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SEASONAL VARIATION OF 10-SQUARE-MILE PROBABLE MAXIMUM PRECIPITATION ESTIMATES, UNITED STATES EAST OF THE 105TH MERIDIAN

Prepared by
Francis P. Ho and John T. Riedel
Hydrometeorological Branch
Office of Hydrology
National Weather Service
Washington, D.C.
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Francis P. Ho and John T. Riedel
Hydrometeorological Branch
Water Management Information Division
Office of Hydrology
National Weather Service, NOAA
Silver Spring, Maryland

ABSTRACT. Estimates of the upper limit to rainfall that the atmosphere can produce (probable maximum precipitation) are given in this study for durations from 6 to 72 hours for each month of the year for 10 mi^2 areas. The results are in a generalized form, that is, on maps allowing use for planning and design of any present or proposed hydrologic structure for the United States east of the 105th meridian. The probable maximum precipitation estimates show a smooth variation with duration, season, and location.

1. INTRODUCTION

1.1 Authorization

This study was authorized and funded through Interagency Agreement No. NRC-01-77-113 between the Nuclear Regulatory Commission (NRC) and the National Oceanic and Atmospheric Administration (NOAA) dated June 2, 1977. The Agreement was extended to October 1, 1979, by an amendment dated May 20, 1979.

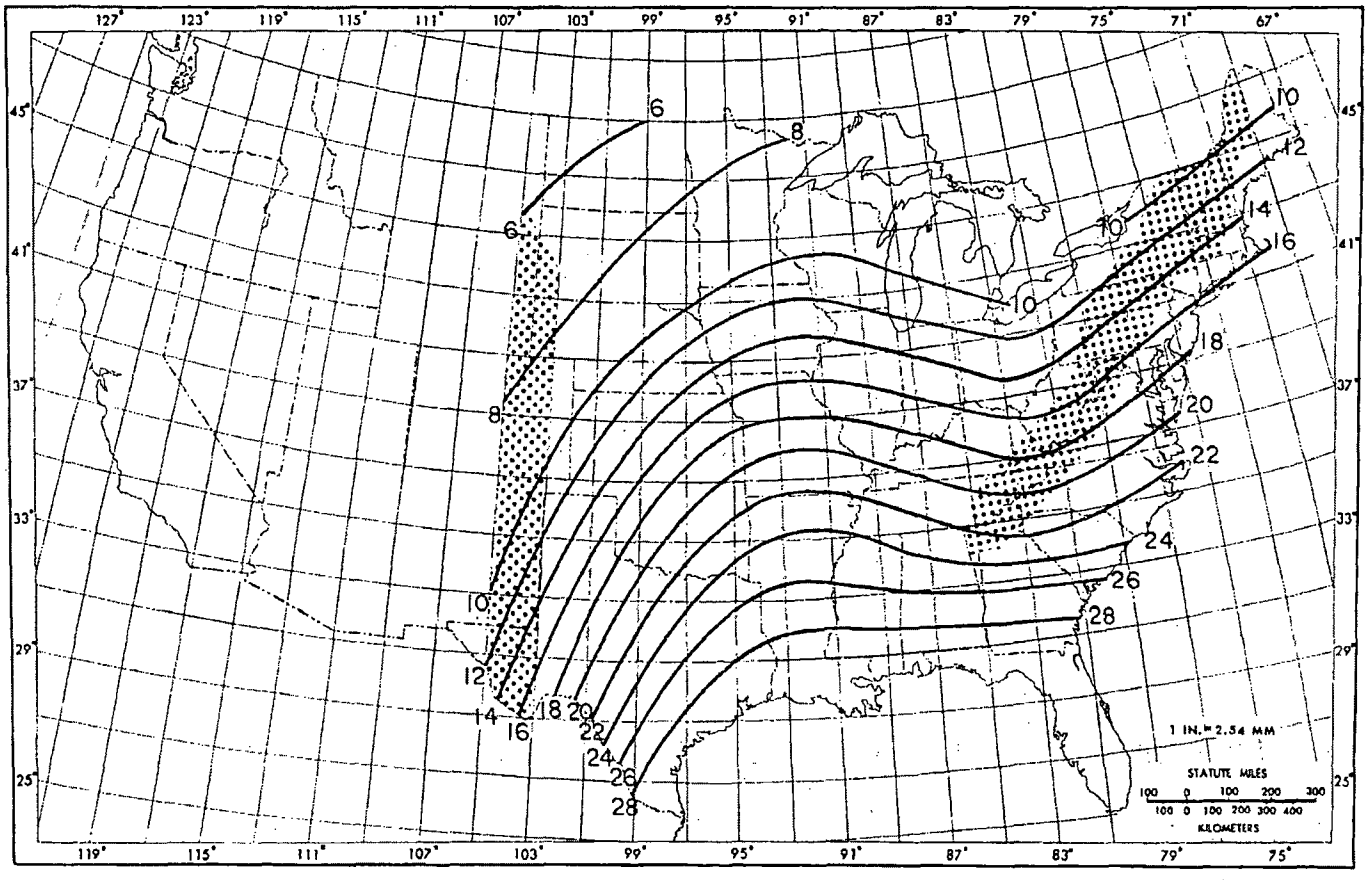
1.2 Purpose

The purpose of the study is to give seasonal variation of probable maximum precipitation (PMP) estimates for 10 mi^2 areas for the United States east of the 105th meridian. PMP estimates for durations of 6 to 72 hours, by 6-hr increments are required.

1.3 Scope

PMP estimates for 6, 24, and 72 hours are given on generalized maps for each midmonth for 10 mi^2 areas. While smaller sized areas have greater PMP values, especially for the warm season, they will not be defined in this study. For the winter season, PMP for smaller areas are not appreciably different from the 10-mi^2 values in this study.

All-season estimates of PMP, Hydrometeorological Report (HMR) No. 51, *Probable Maximum Precipitation Estimates, United States East of the 105th Meridian,* (Schreiner and Riedel 1978) set the greatest values that can be



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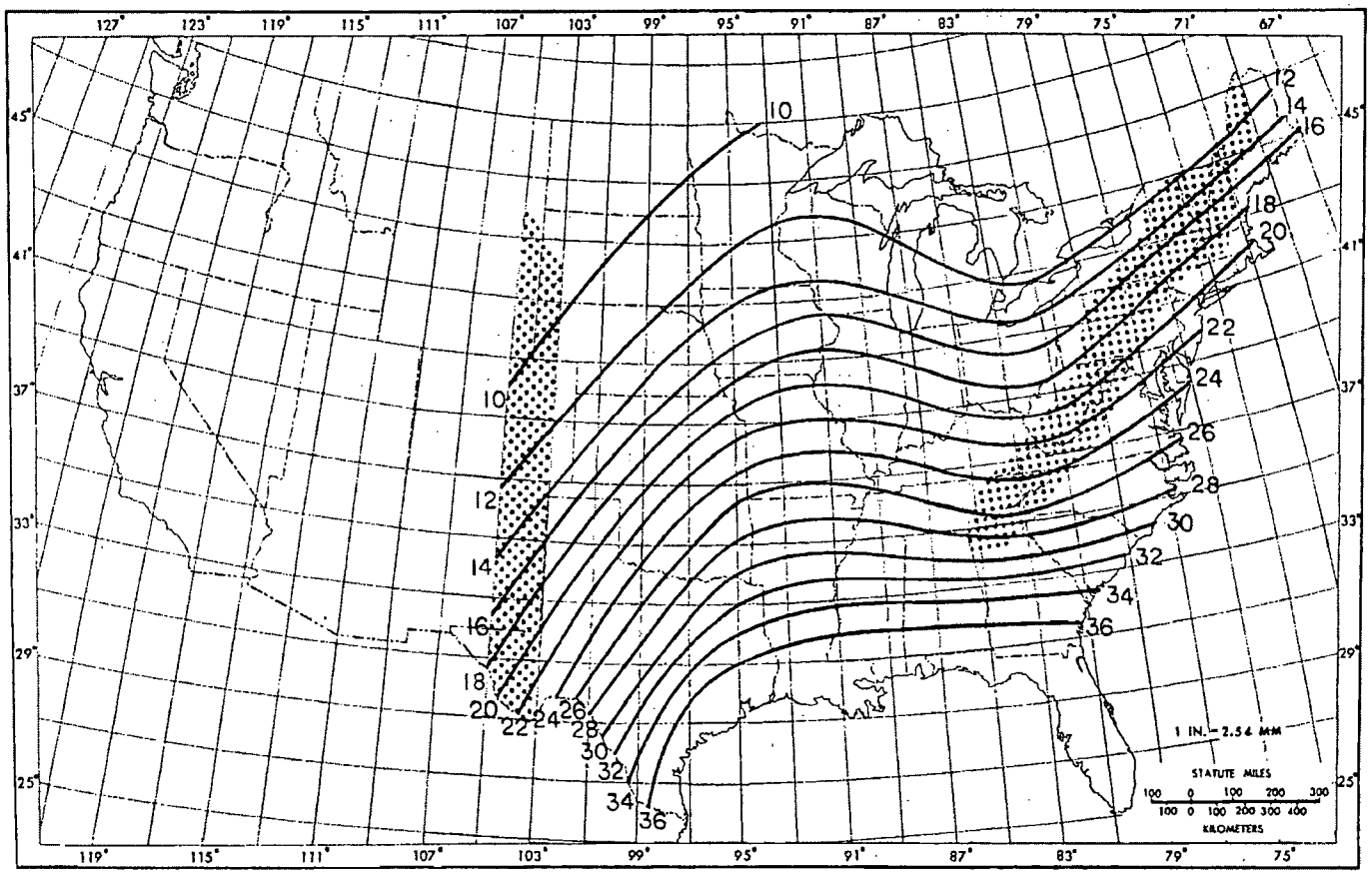

Figure 45.--72-hr 10-mi^2 PMP, December, (in.).