



Get-Together Luncheon, dais left, from left to right, Lewis A. Bernhard, Allen Hilliard, H. Theodore Harding, William G. Hyzer, Joseph T. Dougherty, Max Beard, Rodger J. Ross, and Ethan M. Stifle.

102nd Semiannual Technical Conference Chicago, September 17-22

The 102nd SMPTE Conference in Chicago was an outstanding event from the points of view of the quality of papers of the technical program, the participation of exhibitors at the exhibit, and most importantly, the hard work and enthusiasm of the local people in putting the Conference together.

The Conference was exceptionally well organized, which reflected the efforts put in by the Chicago people. The papers program, under the chairmanship of Hans C. Wohlrab, Bell & Howell, contained 74 papers in 12 sessions. The program was praised for its high interest level, while maintaining an equally high technical level.

General arrangements for the Conference were handled by Allen Hilliard, Geo. W. Colburn Laboratories, Chicago, and it was he and his committeemen who were responsible for the smoothly running Conference. The Equipment Exhibit, too, was well planned and executed, and it ranked as one of the Society's more interesting and comprehensive. Denis Howe, Wilding, Inc., Chicago, was in charge of the exhibit.

Registration began Sunday afternoon. In spite of the large numbers registering, the Registration Desk was rarely jammed up, possibly owing to the large advance registration. Sunday evening there was a special screening of the short, *Our Heritage*, plus the pre-release feature motion picture, *Eldorado*.

Sessions and committee meetings began Monday morning, with the Conference really gaining momentum at Monday noon with the Get-Together Luncheon. At the Luncheon, SMPTE



SMPTE President G. Carleton Hunt presiding at Get-Together Luncheon.

President G. Carleton Hunt dispensed with the usual President's Remarks because of the length of the luncheon's program. Hunt presented the Society Awards (described later in this report) and introduced the luncheon's guest speaker, H. M. Schurmeier, Manager, Mariner-Mars '69 Project, Jet Propulsion Laboratory, Pasadena, Calif. Schurmeier spoke on "The Role and Applications of TV in the Space Program." Schurmeier's speech is excerpted below.

Get-Together Luncheon Speaker:

H. M. Schurmeier

A lunar landing and a storm that may affect your weekend seem to have little in common. The information about these events, however, comes to us by television



Get-Together Luncheon Guest Speaker H. M. Schurmeier.

originating aboard spacecraft developed, launched, and controlled by the National Aeronautics and Space Administration (NASA).

Surveyor V successfully landed on the Moon on September 20, 1967. The landing operation, difficult at best, was given dramatic suspense by a pressurization-gas leak in the rocket braking system. The difficulty was analyzed during the flight and overcome by a precisely timed deviation from normal operations in which the braking flight down to the Moon was delayed. Safe landing was initially known from telemetry values. It was fully confirmed by television pictures showing the spacecraft's feet on the lunar surface (Fig. 1). Later pictures surveyed the landing area and monitored tests of the surface, providing valuable information to Apollo, the manned lunar landing project.



Get-Together Luncheon, dais right, from left to right, G. Carleton Hunt, H. M. Schurmeier, E. B. McGreal, William T. Wintringham, Richard J. Goldberg, Wilton R. Holm, Richard S. O'Brien, and Hans C. Wohlrab.



Fig. 1. Surveyor V's foot No. 2 on the lunar surface, inside a 30-ft-diameter crater in Mare Tranquillitatis. The mirror hood and TV camera lens are visible at lower right of picture. (Jet Propulsion Laboratory)

Daily weather forecasts seen on television news programs in a number of cities make direct use of cloud cover photographs. Partly substituting for hand-drawn weather maps, these television pictures are transmitted from ESSA (Environmental Science Services Administration) or ATS (Applications Technology Satellite) orbiting cameras to NASA ground stations, and then relayed to weather analysts and users.

These are only two examples of the role and application of television in the space program. For television technologists, the space program is one of a number of vital new challenges. It is clear that the technology is applying itself with vigor to this new field. To the space program, television is one of the essential supporting disciplines. There are a number of functions similar to television in the space program. The astronauts carry color cameras and shoot still and motion pictures as part of the mission. Lunar Orbiter used film cameras in space and scanned the negatives, developed on board the spacecraft, for transmission to Earth. Returning the film to Earth for processing is also possible. Finally, there are photometers, radiometers and spectrometers which do not define the visible scene, but read brightness or spectral distribution and send that information back.

Here we shall discuss only television, in which the visible scene is converted to an electrical image that is scanned and converted to an electrical signal. This includes mechanical-scan and spin-scan systems resembling the very early ground TV cameras and currently used for the ATS weather pictures. We shall not talk about TV relay by communications satellites: to COMSAT or Relay or Syncom, TV is just another signal.

TV's Two Roles in Space

Television has two basic roles in the space program. The first is as an instru-

ment that performs a direct role in fulfilling a primary mission objective. The second is like the general role of television: a medium of communication. This communication role is dual, in that it is both a vital link in executing a mission and an information link to the public — the taxpayer.

Eyes of the Spacecraft

A television camera on a spacecraft can be the most versatile, wide-ranging, exciting, and generally useful instrument on the mission. Television cameras have brought us real time weather information on our own planet. They revealed the rays on the Moon to be made up of chains and clusters of secondary craters. They showed how the lunar soil behaves when depressed by a footpad or dug into with a small scoop. They revealed the surface of Mars to be cratered like the Moon (Fig. 2).

So far, direct use of "sticky image" vidicons has dominated spacecraft television. Each Ranger spacecraft had six cameras to provide varied coverage and rapid sequencing. Surveyor uses a single camera with zoom lens and moving mirror to cover a wide field in a series of pictures. Mariner IV carried a simple single camera, with a tape recorder to store the picture data until they could be transmitted over a distance of 150 million mi at $8\frac{1}{2}$ bits/s, about 8 h/picture. Mariner Mars 1969 will fly a two-camera system, wide-angle and high-resolution, with an increased picture format, expanded data storage, and greatly increased transmission rates. The satellite series has included Tiros, Nimbus, ATS and ESSA, with increasingly sophisticated TV coverage of weather and Earth resources.

In future programs, planetary orbiters will someday carry the Earth-satellite type of coverage to other planets; Voyager-class landers will duplicate Surveyor operations on other planets; and we can hope for camera-carrying flyby missions like Mariner IV to Mercury and Venus and the outer planets. In the comparatively near future, the Apollo Project will put television cameras in the hands of the astronauts on the Moon as well as monitoring their activities.

Television has great advantages as an observer. It can "boldly go where no man has gone before," as they say on *Star Trek*, because you don't have to get it back. In the Ranger missions, the spacecraft and its television system hit the Moon at 6,000 mi/h, still transmitting pictures. The last picture in each mission was a partial picture which the vidicon was just reading out as it hit.

Those partial pictures had been exposed a fraction of a second before, and we still got them back. This fast response, characteristic of TV, is one reason we used it on Ranger. It means you can get the data quickly, or run a semiclosed loop

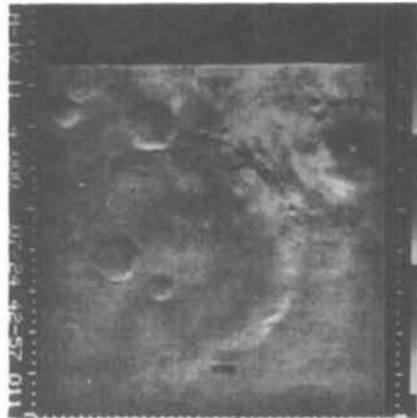


Fig. 2. Eleventh picture of Mars obtained by Mariner IV in July, 1965. The terrain shown measures 170 by 150 mi, is in a light region between Mare Cimmerium and Mare Sirenum (Jet Propulsion Laboratory)

remote control operation in space with pictures to guide you, or send back a lot of pictures in a short time.

The vidicon output is an electrical signal from a calibrated source. It can be processed electronically in various precisely controlled ways. Each picture element on the Mariner IV vidicon was photometrically calibrated. The statistically demonstrated accuracy was about two-tenths of one per cent. This compares with two or three per cent for film, because of grain structure. In other words, there is no grain noise in the vidicon.

An obvious advantage of TV is that you never run out of film. The three Ranger missions produced over 17,000 TV pictures; Surveyor I and Surveyor III about the same. Tiros I, the first global TV weather satellite turned out 22,500 pictures in 1960 — later Tiros satellites are still at it. As soon as the picture is read off the vidicon screen and the old image erased, a new picture can be exposed.

A few disadvantages of TV might be mentioned here. The definition tends to be poorer than film or direct viewing, partly because of special data considerations — for example, the Mariner IV pictures were formatted into only 200×200 -element frames because of the very limited communication rate. The Lunar Orbiter pictures, and the color photographs taken by Gemini astronauts, are much finer-grained and contain orders of magnitude of more bits of data. Another limitation of the conventional vidicon is that of sensitivity. However, the development of the Return-Beam and Secondary Emission vidicons will go a long way to remove this limitation.

Communications Television

Before discussing the applications of spacecraft television, let us examine the other basic role of TV in the space program: that of a communications medium. This is used from spacecraft to Earth,

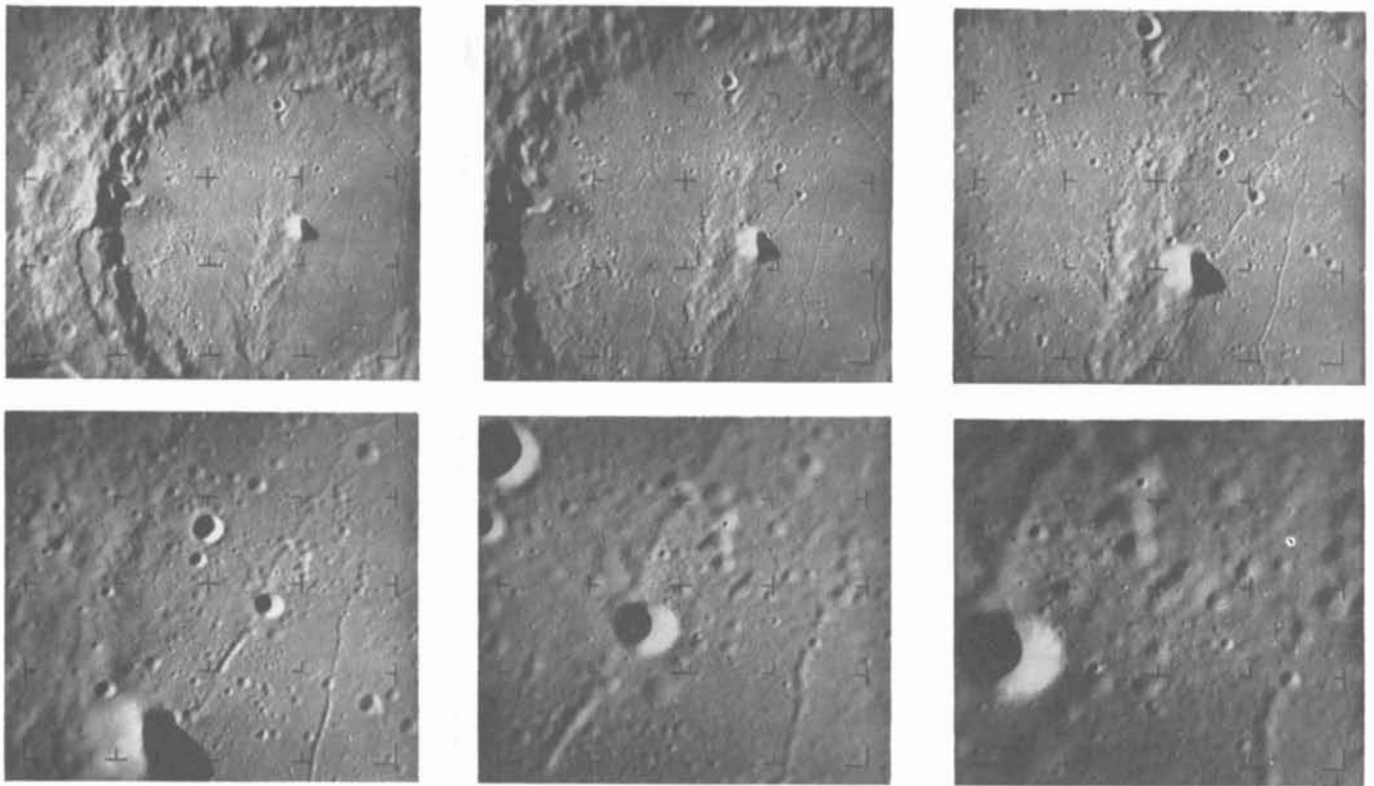


Fig. 3. Series of TV photographs returned by Ranger IX's wide-angle camera A during the last 3 min of its plunge into the crater Alphonsus. The impact point is visible in each picture near the center of the right side. (Jet Propulsion Laboratory)

as a special kind of telemetry; at the Cape and the Space Flight Operations Facility, as a special kind of intercom; and for communicating with the people, as a special kind of technical report.

The TV camera on Surveyor is not just a scientific instrument. It is intended to find out or verify some performance data on the landing: how far into the lunar soil the spacecraft has penetrated, how level the spacecraft is, and so on. Also, it is possible to locate the landing site fairly accurately by observing surface features and correlating these with maps or Lunar Orbiter photographs of the region. The impact sites of the last three Rangers were determined by a similar method.

The surface sampler on Surveyor III was operated on the basis of TV pictures showing the progress of each phase of its digging, trenching and impact testing activities. And, a surface roving vehicle, originally developed in connection with Surveyor and now being considered for planetary applications, uses TV to see where it is going.

Manned spacecraft can use TV to monitor the performance and behavior of the men as well as showing the scenes they can see. Gordon Cooper's Faith 7 spacecraft in the Mercury Program carried a monitor camera of this type; so have a number of Soviet manned spacecraft. Apollo flights and lunar surface explorations will be monitored on Earth from spacecraft-mounted and hand-held TV cameras.

During launch operations, the launch controllers and engineers are sealed up in a blockhouse. The spacecraft and flight project people are several miles away in the spacecraft checkout building; but television cameras mounted around the launch pad, and on tracking telescopes, let them see in real time what goes on with the launch vehicle. Motion-picture cameras are out there too, but decisions are based on the TV data. On some launches, a TV camera has been mounted on the rocket vehicle to watch staging and other operations.

In the Space Flight Operations Facility, from which we control Surveyor, Mariner and other space probes, you can't see the walls for TV monitors displaying tracking and telemetry data, orbit and maneuver calculations, scientific data, etc., from the various special analysis areas. The same TV intercom system is used to pipe data outside the operating area so that additional technical specialists and VIP's can monitor operations without being physically present.

Television data sent outside the operation, whether they are piped directly to the news media or carried out and explained in a televised conference, carry out an important phase of the space program. Our job is not finished until we have communicated the results to the scientific community and the public in a way that is meaningful to each. Sometimes the networks come down to the Cape and cover the launch operations;

then they come to JPL or Houston and cover flight operations.

I can remember on Ranger operations how hard it was to get across the value, or even the meaning, of the earlier missions to the public in an understandable way. The first Ranger pictures, released at a televised conference, went a long way in solving this communication problem. And, during Ranger IX, when the pictures transmitted back from the spacecraft were broadcast all over the country as they were received, the problem was solved in real time (Fig. 3).

TV Applications in Space Exploration

Once TV data from a spacecraft are in hand or available from a spacecraft in orbit, or flying by, or on the surface of the Moon or the planet, many and broad applications are possible.

The data are available in multiple forms. Real time display is the most immediate and is required for controlling remote operations of a Surveyor, a roving vehicle or an orbiting telescope, and also for the task of advising an astronaut as he explores the lunar surface. It also allows the public to participate in a more direct way, as in the Ranger IX mission.

The video signal, which is the primary TV data, is recorded on magnetic tape and also on film by means of a kinescope. Supporting this are the preflight calibrations of the system, including the overall transfer function of the camera, telecommunication system, and the image reconstruction system on the ground, as

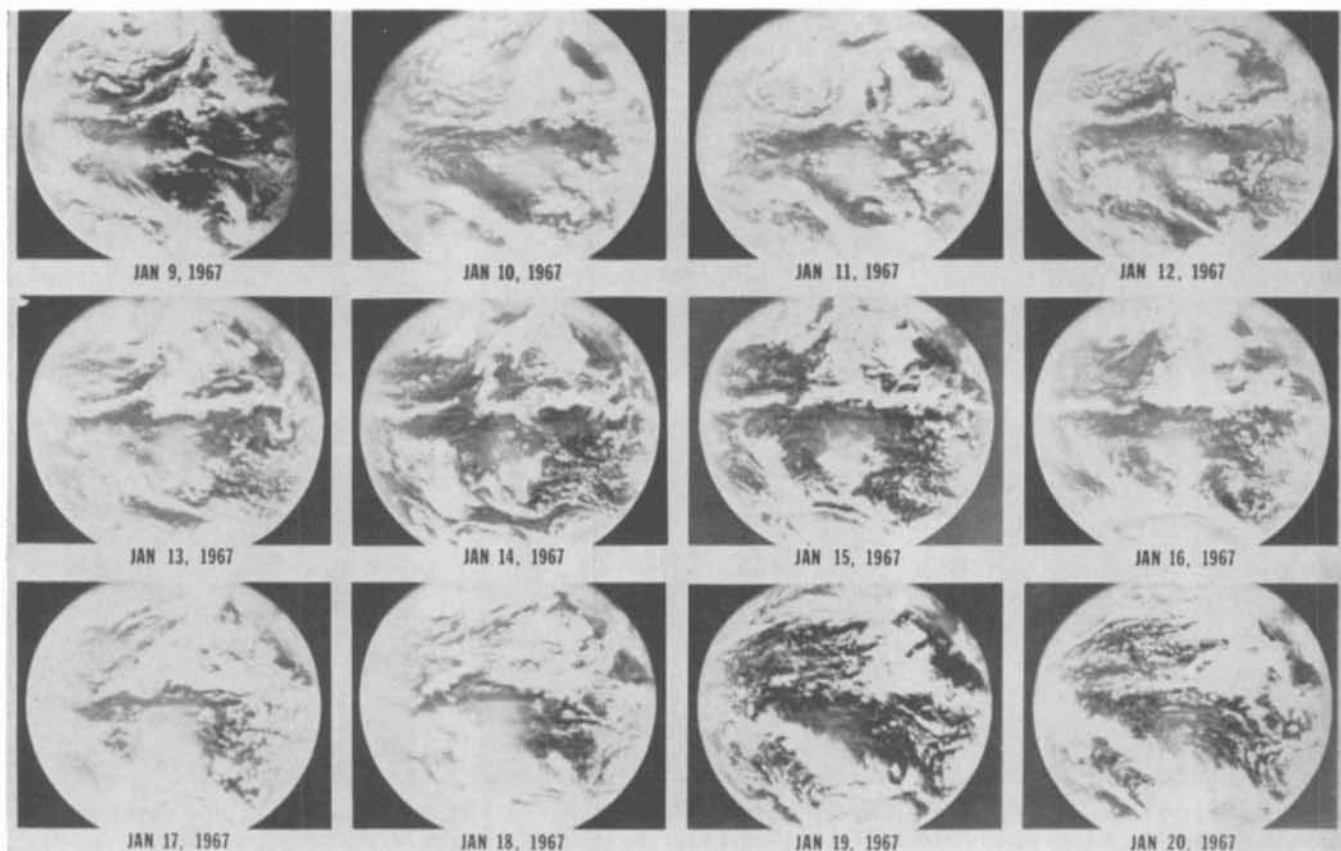


Fig. 4. Series of spin-scan TV photographs returned by ATS in early 1966 showing daily weather variation in the Pacific. (National Aeronautics and Space Administration)

well as telemetry showing the condition of the equipment at the time the pictures were obtained and sent, and tracking and telemetry data giving the location and geometry of the spacecraft and cameras. There may also be important outside information, such as Earth-based data on the Moon or the planet, or weather data on the Earth.

Television and the Scientist

All scientific data from NASA programs are made available to the scientific community as a charter obligation; for instance, from the Ranger project a series of photographic atlases for scientists and the public contained a liberal selection of the pictures as well as the backup data. Similar efforts are underway for Surveyor and Lunar Orbiter pictures.

Each NASA scientific experiment has a Principal Investigator and in many cases a supporting experimenter team, made up of experts in the relevant fields, who in some cases designs the instrument as well as participates directly in conduct of the mission and making the first interpretation of its data. TV experimenter teams usually tend to be large teams. Typically they include experienced observers of the region the TV will look at — geologists, planetologists, and instrumentation specialists. The scientific appeal of lunar and planetary spacecraft television is very broad. Earth satellite TV is even broader in its interest, encom-

passing meteorology, oceanography, ecology and cartography, to name a few.

One product of this wide-ranging scientific study of TV pictures of the Moon and Mars is many theories and arguments about the origin, processes and present conditions on and in these bodies. Anyone who thought TV pictures would settle the great scientific arguments about the lunar surface or the canals of Mars was sadly mistaken. The Moon's surface is as diverse as the theories about it. At least one scientist said the Ranger pictures are a mirror in which each theorist sees reflected his own model of the Moon. And, the Mariner pictures neither showed the Martian canals nor proved they aren't there. We hope to deal with that question in 1969.

The TV data are increasingly becoming a baseline or matrix for the scientists, to be correlated with other observations. In 1969, for example, we are flying an infrared radiometer boresighted with one of the TV cameras, so that the experimenters can correlate thermal data with visible features. For another example, we would like to fly by the planet Mercury, get its size from TV pictures and its mass from the bending of the flight path, and calculate the planet's density, which is unknown at present. And, of course, the satellite weather pictures are correlated with temperatures, barometric pressures, and other ground observations from various points appearing on the map.

Reconnaissance for Mission Planning

Another use of Lunar pictures is more applied engineering — pathfinding for subsequent missions. In September, NASA's Office of Manned Space Flight announced selection of eight manned lunar landing sites, based on Ranger, Lunar Orbiter and Surveyor photographic data. Certainly the Surveyor close-range TV investigations of the surface were crucial in deciding what sort of surface terrain is suitable for manned landings. TV played a vital role in the rocket firing experiment conducted with the landed Surveyor V spacecraft. The effect of the LEM rocket engine on the lunar surface is a key question for the Apollo program.

Some day when Mars manned landings are planned, they will need something like the same kind of TV pathfinders.

A second general application of spacecraft TV data is mapping. One example is weather maps from Earth satellites. This is an ideal application of TV's quick turnaround time, because you want to see what the weather looks like before it changes. To recover the investment of the mission, you want a long lifetime, and many thousands of pictures, and this also is a feature of spacecraft TV. The Applications Technology Satellite (ATS) is an example of a synchronous orbit spacecraft doing this kind of work. Its

position is 23,000 mi above the middle of the Pacific, at 151° West on the Equator. It takes one picture in the morning, seven at noon, and one in the afternoon, as a daily routine (Fig. 4). There are also low altitude polar-orbit satellites such as ESSA 3, providing higher resolution pictures which are put together in a mosaic.

The first maps of the Moon were based on telescopic observation and photography from Earth. The first high-resolution mapping covered an area called Mare Cognitum, the Ranger VII site. Lunar Orbiter photographs provide medium resolution mapping of the whole globe of the Moon, and higher-resolution maps of several areas of interest to the Apollo project. Apollo spacecraft TV and film will also contribute to lunar mapping. The pictures the Mercury and Gemini astronauts took of Earth showed how valuable color photographs from orbit can be for high-resolution mapping, and this is an area where TV doesn't really compete.

Some of the picture enhancement techniques possible with the TV data have produced some quite dramatic results. Some of the Surveyor pictures were combed out by the computer until they showed surface particles as small as one fiftieth of an inch. Dr. Robert Leighton, Principal Investigator on the Mariner IV TV experiment, reported last month at Prague that processing the Mariner pictures brought out more than 200 Mars craters that had not been visible originally. This technique is even being modified now to bring out detail in medical X-rays and photographs, which is a valuable spin-off from lunar maps and space television.

Mapping the planets is likely to be a television job for a long time, because of the great distance, the long time of flight, and the features of a television system. For a start Mariner IV mapped one-half of one per cent of Mars with features as small as three miles across, to an accuracy of about 3°. We plan to add considerably to this in 1969.

Observing at repeated intervals so as to get a time plot of changing characteristics is another scientific application of spacecraft TV. Close to home, the example is again that good old weather satellite, with which you can watch the weather build up hour by hour, world wide. Not very much changes quickly on the surface of the Moon except the length of the shadows, but even they can tell you something about fine-scale topography, and the Surveyors have done quite a lot of time-lapse photography under changing lighting. And, the Surveyor III digging and trenching operations represent man-made changes reported by spacecraft TV (Fig. 5).

On Mars, and eventually Venus, we hope to observe weather and climate effects by means of spacecraft television.



Fig. 5. Surveyor III's surface sampler poised between two prior trenches, ready to start a third. (Jet Propulsion Laboratory)

A planetary orbiter is required for this, because a fly-by spacecraft stays in the vicinity of the planet for only a relatively short time. We hope in 1969 to get TV pictures during the approach to Mars for about two days; possibly we'll see some weather or a dust storm. The two spacecraft we hope to launch will arrive only about a week apart; too short to reveal seasonal variations. Things to watch in a longer planetary mission would include the seasonal waxing and waning of the polar caps, the wave of darkening in springtime reported by some observers, and any seasonal changes in weather or the surface features.

The Most Valuable Instrument

Now let me finish with a word about the value of television in the space program. It is hard to put a price on it — in the larger context it may be called priceless. To rehash an old cliché, a picture is worth a thousand words — each Mariner IV picture, in fact, was sent back in forty thousand words of digital data.

Pictures are essential to the space exploration program. In addition to the information they provide, they stimulate thinking, promote ideas and inspire theories — and this is science. It's clear that scientific interest and activity about the Moon and Mars have increased along with scientific knowledge as a result of the picture taking space missions there.

Television is essential in some project applications. It is fair to say Surveyor's investigation of the strength and physical properties of the lunar soil would have been nearly impossible without the Surveyor television camera to inspect the soil, watch the operations and observe the results.

In ground operations, TV communications have speeded up the flow of data and the reaction to flight situations where quick response was essential.

Finally, the pictures have been especially valuable to the ultimate sponsors and ultimate beneficiaries of the space program. The people get to see on TV

and in the papers close-ups of the Moon and Mars and their home, the Earth, taken from space. These pictures are more than numerical data which only a scientist can use. They're direct views which each of us can understand and interpret. We can all be photo-interpreters. These pictures, and especially the live TV from space, can put everybody into the space program. And welcome. Science and the exploration of space can always use new ideas. Television is bringing some to us.

Society Awards

The presentation of annual awards was formally made at the SMPTE Get-Together Luncheon on Monday of Conference week by SMPTE President G. Carleton Hunt.

Honorary Member Award

Dr. John G. Frayne, retired, was presented the Society's Honorary Membership Award. He received the award in recognition of his devoted and eminent service in the advancement of engineering in motion pictures, television and in the allied arts and sciences.

This great distinction in the Society is awarded to a living pioneer whose basic contributions, when examined through the perspective of time, represent a substantial forward step in the recorded history of the arts and sciences with which the Society is most concerned. Prior to this distinguished honor, Dr. Frayne was a Life Fellow of SMPTE.

Dr. Frayne was born in 1894 in County Wexford, Ireland, attended Trinity College in Dublin, 1912-1914, and emigrated to the United States in 1914. He received his B.A. degree from Ripon College, Ripon, Wisconsin in 1917. In 1922 Dr. Frayne received his doctorate in Mathematics from the University of Minnesota, where he had been an instructor in mathematics. He became affiliated with American Telephone and Telegraph Co. in 1919, working in the research and development division. During World War I, he served as a Second Lieutenant in the U.S. Signal Corps. During the 1920's, Dr. Frayne was Professor of Physics at Antioch College, Yellow Springs, Ohio and a Research Fellow at California Institute of Technology.

In 1929, he went to Westrex Corp. in Hollywood, later becoming Engineering Manager for their Hollywood Division. In collaboration with Halley Wolfe of Westrex, he wrote *The Elements of Sound Recording*, the outstanding text in its field. In 1961 he joined the Marquardt Corp. as Director of Research and Development. Dr. Frayne is well known for his significant work in the field of sound recording and is an avid proponent of better initial training for motion-picture technicians and of continued education throughout their respective careers. He holds patents on eleven inventions in sound recording developed between 1932 and 1959.

Insofar as his personal contributions to research in motion picture engineering are concerned, he is particularly proud of the



The SMPTE Award Winners. Top left, President G. Carleton Hunt presents the Honorary Membership Award to Dr. John G. Frayne. Top center, the Herbert T. Kalmus Gold Medal Award winner John M. Waner. Top right, the Progress Medal Award winner Gordon A. Chambers. Bottom left, the David Sarnoff Gold Medal Award winner Alda V. Bedford. Bottom left center, the Journal Award winner Walter C. Snyder. Bottom right center, the Eastman Kodak Gold Medal Award winner Samuel N. Postlethwait. Bottom right, Loren Ryder accepts the Samuel L. Warner Memorial Award for the winner, Stefan Kudelski.

development of the integrating sphere densitometer which was developed in cooperation with G. R. Crane, which received an Academy Award in 1941. Another of his major contributions was the development of the intermodulation technique of distortion measurements, the basic work for which was done in association with R. R. Scoville. For that they received an Academy Award in 1953.

Dr. Frayne has long been active in SMPTE affairs and has been a member of the Society for the past thirty-seven years. He has served as Chairman of the Education Committee, Governor, Editorial Vice-President and Executive Vice President. He was President in 1955-56. In 1941 Dr. Frayne received the Society's Journal Award; in 1947, the Society's Progress Medal; and in 1959, the Society's Samuel L. Warner Memorial Award.

Though retired from business life in the usual sense, Dr. Frayne continues active as Associate Professor of Physics at California Technical College, Pomona, Calif.

Progress Medal

Gordon A. Chambers, Director of Engineering Services, Motion Picture Film Div., Eastman Kodak Co., Rochester, N.Y., was the recipient of the 1967 SMPTE Progress Medal.

This award recognizes outstanding technical contributions to the progress of engineering phases of the motion-picture and/or television industries. The Progress Medal is awarded annually, and is awarded for an invention or for research or development which, in the opinion of the Society, has resulted in a significant advance in the development of motion-picture or television technology. In considering this award to an individual, his continued technical contributions over a period of years is considered as a most important factor.

In 1921, Chambers was employed as an assistant physicist in the Kodak Research Laboratories. He worked there intermittently during college vacations until graduation, cum laude and Phi Beta Kappa, from St. Lawrence University with a Bachelor of Science degree in physics in February 1926, when he was engaged on a full-time basis doing research work in the Physics Department of the Kodak Research Laboratories. He assisted in the early development of the science of sensitometry and its application to sound on motion pictures and quality control of sound motion picture film processing.

In April 1929, he was transferred to the Motion Picture Film Dept., West Coast Div., Eastman Kodak Co., Hollywood, to assist in experimentation and development of special films for sound recording and for training of Hollywood studio engineers in the science of sensitometry and densitometry and control of sound motion-picture film processing. He supervised the installation of Eastman Model II-B sensitometers in each Hollywood motion-picture film processing laboratory and a system for calibration of standardized light sources for these new instruments. Also, he personally supervised the introduction of the Capstaff densitometer and its use in the Hollywood motion picture industry.

In October 1942, he volunteered for duty with the United States Navy, where he was instrumental in the start-up of the United States Naval Reserve Photographic Science Laboratory at Anacostia, D.C. He was discharged as a Lieutenant Commander after having had an active roll in standardization of motion picture film printing and processing and film handling procedures.

In December 1945 he returned to the Motion Picture Film Dept. of the Eastman Kodak Co. in Rochester where he has

carried on his duties as chief of engineering for the Motion Picture Film Div. As of February 1, 1965, he was appointed Director of Engineering Services after having served as Manager of the Southern Division of the Motion Picture Film Department.

Chambers is a member of the Optical Society of America and a Fellow of SMPTE. He served on the Board of Governors in 1953-1956. He has also served as Chairman of the Society's Papers Committee. His long active participation in SMPTE affairs has included service as Chairman of the Society's Standards Committee. He was a member of the U.S. delegation to the International Standards Organization meeting in Milan in 1965 and was a delegate to the ISO/TC 36 meeting in Moscow last June.

Chambers has written many technical papers and has worked with many individuals and organizations in the industry to improve results obtained with motion picture films and processes. He will soon retire from Eastman Kodak after forty-one years of continuous service.

Eastman Kodak Gold Medal Award

Prof. Samuel N. Postlethwait, Audio-Visual Center, Purdue University, was selected to receive the Society's Eastman Kodak Gold Medal Award.

It is the purpose of this Award to honor recipients by recognizing outstanding contributions in the field of engineering development which lead to the introduction of new and unique *educational techniques* or programs utilizing motion pictures, television, or other aspects of the photographic sciences.

This, the newest of the SMPTE Awards,

the thinkronizer

Its real name is the Jensen 205S film-sound synchronizer—for the Nagra. But our customers call it the thinkronizer. Probably because it's the easiest way to lip-sync precision recordings. And the only instrument that can do it where no AC is available. But besides this exclusive, the thinkronizer's priced at less than half the competitive unit. Which is something else to think about, isn't it?

The 205S: it pays to think small.

While the thinkronizer is rugged, it's not large or complex. Measuring a mere 8¼ x 4¾ x 3½" and weighing only 4 pounds, it won't crowd other equipment off your laboratory shelf. But it isn't designed to impress. Especially not the shoulders of sound men who carry it. And its uncluttered control panel, with single, foolproof function selector switch won't bewilder a visitor to your studio. Or a busy technician with a hundred more important things to think about.

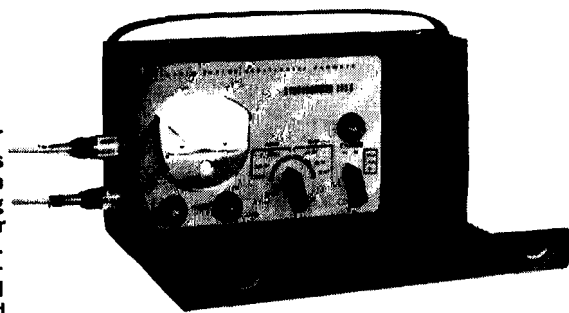
All the thinkronizer looks like is what it is... an easy-to-operate, all-solid-state unit that reliably does what you ask of it. Which can range from camera speed checks to day-in, day-out filming in the field.

The thinkronizer: your recorder's best friend.

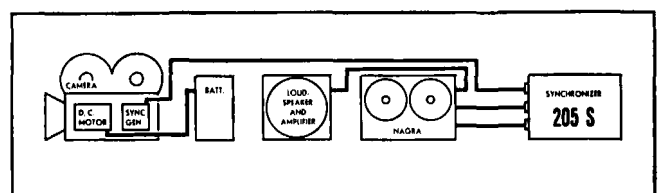
You might say the new Jensen 205S thinks only of the Nagra. It starts by acting as an AC supply and pilot signal source (while charging the Nagra's nicad's if you wish). And, if no AC is available, it will obligingly operate off the Nagra's batteries, drawing a mere 0.08 amps and switching off automatically.

But that's just the beginning... the 205S has a host of other features that give it the flexibility for:

- sync sound transfer from tape to film
- sync sound transfer from tape to film with automatic pulsed or continuous "bloop"
- sync sound transfer from tape to film with automatic marker pencil activation



- post-sync shooting against a pre-recorded sync tape with battery operation (see diagram)
- post-sync shooting against a pre-recorded sync tape with battery operation and automatic luminous edge-marking in the camera
- post-sync shooting against a pre-recorded sync tape in synchronous AC-line mode
- shooting lip-sync sound in synchronous AC-line mode
- camera speed checking



There are many more features that make the thinkronizer a combination of quality and economy you'll want to investigate: features including operation on all standard line voltages (110, 125, 160, 220 and 240) and frequencies (50 and 60, which can be doubled to 100 and 120, where desired); a single, foolproof function selector switch; modern, all-silicon circuitry, including the latest integrated circuits; and a built-in "bloop" oscillator. But space doesn't permit giving details.

Why not get the full story on what the Jensen 205S can do for you? Write or call:

The INTERCRAFT CORPORATION
 69-19 Queens Boulevard
 Woodside, N. Y. 11377
 Telephone: (212) 478-5354



SMPTE Award Winners. Top row, left to right, Dr. Frank P. Brackett, Jr., Alda V. Bedford, Herbert E. Farmer (SMPTE Governor), Harry R. Lubcke, and Arthur C. Davis. Bottom row, left to right, Charles J. Hirsch, Gordon A. Chambers, Rudolph Rolf Epstein, and Michael W. Barlow.



SMPTE Award Winners. Top row, left to right, Dr. John G. Frayne, Richard M. Hyde, and Eldon W. Hamilton. Bottom row, left to right, Samuel N. Postlethwait, Charles E. Anderson, Frederick M. Remley, Jr., and Walter K. Peterson.

was established in May 1966; Prof. Postlethwait is the first recipient. His unique educational system, known as "Audio-Tutorial," requires a broad use of both motion picture, television and other media appropriate to the nature of the subject matter as required for multi-sensory exposure.

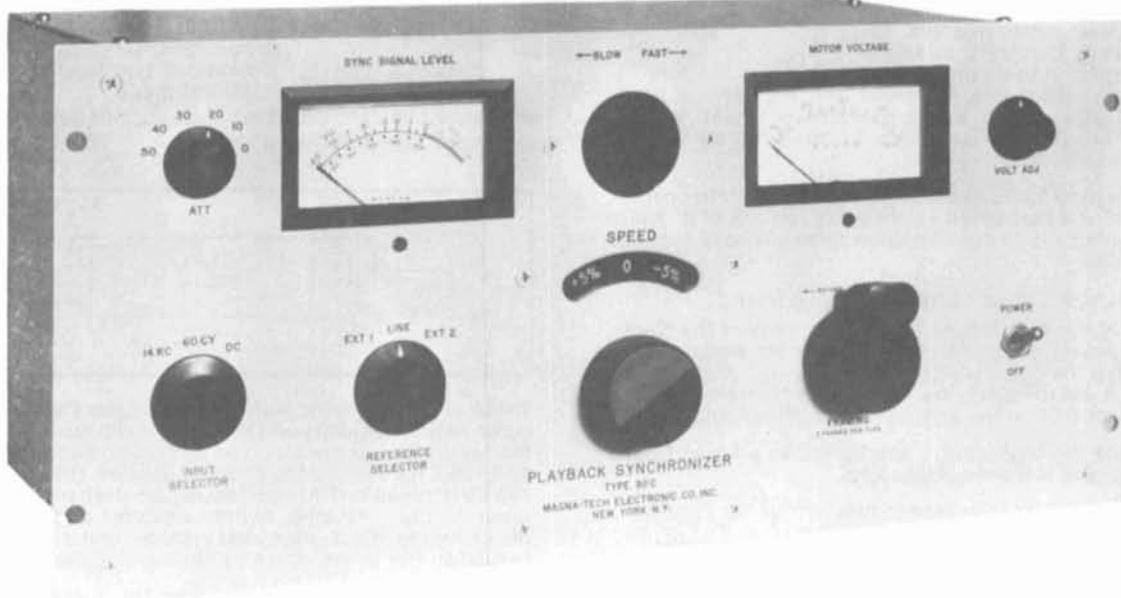
Prof. Postlethwait holds Bachelor, Master and Doctorate Degrees from Fairmont State College, West Virginia University and State University of Iowa, respectively.

He began his career in elementary education in 1940. After serving in the United States Naval Reserve from 1942 to 1946, he joined State University of Iowa as an Instructor. In 1950, he became Assistant Professor at Purdue University and Associate Professor in 1956.

Prof. Postlethwait's system not only utilizes successfully audio-visual equipment and facilities but also successfully places these areas in the correct perspective dependent upon the needs for teaching a

specific subject. The results of his system have been significantly excellent and it is gaining considerable recognition and use throughout the world. Basically, his concept is a multi-faceted, multi-sensory approach to teaching, utilizing audio tapes in a supervised, self-instructional learning center to appropriately sequence and integrate printed texts and manuals, motion pictures or television, microscopes, specimens, etc. It also ideally accommodates students with a wide diversity of back-

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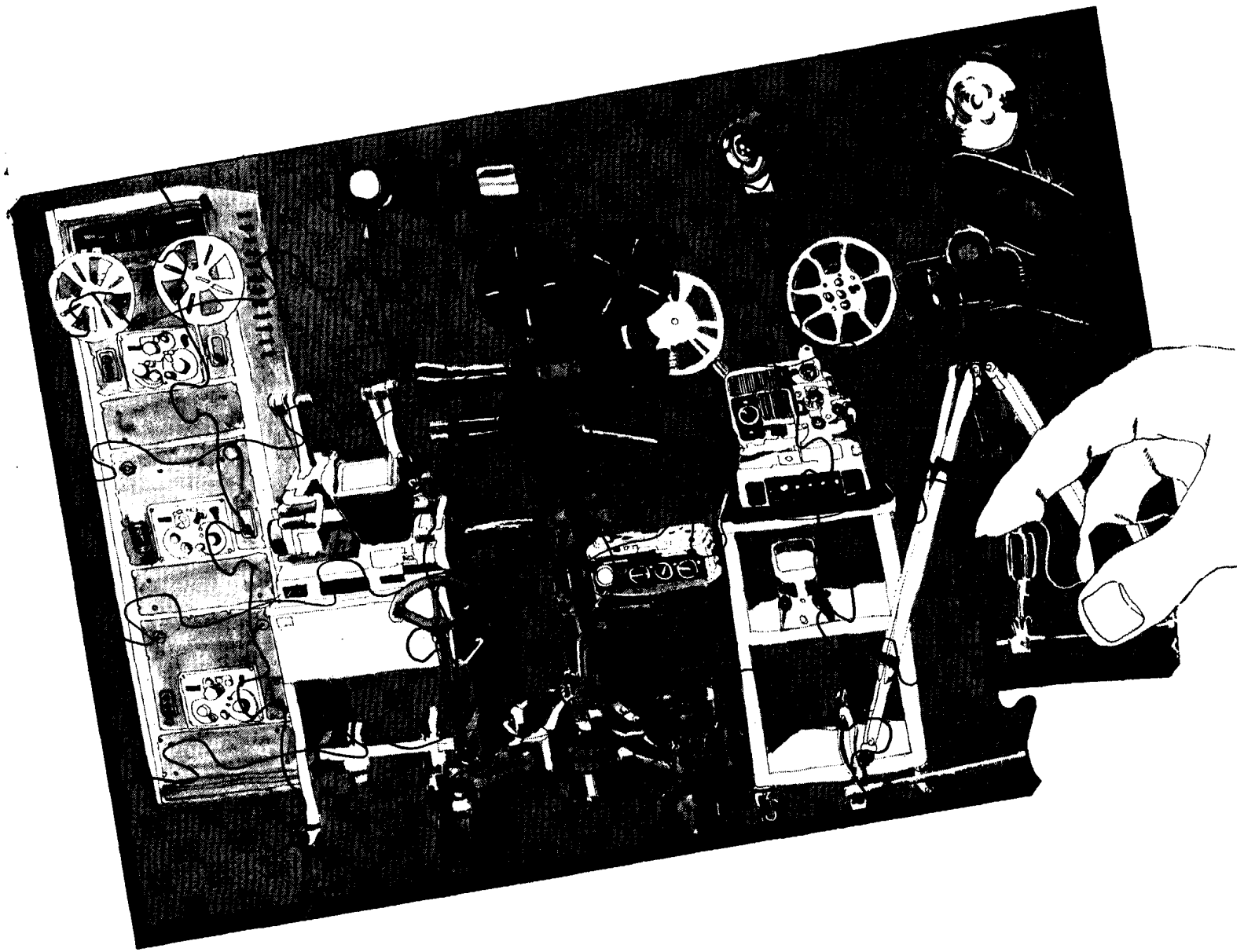
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SMPTE Award Winners. Top row, left to right, William Youngs, Frank J. Bingley, and Walter C. Snyder. Bottom row, left to right, Allan L. Williams, John M. Waner, and John W. Zuidema.

grounds, aptitudes and interests, and places the mechanics of scheduling and responsibility of learning on the students. It leaves the teacher free to concentrate on teaching, orientation, direction, elucidation, guidance and personal contact with individual students.

Prof. Postlethwait has been active in numerous professional societies and has received specific honors and fellow awards. He has taught in several institutes for high school teachers, faculty, science, department and government committees, including presentations in his system to U.S. Senate Committees.

Herbert T. Kalmus Gold Medal Award

John M. Waner, Motion Picture Film Dept., Eastman Kodak Co., Hollywood, Calif., received the Herbert T. Kalmus Gold Medal Award.

The Kalmus Award honors the recipient by recognizing outstanding contributions in the development of color films, processes, techniques or equipment useful in making color motion pictures for theater or television use. Since the award is given to an individual, a development or invention in which a group participates is con-

sidered for this award only if one person has contributed the basic idea or has contributed substantially to the practical elaboration of the idea. Preferably, the work for which the medal is awarded shall have been done within five years of the date of the award.

John M. Waner, a Fellow of the Society, has spent his career working with color motion picture film, and his signal contributions have been instrumental in achieving greater quality, consistency and usefulness of this medium throughout the motion-picture and television industries.

Waner's career started in the Research Division of Eastman Kodak, where he participated in research and development work on the Eastman Color System prior to its introduction to the motion-picture industry. After the introduction of Eastman Color to the industry, Waner transferred to Eastman's Hollywood office where, as Chief Color Consultant, he directed and participated in the introduction of Eastman Color film processing in Hollywood laboratories.

At that time, he instituted and directed Eastman's inter-laboratory survey concept, which to this day is probably the single most useful tool in maintaining consistency and uniformity in color processing among laboratories throughout the world and, recently, in television stations. As a result of this survey concept, color film processing has achieved a worldwide uniformity which the simpler black-and-white process never attained.

In 1964, Waner, as Chairman of the



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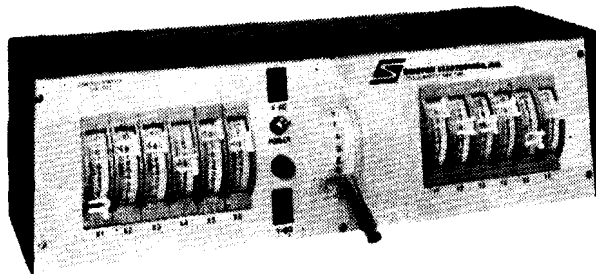
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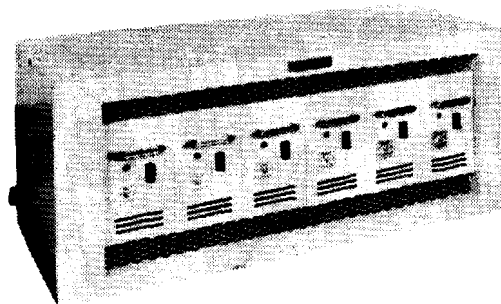
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Arrangements Chairman Allen Hilliard (left) and Program Chairman Hans C. Wohlrab.



SMPTE Vice-President for Education Affairs Max Beard (left) and SMPTE Editorial Vice President Roger J. Ross.

Society's Color and Television Subcommittee, directed the preparation of the report "Considerations in Color Film Production for Color Television" which presented recommended practices for color photography for color television. The report basically explains and states the requirement of the television system in relation to motion pictures. It has been extremely useful in improving the quality of color film in television. Its significance is in-

dicated by its having been translated into several foreign languages.

In the past three years, as Chairman of the Society's Color Committee, Waner has been deeply and tirelessly involved in the preparation and production of the Society's Color Television Test Film. This film is already in wide use and brings consistency and uniformity into the production, processing and transmission of motion pictures in television.

Waner, a graduate of Union College, Schenectady, N.Y. (B.S. in Chemistry) is now a resident of Van Nuys, Calif.

David Sarnoff Gold Medal Award

Alda V. Bedford, a Fellow of the David Sarnoff Research Center, Princeton, N.J., was chosen as the recipient of the 1967 David Sarnoff Gold Medal Award. Bed-

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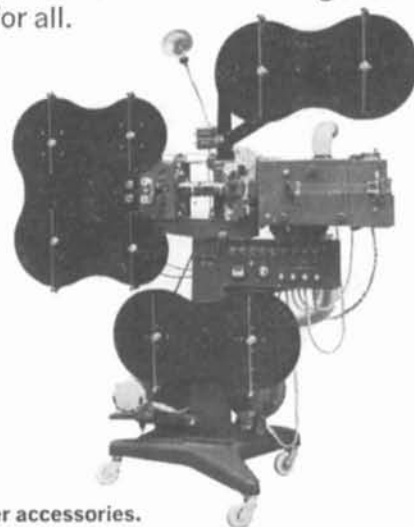
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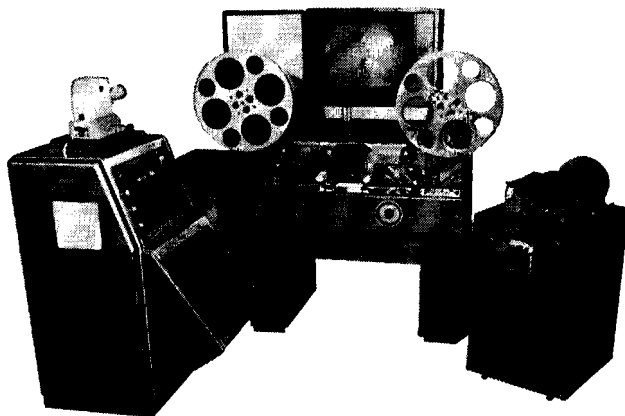
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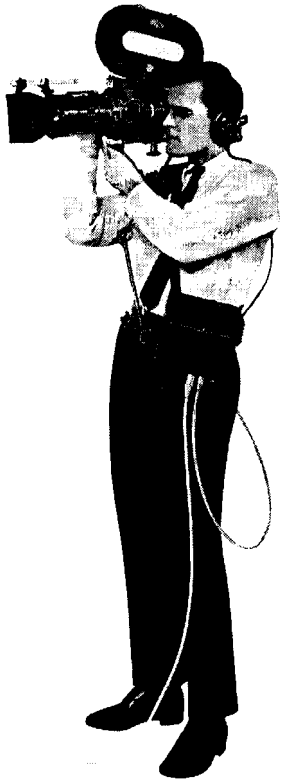
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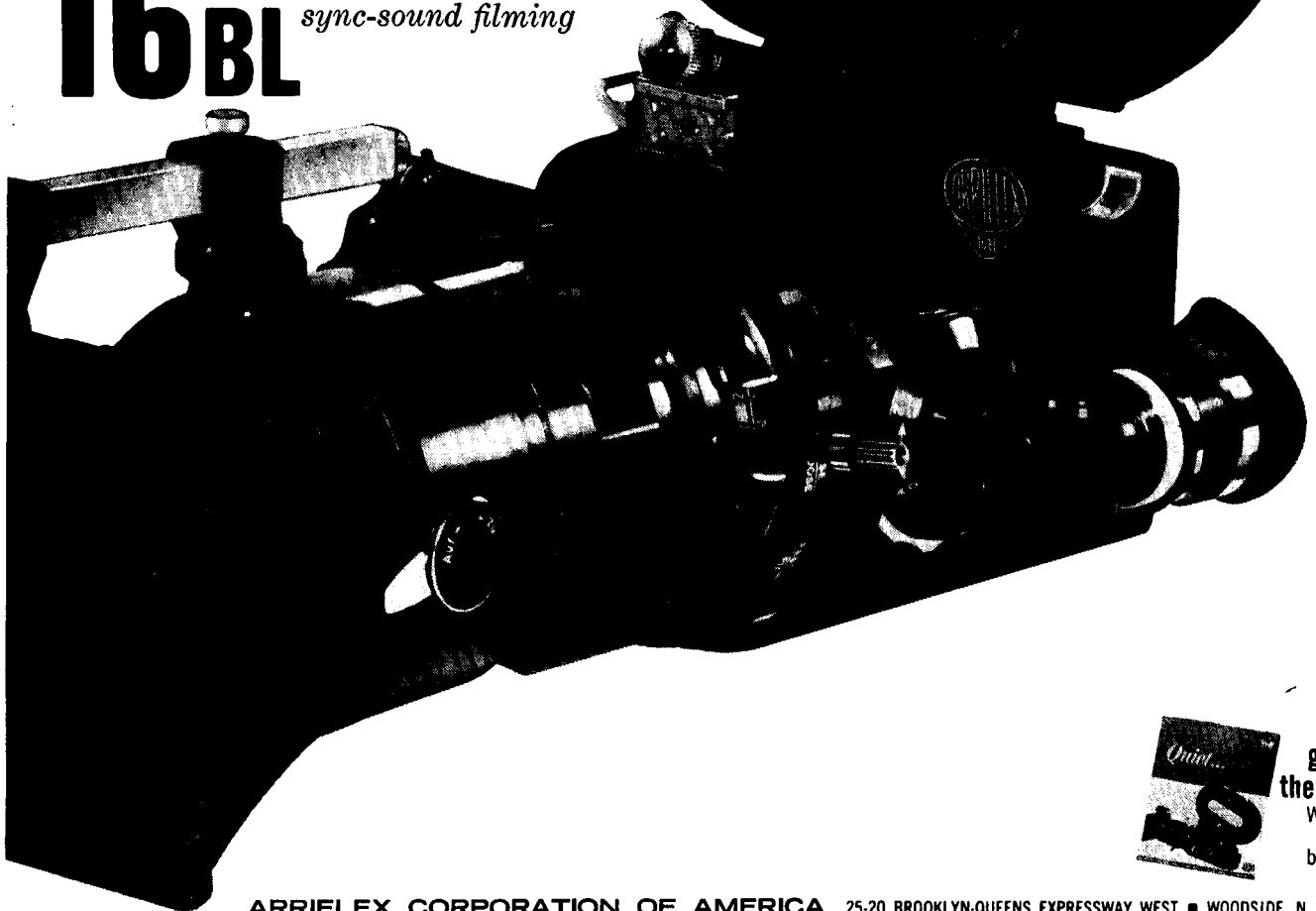
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ford retired last June after completing nearly 37 years with RCA and its predecessor companies.

It is the purpose of this award to honor the recipient by recognizing outstanding contributions in the development of new techniques or equipment which have contributed to the improvement of the engineering phases of television.

Bedford, who holds more than 120 U.S. Patents, is best known for contributions to the principle of mixed highs, a keystone in the development of color television. Although his most noteworthy achievements came in the earlier days of monochrome and color television, he continued research in television until his retirement. He is credited for the concept of a four-tube color camera. He did considerable basic work on some advanced sophisticated color TV cameras that are still under development.

Bedford was born in Texas. He received his Bachelor of Science Degree in Electrical Engineering from the University of Texas in 1925 and his Masters Degree in Electrical Engineering from Union College four years later. He joined RCA in 1930, having previously been associated with the General Electric Company where he participated in the research work on audio transformers, talking pictures, loud speakers and television.

During his 37 years with RCA, Bedford concentrated on television research. However, during World War II, he worked on radar gun training, speech privacy systems, and low-level radar bombing. From 1952 to 1955, he directed a project, for the U.S. Government, to develop a secret audio-frequency communications system he had invented. Bedford also did some research at RCA on phonograph recording. But his chief interest was television. In addition to the mixed-highs principle, he is credited with the use of the color burst for synchronizing color television. Earlier, he had developed the concept of using serrated vertical synchronizing pulses that would not interfere with the interlace of the picture in monochrome television.

In 1939, Bedford received the Modern Pioneer Award from the National Association of Manufacturers. He was awarded the Vladimir K. Zworykin prize by the IRE (IEEE) 15 years later. In 1959, RCA made him a Fellow of the David Sarnoff Research Center. RCA has also presented him with their Laboratories Achievement award for his concept of the "by-passed mixed highs" principle useful in color television. Bedford has published numerous technical papers. He is a Fellow of the IEEE and a member of Sigma Xi.

Journal Award

Walter C. Snyder, Eastman Kodak Co., Rochester, N.Y. was awarded the SMPTE Journal Award. His paper was judged the most outstanding of those originally published in the 1966 SMPTE Journal.

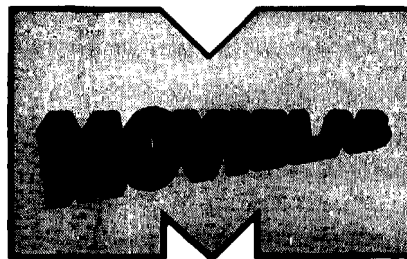
Snyder's paper, "An Investigation of Agitation in a Continuous Immersion Film Process," appeared in the October 1966 Journal, pp. 996-1001.

Papers being considered for this Award by the Society's Journal Award Committee are judged on these qualifications: (1)



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Equipment Exhibit opening ceremony. From left to right, Exhibit Chairman Denis Howe, SMPTE President G. Carleton Hunt, and Conference Vice-President E. B. McGreal.



Sylvania Electric Products won the 102nd Conference Exhibit Award. Standing at the award-winning booth are Exhibit Chairman Denis Howe, John Brophy of Sylvania, and SMPTE President G. Carleton Hunt.

must deal with some technical phase of the Society's major interest areas; (2) technical merit; (3) originality; and (4) presentation. The paper must evidence a thorough understanding of the subject matter, show a new and unique study of the subject, and show excellent clarity in its organization, all of which result in an outstanding contribution to the specific technology represented.

Snyder is a graduate of the University of Pittsburgh, having received his B.S. degree in Chemical Engineering in 1961. Upon graduation, he joined Hooker Chemical Co. as a production engineer. In 1963 he

became affiliated with Eastman Kodak, Rochester, and is presently engaged in research and development of processing techniques and equipment.

Journal Award — Honorable Mention

Two papers were chosen for Honorable Mention in the Journal Award Competition. The authors and papers were: Lawrence E. Mertens, RCA Test Missile Project, Patrick AFB, Fla., "Underwater Photography," October 1966 *Journal*, pp. 983-988; and E. N. Leith, J. Upatnicks,

A. Kozma and N. Massey, University of Michigan, Ann Arbor, Mich., "Hologram Visual Displays," April 1966 *Journal*, pp. 323-326.

Samuel L. Warner Memorial Gold Medal Award

Stefan Kudelski, inventor of the Nagra Tape Recorder, was the recipient of the Society's 1967 Samuel L. Warner Gold Medal Award.

This award honors the individual by recognizing outstanding contributions in the design and development of new and

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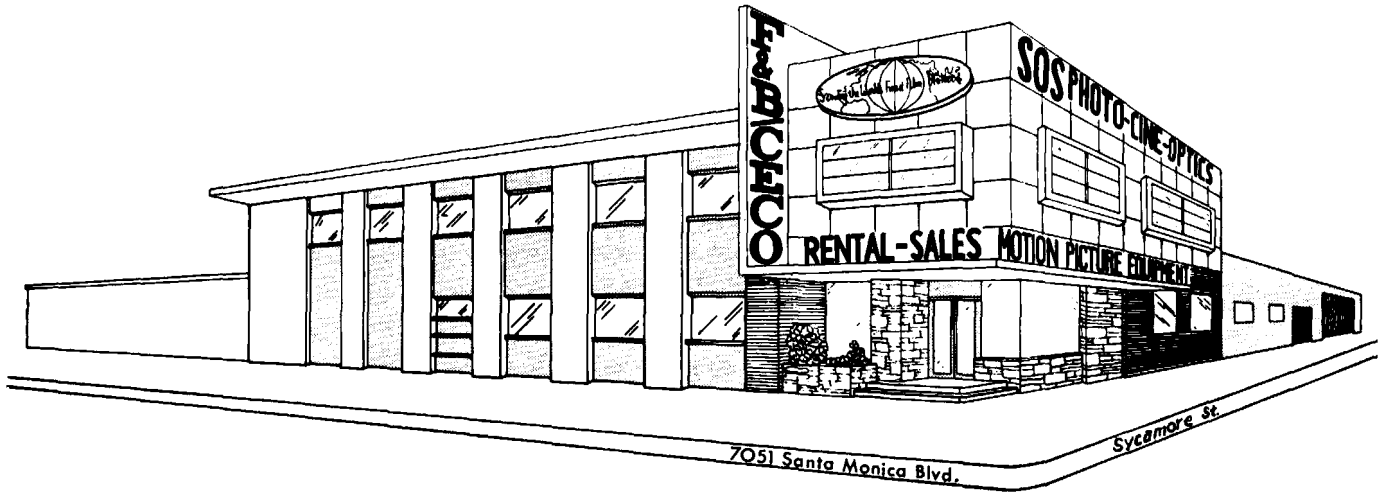
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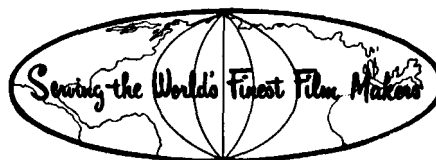
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improved methods and/or apparatus for sound-on-film motion pictures, including any step in the process, and which are likely to have the widest and most beneficial effect on the quality of the reproduced sound and picture.

The citation reads in part: "for the engineering and development of a portable synchronous 1/4-in. tape recording system of unique design resulting in exceptional speed stability under widely varying conditions."

Kudelski is a resident of Switzerland. He was born in Warsaw, Poland, in 1929. In 1939, the Kudelski family moved to Hungary and then to France. In 1943, the family relocated in Geneva, Switzerland. His formal education included studies

at Ecole Florimont and Ecole Polytechnique in Lausanne. In electronics he is self-taught through his experimental studies in his own small laboratory at home, done coincidentally with his college studies. About 1948, the first magnetic recorders appeared commercially. Realizing the impact such recorders might have if perfected, Kudelski initiated the idea of memory storage on tape as associated with automatic control of machine tools; however, he decided to familiarize himself with all aspects of tape recording itself before specializing in such a sophisticated system of automation.

Kudelski developed the first Nagra tape recorder in 1950 and in 1953 he developed an improved model called Nagra II. He

then studied several systems for synchronizing the camera with the tape recorder, finally arriving at a method whereby the camera generates a signal which is recorded on the same tape as the sound. The Nagra III resulted from Kudelski's studies on the possibility of a self-contained tape recorder without a centrifugal speed governor. At present he is developing smaller and lighter versions of the Nagra.

Loren Ryder, Ryder Magnetic Sales Corp., accepted the award for Kudelski at the Conference.

Fellows

Twenty-one members of the Society were elevated to the grade of Fellow of the Society in recognition of their outstanding contributions to the disciplines served by the Society, and to the Society itself.

SMPTE Past President Ethan M. Stifle is Chairman of the Fellow Awards Committee. A Fellow is an individual who is more than 30 years old and who has, by his proficiency and contributions, attained an outstanding rank among engineers or executives in those areas that the Society serves.

Fellow Award certificates were presented at the formal awards presentation ceremonies at the Get-Together Luncheon. Those upon whom the honor of Fellow has been bestowed are:

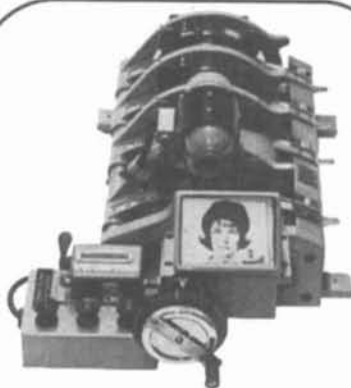
- Charles Edward Anderson, Manager of Broadcast Engineering, Ampex Corp., Redwood City, Calif.
 Michael W. S. Barlow, Senior Engineer, Studio Systems Dept., Canadian Broadcasting Corp., Montreal, P.Q., Canada.
 Frank James Bingley, Engineering Leader, RCA Astro-Electronics Div., Princeton, N.J.
 Dr. Frank P. Brackett, Jr., Technical Manager, Motion Picture Div., Technicolor Corp., Hollywood, Calif.
 Alfred Earnest Bruch, President, Capital Film Laboratories, Inc., Washington, D.C.
 William Daniel Carter, Assistant Chief Engineer, Consolidated Film Industries, Inc., Hollywood, Calif.
 Arthur C. Davis, Vice-President, Audio Controls Div., LTV Altec Lansing Corp., Anaheim, Calif.
 Rudolph Rolf Epstein, Chief, Sound and Projection Div., National Film Board of Canada, Montreal, P.Q., Canada
 Paul W. Fassnacht, President and Chief Executive Officer, Technicolor, Inc., Hollywood, Calif.
 Eldon Wallace Hamilton, President and General Manager, Trans-Canada Films Ltd., Vancouver, B.C., Canada.
 Charles J. Hirsch, Administrative Engineer, David Sarnoff Research Center, Princeton, N.J.
 Richard M. Hyde, Chief Engineer, CBS News, New York, N.Y.
 Harry R. Lubcke, Registered Patent Agent and Consultant, Hollywood, Calif.
 Robert M. Morris, Staff Consultant to the Engineering Dept., American Broadcasting Co., New York, N.Y.
 Walter Peterson, President, Peterson Enterprises, Inc., Glenview, Ill.
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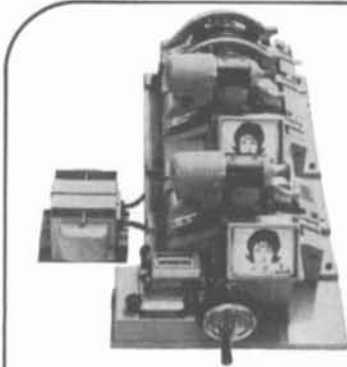
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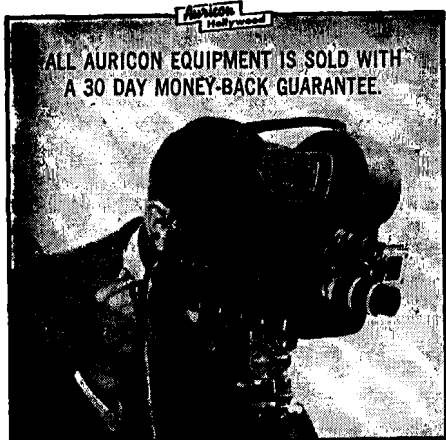
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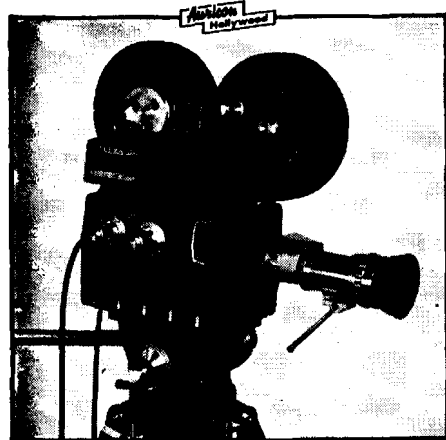
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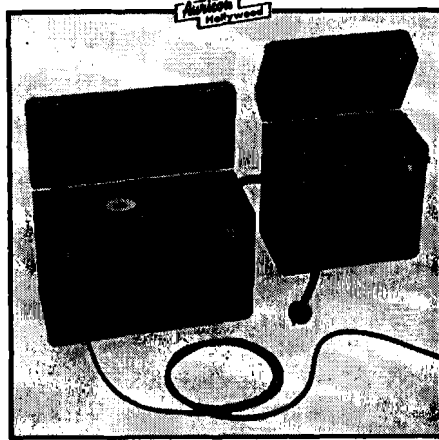
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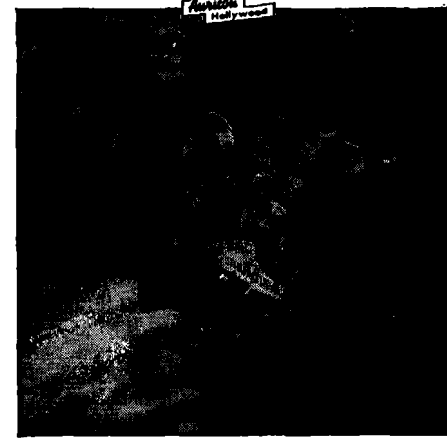
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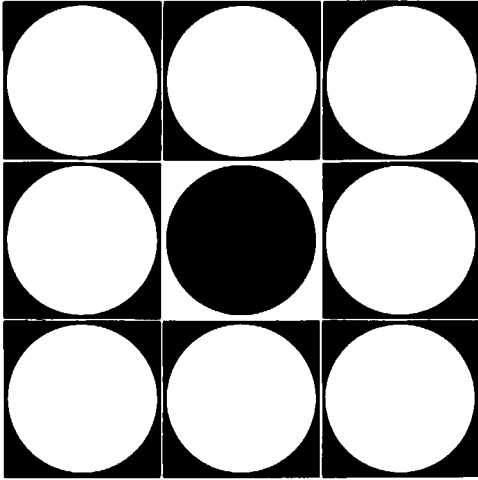
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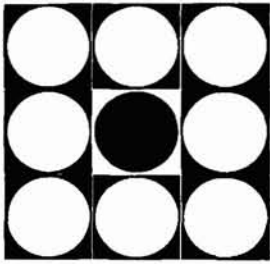
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Past President Ethan M. Stifle, President G. Carleton Hunt, and Former President Reid H. Ray.

John R. Sullivan, Motion Picture Engineer, Eastman Kodak Co., Hollywood, Calif.
Heinz H. Thiele, Chief Engineer, Electronics Laboratory, Zeiss Ikon, A.G., Stuttgart, Germany.

Allan L. Williams, Coordinator of Product Planning, Eastman Kodak Co., Rochester, N.Y.

William E. Youngs, Chief of Projection Services and Production Assistant, U.S.I.A., Washington, D.C.

John W. Zuidema, Technical Associate, Film Testing Div., Eastman Kodak Co., Rochester, N.Y.

Papers Program

Hans C. Wohlrab, the Conference Program Chairman, was primarily responsible for the superlative quality of the papers program. He, along with his individual topic chairmen, put together a program that was praised for its interest, high technical content, and comprehensiveness.

The contributions and support of the SMPTE Papers Committee Chairman, Allan Williams, Eastman Kodak Co., Rochester, N.Y., were basic for the success of the papers program.

The program chairman has a job that is demanding and time consuming. He must start months in advance planning his sessions and with the aid of his topic chairmen, solicit papers. The job is enormous. Not only did Wohlrab do a superb job as program chairman, he went beyond what is normally expected. He assumed the responsibilities for International Papers and Short Films Subjects. He read the papers of those who could not present their papers in person; and also presented a paper of his own.

Assisting Wohlrab as topic chairmen were:

Jack Behrend, Behrend's Inc., Chicago, *Cinematography*; Frederick T. Sharp, Westchester, Ill., *Medicine*; William D. Hedden, Calvin Productions, Inc., Kansas City, Mo., *Laboratory Practice*; Steve Knudsen, Iowa State University, Ames, Iowa, *Education*; V. D. Armstrong, Cocoa Beach, Fla., *Aerospace*; I. F. Jacobsen, Balaban & Katz Corp., Chicago, *Theater*; Harold Kinzle, Wilding, Inc., Chicago, *Studio Techniques*; Hans C. Wohlrab, Bell &

Howell Co., Chicago, *International Papers*; William C. Kusack, WFLD — Channel 32, Chicago, *Television*; Warren H. Lieb, Jack Lieb Productions, Chicago, *Sound*; Richard O. Painter, GM Proving Ground, Milford, Mich., *Instrumentation and High-Speed Photography*.

The Advance Program for the 102nd Conference was published in the August SMPTE *Journal*. Papers were presented as published, except for these changes.

Papers added after the Advance Program was published, but which appeared in the Final Program brochure: "Status Report on Color Intermediates" by Richard J. Goldberg; "An Operational System — Triple-Rank Super 8 Optical Printing Related to a Cartridge-Loading Optical Sound Projector" by Frank Brackett and Robert T. Kreiman; "Selected Characteristics of Organosilicon Hydride-Induced Fog in Photosensitive Media" by Jan L. Meades and David J. Kelch; "Television Interlace Pairing: Its Effect on Detail Response and Its Measurement" by Winslow L. Hurford; "A Unique Method of Television Pulse Distribution" by R. H. Martin; "Electronic Standards Conversion for Transatlantic Color Television" by E. R. Rout and R. E. Davies; "The Use of Special Effects in Television Programming" by Stephen A. Barboun; "A Computer-Controlled Animation Stand" by Kar Liang; "Lighting Factors Affecting Exposure" by Earl W. Kage; "A Graphic Example of Modern Composite Cinematography" by Linwood G. Dunn; "New Systems for Handling Picture-Synchronous Sound in West German Film and TV Studios" by Adolf Hinz; "Adjustable 1/3 Octave Band Notch Equalizer for Minimizing Detrimental Interaction Between a Sound System and Its Acoustic Environment" by Don Davis; "2500 MHz Systems in ETV Applications" by John F. X. Browne, Jr.; "The Use of 35 mm Ektachrome Commercial as Camera Original for Filmstrips" by Sidney P. Solow.

One paper listed in the Advance Program was cancelled: "A New 16/35mm Magnetic Film Recorder/Reproducer." Three papers scheduled in the Final Program were cancelled: "A High-Resolution Image Sensor," "Dynamic Cine Radiography" and "Improvements in Sharpness of Pictures."



SMPTE Equipment Exhibit



SMPTE Equipment Exhibit

Conference Arrangements

The arrangements for the 102nd Conference were handled by General Arrangements Chairman Allen F. Hilliard, Geo. W. Colburn Laboratory, Inc., Chicago, with a roster of local committee chairmen.

It was Hilliard's job to organize and coordinate the work of all the committees to insure attention to all the myriad details. It was Hilliard and his Arrangements Chairmen who were responsible for the smooth-running conference.

General supervision of the Conference

was under the jurisdiction of Conference Vice-President E. B. (Mike) McGreal, Producers Service Co., Glendale, Calif.

Assisting Hilliard as General Arrangements Vice Chairman was William A. Koch, Eastman Kodak Co., Oak Brook, Ill. The arrangements chairmen for specific areas were: Harold Kinzle, Wilding, Inc., Chicago, *Hotel Arrangements*; Chuck Zichter, Bell & Howell Co., Chicago, *Get-Together Luncheon*; Geo. W. Colburn, Geo. W. Colburn Laboratory, Inc., *Banquet*; George Tressel, Argonne National Laboratory, Argonne, Ill., *Registration*; Jack Behrend, Behrend's, Inc., Chicago, *Public Address and Recording*; I. F. Jacobson,

Balaban & Katz Corp., Chicago, *Projection*; Harold Miller, Bell & Howell Co., Chicago, *Publicity*; Nancy Hilliard and Gloria Koch, *Ladies Program*; Bruce Peterson, Peterson Enterprises, Glenview, Ill. *Hospitality*; Richard Villaume, Illinois Bell Telephone, Chicago, *Message Center*; Matt Herman, Geo. W. Colburn Laboratory, Inc., Chicago, *Transportation*; John Maynard, Eastman Kodak Co., Oak Brook, Ill., and Francis Colburn, Geo. W. Colburn Laboratory, Inc., *Auditors*; and Henry Kakehashi, International Film Bureau, Chicago, and Phillip Smith Eastman Kodak Co., Oak Brook, Ill., *Administrative Assistants*.



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SMPTE Papers Committee Chairman Allan L. Williams (left) and Conference Program Chairman Hans C. Wohlrab.

Short Film Subjects

Each Conference technical session is opened with a short film. Many films are screened prior to a Conference to select the best and most appropriate for a sophisticated, technical audience. Many of the films shown are award winners. Hans C. Wohlrab, in addition to his duties as Program Chairman, handled the duties of Short Film Subjects Chairman. From the large number screened, these films were shown:

Our Heritage, Produced and Directed by Emerson Yorke for Prestige Productions

Spaceport USA, Produced by Kennedy Space Center

Study in Wet, Produced by Homer P. Groening

Study in Paper, Produced by Loyd Bruce Holman, Syracuse University

Notes on a Triangle, Produced by National Film Board of Canada

Precision, Produced by the National Film Board of Canada

Mosaic, Produced by the National Film Board of Canada

Clay, Produced by Elliot Noyes, Jr., Contemporary Films

Neighbors, Produced by Norman McLaren, National Film Board of Canada

Man and His World, The first ten award-winning films of the Montreal International Film Festival contest for the best interpretation of this theme in a 50-second motion picture

The Calypso Singer, Produced by Paul Glickman

Help, My Snowman is Burning Down, Produced by Carson Davidson

Breaking the Habit, Produced by John Korty for the American Cancer Society

People Might Laugh at Us, Produced by the National Film Board of Canada

Equipment Exhibit

The 102nd Conference Equipment Exhibit had more than 70 booths of equipment on display; 43 companies participated. Denis Howe, Wilding, Inc., Chicago, was

Exhibit Chairman and he was responsible for the Exhibit's strong showing.

Sylvania Electric Products, Inc., was the winner of the SMPTE Exhibit Award, presented for excellence and originality. A suitable inscribed plaque was presented to Sylvania at appropriate ceremonies shortly after the Conference.

The Exhibit opened at 5 p.m. Monday of Conference week. Exhibit Chairman Denis Howe, SMPTE President G. Carleton Hunt and SMPTE Conference Vice-President E. B. McGreal combined in the ribbon-cutting ceremony opening the Exhibit. The opening was followed by an open house sponsored by the exhibitors.

On Wednesday morning, several exhibitors presented papers or gave demonstrations of their equipment, as announced in the program.

Companies that had booths at the Exhibit are:

Allied Impex Corp.
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 Red Lake Laboratories, Inc.
 Ryder Magnetic Sales Corp.
 S.O.S. Photo-Cine-Optics, Inc.
 Shure Brothers, Inc.
 Sylvania Electric Products, Inc.
 Todd-AO Corp.
 Tokyo Shibaura Electric Co., Ltd.
 Welch Scientific Co.

Ladies Program

Mrs. Allen Hilliard (Nancy) and Mrs. William Koch (Gloria) were co-chair-ladies for the 102nd Conference Ladies Program Committee. They arranged and scheduled all those events which the wives of members attending the Conference were able to enjoy throughout the week.

The first day of the Conference, Sunday, the ladies signed up for the ladies activities, and in the evening saw the feature film shown in the hotel. Monday afternoon they took a bus trip to the Loop and went on a boat ride on the Chicago River. Tuesday morning they toured Chicago's Old Town and had luncheon at the Pickle Barrel.

Wednesday was a free day for sightseeing and shopping, and preparing for that

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Ladies committee co-chairwomen Nancy Hilliard (left) and Gloria Koch.

evening's Banquet at the hotel. Thursday the ladies toured the North Shore with stops at the Baha'i House of Worship, the North Shore Congregation Israel, the Charles Gates Dawes Mansion, and lunch at Fanny's Restaurant in Evanston. Friday they toured the University of Chicago and lunched at the Kellogg Center.

Generous contributions from the following companies enabled the Society to provide the program for the ladies at minimum expense to members and their wives. The Society is grateful for these companies' contributions: Bell & Howell Co.; Calvin Productions, Inc.; Geo. W. Colburn Laboratory, Inc.; E. I. du Pont de Nemours; Eastman Kodak Co.; Hollywood Film Co.; Jamieson Film Co.; Lipsner-Smith Corp.; Peterson Enterprises, Inc.; Quick-Set, Inc.; Reid H. Ray Film Industries, Inc.; Henry Ushijimi Films, Inc.; and Wilding, Inc.

Cocktail Party and Banquet

Some 400 members and wives attended SMPTE's traditional Banquet which was held in the Marine Room of the Edgewater Beach Hotel. Entertainment at the Banquet was by Minsky's Follies.

Preceding the Banquet, there was a cocktail party in the South Terrace of the hotel.

George W. Colburn, Geo. W. Colburn Laboratory, Inc., Chicago, was responsible for Banquet arrangements.

Committee Meetings

Ten SMPTE engineering committees met during Conference week, and attendance at these meetings was high. The committees meeting were: Television, Instrumentation and High-Speed Photography, Standards, Laboratory Practice, 16mm and 8mm, PH22, Film Projection Practice, Color, Film Dimensions, and Sound.

On Wednesday Conference week, a full slate of editorial meetings was held. Starting off was the Publications Advisory Committee Breakfast, followed by the Board of Editors meeting, then the Papers Committee meeting, and finally the Editorial Luncheon.

In addition, the SMPTE Board of Governors convened their fourth meeting of 1967 on Sunday, September 17.

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Acknowledgments

The Society expresses its thanks to the following companies for providing necessary service and equipment: Behrend's, Inc., Public Address and Recording Equipment, Illinois Bell Telephone Co., Message Center, and Trans World Airlines, Airline Reservation Center.

The Society is grateful to the following Balaban & Katz theaters for complimentary passes for SMPTE Conference registrants: Chicago Theater, Granada Theater, Roosevelt Theater, State Lake Theater, Uptown Theater. Bruce Peterson, Peterson Enterprises, as Hospitality Chairman, arranged for the passes.

Sylvania Wins SMPTE Exhibit Award



At the recent 102nd SMPTE Conference in Chicago, Sylvania Electric Products, Inc. was selected as the exhibitor with the best display in the Equipment Exhibit. Among the nearly 80 booths in an Equipment Exhibit of quite outstanding quality the choice was, indeed, a difficult one since there were many that were prominent in interest and appearance. The final decision of the Exhibit Award Committee in favor of the Sylvania booth was based on its attractive arrangement, the effective use of space and color and the excellent way in which it was calculated to present the company's products, emphasizing the importance of the present transition from black-and-white to color in lighting for television.

In order to point out the role of tungsten-halogen lamps in the conversion from black-and-white to color television, the Sylvania booth made use of an attractive young lady who smoothly and competently performed an old-time magic trick of pouring colorless liquids into each other and producing varied colors. Having used this device to attract the crowd, it was then easy to go

into a technical description of the company's products and the role of tungsten-halogen lamps in television studio lighting. The display also illustrated successfully Sylvania's "Family of Lamps" concept and the lumen and color-temperature maintenance characteristics of tungsten-halogen lamps. The exhibit was made by Design-Built Exhibits, Long Island City, N.Y.

After the Exhibit Award Committee had decided upon its choice, John Brophy of Sylvania, who was in charge of the booth, was congratulated by SMPTE President G. Carleton Hunt. A picture of the occasion appears on page 1236.

The Award plaque was subsequently prepared and the presentation took place on Monday, October 27, at the New York offices of Sylvania Electric Products, Inc. In the picture above, Richard B. Martenson (left), Vice President-Marketing of the Photo-Lamp Division of Sylvania Electric Products, Inc. accepts the award from Dr. Deane R. White, SMPTE Executive Vice President.