section reports

Elements of Automation

At the November 1956 meeting of the Hollywood Section of SMPTE, which was held at Paramount Sunset Corp., November 20, Phil Adamson, Senior Staff Engineer, Hughes Systems Development Laboratories, Hughes Aircraft, gave a tutorial talk on automation. Mr Adamson's talk was fundamental in nature and was presented on a relatively nonengineering level in order to show the simple principles of computers and how they can save time and labor. Following Mr. Adamson's presentation, a panel discussion was held on how automation can be adapted to motion-picture problems in the sound departments, laboratories, special effects departments, and other phases of motion-picture production and exhibition.

The panel consisted of Norwood L. Simmons, Moderator; Gordon E. Sawyer; John P. Livadary; Sidney P. Solow; Harlan L. Baumbach; Ub Iwerks; and L. B. Abbott.

Each of the panel members gave briefly his understanding of the influence which automation might have on the functions of his particular department in a studio or laboratory. An attempt was made to explore the ways in which automation can help the industry. If it is arbitrarily assumed that automation must do a job better, faster, or cheaper, then if at least one of these three objectives is not achieved there is no logic in attempting to foist any of the processes covered by the term "automation" on motion-picture production management. It is highly questionable whether automation has a place in many of the departments in a motion-picture studio. It is believed that efforts at automation in some departments have resulted in higher costs to studios. What is most needed is a fair appraisal of this latest offspring of our permanent industrial revolution.

Some examples of possible uses for automation that were explored by the panel are:

(1) The use of automatic focusing devices in motion-picture projection. By feedback of sharpness information a theater projector could be made self-focusing. There is a great need for this today with the strains which wide-screen processes have imposed on the film and the optical characteristics of a motion-picture projection system.

(2) A storage device could be made to program the printing or projecting (optical printing) of a negative which must be cropped unsymmetrically, scene to scene, because it was produced or photographed at one aspect ratio and will be projected at another. Such a negative could be programmed on a punched card or storage device, and then release-printed automatically.

(3) The need for monitoring light output in printers, and in any other equipment that relies on constancy of illumination, is great. Automation in the simple sense of feedback devices could be put to work here.

(4) Automatic editing devices were discussed at some length. Experience with these devices has pointed up the fact that motion-picture production is not an assembly-line operation and this form of automation may be used correctly only in select cases.

(5) Some devices, such as automatic titrators and automatic flow-control devices, are in use now in motion-picture laboratories for chemical control.

One challenge to the automation experts is "product inspection," which has been called "astonishingly unmechanized." In the motion-picture industry product evaluation is mechanized by the use of loudness meters to measure laughter and other audience reaction at previews. This is a very simple instance. Thus far, there has been no successful method devised for mechanizing film inspection in a laboratory. The presence of scratches and unwanted spots can not be distinguished, by integrating devices or other mechanical control devices, from the subject matter itself.

A few quotes from the meeting:

"Automation ranges from coffee-vending machines to intercontinental missiles."

"It has been said that to use a high-speed digital computer in order to centralize all control features of certain processes, such as oil refining, under the present conditions of instrumentation and chemical understanding, would be like using a Cadillac to move trash. Can this statement be applied likewise to an effort to mechanize motion-picture production at the present time?"

"A servomechanism, an element of a closed-loop control system, is a sort of mechanical muscle."

"There have been Congressional hearings which have resulted in vague warnings that automation may upset the economic balance of our industry."

"Fans of 'automation' have been anticipating an early return to The Garden of Eden, where man got his living without a sweaty brow."

The moderator concluded the panel discussion with the following statement:

"A picture of the future as influenced by automation, and as has been drawn by some experts in the field, would be as follows: Fewer men will stand behind machines. More maintenance men will be needed than heretofore. Also, since automatic machinery will do only what it is told to do, it will always have to be programmed. (Boeing engineers call high-speed computers 'supersonic morons.') The emptier the factory floor becomes, the more crowded the computing room, the laboratory, the engineering department. This trend will require a broadening and deepening of the entire educational system. It will, we hope, liberate man from routine tasks and give him more time for the creative enjoyment of life."—*Norwood L. Simmons*, Moderator, c/o Eastman Kodak Co., 6706 Santa Monica Blvd., Hollywood 38.

The San Francisco Section met December 11 at the Stanford Research Laboratory with an attendance of 20. Four experts dis-

cussed the subject of "Electrostatic Duplicating," a promising new technique for recording pictures and printed matter having an ultimate resolution capability comparable to that of slick magazines (120 lines/in. or 1800 lines TV resolution). The speakers were Dr. Philip Rice, William Evans, Howard Bordon and Wayne Crewes, all of the Electronic Devices Lab. at the Stanford Research Institute. This system will be capable of reproducing three 8½ × 11 in. sheets of paper each second, or for computer use it is capable of read-out speeds of 10,000 characters each second. It utilizes a unique cathode-ray tube having closely spaced wires sealed into its face in a straight line. The ends of the wires are charged by an electron beam which can be modulated with video information. Treated paper moving across the face of the tube acquires a charge pattern which in turn collects finely divided powder or dye. The resulting image can be permanently fixed. This device was developed for the A. B. Dick Co. for a high-speed duplicator not requiring a master. Its ultimate usefulness will probably transcend this application since it is the highest speed facsimile system known to be under development—*R. A. Isberg*, Secretary-Treasurer; Consulting Television Engineer, 2001 Barbara Dr., Palo Alto, Calif.

The San Francisco Section met January 15 at the Walter Ball Film Labs with an attendance of 27. Speakers were W. A. Palmer of W. A. Palmer Films, Inc., who told of the early work of Walter Ball. Joe Rucker, a freelance newsreel camerman, told of his experiences during 45 years as a newsreel cameraman. The meeting was planned to honor those men who have been active in the field of motion-pictures since the early days.

Mr. Palmer showed a film, produced by him, which traced the history of motion-picture photography in the San Francisco area. Depicted in the film were the early works of Walter Ball, C. R. Skinner and the speaker. He also displayed a 35mm camera made by Ball about 1910. The 45-year-old camera is still in perfect operating condition and is equipped with the latest mattes such as the diamond shape, binocular, and the keynole shape. He also described processing machines, mike booms and printers invented or developed by Ball.

Joe Rucker who, as he said, "worked in the theatrical newsreel game from its start to finish," has covered major news events throughout the world. He covered Admiral Byrd's first expedition to the South Pole, the Ford Peace Mission to Europe in 1915, the opening of the Panama Canal and other important events.

After the meeting, Mr. Ball conducted a tour through his processing laboratories and machine shop where he displayed an unusual animation stand he had built.—*Werner H. Ruhl*, Secretary-Treasurer, 415 Molimo Dr., San Francisco 27.

The Rochester Section met January 17 at the Dryden Theater, Eastman House, Rochester, N.Y. Robert Shoberg, Wollensak Optical Co., gave an historical résumé of the development of rotating prism cameras for motion-picture photography and concluded his talk with two 16mm sound

films which displayed the versatility of these cameras. The address was followed by an informal discussion. Thirty three persons were present, the comparatively small attendance being attributed to the sub-zero weather that on the date of the meeting broke a 25-year record.—*A. E. Neumer*, Secretary-Treasurer, 147 Dale Rd., Rochester 10, N.Y.

The Chicago Section met December 13 at the Prudential Building with an attendance of 35. The meeting was opened with a film, *The Chicago Tribune All Star Game*, produced by Douglas Productions, Chicago, and narrated by Jack Brickhouse.

The first paper, "A 16mm Process Control Sensitometer," was presented by George Colburn, Geo. W. Colburn Laboratory, Chicago. This paper described a sensitometer of the intensity-scale type, exposing a full 16mm frame for each step. The instrument can be used with black-and-white or color film. A model was available for inspection. The second paper, "A Transmission-Reflection Color Densitometer," presented by John A. Maurer, W. M. Welch Scientific Co., Chicago, described a new process control densitometer for measuring full-frame 16mm or 35mm areas. A model of the instrument was available for inspection.—*H. H. Brauer*, Secretary-Treasurer, c/o Bell & Howell Co., 7100 McCormick Rd., Chicago, 45.

A Canadian Section of the Society of Motion Picture and Television Engineers was authorized by the Board of Governors at the meeting held at New York, January 25, following presentation of a petition to the Board from members living in Canada. The new section, with headquarters in Toronto, will hold its first technical meeting following completion of the organizational arrangements, and will include 180 members now living in Canada.

In addition to approval of the Canadian Section, the Board authorized the establishment of two new student chapters, one at City College, New York, and the other at the Rochester Institute of Technology. The new chapters are under the direction of Faculty Advisors Martin Rich (CCNY) and Hollis Todd (RIT). The Society has at present a student chapter at New York University and a chapter at the University of Southern California.

A survey conducted by the Engineers Joint Council shows that salaries of engineers have generally lagged and are not keeping much ahead of the pay of industrial workers, carpenters, plumbers and bricklayers. The Council, representing 13 engineering societies, conducted the survey covering the salaries of 93,000 engineers. Data were obtained mainly from the payroll records of 350 companies. Prof. Edward B. Peck, Rutgers University, presented an analysis of the data to the Council at a meeting held January 17 at the Statler Hotel, New York. The report showed that a typical engineer in mid-career earns $10,000 a year, but if his salary had kept pace with industrial increases since 1939, he would be earning $16,000. "This is not an attractive return on the investment for an engineering education," Dr. Peck observed.