19920804HI_FDIR

RFC-1 WORK FORM
(7-76)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
RESEARCH FACILITIES CENTER
MIAMI, FLORIDA

FLIGHT LOG

AIRCRAFT	N42RF
FLIGHT NO.	63-80
FLIGHT ID	800804H
DATE	AUG. 4, 80

TAKE OFF (City or airport)	LAND (City or airport)	ALTITUDE
MIA	MIA	7K

PURPOSE RFC - ODW TEST

PROPOSED TAKEOFF TIME:	1400 Z	PROPOSED FLIGHT DURATION :	4 HR S
TIME IN :	1740 Z	TIME ON :	1741 Z
TIME OUT :	1400 Z	TIME OFF :	1414 Z
BLK. TIME:	3:40 HRS	FLIGHT TIME :	3:07 HRS

FLIGHT PERSONNEL

OPERATIONS CREW		SCIENTIFIC CREW		VISITORS	
TURNER	SCHISSEL	DAVIS	JARVI	BURPEE	MARKS
NOBLE		DEVIVO		FRANKLIN	WILLOUGHBY
CORNELL		DUGRANRUT		JORGENSEN	
MOORE		BERLES		LORD	

PROPOSED MISSION
WIND L.L. AT 180, 010, 040 IAS, 4 MIN LEAD

ACTUAL MISSION AND REMARKS
AS PLANNED

DATA COLLECTED AND REMARKS
1 STD FLT LVL TAPE

193/52

A/C COMMANDER	NAVIGATOR	A/C NO.	MISSION NO.	TIME AIRBORNE	LOCATION	DATE	PROJ. NAME
Turner	Schissel	42KF	82084	141330	Miami	4 Aug 82	Drop Sonde 256

TIME OF ENTRY	POSITION	TYPE	INERTIAL POSITION	LAT LON COR'S	POSITION	LAT LON COR'S	REMARKS
140236	25-48.2 80-17.6		25-48.8 80-17.4		25-48.8 80-17.3		BLOX
141330	25-48.2 80-17.6		25-48.6 80-17.4		25-48.5 80-17.3		T.O
143831		7/10	24-52.6 N 79-21.4 W		24-52.6 N 79-21.6 W		Drop 1
145053		7/10	24-58.4 N 79-28.6 W		24-58.5 N 79-28.2 W		Drop 2
155100		7/10	24-51.7 80-23.2		24-51.8 80-22.8		24.87 80.38
160400		7/10	25-00.3 80-24.7		25-00.4 80-24.2		
161230		7/10	25-04.0 80-22.1		25-03.9 80-21.8		25.07 80.36
162400		7/10	24-58.0 80-25.6		24-57.9 80-24.7		24.97 80.42
163445		7/10	25-03.3 80-21.4		25-03.2 80-20.1		80.33
164540		7/10	24-57.6 80-24.8		24-57.6 80-25.4		24.96 80.42
165745		7/10	25-03.2 80-21.6		25-03.3 80-20.3		25.06 80.34
170910		7/10	24-57.5 80-25.0		24-57.6 80-23.9		24.96 80.40

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.	Δ T (2)(1)	TERMINAL ERRORS LAT	LONG	G S
INS 1											
INS 2 or IMU											

ALIGN REMARKS:

OTHER REMARKS:

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

NOAA FORM 59-4
(2-72)

830804H

1400	OUT													
140300	OUT MIA						CAL LAB 1014.5					AIC 1013.5		
141347	OFF													
1439	137	2485		7933	6776	6436		-11	-28	015	04	ODN 1		
1451	T	2498		7946	6775	6452		-11	-23	005	04	ODN 2		
							TK							
153900	-	154300		180	IAS		180°					R TURN 180°		
154510	-	155000		"	"		006°		360	03		R TURN 90°		
155100	-	155520		"	"		090		270	02		L TURN 180°		
155640	-	160140		"	"		357°		270	01		L TURN 90°		
160211	RAMS	INOP		161026										
RUN SOUTH UNTIMED														
	—	161143		210	IAS		360°					R TURN 090°		
161250	-	161650		"	"		090°					R TURN 180°		
161820	—	162305		"	"		269°					L TURN 090°		
162350	-	163740		"	"		180°					L TURN 180°		
163940	-	163335		"	"		354					R TURN 090°		
163440	-	163840		240	IAS		090°					R TURN 180°		
164020	-	164440		"	"		270°					L TURN 90°		
164540	-	164940		"	"		180°					L TURN 180°		
165130	-	165640		"	"		360°					R TURN 090°		
165800	-	170200		180	IAS		090°					R TURN 180°		
170330	-	170815		"	"		266°					L TURN 90°		
170900	-	171300		"	"		180°					L TURN 180°		
171430	-	171840		"	"		360°							
172040		OVR	KEY LARGO											
173615	ON	MIA						AIC	1014.0					
174030	IN			CAL LAB		1014.0		AIC	1014.0					
1740		IN												

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NOAA FORM 59-4
(3-72)

8208 04H

			HDC		PDC		DAPC		DBPC						
154200 -	4300		+0.53		-0.26		-0.80		-0.59						
154510 -	4610														
155450 -	5550		-0.10		+0.50		+0.04		+0.50						
155640 -	5740														
161550 -	1650		-0.18		-0.37		-0.67		-1.42						
161840 -	1940														
162640 -	2740		+0.23		-0.45		-0.81		-1.54						
162900 -	3000														
163740 -	3840		-0.18		-0.58		-0.84		-1.63						
164050 -	4150														
164840 -	4940		+0.32		-0.28		-0.49		-1.36						
165130 -	5230														
170100 -	0200		-0.22		-0.27		-0.48		-0.72						
170330 -	0430														
171200 -	1300		-0.23		+0.27		+0.37		-0.20						
171430 -	1530														
			+0.02		-0.18		-0.46		-0.87						

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
ENVIRONMENTAL RESEARCH LABORATORIES
RESEARCH FACILITIES CENTER
P. O. Box 520197
Miami, Florida 33152

154929

2 August 1982

TO: RD/RF60 - ODW Test Participants

FROM: RD/RF60 - James D. DuGranrut

SUBJECT: Omega Dropsonde Test Flight

The subject test flight will be conducted on Wednesday, 4 August, weather and schedule permitting, with a backup date of Thursday, 5 August if required. Two separate, but related tests will be performed during this flight. Coordination will be required between aircraft crews and the ground crews on Key Largo and off-shore. The flight will be conducted on N42RF and should take approximately 4.5 hours. The flight may be conducted by N43RF, but N42RF is preferred.

Test 1 will check the operational mechanism of encoding drop messages in flight and transmitting the data to NMC via the Aircraft Satellite Data Link (ASDL).

Test 2 will check the effects of aircraft maneuvers on the computation of winds from a dropsonde.

Detailed description of aircraft operations:

TEST 1:

The aircraft will depart from Miami International at 1000L and proceed to an area where two dropsondes will be launched from an altitude of 20,000 to 25,000 feet. The drops will be made 15 minutes apart and the aircraft will remain in the drop area until both sondes have splashed. The aircraft may then proceed to the area over Key Largo. The drops will be encoded as soon as possible after the completion of the drop, and the coded messages will be ertered into the data system for transmission via ASDL. Coding will be performed by NHRL personnel as will be the case during the Hurricane missions.

TEST 2:

Upon arrival over Key Largo, the aircraft will set up a pattern of a typical "wind-L" with three minute straight and level legs between turns. This pattern will be repeated for approximately two hours, after which the aircraft will return to Miami International.

82 Sonde
25° 3.5' 25.06
80 28.5' 80.48

SUBJECT: Omega Dropsonde Test Flight 2 August 1982

During this test, three "simulated" drops will be made from the aircraft. No sondes will be actually dropped, but three sondes will transmit from the ground. Sonde 1 will be stationary and will re-transmit a synthesized Omega signal. The winds calculated from this sonde should be zero and should not be contaminated by Omega propagation problems. Sonde 2 will also be stationary, but will receive and re-transmit, "real-world" Omega. The winds computed from this sonde should also be zero, but may be contaminated by Omega propagation anomalies. Sonde 3 will be in a boat traveling at a near-constant speed around a triangular course. The winds from this sonde should be of a magnitude equal to the speed of the boat, and of a direction equal to the course of the boat. The course will have legs of a length that will take approximately eight to ten minutes to complete at the highest speed. This timing will allow, on the average, two straight legs of the aircraft pattern and one or two turns during each straight leg of the boat pattern. The boat will complete two of the patterns at a high speed (approximately 25 knots) and one pattern at a lower speed (approximately 12-15 knots). These three patterns should take approximately two hours to complete.

Detailed description of ground operations:

TEST 1:

During Test 1, NHRL personnel will watch for the encoded messages from ASDL to arrive at NHC as do all ASDL messages. These messages will be transferred to the NWS AFOS System at NHC for transmission to the mathematical model at NMC.

TEST 2:

The field ground crew will depart RFC at approximately 0800L for Key Largo. They will carry six dropsondes, (two of each of three channels), batteries for the boat sonde, power supplies for the stationary sondes, a signal generator for the synthesized Omega signal, and two portable UHF radios for communication with the aircraft. After arrival at Key Largo, the crew will set up the sondes and deploy their antennas, check the state of the sea surface (low wave conditions are desired), and call RFC to give the go-ahead for Test 2. This information will be passed by KJY74 to the aircraft which will be performing Test 1. After the aircraft completes Test 1 and is proceeding towards Key Largo, radio communication will be established with the ground crew for coordination of patterns and the operation of the sondes. The boat pattern will be a triangle around marker 37, "Three Sisters", and the "triangle" off the coast of South Key Largo. The boat will perform the first pattern at a speed of approximately 25 knots, the second at approximately 12 knots, and the third at the higher speed. The speed will be held as near constant as possible during the legs, and time marks will be recorded at each marker to calculate the actual average speed of each leg. The distance and course of each leg will be determined from navigational charts. The speed and direction of the sonde on the boat will be compared to the wind speed and wind direction computed by the ODW System on the aircraft. When the boat has completed all three of its patterns, the aircraft and ground crews may return to Miami.

SUBJECT: Omega Dropsonde Test Flight 2 August 1982

The data collected during this test will be recorded on the ODW System printers, ODW System cassette tapes, and on RAMS Magnetic tape. The data from Test 1 will be transmitted via ASDL and will also be on file at NESS, NHC, and NMC. Data from Test 1 will be checked by NHRL personnel for accuracy of reception. Data from Test 2 will be checked by RFC personnel, and the report on the effects of aircraft maneuvers on computed winds will be delivered to NHRL within two weeks of the completion of the test.