

Weather Modification Bungled? SEP 22 1974

By Ferdie J. Deering

The federal government has at last officially admitted that it has fumbled the ball on weather modification. The admission came in a report to the Congress by the Comptroller General of the United States.

The report is titled "Need for a National Weather Modification Research Program" and it reviews the present muddled and ineffective programs from the standpoint of costs. The conclusion is that a national program in weather modification research is necessary to effectively control activities of the agencies involved.

The report states that the need for this kind of



of Reclamation at Denver for this purpose.

Because of weak direction, impractical objectives, personal prejudices, empire building, and apparent indifference to the urgency of doing something to prevent and alleviate drouth, this agency has failed to get the job done.

As a result of this failure, other federal agencies got into weather modification research for various reasons.

"During fiscal year 1974 seven federal departments and agencies—Agriculture, Commerce, Interior, Defense, Transportation, the National Science Foundation, and the National Aeronautics and Space Administration — conducted weather modification research," the comptroller's report stated.

"Estimated cost for this research increased from about \$3 million in fiscal year 1959 to about \$17.4 million in fiscal year 1974," indicating that enough money has been available to do something worthwhile if a well-directed, problem-solving research program had been under way.

Actually, this country could afford to spend whatever is needed to utilize scientific knowledge to extract more rainfall from clouds. Figures on the 1974 drouth relief programs are

not available, but in 1971, more than \$150 million was paid out in the form of emergency drouth relief and loans in Oklahoma, Texas and New Mexico. This doesn't include all losses that farmers, ranchers, businessmen, manufacturers, wholesalers and others suffered.

The report identified these problems as hindering progress in weather modification research:

No central authority to direct federal departments' efforts;

Ineffective co-ordination;

Insufficient resources to achieve timely, effective results.

Examples of interagency bungling were cited. In one hail experiment, the National Science Foundation was the lead agency. USDA was to assess crop damage from hail and study economic effects of hail suppression, but didn't do it. Commerce Dept. was to furnish radars and aircraft but only supplied technical ground work. Defense sent men but not the helicopters requested. Atomic Energy Commission had to be funded by NSF to provide technical assistance. Transportation Dept. provided personnel as planned. The project was a failure.

Recommendations to Congress based upon this investigation include:

1. Develop a national program with goals, objectives, priorities and milestones, designating one agency to have primary responsibility, to administer and maintain the national program;

2. Develop a plan to define and reassign, if appropriate, responsibilities of federal departments and agencies providing support or conducting weather modification research;

3. Develop a plan to allocate resources to the na-

tional program elements.

Even this won't do the job, if accomplished, unless local people get better organized to act to prevent drouth. Oklahoma has nearly a dozen projects for weather modification districts through USDA, but most of the state is not included.

Sen. Bellmon has introduced legislation to provide matching funds for weather modification districts through USDA, but it is not likely to be passed this year.

A continuing program is essential. Paul Caubin vice president of Irving P. Krick, Inc. says: "Weather modification is a lost cause unless it is directly related to and operated within long and short range forecasts of weather that have reliability. You must know well in advance when and where to operate."

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Column of Comment

action was recognized as early as 1966, but the organizations involved have not developed and implemented an effective over-all national program.

"The present fragmentation of research efforts has made it extremely difficult for agencies to conduct effective field research which, in the case of weather modification, must precede operational activities," says one of its conclusions.

The stated need was noted by Congress in action taken in 1961. Private enterprise and a number of scientists had been working with cloud seeding and other weather modification for 15 years before that. The U.S. Weather Bureau (now NOAA) didn't want any part of it and opposed the idea.

The Department of Interior took the assignment of pulling together all weather modification research, conducting more, and making something useful out of it. It created a special division in the Bureau

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Dear Ferdie:

Your article on the federal bungling of weather modification research, in the September 22 issue of the Sunday Oklahoman, was very interesting.

Can you tell me how I can get a copy of the referred to Comptroller General's report to Congress? I would very much like to take a look at it for it may, as your article suggests, reflect a broader perspective than many of us have seen yet.

Under separate cover I am sending a copy of Weisbecker's IMPACTS OF SNOW ENHANCEMENT and Weisbecker's SNOWPACK, CLOUD-SEEDING, AND THE COLORADO RIVER. One book is the full technical report on the Stanford Research Institute's pilot program on snowfall in the Colorado River area, and the other book is a simplified version for the lay or general reader.

Best wishes,



Edward A. Shaw

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