Rogers

Lead Project Scientist

Preflight

1. Participate in general mission briefing.
2. Determine specific mission and flight requirements for assigned aircraft.
3. Determine from field program director whether aircraft has operational fix responsibility and discuss with AOC flight director/meteorologist unless briefed otherwise by field program director.
4. Contact HRD members of crew to:
   a. Assure availability for mission.
   b. Review field program safety checklist
   c. Arrange ground transportation schedule when deployed.
   d. Determine equipment status.
5. Meet with AOC flight director and navigator at least 3 hours before take-off for initial briefing.
5. Meet with AOC flight crew at least 2 hours before take-off for crew briefing. Provide copies of flight requirements and provide a formal briefing for the flight director, navigator, and pilots.
6. Report status of aircraft, systems, necessary on-board supplies and crews to appropriate HRD operations center (MGOC in Miami).
7. Before take-off, brief the on-board GPS dropsonde operator on times and positions of drop times.
7. Make sure each HRD flight crew members have life vests
7. Perform a headset operation check with all HRD flight crew members. Make sure everyone can hear and speak using the headset.
8. Collect "mess" fee ($2.00) from all on-board HRD flight crew members.

In-Flight

1. Confirm from AOC flight director that satellite data link is operative (information).
2. Confirm camera mode of operation.
3. Confirm data recording rate.
4. Complete Lead Project Scientist Form.
5. Check in with the flight director to make sure the mission is going as planned (i.e. turns are made when they are supposed to be made).

Post flight

1. Debrief scientific crew.
2. Report landing time, aircraft, crew, and mission status along with supplies (tapes, *etc.*) remaining aboard the aircraft to MGOC.
3. Gather completed forms for mission and turn in at the appropriate operations center. [**Note**: all data removed from the aircraft by HRD personnel should be cleared with the AOC flight director.]
4. Obtain a copy of the 10-s flight listing from the AOC flight director. Turn in with completed forms.
5. Obtain a copy of the radar DAT tapes. Turn in with completed forms.
6. Obtain a copy of the all VHS videos form aircraft cameras (3-4 approx.). Turn in with completed forms.
7. Obtain a copy of CD with all flight data. Turn in with completed forms.
8. Determine next mission status, if any, and brief crews as necessary.
9. Notify MGOC as to where you can be contacted and arrange for any further coordination required.
10. Prepare written mission summary using **Mission Summary** form (due to Field Program Director a week after the flight).

Lead Project Scientist Check List

Storm or Project E Pac Suspect Area **Experiment name** IFEX Genesis
Date 7/15/05 **Aircraft** N42RF **Flight ID** _____

A. Participants:

HRD		AOC	
Function	**Participant**	**Function**	**Participant**
Lead Project Scientist	Rogers	Flight Director	Flaherty
Radar	Leighton	Pilots	Kennedy, Choy
Workstation	Murillo/Leighton	Navigator	Gallagher
Cloud Physics	—	Systems Engineer	
Photographer/Observer /Guests	Raymond/NMT Cisneros/ Braun/NASA GSFC NMT	Data Technician	McMillan, Hill, Rogers
Dropwindsonde	Merrill	Electronics Technician	
AXBT/AXCP	Braun	Other	

B. Take-off and Landing Times and Locations:

Take-Off: 175242 UTC Location: MROC

Landing: 022213 UTC Location: MROC

Number of Eye Penetrations: —

C. Past and Forecast Storm Locations: —

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

D. Mission Briefing:

Fly diamond survey pattern into suspect area in E Pac at about 8 N 87 W. Convection has persisted there for 2 days along northern boundary of ITCZ. NE flow offshore and SW flow further out has set up a shear axis / circulation at the surface. See attached figure for track.

E. —Equipment Status (Up ↑, Down ↓, Not Available —, Not Used **O**)

Equipment	Pre-Flight	In-Flight	Post-Flight	# DATs / Cds /Expendables/ Printouts
Radar/LF	↑			
Doppler Radar/TA	↑			
Cloud Physics	O			
Data System	↑			
GPS sondes	↑			
AXBT/AXCP	↑			
Ozone instrument	↑			
Workstation	↑			
Videography	↑			

REMARKS:

Lead Project Scientist Event Log

X - no launch detect

Date 7/15/05 **Flight** 050715H **LPS** Rogers

	Time	Event	Position	Comments
	175242	takeoff	MRC	takeoff from MRC
	182956	FL, radar	7°57' 84°25'	ferry to IP, inc~~usive~~
				stratiform precip, circulation
				all around, broad shield on
			LFW	embedded 36-40 dBZ echoes,
			FL winds 142° @ 16 kts; some tops	
			ONTA	up to 12 km
(1)	183721	drop 1 (combo)	7°28' 84°14'	FL 175 @ 20 kts; SST 27.5; no winds below 1700m
	184304	FL pattern	7°17' 84°35'	flying at 13,500 ft to avoid icing
	1837	turn	7°28' 84°14'	turn to 235 track, beginning second
(2)	185017	drop 2	7° 85°	FL 223 @ 14 kts; no winds below 3000 m
	185847	FL winds	6°40' 85°29'	FL winds shifted from ESE'ly to
				swrly moving south, indicating
				pronounced cyclonic wind shift at FL
X (3)		drop 3		no launch detect
X (4)		drop ~~3a~~		no launch detect
	190750	FL obs	6°15' 86°7'	some whitecaps, underneath
				broad stratiform anvil (non-
				precipitating)
(5)	191555	drop 4 (combo)	5°59' 86°32'	FL 275°@ 8 kts; late winds; SST 27.1
	191556	turn	5°59' 86°32'	turn to track
(6)	191748	drop 4a	6°6' 86°32'	FL 300°@ 20 kts; late winds; sfc 20
(7)	193311	drop 5	7°7' 86°6'	FL 8°@ 14 kts; sfc 230@15 kts
(8)	194949	drop 6	8°14' 85°43'	FL 98°@ 10 kts; sfc 230@15 kts
	195820	FL winds	8°49' 85°31'	clear cyclonic shear axis
				or gyre at flight-level
				↘ ↓

sfc wind 208°@ 15kt wind 223° @ 20kt

Lead Project Scientist Event Log

Date 7/15/05 **Flight** 050715H **LPS** Rogers

	Time	Event	Position	Comments
(9)	200553	drop 7 (combo)	9°22' 85°20'	FL wind 113° @ 8kt; SST 28.5; 19 m MLD
X (10)	202341	drop 8	8°26' 86°13'	No launch detect; sfc. 209 @ 15kt.
(11)	202439	drop 8a	8°23' 86°16'	FL 86° @ 12kt; sfc. 229 @ 10kt
	202810	radar	8°11' 86°27'	entering widespread stratiform shield, embedded echos of 32 dBZ
	203945	radar	7°31' 87°4'	swirl of low reflectivity in LF radar
(12)	204027	drop 9	7°30' 87°6'	FL 20° @ 10kt; sfc. 217° @ 13kt
	204145	radar	7°25' 87°11'	large areas of deep convection to right of airplane, max reflectivity of about 36 dBZ; tops do not extend much above melting level though
	204355	FL obs	7°18' 87°19'	broad shield of anvil debris
(13)	205730	drop 10 (combo)	6°35' 88°2'	FL ; sfc. 198 @ 15kt.
	205731	turn	6°34' 88°1'	turn to track 20°
	211419	radar, FL	7°39' 87°37'	going turn heavier precip here, steady turbulence +/- 1.5 m/s, some 40 dBZ echos
X (14)	211546	drop 11	7°46' 87°34'	no launch detect
	211829	FL obs	7°56' 87°31'	near white-out visibility
	212131	radar	8°8' 87°26'	convection encountered here, cloud tops around 10 km or 50
(15)	213237	drop 12	8°53' 87°10'	FL 65° @ 8 kts; sfc. 209 @ 16 kts.
	213333	obs	8°57' 87°9'	went through broad area of moderate strat form precip, heading NNE, have come out to field of cumulus congestus
X (16)	214852	drop 13 (combo)	10°1' 86°45'	no launch detect
	214853	turn	10°1' 86°44'	turn to track 260

Lead Project Scientist Event Log

Date 7/15/05 **Flight** 050715H **LPS** Rogers

	Time	Event	Position	Comments
(17)	215013	drop 13a	10°3'86°48'	FL 104°@ 7 kts; SST 28.3; 15m MLD
				sfc. 157°@ 11kt.
	220759	radar	9°0'87°38'	coming up on some
				isolated cells of heavier precip
(18)	220916	drop 14	9°56' 87°42'	FL winds 90°@ 10 kts; sfc. 206°@ 13kt
(19)	222703	drop 15	7°53'88°37'	FL winds 51°@ 9kt; sfc. 221°@ 19kt
	223256	obs	7°34' 88°52'	wide spread stratiform precip
				with some embedded convection,
				hitting some 4 m/s updrafts,
				heavy rain on window
	225409	obs		heaviest and longest lived
				turbulence hit yet; w's
				oscillating b/w -2 and 5 m/s for
				about 10-15 nm
(20)	224547	drop 16 (combo)	6°49' 89°32'	FL winds 2°@ 11 kt.; sfc. 196°@ 14kt.
	224550	turn	6°53' 89°34'	turn to track 29°
X (21)		drop 17		no launch detect
	231824	track change	9°0' 88°46'	change track to cut off northern
				tip of top triangle, extend end SW end of
				pattern to the south and east to try
				to capture the flight-level SW wind
				again
(22)	232117	drop 18	9°8' 88°44'	FL 64°@ 8 kt., sfc. 253°@ 10kt
	232153	turn	9°10' 88°45'	turn to about 280
X (23)	233007	drop 19	9°19' 89°22'	no launch detect
	233041	turn	9°18' 89°23'	turn to 226
	233143	radar	9°12' 89°29'	NW-SE oriented line of showers
				about 40 nm away; embedded echoes
				of 32-36 dBZ

Lead Project Scientist Event Log

Date 7/15/05 **Flight** 050715H **LPS** Rogers

Time	Event	Position	Comments
234424	radar	8°33' 90°7'	back in heavy stratiform
(24) 23 48 36	drop 20	8°20' 90°21'	FL 40°@ 6 kts; sfc. 251°@ 18 kts
234932	radar	8°17' 90°23'	well-organized NE-SW
			oriented line of rain about 40 nm
			left of track, some embedded 40 dBZ
			echoes (through LF may have a high bias)
(25) 000601	drop 21 (combo)	7°26' 91°13'	sfc. wind 236°@ 19 kts; SST 27.5
(26) 002039	drop 22	6°26' 90°47'	sfc. 228°@ 17 kts
002426	pattern plan	6°12' 90°39'	planned a pattern for 43's
			night mission based on obs today of the
			cyclonic windshift/gyre and assuming
			a motion of 3 deg in 12 hrs. 43 will fly
			a square spiral pattern centered at 7.5N 87.5W
X (27) 003402	drop 23	5°28' 90°18'	no launch detect
(28) 003543	drop 23a	5°28' 90°14'	FL wind 241@ 8 kt; SST 27.2
			sfc. 202°@ 8 kts
003404	turn	5°28' 90°18'	turn toward 45, heading toward home
005237	FL winds	6°20' 89°22'	FL winds 25 kts @ 195°
(29) 010459	drop 24	6°57 88°38'	FL winds 302@ 4 kt; sfc. 228@ 17 kt
010634	FL obs	7°1' 88°32'	in steady stratiform rain
011545	FL winds	7°26' 88°3'	FL winds 33°@ 12 kts
0135	track		track 056; RTB
0203	FL obs		hitting turbulence just
			offshore Costa Rica
022213	landing	MRec	land at MROC

7.5 N
87.5 W
center location
for 43

Mission Summary

Storm name WXW XFZ SUSPECT

YYMMDDA# Aircraft 42 RF

Scientific Crew (4 RF)

Lead Project Scientist Rogers

Radar Scientist Leighton

Cloud Physics Scientist —

Dropwindsonde Scientist Murillo

Boundary-Layer Scientist Braun (NASA GSFC)

Workstation Scientist Murillo/Leighton

Observers Raywood, Cisneros

Mission Briefing: (include sketch of proposed flight track or page #) Fly diamond survey pattern into suspect area at about 8N 87W. Convection has persisted there for 2 days along northern edge of ITCZ (See text on earlier sheet)

Mission Synopsis: (include plot of actual flight track) Flew modified diamond survey pattern, mapped out wind & thermo. field of suspect area. Saw evidence of wave in flight-level data, saw clear cyclonic shear axis or possible gyre at FL too. Strong SW flow at surface. Widespread stratiform anvil debris and occasional areas of heavier stratiform rain w/some convective elements.

Evaluation: (did the experiment meet the proposed objectives?) Yes. This system has the potential to develop over the next few days. Mission was able to document tropical wave from flight-level data, including possible cyclonic gyre. Observations from this flight have been used to help guide follow-on flight with 43 tonight. That should prove to be an interesting flight, as will tomorrow's 42 flight to document the response of the atmos. to tonight's expected convection.

Problems:(list all problems) Dropsondes continued to occasionally give problems. There were 7 no launch detects. Otherwise things worked well.

Expendables used in mission:

GPS sondes : 29

AXBTs : 8

Sonobuoys: 0

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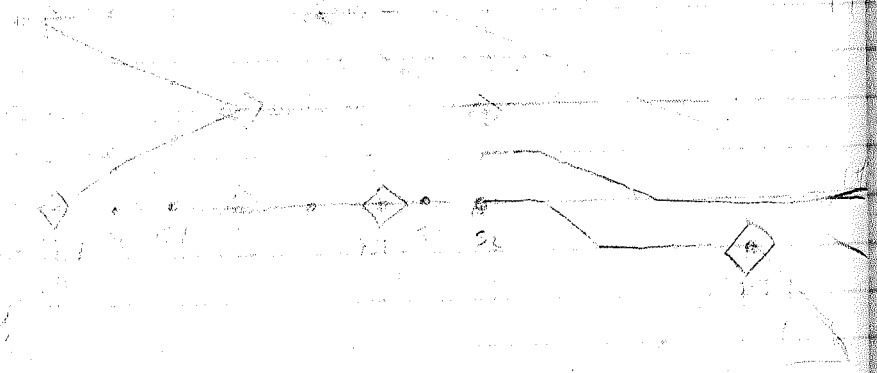


TBT 2 [illegible]

Crew		HKD	Guest
Kennedy	Hill	Rogers	K. Mallon
Clay	Rogers	Morillo	U. Mackay
Gallagher		Leighton	J. Seavey
Wade		Uhlhorn	Cr Albert
Flaherty			
McMillan			

2005?15H1 IFEX

WXWXE SUSPECT

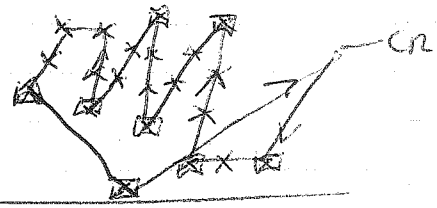
scheduled 11:30 local Takeoff

Sliding---

flying ~~Sat~~ pattern SE of
previous Flight

Takeoff MS2

land 2625



2005071641 IFEX

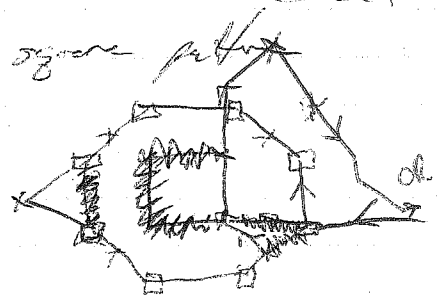
WXWXE SUSPECT

scheduled 1110 local takeoff

Eglin 2 ctrl light on possible delay

" Cancel

flying okp sign w/ square pattern



Guest

Raymond

Seavey

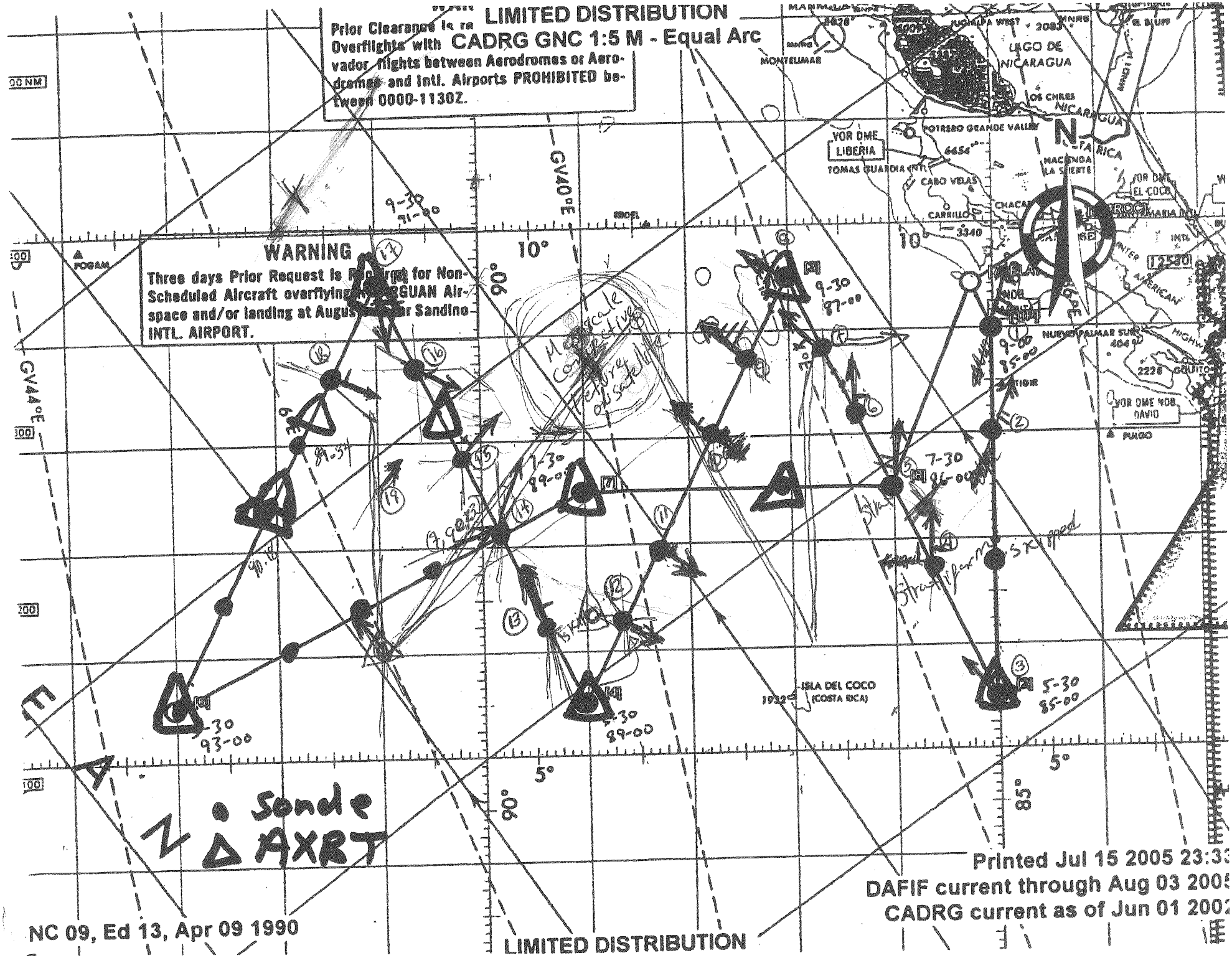
Lynn Tiam

Wein Mallon

Mikkinontgomery

Takeoff 1853Z44

Land 24[illegible]24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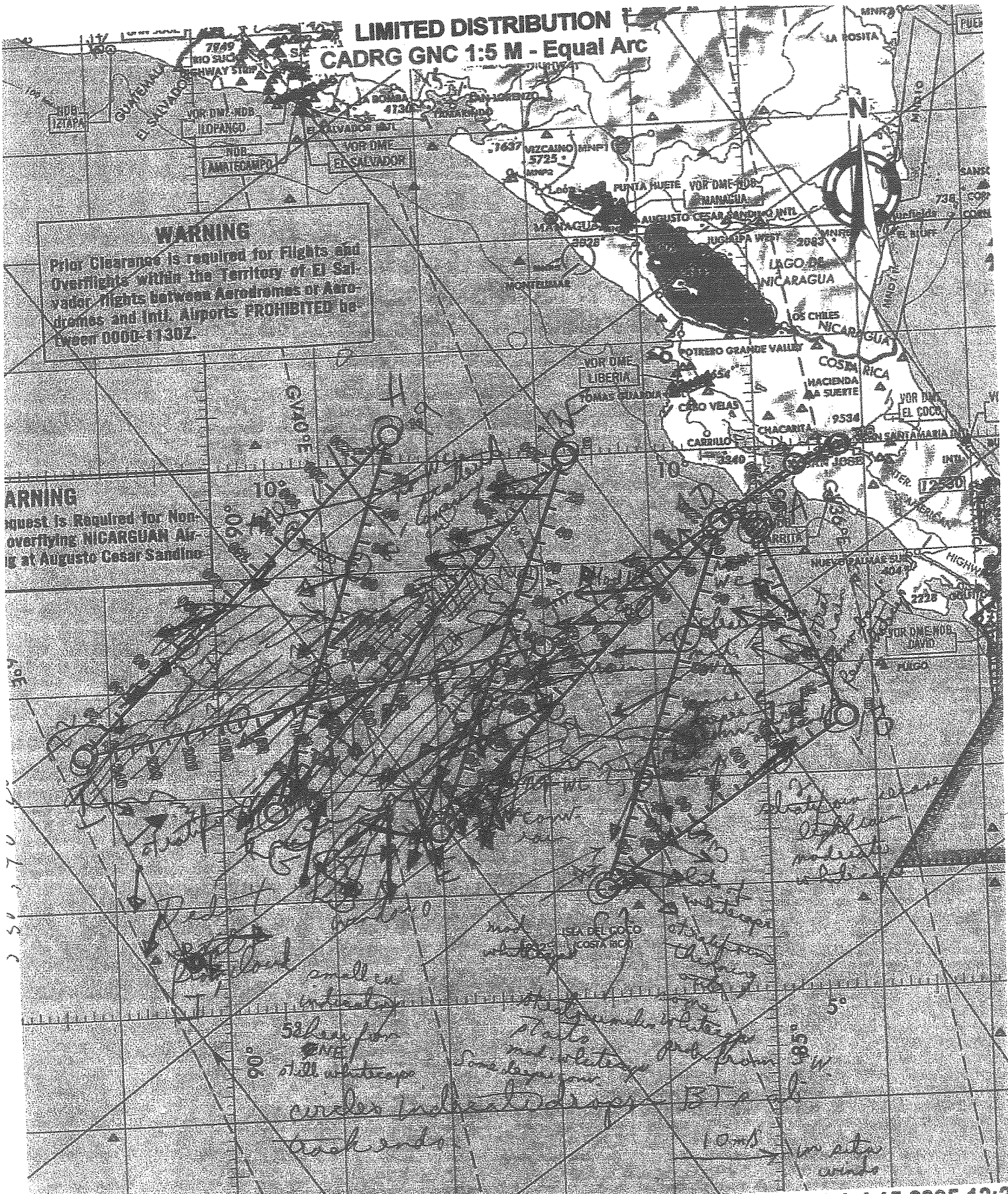
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OTRERO GRANDE VALLEY
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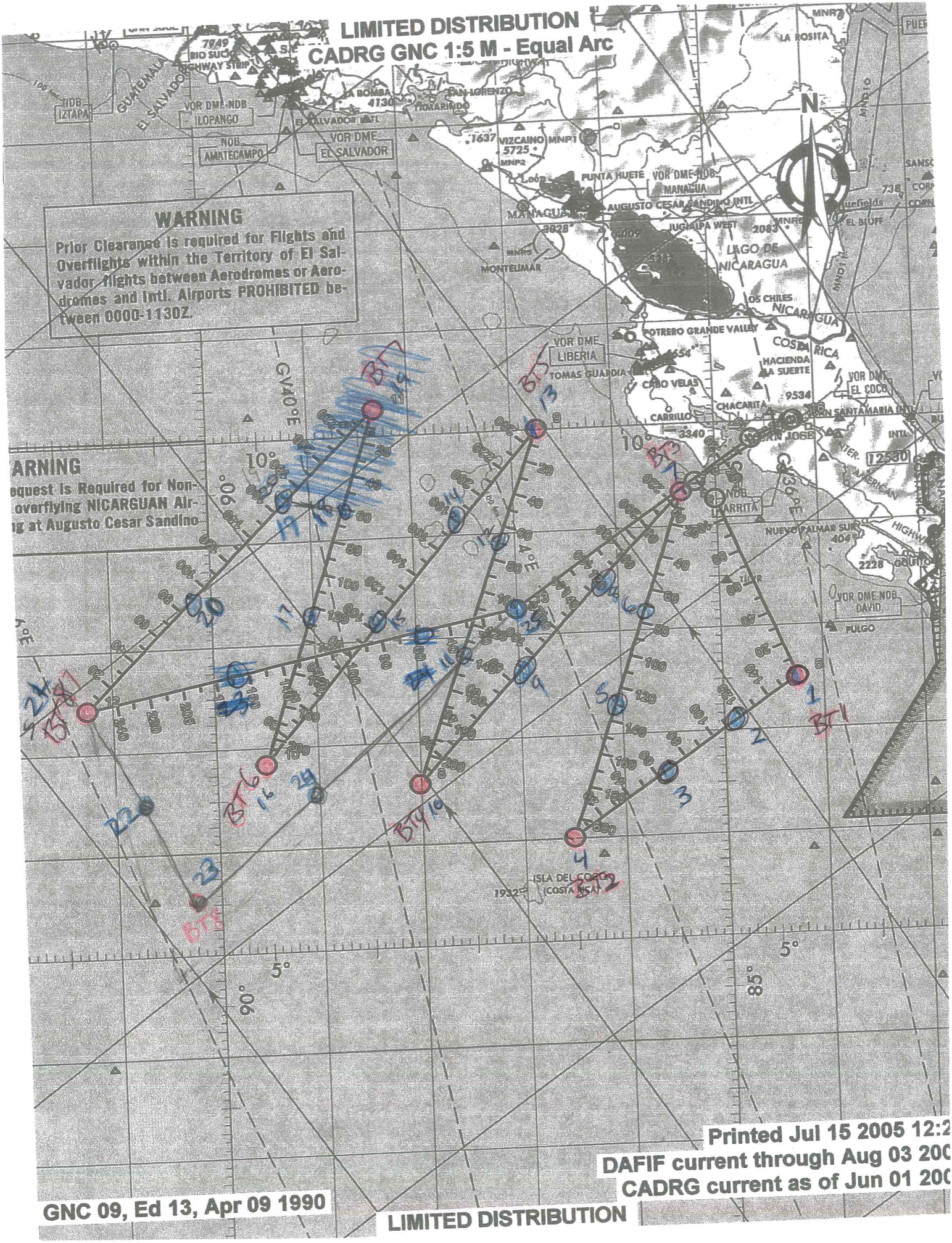
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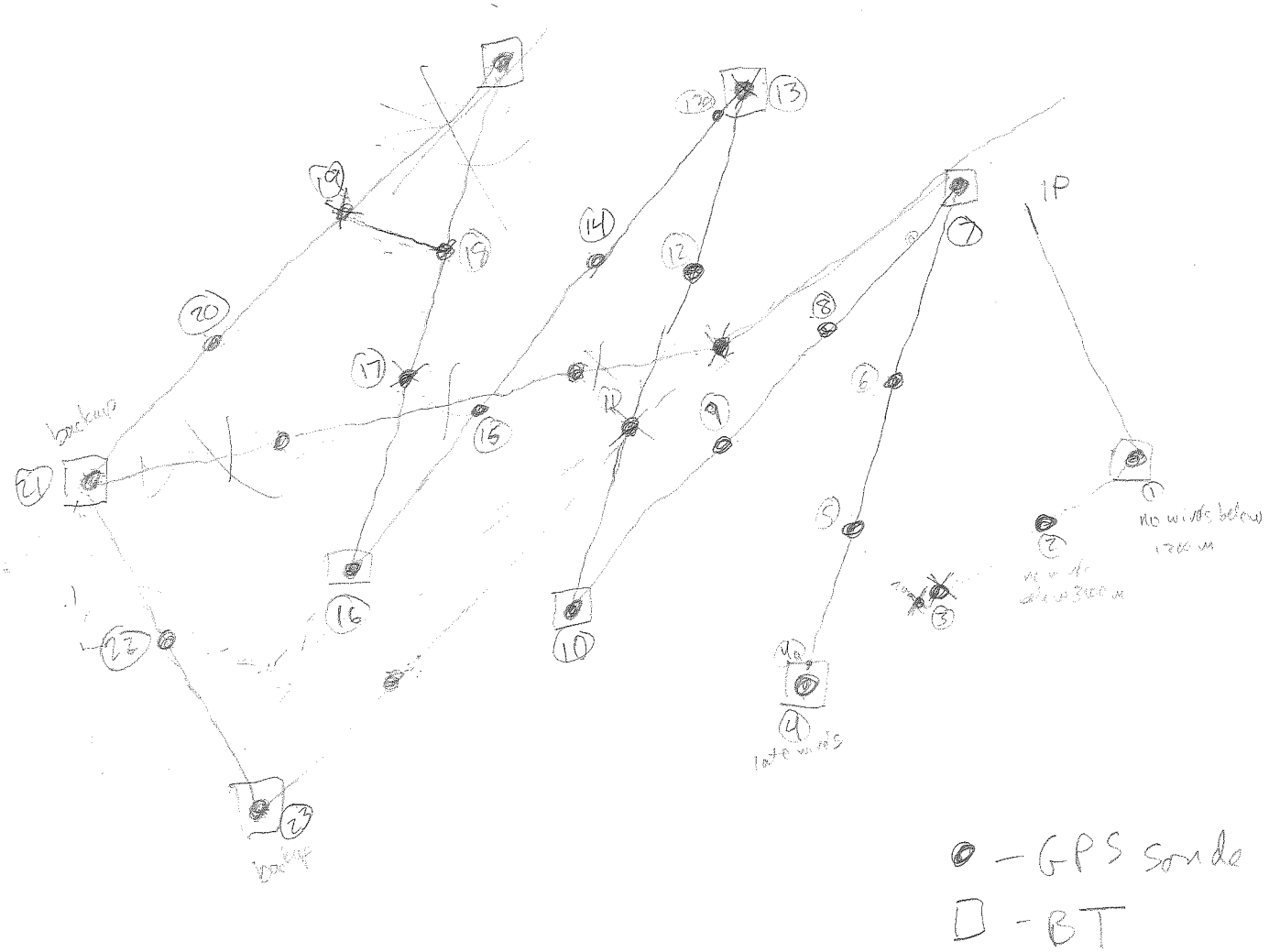
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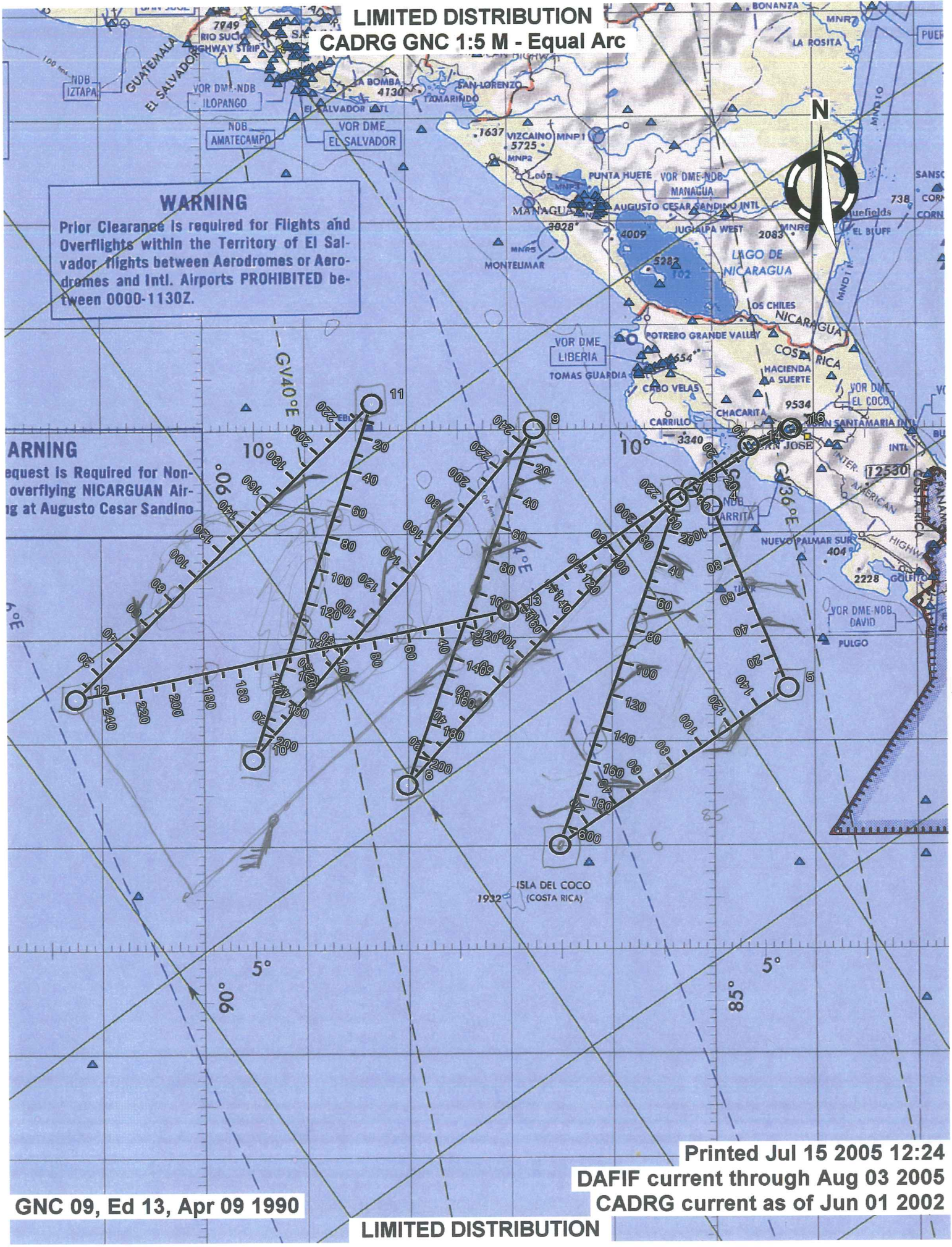
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TOMAS GUARDIA
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