

Tropical Weather

THE TANZANIA HURRICANE OF 14-16 APRIL, 1952

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ABSTRACT

An extensive survey of Southwest Indian Ocean tropical cyclones dating back to 1854 reveals that, although hurricanes are fairly common (avg. 3 per yr.) and frequently strike the Malagasy Republic (Madagascar), Mascarene Islands, or Mozambique, they are virtually unheard of along the coast of Tanzania. This paper takes a brief look at these hurricanes, and reviews the only known cyclone of full hurricane intensity to cross the Tanzanian coast.

1. INTRODUCTION

While conducting a global tropical cyclone survey in 1981-1982, the author obtained extensive data and tracks for the southwest Indian Ocean, extending from 1854 through 1980. Close inspection of the storm tracks revealed two significant features. One, that although cyclones of tropical storm force are quite common, with a seasonal average near nine, the total annual number of hurricanes appears to be significantly less, averaging near three per year. However, it should be emphasized that the period 1939-1977 only was utilized to compute these averages and further, routine surveillance of this region by geostationary (GOES) meteorological satellites did not begin until 1978-79 (Meteosat-1 over Long. 0°) and the Japanese GOES (Himawari-1 near Long. 60°E). Two, that only one cyclone of full hurricane intensity has been documented striking the East African coast above latitude 10°S, the "Lindi" hurricane of April 1952. This hurricane is discussed here.

2. DISCUSSION

An aerial reconnaissance of South Indian Ocean hurricanes is non-existent. Scattered coastal, isolated island and minimal ship reports must be relied on for good, qualitative in situ measurements of wind speed and direction, air/sea pressure, etc. Additionally, operational satellite data since 1966 (ESSA-1) have allowed estimates of maximum winds and eye locations on a daily basis. However, exact intensity data still are dependent upon the relatively rare event of a direct hit from a hurricane upon an instrumented station, be it ship,

coastal, or island. Such was the case with the "Lindi" hurricane of 14-16 April, 1952. A report from within the eye of this hurricane indicated a minimum observed sea-level pressure of 958 mb, 28.30 in., aboard the "M.V. Tayari" (2). This value, the minimum reported for the storm, was recorded within 50 miles of the extreme Southeast tip of Tanzania, near the town of Lindi. Maximum sustained winds were estimated near 110 mph during landfall at Lindi, which encountered the stronger left, or southern semicircle. This value of maximum wind agrees well with observed minimum pressures-maximum winds in the western North Pacific and North Atlantic Oceans. Thus, this was the strongest tropical cyclone to ever strike Tanzania, was the first damaging cyclone of tropical storm or greater intensity to cross the Tanzanian coast since April 1872, and remains the only documented category 3 or greater hurricane observed north of latitude 10°S in the southwest Indian Ocean (3).

Concerning the frequency/probability of tropical storms and hurricanes near Tanzania, bounded by latitude 10°S, and from longitude 50°E westward to 41°E (coastline-see Figure 1), Crutcher and Quayle (4) compute a 13% probability of at least one tropical storm annually between Long. 45° and 50°E., decreasing to 7% between Long. 40° and 45°E, and only 3% annual probability of a landfalling tropical storm on the southern Tanzanian coast. Additionally, the same report indicates the annual probability of a hurricane within the area of Long. 50°E-41°E and north of lat. 10°S to be near zero.

3. SUMMARY

The extremely rare event of an intense hurricane crossing the coastline of Tanzania, East Africa, has been presented. Tropical storm and hurricane probabilities along and offshore of Tanzania have also been reviewed, together with the difficulty of data collection in this region. Improvements in satellite-sensor capabilities together with the establishment of a GOES satellite over the Indian Ocean by the Indian Meteorological Service, coupled with 20 or more years of good, consistent data collection may allow a re-appraisal of the frequency/intensity probabilities both along the East African coast, and throughout the Indian Ocean.

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References and Footnotes

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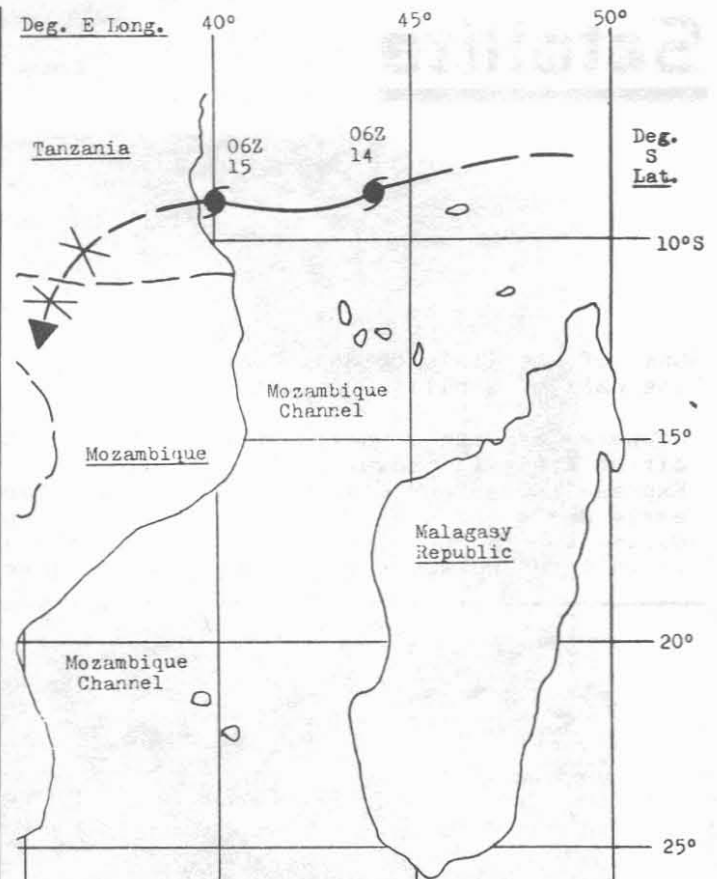


Figure 1. Approximate Track of the Tanzanian Hurricane, 14-16 April 1952.

- — Tropical Storm (39-73 mph)
- Hurricane (74 mph or higher)
- X X Depression (Less than 39 mph)

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