

THE EVALUATION OF RAINFALL RECORDS FROM A FIVE YEAR CLOUD SEEDING EXPERIMENT IN MISSOURI

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1. Introduction

During the five year period from 1960 through 1964 a weather modification experiment was conducted in south central Missouri and north central Arkansas. The experiment involved the use of silver iodide which was placed in the atmosphere from aircraft. This project was designed and operated by the Cloud Physics Laboratory of the University of Chicago under the name "Project Whitetop." The participation by the University of Missouri in the investigation consisted only in the basic reduction of the rainfall records obtained from the recording raingages and performance of the analyses from these rainfall records. The entire program was sponsored by the National Science Foundation.

A detailed description of Project Whitetop has been presented by Braham [1] and will not be repeated in detail here. The basic responsibility of the University of Missouri was to evaluate the hypothesis that the average rainfall was influenced by placement of silver iodide into the atmosphere. Data collected, through radar and by an instrumented aircraft, concerning the development and testing of other hypotheses, either have been or will be reported by Braham [2], [3] and his co-workers at the University of Chicago.

2. The experimental design

The experiment was designed to study the influence of seeding clouds which were formed by convective processes during summer. For this reason, the seeding operation was confined to a six hour period beginning at midday and extending to approximately 1800 CST. This, of course, excluded all nocturnal rain beginning late in the night and the rain occurring during the daylight hours prior to noon.

Only days during which instability showers were expected in the afternoon were included in the experiment. These operational days were defined on the basis of the amount of precipitable water at Little Rock, Arkansas and Columbia, Missouri for the 0600 CST sounding of each day. Precipitable water of 1.05 inches

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