the descent from 10,000 feet to 5000 feet N43RF and the C-130 will fly a formation maneuver that will consist of a box pattern with each leg 5 minutes in duration. The box will be orientated so true cardinal headings will be flown. N42RF will separate from the other aircraft and perform calibration maneuvers discussed during the pre-flight briefing (yaw, pitch, wind-L's, etc). During the descent from 5000 feet to 1000 feet N42RF and the C-130 will perform the box maneuver while N43RF performs pre-arranged calibration maneuvers. Additional maneuvers may be performed during the ferry to and from the balloon site. Aircraft commanders and flight directors will discuss aircraft separation and airspace requirements for formation flying and calibration maneuvers during the pre-flight briefings.

Communications between the balloon site ground crew and NOAA aircraft will be on VHF frequencies 122.925 and 123.05 Mhz

CAUTION: STROBELIGHTS AND UNMARKED
BALLOON ON CABLE TO 15,000 MSL

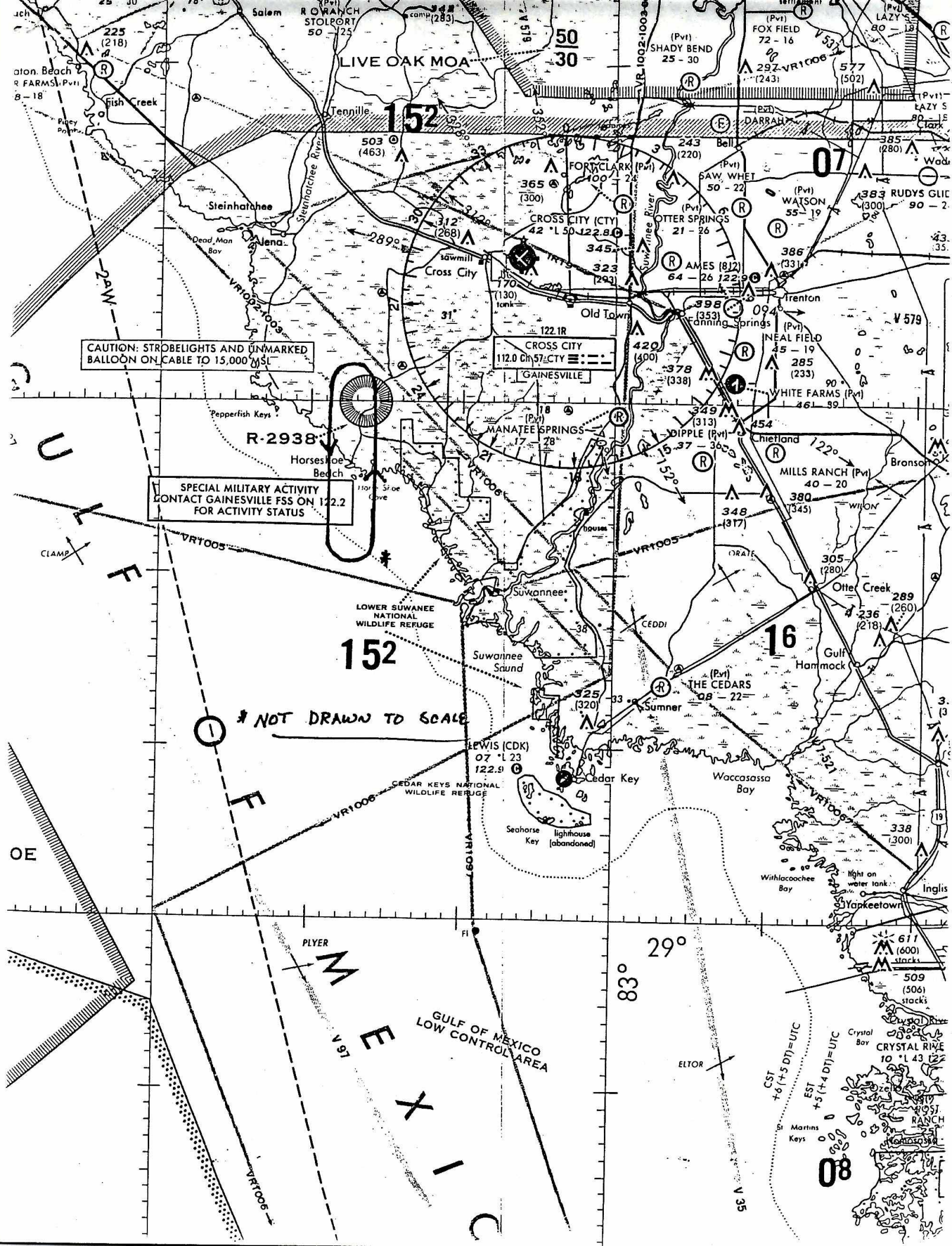
SPECIAL MILITARY ACTIVITY
CONTACT GAINESVILLE FSS ON 122.2
FOR ACTIVITY STATUS

NOT DRAWN TO SCALE

LOWER SUWANNEE
NATIONAL WILDLIFE REFUGE

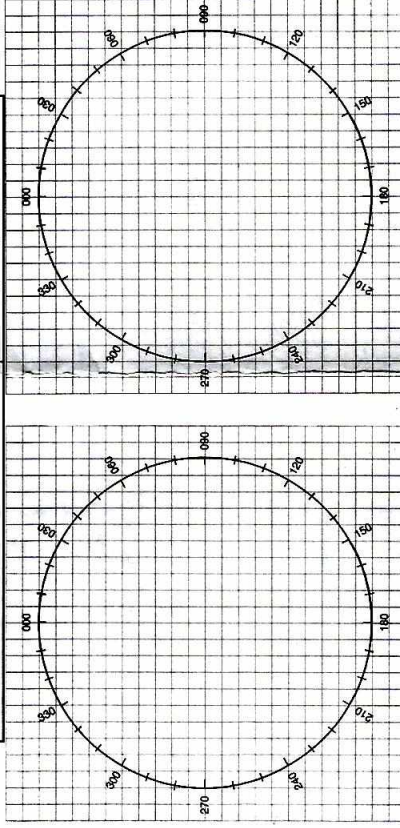
CEAR KEYS NATIONAL
WILDLIFE REFUGE

GULF OF MEXICO
LOW CONTROL AREA



[illegible]

POSITION REPORT



TRANSMIT THE FOLLOWING MESSAGE TO ANY AGENCY ON THE AIR-GROUND FREQUENCY IN USE. IF UNABLE TO ESTABLISH COMMS, ATTEMPT CONTACT ON ANY OF THE FOLLOWING EMERGENCY FREQUENCIES:

UHF/VOICE	VHF/VOICE	MF/VOICE	HF/CW	MF/CW
243.0	121.5	2182 KHZ	8364 KHZ	500 KHZ

MAYDAY, MAYDAY, MAYDAY
THIS IS NOAA . NOAA . NOAA

- POSITION _____ N/S _____ E/W AT _____ Z _____

- HEADING _____ TRUE/MAG _____
- AT _____ KTS TRUE/INDICATED _____

- FLIGHT LEVEL OR ALTITUDE

- WE ARE A P-3 AIRCRAFT WITH _____ SOULS ON BOARD _____

- NATURE OF EMERGENCY

- ASSISTANCE DESIRED
- PILOT INTENTIONS

[illegible]

INS PERFORMANCE		INS 1	INS 2
BEGIN ALIGN TIME		0030	0030
ALIGN STATUS (0-5)		5	0
END NAV TIME		1720	1720
START NAV TIME		1050	1050
DELTA T		6+30	6+30

TERMINAL ERRORS		INS 1	INS 2
DELTA LAT	312	164	
DELTA LON	139	610	
RCS	4	2	
RADIAL ERROR	5	8.	

[illegible]