INTERNATIONAL CONFERENCE ON DISASTER MITIGATION

IN HEALTH FACILITIES

THE BAHAMAS REPORT

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THE BAHAMAS' REPORT ON THE STATUS OF DISASTER MITIGATION AND PREPAREDNESS

AN OVERVIEW

The Bahamas is comprised of an archipelago of over 700 islands and cays in the western Atlantic Ocean. The map (*in Appendix 1)* highlights the main islands. Of these islands, about 22 are inhabited, including New Providence, on which Nassau, the capital, is located.

With a land mass of 5,382 square miles, The Bahamas spans an area of 100,000 square miles of sea stretching from Abaco Island in the north to Great Inagua Island in the south.

POLITICAL AND ADMINISTRATIVE CONTEXT OF THE COUNTRY

The Bahamas, an independent country since 1973, continues to be administered as a unitary state within the British Commonwealth of Nations It is governed as a parliamentary democracy. There is an appointed Governor General, who is the Queen's representative; a bicameral legislature consisting of an appointed Senate; and an elected House of Assembly, and there is an independent judiciary.

The Prime Minister is the Chief Executive as well as Head of the Legislative arm of the Government. The governing party is comprised of 17 Cabinet Ministers.

Government programmes are implemented through Ministries which are headed by a Minister (Political) and a Permanent Secretary (Administrative), as well as through quasi-governmental institutions.

The system of government is primarily a centralized one, however, by a recent Act of Parliament, island communities have been given some degree of autonomy to manage their own affairs and elections of Local Government Boards will be instituted later this year.

For economic and social reasons, the Government continues to pursue a policy of keeping the Family Islands populated through the development of basic amenities and services and employment opportunities in order to minimize migration to New Providence - the capital - and Grand Bahama, the next largest metropolitan area and population centre.

Despite this however, both the islands of New Providence and Grand Bahama have shown a substantial population growth in the last 15 years. The population of New Providence increased by more than 40,000 (21%) to approximately 190,000 and that of Grand Bahama by over 8,000 or (19%) to more than 41,000.

ORGANIZATION OF HEALTH CARE

Although the population in all but two of the islands is sparse and widely dispersed, the Government is mandated to provide adequate infrastructure to ensure that urban as well as under-served rural communities have access to a health care service which is technically comparable on a national basis, culturally acceptable and financially feasible.

Towards this end, the Government maintains primary health care services through the out-patients departments of the acute hospitals and through a network of 115 community clinics. *(Appendix II)*

INSTITUTIONAL HEALTH SERVICES

Princess Margaret Hospital, a 462 bedded facility in New Providence and the Rand Memorial Hospital, a 84 bedded facility in Grand Bahama, provide secondary and tertiary levels of care. The Sandilands Rehabilitation Centre, a 451 bed facility in New Providence, provides long-term geriatric and psychiatric care for the entire Bahamas.

RISK OF NATURAL AND OTHER DISASTERS

Natural Disasters

The geographical location of The Bahamas, which is between latitude 20 degrees to 27 degrees north and longitude 72 degrees to 80 degrees west, places it squarely in the path of hurricanes originating in the Atlantic Ocean or Gulf of Mexico. The threat of

disasters from hurricanes, tornados and surges is further heightened due to the geologic and archipelagic make up of the country. Approximately 95% of its territorial boundary is sea, which assists in maintaining the strength of storms and hurricanes.

The vulnerability of The Bahamas to hurricane related disasters can also be attributed to its topography. Ninety eight percent of the islands are low-lying, making them highly susceptible to flooding as a result of torrential rains, and tidal surges.

The Map in Appendix III indicates the number and location of heavy tropical activity over the last 10 years.

Un-natural Disasters

The Bahamas is also threatened by disasters of un-natural causes or those relating to the activities of man in his environment. These threats can be linked to three factors:

(i) our geography - (proximity to U.S.);

(ii) activities associated with the two leading sectors of our economy - tourism and offshore banking,

(iii) other industrial activities.

The close proximity of The Bahamas to the U.S.A. (a major trading giant) puts it directly in the shipping lane between the U.S. and Europe and the U.S and South America. The environmental and ecological hazards associated with cargo ships which frequent our waters - as well as the inter-island and international air and sea commercial traffic - constitute a considerable risk (*Appendix IV*).

We have experienced on more than three (3) occasions, outbreaks of foodborne illnesses, which have been attributed in part to the constant discharge of effluents, oils and bilge from ships in the harbours, where fish and other sea-food harvests were stored. Additionally, The Bahamas' tax haven status has attracted a number of major multi-national manufacturing companies - these together with locally owned operations are engaged in the refining, bunkering or transhipment of petroleum and the manufacture of pharmaceuticals and other chemicals. Grand Bahama in the north is the premier location for industrial enterprise in the Bahamas. An inventory of industry on that island is provided in (*Appendix* V).

An account of the disasters experienced over the last 10 years which have affected our health sectors is also provided (*Appendix* VI). Fortunately for us, the social and economic impact of these incidents have not been phenomenal although, there has been substantial cost to private industry in replacement and refurbishment of damaged facilities. Over the 10 year period, these costs have been estimated at tens of millions of dollars.

Costs to the Government for social assistance, expanded emergency health care services and facility repairs for the same period are approximately $20 million.

HEALTH AND HOSPITAL FACILITIES - CONSTRUCTION (CODES AND STANDARDS)

Government approval, which is required for the construction of all buildings (Health facilities included) is subject to the satisfactory compliance of the provisions of the National Building Code, which specifies certain minimum standards for safe and stable building design, method of construction and use of materials. The code, which is similar to that of the Florida Building Code, addresses structure and frame work in relation to height, load, fire resistance (4 hours maximum), and wind resistance (of up to 125 mph).

In the absence of national guidelines, The Bahamas adheres to international standards in the planning of operating theatres, radiology and laboratory units, refuse disposal and other hospitals facilities.

The institutions responsible for physical planning, design, construction and maintenance of hospitals are the Ministries of Health and Public Works. Financial approval rests with the Ministry of Finance and Planning.

CURRENT STATE OF HOSPITAL/HEALTH FACILITIES WITH REGARD TO DISASTER MANAGEMENT

The National Disaster Plan calls for an annual recertification of Government and private buildings which are then designated as hurricane shelters. Health facilities which are not normally used as shelters - though assessed as to their structural vulnerability - are reviewed in relation to their ability to provide response to situations where medical services are required by disaster victims.

Hospital disaster response plans address internal and external incidents. The latter

involving potential disasters such as airplane crashes, hurricanes, road accidents, industrial accidents, fires etc. which call for an **expansion** of the health services, both in-house and externally to meet an increased patient load.

The internal disasters considered in the planning relate to bomb threats, fires, explosions, hazardous materials spillage, which involve not only activities to ensure building safety, but evacuation of patients to safe areas within and outside the hospitals.

The size of the Bahamian population of 250,000 persons, other health care resources, the organization of health care services - one major acute or national hospital; one island hospital:, 115 primary health care clinics on different islands, a national psycho-geriatric facility - necessitates a certain degree of interdependence, not only when responding to a disaster which taxes the resources of any one system, but in the ordinary provision of health care.

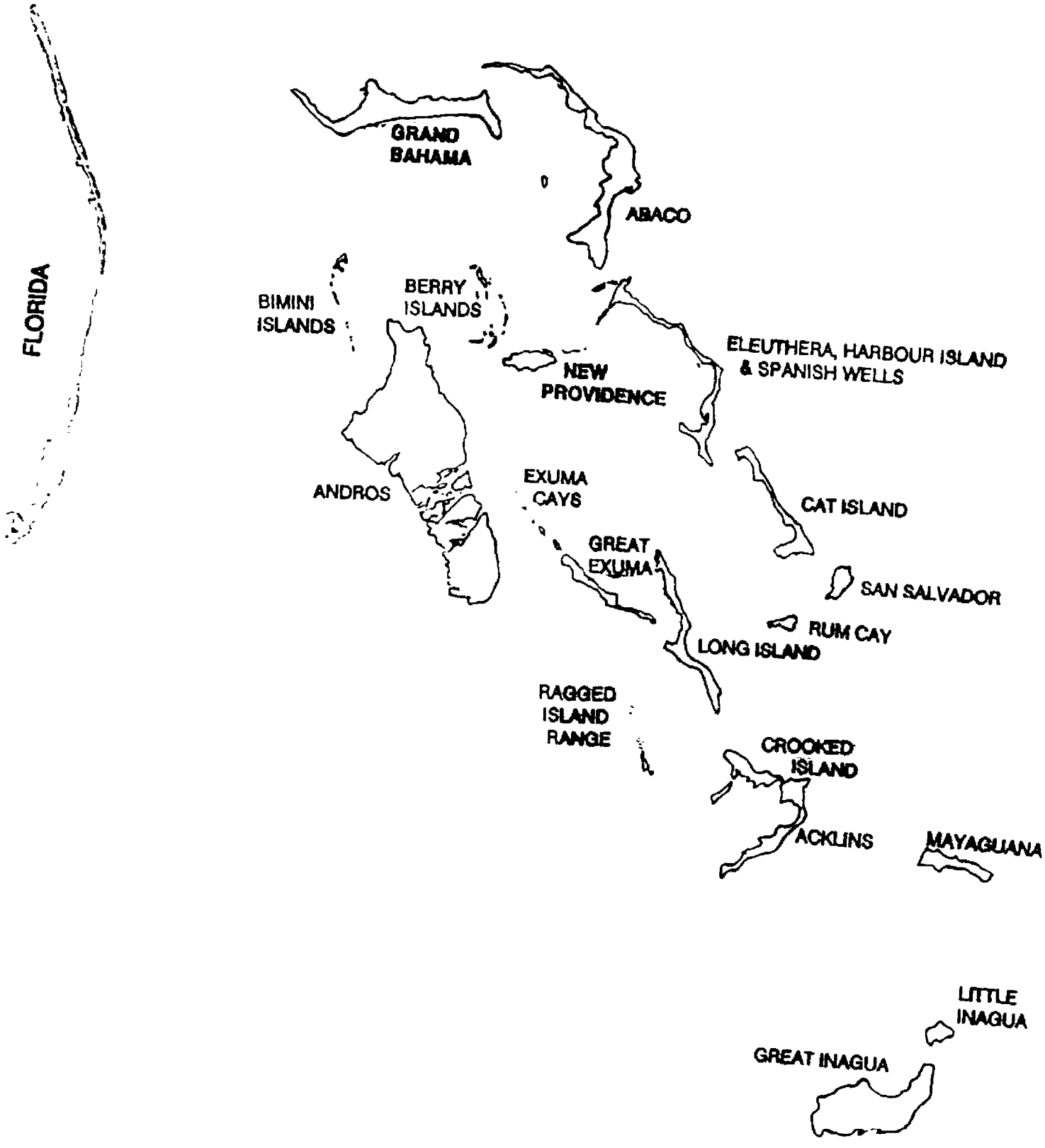
The National Disaster Response Plan for the health sector therefore details the interactions required in those instances where health systems must join together in disaster mitigation attempts.

Institutional plans are affected by the level of technology (communication and medical) and the availability and deployment of trained personnel in the system. Hospital plans therefore call for notification and response mobilization at the lowest level of operations, with opportunity to build on this as senior professional, technical and managerial personnel are contacted and become involved.

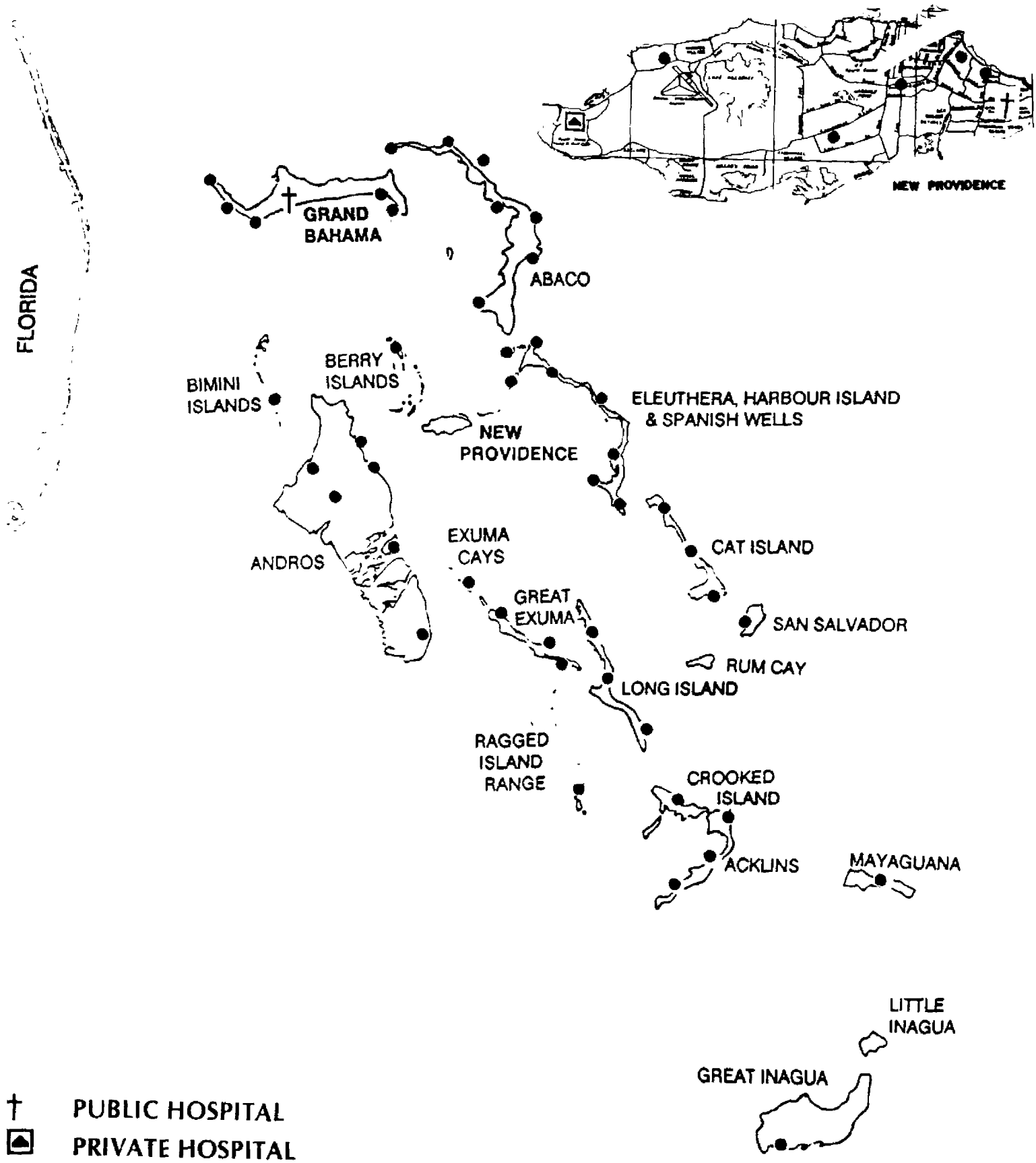
An example of this evolutionary strategy is noted in the attached response activity charts (*Appendices VII & VIII),* which places the onus of initiating the plan on the telephone operators and the Emergency Room physicians (who are available 24 hours per day, 7 days per week) with more decisive involvement once functional managers or their designates are contacted.

<u>February, 1996</u>

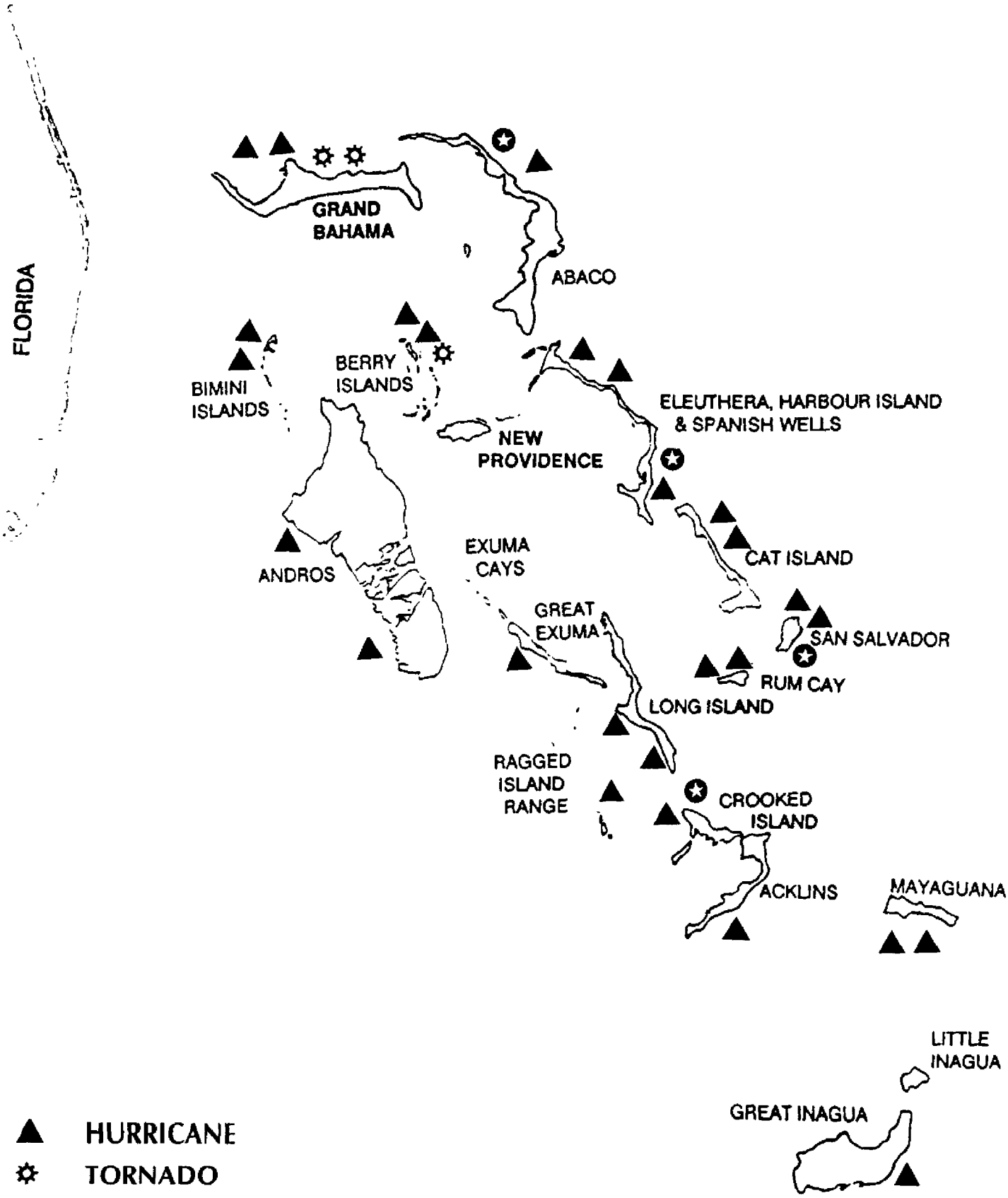
COMMONWEALTH OF THE BAHAMAS



COMMONWEALTH OF THE BAHAMAS



COMMONWEALTH OF THE BAHAMAS



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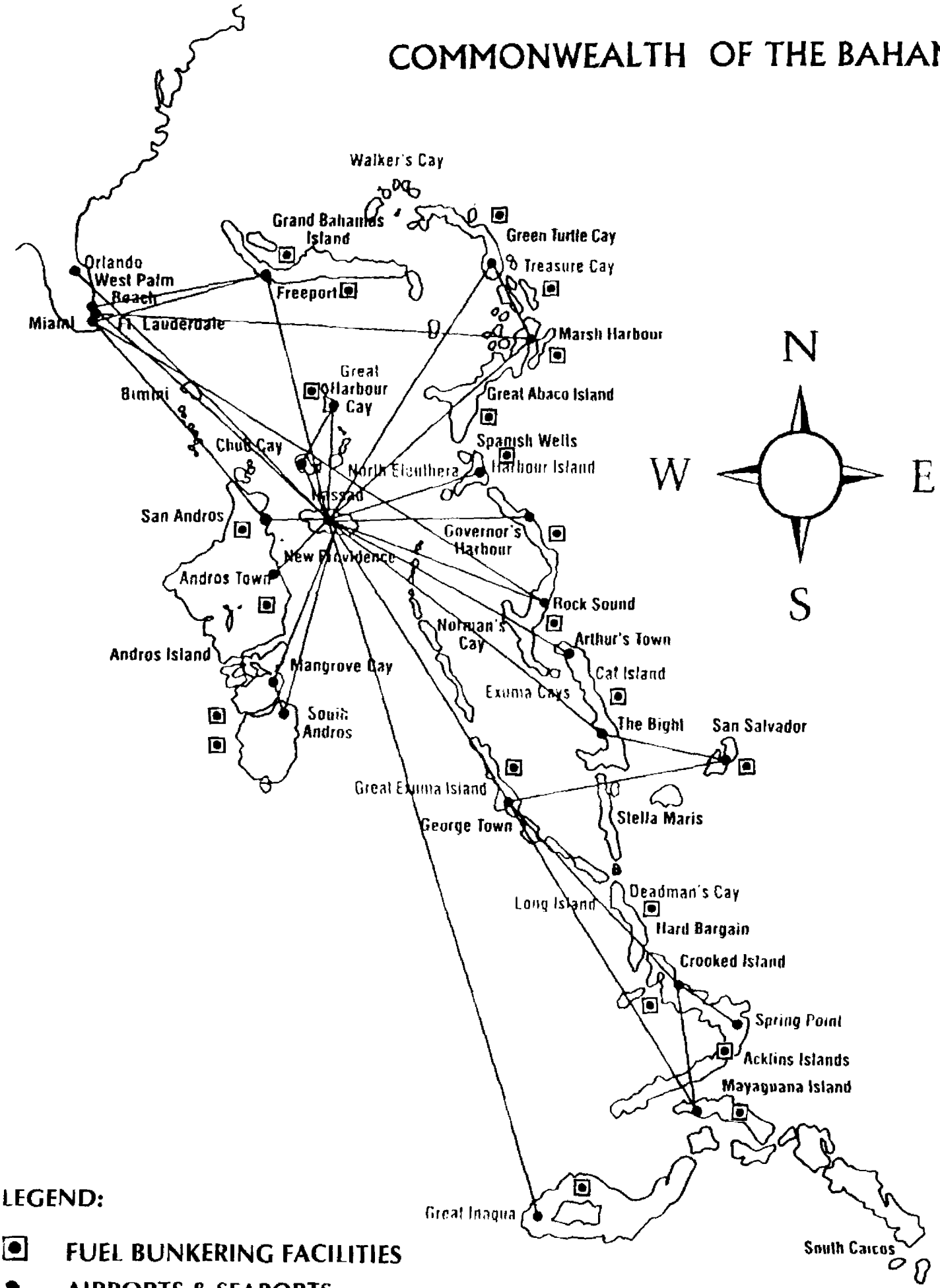
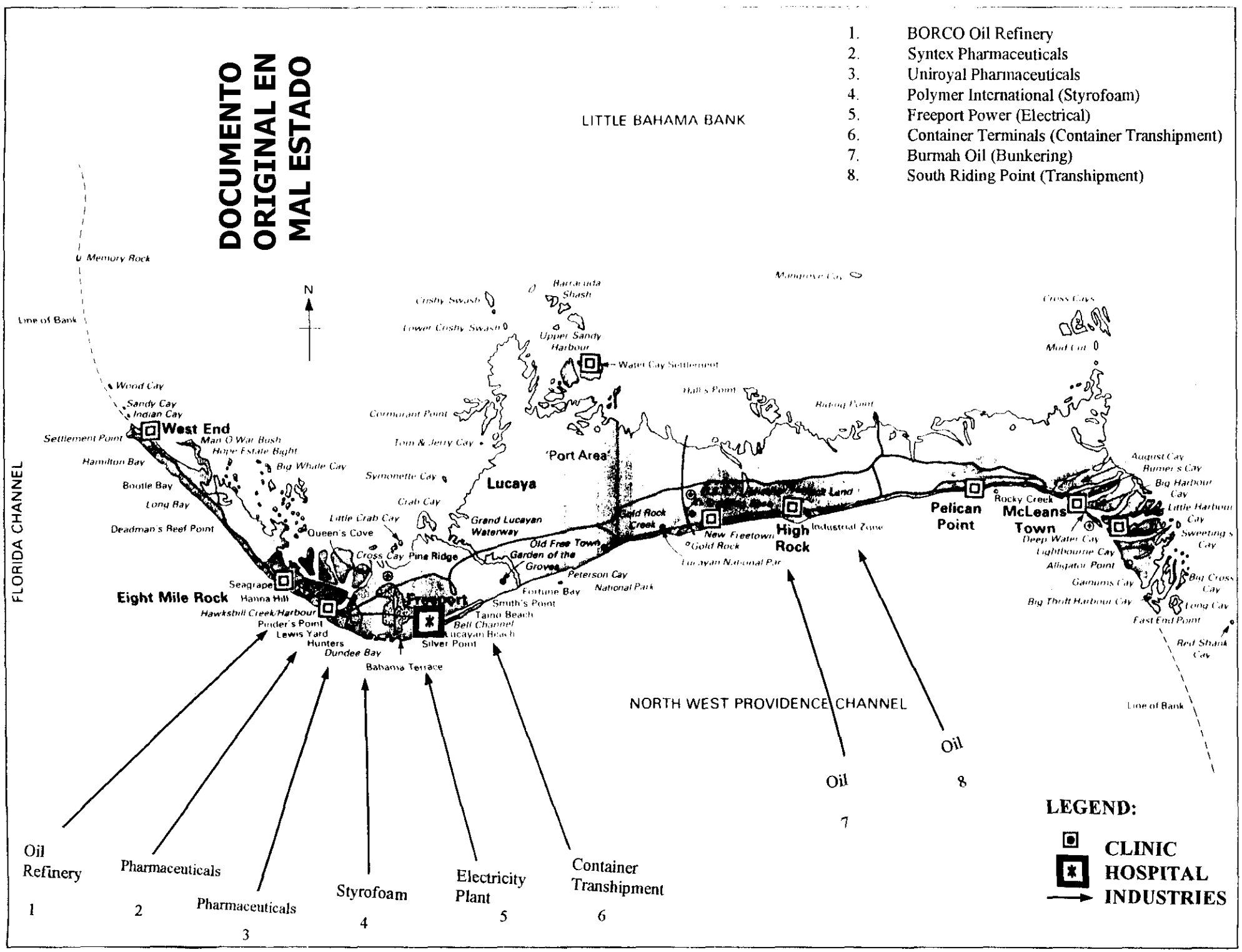


LEGEND:

- ▣ FUEL BUNKERING FACILITIES
- • AIRPORTS & SEAPORTS

APPENDIX V

1. BORCO Oil Refinery
2. Syntex Pharmaceuticals
3. Uniroyal Pharmaceuticals
4. Polymer International (Styrofoam)
5. Freeport Power (Electrical)
6. Container Terminals (Container Transhipment)
7. Burmah Oil (Bunkering)
8. South Riding Point (Transhipment)



APPENDIX VI

YEAR	EVENT MAGNITUDE	AREAS AFFECTED	DEAD	INJURED	HEALTH FACILITIES DAMAGED	HEALTH FACILITIES DESTROYED
1983	Industrial Explosion	Oil Plant, Grand Bahama	3	1	-	-
1985	Hurricane Kate	Northern Bahamas	-	-	-	-
1987	Industrial Explosion	Chemical Plant, Grand Bahama	2	-	-	
1987	Hurricane Emily	Northern Bahamas	-	-	-	-
1987	Hurricane Floyd	Northern Bahamas	-	-	-	-
1988	Lightning Strike/Fire	Acid Container, Chemical Plant, Grand Bahama	-	-	-	-
1988	Oily Water Spillage	Residential (50,000 gals)	-	-	-	-
1988	Plane Crash	Grand Bahama	8	-	-	-
1990	Industrial Explosion	Oil Plant, Grand Bahama	2	2	-	-
1991	Tornado	Central Grand Bahama	-	1	-	-
1991	Cement Silo Collapse	Central Grand Bahama	2	-	-	-

1991	Surges - 15 ft	South Eastern, Central and Northern Bahamas (five islands)	3	-	-	-
1991 - 1993	Foodborne Illnesses (sea-foods)	New Providence		2,370		
1992	Hurricane Andrew (sea surge)	Central and Northern Bahamas	4	-	2	-
1993	Plane Crash	International Airport, Grand Bahama	-	2	-	-
1993	Industrial Explosion	Oil Plant, Grand Bahama	2	-	-	-
1995	Hurricane Erin	Nine islands in South East, Central and Northern Bahamas	-	-	-	-
1995	Lightning Strike/Fire	Local community of 10,000 persons				
1995	Service station underground petrol leakage into harbour	Abaco Island				

NOTE: Damages over the period have been to houses, commercial buildings, roads and the general environment. Total estimated cost to Government over the period - $20 million.

EXTERNAL DISASTERS
Procedures for Fire, Explosion, Airplane Crash Boat, Road and Industrial Disasters

AT FIRST KNOWLEDGE OF A DISASTER

NOTIFY

E.R. DOCTOR WHO WITH THE HELP OF THE NURSE SUPERVISOR

WILL

CONTACT

- MEDICAL STAFF COORDINATOR EXT. 164, 373-6633
- PRINCIPAL NURSING OFFICER EXT. 117, 373-2328
- HOSPITAL ADMINISTRATOR EXT. 211, 373-5501
- POLICE - 919
- FIRE DEPARTMENT - 352-8888

- SEND FIRST AVAILABLE REGISTRAR TO DISASTER SITE
- DELIVER THE AMBULANCE KITS TO THE AMBULANCE
- SEND NURSING TEAM TO DISASTER SITE WITH FIRST AMBULANCE
- DISPATCH ADDITIONAL AMBULANCES TO DISASTER SITE
- START PREPARING RECEIVING AREA
- ACT ON NURSING PLAN UNTIL PRINCIPAL NURSING OFFICER ARRIVES
- ACT ON MEDICAL PLAN UNTIL MEDICAL STAFF COORDINATOR ARRIVES

1. **CALL OUT ALL HOSPITAL DOCTORS**
2. **CALL OUT DISTRICT MEDICAL OFFICERS**
3. **SET UP RECEIVING AREA**
4. **EVACUATE PATIENTS**
5. **ALLOCATE DOCTORS TO TREATMENT AREA**
6. **CONTACT AND ALLOCATE PRIVATE DOCTORS**
7. **CALL OUT RADIOGRAPHERS**
8. **CALL OUT LABORATORY TECHNICIANS**
9. **CALL OUT PHARMACISTS**
10. **CALL OUT ENVIRONMENTAL OFFICER**

1. **CALL OUT HOSPITAL NURSING STAFF**
2. **CALL OUT COMMUNITY NURSING STAFF**
3. **ORGANIZE NURSING STAFF**
4. **SUPERVISE PREPARATION OF DISASTER WARD, RECEIVING AREA, EMERGENCY ROOM**
5. **SUPERVISE MOVEMENT OF PATIENTS**

1. **REPORT TO MINISTRY**
2. **CALL OUT ADMINISTRATIVE AND OTHER STAFF**
3. **SET UP CONTROL CENTRE FOR COMMUNICATION, RECORDS AND INFORMATION**
4. **POST SECURITY GUARDS AND TRAFFIC WARDENS**
5. **ESTABLISH MESSENGER POOL AND POST MESSENGERS TO EACH AREA**
6. **SPECIAL ARRANGEMENTS:**
   - a. **UTILITIES AND STAND-BY MEASURES**
   - b. **REQUEST FOR SUPPLIES AND EQUIPMENT FROM OUTSIDE AGENCIES**
   - c. **ARRANGE FEEDING OF STAFF/VOLUNTEERS/ PATIENTS**

INTERNAL DISASTERS
Procedures for Fire, Explosion, Building Damages Bomb Threats