to allow the more appropriate recording of different levels of information density, or in another case of different wavelength bands. Perhaps the simplest of these would be a two-layer composite film. The top layer could be an ordinary fast emulsion like a TRI-X or perhaps a medium emulsion like a microfilm emulsion and could be used to record say a road map or a rail map of a country. The second emulsion should preferably be a very fine-grained emulsion such as one of the new aerial recording emulsions or even a maximum resolution graticule emulsion. This second emulsion could carry a complete aerial photograph on it of the region under consideration, to the same scale as the road map. One could use the same principle as Wyckoff has used of color coupling the images and bleaching out the silver so that the two pictures were of different colors and could be viewed together or independently by suitable choice of a color filter in the viewing device. Perhaps simple colored spectacles would do. One could use such a map in the way that one ordinarily used a road map to find one's way to a given town and could then, by simple shift of the color filter and the use of a magnifying device, examine the area in the other color for viewing say a complete street map of the town or even an aerial photograph of any section of it. The idea could obviously be extended to the superficial in addition to the detailed recording of large tracts of country as required in military reconnaissance and surveillance. These ideas can be extended for projection systems and possibly even for the direct viewing of transparencies to allow multiple image levels of different detail even in color.

Summarizing, the idea is to use XR film to take or record pictures in three degrees of detail rather than in three degrees of brevity of exposure. This would be useful in say metallographic records where one may wish to see, for example, the general position of a fatigue crack and also to study how this crosses individual grains.

Similarly, one could record an aerial photograph and on it have superposed a coarse road map and a city street map. Print and lettering need not interfere with the detail of the readings. Such a "supermap" could be examined without filters quite usefully, but would be better studied with filters. One could use a fine detailed substrate map and add, say, rail features on one of the overlying emulsions and road features or contour lines on another. If there are several such features that it seemed desirable to record (and they need not be of differing detail levels) one might consider building up films of more than three layers, and the layers could be of the same or different speeds and resolution capabilities. Polaroid vectograph film seems equally suitable for this kind of work, though polarizing rather than color filters are needed. We made a number of examples of two-level records at Bell Laboratories using monochrome vectograph film. Some colored vectograph transparencies were also made for us by Dr. Bruce de Palma at Polaroid; and these may be examined directly, or simply projected using an overhead projector and a Polaroid sheet.

9TH INTERNATIONAL CONGRESS ON HIGH-SPEED PHOTOGRAPHY

DENVER, COLORADO · AUGUST 2 THROUGH AUGUST 7, 1970

9th Congress Papers Program

Organization of the technical papers sessions are now complete for the 9th International Congress on High-Speed Photography, announced Congress Chairman **Carlos H. Elmer** and Program Chairman **Robert D. Shoberg.** Over 100 technical papers from participating nations have been arranged into sessions. The complete program of titles and abstracts will be published in the July *Journal.* Countries represented are the U.S., England, France, Germany, Japan, the Netherlands, the U.S.S.R., Bulgaria, Switzerland, Canada, Australia, Sweden and Czechoslovakia. The official languages of the Congress are English, French, German and Russian. All technical sessions will be supplied with four-language simultaneous interpretation.

The Congress will open on Monday, August 3, with a brief ceremony. The entire morning technical session will be devoted to a group of invited papers and a panel discussion on the subject of formal training for careers in photographic science and technology. This seminar will be chaired by Herbert E. Farmer, SMPTE Vice-President for Educational Affairs.

Additional topics scheduled for technical sessions are: holography and lasers; rotating mirror and raster cameras; image converters; equipment papers by exhibiting firms; lighting, flash and x-rays; and high-speed applications.

Each technical paper is to be preprinted and will include abstracts in French, German and English. All papers written in a language other than English will be preprinted in both the original language and in English. Preprints will be given to all Congress attendees. Papers and resulting discussion will be published in hard-cover book form as the official proceedings of the Congress.

Congress Arrangements

A comprehensive exhibit of specialized high-speed photographic equipment will be shown in conjunction with the Congress. Approximately 40 companies are expected to display their products.

The Final Announcement is now available from Society Headquarters. This sixteen-page booklet describes the Congress activities. Complete registration information can also be obtained. All-inclusive registration fees for the week are $90.00 for delegates and $45.00 for accompanying persons. A full and interesting schedule of events for families accompanying delegates has been planned. The schedule will be of interest to older children as well as wives, with visits to points of interest in scenic Colorado including an excursion to Colorado Springs. For more information, write to Society Headquarters.

Authors are reminded that their manuscripts are due at Society Headquarters by June 1. Format sheets and instructions have been sent to all authors for this.