

*IV. Information and Education**

Human participation, human behavior patterns, and human judgments play important roles in the ignition and extinction of fires. The instruction of people in the technical intricacies of fire-related matters presents a challenge that requires a variety of approaches.

When the NSF/RANN programs on Fire Research were initiated in 1970, it was recognized that, apart from the all too fragmentary knowledge of underlying physical, psychological, and medical facts, another serious problem needed to be attacked—namely how to lower a communication barrier that then existed between the practitioners in the fire field and the research people whose function is to advance the understanding of its basic principles. Similar gaps existed between the fire community and the general public on matters of fire safety and prevention. Not least, within the specialized audiences making up the various subsections of the fire field there is need for better exchange of information on intentions, accomplishments, and results.

The APL attack on these communication barriers proceeded along a number of separate paths:

1. The Washington/Baltimore metropolitan area, with APL located near its geographical center, contains within its boundary a wide variety of urban, suburban, and rural fire departments, one University and a number of Community Colleges concerned with teaching functions in the fire field, several Fire Research Centers (such as the Fire Center of the National Bureau of Standards) and many federal agencies with direct or indirect interests in fire problems. It seemed appropriate to furnish to varied audiences a center for the presentation of technical discussions on a wide variety of fire-related themes.

Side by side with large numbers of very practical fire prevention and suppression matters, there are many exquisitely complex physical and chemical problems on the ignition and extinction of flames and their propagation along surfaces which must be worked out to predict and explain the frequently observed generation of smoke or the

liberation of toxic combustion products. There exist intricate fluid mechanical and heat transfer processes, such as in fire whirls, that can assume devastating intensities or, as in the case of fully developed heat release in buildings, can cause extensive damage to structures. The effects of fires on living beings, through ingestion of toxic substances or the consequences of burns, are profoundly distressing as are the psychological consequences to fire exposures.

Several dozen colloquia, covering physical and chemical aspects of Fires, Health, and Behavioral Problems, Fire Protection Prevention, Design Principles, and General Reviews have been held at monthly intervals, attracting diverse local audiences to the presentations as well as nationwide participants to several two- or three-day-long Conferences and Workshops where specific topics (Teaching of the Fire Sciences; Fireground Command, Control and Communications; Fire Casualties) were discussed in considerable detail.

As a means of expanding the coverage of the Colloquia series, edited audio and video recordings have been made available, providing an opportunity for building up a "library" of source materials in topics of current interest. This is of particular value to the several hundred community colleges throughout the United States whose faculty and students do not have ready access to new developments in the fire field. It supplies to a student body, numbering in the tens of thousands, and to a large number of practitioners a convenient way to supplement their insights into new developments out of which the technology and science of fires are fashioned.

2. Despite the difficulty of documenting quantitatively the effectiveness of alternate ways of reducing the appalling annual fire losses, it is nevertheless clear that the majority of the serious human injuries and deaths is due to misjudgments or errors in human behavior. In order to reduce these losses by a substantial amount (the recent federal legislation in the fire field "mandated" a 50% reduction in a generation), a vigorous educational program directed towards the needs of the public appears essential.

An interesting appeal to a specific audience was carried out in the following way: A group of young high-school students, participating in an accredited course in Creative Writing and Film Making, took on the assignment of producing a film for their peers that would present sound fire

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prevention and safety advice in a manner appealing to youthfully critical audiences. With the guidance of the Montgomery County, Maryland, Fire Marshal and the APL Film and Fire Problems Group, a 23-minutes-long sound-and-color film ("Don't Get Burned") was made on the theme of how to go about producing a film that would have an impact on young people. The project was carried out with such infectious good humor and enthusiasm that the serious messages woven into the story carry a strong impact. (See Fig. 24.) The film is distributed widely throughout the United States by the National Fire Protection Association. A sequel, "Don't Make an Ash of Yourself," dealing with inner-city problems has been written by a creative Baltimore student group and awaits funding for final production.

3. A strong leverage position in the transmittal of new information and of a forward-looking practical outlook on fires is held by a rapidly expanding educational group of Fire Science and Fire Technology instructors. This group has only been loosely organized in the past, despite its important place in the training of young people in fire suppression, fire protection, fire administration, and in other related areas. Spurred on by two APL-organized symposia on the "Teaching of the Fire Sciences," where searching questions were asked concerning basic fire science curriculum contents and teaching objectives, qualification standards, student recruitment, innovative teaching methods, and other similar issues, a decision was reached to organize a formal "Association of Fire Science and Technology Instructors" with responsibilities for providing continuing contacts among its members, setting teaching standards, and pursuing high levels of professional performance.

4. An as yet incompletely met need of the fire field is an adequate network of information exchange. With the exception of the services provided by a monthly Soviet Abstract Journal, *Fire Protection*, and of *Fire Research Abstracts and Reviews* (published by the U.S. Academy of Sciences and edited by an APL staff member), it is not at all easy to keep in touch with the relevant published literature. These two cited sources only partially fill the void, leaving out important areas of interest, such as economic, legal, fireground command and fire training issues, and the statistics on losses from which informed planning models could be derived.



Fig. 24—Scenes from film "Don't Get Burned."

To offset this difficulty somewhat, the APL program has generated bibliographic materials of several kinds. The most elaborate part of this effort was the preparation of a *Fire Dictionary and Source Book* in which approximately 8000 terms from every section of the fire field were included. Each is explained in sufficient detail so that the reader can find a way through the maze of highly specialized expressions that may be in common usage in one fire specialty, but which are quite unclear in another. This dictionary is expected to be widely used by the practitioners in the fire field and presents a good start on a syllabus of technical terms. Bibliographies of important parts of the combustion literature, reviews of specific technical fire areas, and a *Source Book on Workers in the Fire Field* make up the remaining inputs.