

## Obituaries



**Hellmut H. Berger**

Hellmut H. Berger, a Fellow of the Society and Chairman of the Toronto Section, died suddenly at his home on 22 August 1980 at the age of 61. He had been under care for a heart problem.

Born in Germany, 9 November 1918, he obtained his secondary and technical education there and was engaged in the design, development, and construction of radar equipment and, later, as recording engineer with the German Government Broadcasting organization. He was with the American Armed Forces Electronics headquarters in Frankfurt from 1948 to 1953.

In 1953, Hellmut emigrated to Canada and was employed as a senior technician by the Canadian Broadcasting Corporation for seven

years. His work in the field of kinescope recording was highly valued in the days preceding videotape recording. The same attention to technical excellence gained him respect as videotape recording became familiar to broadcasters.

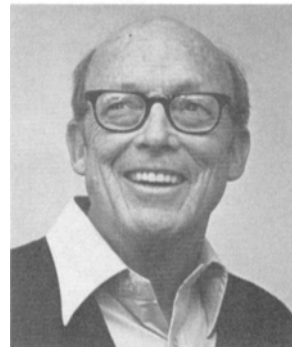
The private videotape production industry in Canada evolved in the early sixties and Hellmut was instrumental in its progress. He left the CBC to become Chief Engineer of Taylor Video Corporation in 1960. The first of the large videotape production mobiles in Canada was built under his direction.

In 1962, Hellmut joined CFTO-TV as Chief Engineer. He was responsible for conversion to color broadcasting in 1966; somewhat later he served as Chairman of the broadcasters' group created to consolidate Toronto broadcast transmitters at the CN Tower. Since 1972, he had been Director of Engineering for Baton Broadcasting.

He was a member of the Ontario Association of Certified Engineering Technicians and Technologists and a member of the Verein Deutscher Ingenieure. He also served on the Advisory Committee for Video Systems Technicians Courses at George Brown College.

A member of the SMPTE since 1960, he has been a very active member of the Toronto Section, involved in the management and activities of the section, standardization, and committees. He was elected a Fellow of the Society in 1976, and at the time of his death was Chairman of the Toronto Section.

Hellmut is survived by his wife, Wilmar, and two sisters, Ursula and Erika. A service was held in Toronto on 27 August attended by a large number of his friends and colleagues. The eulogy was read by Maurice French, Canadian Governor of SMPTE. The Toronto Section will certainly miss his leadership, enthusiasm, and his loyal friendship. — *Howard E. Wilkinson*



**John R. Clark, Jr.**

John R. Clark, Jr., retired President of Technicolor, Inc., and President and Tournament Chairman of the 1981 Bob Hope Desert Classic, died 13 July 1980 at Eisenhower Medical Center in Rancho Mirage at the age of 65.

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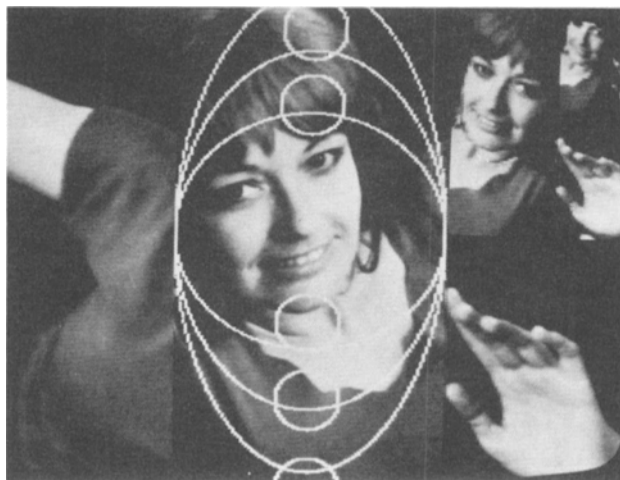
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# Electro-Voice's Greg Silsby talks about the Sentry 100 studio monitor



Production Studio, WRBR-FM, South Bend, Indiana.

In all the years I spent in broadcast and related studio production work, my greatest frustration was the fact that no manufacturer of loudspeaker systems seemed to know or care enough about the real needs of broadcasters to design a sensible monitor speaker system that was also sensibly priced.

Moving to the other side of the console presented a unique opportunity to change that and E-V was more than willing to listen. When I first described to Electro-Voice engineers what I knew the Sentry 100 had to be, I felt like the proverbial "kid in a candy store." I told them that size was critical. Because working space in the broadcast environment is often limited, the Sentry 100 had to fit in a standard 19" rack, and it had to fit *from the front, not the back*. However, the mounting hardware had to be a separate item so that broadcasters who don't want to rack mount it won't have to pay for the mounting.

The Sentry 100 also had to be very efficient as well as very accurate. It had to be designed so it could be driven to sound pressure levels a rock 'n roll D.J. could be happy with by the low output available from a console's internal monitor amplifier.

In the next breath I told them the Sentry 100 had to have a tweeter that wouldn't go up in smoke the first time someone accidentally shifted into fast forward with the tape heads engaged and the monitor amp on. This meant high-frequency power handling capability on the order of five

times that of conventional high frequency drivers.

Not only did it have to have a 3-dB-down point of 45 Hz, but the Sentry 100's response had to extend to 18,000 Hz with no more than a 3-dB variation.

And, since it's just not practical in the real world for the engineer to be directly on-axis of the tweeter, the Sentry 100 must have a uniform polar response. The engineer has to be able to hear exactly the same sound 30° off-axis as he does directly in front of the system.

Since I still had the floor, I decided to go all out and cover the nuisance items and other minor requirements that, when added together, amounted to a major improvement in functional monitor design. I wanted the Sentry 100 equipped with a high-frequency control that offered boost as well as cut, and it had to be mounted on the front of the loudspeaker where it not only could be seen but was accessible with the grille on or off.

I also didn't feel broadcasters should have to pay for form at the expense of function, so the walnut hi-fi cabinet was out. The Sentry 100 had to be attractive, but another furniture-styled cabinet with a fancy polyester or die-cut foam grille wasn't the answer to the broadcast industry's real needs.

And for a close I told E-V's engineers that a studio had to be able to purchase the Sentry 100 for essentially the same money as the current best-selling monitor system.

That was well over a year ago. Since that time I've spent many months listening critically to a parade of darn good prototypes, shaking my head and watching

some of the world's best speaker engineers disappear back into the lab to tweak and tune. And, I spent a lot of time on airplanes heading for places like Los Angeles, Grand Rapids, Charlotte and New York City with black boxes under my arm testing our designs on the ears of broadcast engineers.

The year was both frustrating yet enjoyable, not just for me but for Ray Newman and the other E-V engineers who were working on this project. At this year's NAB show it all turned out to be worth it. The Sentry 100's official rollout was universally accepted, and the pair of Sentry 100's at the Electro-Voice booth was complemented by another 20 Sentry 100's used by other manufacturers exhibiting their own products at the show.

What it all boiled down to when I first started the project was that I knew that the Sentry 100's most important characteristic had to be *sonic integrity*. I knew that if I wasn't happy, you wouldn't be happy. I'm happy.

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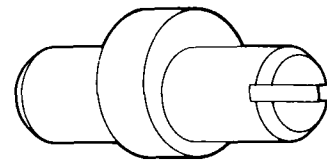
# Engraved Arrows and Eccenters:

The 16SR design goes far beyond "groundglass adjustment." Its fiber optics screen comes in a precision *mount*, like a lens mount. The mount holder on the camera body can be adjusted with a screwdriver, using eccenters. Engraved white arrows indicate the settings.



Part of one 16SR module: inside the rear half of the camera housing. Aperture is visible at lower left. In center: white

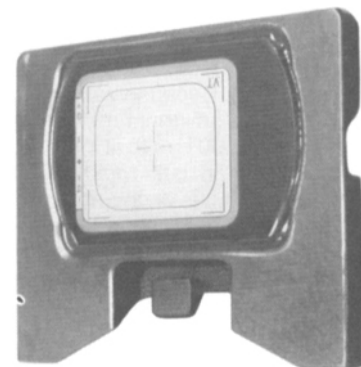
arrows next to eccentric slots show the technician how each eccentric affects the positioning of the fiber optics screen.



This is a drawing of an eccentric. It's a metal shaft with a circular bushing halfway along it. The bushing is positioned off center — eccentrically.

In the photo at left below, you can see three eccenters end on, with their screwdriver notches facing you. Each eccentric is partly hidden behind a slot. Each slot has a double-ended white arrow next to it, or crossing it.

The 16SR fiber optics screen, in its frame mount, is set horizontally in the mount holder above the aperture. When a technician turns one of the eccentric bushing moves the mount holder.



Fiber optics screen in steel frame mount.

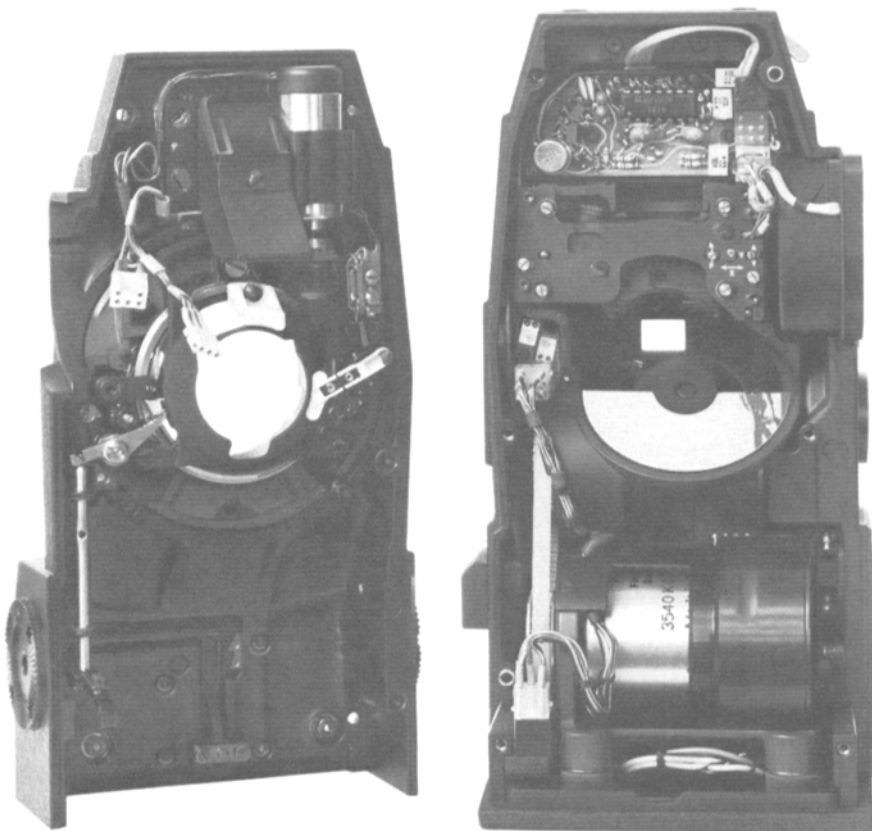
### What the arrows mean:

The right-hand arrow points up and down. Turning that eccentric moves the screen mount holder up and down — moving the fiber optics screen in and out of focus.

The center arrow points left and right. Turning that eccentric moves the mount holder (and thus the fiber screen) from side to side — so what you see at the eyepiece matches what the film sees at the aperture (parallax).

The left-hand arrow has a curved vertical shape. Turning that eccentric tilts the mount

# Technology of the 16SR / One of a Series:



Inside two halves of 16SR camera housing (see white arrows on one at right). Housing halves are two of fifteen modules. The

modular idea: they're quickly separable for service; and built in adjustments ensure precise compatibility of every module.

holder (and screen) so focus is uniform from edge to edge.

### Why they're engraved:

The white paint can be stencilled on the metal surface. Or the arrow forms can be engraved and the grooves filled with paint. Engraving is the better way.

### Why eccenters:

Any groundglass must be adjustable for focus, parallax and tilt. With every other 16mm camera, you have to use shims — layers of thin, compressible foil. Adjusting an eccentric is both faster and more definite.

It's also more permanent. When you adjust Eccenter Three, it doesn't alter the settings of Eccenters One and

Two. You can zero in systematically and logically on the final setting. Then it *stays* adjusted.

### Zero-tolerance interchangeability.

Measured in microns, no two artifacts are exactly alike. But the 16SR fiber optics screen mount is built to tolerances closer than a lens mount. Any ARRI mount lens will fit any Arriflex camera. Any 16SR fiber screen mount will fit any 16SR. If the screen is replaced, focus almost certainly *won't* need to be re-set. But if it does need it, that's easy: *16SR modules are adjustable.*

### Time is money and will continue to be.

When you buy a camera, you know the purchase price.

But you don't know what skilled service labor will cost three years from now. You don't know what it will cost to rent another camera while yours is being worked on, three years from now.

### Modular saves time.

All cameras need routine maintenance. The 16SR's modular design and precise settings make adjustment quicker and more positive. *The camera stays adjusted longer.*

Repair is quicker, too. The 16SR is designed to be dismantled easily; and a malfunctioning or damaged module can be replaced immediately, from stock. The fact is: The 16SR is the most sophisticated 16mm camera in the world. It's also the simplest to service.

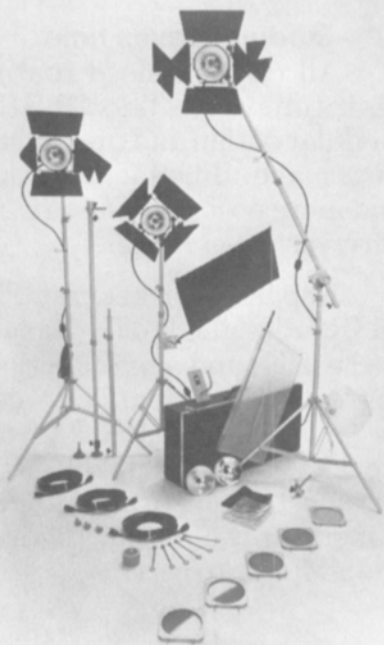


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company from 1960-1962, Clark joined Technicolor's manufacturing department in 1934 after graduating from Columbia University and Columbia Teachers College. After two years in the Research Department, he became an Administrative Assistant in 1938 and held that job, with time out during World War II with the Office of Scientific Research and Development, until 1946 when he became Assistant to the President. He became Vice-President of Technicolor in 1955 and five years later he became President and General Manager. After his retirement, he remained with Technicolor as a Director through 1963.

Clark came to the desert in 1962 and found an active calling in community service. Commonly known as "Jack," he had served as an Indian Wells City Councilman, on the Eisenhower Medical Center Council, and recently was honored by the Hebrew University with their Scopus Award for his humanitarian efforts. This award had previously been bestowed on former President Gerald Ford, Bob Hope, Frank Sinatra, and Henry Kissinger. Clark was a Fellow of SMPTE and a member of the Academy of Motion Picture Arts and Sciences.

A resident of Indian Wells, Clark served as Bob Hope Desert Classic President and Tournament Chairman in 1971, 1972, 1976 and was re-elected to an unprecedented fourth term for the 1981 tournament, which is an Eisenhower Medical Center benefactor and fund raiser for other local desert charities.

Expressing his sorrow, Classic Board Chairman Bob Hope said, "Both Delores and I have lost a valued friend. He really loved golf and he loved the desert community. We all owe Jack Clark a tremendous debt of gratitude for his years of service to the Classic as well as his selfless charity endeavors for the Eisenhower Medical Center and the Community Blood Bank. We shall really miss him."

Survivors include his wife Marion; parents John R. and Caroline Clark of Gwynedd, Pa.; son, Robert, of San Juan Capistrano; daughter, Patricia Vander Hoven, of Santa Barbara; sister, Betsy McIsaac, of Washington, D.C., and stepson, Russell Keeley, of La Quinta.



**Alan E. Freedman**

Alan E. Freedman, founder and former Chairman of the Board and President of De Luxe Laboratories, Inc., died 28 April at the age of 90 after a short illness. De Luxe Laboratories, Inc. is now De Luxe-General, Inc., a wholly owned subsidiary of Twentieth Century-Fox Film Corp. from which Freedman retired as active head on 31 December 1962.

He joined Fox Film in 1915 as Assistant to

Jack Leo, then Vice-President. Having started his career in 1911 at the Crystal Laboratory in New York City, he was assigned to manage the laboratory in Fort Lee, N.J. When Fox decided to build its home office and laboratory in New York City, he was assigned the additional responsibility to supervise the design and installation. The laboratory was opened in 1921 and was servicing only the Fox product.

In 1932, Freedman headed a syndicate that purchased the laboratory from the Fox Film Corp. for \$2 million and renamed it De Luxe Laboratories, Inc. The laboratory opened its facilities to all commercial accounts. Under an option agreement with Fox, Fox could purchase the Laboratory. They exercised the option in 1936 at which time the Lab became a wholly owned subsidiary.

Under his aegis, De Luxe was responsible for the development of a number of technological innovations in the laboratory industry. Among these were spray development, the 32mm process, octette printers, additive printers from a single light source, and Color by De Luxe.

During World War II, Freedman made available a major portion of the production facilities of the Lab for War Department needs increasing the capacity to enable the Lab to ship in excess of 20 million feet weekly. He received a citation from the War Department for his contributions. He held a rank equivalent to that of Brigadier General in the OSS.

Freedman was a Life Fellow of the SMPTE; a founding member of the Motion Picture Pioneers; a member of the Academy of Motion Picture Arts and Sciences; a consultant to UNESCO; Chairman of the Trustees of The Motion Picture Laboratory Technicians, Local 702, Pension and Welfare Funds; a member of the National Executive Reserve of the U.S. Department of Commerce; and a member of the Board of the Will Rogers Hospital.

An avid yachtsman, he held the rank of Commodore Emeritus of The Knickerbocker Yacht Club. During World War II, he served with the U.S. Coast Guard Auxiliary on regular patrols.

He is survived by a daughter, Dr. Dorothy Stone, and three sons: Harold, now retired; Irwin (Buck), Motion Picture Sales Manager for Agfa-Gevaert; and Myron (Mickey), General Manager of the Film Rejuvenation Division of Hollywood Film Co. Also surviving are nine grandchildren, four great-grandchildren, three sisters, and a brother.

### **Charles A. Jantzen**

Charles A. Jantzen died 16 April 1980 at his home in Wayne, N.J., at the age of 59.

He was born 8 July 1920 in Rotterdam, Netherlands, and emigrated to the United States with his parents when he was four years old.

During World War II, he served in General Eisenhower's headquarters on a liaison team with the Dutch government. He spoke Dutch and German as well as English. In 1941, he joined Fairchild Camera and Instrument Corp. in Research and Development; and in 1951, he founded the Photographic Analysis Company. During that same year, he joined the SMPTE. A pioneer in the field of high speed photography, he lectured extensively to college and professional groups and

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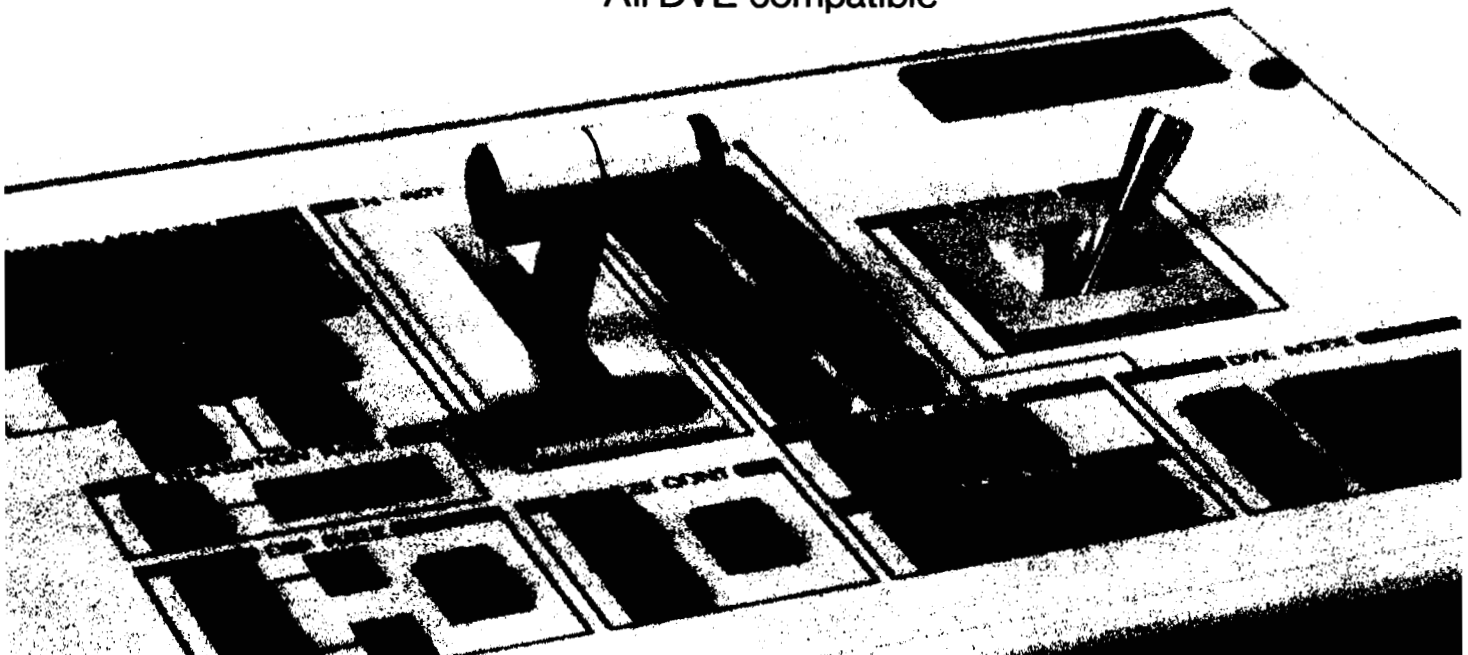
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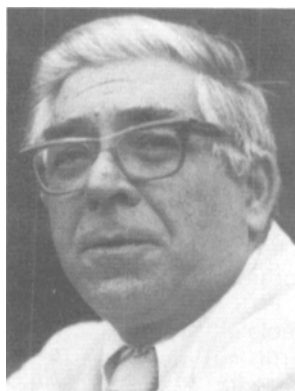
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gradually became known internationally as an expert in the field. For many years, he conducted seminars on high speed photography in both the United States and Canada. He also acted as a consultant to many large corporations and universities.

Working with a friend, Victor J. Canziani, he developed and obtained a patent on the X-L Meter, an exposure meter for use with high speed motion picture cameras. When any three of the four variables of light, frame speed, f/stop and film speed are entered in the instrument, the correct fourth variable is indicated by the X-L Meter without any computation by the photographer.

After joining the SMPTE in 1951, he served on various committees, becoming Chairman of Photoinstrumentation Committee in 1972. In 1966, he became a director of Photographic Analysis Ltd. of Markham, Ont., Canada.



**Gordon E. Sawyer**

Gordon E. Sawyer, a Life Fellow of the SMPTE, died 15 May 1980. A member of the SMPTE since 1938, his many services to the Society included membership on various committees, including the Sound Committee, the Standards Committee, and membership on the Board of Governors. In 1970, he was awarded the Samuel L. Warner Memorial Award "for pioneering and maintaining the highest engineering standards in sound recording for motion pictures through the development of advanced equipment and original techniques; for encouraging the highest possible standards throughout the industry by lead-

ership in technical societies and associations and fostering of joint industry research and development; and for continued promotion of programs for the technical training of sound recording personnel."

From 1928 until his retirement, he was with Samuel Goldwyn Studios as Recording Engineer, Sound Director, and Technical Director.

He was a member of the Academy of Motion Picture Arts and Sciences for many years, serving as a Governor of the Academy for 17 years, a member of the Scientific or Technical Awards Committee for 43 years, and as Chairman of the committee for 12 years.

The establishment of the Gordon E. Sawyer Memorial Award was recently announced by the Academy. The award will recognize exceptional long-term accomplishments by an individual who has made substantial contributions toward the advancement of the science or technology of the motion picture. The award will be given by the Academy's Board of Governors only in those years when a worthy candidate is proposed to the Board by the Scientific or Technical Awards Committee. The announcement noted that a memorial award of this magnitude has not been voted by the Board since the Jean Hersholt Humanitarian Award was established in 1956.

In 1978, Sawyer was awarded a special Medal of Commendation by the Academy's Board of Governors "in appreciation for outstanding service and dedication in upholding the high standards of the Academy of Motion Picture Arts and Sciences." During his tenure as head of the Samuel Goldwyn Studios Sound Department, the department received four Oscars for sound recording. (Until 1969, the Academy awarded Oscars for sound recording to studio sound departments rather than to individuals.)

Donald C. Rogers, Chairman of the Scientific or Technical Awards Committee, said "Gordon Sawyer's expertise as a director of sound represented only a fraction of his scientific knowledge. His advice was valuable in every area of production, from chemistry to physics to engineering." Many people relied on Gordon's counsel.

Other than his membership in the SMPTE and the Academy, Sawyer was also a senior member of the Institute of Electronic and Electrical Engineers.

### **Ernest M. Reynolds**

Ernest M. Reynolds died 15 June 1980 in Cleveland, Ohio, at the age of 85. He became interested in film during the very early days of motion pictures, becoming a cameraman in 1918 and shooting a number of silent movies. He filmed the first movies of Will Rogers. He joined the Art Film Studios in Cleveland in 1926 as studio head, leaving in 1933 to form his own company. He retired in 1960. Among his patented inventions were a film developing rack and a film cleaner for narrow film. He had been a member of the SMPTE since 1953.