

U.S. DEPT. COMM./NOAA/ORD - DATA SECTION WORK FORM NO. 2 OARWFZ

FLT ID: 980806I

TIME OFF: 1410Z

TIME ON: 1855Z

	A/C T/O	WX STN	A/C LAND	WX STN
PRESSURE	1017.2	30.07	1015.5	30.04

NO

DATA DISPOSITION/DATE/QUALITY

1/SEC FLT LVL TAPES

FAST FLT LVL TAPES

RADAR TAPES

DOPPLER TAPES

ODW CASSETTES

HARD COPIES

AXBT

RXCP

ODW

PHOTOGRAPHY

	FWD	LS	RS	VERT	
ON					
OFF					
RATE					

REMARKS

1400Z 8 AUGUST 1988

DATE : 8/10/98
TO : Chief, AOC Flight Operations
FROM : Pilot/Flight Director, Aircraft SUBJECT: Hazardous Duty
ON 1906 BLOCKTIME
N43AF
OFF 1358 5.1

PURPOSE OF FLIGHT: CAL FLIGHT / PMS TEST

Hazardous Duty Pay is required for flight made on 8/6/98
(DATE)

Request based on PENETRATION OF WEATHER FOR PMS TEST

Personnel on board authorized Hazard Pay:

Czyzyk, S

WADE, S

MOORE, H

CARPENTER, D

LYNCH, T

DAMIANO, B

PILOT/FLIGHT DIRECTOR:

APPROVED:

DISAPPROVED:

CHIEF, AOC FLIGHT OPERATIONS:

N43RF CALIBRATION RESULTS FROM AUGUST 6 1998 FLIGHT

N43RF flew a five-hour mission on August 6, 1998 over the southeast Gulf of Mexico. Several maneuvers were executed that would determine the coefficients for the attack and slip angles. A yaw maneuver was done at 1500 feet and 15000 feet to provide input for deriving the slope for slip angle. Several speed runs, into and out of the wind, were flown at five altitudes and the data collected from those maneuvers were used to determine the slope and intercept for attack angle.

The slow data was stored on the HP system and the Sun System (Everest) via UCI's AOCPROC program. Through AOCPROC the flight level data was stored as a netCDF file. This allows the NCAR-provided plotting program, NC PLOT, not only to view the flight level parameters, but also store user-selected portions of the data as ASCII files. These ASCII files are used as input to the attack/slip angle derivation program ABD_TPCAL.o located in /home/users/barryd/cprog on Everest.

For the attack angle coefficients four separate ASCII files (one for each speed run) were created for each altitude. Each file was edited to remove data points that did not fit the specs for that particular run. Approximately one hundred (100) points are required for each speed run to make it statistically sufficient. After each file was edited, the four files were merged into one ASCII file. ABD_TPCAL.o uses that merged file as input to determine the attack angle coefficients for that altitude. The following table shows the attack angle coefficients for each of the five altitudes:

	Slope	Intercept
1500 feet	6.69712	1.1149
5000 feet	6.75386	1.1075
10000 feet	6.70276	0.9862
15000 feet	6.66549	1.0463
20000 feet	6.70470	1.0326

The above table is for reference purposes only. To obtain the "final" slope and intercept for attack angle all five ASCII files (one for each of the five altitudes) are merged into a single ASCII file, and that file would be used as input by ABD_TPCAL.o. For this calibration flight the slope and intercept for attack angle are as follows:

For all levels Slope: 6.73176 Intercept: 1.0564

The program also computes a correlation coefficient and it is .99755 for this data.

The input data to determine the slope for slip angle comes from the two yaw maneuvers. Each maneuver has its own ASCII file. Each file is edited to remove

unwanted data. Approximately one hundred (100) points are required per maneuver. ABD_TPCAL.o computes a slope for slip angle for each maneuver. For this flight the slip angle slopes are as follows:

1500 feet	Slope: 7.25118
15000 feet	Slope: 7.36462

As was for the attack angle derivation, the two files are merged into one ASCII file. The "final" slip angle slope is 7.33486.

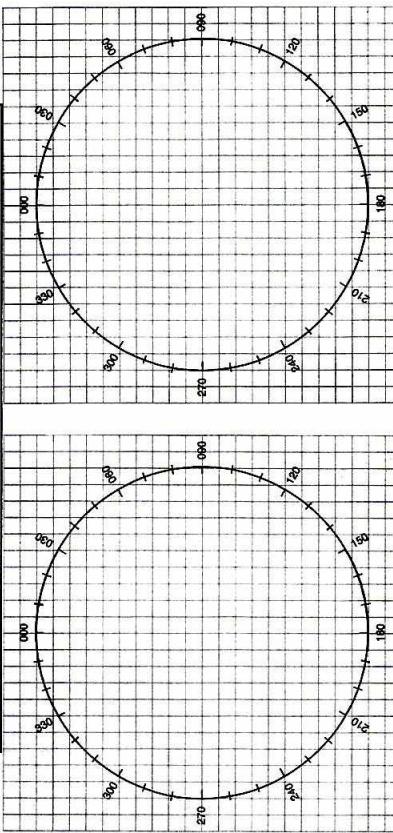
To determine the slip intercept, a subjective technique is employed using plots of wind direction, wind speed and vertical wind from the circle maneuvers made at 5000 feet. Several plots of the aforementioned parameters are made varying the intercept value for slip angle. Through some simple statistics and a "meteorological eyeballing" of the plots, a determination for the slip angle intercept is made. For this flight the slip angle intercept is +0.475. As stated previously this method is very subjective, but it does provide a hands-on view of what is happening to the wind values when modifying the value for the slip angle intercept.

980806I

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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/CW	MF/CW	HF/CW	500 KHZ					
243.0	121.5	2182 KHZ	8384 KHZ	500 KHZ							
MAYDAY, MAYDAY THIS IS 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 —

CLEARANCES			
FREQ	ALT	HDG	OTHER
1354	310	308	PET 310/308
1358	260	306	SNG 260/306
1428	260	308	
1513	2641.3	2641.4	
	8423.6	8423.7	
1548	2651.5	2651.4	
1623	2700.7	2700.9	
1658	8348.6	8348.4	
1732	2630.8	2630.6	
1803	2634.2	2632.1	
1855	2751.2	2750.2	
1906	8231.0	8230.6	

TIME	FIX	TYPE	POSITION	INS 1 POSITION	KERR	INS 2 POSITION	KERR	MH	VAR +E==>	TH	DR +R==>	TRK	GS	WD	WS	ALT	TAS	NEXT PT	DIST	TIME	ETA	REMARKS
1354	2800.8	2800.8	2800.8	2800.8	-1	2800.9	-1														ENG START TAKE OFF	
1428	8238.8	8238.8	8238.8	8238.8	-1	8238.7	-1															
1513	2641.3	2641.4	2641.4	2641.4	-1	2641.8	-1															
	8423.6	8423.7	8423.7	8423.7	-1	8423.3	-1															
1548	2651.5	2651.4	2651.4	2651.4	-1	2651.4	-1															
1623	2700.7	2700.9	2700.9	2700.9	-1	2700.2	-1															
1658	8348.6	8348.4	8348.4	8348.4	-1	8347.1	-1															
1732	2630.8	2630.6	2630.6	2630.6	-1	2630.1	-1															
1803	2634.2	2632.1	2632.1	2632.1	-1	2632.2	-1															
1855	2751.2	2750.2	2750.2	2750.2	-1	2747.3	-1															
1906	8231.0	8230.6	8230.6	8230.6	-1	8231.4	-1															

BAND 10
BLOCK IN

MISSION PREFLIGHT LOG

DESTINATION KMCF → KMCF

MISSION CAP FLIGHT

PILOT Mackin

NAVIGATOR Rutherford

DR +R=>

TH

VAR

MH

RTE

DR

TRK

GS

WD

WS

ALT

TAS

LEG / TOT DIST

PROP ETA

ATA

REMARKS

< 2Y2YC

14100Z 1410Z

6 AUGUST 98

SCHEDULED / ACTUAL TAKEOFF Z

DATE OF TAKEOFF

C 2Y2YC

14100Z 1410Z

6 AUGUST 98

AIRCRAFT COMMANDER

FLIGHT DIRECTOR

< 2Y2YC

14100Z 1410Z

6 AUGUST 98

INS PERFORMANCE

INS 1

INS 2

BEGIN ALIGN

TIME

1230Z

1230Z

ALIGN STATUS (0.5)

φ

φ

END NAV TIME

1855Z

1855Z

START NAV TIME

1355Z

1355Z

DELTAT

5100

5100

TERMINAL ERRORS

INS 1

INS 2

DELTA LAT

+1.6

+3.9

DELTA LON

+ .4

- .4

RGS

φ

7

RADIAL ERROR

1

4.

REMARKS