

Report by the SMPTE Archival Papers and Historical Committee

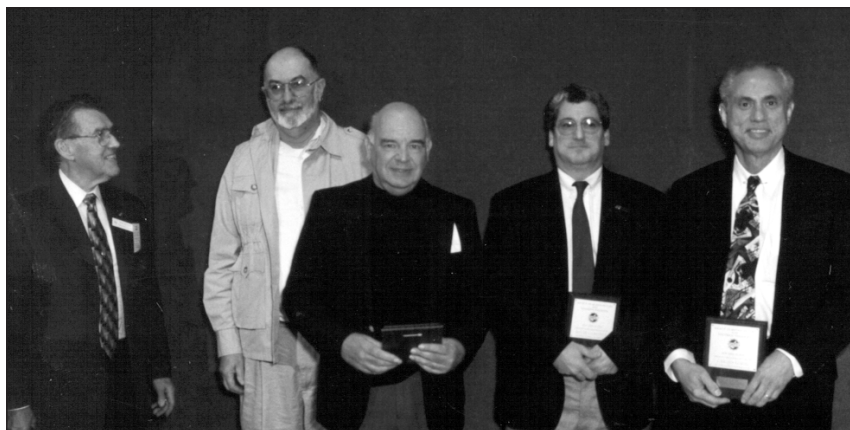
By Edgar A. Schuller, Chair, Archival Papers and Historical Committee

Presented at the New York Section Meeting, October 11, 2000

In October 1998 the Archival Papers and Historical Committee printed an appeal in the New York Section meeting notice. It called for historical information on the era covering the conversion from film newsgathering to electronic newsgathering (ENG) and requested first-hand accounts from people who experienced this transition period. This resulted in a comprehensive program on the topic of "ENG—The Revolution in Television Newsgathering," at the October Section meeting.

All the speakers had volunteered to present a paper for the meeting, which was held at Studio 46 in the CBS Production Center. The theme documented, in historical context, the television broadcast industry's transition from motion picture film news to electronic newsgathering. The meeting began with a social gathering for about 90 attendees as well as a chronological exhibition of historical newsgathering equipment. Motion picture equipment included a 35mm Bell and Howell Eyemo camera from 1924, 16mm Filmo and Bach Auricon cameras, and a complete set of film editing equipment. Electronic equipment featured the first CBS Minicam, RCA TK76, Ikegami HL-79A, Panasonic RECAM, and Panasonic AJ-D700 DVCPRO. Old reference books, equipment catalogs, and manuals illustrated how the industry has changed. During the reception members were also given tours of the CBS Hard News Center as well as a wide variety of foods and drinks, courtesy of CBS.

The presentations began with Rupert Stow, formerly with CBS. The network was the early innovator in electronic newsgathering, and he described some of the discussions and developments that led to the idea of CBS converting from film news to electronic equipment. The project



New York Section at CBS in October. (l-r) Ed Schuller, Elliot Butler, Dobie Borovecki, David Garfinkle, and Carl Girod.

was led by CBS executive Joseph Flaherty, an Honorary Member of SMPTE. Stow talked about the CBS Minicam, the first portable television news camera, which had been developed at CBS Laboratories in Stamford, CT, in the late 1960s. The actual camera was brought to the meeting as part of the historic equipment exhibit; it was used to record President Nixon's announcement that "peace is at hand" in Vietnam.

The second speaker was Elliott Butler, who recently completed 37 years with ABC local and network news. He started his career with film cameras and lived through the entire transition to electronic news. Butler demonstrated the lightweight Bell & Howell Filmo silent camera and then explained how the Auricon Cine Voice sound cameras had been modified for increased running time. By cutting off the built-in 100-ft film magazine and installing a new mounting plate for removable 400 and 1200 stock Mitchell magazines, running time was increased from 2 3/4 min to as much as 33 min. Butler described how the original three-man crews used for film recording were gradually reduced to a "one-man band" for ENG. When tape recording

replaced film recording it was thought that lighting would no longer be required. Unfortunately this resulted in a rather flat, low-contrast picture. When shooting with film, cameramen had to be concerned with excess picture contrast; conversely, tape limited the contrast. ENG cameramen, proficient with lighting for film, used their lighting experience to increase picture contrast for recording on videotape. Butler also commented that the equipment load for ENG technicians had gotten progressively heavier in recent years.

Ed Schuller, formerly with Entertainment Video Systems, read the next paper by Sheldon Nemeyer, formerly director of NBC Newsfilm operations worldwide. Nemeyer, who was unable to attend the meeting, stated that the initial format for television news was very similar to that developed during World War II by the familiar *Movietone News* and *Warner-Pathe News* theatrical newsreels. The same equipment and format was used for *The Camel Caravan* with John Cameron Swayze, an early television news magazine show. Before videotape and satellites it was impossible to quickly transmit news stories to the



Exhibit of film cameras at New York Section meeting in October.

home viewer. However, during the 1948 Presidential Convention, NBC developed a system using film, whereby a recap of Huntley and Brinkley's report was broadcast the very same night; this was considered to be amazingly fast at the time. Film copies of the report were also shipped by air to NBC's affiliate stations for broadcast the next day. The many functions required for the fast turnaround-time were carried out by a new type of firm called film expeditors. The advent of magnetic sound, recorded in the camera along with the picture, resulted in improved sound compared to the optical sound track technology of that time. Color was on the horizon in 1965, with almost everything being broadcast in color, except television news. Many tests were made of various color processes and Filmline Corp. and other machine manufacturers produced hundreds of color processing machines. NBC staffed about 125 complete film newsreel outfits around the world.

NBC's first all-color evening news show was broadcast in November 1965. Ironically, the network's very first news in color was 8mm Kodachrome footage of a burning cruise ship off the coast of Florida. The engineering and newsfilm departments, with the help of Ed Bertero, jury-rigged an 8mm film chain to broadcast the story. Color gave the viewing audience a new impression of news events. NBC's evening news director commented that he received a sudden large quantity of mail, with much concern of how "bloody red" the Vietnam War appeared on home color television.

Modifications and accessories to simplify and decrease the weight of the film news equipment package were designed and manufactured by Edmund DiGiulio, Cinema Products, and James Frezzolini, among others. Various problems generated by the introduction of color film and magnetic striped raw stock were investigated and solved; film sensitometry and quality control were constantly improved with the help of Eastman Kodak's field representatives. By 1975, just ten years after the start of color newsfilm, however, improvements in videotape indicated that there would soon be a switch from motion picture to electronic equipment. The elimination of motorcycle couriers, darkroom equipment, film processing, processing time, and film editing all marked the end of film newsgathering, and NBC began EJ (electronic journalism).

The fourth speaker, Dobie Boroveck, formerly with CBS engineering, described the beginning of electronic newsgathering. By 1971 television equipment that was sufficiently small in size to be moved by news crews became available. The original goal of the CBS engineering department for a pilot project was to package an electronic system the same way film crews did; it was to be transported in the trunk of a car. Even though the equipment package was relatively small, it was still considerably larger than its 16mm film equivalent. It consisted of a CBS Minicam; an electronics "backpack" for the camera that contained two rows of plug-in circuit boards; a DC-to-DC converter and silver cell batteries; a small version of the Ampex

AVR-3000, which was a 2-in. quad videotape recorder; extra 2-in. videotapes; microphones; and a small audio mixer. A van was needed for transport and two refrigerator dollies, capable of negotiating curbs and stairs, were modified to carry the equipment. The specialized handcars enabled technicians to move the equipment from the van to the news location.

The pilot project was successful, and by the spring of 1972 the News Department started testing the equipment while the Engineering Department investigated newer, smaller, and better gear. The first experiments were completed at WCBS channel 2 in New York City. After the News Department accepted the pilot system, a decision was made to introduce the same technology at news departments in all five owned and operated (O & O) CBS TV stations. In March 1973, all five simultaneously introduced a news segment originated by electronic newsgathering on their evening broadcasts. In 1974, station KMOX-TV (now KMOV-TV) in St. Louis, MS, became the first all-ENG station in the world.

Boroveck then read a paper written by his colleague, David Horowitz, who worked with CBS Engineering for 25 years, latterly vice-president of planning. Horowitz was unable to attend but his paper illustrated CBS's encouragement and support of companies developing tools for ENG in the early 1970s. The tools included transportable cameras and videotape recorders, portable microwave systems, and a time base corrector. CBS developed the systems to use these tools. Like other networks, CBS used portable color cameras at the 1968 political conventions, but the first true ENG experiments were completed in 1972 at WCAU-TV, Philadelphia. In 1974, at KMOX-TV, CBS rebuilt a portion of the newsroom for the new operation and initially used the IVC 800 series of VTRs. After training news crews to use this system the station went on the air on September 21, and as mentioned earlier, became the first all-ENG station in the world.

After a year of operation CBS estimated the cost of an ENG story to be



Exhibit of video cameras at New York Section meeting in October.

just 57% of the cost of a film story. Some argued the financial estimates but no one could dispute the immediacy and effectiveness of ENG. Shortly thereafter, CBS rebuilt its entire station in Chicago, IL, WBBM-TV, focusing on the news operation and ENG. By then, Sony's U-matic tape format was established. An on-air news control room, edit rooms, microwave-feed record system, and extensive communications facilities were built. The remaining CBS-owned stations, as well as CBS News in its field operations and bureaus around the world, were also converted to ENG. Horowitz led the team that implemented most of these projects. Borovecki returned to an earlier time in the development of ENG transmission when live signals were transmitted back to the studios with 2-GH microwave equipment. This required large and unwieldy parabolic antennas, which were carried in utility vans and, at the news location, were moved to the top of the vans and mounted on tripods. The engineering department was again thinking of further improvements.

The next speaker, Carlos Girod, director of audio-video engineering for CBS Broadcast Operations and Engineering from 1974 to 1988, and now SMPTE Director of Engineering, provided a description of the next major developments: improved transmission and mobility. The new electronic system not only changed the tools for the news crews but the "revolution" toward ENG

also changed the methods by which news stories were gathered for television networks and local television stations. Formerly, during the 6 p.m. news, television news anchors would announce "film at 11" p.m. It was now possible to broadcast relatively immediate live inserts of news stories on breaking news events any time of the day. This was accomplished by specially designed ENG vans using built-in microwave facilities to feed live stories back to the broadcasting studio. The unwieldy parabolic antennas were replaced with telescoping, 30-ft high, 2-GH antennas, which were built into the vehicle. Permanent equipment racks were also built into the van.

CBS was the first of the television networks and O & O stations to begin using ENG vans, starting at KMOX-TV, followed closely by the implementation of ENG vans at CBS affiliate stations WBBM-TV, Chicago, WCAU-TV, Philadelphia, WCBS-TV, New York, and KNXT, Los Angeles. Girod provided pictures and details of five ENG vans built for KNXT (now KCBS-TV) in Los Angeles in 1977. He also presented a section from an important new safety video on ENG vans and possible problems with elevated transmission masts near power lines (see *SMPTE Journal*, Sept., p. 744).

The sixth speaker, David Garfinkle, formerly with The Camera Mart and now with CBS News' *60 Minutes*, spoke of the importance of education in the success of the ENG revolution.

Garfinkle worked as manager at The Camera Mart, which was the primary network supplier of ENG equipment. He trained many professionals to use the new ENG equipment and ensure successful rental of the equipment. Accessories that had been developed for film news, such as the Cinema Products Steadicam camera stabilizer, were adapted to electronic cameras. All television cameras had been equipped with right-eyed viewfinders but Camera Mart developed a left-eyed viewfinder for cameramen who required that feature. Originally cameramen carried batteries on a belt around their waist, with a wire leading to the camera. Due to comments from cameramen in the field, Camera Mart encouraged Anton Bauer to develop battery packs that could be clipped directly onto the camera, a feature now taken for granted on all professional and consumer camcorders.

Similarly, Porta-Brace was encouraged to develop specialized canvas carrying cases for sound and video equipment. The hard shipping cases now used for common carrier transport were also designed by incorporating ideas from news crews reporting back to Camera Mart. The company was instrumental in modification changes across a broad spectrum of professional equipment. Later on, as vice-president of production at Broadcast News Service, Garfinkle was responsible for the operation of Cable News Network and Independent Network News in seven cities. Here, again, the key to the success of these companies was educating its employees and customers in new technology.

The meeting concluded with a lively Q & A session and panel discussion. The committee chair would like to thank all of the speakers who volunteered, the many members who carried historic equipment to the equipment exhibition, the host, CBS, and the officers of the New York Board of Managers who helped in implementing many technical details necessary to stage this meeting. The entire proceedings were recorded by two digital camcorders and the edited version will be placed in the archival files of the Society.