

age from lightning than one inflated with non-inflammable helium, provided it is properly "caged" with electrically conducting metal framework. In the airship the protection is greater the closer the meshes of the metallic framework, the wire bracing and the wire netting enclosing the gas bags, and particularly the more highly electrically conducting the surface of the outer envelope.

A number of reports of damage by lightning to airplanes are reviewed. It was generally agreed that "It is possible, without serious complication, to render an airplane practically immune to serious danger either to the airplane or to the occupants."

Though neither airplanes nor airships are in serious danger from lightning, it is important that every effort be made to avoid thunderstorms. The violent winds during thunderstorms, rather than the lightning, are the cause of destruction.

STREAM SURVEYS IN THE NATIONAL PARKS BY THE U. S. BUREAU OF FISHERIES

THE program of stream surveys in the national parks and forests to be conducted by the Bureau of Fisheries on funds allotted by the Public Works Administration is rapidly nearing completion. On January 8 and 9 a conference of the administrative and supervisory personnel was held in Washington, D. C., for the consideration of details of this organization. Besides the administrative officers of the bureau, the conference was attended by Dr. H. S. Davis, who will have general technical supervision of the investigations, and by Dr. A. S. Hazzard, Dr. P. R. Needham and Dr. Eugene Surber, all of the regular scientific staff.

The purpose of this survey is to formulate a sound scientific stocking and improvement program for the most heavily fished waters of the national forests, based on an actual assessment of the physical and biological characters of the streams and lakes within the areas studied. The improved program of planting resulting from such a survey will effect material economies by coordinating the activities of the Federal and State Governments engaged in stocking public waters, and in addition recommendations will be offered to the Forest Service for the more effective improvement of stream conditions, utilizing the services of the emergency conservation workers. Owing to the limitation of trained personnel, however, recommendations for stream improvement will be offered only in the particular forest areas that can be surveyed by the various bureau parties in the field. Since there are upward of 120 national forests, these recommendations for improvement will cover but a very small portion of the national forest areas.

The survey program will be organized in three

major sections: The eastern section, including a part of forest area 7; the intermountain section, including parts of forest areas 1, 2, 3 and 4; and the western section, including selected forests in area 5.

Four survey parties will be placed in the field in the eastern section. One will operate in the Pisgah National Forest, parts of the Great Smoky National Park, and a portion of the Nantahala National Forest, where work will be undertaken about March 15; one in the George Washington and Monongahela National Forests and a portion of the Shenandoah National Park; one in the White Mountain National Forest and adjacent regions in New Hampshire, and one in the Green Mountain National Forest and the Battell Forest and adjacent regions in Vermont. Work in the latter areas can not begin before April or May owing to climatic conditions.

In the intermountain region one party will work in Glacier National Park, completing the surveys that have already been undertaken in the past. One will be assigned to each of the seven Intermountain States, including Idaho, Wyoming, Nevada, Utah, Colorado, Arizona and New Mexico. In each case one or more national forests will be surveyed as fully as possible during the limited working season of midsummer.

In the western section three survey parties will be engaged in studying the waters of the Yosemite National Park and the Stanislaus, Tahoe, Klamath and Trinity National Forests in California. Weather conditions will not permit effective work in these high mountain areas until late in the spring.

In all, 15 parties will be placed in the field varying from 4 to 7 in number, including a skilled biologist in charge of the party; 2 to 4 assistant biologists and 1 or 2 unskilled assistants to assist in maintaining and moving the camps, caring for pack horses, trucks and equipment. In all approximately 85 persons will be employed for periods varying from 3 to 8 months.

THE NEW YORK STATE PLANNING BOARD

FUNDS have been placed at the disposal of the National Planning Board by the Federal Emergency Administration for Public Works for the employment of qualified experts to further the development of planning on a state-wide basis. As a condition of providing a technical adviser without expense, it is stipulated that state planning boards shall be appointed. The boards will work in cooperation with the National Planning Board as part of the Federal Recovery program. The Public Works Administration will defray expenses for salaries and for administrative work for six months.

Robert Whitten has been appointed expert director of the New York State Board, and Dr. A. R. Mann, provost of Cornell University, has been named chair-