LOCAL AREA FORECASTER'S HANDBOOK FOR DIEGO GARCIA

PREPARED FOR

COMMANDER
NAVAL METEOROLOGY AND OCEANOGRAPHY COMMAND
STENNIS SPACE CENTER MS 39529-5000

PREPARED BY

NAVAL CENTRAL METEOROLOGY AND OCEANOGRAPHY DETACHMENT, DIEGO GARCIA

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From: Officer in Charge

Subj: LOCAL AREA FORECASTER'S HANDBOOK

Ref: (a) NAVMETOCCOMINST 3140.2E

Encl: (1) Local Area Forecaster's Handbook for Naval Central Meteorology and Oceanography Detachment Diego Garcia.

1. Purpose. Published in accordance with ref a, the intention of this handbook is to provide forecast guidance for local forecasters supporting commands located on the island of Diego Garcia.

2. Discussion. A thorough knowledge of enclosure (1) will assist forecasters in understanding how local METOC factors impact local operations. Also included is a station description and climatological data for Diego Garcia.

3. Action.

a. All forecasters at this detachment shall become familiar with the content of enclosure (1).

b. All forecasters are encouraged to identify and develop new techniques to improve local forecasting abilities. All such techniques or rules of thumb shall be forwarded to the Leading Chief for possible inclusion in future revisions of enclosure (1).

c. Enclosure (1) shall be reviewed annually for accuracy and completeness. Revisions will be made accordingly.

B. S. BOMMARITO

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SECTION I BASIC DESCRIPTION

A. GENERAL INFORMATION

1. Location. Diego Garcia is located in the Central part of the Indian Ocean at Latitude 07 degrees 18 minutes South, Longitude 072 degrees 24 minutes East. Its remote location is depicted in figure (1-1). The Navy Support Facility Airfield is located on the Northwest portion of the atoll's rim, see figure (1-2). The Naval Central Meteorology and Oceanography Detachment (NCMOD) is located in the Air Operations building (301) along the Northeast side of the parallel taxiway.

2. Definition of Local Area. The local forecasting area includes the entire island of Diego Garcia and the lagoon.

3. Definition of Local OPAREA. The local OPAREA is defined as within 100nm of Diego Garcia.

B. GEOGRAPHICAL AND TOPOGRAPHICAL DESCRIPTION

1. Surrounding area and terrain. Diego Garcia is the southern most and largest nonsubmerged atoll in the Chagos Archipelago. With a total area of 170 sq. km, the lagoon occupies 124 sq. km, the enclosing land 30 sq. km, and the remaining 16 sq. km is the peripheral reef. The land rim stretches 61 km from end to end and comprises 90% of the lagoon's circumference. Three small islands restrict the lagoon's Northern entrance where it opens to the Indian Ocean. The local terrain is flat with lush foliage. The small land area of the atoll has no significant effect on the local weather. Maximum Island elevation is 22 ft, and the airfield (runway) elevation is 9 ft.

C. METEOROLOGICAL/OCEANOGRAPHIC SUPPORT EQUIPMENT

1. ML-3 Microbarograph. Located in the observer's space, 10 feet above MSL, it is used as a continuous graphic representation of station pressure.

2. Precision Aneroid Barometer, ML-448/UM. Located in the observer's space at 13 feet above MSL, this instrument provides an instantaneous representation of station pressure.

3. Electric Psychrometer, ML-450/UM. Stored in the observer's space, it is used to take dry bulb and wet bulb temperatures as a backup to ASOS.

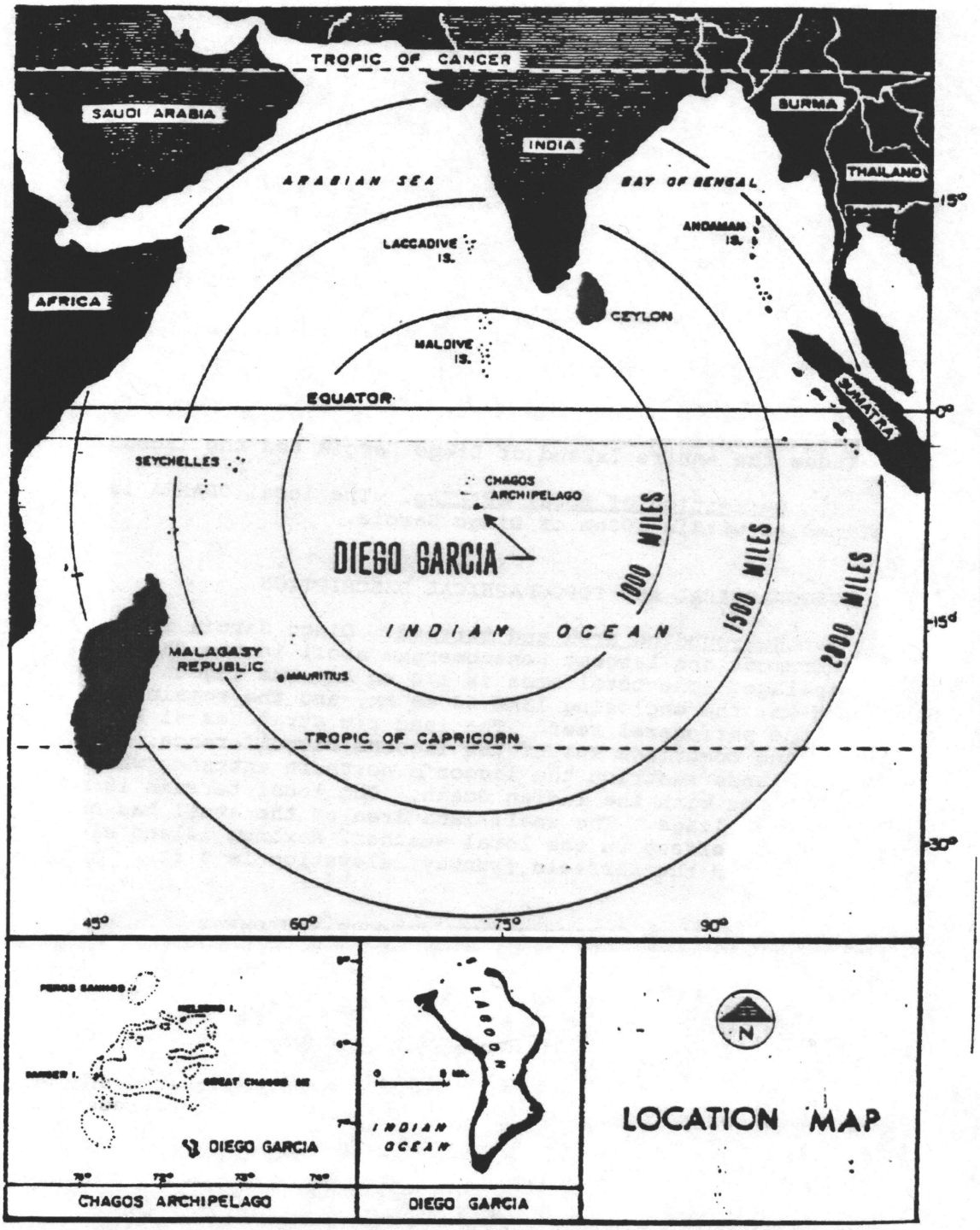

FIGURE 1-1: Indian Ocean Location Map.

FIGURE 1: Indian Ocean Location Map

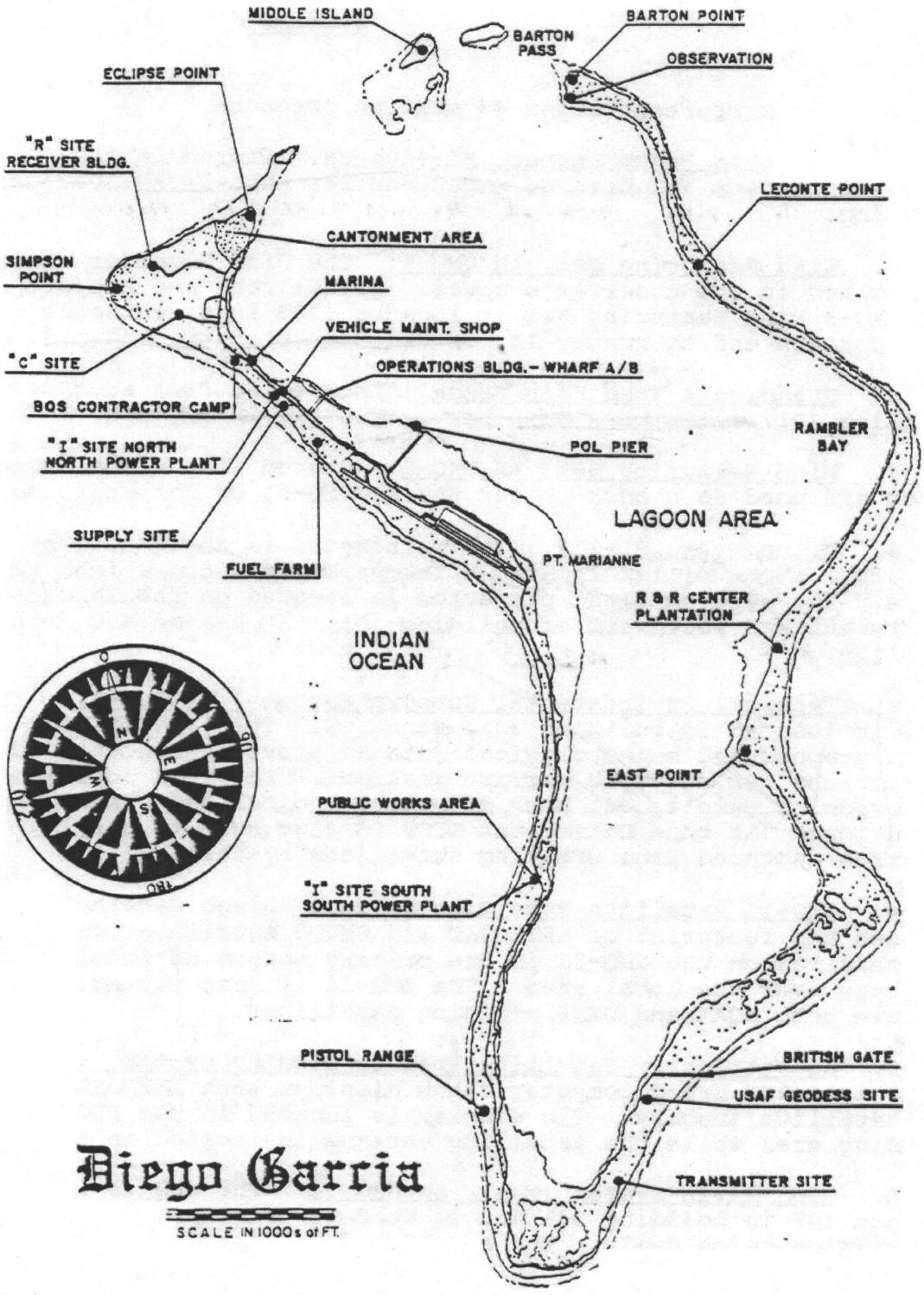

FIGURE 1-2: Diego Garcia Island Map

FIGURE 2: Diego Garcia Island Map

4. Wind Measuring Set, AN/UMQ-5. The Wind Recorder RD-108B is located in the observer's space. Transmitter and support for the UMQ-5 Wind Measuring Set is located 1700 feet southeast to the approach end of runway 13.

5. Standard 4-Inch Rain Gauge. Located 60 feet southwest of building 301.

6. Wind Measuring Set, AN/PMQ-3. Stored in the Supply room and used as a back up for the AN/UMQ-5.

7. MET-5 and GMS-5. MET-s and GMS-5 satellite receivers are used to receive MET-5 satellite images. They are displayed on MIDDS using The Wall of Thunder computer and the SAND program.

8. SMQ-11 Satellite Receiving System. The SMQ-11 is a source for satellite coverage over the local area. It is used as a backup if the GSIDS system goes down(capturing NOAA, TIROS and DMSP orbiting satellites).

9. Mini Rawin System (MRS), AN/UMQ-12. The MRS is located in building 301 room 107, and is used to take upper air observations twice daily (00Z & 12Z). The antennas for this system are located on the roof.

10. SWR-250 WEATHER RADAR. It is located in the FDO's briefing area. It is the primary source of information for locating and setting thunderstorm warnings. The radar has a range of 240 nautical miles around Diego Garcia.

11. FURUNO RADAR. This radar is the backup to the SWR-250 weather radar. It is located in room 109 when not in use. When used it will be located at the FDO's briefing area.

12. SCINDA. A Scintillation Network decision aid nowcasting station is located back in room 107. It measures ionospheric disturbances that interfere with radio signals up to a few GHz frequencies, degrading satellite-based navigation and communication systems.

13. ASOS. Automated Surface Observing System is located in the observer space room 103B and a monitor in the FDO space. It gathers current winds, temperature, and dew point. Also contains monthly and daily climatology data.

D. COMMUNICATIONS EQUIPMENT AND CIRCUITS

1. Operations Computers. There are three computers used for daily operations and a server hosted on the MIDDS network system. Two unclassified computers are located in room 105 (OPS floor), one unclassified computer located in room 103b (observer space) and the server located in room 107 (secure space). Operational computers can be used to download or relay meteorological and oceanographic data via DSN or NIPRNET. The following is a list of some uses for these computers:

- Naval Oceanographic Data Display System (NODDS)
- Optimum Path Aircraft Routing System (OPARS)
- Joint Metoc Viewer (JMV)
- METCAST Client
- Passing applicable meteorological data to Mauritius
- E-mail (NCMOD account is metocdg@dg.navy.mil)
- E-mail Daily Forecast to NSF, Brit Rep and tenant commands
- Navy Support Facility (NSF) Local Area Network (LAN)
- Word-processing
- GFMPL NT
- Message Format Tool
- Global Tracks (Upper Air Data)

2. Defense Messaging System (DMS). Located in room 107, it is used for receiving Naval messages throughout the Navy. This is the primary method of receiving (classified and unclassified) autodin message traffic.

3. Pilot to Forecaster Metro Voice Circuit, TTC-8/800, Operating on frequency 344.6 MHz, this radio is located in the FDO space. It is used to update/extend flight weather briefs, and to pass and receive current weather/PIREPS. This unclassified circuit is monitored 24 hours a day.

4. Dial Telephones. Access to DSN is available on selected lines. Commercial access is available through a command pin #, but is strictly for official use.

5. Brother 1270 facsimile transceiver (FAX). Located in the FDO space, it is used to send and receive unclassified documents to and from outside activities.

6. NIPRNET. NCMOD Diego Garcia may access NIPRNET through NCTS Diego Garcia.

7. SIPRNET. The data circuit supporting the Tactical classified computer in room 107.

8. METOC Duty Beeper. The duty beeper is located in the FDO's Space.

E. COMMANDS AND STAFFS SUPPORTED

1. NAVCENTMETOCDET Diego Garcia provides environmental support to a variety of commands. Requirements will occasionally change, but the following commands frequently receive environmental support.

Navy Support Facility. NSF is the island host activity for all tenant commands, and is the regional coordinator for fleet support in the Indian Ocean. The daily forecast and all local warnings are addressed to NSF. A weekly weather briefing is provided to the Commanding Officer. Special weather briefings are provided as requested or as METOC conditions warrant.

Patrol Wing One (PRW-1) Detachment Diego Garcia. A formal briefing is conducted every Friday at the Tactical Support Center (TSC). NCMOD personnel provide environmental conditions concerning their area of operations. Special briefings are provided for coordinated operations and exercises as requested.

Commander Task Group 72.8 (Deployed VP Squadron). Support includes flight weather folders, acoustic predictions in the form of USW packets and IREPS products. Formal briefings are conducted to the CTG Staff at TSC. Comprehensive INCHOP briefings are provided to each crew when a new squadron arrives for its deployment.

U.S. Air Force (AMC). Air Mobility Command is responsible for cargo and passenger transportation to and from Diego Garcia via military and commercial contract aircraft. Support includes aviation weather briefings and flight forecast folders.

U.S. Air Force Pacific Air Command (PACAF). This unit deploys to Diego Garcia on a contingency basis to stage operations involving B-1, B-52, KC-135 and KC-10 aircraft. Support includes aviation weather briefings, flight weather folders and occasionally formal briefings to the entire PACAF contingent in support of exercises.

Commander Prepositioning Ships Squadron Two. Controls the Rapid Deployment Force anchored in the lagoon. The squadron Commodore is a U.S. Navy Captain and maintains his staff onboard a designated flagship. Prior to underway periods, NCMOD provides comprehensive sailing packages for ship's masters and conducts onboard briefings for staff and masters as requested.

Afloat Prepositioning Ships Squadron (APSRON) Four. Controls the deployment of all MSC ships anchored in the lagoon. The squadron Commodore is a U.S. Navy Captain and maintains his staff onboard a designated flagship. Prior to underway periods, NCMOD provides comprehensive sailing packages for ship's masters and conducts onboard briefings for stall and masters as requested.

Joint Typhoon Warning Center (JTWC). NCMOD provides the Joint Typhoon Warning Center with tropical cyclone position and intensity information when available.

Government of Mauritius. NCMOD provides meteorological information daily to Mauritius under the provisions of the U.S./U.K. Diego Garcia Treaty. Surface observations, TAFS, upper air observations and any applicable tropical cyclone information is transmitted via E-mail.

Fleet Units/NATO Units. All units calling on or deployed to Diego Garcia are visited by a representative of NCMOD. Assistance is provided for meteorological, oceanographic and training needs. Special pre-sail briefings are offered to the ships and are scheduled upon request.

National Oceanographic and Atmospheric Administration (NOAA). NCMOD routinely downloads and transmits via E-mail tidal measurement data. NCMOD also takes sea water temperatures and samples when possible which are then mailed to NOAA.

Tenant Commands. Numerous tenant commands receive environmental support. They include U.S. Air Force Space Command Det 4, 1st Space Wing, Military Sealift Command Unit, all British Forces, Naval Computer and Telecommunications Station, Navy Broadcasting Service Detachment, Navy Mobile Construction Battalion (Seabee's),U.S. Army Supply Detachment and Base Operating Service (BOS) Contractor.

SECTION II CLIMATOLOGY

A. SYNOPTIC CLIMATOLOGY FOR THE INDIAN OCEAN

1. Northeast Monsoon. As winter sets in over the Northern hemisphere the land mass of Southwestern Asia cools and higher pressure forms. The resultant wind flow is from the Northeast off the dry continent over the Northern Indian Ocean. This produces light winds and mostly clear skies for the majority of the region. The Inter-Tropical Convergence Zone moves southward and is located in the vicinity of Diego Garcia. Scattered showers, isolated thunderstorms and light westerly winds generally characterize Diego Garcia's weather. The Northeast monsoon typically runs from December to April.

2. Southwest Monsoon. In the Northern Hemisphere summer, a thermal low pressure forms over the Asian land mass and high pressure strengthens over the Southern hemisphere, moving the Inter-Tropical Convergence Zone Northward of the equator. This results in a southeasterly tradewind flow and relatively fair weather south of the equator. North of the equator, very strong southwest winds and high seas persist over the North Arabian Sea and Bay of Bengal. This region north of the equator is in the rainy season. Large amounts of precipitation fall along most coastal regions exposed to the southwest flow. The southwest monsoon typically runs from July to September. Diego Garcia's weather during this regime is characterized by east-southeast winds, typically between 10-15kts with light showers.

3. Tropical Cyclones.

a. North of the Equator. Tropical cyclones generally do not form during the heart of the southwest monsoon. This is due to the extreme amount of shear generated by a strong southwesterly wind flow. Cyclones are more likely to form during the transition season (May-June and October-November) when water temperatures are warm and there is a minimal amount of shear in the atmosphere.

b. South of the Equator. Most tropical cyclones form to the southeast or south of Diego Garcia. The primary tropical cyclone season is from December through March. Due to Diego Garcia's proximity to the equator, storms that affect the island are in the formative stage and only produce gusty winds and heavy rainshowers. Diego Garcia can expect direct influence from a tropical depression or tropical cyclone times a year. As cyclones continue their track toward the Southwest they become more of a threat to Mauritius, Madagascar, and La Reunion. Typically, only four cyclones reach Typhoon intensity (>63 kts) each year in the South Indian Ocean.

B. GENERAL CLIMATOLOGY FOR DIEGO GARCIA

1. Temperature. Temperatures are generally uniform throughout the year. March and April are the warmest months with an average maximum of 88°F/31°C and July through September is the coolest time of the year with an average daily maximum of 84°F/29°C. Diurnal variation is approximately 10 degrees Fahrenheit 3-4 degrees Celsius year-round. Warm Indian Ocean sea surface temperature is the primary climatic control.

2. Surface Wind. During the summer, from December through March, the island is under the influence of converging westerlies; winds are westerly at approximately 6kts. During April and May (fall transition), winds go through a period of light and variable conditions, ultimately backing to a east-southeasterly direction. During the period from June through September (winter) the island is under the influence of the Southeast trades, with speeds of 10-15 kts. During October and November (spring transition), winds again go through a period of light and variable conditions veering to a westerly direction with the onset of summer.

3. Upper level Wind. During the winter months upper level winds across the Indian Ocean are of an easterly component, with velocities directly related to the height and intensity of the Tropical Easterly Jet. Wind speeds of 50 knots are not uncommon at 200mb. During the remainder of the year winds continue to have an easterly component with velocities of 15 to 25 kts.

4. Precipitation. All precipitation falls in the form of rain, characterized by air mass type showers. Precipitation amounts vary from **4.2** inches during August, to **13.9** inches during January. The annual mean rainfall amount is **102.5** inches.

5. Humidity. The relative humidity is inversely proportional to the diurnal temperature; therefore a maximum humidity will occur with the minimum temperature and a minimum humidity will occur with maximum temperature. Seasonally, relative humidity is lower during the winter months.

6. Thunderstorms. Thunderstorm activity generally occurs during the Summer Months and during transition season when the ITCZ is in the vicinity of the island. Most thunderstorm activity occurs during the late afternoon to midnight hours.

7. Tropical Cyclones. Tropical cyclones do not present a significant threat to Diego Garcia. Due to Diego Garcia's proximity to the equator, the coriolis parameter required to organize circulation is minimal. Thus, most tropical cyclones that effect Diego Garcia are tropical depression strength. Tropical cyclones typically form approximately 100NM south and track to the west-southwest.

8. Flight Minimums. Diego Garcia is equipped with an Instrument Landing System (ILS). Minimums for category A and B aircraft are 200 ft ceilings with ½ mile visibility. Category C and above are 200 ft ceilings with ¾ mile visibility. Minimums rarely occur, lasting only for brief periods. Normally these occurrences are when the Inter-Tropical Convergence Zone (ITCZ) is located near the island.

9. Oceanography. Diego Garcia lies within the influence of the South Equatorial current year-round. The surface currents of the Indian Ocean also have a monsoonal regime associated with the Asian Monsoonal wind regime. Sea surface temperatures are in the range of 80-84 degrees F/26-28 degrees C year-round.

C. DESCRIPTIVE ANNUAL AND MONTHLY CLIMATOLOGY

1. ANNUAL CLIMATOLOGY

Diego Garcia's climate is characterized by plenty of sunshine, warm temperatures, showery precipitation and light breezes. Day to day weather conditions remain fairly constant, but pronounced seasonal changes are observed. The period June through September is considered the dry season (winter). It is characterized by moderate south-easterly winds, slightly cooler temperatures and lower amounts of precipitation. The period December through February is considered the rainy season (summer monsoon). Typical weather conditions include light west-northwesterly winds and warmer temperatures with greater amounts of precipitation. March through May and October through November are transitional periods when weather conditions may reflect characteristics of either the rainy or dry season.

Sky Cover (% frequency)

46% overcast(8/8 cloud cover)
31% broken(5/8 to 7/8 cloud cover)
21% scattered(1/8 to 4/8 cloud cover)
1% clear(less than 1/8 cloud cover)

Ceiling and Visibility (%chance)

09% Below 3,000′ and < 3NM
01% Below 1,000′ and < 3NM
<.5% Below 500′ and < 1NM

Precipitation

Mean Annual Precipitation: 102.5″

Precipitation Extremes:

Max: 149.0″ Min: 64.9″

Temperature Data

Average:	81F/27C
Average Maximum:	86F/30C
Average Minimum:	77F/25C
Extreme Maximum:	95F/35C
Extreme Minimum:	65F/18C

Average # of days of occurrence

Precip. greater than 0.01″: 209
Precip. greater than 0.50″: 61
Thunderstorms: 16
Rain/Drizzle: 296
Fog: 1

Mean Relative Humidity

0700 LST: 82%
1600 LST: 75%

Wind Data

Prevailing direction: Southeast
Mean wind speed: 09 KTS
Peak gust: 60 KTS in 1984

Cooling Degree Day Unit(base 65F)

Mean: 598.2

2. JANUARY CLIMATOLOGY

January is one of the wettest months of the year as the Inter-Tropical Convergence Zone lies over or just to the south of Diego Garcia. This results in Westerly winds with very warm, humid conditions and frequent rainshower activity.

Tropical cyclones do occur during the month of January. Tropical cyclones normally form to the east-southeast of Diego Garcia and track to the southwest. Because of Diego Garcia's close proximity to the equator, most storms only result in an increase in precipitation and gusty west-northwesterly winds. Three tropical cyclones of tropical storm intensity (winds 34-63 kts) normally form each January with an average of one tropical cyclone reaching hurricane intensity (winds greater than 63 kts).

Sky Cover(%frequency)

57% overcast (8/8 cloud cover)
30% broken (5/8 to 7/8 cloud cover)
13% scattered (1/8 to 4/8 cloud cover)
<1% clear (less than 1/8 cloud cover)

Ceiling and Visibility(%chance)

10% Below 3,000'and < 3NM
01% Below 1,000'and < 3NM
<.5% Below 500'and < 1NM

Precipitation

Mean Monthly Precipitation: 13.9"

Precipitation Extremes:

Max: 27.3" Min: 4.1"

Temperature Data

Average:	81F/27C
Average Maximum:	86F/30C
Average Minimum:	77F/25C
Extreme Maximum:	93F/34C
Extreme Minimum:	70F/21C

Average # of days of occurrence

Precip. greater than 0.01": 22
Precip. greater than 0.50": 9
Thunderstorms: 2
Rain/Drizzle: 27
Fog: 0

Mean Relativity Humidity

0700 LST: 82
1600 LST: 76%

Wind Data

Prevailing direction: West-Northwest

Mean wind speed: m 09 KTS

Peak gust: 43 KTS in 1978

Cooling Degree Day Unit(base 65F)

Mean: 509

3. FEBRUARY CLIMATOLOGY

The rainy season continues during the month of February. The Inter-Tropical Convergence Zone remains just to the South of Diego Garcia. Precipitation in the form of rainshowers occur almost daily with the late afternoon and early morning hours being the most common time of day for shower activity.

Tropical cyclones that affect the Diego Garcia area tend to form east-southeast to south of Diego Garcia and move southwestward. As these storms reach 20 degrees south latitude they tend to recurve to the southeast. Three tropical cyclones of tropical storm intensity (winds 34-63 kts) form each February with an average of one tropical cyclone reaching typhoon intensity (winds greater than 63 kts).

Sky Cover (% frequency)

54% overcast (8/8 cloud cover)
27% broken (5/8 to 7/8 cloud cover)
19% scattered (1/8 to 4/8 cloud cover)
<1% clear (less than 1/8 cloud cover)

Ceiling and Visibility(%chance)

09% Below 3,000 and < 3NM
02% Below 1,000 and < 3NM
<.5% Below 500 and < 1NM

Precipitation

Mean Monthly Precipitation: 10.9"

Precipitation Extremes:

Max: 21.1" Min: 2.8"

Temperature Data

Average: 82F/28C
Average Maximum: 86F/30C
Average Minimum: 77F/25C
Extreme Maximum: 93F/34C
Extreme Minimum: 70F/21C

Average # of days of occurrence

Precip. greater than 0.01": 18
Precip. greater than 0.50": 7
Thunderstorms: 3
Rain/Drizzle: 24
Fog: <.5

Mean Relative Humidity

0700 LST: 83%
1600 LST: 75%

Wind Data

Prevailing direction: Northwest

Mean wind speed: 10 KTS

Peak gust: 60 KTS in 1984

Cooling Degree Day Unit(base 65F)

Mean: 479

4. MARCH CLIMATOLOGY

March begins the transition from the rainy season to the dry season. As the Inter-Tropical Convergence Zone moves northward, rainshower activity decreases significantly and the prevailing westerly winds give way to the southeast trade winds. The slight decrease in cloudiness during the month normally causes maximum temperatures to reach into the low 90's. March and April are the warmest months of the year.

Tropical cyclone activity begins to slow during March. An average of 2-3 tropical cyclones of tropical storm intensity (winds 34-63 kts) occur every March or approximately 25 storms every 10 years with 8 storms every 10 years reaching typhoon intensity (winds greater than 63 kts). Most cyclones form to the east-southeast to south of Diego Garcia and track to the west-southwest. Again, because of Diego Garcia's close proximity to the equator, most storms only result in an increase in precipitation and gusty west-northwest winds.

Sky Cover (% frequency)

36% overcast (8/8 cloud cover)
33% broken (5/8 to 7/8 cloud cover)
31% scattered (1/8 to 4/8 cloud cover)
<1% clear (less than 1/8 cloud cover)

Ceiling and Visibility(%chance)

05% Below 3,000' and < 3NM
01% Below 1,000' and < 3NM
<.5%Below 500' and < 1NM

Precipitation

Mean Monthly Precipitation: 7.8"

Precipitation Extremes:

Max: 15.7" Min: 3.4"

Temperature Data

Average:	83F/28C
Average Maximum:	88F/31C
Average Minimum:	78F/26C
Extreme Maximum:	95F/35C
Extreme Minimum:	68F/20C

Average # of days of occurrence

Precip. greater than 0.01": 18
Precip. greater tan 0.50": 5
Thunderstorms: 2
Rain/Drizzle: 26
Fog: 0

Mean Relative Humidity

0700 LST: 82%
1600 LST: 72%

Wind Data

Prevailing direction: West-Northwest

Mean wind speed: 08 KTS

Peak gusts: 46 KTS in 1978

Cooling Degree Day Unit(base 65F)

Mean: 559

5. APRIL CLIMATOLOGY

The fall transition to the southeasterly tradewind regime continues during the month of April. The Inter-Tropical Convergence Zone continues its Northward trek away from Diego Garcia. Rainshowers are less frequent and maximum daytime temperatures reach into the upper 80's on days with minimal cloudiness.

Tropical cyclone activity wanes during the month of April. Storms that do occur normally form well to the east-southeast to south of Diego Garcia and track southwestward. Approximately one tropical cyclone of tropical storm intensity (34-63 kts) occurs each year and only one cyclone every other year will reach typhoon intensity (greater than 63 kts).

Sky Cover (% frequency)

33% Overcast (8/8 cloud cover)
35% Broken (5/8 to 7/8 cloud cover)
32% Scattered (1/8 to 4/8 cloud cover)
<1% Clear (less than 1/8 cloud cover)

Ceiling and Visibility (%chance)

06% Below 3,000' and < 3NM
01% Below 1,000' and < 3NM
<.5%Below 500' and < 1NM

Precipitation

Mean Monthly Precipitation: 8.1"

Precipitation Extremes:

Max: 19.3" Min: 1.3"

Temperature Data

Average:	83F/28C
Average Maximum:	88F/31C
Average Minimum:	78F/26C
Extreme Maximum:	95F/35C
Extreme Minimum:	70F/21C

Average # of days of occurrence

Precip. greater than 0.01": 17
Precip. greater than 0.50": 5
Thunderstorms: 2
Rain/Drizzle: 24
Fog: 0

Mean Relative Humidity

0700 LST: 82%
1600 LST: 72%

Wind Data

Prevailing direction: East-Southeast

Mean wind speed: 06 KTS

Peak gust: 37 KTS in 1987

Cooling Degree Day Unit(base 65F)

Mean: 546

6. MAY CLIMATOLOGY

During the month of May the wind flow is predominantly southeasterly. Precipitation continues to diminish while the average maximum temperature drops from 88 to 86 degrees Fahrenheit. Weather conditions are relatively benign during May.

Tropical cyclones occur less frequently during the month of May as activity begins to shift north of the equator. Occurrences average less than two every ten years south of the equator, with less than one every ten years reaching typhoon intensity (greater than 63 kts).

Sky Cover (% frequency)

42% overcast (8/8 cloud cover)
36% broken (5/8 to 7/8 cloud cover)
22% scattered (1/8 to 4/8 cloud cover)
<1% clear (less than 1/8 cloud cover)

Ceiling and Visibility (%chance)

06% Below 3,000′ and < 3NM
01% Below 1,000′ and < 3NM
<.5%Below 500′ and < 1NM

Precipitation

Mean Monthly Precipitation: 5.7″

Precipitation Extremes:

Max: 15.2″ Min: 1.0″

Temperature Data

Average:	82F/28C
Average Maximum:	86F/30C
Average Minimum:	78F/26C
Extreme Maximum:	91F/33C
Extreme Minimum:	67F/19C

Average # of days of occurrence

Precip. greater than 0.01″: 14
Precip. greater than 0.50″: 3
Thunderstorms: 1
Rain/Drizzle: 23
Fog: 0

Mean Relative Humidity

0700 LST: 83%
1600 LST: 74%

Wind Data

Prevailing direction: Southeast

Mean wind speed: 07 KTS

Peak gust: 32 KTS in 1980, 1983 and 1991

Cooling Degree Day Unit(base 65F)

Mean: 542

7. JUNE CLIMATOLOGY

June marks the beginning of the dry season (winter). Precipitation still occurs, but is mostly limited to brief, light rainshowers. It is the first month in which the winds are consistently from the southeast. This is caused by an area of high pressure, which builds to the South of Diego Garcia.

Tropical cyclones are extremely rare over the southwest Indian Ocean during the entire winter (June through September), averaging less than one occurrence every twenty years.

Sky Cover (% frequency)

43% Overcast (8/8 cloud cover)
34% Broken (5/8 to 7/8 cloud cover)
23% Scattered (1/8 to 4/8 cloud cover)
<1% Clear (less than 1/8 cloud cover)

Ceiling and Visibility(%chance)

09% Below 3,000' and < 3NM
01% Below 1,000' and < 3NM
<.5%Below 500' and < 1NM

Precipitation

Mean Monthly Precipitation: 5.4"

Precipitation Extremes:

Max: 13.5" Min: 0.6"

Temperature Data

Average: 81F/27C
Average Maximum: 85F/29C
Average Minimum: 77F/25C
Extreme Maximum: 95F/35C
Extreme Minimum: 69F/21C

Average # of days of occurrence

Precip. greater than 0.01": 14
Precip. greater than 0.50": 3
Thunderstorms: <.5
Rain/Drizzle: 22
Fog: <.5

Mean Relative Humidity

0700 LST: 83%
1600 LST: 75%

Wind Data

Prevailing direction: Southeast

Mean wind speed: 09 KTS

Peak gust: 35 KTS in 1989

Cooling Degree Day Unit(base 65F)

Mean: 483

8. JULY CLIMATOLOGY

The Southeast tradewinds dominate. Small craft warnings (winds of 16 kts or greater) are a common occurrence. The average maximum temperature is 84 degrees F which results in rather pleasant conditions. Precipitation generally occurs in the form of fast-moving, light rainshowers.

Tropical cyclones are very rare during the Southern Hemisphere winter. Less than one tropical cyclone occurs every twenty years south of the equator during the month of July.

Sky Cover (% frequency)

46% overcast (8/8 cloud cover)
30% broken (5/8 to 7/8 cloud cover)
20% scattered (1/8 to 4/8 cloud cover)
4% clear (less than 1/8 cloud cover)

Ceiling and Visibility (%chance)

08% Below 3,000′ and < 3NM
01% Below 1,000′ and < 3NM
<.5% Below 500′ and < 1NM

Precipitation

Mean Monthly Precipitation: 5.8″

Precipitation Extremes:

Max: 14.3″ Min: 1.1″

Temperature Data

Average:	80F/27C
Average Maximum:	84F/29C
Average Minimum:	76F/24C
Extreme Maximum:	90F/32C
Extreme Minimum:	69F/21C

Average # of days of occurrence

Precip. greater than 0.01″: 16
Precip. greater than 0.50″: 3
Thunderstorms: 1
Rain/Drizzle: 25
Fog: <.5

Mean Relative Humidity

0700 LST: 82%
1600 LST: 75%

Wind Data

Prevailing direction: Southeast

Mean wind speed: 10 KTS

Peak gust: 37 KTS in 1978

Cooling Degree Day Unit(base 65F)

Mean: 463

9. AUGUST CLIMATOLOGY

August is the driest month of the year, receiving an average of 4.2" of precipitation. The mean maximum temperature is also lowest during August, or middle winter for the southern hemisphere. Moderate southeast winds persist during the month, with smallcraft warnings (winds greater than 16 kts) often issued during daylight hours.

Tropical cyclones continue to be very rare during August. Less than one storm occurs every twenty years south of the equator during the month of August.

Sky Cover (% frequency)

45% overcast (8/8 cloud cover)
33% broken (5/8 to 7/8 cloud cover)
20% scattered (3/8 to 4/8 cloud cover)
2% clear (less than 1/8 cloud cover)

Ceiling and Visibility (%chance)

09% Below 3,000' and < 3NM
01% Below 1,000' and < 3NM
<.5% Below 500' and < 1NM

Precipitation

Mean Monthly Precipitation: 4.2"

Precipitation Extremes:

Max: 17.0" Min: 0.1"

Temperature Data

Average: 80F/27C
Average Maximum: 84F/29C
Average Minimum: 75F/24C
Extreme Maximum: 90F/32C
Extreme Minimum: 68F/20C

Average # of days of occurrence

Precip. greater than 0.01": 14
Precip. greater than 0.50": 2
Thunderstorms: <.5
Rain/Drizzle: 24
Fog: 1

Mean Relative Humidity

0700 LST: 82%
1600 LST: 74%

Wind Data

Prevailing direction: Southeast

Mean wind speed: 11 KTS

Peak gust: 32 KTS in 1972, 1985 and 1986

Cooling Degree Day Unit(base 65F)

Mean: 459

10. SEPTEMBER CLIMATOLOGY

The dry season continues during the month of September. Mean precipitation amounts begin to increase. Winds continue to be primarily out of the Southeast, with smallcraft warning conditions (16 kts or greater) occurring often during the daylight hours. The mean maximum temperature remains at 84 degrees Fahrenheit.

Tropical cyclones continue to be a rare occurrence during this time of year. Less than one storm occurs every twenty years during the month of September.

Sky Cover (% frequency)

51% overcast (8/8 cloud cover)
27% broken (5/8 to 7/8 cloud cover)
20% scattered (1/8 to 4/8 cloud cover)
3% clear (less than 1/8 cloud cover)

Ceiling and Visibility (%chance)

11% Below 3,000′ and < 3NM
02% Below 1,000′ and < 3NM
<.5% Below 500′ and < 1NM

Precipitation

Mean Monthly Precipitation: 9.8″

Precipitation Extremes:

Max: 26.9″ Min: 1.3″

Temperature Data

Average: 80F/27C
Average Maximum: 84F/29C
Average Minimum: 76F/24C
Extreme Maximum: 90F/32C
Extreme Minimum: 70F/21C

Average # of days of occurrence

Precip. greater than 0.01″: 16
Precip. greater than 0.50″: 5
Thunderstorms: 1
Rain/Drizzle: 24
Fog: <.5

Mean Relative Humidity

0700 LST: 82%
1600 LST: 75%

Wind Data

Prevailing direction: Southeast

Mean wind speed: 10 KTS

Peak wind: 41 KTS in 1990

Cooling Degree Day Unit (base 65F)

Mean: 456

11. OCTOBER CLIMATOLOGY

October begins the transition from winter to summer. Southeast winds prevail during October, but they begin to weaken and smallcraft warning conditions (16 kts or greater) occur less frequently. Mean rainfall totals remain nearly the same as September.

Tropical cyclones may occur during October, but are still very infrequent with approximately 3 storms occurring every ten years.

Sky Cover (% frequency)

55% overcast (8/8 cloud cover)
30% broken (5/8 to 7/8 cloud cover)
13% scattered (1/8 to 4/8 cloud cover)
3% clear (less than 1/8 cloud cover)

Ceiling and Visibility (%chance)

12% Below 3,000′ and < 3NM
01% Below 1,000′ and < 3NM
<.5% Below 500′ and < 1NM

Precipitation

Mean Monthly Precipitation: 10.6″

Precipitation Extremes:

Max: 24.2″ Min: 1.6″

Temperature Data

Average:	81F/27C
Average Maximum:	85F/29C
Average Minimum:	76F/24C
Extreme Maximum:	90F/32C
Extreme Minimum:	66F/19C

Average # of days of occurrence

Precip. greater than 0.01″: 20
Precip. greater than 0.50″: 6
Thunderstorms: 1
Rain/Drizzle: 27
Fog: 0

Mean Relative Humidity

0700 LST: 82%
1600 LST: 76%

Wind Data

Prevailing direction: Southeast

Mean wind speed: 09 KTS

Peak gust: 37 KTS in 1990

Cooling Degree Day Unit (base 65F)

Mean: 487

12. NOVEMBER CLIMATOLOGY

During November, the transition to west-northwesterly wind flow indicative of the rainy season (summer monsoon) continues. Winds are generally light, while the direction varies from southeast to west-northwest. Mean precipitation amounts increase slightly, as does the mean maximum temperature.

Tropical cyclone activity continues to be infrequent, with only four storms developing every ten years. Less than one of these storms will reach typhoon intensity (greater than 63 kts) every twenty years.

Sky Cover (% frequency)

47% overcast (8/8 cloud cover)
27% broken (5/8 to 7/8 cloud cover)
24% scattered (3/8 to 4/8 cloud cover)
2% clear (less than 1/8 cloud cover)

Ceiling and Visibility (%chance)

09% Below 3,000′ and < 3NM
01% Below 1,000′ and < 3NM
<.5% Below 500′ and < 1NM

Precipitation

Mean Monthly Precipitation: 9.1″

Precipitation Extremes:

Max: 18.4″ Min: 1.8″

Temperature Data

Average: 81F/27C
Average Maximum: 86F/30C
Average Minimum: 76F/24C
Extreme Maximum: 91F/33C
Extreme Minimum: 71F/22C

Average # of days of occurrence

Precip. greater than 0.01″: 19
Precip. greater than 0.50″: 6
Thunderstorms: 2
Rain/Drizzle: 23
Fog: <.5

Mean Relative Humidity

0700 LST: 82%
1600 LST: 75%

Wind Data

Prevailing direction: South-Southeast

Mean wind speed: 07 KTS

Peak gust: 38 KTS in 1985

Cooling Degree Day Unit (base 65F)

Mean: 492

13. DECEMBER CLIMATOLOGY

December is the beginning of the Southern Hemisphere's summer, which is also the rainy season for Diego Garcia. Winds are from the west-northwest and are generally light becoming gusty as tropical cyclones pass within 300 nautical miles of the atoll. The Inter-Tropical Convergence Zone typically lies over or just to the South of Diego Garcia producing scattered rainshower activity.

Tropical cyclones can occur during the month of December. Tropical cyclones tend to form to the east-southeast to south of Diego Garcia and track to the west-southwest. Because of Diego Garcia's close proximity to the equator, most storms only result in an increase in precipitation and gusty west-northwest winds. Typically 1-2 tropical cyclones of tropical storm intensity (34-63 kts) form each December, with one tropical cyclone reaching typhoon intensity (greater than 63 kts).

Sky Cover (% frequency)

43% overcast (8/8 cloud cover)
34% broken (5/8 to 7/8 cloud cover)
21% scattered (1/8 to 4/8 cloud cover)
2% clear (less than 1/8 cloud cover)

Ceiling and Visibility (%chance)

09% Below 3,000' and < 3NM
01% Below 1,000' and < 3NM
<.5% Below 500' and < 1NM

Precipitation

Mean Monthly Precipitation: 11.1"

Precipitation Extremes:

Max: 18.4" Min: 4.9"

Temperature Data

Average:	82F/28C
Average Maximum:	86F/30C
Average Minimum:	77F/25C
Extreme Maximum:	92F/33C
Extreme Minimum:	65F/18C

Average # of days of occurrence

Precip. greater than 0.01": 21
Precip. greater than 0.50": 7
Thunderstorms: 1
Rain/Drizzle: 27
Fog: 0

Mean Relative Humidity

0700 LST: 81%
1600 LST: 74%

Wind Data

Prevailing direction: West-Northwest
Mean wind speed: 08 KTS
Peak gust: 40 KTS in 1982 and 1990

Cooling Degree Day Unit (base 65F)

Mean: 521

SECTION III FORECASTING

A. TEMPERATURE

Temperatures vary little from day to day. Therefore, persistence is reliable. Climatology can be used for all long range forecasting requirements. The main factors that account for variability are cloud cover and the occurrence of precipitation that deviate from the mean.

B. WIND

The westerlies associated with the Inter-Tropical Convergence Zone is the dominant regime during the summer months. During the winter months the southeasterly trade winds are associated with the equatorward movement of the Southern Hemisphere Sub-Tropical Ridge. The Southwest Monsoon is the dominant wind regime in the Northern Hemisphere. The current synoptic situation must be considered during the Spring and Fall transitions to determine the dominant regime. The following thumb rules should be applied:

1. When the ITCZ is overhead the winds are westerly.

2. When the ITCZ is to the north the winds are southeasterly.

3. When the ITCZ is to the south the winds are northwesterly.

Forecasting wind speeds can be a difficult task. The Forecaster should consider the following sources of information:

1. The latest upper air wind profile.

2. Surface and gradient level progs available through Joint Metoc Viewer (JMV).

3. Any ship reports near Diego Garcia.

4. WSR Radar velocity products

5. Formation of bow in approaching rainshowers bands (satellite and radar).

Persistence is the best overall technique for forecasting wind speed throughout the year. When the Southeast Trades are strongest, (June-September) a small craft warning can be expected during daylight hours.

A noticeable reduction in wind speed (5-10 kts) during the winter months can be associated with:

1. The occurrence of overcast conditions for an extended period of time (2-3 days) over Northern India and Pakistan. The marked decrease in insolation driving thermal low strength is thought to be the cause.

2. The prevailing winds become westerly, vice southwesterly, across the North Arabian Sea off the West Coast of India. During this period an increase in convective activity occurs in the vicinity of the equator due to an increase in cyclonic curvature. The build-up of mass during this period is thought to be the cause of the decreased wind speed.

Note: Diego Garcia does not experience tertiary circulations. However, wind speed does decrease approximately 2-3 kts during the early morning hours when the stability of the surface layer is greatest.

C. WEATHER and OBSTRUCTION TO VISION

Visibility in the region is good with the primary obstruction being precipitation. Visibility will generally be reduced to 3-5 miles in light to moderate showers and near zero in heavy precipitation.

NOTE: When the winds are light and large waves are breaking on the western coast adjacent to the runway, salt spray is suspended in the air restricting sector visibility to 5-6 miles and a slant range visibility of 2-4 miles during approach on runway 13.

D. SKY COVER/FLYING WEATHER

Skies are predominately partly to mostly cloudy with cloud bases above 1,000 ft. Clear skies very rarely occur. Flying weather is considered to be very good except when the ITCZ is overhead.

E. THUNDERSTORMS

Thunderstorms occur primarily during the summer and transition seasons at Diego Garcia. Forecasting thunderstorms is extremely difficult. The SWR-250 weather radar and satellite imagery are useful tools for forecasting thunderstorm conditions. Thunderstorm warnings are primarily issued when cells can be located on the SWR-250, when thunder is heard, or when lightning is seen by an observer. Thunderstorms that do occur in the vicinity of Diego Garcia have an average maximum height of 38,000 feet.

F. WATERSPOUTS

Waterspouts have been observed around Diego Garcia. The occurrence is infrequent and is normally associated with cumulonimbus clouds.

G. HAIL

The probability of hail in the vicinity of Diego Garcia is quite remote. A persistent high freezing level (above 15,000 feet) prohibits frozen pellets from reaching the ground. Additionally, most thunderstorms in the region do not attain sufficient height to produce large hailstones. Aircraft flying in the vicinity of large thunderstorms should be cautioned that small hailstones may be present in the upper portions of individual cells.

H. HIGH WINDS

Generally, high winds can be expected in the vicinity of Towering Cumulus and Thunderstorms. While these winds are not high enough to cause structural damage, they can cause problems for small craft operating in the lagoon.

I. WEATHER ASSOCIATED WITH TROPICAL CYCLONES

The weather associated with tropical cyclones is characterized by low ceilings (500-1000 ft), intermittent rain and rainshowers of moderate to strong intensity, and isolated thunderstorms. These conditions tend to persist from 36 to 48 hours.

As the tropical cyclone moves away to the southwest, a period of clearer than normal sky conditions can be expected. Conditions of 1/8 - 2/8 cirrus for a 24-36 hour period usually occur after a tropical cyclone passes Diego Garcia.

1. Tropical Cyclone Induced Winds. Winds are generally in the range of 15-20 kts. Higher wind speeds are subject to individual cell and squall line activity and gusts of 25-35 kts are common. The maximum wind recorded on the island is 60 kts.

2. Storm Surge. Based on a 1979 study by NAVPACMETOCCEN WEST/JTWC Guam, storm surge for a slow moving storm passing 20-25 NM to the North of Diego Garcia has been calculated as follows:

MAX WINDS (KTS)	STORM SURGE (FT)
40	2.5
50	3.3
60	3.8

For a storm passing 20-25 NM South of the island, the surge values are half of those listed above for the same wind speed. A storm surge is not evident at all if cyclone passage is beyond 50 NM to the South.

J. ICING

The persistently high freezing level (15,000 ft) in the region reduces the possibility if icing. Conditions favorable for icing occur when altostratus and nimbostratus extend above the freezing level to altitudes of 25,000 feet. Severe icing may occur when flying near the Malaysian peninsula and encountering cumulus congestus clouds.

1. There have been C-141 aircraft flying air routes to the West of Diego Garcia at flight levels 350-390 that have reported trace to light rime icing at temperatures from -35 to -54 degrees C. These occurrences have been during the Southwest monsoon, when the upper level winds have been greater than 50 kts and the aircraft reported flying in and out of cirrus. This icing is believed to be cumulonimbus blowoff carried far downstream.

K. TURBULENCE

Pilots have reported moderate turbulence during their approach to runway 31 when the wind is northwesterly at speeds greater than 15 kts. The tree line at Pt. Marianne is partially thought to be responsible. The low, flat island terrain minimizes orographic effects. However, light turbulence may be associated with island generated convection.

1. Reports of severe clear air turbulence (CAT) or convective turbulence have not been received. Occasional pilot reports have indicated light to moderate turbulence. Severe CAT in tropical regions is extremely rare and is difficult to forecast.

L. ALTIMETER SETTINGS

Pressure changes in tropical regions are slow and generally minimal. Use the following thumb rule to forecast an altimeter setting: Compare your current reading with the reading from 24 hours ago. Based on the 24-hour trend, figure your QNH to be .02 lower than the trend indicates.

1. Example:	Current Altimeter	29.85
	24 hours ago	29.80
	Lowest Altimeter past 24 hrs	29.75
	Forecast QNH	29.78

M. UTILIZATION OF JMV PRODUCTS

The NOGAPS upper air analysis is used in conjunction with the 24 and 36 hour prognosis. Careful attention is paid to the analysis as to how it compares with the prognostic series with the same valid time. The following charts and parameters are reviewed:

1. 200 millibar analysis. Used to locate the Tropical Upper Troposheric trough (TUTT).

2. 500 millibar analysis. The 500 millibar analysis chart is one of the most important charts analyzed by the NCMOD forecaster. It is screened for all high and low height centers. Past history should be maintained for these height centers in the subtropics, due to their importance in helping determine steering flow associated with tropical cyclones.

3. 850 millibar analysis. The 850 millibar chart is used by the forecaster to depict gradient wind flow for tropical areas.

4. Altimeter Settings. Altimeter settings are used by the aviation community for low-level operations. This product is generally accurate and requires little modification.

5. Ditch Headings. These are issued for all flights over water and give 360 degree direction for aircraft to ditch, if necessary. The product needs no modification.

N. MONITORING, AMENDING and VERIFYING FORECAST

All NCMOD forecasters review every forecast for accuracy. If a forecast needs amending, the forecaster will make whatever revision is necessary to ensure an accurate forecast is issued. Guidelines for amending forecasts and amendment criteria are available in the forecaster's SOP.

SECTION IV SPECIALIZED FORECASTS

A. UNDERSEA WARFARE PACKETS

USW environmental folders are provided to all USW missions originating from Diego Garcia. Information in the flight forecast folder is compiled IAW local SOPs and consists of the following:

1. USW Environmental Brief Form - This is a quick-look reference guide for the flight crew. It includes Alpha and November Indices.

2. Bathythermograph Trace - This may be a historical or actual trace depending on availability.

3. Sound Speed Profile

4. Raytraces

5. Ambient Noise Data

6. Passive and Active Propagation Loss

7. Figure of Merit Calculations

8. Meteorological Brief Sheet

9. Environmental Flight Debrief Form

B. IREPS

The Integrated Refractive Effects Prediction System is used to support SSC (Sub Surface Commands) and USW missions conducted by the PATRON deployed to Diego Garcia. This forecast may be disseminated through the ASW flight packet. An IREPS packet is compiled IAW local SOPs and contains the following:

1. Summary of Refractive Conditions.

2. Detection Ranges for Airborne Radars of Concern.

C. TOXIC CORRIDOR FORECAST

Diego Garcia has been officially designated as an Emergency Landing Site (ELS) for the space shuttle program. Upon notification that Diego Garcia will be used (or could be used) as an emergency divert field, the FDO will prepare a Toxic Corridor Forecast IAW the local SOP.

D. OPTIMAL PATH AIRCRAFT ROUTING SYSTEM (OPARS)

OPARS consists of a set of computer programs that select optimum routes for aircraft in support of flight operations. Within the context of OPARS, an optimum route is defined as the selected aircraft path and altitude which is constrained by aircraft performance parameters, weather conditions, flight regulations, minimum total fuel consumption, or least time enroute for the flight requested. OPARS are ordered from FNMOC as requested by the user. OPARS requests are generated on the observers or FDO's computer via NIPRNET or DSN.

E. SEARCH and RESCUE

FLENUMETOCCEN Monterey provides automated drift computations to assist SAR coordinators planning search and rescue operations in the open ocean. It is a computer-generated output consisting of datum, mini/max datum, and probable error of position and search radius for both simple and complex patterns. The use of this program is available for all SAR coordinators through FLENUMMETOCCEN Monterey and can be requested via an Automated Product Request (APR). In emergency situations, required data may be requested by DSN. Search and Rescue computations can also be calculated on the classified computer in room 107 using GFMPL in minimal time. This is a quicker method of getting critical data to the SAR coordinator. However, a follow-up APR is highly recommended.

SECTION V ENVIRONMENTAL EFFECTS

A. WIND

1. General Considerations. The most predominate environmental effect is the impact of wind on operations taking place in the lagoon. The lagoon's north-south orientation, relative to the location of the island facilities, require several unique considerations:

a. The airfield anemometer is protected to a certain extent on all sides by foliage. The anemometer on the port control tower (approximate elevation 45 feet) consistently reads 5-10 knots higher depending on wind velocity (higher speeds/larger difference).

b. All ship refueling operations and small craft operations are suspended during small craft warnings. However, the liberty launches for the merchant ships anchored in the lagoon continue to operate at their own discretion.

c. The Recreational services Marina located on the lagoon side of the island experiences an increased wind effect with an easterly or southeasterly component. Frequent phone calls from the Marina Staff and Harbor Operations can be expected when east/southeast winds are experienced at speeds greater than 10 knots.

2. Local Wind Warnings. Warnings are disseminated IAW local SOPs. The following is a list of local wind warning criteria:

a. Small Craft Warning: Indicates sustained winds of 16 to 33 knots are forecast or are occurring.

b. Gale Warning: Indicates sustained winds of 34 to 47 knots are forecast or are occurring.

c. Storm Warning: Indicates sustained winds of 48 knots or greater are forecast or are occurring, (not associated with a tropical cyclone).

B. THUNDERSTORMS

1. General Considerations. Although thunderstorms may occur year-round, they are most common during the summer and transition seasons. Thunderstorms greatly effect ammunition handling, aircraft fueling and boating operations.

2. Thunderstorm Warnings. Thunderstorm warnings are disseminated IAW SOPs. The following is a list of local thunderstorm warning criteria:

a. Thunderstorm Condition II - indicates that conditions are favorable for thunderstorm development within the next six hours or that thunderstorms are within 25 nautical miles of the airfield.

b. Thunderstorm Condition I - indicates that thunderstorms are expected to occur within 1 hour or are occurring within 5 miles of the airfield.

C. TROPICAL CYCLONES

1. General Considerations. Although tropical cyclones do not generally pose a direct threat to Diego Garcia, destructive winds are possible. In the event that a tropical cyclone will pass close by and produce winds of 50 knots or greater, NCMOD forecasters must be prepared to make recommendations to the CO of NSF in the setting of Tropical Cyclone Conditions of Readiness. Tropical Cyclone Conditions of Readiness enable Navy Support Facility personnel to adequately plan and prepare for destructive weather.

2. Conditions of Readiness.

a. Tropical Cyclone Condition IV indicates that sustained winds of 50 knots or greater are possible within 72 hours. **Diego Garcia remains in COR IV year-round.**

b. Tropical Cyclone Condition III indicates that sustained wind of 50 knots or greater are possible within 48 hours.

c. Tropical Cyclone Condition II indicates that sustained wind of 50 knots or greater are possible within 24 hours.

d. Tropical Cyclone Condition I indicates that sustained winds of 50 knots or greater are anticipated within 12 hours or are occurring.

D. EARTHQUAKES

1. General Considerations. While infrequent, the occurrence of earthquakes on Diego Garcia merits mention. Earthquake activity felt on Diego Garcia is associated with plate movement along the Carlsberg Ridge located just to the west of the island.

The Forecast Duty Officer is assigned the task of reporting the occurrence and estimated intensity to the National Earthquake Information Center, Denver, CO, IAW local SOPs.

E. TSUNAMIS

1. General Considerations. Tsunamis do occur in the Indian Ocean. Due to the extreme bathymetry in the vicinity of the Chagos Trench located to the east of Diego Garcia, a Tsunami's pass by the

island would be no more than a minor fluctuation in the tidal record.