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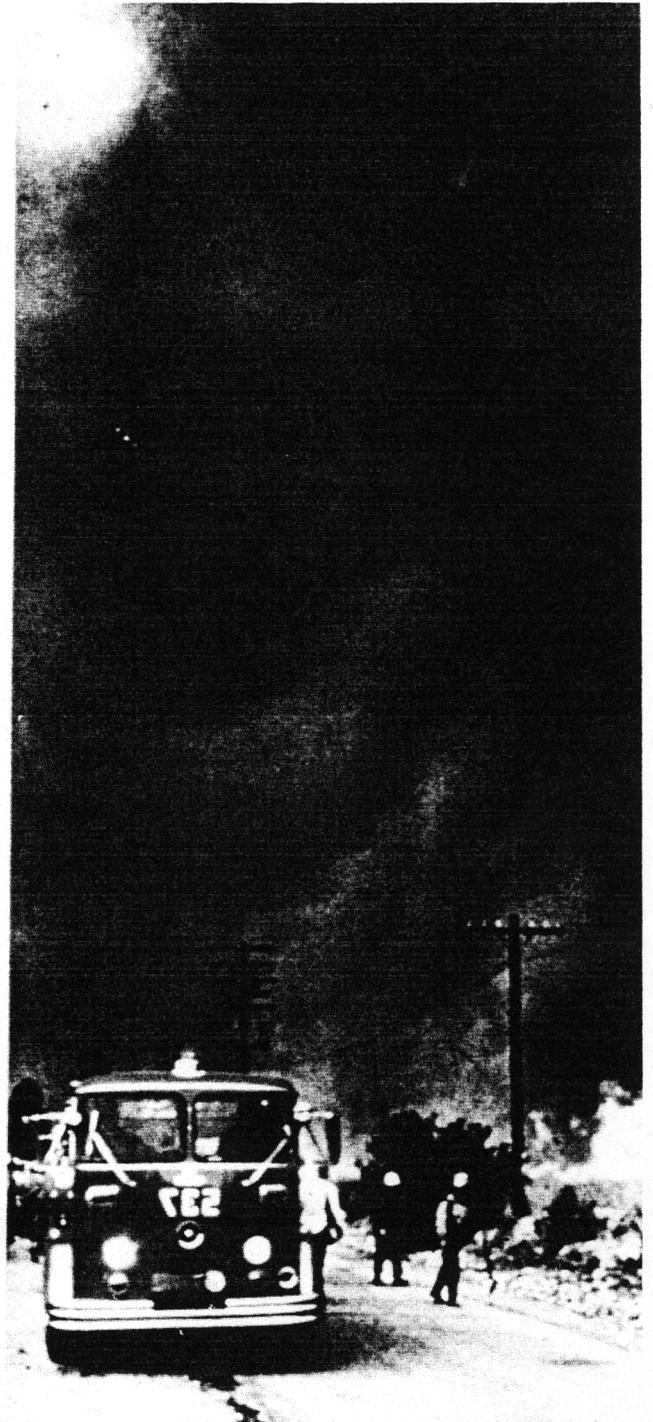
Pacific Southwest  
Forest and Range  
Experiment Station

General Technical  
Report PSW-40

# FIRESCOPE:

a new concept in multiagency  
fire suppression coordination

Richard A. Chase



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## **The Author**

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**RICHARD A. CHASE** was formerly assistant manager of the FIRESCOPE research and development program and leader of the Station's research unit supporting the program, with headquarters in Riverside, Calif. He is now assigned to the Aviation and Fire Management Staff, Forest Service, U.S. Department of Agriculture, Washington, D.C. He earned bachelor of science (1953) and master of forestry (1954) degrees at Yale University, and joined the Forest Service in 1954. After serving in a variety of resource management positions in the National Forest System, he was assigned to the Station's research staff in Riverside from 1969 until early 1980.

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## PREFACE

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For a 2-week period in fall 1970, a continuing siege of major wildfires over the chaparral region of southern California severely taxed the capabilities of the region's fire protection agencies and caused major damage to structures and wildland resources. As a result, in 1971, Congress directed its attention to the southern California fire problem. During the second session of the 92d Congress, a subcommittee of the House of Representatives, Committee on Appropriations, recommended an appropriation of "\$900,000 to strengthen fire command and control systems research at Riverside, California, and Fort Collins, Colorado." The House subcommittee further recommended: "At Riverside, research will concentrate on developing advanced airborne fire intelligence methods for detecting and mapping fires, including real time telemetry of information and display at fire command control centers..."

With the subsequent appropriation of funds, a research, development and application (RD&A) program was established at the Pacific Southwest Forest and Range Experiment Station's Forest Fire Laboratory, Riverside, California. In response to the Congressional directive, research was to identify the most productive study areas and approaches for the RD&A program. Analysis of the problem was carried out jointly by Forest Service researchers and principal southern California fire agencies. This analysis quickly showed that the solution must involve a major systems design that would necessarily address not only advanced airborne fire intelligence methods, but fire information systems generally and their effective utilization in planning and coordinating action on both single- and multiple-agency fires or similar emergencies. The program charter was prepared accordingly and formally approved in March 1973.

The intent of the total program was to design and provide the procurement, testing, and implementation of an operational fire suppression coordination system, assuming that implementation funding would become available in an orderly and timely manner as the program proceeded. Such funding, however, did not materialize within the 5-year R&D phase of the program. The research product was therefore redefined in June 1976 as a series of performance specifications for recommended subsystems, and implementation was delayed. The specification reports, which form the basis of the system descriptions herein, are listed in the footnotes. These reports were prepared by the Station and contractors.

In October 1975, in preparation for the implementation phase, leadership responsibility began to shift from the Pacific Southwest Station to State and Private Forestry, California (now Pacific Southwest) Region of the Forest Service. Research and development work required to complete the design and support implementation was assigned to a research work unit.

The major product of this complex team effort involving Forest Service researchers and land managers, cooperating fire agencies, and contractors was FIRESCOPE (*FI*refighting *RE*sources of *Southern California* *O*rganized for *Potential Emergencies*—a new concept and system in multiagency fire suppression coordination).

The principal researchers and their contributions:

- Stanley N. Hirsch, program manager (1972-1975)—general program management.
- Richard A. Chase, assistant program manager (1972-1975); Research Work Unit Leader (1975-1978)—program coordination, overall system concept design and development.
- Randall J. Van Gelder, operations research analyst—information management system design and development.
- John W. Warren, electronic engineer, communication system, infrared telemetry, weather telemetry design.
- Kelly Mason, electronic engineer, communication system, mobile communication unit, and weather telemetry network design.
- Romain M. Mees, operations research analyst—information services development.

Research Work Units that furnished technical support:

- Forest Fire Meteorology (PSW-2108), Pacific Southwest Forest and Range Experiment Station, Riverside, Calif.
- Management of Chaparral and Related Ecosystems (PSW-1652), Pacific Southwest Station, Riverside, Calif.
- Fire Fundamentals (INT-2103), Intermountain Forest and Range Experiment Station, Missoula, Mont.

Program support and technical advice was provided by personnel from these agencies:

- California Department of Forestry
- California Office of Emergency Services
- Los Angeles City Fire Department
- Los Angeles County Fire Department
- Santa Barbara County Fire Department
- California Region, Forest Service, U.S. Department of Agriculture
- Ventura County Fire Department

Principal contractors to the program were:

- The Aerospace Corporation, El Segundo, Calif.
- Mission Research Corporation, Santa Barbara, Calif.
- System Development Corporation, Santa Monica, Calif.
- Stanford Research Institute, Palo Alto, Calif.
- University of California, Berkeley, Calif.

The recommendations, criteria, and descriptions outlined in this report resulted from an iterative process involving cooperators, researchers, land managers, and contractors. In addition, the implementation program now underway and directed by Robert L. Irwin, State and Private Forestry, Pacific Southwest Region, Forest Service, was begun 18 months before the research effort was terminated. Therefore, some of the final design recommendations included changes related to evaluation, testing, and modification in the implementation program. This iterative process also resulted in the rejection of parts or all of the contractor reports. These reports, which have been made available to cooperators, may become valuable reference documents, however, for any future work designed to improve and strengthen FIRESCOPE.