

AOCWF1

AOC Personnel

Participating Scientists / Visitors / AOC

Proposed/Actual Mission Remarks (Recco, Fixes, Storm, PENET, NHOP #)

only DW2 installed EdgeTech

Cells at 12K A/K 2 hrs higher THS
1-2 hrs higher IAR

11492 140/10 htr
1019.0

13 4635 2810
RD

BUDY 26°02' N
42003 85°53'30" W

Not 43

U.S. Dept. of Commerce / NOAA / Aircraft Operations Center AOCWF2

Flt ID: **070619H** Time Off: **1149Z** Time On: **1833Z**

A/C (Take Off) Wx Station (Take Off) A/C (Land) Wx Station (Land)

Pressure **1019.0** **30.12 / 1019.5** **1019.7** **30.12 / 1019.1**

	Number	Data Disposition / Date / Quality
Flt Lvl Tapes	1	
Radar Tapes	1	
Cloud Physics Tapes		
Video Tapes		
ABDATA	1	
AXBT		
AXCP		
AXCTD		
Dropsondes	2	Both good; 2 messages sent

Video

	Forward	Left Side	Right Side	Down	Remarks
Time On					
Time Off					
Rate					

Remarks

Begin Time: _____ End Time: _____

7

180 kts
5,000 feet
Into/With Wind

Begin Time: 135317 End Time: 135517

Begin Time: _____ End Time: _____

Begin Time: _____ End Time: _____

8

180 kts
5,000 feet
With/Into Wind

Begin Time: 140011 End Time: 140211

Begin Time: _____ End Time: _____

Begin Time: _____ End Time: _____

9

210 kts
5,000 feet
Into/With Wind

Begin Time: 140558 End Time: 140758

Begin Time: _____ End Time: _____

Begin Time: _____ End Time: _____

10

210 kts
5,000 feet
With/Into Wind

Begin Time: 141245 End Time: 141445

Begin Time: _____ End Time: _____

Begin Time: _____ End Time: _____

11

240 kts
5,000 feet
Into/With Wind

Begin Time: 143839 End Time: 144039

Begin Time: _____ End Time: _____

Begin Time: _____ End Time: _____

12

240 kts
5,000 feet
With/Into Wind

Begin Time: 144533 End Time: 144733

Begin Time: _____ End Time: _____

Begin Time: _____ End Time: _____

(13)

180 kts
10,000 feet
Into/With Wind

Begin Time: 145713 End Time: 145913
Begin Time: _____ End Time: _____
Begin Time: _____ End Time: _____

(14)

180 kts
10,000 feet
With/Into Wind

Begin Time: 150540 End Time: 150740
Begin Time: _____ End Time: _____
Begin Time: _____ End Time: _____

(15)

210 kts
10,000 feet
Into/With Wind

Begin Time: 151330 End Time: 151530
Begin Time: _____ End Time: _____
Begin Time: _____ End Time: _____

(16)

210 kts
10,000 feet
With/Into Wind

Begin Time: 152039 End Time: 152239
Begin Time: _____ End Time: _____
Begin Time: _____ End Time: _____

(17)

240 kts
10,000 feet
Into/With Wind

Begin Time: 153018 End Time: 153218
Begin Time: _____ End Time: _____
Begin Time: _____ End Time: _____

(18)

240 kts
10,000 feet
With/Into Wind

Begin Time: 153745 End Time: 153945
Begin Time: _____ End Time: _____
Begin Time: _____ End Time: _____

(19)

180 kts
15,000 feet
Into With Wind

Begin Time: 154748 End Time: 154948

Begin Time: _____ End Time: _____

Begin Time: _____ End Time: _____

(20)

180 kts
15,000 feet
With Into Wind

Begin Time: 155515 End Time: 155715

Begin Time: _____ End Time: _____

Begin Time: _____ End Time: _____

(21)

210 kts
15,000 feet
Into With Wind

Begin Time: 160156 End Time: 160356

Begin Time: _____ End Time: _____

Begin Time: _____ End Time: _____

(22)

210 kts
15,000 feet
With Into Wind

Begin Time: 160803 End Time: 161003

Begin Time: _____ End Time: _____

Begin Time: _____ End Time: _____

(23)

240 kts
15,000 feet
Into With Wind

Begin Time: 162148 End Time: 162348

Begin Time: _____ End Time: _____

Begin Time: _____ End Time: _____

(24)

240 kts
15,000 feet
With Into Wind

Begin Time: 162811 End Time: 163011

Begin Time: _____ End Time: _____

Begin Time: _____ End Time: _____

NOTE

26

180 kts
20,000 feet
Into/With Wind

Begin Time: 165855 End Time: 170055

Begin Time: _____ End Time: _____

Begin Time: _____ End Time: _____

25

180 kts
20,000 feet
With/Into Wind

Begin Time: 165129 End Time: 165329

Begin Time: _____ End Time: _____

Begin Time: _____ End Time: _____

27

210 kts
20,000 feet
Into/With Wind

Begin Time: 170600 End Time: 170800

Begin Time: _____ End Time: _____

Begin Time: _____ End Time: _____

28

210 kts
20,000 feet
With/Into Wind

Begin Time: 171306 End Time: 171506

Begin Time: _____ End Time: _____

Begin Time: _____ End Time: _____

29

240 kts
20,000 feet
Into/With Wind

Begin Time: 172721 End Time: 172921

Begin Time: _____ End Time: _____

Begin Time: _____ End Time: _____

30

240 kts
20,000 feet
With/Into Wind

Begin Time: 173417 End Time: 173534
173740 173823

Begin Time: _____ End Time: _____

Begin Time: _____ End Time: _____

**N42RF AIRCRAFT FLIGHT LEVEL DATA COMPARISON TO GPS DROPSONDE DATA
FROM WIND CALIBRATION FLIGHT JUNE 19, 2007**

Dropsonde #1 launched at 154123Z												
	Time(Z)	Pressure (mb)		Air Temperature (C)		Dewpoint Temp (C)		Geopotential Alt. (m)		Lat	Lon	Distance (nm)
Dropsonde #1	154220	715.8		9.6		-4.2		3044		25.37	85.67	
N42RF	153950	715.6		9.9		-4.5		3058		25.45	85.61	5.8
Dropsonde #1	154425	857.0		20.2		2.7		1520		25.37	85.67	
N42RF	142015	857.1		20.6		3.0		1523		25.59	85.67	13.2
Dropsonde #1	154555	966.1		24.2		22.2		477		25.37	85.68	
N42RF	133930	966.3		24.4		22.8		471		25.85	85.62	29.0
Dropsonde #2 launched at 171624Z												
Dropsonde #2	171809	570.3		-1.9		-4.5		4887		25.25	85.15	
N42RF	162930	570.3		-1.0		-5.8		4904		25.03	85.15	13.2
Dropsonde #2	172023	716.1		9.6		-5.6		3037		25.25	85.15	
N42RF	153950	715.6		9.9		-4.5		3058		25.45	85.61	27.7
Dropsonde #2	172226	857.2		19.9		5.5		1517		25.25	85.16	
N42RF	142015	857.1		20.6		3.0		1523		25.59	85.67	34.4
Dropsonde #2	172356	966.0		24.2		23.2		476		25.25	85.16	
N42RF	133930	966.3		24.4		22.8		471		25.85	85.62	43.8

TDM2 - 182606 - 7 182729

PSF

PQF 1

WSI 1/2 - 131243 - 7 131255

tt2

ine2

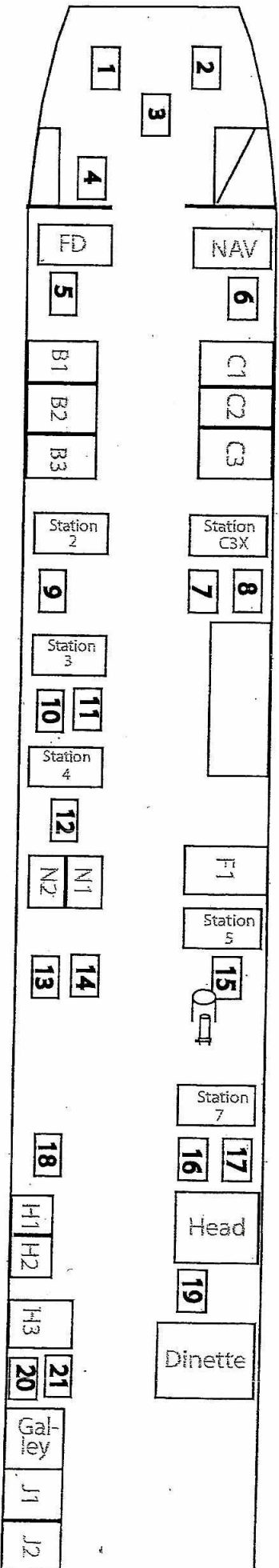
Sub tt2 - 7 tt1 @ 5
r↓

131402 - 7 131407 ✓

Rx

NOAA AIRCRAFT OPERATIONS CENTER

Flight ID H070619



1. CHOY, B. PILOT
2. LIETMONT, A COPILOT
3. KLIPPEL, J FLIGHT ENGINEER
4. STATION 1
5. DAMIANO FLIGHT DIRECTOR
6. STEELE NAVIGATOR
7. GALLAGHER STATION C3X
8. STATION C3X
9. ALMEIDA STATION 2
10. SHEPHERD STATION 3
11. FLAHERTY STATION 3
12. PEEK STATION 4
13. PROJECT SEAT
14. PROJECT SEAT
15. BLUEY STATION 5
16. STATION 7
17. STATION 7
18. STATION 8
19. DINETTE
20. GALLEY
21. GALLEY

Launcher S/N:

[illegible]

①

180 kts	124744
1500 ft	125052
into wind	Time
	184 data points

5100		
125052		86
48528	60	120
4934	78	86
	120	34
	78	
	42	

124721 → 124755 = 34 pts $\sigma \approx 0.3...$
 124934 → 125100 = 86 pts $\sigma \approx 0.29...$
 120 pts

180 kts	125539
1500 ft	125854
with wind	TIMES
	195 data pts.

125606 } 120
 125806 }

125606 → 125806 = 120 pts $\sigma \approx 0.35...$

210 kts	130347
1500 ft	130658
into wind	191 pts

0527 62pts	0429 29pts	0347 71pts
0629 $\sigma.60...$	0458 $\sigma.53...$	0458 $\sigma.87...$
0347 40pts	0544 45pts	0347 60
0427 $\sigma.66...$	0629 $\sigma.35...$	0447 $\sigma.77...$
0550 60	0550 68	0550 70
0650 $\sigma.56$	0658 54	0700 53...
0340 78	0808 50	
0458 $\sigma.87...$	0458 $\sigma.99$	
0340 25	0430 25	
0405 $\sigma.53...$	0455 $\sigma.49$	

130340 → 130405 = 25pts $\sigma \approx 0.53...$
 130430 → 130455 = 25pts $\sigma \approx 0.49...$
 130550 → 130700 = 70pts $\sigma \approx 0.53...$
 120pts

210 kts	131201
1500 ft	131550
with wind	229 pts

1201 120
 1401 $\sigma.45$

131201 → 131401 = 120pts $\sigma \approx 0.45...$

(2)

1500 ft+ 131937
yaw 132947
647 pts

2330 4 cycles
2947 35 end pts

74.1 - 74.2

2012 ?

2047 0

1937
2012 35 beginning pts

1841 ?
1916 0

131920 $\rightarrow$ 131950 = 30 beginning pts ?

132228 $\rightarrow$ 132948 = 4 cycles + 30 end pts

240 kts 133336
1500 ft+ 133651
with wind 196 pts

3451 120
3651 0.20

133451 $\rightarrow$ 133651 = 120 pts $\theta \approx 0.20$

240 kts 134058
1500 ft+ 134410
into wind

4058 132
4310 0.21...

134058 $\rightarrow$ 134258 = 120 pts $\theta \approx 0.21...$

180 kts 135203
5000 ft 135518
with wind

135317 $\rightarrow$ 135517 = 120 pts $\theta \approx .65$

180 kts 135949
5000 ft 140304
into wind

140011 $\rightarrow$ 140211 = 120 pts $\theta = .32$

210 kts 140455
5000 ft 140810
into wind

140558 - 140758 = 120 pts $\theta \approx .20$

210 kts 141236
5000 ft 141572
with wind

141245 - 141445 = 120 pts $\theta \approx .18$

(3)

~~143730 - 143831~~ $\theta \approx .51$ ~~64 PR~~

240 KTS
5000 FT
WITH
WIND

143725
144040

143839 - 144039

$\theta \approx .99$

240 KTS
5000 FT
INTO
WIND

144450
144800

144533 $\rightarrow$ 144733

$\theta \approx .63$

180 KTS
10,000 FT
INTO
WIND

145248
145456

145713 $\rightarrow$ 145913

$\theta \approx .32$

180 KTS
10,000 FT
WITH
WIND

150418
150740

150540 $\rightarrow$ 150740

$\theta \approx .57$

210 KTS
10,000 FT
WITH
WIND

151214
151530

151330 $\rightarrow$ 151530

$\theta = .55$

210 KTS
10,000 FT
INTO
WIND

151955
152358

152039 $\rightarrow$ 152239

$\theta \approx .44$

(4)

210 KTS

19000 FT

INTO
WIND

152843-

153218

153018 $\rightarrow$ 153218

$\theta \approx .66$

240 KTS

19000 FT

WITH WIND

153621

153945

153745 $\rightarrow$ 153945

$\theta \approx .22$

180 KTS

15000 FT

INTO
WIND

154711

155019

154742 $\rightarrow$ 154948

$\theta \approx .33$

180 KTS

15000 FT

WITH
WIND

155440

155740

155515 $\rightarrow$ 155715

$\theta \approx .26$

210 KTS

15000 FT

INTO
WIND

160049

160452

160156 $\rightarrow$ 160356

$\theta \approx .35$

210 KTS

15000 FT

WITH
WIND

160712

161011

160803 $\rightarrow$ 161003

$\theta \approx .33$

5

3028

240 KTS
15,000 FT
INTO
WIND

162138
162459

240 KTS
15,000 FT
WITH

162736
163052

YAW
YAW
15,000 FT

161110
161834

180 KTS
20,000 FT
INTO
WIND

165844
170151

180 KTS
20,000 FT
WITH
WIND

165011
165329

210 KTS
29,000 FT
WITH
WIND

170140
170259

162203 → 162308 $\Theta \approx .17$ (65)
162405 → 162500 $\Theta \approx .14$ (55)

162148 → 162348 $\Theta \approx .60$

162744 → 162824 $\Theta \approx .45$ (40)
162933 → 163053 $\Theta \approx .25$ (80)
162811 → 163011 $\Theta \approx .77$ 120

161118 - 161149
161410 - 161834
END 161759 - 161834
BEGINNING
CYCLE + END

161123 - 161153
161322 - 161758
161758 - 161828

165855 → 170055 $\Theta \approx .22$

165129 → 165329 $\Theta \approx .45$

170600 - 170800 $\Theta \approx .27$

⑥

210 KTS 171306
20,000 FT 171619
INTD
WIND

171306 - 171506 $\theta \approx .69$

240 KTS 172645
20,000 FT 173008
WITH
WIND

172721 - 172921 $\theta \approx .53$

240 KTS 173410
20,000 FT 173718
INTD
WIND

173417 - 173534 (77 PTS) $\theta \approx .84$

~~173726 - 173823~~ 173726
~~173823~~
~~173823~~

173740 - 173823 $\theta \approx .26$ (43 PTS)

FREQ	ALT	HDG	OTHER
			433 1,600
			119.65
			501135
			14E + 10
			8004 26 01.6 85 51.6
			MIA CR 305 716 1781
			Hou cr. 5552
			281 230 5528 15570

PAGE / OF

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 HF/VOICE MF/CW
243.0 121.5 2182 KHZ 8384 KHZ 500 KHZ

MAYDAY, MAYDAY, MAYDAY

THIS IS NOAA _____ NOAA _____

42

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

- HEADING _____ TRUE/MAG _____

- ALT _____ 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 _____

[illegible]

N42RF Calibration Results
From June 19, 2007 Wind Cal Flight

N42RF flew a 7 hour mission on June 19, 2007 over the southeast Gulf of Mexico. Several maneuvers were executed in order to determine the coefficients for the attack and slip angles. Yaw maneuvers were performed at 1500 feet and 15000 feet to provide input for deriving the slope for the aircraft's slip angle. Several speed runs, tracking into and out of the wind, were flown at five pre-determined altitudes. The data collected from these maneuvers were used to determine the slope and intercept for the aircraft's attack angle.

The slow data was stored on the LINUX system (ISIDORE) as well as the HP1000. The prodat2nc program was used to store the flight level as a netCDF file on ISIDORE under /home/acdata/2007/hur07/070619H directory. This allows the NCAR-provided plotting program, NCPLLOT, to view the flight level data. For the results that follow, the HP1000 version of ABD_TPCAL was used.

One hundred twenty (120) points were selected for each leg flown into and with the wind for each airspeed (180, 210, 240 IAS), making a total of 240 points per indicated airspeed to make it statistically significant. The following table shows the attack angle coefficients for each of the five altitudes:

	Slope	Intercept
1500 feet	6.083916	2.309525
5000 feet	6.157861	2.276832
10000 feet	5.914171	2.194611
15000 feet	5.971965	2.168845
20000 feet	5.940178	2.153957

The above table is for reference purposes only. To obtain the "final" slope and intercept for attack angle all of the selected data points were used as input by ABD_TPCAL on the HP1000. For this calibration flight the slope and intercept for the attack angle are as follows:

For all levels (3556 points) Slope: **6.092095** Intercept: **2.230896**

The program computes a correlation coefficient and it is .997911 for this data.

The input data to determine the slope for the slip angle came from the two yaw maneuvers. A minimum of, but not limited to, 120 points are required per maneuver. ABD_TPCAL on the HP1000 computes a slope for the slip angle for each maneuver. For this flight the derived slip angle slopes are as follows:

1500 feet	Slope: 7.510100	for 472 points
15000 feet	Slope: 7.032987	for 338 points

As was for the attack angle derivation, both sets of data were entered into the ABD_TPCAL program. The "final" slip angle slope from the 810 points was calculated to be **7.277213**.

To determine the slip intercept, a subjective technique is employed using plots of wind direction, wind speed and vertical wind from the circle maneuvers conducted at 5000 feet. Several plots of the aforementioned parameters were made, varying the intercept value for the 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 was determined to be **+0.35**. As previously stated this method is very subjective. However it does provide a hands-on view of what is happening to the horizontal and vertical wind values when the value for the slip angle intercept is modified.

AS YAW TOTAL

POINTS = 810

SLOPE = 7.277213

YAW 1500

POINTS = 472

SLOPE = 7.5101

YAW 15,000

POINTS = 338

SLOPE = 7.032987

AVE. SLOPE OF LEVELS
6.0136182

AA # POINTS = 3,556

TOTAL

AA SLOPE = 6.092095

AA INT = 2.230896

CORR = .997911

SD = .083435

1500'

POINTS = 729

6.083916

2.309525

.998942

.065776

5000'

PTS = 726

AA SLOPE = 6.157861

INT = 2.276832

CORR = 0.998637

SD = .070120

10,000'

PTS = 726

5.914171

2.194611

.999055

.049749

15,000

PTS = 726

SLOPE = 5.971965

INT = 2.168845

CORR = 0.998943

SD = 0.054428

20K 727

SLOPE = 5.940178

INT = 2.153957

CORR = 0.998746

SD = 0.054040

Left cross

OLD S.A. A.A
L

SAT = 0.

SAT = .1

SAT = .2

SAT = .3

SAT = .4

SAT = .35

WD

MAX = ~~1770.62~~ 170.73
MEAN = ~~1770.62~~ 107.40
 $\bar{m} = 134.7$
SD = ~~1.34~~ 13.958

MAX = 181.57
MEAN = 97.90
 $\bar{m} = 135.67$
SD = 19.088

MAX = 176.05
MEAN = 103.90
 $\bar{m} = 135.14$
SD = 16.465

MAX = 171.346
MEAN = 107.405
 $\bar{m} = 134.585$
SD = 14.233

MAX = 166.687
MEAN = 110.583
 $\bar{m} = 132.834$
SD = 12.4985

MAX = 162.341
MEAN = 111.428
 $\bar{m} = 133.252$
SD = ~~11.428~~ 11.4203

MAX = 164.485
MEAN = 112.284
 $\bar{m} = 133.589$
SD = 11.8664

WS

MAX = ~~1.14~~ 3.993
MEAN = ~~1.14~~ .9975
 $\bar{m} = 2.673$
SD = ~~.656~~ .7552

MAX = ~~.656~~ 4.228
MEAN = .6745
 $\bar{m} = 2.7767$
SD = .9498

MAX = 4.0417
MEAN = .8219
 $\bar{m} = 2.7178$
SD = .8500

MAX = 3.9616
MEAN = .9793
 $\bar{m} = 2.6661$
SD = .7525

MAX = 3.8384
MEAN = 1.1428
 $\bar{m} = 2.6217$
SD = .6597

MAX = 3.7229
MEAN = 1.3100
 $\bar{m} = 2.5846$
SD = .5757

MAX = 3.7797
MEAN = 1.2260
 $\bar{m} = 2.6023$
SD = .6163

WZ

MAX = .7789
MEAN = .3169
 $\bar{m} = 1.836$
SD = ~~.3~~ .2817

MAX = .8462
MEAN = .4136
 $\bar{m} = .2137$
SD = .2564

MAX = .7389
MEAN = .4138
 $\bar{m} = .1307$
SD = .2328

MAX = .6317
MEAN = .4546
 $\bar{m} = .0477$
SD = .2172

MAX = .5244
MEAN = .5595
 $\bar{m} = .0353$
SD = .2112

MAX = .4171
MEAN = .6643
 $\bar{m} = .1183$
SD = .2156

MAX = .4707
MEAN = .6119
 $\bar{m} = .0768$
SD = .2121

$$X_{AW} = 7.27721$$

$$AA \text{ slope } 6.09209$$

$$A_{min} = 2.23090$$

1/20/07

Dwp, 214357 (919)
230859 (904)
005735 (934)

✓

1/22/07

Dwp ~~144004~~ (915)
144004 (939)
145213 (927)
161759 (893)
162906 (892)
165657 (864)

✓

1/26/07

162237 (904)
~~163816~~ (866)
174932 (961)

✓

2/2/07

225002 (722)
232538 (891)
234029 (888)

✓

2/6/07

203004 (885)
211500 (890)
222951 (904)

✓

2/8/07

213532 LW from log
215400 (975)
222210 (854)
223447 (929)
230600 (948)

✓

all condns for
2/9/07

Regler Giver	GLD AA, SA	SAI = 0	SAI = .1	SAI = .2	SAI = .3	SAI = .4	SAI = -.35
WD	$\mu_{AX} = 160.162$ $\mu_{EW} = 106.578$ $\bar{\mu} = 136.068$ $SD = 14.2592$	$\mu_{AX} = 164.313$ $\mu_{EW} = 104.452$ $\bar{\mu} = 137.934$ $SD = 17.461$	$\mu_{AX} = 161.025$ $\mu_{EW} = 106.322$ $\bar{\mu} = 136.716$ $SD = 14.9844$	$\mu_{AX} = 157.724$ $\mu_{EW} = 108.522$ $\bar{\mu} = 135.469$ $SD = 12.738$	$\mu_{AX} = 154.429$ $\mu_{EW} = 108.41$ $\bar{\mu} = 134.208$ $SD = 10.8779$	$\mu_{AX} = 152.106$ $\mu_{EW} = 107.354$ $\bar{\mu} = 132.947$ $SD = 9.6461$	$\mu_{AX} = 152.792$ $\mu_{EW} = 107.905$ $\bar{\mu} = 133.576$ $SD = 10.652$
WS	$\mu_{AX} = 3.6824$ $\mu_{EW} = 1.4691$ $\bar{\mu} = 2.8126$ $SD = .5638$	$\mu_{AX} = 3.8439$ $\mu_{EW} = 1.3226$ $\bar{\mu} = 2.6538$ $SD = .6142$	$\mu_{AX} = 3.7194$ $\mu_{EW} = 1.4672$ $\bar{\mu} = 2.8210$ $SD = .5723$	$\mu_{AX} = 3.6543$ $\mu_{EW} = 1.6192$ $\bar{\mu} = 2.7976$ $SD = .5488$	$\mu_{AX} = 3.7007$ $\mu_{EW} = 1.6382$ $\bar{\mu} = 2.7838$ $SD = .5470$	$\mu_{AX} = 3.7624$ $\mu_{EW} = 1.4964$ $\bar{\mu} = 2.778$ $SD = .5675$	$\mu_{AX} = 3.7297$ $\mu_{EW} = 1.5664$ $\bar{\mu} = 2.7805$ $SD = .5545$
WT	$\mu_{AX} = .3997$ $\mu_{EW} = -.7678$ $\bar{\mu} = -.06578$ $SD = .2248$	$\mu_{AX} = .2636$ $\mu_{EW} = -.9758$ $\bar{\mu} = -.3030$ $SD = .2372$	$\mu_{AX} = .2302$ $\mu_{EW} = -.8740$ $\bar{\mu} = -.02334$ $SD = .2205$	$\mu_{AX} = .3363$ $\mu_{EW} = -.7723$ $\bar{\mu} = -.1639$ $SD = .2128$	$\mu_{AX} = .4424$ $\mu_{EW} = -.6705$ $\bar{\mu} = -.0943$ $SD = .2150$	$\mu_{AX} = .5485$ $\mu_{AX} = .5485$ $\mu_{EW} = -.5688$ $\bar{\mu} = -.0242$ $\bar{\mu} = -.0242$ $SD = .2270$	$\mu_{AX} = .4954$ $\mu_{AX} = .4954$ $\mu_{EW} = -.6196$ $\bar{\mu} = -.0595$ $SD = .2199$