HIGHLIGHTS OF THE FALL CONVENTION

HOTEL PENNSYLVANIA, NEW YORK, N. Y., OCTOBER 16–19, 1939

One of the outstanding features of the Conventions of the Society is the great variety of subjects covered in the papers sessions. This is especially so with regard to the 1939 Fall Convention just ended, at the Hotel Pennsylvania, New York, N. Y., October 16th to 19th, inclusive. The Convention was unusually well attended, the number of paid registrations being greater than at any convention held heretofore either on the East Coast or the West Coast. The attendance at the individual sessions was also unusually good, there being at no time fewer than 100 persons at any session, and, in several cases, the attendance reached 250 or 300 persons.

Mr. J. I. Crabtree opened the Monday morning session. Then, following reports of several convention committees, the delegates were formally welcomed to the Convention by President Williford, who occupied the chair for the remainder of the session.

During the business part of the program, several amendments of the By-Laws were proposed and acted upon, and announcement was made of the results of the election of officers for 1940. These results were as follows:

***Engineering Vice-President*	D. E. HYNDMAN
***Financial Vice-President*	A. S. DICKINSON
**Secretary*	J. FRANK, JR.
**Treasurer*	R. O. STROCK
***Governors*	A. N. GOLDSMITH
	H. GRIFFIN
	A. C. HARDY

* Term expires December 31, 1940.
** Term expires December 31, 1941.

After an interesting discussion of "The Problem of Distortion in the Human Ear," by S. S. Stevens of Harvard University, a very interesting demonstration of "High-Speed Motion Pictures of the Human Vocal Cords" was presented by J. Crabtree and D. W. Farnsworth of the Bell Telephone Laboratories. A 16-mm motion picture of the vocal cords in action was projected upon the screen, illustrating the movement of the cords during the emission of various kinds of sounds.

The Informal Get-Together Luncheon was held at noon of this day (Monday, October 16th). Seated at the speakers' table with President Williford were the Honorable Fiorello H. LaGuardia, Mayor of the City of New York; the Honorable Bruce Barton, Congressman from New York; Mr. W. G. Van Schmus, Managing Director of Radio City Music Hall; Mr. E. P. Curtis of the Eastman Kodak Company; Messrs. F. Speidell and W. Brooks of Audio Productions, Inc.; Dr. A. N. Goldsmith; Mr. S. K. Wolf; and Mr. D. E. Hyndman.

After introducing the officers-elect, listed above, President Williford introduced Mayor LaGuardia, who discussed at some length his hope and wish that the motion picture industry would some day move from Hollywood to New York. Brief addresses were then delivered by Messrs. Barton and Van Schmus. About 250 persons attended the luncheon.

The succeeding afternoon included a group of five papers on widely varying subjects. The interesting paper by H. Roger described the vast territory covered by the motion picture as an aid in scientific research. Emphasis was placed on the application of the motion picture to biological research, and some remarkable motion pictures were shown of the cellular activities of living tissues, magnified some 200 times on the film. A valuable paper on the subject of "Photographic Duping of Variable-Area Sound" was presented by F. W. Roberts and E. Taenzer of the Ace Film Laboratories, in which a method of duping was evolved that would satisfy a number of criteria for making duplicate sound negatives to be used in replacement of damaged original negative sections. The paper included a cross-modulation treatment of the subject and a film demonstration.

Mr. S. L. Reiches of the Case School of Applied Science, Cleveland, discussed the subject of "Volume Distortion" from the point of view that despite the fact that linear recording and reproducing systems may be used in sound recording, experience shows that the sound reproduced by the system does not exactly represent the original recorded sound. Mr. Reiches' discussion revolved about the thesis that the discrepancy was due to the ear sensitivity to frequency as a function of loudness.

The afternoon closed with a brief description by W. A. MacNair of the Bell Telephone Laboratories of the sound equipment to be seen by the delegates at the Bell Telephone Exhibit at the New York World's Fair.

About 400 delegates and guests of the Society convened in the auditorium of the Chrysler Exhibit at the Fair at 8 o'clock, at which time Mr. J. A. Norling presented a discussion of the principles involved in producing three-dimensional motion pictures, following which was projected a film in which stereoscopic effects were produced by using polaroid filters on the cameras and viewing spectacles for separating the stereoscopic pairs successively for each eye of the viewer.

The delegates then paid a visit to the RCA Exhibit where a demonstration of television was in progress, and then the group proceeded to the Kodak Exhibit, where Mr. F. Tuttle presented a paper describing the automatic slide projectors installed in the building. The hall where the exhibit was held was semicircular in shape, or approximately so, and arranged on the concave surface of the wall were eleven large screens upon which were projected in rather quick succession groups of Kodachrome still pictures by eleven specially built projectors. The eleven screens on the concave surface were contiguous, thus allowing the simultaneous projection of eleven pictures in a beautiful panorama effect.

After the projection of the pictures, the delegates were permitted to inspect the projection room and the equipment therein.

The last event of the evening was a visit to the American Telephone and Telegraph Exhibit where a demonstration was given of two-channel recording and reproduction with steel tape, in which demonstration a number of the delegates participated, by having recorded on the steel tape their conversations held

on the stage set up for the purpose. At the end of the conversations, the participants were replaced by dummy figures, and the steel tape played back. The stereophonic set-up resulted in a very satisfying facsimile of the voices.

The delegates were also permitted to have tests made of their aural acuity by means of special tone-producing machines.

A demonstration was also given of the Voder, which is a machine for synthesizing speech by combining in their proper sequence varying levels of selected tone and noise frequencies by means of manual and foot controls.

The morning of Tuesday, October 16th, included a report of the Laboratory Practice Committee by D. E. Hyndman, Chairman, which discussed in detail the possible design of motion picture processing laboratories of several footage capacities. Although the report was not presented in full, it will, when published in the JOURNAL, represent the most comprehensive treatise on the subject available up to the present time.

The morning concluded with a discussion by L. L. Ryder of Paramount Studios, Hollywood, on the subject of coöperation between story construction and sound, and a paper by R. Kingslake of Eastman Kodak Company on the subject of 16-mm and 8-mm lenses for motion picture equipment.

The evening of Tuesday was devoted to a joint meeting with the New York Electrical Society in the auditorium of the Engineering Societies Building, the speaker being Mr. Homer Dudley of the Bell Telephone Laboratories. In these Laboratories, Mr. Dudley and his associates have developed electric circuits for the artificial production of speech. One form of the device is itself voice-controlled, thus differing fundamentally from the Voder of the World's Fair which is controlled by keys and pedals. It has been christened the "Vocoder" or "voice coder."

The speaker demonstrated many of the startling effects which result when the code is varied. In this way the Vocoder created sounds quite other than those used by the person speaking. Cadences became monotones, rising inflections were turned into falling inflections, a vigorous voice became a quaver, and a single voice accompanied itself at any desired musical interval—thus converting a solo into a duet. Also non-speech sounds were coded into intelligible speech and instrumental music into vocal music.

There were present at the meeting about 250 SMPE delegates, in addition to the representation from the New York Electrical Society.

On the morning of Wednesday, October 18th, a symposium was held on projection, with Dr. Alfred N. Goldsmith acting as Chairman. The symposium included eight papers on various phases of projection. One of the most interesting of the group was a paper by B. Schlanger on the subject of "Motion Picture Auditorium Lighting." The report of the Projection Practice Committee traced the influence upon the industry of the Committee's projection room plans, first evolved in 1930, and subsequently revised several times. Announcement was made to the effect that these plans were proving of considerable importance to a number of States in drafting their regulations for constructing and operating motion picture projection rooms, and were also being used as a basis for insurance ratings by an insurance rating bureau in New England. They also provided the basis for the recent revision of the regulations of the National Fire Protection Association, adopted at Chicago last May.

Wednesday afternoon contained an assortment of papers on motion picture carbons, television control equipment, the transmission of animated line images, sound recording, and the production of synthetic reverberation. The paper by A. M. Skellett describing a narrow-band transmission system for animated line images demonstrated a method of converting line drawings into photographic sound records, in the form of variable-area sound-track, and the reconversion of these records into line images on the fluorescent screen of a cathode-ray tube. G. L. Dimmick described in considerable detail methods of controlling wave-shape and amplitude characteristics in variable-density recording by the use of the so-called "penumbra system" of varying the intensity of the recording light-beam and the control of this intensity by means of variously shaped masks on the penumbra vane or mirror.

Messrs. P. C. Goldmark and P. S. Hendricks of the Columbia Broadcasting System demonstrated a method of introducing reverberation into "dead" records by means of a rotating disk, the periphery of which is coated with a fluorescent material. Part of the sound current coming from the original source, either disk, film, or microphone, is caused to vary the intensity of a light-beam incident upon the fluorescent edge of the disk. Around the periphery of the disk are located a number of sound pick-up devices so located as to provide various time-intervals between the point at which the fluorescent material is activated and the points where the sound is picked up again. The sound or sounds thus picked up are then mixed with the original sound signal in the required proportions, and reproduced in the usual manner.

Mr. C. R. Daily of the Paramount Studio, Hollywood, presented a paper on the "Improvement in Sound and Picture Release through the Use of Fine-Grain Film," presenting data on some of the problems encountered in the use of such film for original sound negative, dubbing prints, release negative, and release prints. The sound quality is improved due to the reduction in noise and modulated noise effects which partially mask the signal when emulsions of the coarser grained positive type are used. The picture image on such fine-grain films was warm-toned as distinct from the usual blue-black image, and a vote of the members present indicated an approximately 50–50 preference for the two tones.

On the evening of Wednesday, October 18th, was held the semi-annual banquet and dance of the Society, in the Grand Ballroom of the Hotel Pennsylvania. The banquet was attended by approximately 250 persons. President Williford introduced the officers-elect for 1940. Seated at the speakers' table were President and Mrs. Williford; Mr. and Mrs. Frank Meyer of Paramount Pictures, Inc.; Mr. and Mrs. Hyndman; Dr. L. A. Jones, recipient of the 1939 Progress Medal; Dr. A. N. Goldsmith, citationist for Dr. Jones; Dr. H. T. Kalmus, recipient of the 1938 Journal Award; Mr. E. P. Curtis, citationist for Dr. Kalmus; Mr. G. F. Lewis, Technicolor, Inc.; Mr. E. G. Hines, General Theatre Equipment Corporation; and Mr. J. I. Crabtree, Editorial Vice-President.

After a few words of welcome by the President and the introduction of the officers-elect for 1940, the citations of the work of Dr. Jones and Dr. Kalmus were read by Dr. Goldsmith and Mr. Curtis, respectively. (These citations will be published in the next issue of the JOURNAL.) The awards were made by President Williford and appropriate responses delivered by the recipients.

The banquet concluded with dancing and entertainment.

The morning of Thursday, October 19th, included an assortment of papers on 16-mm applications, the report of the Non-Theatrical Equipment Committee, a time-lapse outfit adapted to the 16-mm Cinekodak, a sound-track center line measuring device, and the development and application of the triple-head background projector in the Warner Brothers First National Studios at Burbank, California.

Messrs. F. Ehrenhaft and F. G. Back presented a paper discussing the optical requirements of non-intermittent motion picture projectors, and gave a demonstration of a 16-mm non-intermittent projector designed in accordance with the principles discussed in the paper. The sound-track center-line measuring device described by F. W. Roberts and H. R. Cook, Jr., of the Ace Film Laboratories, Brooklyn, permits the measurement of the position of a sound-track center-line within a ten-thousandth of an inch. Direct readings may be taken with the instrument in ten seconds.

Thursday afternoon (October 19th) was devoted to a sound session. Mr. E. S. Seeley of the Altec Service Corporation, New York, discussed in considerable detail the characteristics of warbled frequency films, pointing out that the warbled signal is a frequency-modulated signal and may be represented by a carrier frequency and a series of side-frequencies, all of which are steady and discrete. The frequency structure of a warbled film in current use is calculated and shown graphically.

Dr. J. G. Frayne of Electrical Research Products, Inc., Hollywood, presented a report of progress on the adaptation of fine-grain films to variable-density sound technics. This is a report of a committee of representatives of twelve organizations on the West Coast, set up for the study of the problem, with Dr. Frayne as Chairman.

Messrs. R. O. Drew and E. W. Kellogg of RCA Manufacturing Company, Camden, discussed by means of a series of oscillograms, the wave-shapes of spoken sounds, showing in particular the build-up of the sound-wave from the instant the sound is started. Messrs. D. J. Bloomberg and C. L. Lootens of Republic Productions, Inc., Hollywood, discussed the progression of the industry from standard variable-area types of recording to Class *A* push-pull and finally to Class *B* push-pull, indicating that this transition was primarily motivated by an appreciation of the inherent advantages of the push-pull types of recordings and an ability to perfect processing and recording controls necessary to realize the finer qualities of the Class *B* push-pull method.

A tape splicer for film developing machines was described and illustrated by Messrs. J. G. Capstaff and J. S. Beggs of the Eastman Kodak Company, and Mr. A. L. Holcomb of Electrical Research Products, Inc., Hollywood, analyzed a new motor-drive system for motion picture studios, which will operate on either alternating or direct current and provide either running interlock or interlock from start. The multiduty motors described are basically d-c motors with the commutators tapped for three-phase interlock as used in previous d-c interlock systems.

ACKNOWLEDGMENTS

The Society wishes to acknowledge its gratitude to the large number of persons and companies who collaborated in providing the various facilities of the Convention and, in fact, making the Convention possible.

The general facilities of the Convention were arranged by Mr. W. C. Kunzmann, *Convention Vice-President:* Mr. J. I. Crabtree, *Editorial Vice-President:* Mr. D. E. Hyndman, Chairman of the Atlantic Coast Section and Chairman of the Local Arrangements Committee; Mr. Julius Haber, Chairman of the Publicity Committee; Dr. A. N. Goldsmith, Chairman of the Banquet Committee; Mr. S. Harris, Chairman of the Papers Committee; and Mr. L. A. Aicholtz, Chairman of the West Coast Branch of the Papers Committee.

Messrs. H. Griffin and G. Friedl, Jr., are to be thanked for their efforts and labor in providing the projection and sound-reproducing equipment used at the meetings. The Society extends its thanks also to Mrs. O. F. Neu, Chairman of the Ladies Committee, for her efforts in arranging an interesting program for the ladies attending the Convention.

Among the companies who contributed in equipment and service to the Convention are the following: National Carbon Company, Bausch & Lomb Optical Company, National Theater Supply Company, International Projector Corporation, Raven Screen Corporation, Bell & Howell Company, Local 306, IATSE; the Management of the Hotel Pennsylvania; and the New York Convention Bureau.

The Society is indebted also to the Chrysler Motor Corporation, the RCA Manufacturing Company, the Eastman Kodak Company, and the American Telephone and Telegraph Company for making their exhibits at the World's Fair available to the Society on Monday evening of the Convention; also to the Capitol Theater, Paramount Theater, Radio City Music Hall, Roxy Theater, and Warner's Strand Theater for the passes issued to the delegates to the Convention during the week of the meeting; to Mr. W. G. Van Schmus and the Radio City Music Hall for the entertainment at the banquet.