

U.S. DEPT. COMM./NOAA/OAO - DATA SECTION WORK FORM NO.1 OAOWF1 FILE

FLT ID: 970205H	FM: EINN	TO: EINN
FLT NO: 97-022	BLK IN: 0645	ATA: 0639
ETD: 2045	DLK OUT: 2041	ATD: 2054
ETE: 0615	BLK TIME: 10.1	FLT TIME:
SPONSOR ORG: NOAA	PROGRAM: FASTEX	PURPOSE: SYS SURVEY

OAO PERSONNEL

AC KENNEDY, D	SYS ENG LYNCH, T ✓
CP TAGGART, B ✓	DATA SYS MCNICCA, N ✓
NAV STRONG, T ✓	RADAR BARR, J ✓
FE TORREY, R / WADE, S ✓	BT/ODW OFFUTT, D
RADIO ROGERS, M ✓	CLD PHYS
FD WHITE, S	DOPPLER

PARTICIPATING SCIENTIST/VISITORS/OAO

LAST, FIRST NAME	ACTIVITY ON A/C	AFFILIATION
JORGENSEN, D		NSC
SHEPHERD, T		↓
ROUX, F ✓		CNRS
VILTARD, N		↓
BOUSQUET, O		ONR
DALY, R ✓		UNIV READING
BROWNING, K ✓		

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

1019.5

11011.0

97020574

START: 2050:04
END: 0642:00

220000	+0.5	+0.1	INE 2
230000	+0.5	+0.4	AV 2
000000	+0.3	+0.2	
010000	+0.6	+0.1	
020000	-0.8	+0.9	
030000	-0.9	+1.8	
040000	-1.8	+2.8	
050000	-2.4	+3.2	
064200	-3.1	+7.3	

BAD BLOCK

0448:31
:40

0449:01
:10

0449:31
:40

0450:01
:10

0451:01
:10

2A159 w/232

2054:01 - 2056:00

0639:01 - 0642:00

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TITLE (MAX 21 CHARACTERS) -- EX HURRICANE PAINE
FASTEX IOP11 SYS SURVEY
YYMMDDL FLT I.D.
970205H
HHMMSS START TIME -99999 DEFAULT TO START OF DATA FOR PRINTOUT ONLY
205001
HHMMSS END TIME 999999 DEFAULT TO END OF DATA FOR PRINTOUT ONLY
064200
HHMMSS TAKE OFF TIME
205400
* NUMBER OF TAPES (I2) ...FOR STANDARD TAPE OUTPUT ONLY
07
* -----LOGICAL UNIT OF INPUT DATA (I1) 5, 8 OR 9 FOR TAPE DRIVE
8
* -----LOGICAL UNIT OF OUTPUT TAPE DRIVE (I1) [FOR STANDARD TAPE ONLY]
8
* -----LOGICAL UNIT OF PRINTER (I1)
6
* -----DATE OF PROGRAM (MMDDY)
06094
* -----STATIC PRESSURE PROBE (I1)
* 1 = PSW (WINGTIP)
* 2 = PSF (CO-PILOT/FUSELAGE)
* 3 = FUTURE USE
2
* -----DYNAMIC PRESSURE PROBE (I1)
* 0 = PQW(WINGTIP)
* 1 = PQF1 (FUSELAGE 1281)
* 2 = PQF2 (FUSELAGE 1221)
* 3 =FUTURE US
1
* -----INE SELECTION (I1)
* 1 = INE 1
* 2 = INE 2
2
* -----ACCELEROMETER (I1) - USUALLY THE SAME AS YOUR INE SELECTION
2
* ----- TOTAL TEMPERATURE PROBE (I1) [1 OR 2]
1
* ----- DEWPOINT TEMPERATURE PROBE (I1) [1 OR 2]
1
* -----ALTIMETER OPTION (I1) - FOR VERTICAL WIND COMPUTATION
* 0 = PRESSURE ALTITUDE (OVER LAND)
* 1 = RADAR ALTITUDE APN-159 (OVER WATER)
* 2 = RADAR ALTITUDE APN-232 (OVER WATER)
1
* -----PRINTOUT RATE SECONDS (I2)
10
* -----WINDSPEED/DIRECTION RUNNING AVERAGE TIME, SECONDS (I2)
10 ! FOR STANDARD TAPE OUTPUT ONLY
* -----TIME OPTION (I1)
* 1 = MICRO 29
* 2 = TIME BASED GENERATOR #1
* 3 = TIME BASED GENEATOR #2
1
* -----NAME OF CONSTANTS FILE EX CO3863.CON
CO2971.CON
*****
CI>

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Notes:

CI>

[illegible]

FASTEX AIRCRAFT CHIEF SCIENTIST EVENT LOG

Flight Number: 970205H1 Page 1 of

Date: February 6, 1997 Aircraft ID: 42RF Scientist: Jorgensen

Event Log

Time (UTC)	Approx. Location (Lat, Lon)	Event & Comments
20:40:11	Shannon	Engine Start
20:42:30	Shannon	Block out
		This is mission 7 and IOP11. Mission is LOW 30. Will perform coordinated runs with UK C-130 near low center
20:54:02	52.709 -8.910	Takeoff
21:07:49	53.170 -9.790	radars are up
21:17:14	53.567 -10.512	contact with METMAN
21:51:16		TA apparently not working correctly - techs working on it
21:54:53	55.366 -13.348	in extensive stratiform percip - mostly below 5 km. See bright band about 1 km above sfc
21:55:59	55.426 -13.433	begin descent to 5 kft about 40 km from buoy
21:58:46		begin recording radar data-TA still being worked on
22:02:18	55.821 -13.975	at 5k ft-tracking toward the buoy
22:06:42		contact with 308D-they are still hunting for a good band to work-we are in extensive stratiform percip with a strong bright band
22:07:48	55.980 -14.445	now tracking 255 to the storm center
22:09:49		TA now apparently up and running
22:17:26	55.861 -15.355	curved bands of percip
22:21:59	55.816 -15.757	climbing up 1000 ft to get on top of the shear layer
22:27:05	55.762 -16.162	temps about 2 degrees warmer at 6k ft than at 5k ft - turbulence much reduced too-may have cross on top of the front
22:34:03	55.703 -16.705	more cellular percip as we proceed WSW
22:51:15		TA malfunctioning again radial velocities look bad
23:00:25	55.424 -18.776	curved bands 200-300 km to the north
23:03:40		G-IV apparently entered the box at the same altitude as METMAN. The C-C-130 descended to 24k ft
23:09:55		contact with METMAN
23:13:55		techs will try to replace the Doppler signal processor
23:25:17	55.122 -20.779	radar system down as the DSP is replaced
23:25:44	55.115 -20.822	banded features to the NW might be cold front or bent back region
23:29:38	55.068 -21.139	sfc pressures continue to fall as we get close to the trough axis

23:47:47	54.818 -22.688	can't get far enough west to go through the front - turning to track to our IP with METMAN
23:49:59		TA seems to be working better
23:51:17	55.007 -22.672	now tracking 020 toward pt 1
0:00:21	55.643 -22.308	descending back down to 5k ft position report from 49: 54 44N 23 38W
0:10:04	56.214 -21.976	apparently through the front at this level as the winds have shifted to the north and temps have dropped to -4.2C
0:12:55		apparently 308D is heading back
0:31:47	57.401 -21.239	still in extensive stratiform precip-cold front well marked on LF as band to our SE.
0:32:45	57.457 -21.202	at IP starting leg 1 with METMAN
0:44:41	57.050 -20.073	cloud deck coming down on TA - temps warming a few degrees and winds shifting to SW
0:49:27	56.874 -19.641	more turbulent as we move into the warm side - more convective type cells evident on TA
0:52:07	56.773 -19.396	pronounced slope to the echoes on the TA from S to N
1:01:28	56.410 -18.551	winds now up to 70 knots from 225 as we move into the warmer air on the SE side of the front
1:03:34		METMAN reports sonde system failure, most of the sondes on this run may be lost
1:12:13	55.979 -17.598	going through a field of shallow convective type cells
1:19:07	55.695 -16.984	going down to 1000 ft to check out the low level jet strength
1:23:49	55.509 -16.605	at bottom of descent-climb up to 8 kft
1:26:05	55.444 -16.719	out of the turbulent boundary layer at 1000 m altitude (RA)
1:28:48	55.365 -16.878	now tracking 231 to point 3 end of leg 1
1:40:49	55.051 -17.631	at pt 3 turn to track 333 to pt 4 start of leg 2
1:43:03		METMAN reports its turn to the NW at 0131
1:50:11	55.645 -18.133	cold front curves to the east north of us - becoming a warm front with wave development near us?
1:54:14	55.903 -18.351	some increase in turbulence
1:55:08	55.963 -18.402	back to calmer air
1:57:30	56.106 -18.535	entering stratiform precip
2:04:45	56.565 -18.945	very strong bright band now up to 35 dBZ
2:13:47	56.565 -18.945	precip decreasing in intensity
2:16:25	57.298 -19.637	there has been a change in the orientation of the sea clutter from a maximum to the south to a maximum to the north - change in sfc winds reflecting strong northerlies behind the front?
2:17:41	57.375 -19.708	winds dropping off rapidly now
2:20:20	57.534 -19.856	small line line on LF immediately ahead 5 nm
2:30:45	58.161 -20.462	extended the leg slightly to go through the narrow thin reflectivity line
2:31:23	58.183 -20.521	end of the leg - turning to track 205 to pt 5

2:33:09	58.087 -20.625	never did get into the cold air at 8k ft
2:42:28	57.525 -21.083	end of cross leg at pt 5-trk 132 on leg 3
2:47:35	57.311 -20.616	winds now backing around to SW-wind speed now increasing too-very light stratiform precip
3:01:38	56.761 -19.252	going through small band-looks fairly stratiform on TA
3:03:31	56.683 -19.071	sfc position of the front is apparently marked by a sea clutter minimum
3:12:20	56.326 -18.229	through the last weak band indicating we're into the warm side of the sfc position of the front. Descending to 1000 ft in a mini-sounding to map the low level jet
3:15:08	56.216 -17.981	now in precip free region
3:20:39	56.009 -17.533	at 1000 ft in turbulent air - climbing back up to 5k ft. Low level jet max of 75 knots at 3000 ft Decreasing below
3:25:00	55.851 -17.184	cutting this leg a little short to save a little time. End of Leg 3. Turn to trk 255 to new pt. 7
3:28:20		at 5k ft for rest of run
3:29:37		wind direction and the track are the same. Every bit of the 72 knot wind is in our face
3:41:33		now trk 337 start of leg 4
3:52:25	56.250 -18.685	most turbulence so far as we go through the front for the last
3:54:08	56.360 -18.777	entering frontal precip zone
4:01:31	56.820 -19.157	turbulence decreasing as we apparantly moved through the narrow cold front band
4:22:45	57.966 -20.142	at the final end point-extending the leg 20 nm farther NW to examine secondary band of precip
4:29:26	58.328 -20.453	end of leg, climb to 15k ft for trek to buoy-the extra altitude is for fuel economy
4:30:32	58.357 -20.366	still in light stratiform precip
4:36:53	58.122 -19.668	the frontal width is well marked by the lack of ground return-approximately 20 nm wide
4:51:38		radar system locked up for a few minutes at 0445 Z
4:52:46	57.465 -17.936	getting into heavier stratiform precip as we move to the south-bright band is well defined and >30 dBZ in spots
4:58:17	57.226 -17.342	precip decreasing rapidly over buoy at 15k ft
6:21:04	53.176 -9.724	begin descent
6:40:06	SNN	land
6:45:40	SNN	blockin

MSA Coordinator Summary Report

970205H IOP11 (Flight 7) on Low 30 and Cold Front
Aircraft Involved: P-3, Electra, UK C-130, and G-IV

Summary Description of Mission:

The planned primary mission was a "systematic survey" of the cyclone and cold frontal region and rainbands associated with Low 30. The UK C-130 and P-3 were to join up on a survey of the low center around 0030 UTC, after the C-130 had completed several legs on the warm front farther east in support of Electra flight legs through the warm front. The G-IV was to make a "Figure 4" pattern on the low center with its first pass coincident with the first P-3 pass near 2330 UTC. The low was expected to be fairly deep (981 mb), with an extensive precipitation zone near the frontal zone, which was expected to have a good thermal and wind contrast at low levels.

The P-3 completed its first leg to the west at about 2350 UTC, cutting the leg a little short to insure getting to the meeting point with the C-130 on time. On the leg to the northeast the P-3 saw a dramatic wind shift near 0000 UTC indicating the location of the front. The P-3 and C-130 began coordinated flight legs at 0032 UTC and four legs were completed by 0430 UTC. On leg 1, the P-3 performed a descent "mini sounding" from 5,000 ft to 1,000 ft, then up to 8,000 ft to map the extent of the low-level jet ~100 km ahead of the precipitation band on the cold front. On leg 3, the P-3 performed another mini-sounding from 8k ft down to 1k ft, then return to 5k ft just on the warm air side of the frontal band. Saw winds of 75 knots at the jet maximum level of 3000 ft.

Communications:

1. No problems.

P-3 Equipment Problems Encountered:

1. None of note.

Coordination Problems

1. No problems of note.

Recommendations & Evaluation:

1. Excellent case of a strong cold front and low level jet. Well coordinated with C-130 dropsondes.

--Dave Jorgensen & Frank Roux

DATE : 5 FEB 92

TO : Chief, AOC Flight Operations

FROM : Pilot/Flight Director, Aircraft N42RE ON BLOCKTIME
OFF 10.1

SUBJECT: Hazardous Duty

PURPOSE OF FLIGHT: FASTEX

Hazardous Duty Pay is required for flight made on 5 FEB 92
(DATE)

Request based on HAZARDOUS FLIGHT IN
REGION OF CYCLOGENESIS AT LOW
ALTITUDES

Personnel on board authorized Hazard Pay:

TORREY, R

WADE, S

ROGERS, M

LYNCH, T

MCNICAN, S

BARR, J

OFFUTT, D

PILOT/FLIGHT DIRECTOR: LCDR S.R. WHITE

APPROVED: DISAPPROVED:

CHIEF, AOC FLIGHT OPERATIONS:

EMERGENCY MESSAGE

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/ICW	MF/ICW
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 _____

• WE HAVE _____ ENDURANCE REMAINING _____

EMERGENCY MESSAGE

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/VOICE	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 _____
- WE HAVE _____ ENDURANCE REMAINING _____

POSITION REPORT

1. POSITION	
2. TIME	
3. ALTITUDE	
4. NEXT POSITION	
5. ETA	
6. NEXT POSITION	

MISSION LOG

PAGE ____ OF ____

The figure shows two identical circular mission log templates side-by-side. Each template consists of a circle drawn on a grid of small squares. The circle is divided into 36 segments by radial lines, each labeled with a degree value from 0 to 360 in increments of 10. The labels are: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360. The left template has the text 'MISSION LOG' written vertically to its left. The right template has the text 'PAGE ____ OF ____' written vertically to its left.

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