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## A Film and Television System for Medical Students

By NEIL L. REZNIKOFF

**T**HE MEDICAL STUDENT HAS to gather information about patients, experiments, anatomy, the community, pathology and other areas. This material is presented to his fellow students and teachers, usually in the form of talk with some slides. If the presentation is to be repeated, the student will have to repeat his complete live performance.

The film and television system gives the student a means of recording and presenting his talks in a finished, repeatable and professional manner. The system consists of a cartridge motion-picture camera (8mm) with sync sound, a stop-motion projector and that connected to one or more video-tape recorders and monitors.

The student wishing to make a presentation films and records the patient, laboratory reports, microscope slides, charts and written material, and perhaps the patients' environments and any other pertinent material. After processing, the original film is transferred to video tape with its sync sound. All editing, additions and corrections are handled on video tape, saving the expense of work prints and allowing the quickest way of viewing. Since the video tape has both sound and picture, the problem of the student's handling both the sound and picture is avoided. Most video-tape recorders also have two sound records, which provides added flexibility. After the student has finished with his editing and preparation, the presentation is ready as a video tape with sound record. This allows a coherent presentation that can be repeated at will.

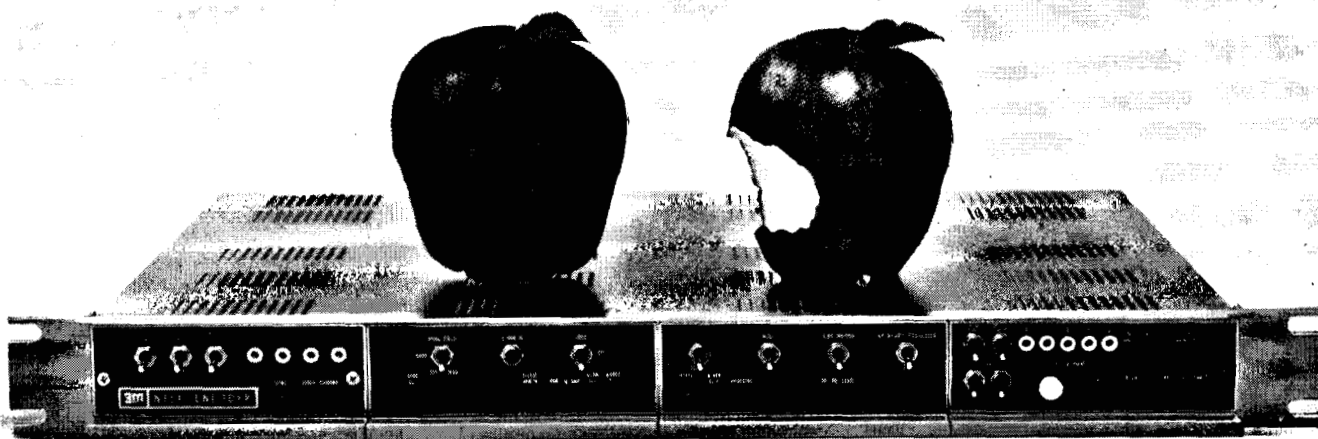
This system has two uses. The first is as a practice media for the medical student. Using video tape provides the student immediate feedback and allows corrections to be easily made. The second use is making a permanent record to be played on a cartridge movie projector by going back to the original film without having to make a video to film transfer.

It is best for the student to work with a television system for editing; if this is too expensive or the equipment is not available, he can edit in the conventional manner and use the TV system only to add sound. He can overcome shortcom-

An abridgment of a paper presented on April 24, 1969, at the Society's Technical Conference in Miami Beach by Neil L. Reznikoff, Mt. Sinai School of Medicine, 1428 Madison Ave., New York, NY 10029.

(The paper was received on March 28, 1969.)

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ings of film or television by using the other media.

**Acknowledgment:** The author is grateful for assistance received from Professor G. C. Rust, Richmond College of The City University of New York.

### Discussion

**Maxwell A. Kerr (Consultant, Educational Technology):** Your brought out the difficulty of using audio tape with super 8 film and the editing situation because of the difficulty of maintaining sync. I recall some of the efforts of using audio tape with 16mm perforations to solve that very problem and I wonder what was really wrong with that idea. (There was a paper, for instance, by Warren R. Isom, "Synchronized Recordings on Perforated Tape," *Journal*, 63: 26-28, July 1954.)

**Mr. Reznikoff:** There is nothing wrong with that system; there is the problem of having the equipment available, then how to make the transfer. The odd thing is the video-tape recorders are becoming very accessible and very easy to use. But you don't have color and to make a final presentation you are at a disadvantage. With super 8 you edit, for instance, combining materials. I am trying to take a system that uses both

interchangeably in a way that any person can work. To make a major production you can go either to 16mm or make the equipment. This is not for the average person. Another example of this situation is using overhead projectors—fairly simple and very worthwhile, but when it comes down to making the materials and generating the whole presentation, especially for repeat performances, there is the same problem. You only go so far.

**William L. Millard (University of Southern California):** Is the objective of the system you are proposing for the purpose of student information gathering and playback for their use? Is it not intended for major productions?

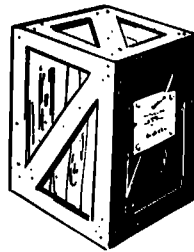
**Mr. Reznikoff:** It is also intended for faculty use. But if there is a great enough desire, we either go to 16mm or they will get the quad machine. The system with super 8 is to fill the gap between a major production and making a small production in a useful way.

**Mr. Millard:** Is it the intent of these productions that they be short lived? Is the material to be used once or twice and then thrown out? Is this part of the cost factor involved?

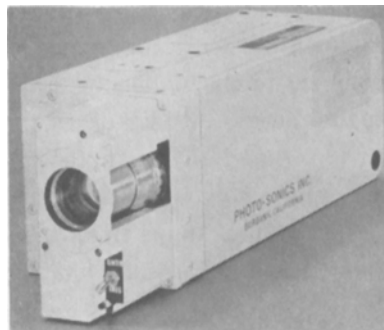
**Mr. Reznikoff:** Certain of it would have a short life. Other parts, such as a series of microscope slides, are worth having on a cartridge so they can be reviewed and be a permanent file.

## new products

(and developments)

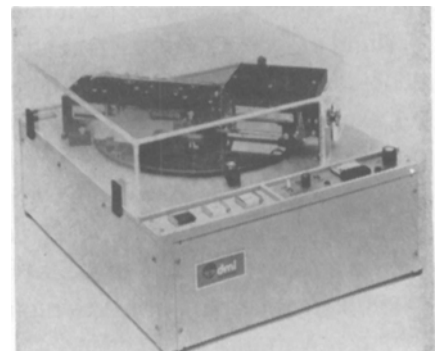


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Further information about these items can be obtained direct from the addresses given. As in the case of technical papers, the Society is not responsible for manufacturers' statements, and publication of these items does not constitute endorsement of the products or services.



The 16 mm 1MB high-speed instrumentation camera has been announced by Photo-Sonics, Inc., 820 South Mariposa St., Burbank, CA 91506. The camera has an

iris exposure control attachment which provides for dual iris and shutter exposure control over a wide range of *f* stops. The automatic exposure control (AEC) is completely contained in the camera and utilizes scene brightness, frame rate, *f* stop and film speed input signals to energize both servo mechanisms providing for proper exposure. The system automatically cycles between iris and shutter whenever the limits of each are reached. The camera accepts 100-, 200- or 400-ft daylight loading magazines with frame rates of 24, 32, 48, 64 and 200 frames/s. The camera weighs less than 12 lb with 100-ft magazine and film. The price is \$5,000 for the camera (less magazine and lens).



The IDR-100 Instrumentation Disc Recorder, a magnetic disc recorder especially designed for instrumentation use, has been announced by Data Memory Inc., Instrumentation Div., 1255 Terra Bella Ave., Mountain View, CA 94040. The 45-lb self-