

CHAPTER II

OPERATIONAL PROCEDURES

A. DETECTION OF TROPICAL CYCLONES

Surface and upper air analyses, supported by the Stidd Diagram and time cross-sections of winds aloft for the Trust Territory Islands, were the primary means by which tropical cyclones were initially detected. Normally, when reconnaissance aircraft are routinely available for investigative flights and a doubt exists as to whether a circulation is actually closed, the initial warning is not issued until an investigation has been made which confirms the existence of a vortex. Due to the fact that reconnaissance aircraft were frequently not available for investigative flights during 1960, it was often necessary to issue an initial warning based on only a few surface and/or upper air observations which indicated the possible existence of a tropical cyclone. Of the 19 typhoons and 2 tropical storms described in detail in this Report, initial warnings were based primarily on ship reports in 11 cases, on the Stidd Diagram and time cross-sections of the winds aloft in 6 cases, aircraft reports (other than reconnaissance) in 2 cases, land reports in 1 case, and observations from a scheduled reconnaissance flight in 1 case. Because of the increased availability of reconnaissance aircraft during 1961, the detection of tropical cyclones should take place earlier in the formative stages of their development, and initial warnings will, in most cases, be based on reconnaissance.

B. WARNINGS

Warnings are filed and transmitted every 6 hours at synoptic times (0000Z, 0600Z, etc.), the present position of the tropical cyclone, as contained in the warning, being valid for the scheduled transmission time. Therefore, the "present position" of a tropical cyclone is actually a short range forecast position. The position may be based on a reconnaissance fix 30 minutes to perhaps 6 hours old, on surface observations as much as 6 hours old, etc. It is for this reason that the 0600Z warning, for example, may not, on occasions, agree with the position of the tropical cyclone as indicated by the 0600Z analysis. Amendments are issued when the difference is significant. The numbers of tropical warnings run consecutively when the cyclone is upgraded or downgraded, and if warnings are discontinued and the circulation regenerates, the new series of warnings are numbered consecutively from the number of the last warning of the previous series. When necessary, amendments and corrections are issued, and these are numbered the same

as the warning which they amend or correct.

C. COORDINATION WITH OTHER AGENCIES

Coordination with other agencies is on a scheduled and unscheduled basis. When a circulation, for which warnings are being issued, is N of approximately 20N, Fuchu Air Force Weather Central transmits scheduled coordination forecasts twice daily to FWC/JTWC. These forecasts are based on the 500 mb space mean technique. Coordination with other Air Force and Navy activities is on an unscheduled basis depending upon the existing situation.

D. VERIFICATION OF 24 AND 48 HOUR FORECASTS

All 24 and 48 hour forecasts, made when a tropical cyclone is of tropical storm or typhoon intensity, are verified when the verifying position, based on the best track, is at or S of 35N.

A table is included in Chapter I of this Report showing the average error for each 1960 typhoon and for Tropical Storms LUCILLE AND NADINE. In addition, Chapter V contains a Table of "Position and Forecast Verification Data", in each individual typhoon summary. In each of these Tables the 24 and 48 hour forecast errors are the errors of the forecasts which were made 24 and 48 hours previous to the date-time group. For example, the 24 and 48 hour forecast errors shown for 211200Z are the errors of the forecasts made at 201200Z and 191200Z, respectively. Also included in each individual typhoon summary is a chart showing the 24 hour forecast position in relation to the best track position.