

Flt ID: 020910H	From: KMCF	To: KPSM
Flt No: 02-74	Blk In: 2250	ATA: 2246
ETD: 1400Z	Blk Out: 1404Z	ATD: 1416
ETE: 8+00	Blk Time: 8.8	Flt Time: 8.5
Sponsor Org: NDAA / NESDIS	Program: OCEAN WINDS	Purpose: S.T.S. GUSTAV

AOC Personnel

AC: TAGGART, B ✓	Sys Eng:
CP: TEBEEST, R ✓ / STRONG, T ✓	Data Sys: McMillan, S ✓
Nav: NEWMAN, C ✓	Radar:
FE: BAST, G ✓	GPS/BT: PEEK, B ✓
FD: SHEPHERD, T ✓	Cld Phys: McFadden, J ✓
Avionics: ROBERS, M ✓	C. Chief: CURRY, J ✓

Participating Scientists / Visitors / AOC

Name (Last, First)	Activity on Aircraft	Affiliation
CHANG, P ✓	PI	NESDIS
CARSWELL, J ✓	Co PI	UMASS
ZHANG, A ✓	SFMR / C-SCAT	↓
ESTABAN, D ✓	↓	↓
BLACK, B ✓	HAPS	HRD
LEIGHTON, P ✓	↓	↓

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

1149Z 3342 7525 62 KTS NE

TEAL 55
TEAL 17

Power Dump ~ 2 min before blackout

3X18 60
18
42

Flt ID: 020910H	Time Off: 1416	Time On: 2246
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	A/C (Take Off)	Wx Station (Take Off)	A/C (Land)	Wx Station (Land)
Pressure	1012.7	29.91	999.2	29.65

	Number	Data Disposition / Date / Quality
Flt Lvl Tapes	2	TRS
Radar Tapes	2	Bob Black HRD
Cloud Physics Tapes		
Video Tapes	1	Paul Chang
AXBT	10	HRD
AXCP		
AXCTD		
Dropsondes	23	21 NESDIS (2 No Launch DET) 2 WHC

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

Remarks
1353 34.3 75.3 E989 62 NE 5.1 SE 60 sfc



NOAA P-3 N42RF Ocean Winds 2002 T.S. Gustav



Flight ID: H020910

<u>Sensor or system</u>	<u>Number or Name</u>
INE	1
Accelerometer	1
Temperature Probe	1
Dew Point Probe	3 (Buck Research)
Altitude (for vertical wind)	Radar Altitude (RA-159)
Static Pressure	Rosemount Fuselage
Dynamic Pressure	Rosemount Fuselage
Time Source	Micro 99
Constants File	CO2023.CON

Take off: 1416Z

Land: 2246Z

Notes:

The Radar Altimeter (RA-159) was replaced by the RA-232 during take off and landing due to spiking (141301 - 142330 Take off and 222730 - 224900 Landing).

All other instruments worked optimally during the flight; however, there were multiple times when the dewpoint temperature exceeded ambient temperature resulting in an RH >100%. These times were during heavy rain events (as noted by the Johnson-Williams Liquid Water sensor) and were likely due to a wet-bulb effect on the total temperature sensor.

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.

	Takeoff	Landing
Aircraft Static Pressure	1012.7 mb	999.2 mb
Corrected Tower Pressure	1012.9 mb	1004.1 mb

Flight Director: Tom Shepherd
Phone #: (813) 828-3310 ext. 3053

Flight ID: 020910H

Takeoff: 1414

Land: 2246

TT # 1

TD # 3

INE # 1

AZI # 1

TT 2 appears to be wet walking during precip events. Altimeter 159

Sub RA 232 for 159.

Takeoff 141301-142330

Land 222730-224900

Renav (OVER)

1)	143700	-0.5	-0.2	28 33.4	81 19.5 ✓
	151300	-0.7	+0.6	30 40.2	79 9.0 ✓
	163800	-1.0	+2.6	35 25.7	74 57.9 ✓
	171700	-1.5	+2.8	35 55.5	74 42.2 ✓
5)	175200	-1.2	+3.5	35 28.1	75 8.8 ✓
	185700	-0.8	+3.9	34 37.3	75 41.5 ✓
	194200	-0.2	+4.5	33 47.7	75 56.2 ✓
	201600	-0.4	+4.2	35 11.9	75 23.4 ✓
	205500	+0.2	+6.5	37 13.5	75 10.9 ✓
10)	214800	+1.5	+5.4	39 7.1	72 20.1 ✓
	221300	+2.7	+7.5	41 1.8	71 43.4 ✓
12)	224900	+2.9	+7.8	43 4.6	70 49.1 ✓

N42RF AVAPS DropSonde Log

N42RF Project: HURRICANE 02

Flight ID 020910H

Mission: GUSTO-B

Flight #: 1

System Status:

Drop #	Sonde Serial Number	Chn. #	Time (Zulu)	Press. offset	Winds time	Operator Initials	Comments / Drop Status/ Failure Reason	GOOD ☒
1	013 945 073	2	1611	—	17	ACP		✓
2	020 615 253	3	1634	—		ACP		✓
3	020 615 042	4	1635	—		ACP	NO LAU DET	
4	020 615 295	1	1645	—		ACP		✓
5	020 615 257	2	1649	—		ACP		✓
6	020 615 045	3	1717	—	14	ACP		✓
7	013 948 102	4	1718	—	36	ACP		✓
8	020 615 300	1	1743	—	32	ACP		✓
9	020 615 043	2	1746	—	41	ACP		✓
10	020 615 271	3	1759	—	25	ACP	Center FIX	✓
11	020 615 262	4	1844	—	14	ACP		✓
12	020 615 041	1	1848	—	22	ACP		✓
13	020 615 301	2	1846	—	42	ACP		✓
	020 215 272	3	1848	—	45	ACP		✓
	020 615 303	4	1904	—	40	ACP		✓
16	020 215 268	1	1920	—	25	ACP		✓
17	020-215-088	2	1932	—	30	ACP		✓
18	020-615-294	3	2001	—	—	ACP	NO LAU DET	
19	020-615-049	4	2002	—	15	ACP		✓
20	020-215-183	1	2018	—	20	ACP	CENTER FIX	✓
21	003-115-013	2	2038	—	45	ACP		✓
22	003-115-123	3	2043	—	18	ACP		✓
23	003-828-036	4	2043	—	20	ACP		✓
24								
25								
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31								
33								

DATE 9/10/02	SCHEDULED RX TIME 18Z	AIRCRAFT NUMBER N42RF	FLIGHT DIRECTOR SHEPHERD
WX MISSION IDENTIFIER NOAA2 Wx WXA GUSTAV			OB NUMBER 14
VORTEX DATA MESSAGE			
A	10 11759 Z	DATE and TIME of FIX	
B	35 DEG 09 MIN N S	LATITUDE of FIX	
	75 DEG 32 MIN W E	LONGITUDE of FIX	
C	850 MB 1331 M	MINIMUM HEIGHT of STANDARD LEVEL	
D	NA KT	ESTIMATE of MAXIMUM SURFACE WIND OBSERVED	
E	NA DEG NM	BEARING and RANGE FROM CENTER of MAXIMUM SURFACE WIND	
F	121 DEG 53 KT	MAXIMUM FLIGHT LEVEL WIND NEAR CENTER 3527 7510	
G	055 DEG 21 NM	BEARING and RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND	
H	988 MB	MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM FLIGHT LEVEL. IF EXTRAPOLATED, CLARIFY IN REMARKS.	
I	17 C / 1530 M	MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE OUTSIDE EYE	
J	19 C / 1628 M	MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE INSIDE EYE	
K	16 C / NAC	DEWPOINT TEMP / SEA SURFACE TEMP INSIDE EYE	
L	Poorly defined	EYE CHARACTER: Closed wall, poorly defined, open SW, etc.	
M	C 35	EYE SHAPE/ORIENTATION/DIAMETER: Code eye shape as: C - Circular; CO - Concentric; E - Elliptical. Transmit orientation of the major axis in tens of degrees, i.e., 01-010 to 190; 17 - 170 to 350. Transmit diameter in nautical miles. Examples: C8= Circular eye 8 miles in diameter. E09/15/5=Elliptical eye, major axis 090-270, length of major axis 15 NM, length of minor axis 5 NM. CO8-14=Concentric eye, diameter inner eye 8 NM, outer eye 14 NM.	
N	12345/8	FIX DETERMINED BY / FIX LEVEL. FIX DETERMINED BY: 1-Penetration; 2-Radar; 3-Wind; 4-Pressure; 5-Temperature. FIX LEVEL (Indicate surface center if visible; indicate both surface and flight level centers ONLY when same): 0-Surface; 1-1500 ft; 9-925mb; 8-850mb; 7-700mb; 5-500mb; 4-400mb; 3-300mb; 2-200mb; NA-Other	
O	1 1 2 NM	NAVIGATION FIX ACCURACY / METEOROLOGICAL ACCURACY	
P	REMARKS MAX FL WIND 58 KT NE QUAD 1718Z 988 SLP 988 mb Dropsonde 58 1718Z 3559 7441		

INSTRUCTIONS: items A thru G (and H when extrapolated) are transmitted from the aircraft immediately following the fix. The remainder of the message is transmitted as soon as available for scheduled fixes and at the Flight Director's discretion for unscheduled (intermediate) fixes.

DATE 9/10/02		SCHEDULED RX TIME 21Z		AIRCRAFT NUMBER N42RF		FLIGHT DIRECTOR SHEPHERD	
WX MISSION IDENTIFIER NOAA2 WXXWA GUSTAV						OB NUMBER 24	
VORTEX DATA MESSAGE							
A	10 1 2018Z		DATE and TIME of FIX				
B	35 DEG 18MIN (N) S		LATITUDE of FIX				
	75 DEG 24MIN (W) E		LONGITUDE of FIX				
C	850 MB 1282 M		MINIMUM HEIGHT of STANDARD LEVEL				
D	NA KT		ESTIMATE of MAXIMUM SURFACE WIND OBSERVED				
E	NA DEG NM		BEARING and RANGE FROM CENTER of MAXIMUM SURFACE WIND				
F	332 DEG 60 KT		MAXIMUM FLIGHT LEVEL WIND NEAR CENTER 3432 7616				
G	240 DEG 64 NM		BEARING and RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND				
H	988 MB		MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM FLIGHT LEVEL. IF EXTRAPOLATED, CLARIFY IN REMARKS.				
I	24 C / 1643 M		MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE OUTSIDE EYE				
J	24 C / 1643 M		MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE INSIDE EYE				
K	19 C / NA C		DEWPOINT TEMP / SEA SURFACE TEMP INSIDE EYE				
L	POORLY Defined		EYE CHARACTER: Closed wall, poorly defined, open SW, etc.				
M	NA		EYE SHAPE/ORIENTATION/DIAMETER: Code eye shape as: C - Circular; CO - Concentric; E - Elliptical. Transmit orientation of the major axis in tens of degrees, i.e., 01-010 to 190; 17 - 170 to 350. Transmit diameter in nautical miles. Examples: C8= Circular eye 8 miles in diameter. E09/15/5=Elliptical eye, major axis 090-270, length of major axis 15 NM, length of minor axis 5 NM. CO8-14=Concentric eye, diameter inner eye 8 NM, outer eye 14 NM.				
N	1345/8		FIX DETERMINED BY / FIX LEVEL. FIX DETERMINED BY: 1-Penetration; 2-Radar; 3-Wind; 4-Pressure; 5-Temperature. FIX LEVEL (Indicate surface center if visible; indicate both surface and flight level centers ONLY when same): 0-Surface; 1-1500 ft; 9-925mb; 8-850mb; 7-700mb; 5-500mb; 4-400mb; 3-300mb; 2-200mb; NA-Other				
O	11Z NM		NAVIGATION FIX ACCURACY / METEOROLOGICAL ACCURACY				
P	REMARKS MAX FL WIND 63 KT SW QUAD 1932Z SLP 988 mb Dropsonde 19323409 7537 63 988						

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Proposed Flight Track

STS GUSTAV

10 SEP 02 N420F

~ 142 takeoff

~~Pease AB~~ NH

- ① ~35N 75.6W
- ② ~34.1N 76.5W
- ③ ~34.1N 74.5W
- ④ 35N 75.6W
- ⑤ 33N 75.6W

On Forest Center
9/10/12
34.1N 75.6W

— race track dropside pattern inserted between
points 1-2, 3-4, 4-5

— plan for approx 3 drops along each leg +
race track pattern



