

OREGON'S IMMENSE FORESTS NOW PROTECTED FROM FIRE BY AIRPLANE PATROLS

Latest Preventive and Fighting Facilities Are Installed to Keep Guard Over State's Magnificent Stand of Choice Timber—Experiments of the Past Season Prove Success of Plan to Watch Vast Areas From the Sky



Maj. Albert J. Smith and State Forester F.O. Elliott with DeHavilland plane, Salem field.



Transporting wireless telephone outfit to fire lookout house on Mount Hood.

By F. A. Elliott, State Forester. IT MAY be safely said that the latest development in forestry is the use of airplanes in patrolling Oregon's timber resources for the detection of forest fires.

Experiments along this line were carried on during the past summer by the air service branch of the war department, working in co-operation with the United States forest service and the Oregon state board of forestry.

Next season's work may be classed as an experiment by the different services to determine the advisability of maintaining such a patrol from year to year.

Would airplane patrol prove to be the more economic and effective, eventually replacing the patrol and lookout system now employed for forest fire detection and suppression? These and many other questions were in the minds of the men charged with the protection of Oregon's timber when the planes were first introduced.

The air service had available planes and personnel at their disposal. These pilots, mechanics and planes must be kept in action, and the air service was anxious to determine the possibility of performing a real and valuable service in conjunction with their regular duties, which provide that each pilot spend a certain amount of time in the air.

The men on airplane patrol in Oregon last season are highly enthusiastic over the experiments and eager to become efficient in this new line of work, while the forestry officials are extremely optimistic over the possibilities of organizing an efficient patrol system for the coming year.

Meetings of representatives from the air service, state, federal and private forest protective organizations are being held and plans formulated for 1920. It is very probable that the war department will give further assistance next season and that a system of airplane patrol will cover Oregon, California, Idaho, Montana and Washington. Such a patrol will disregard all state and national forest boundaries and will conform to the general topography and character of the forest covered throughout the five states.

This work may be accomplished in practically three weeks' time.

Should the plan for the combined patrol of the five states be approved by the air service, primary control stations will be established at Eugene, Or.; Camp Lewis, Wash.; Mather field, near Sacramento, Cal., and one other in Idaho or Montana, not yet selected. The Oregon sub-bases will be located at Portland, Salem, Eugene, Roseburg, Medford, Klamath Falls, Prineville, Marshfield and La Grande.

To accommodate the large DeHavilland ships, the landing fields must be at least 2000 by 1000 feet, free from obstructions, such as trees, telephone lines, etc., and located on a level or fairly even slope of sod or firm soil. Several such fields have already been provided through the efforts of local commercial or aero clubs and by public-spirited citizens, and are located at Portland, Salem, Eugene, Roseburg and Medford. The advisability of going to any great expense of providing emergency landing fields along the patrol routes in the mountainous regions is not considered practical by the air service officials, since, they state, that such fields are apparently never located near where trouble occurs.

The mechanical success of the planes is beyond question, when the figures are considered regarding the distance covered by the Oregon patrol in 1919. The first patrol started August 2 and continued until August 23, during which time seven Curtiss type planes were used, four ships

making two two-hour trips each day, flying at an average speed of 60 miles an hour and making a total distance of 30,160 miles during the 21 uninterrupted flying days.

On August 23 the Curtiss planes were replaced by the larger DeHavilland type, because they can remain in the air nearly twice as long. This type of plane was found to be more efficient and continued the patrol work until October 7, when the fall rains and cool nights made further patrol unnecessary for the season. The DeHavilland planes are American-made and contain a 400-horsepower Liberty motor and are capable of traveling at the rate of 120 miles an hour. Although a more difficult plane to handle than the Curtiss type, they have a much greater gas and oil-carrying capacity and can safely remain for a period of four hours in the air.

During the 35 actual patrol days by these five new ships, two flying six hours each day at an average speed of 95 miles per hour, they covered a distance of 69,900 miles. The combined distance flown by the Curtiss and DeHavilland planes during the 58 patrol days amounted to approximately 60,000 miles, or more than twice the distance around the earth. This distance was traversed with only six forced landings; three due to inclement weather, and resulting in one wrecked plane. The other three were caused by motor trouble, resulting in the loss of one officer and the total loss of one ship.

The entire operating expense was borne by the air service. The state and federal forest service arranged the plan of patrol and gave the pilots and observers the benefit of their knowledge in fire detection and suppression, gained through years of experience. They also provided landing fields, arranged for gasoline and guards for planes at sub-stations, provided transportation for the men to and from the fields, and co-operated with the air service in every way possible.

The area of effective visibility depends somewhat upon the atmospheric conditions and the altitude of the plane. At a height of 10,000 feet under fair observation conditions, a very small fire may be easily picked up at a distance of 30 miles. It is during smoky weather that the airplane patrol is much more advantageous than the lookout system. Neither smoke nor a difference of several thousand feet in altitude hinders the visibility as much as one would suspect. With the lookout system, there is nearly always a section of the country back of the ridges which cannot be seen; with the airplane all regions are equally visible.

The airplane is not only effective for locating new fires, but as the past season demonstrated, is extremely valuable in reporting progress on large fires or in exactly locating a group or series of small scattered ones. Experience has shown that a trained observer, after a reconnaissance from the air, can gain more

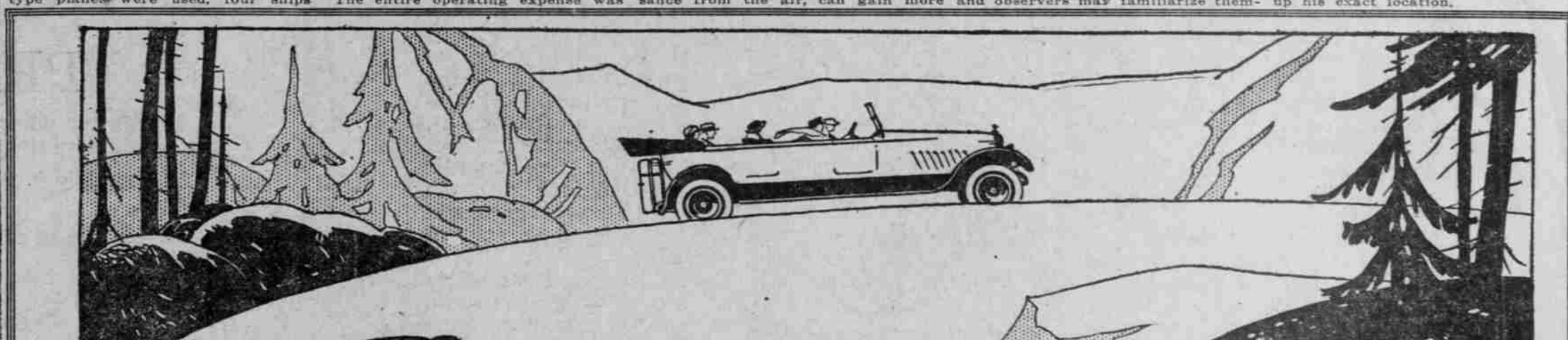
useful information about the character of a large fire than can a man on the ground in a heavily timbered area. Old fires can be covered each day to see that they do not break out anew.

At present it is not deemed advisable to reduce the regular patrol and lookout personnel. However, these men may be used more advantageously and, instead of being on patrol duty, may be bunched on improvement and construction work; each working crew to be provided with a telephone set and fire-fighting equipment so that upon report of a fire they may proceed without loss of time as an organized fire-fighting crew.

Observers' Responsibility Large. The success of this new patrol depends principally upon the accuracy of the observer in locating the fire and the rapidity with which he reports the fire to the district ranger or warden in whose district the fire is located.

The accuracy with which a fire can be located depends upon the experience of the observer and the correctness of the maps with which he is provided. The state forester will provide complete cover maps of Oregon, showing the timberland, old burns, brush, cutover or farm lands and will include the location of all principal roads, streams, cities and railroads.

Next season, the air service officials plan to start the patrol at least one month before the beginning of the fire season in order that the pilots and observers may familiarize themselves with their duties and the country over which they will maintain the patrol. It is during this instruction period that it is planned to photograph the forested regions of the state. These photographs will be assembled in map form and be used in connection with other maps for the location of fires.



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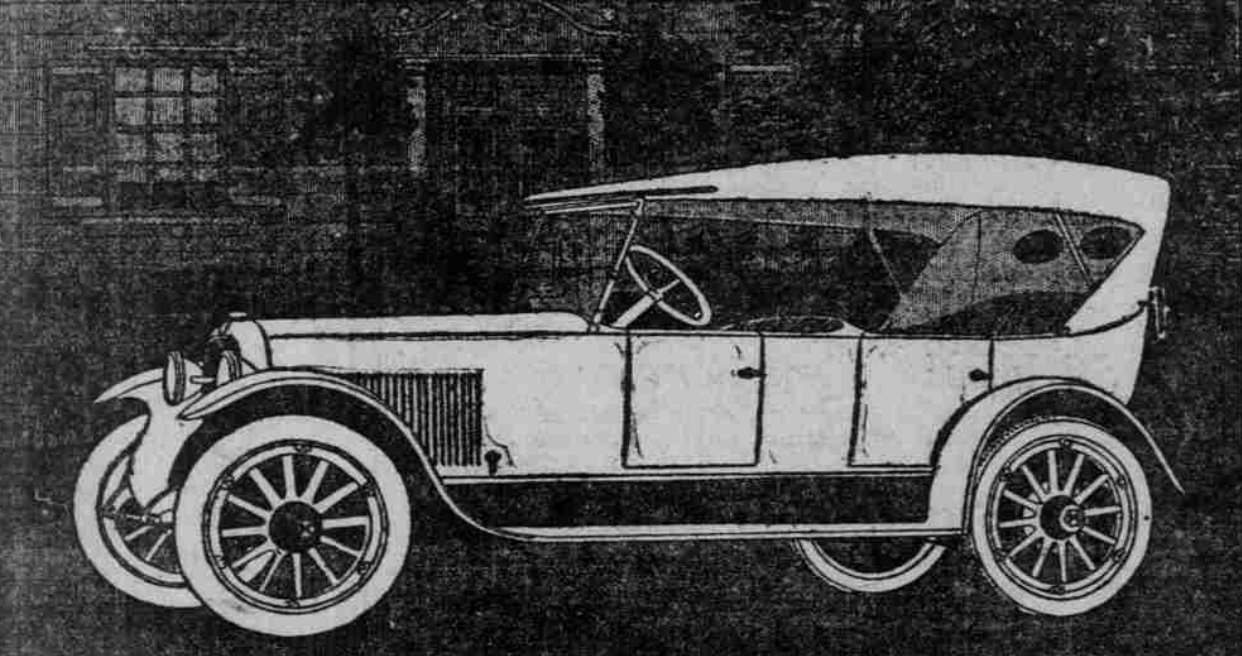
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