



G4 N00 163-77-C0066

BTS

cl 12

18000000891

B4 Lot 10 5-78

14

A4

12

F3 BTS 23 7-77

14

E3 BTS 23 7-77

14

D3 BTS 23 7-77

14

C3 Lot 10 5-78

14

B3

12

A3

16

F2 12

E2 12

D2 12

C2 12

B2 16

A2 Lot 10 5-78 14

G1 Lot 6 5-78 16 NO

F1 Lot 6 5-78 16

E1 16

D1 16

C1 16

B1 Lot 10 5-78 14

A1 12

AIR-SEA INTERACTION CHECK LIST

FLIGHT 800808I

Pre-deployment (following 48 hour alert)

- 1) Check radiometer calibration; if points deviate by more than .15°C, recalibrate  
42RF.....  
43RF.....
- 2) Arrange for deployment of needed AXBT units to staging base  
.....
- 3) Participate in flight crew, flight director briefing on proposed flight plan and AXBT drop sequence.  
.....

Pre-flight (following 24 hour alert)

- 1) Inventory AXBT stocks, log quantities on AXBT check sheet summary  
..... ✓
- 2) Check that antennas are in place and secured  
..... ✓
- 3) Turn on receiver and run through calibration sequence - check for proper operation  
..... all 3 OK ✓
- 4) Check operation of strip chart recorder; set chart drive on .1"/sec; set scale on 0-5V; set pens on zero; set receivers on calibrate position 3 and adjust pen to voltmeter reading  
..... NA
- 5) Check that required number of AXBT's are loaded externally and internally (remove tape from these) and that externally loaded tubes are labelled according to channel and year of manufacture number on the launch control panel  
..... ✓
- 6) Clean radiometer lens  
..... RFC
- 7) Check proper operation of radiometer-compare meter reading and output of digital system while performing field calibration check at 3 temperatures  
..... ✓

2

8) Obtain best estimate of radius of max wind,  $R_m$ , maximum wind,  $V_m$ , and minimum pressure,  $P_m$

20  
135 KT  
950 mb

..... ✓

9) Set up receives 1 and 3 (left hand and right hand) on strip chart

..... NA

Post takeoff

1) Log takeoff time

..... 162900

2) Turn on radiometer

..... ✓

3) Turn on AXBT receiver, check for proper operation

Printer set for  
..... 1 sec rate when  
AXBT receiver on

4) Turn on strip chart recorder, setting chart rate at .1"/sec and voltage scale at 0-5 V, adjust 0 and 5 volt readings to edges of paper

..... NA

5) Have line printer turned on and set at one sample per second rate, run through three calibration frequencies on all AXBT receivers

..... ✓

6) Set up graphics via terminal

..... NA

7) Enter necessary programs via terminal

..... NA

In flight

1) Run through AXBT calibration at the beginning and end of each flight leg

..... ✓

2) Make sure flight pattern is oriented according to direction of prior tasks

..... ✓

3) Update estimate of  $R_{max}$  and storm intensity at least 1/2 hour prior to first AXBT drop

..... ✓

4) Check radiometer every 1/2 hour between AXBT legs

..... ✓

5) Log times of all ascents and descents

..... 1630Z ↑ 5100 m RA  
1804Z ↓ 500 m RA

6) Label head and tail of strip chart with flight number, number each AXBT trace. Turn chart on before each leg, off at end of leg

..... NA

3

- 7) Encode AXBT traces between AXBT legs, deliver logs to flight director for transmission, log time of transmission on the log

..... 2 BT's encoded

During AXBT Legs

- 1) Before and after each leg, switch receivers to calibrate mode and step through the calibration points, pausing 10 sec at each position
- 2) Drop AXBT's in sequence according to channel no. (12-14-16-12, etc). Make sure channel selector switch on each receiver matches the AXBT channel number to be dropped.
- 3) In the case of 2 AXBT's in the water at the same time, switch receivers 1 and 2 to the proper channel for the new AXBT, leaving receiver 3 set to the channel for the AXBT in the water
- 4) Key AXBT drops to time. Memorize interval (in sec) between each drop along the leg 1 from Table E.1; compute time to next drop from Table E.2. Predicted time should thus always equal drop time. As time permits, check AXBT positions with HP-25 program
- 5) Fill in as much of AXBT check sheet as possible before the drop. i.e., log latitude and longitude degrees before drop, then fill in tenths and hundredths (or minutes) of degrees just after dropping
- 6) If available, punch right hand event button at drop time and again just after modulation begins.
- 7) Estimate mixed layer depth (MLD) by estimating elapsed time from strip chart recorder, or by again hitting event button, when the temperature just begins dropping at bottom of isothermal layer (change of  $> .2^{\circ}\text{C}$  in 1 sec). Convert elapsed time to depth using Table E.3.
- 8) Estimate time to first AXBT drop following a known turn point, using the average ground speed achieved after the turn

..... ✓

..... ✓

..... ✓

..... ✓

..... ✓

..... ✓

..... NA

..... ✓

9) If AXBT drop is a manual one using internal sondes released from free-fall chute:

- 1) Check with flight engineer to be sure that the aircraft is depressurized
- 2) Be sure the sleeve is inserted in the free-fall chute

..... NA

10) For external launching (legs through the hurricane center) be sure pilot has armed the system, you arm the system with key, select AXBT chute to be fired (row and column switches), arm the system with toggle switch and then fire at predetermined time. Copy info., label strip chart, set switches for next AXBT chute and compute time of next drop

..... ✓

11) From a flight altitude of 300 m, about 90 sec elapse between AXBT launch and the beginning of carrier transmission. For the rotor chute sondes, modulation begins about 60 seconds later. For the parachute sondes, modulation begins about 80 seconds after the carrier begins. The sonde is to be considered a failure if modulation does not begin 90 seconds after the carrier begins or, depending upon altitude, about 3 minutes after launch. If the planned AXBT spacing is 15 nm, or greater, a second sonde should be launched immediately after the above time is exceeded

..... ✓

After Landing

1) Turn off all equipment

IRT ..... ✓  
 AXBT ..... ✓  
 Strip chart ..... NA

2) Turn in forms and check sheets to Lead Project Scientist

..... ✓

3) Sketch flight pattern and approximate locations of AXBT drops

..... ✓

4) Sketch surface temperature and mixed layer depth analysis

..... NA

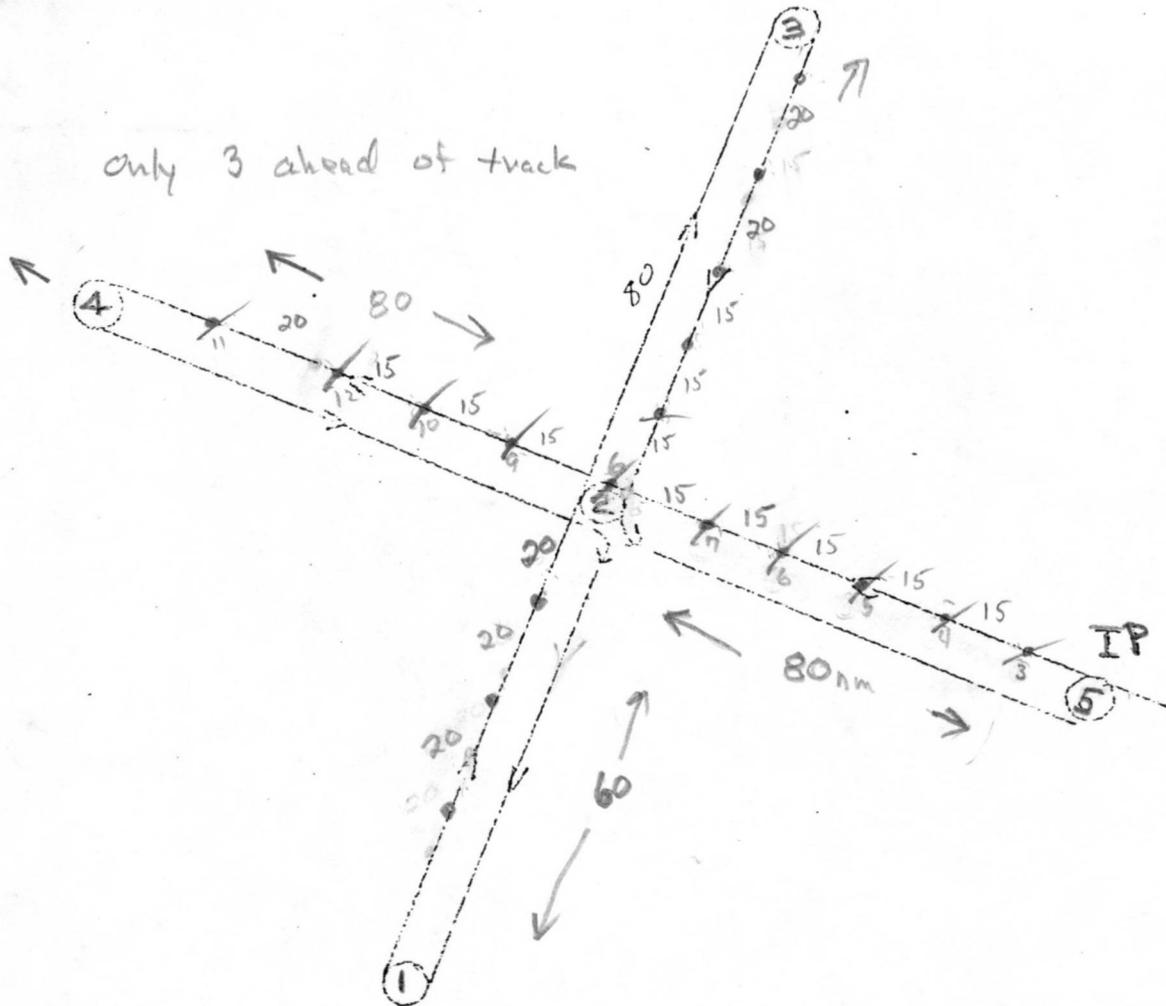
5) Itemize problems

..... \_\_\_\_\_

# AXBT Drop Plan

21 AXBT'S

A/C MODIFIED EYE-WALL EXP  
OPTION B



ALL AIRCRAFT FLY 5, 2, 4, 2, 1, 2, 3, 2, 5, 2, 4, 2, 1, 2, 3, 2, 5  
FOR DURATION

ALTITUDES      41C    12000 FT  
                  42RF    18-20000 FT  
                  43RF    5000

OPTION B WILL BE FLOWN IF THE  
EYE IS LARGE OR IF A SECONDARY  
WIND MAXIMUM IS PRESENT

8 penetrations

SEA SURFACE RADIOMETER CHECK SHEET

FLIGHT 800808I

SERIAL NO \_\_\_\_\_

Date of last lab calibration NA

Calibration constants

Last lab check on calibration date NA

IR Temp Bath Temp \_\_\_\_\_  
Temperatures checked in field \_\_\_\_\_

Field check on calibration-time \_\_\_\_\_

Log every 1/2 hour

Time	IR Temp Digital Temp Voltmeter	IR Temp Dial Temp CRT (°C)	AXBT Sfc Temp	Flight level RA (m)	Comments
<u>172300</u>	<u>NA</u>	<u>24.1</u>	<u>-</u>	<u>5150</u>	<u>OK</u>
<u>174310</u>	<u>NA</u>	<u>24.4</u>	<u>-</u>	<u>5133</u>	<u>OK</u>
<u>180600</u>	<u>NA</u>	<u>23.8</u>	<u>-</u>	<u>3270</u>	<u>OK</u>
<u>181900</u>	<u>-</u>	<u>24.9</u>	<u>23.9</u>	<u>437</u>	<u>OK</u>
<u>183415</u>	<u>-</u>	<u>21.8</u>	<u>24.9</u>	<u>1444</u>	<u>Thin clouds</u>
<u>184300</u>	<u>-</u>	<u>20.7</u>	<u>27.6</u>	<u>1457</u>	<u>" "</u>
<u>192410</u>	<u>-</u>	<u>23.8</u>	<u>-</u>	<u>1460</u>	<u>" "</u>
<u>195230</u>	<u>-</u>	<u>22.0</u>	<u>29.0</u>	<u>1456</u>	<u>Cu below</u>
<u>203430</u>	<u>-</u>	<u>27.2</u>	<u>-</u>	<u>1452</u>	<u>" "</u>
<u>211920</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
<u>224100</u>	<u>-</u>	<u>24.0</u>	<u>-</u>	<u>1440</u>	<u>" "</u>
<u>000637</u>	<u>-</u>	<u>24.3</u>	<u>29.92</u>	<u>3105 ↑</u>	<u>Clear</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____