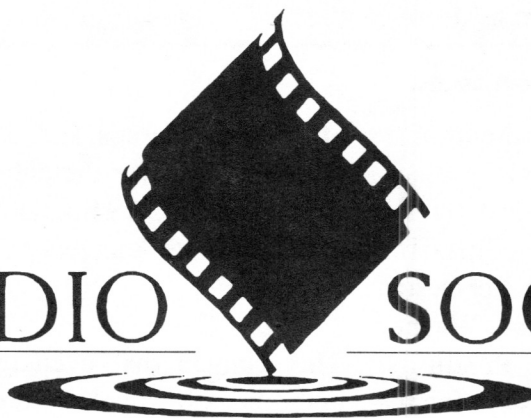


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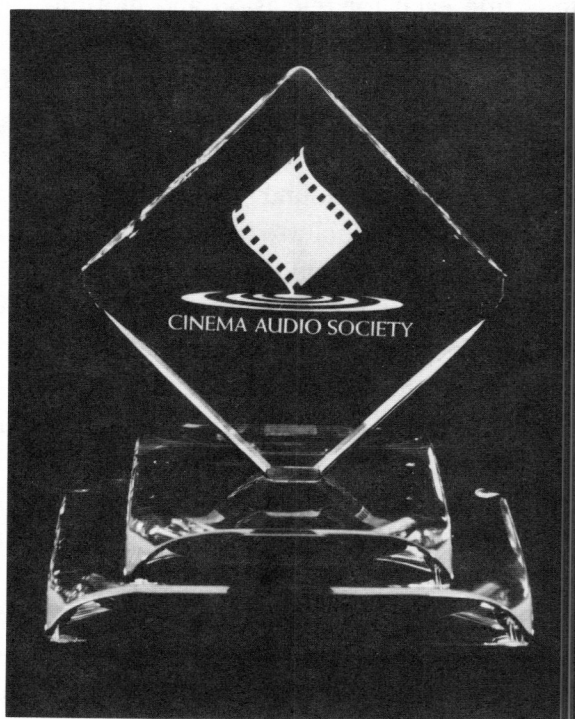
Walter Murch to be Honored with CAS Life Achievement Award

by David Weishaar, C.A.S.

The C.A.S. Board of Directors, is proud to announce that they will bestow the Life Achievement Award to Academy Award winning Re-Recording Mixer, Sound Designer, and Film Editor, Walter Murch. The presentation will take place March 5, 1994, at our Thirtieth Anniversary - Awards Banquet, at the Sheraton Universal Hotel.

Walter Murch has enjoyed a long-term collaboration with filmmakers Francis Ford Coppola and George Lucas. His sound editing was central to the success

continued on page 2



The C.A.S. Sound Award

and executed by Stephen Schlanser of the Schlanser Design Studio.

The Award

The award, made entirely of fused, crystal clear glass, stands over six inches in height and is five and three quarters inches across and weighs four pounds. The new C.A.S. logo is etched onto the free standing vertical plane by a unique sandblasting technique. The glass blocks are perfectly balanced and proportional, just as sound must be clear and in perfect balance with the moving images. This unique piece of art will be a prized possession that can proudly be displayed by the

The First CAS Sound Awards

by Richard Lightstone, C.A.S.

"And the Cinema Audio Society Sound Award goes too.....,"

These are the words Producer, Mace Neufeld will speak as he opens the sealed envelope on the night of March 5, 1994. Mr. Neufeld will present the Cinema Audio Society's First Sound Awards for outstanding achievement in sound mixing for both Television and Motion Pictures. The winners will receive a beautifully sculpted glass trophy, designed by Christine Jaszowskiak

continued on page 2

The First Sound Awards, continued...

lucky winners on March the fifth.

The award was developed by the Graphic Designer, Christine Jaskowiak, Senior Computer Design Creative Supervisor at Warner Brothers Consumer Products. Christine is also responsible for the creation of our terrific new logo, which celebrates the Cinema Audio Society's thirtieth year.

The new logo captures moving, kinetic film frames, rising from rings in a pool of sound waves. These concentric rings represent past and future sound recording, from early wax cylinders, to tape, magneto-optical disks and future technology....."the advancement of sound".

Mr. Schlanser, a native of California has been operating a very successful stained glass studio for 10 years. He began experimenting with kiln firing of plate glass to form interesting and exciting pieces of art, which are sold

at Nieman Marcus and Saks Fifth Avenue. However the only place to get one of the CAS Sound Awards is at our Thirtieth Anniversary - Awards Banquet!

The winners that evening will be determined by a vote of the 280 full members of the Cinema Audio Society. The final ballot will consist of the five final nominees in each category, and voters will select one title each for television and motion pictures. The ballots will be tabulated by the independent accounting firm of Seymour B. Bloom.

The C.A.S. Sound Award will be given individually to the re-recording mixers and production mixers of the winning titles in each category. Don't miss out on this historic and exciting night, the Cinema Audio Society's Thirtieth Anniversary - Awards Banquet, at the Sheraton Universal Hotel, Roof Garden on Saturday March 5, 1994.

**Walter Murch, continued...**

of "The Conversation" (1974), in which Walter received his first Academy Award Nomination. Mr. Murch later received an Oscar for his aural design on "Apocalypse Now" (1979), as well as another Academy Nomination for film editing on the same motion picture. Murch's film editing has garnered him three additional Academy Nominations; "Julia" (1977), "Ghost" (1990), and "The Godfather Part III" (1990).

Walter's creativity doesn't just include sound and editing; he is also a screenwriter and a director. He collaborated on the screenplay for "THX 1138" (1971) and wrote and directed, "Return To Oz" (1985).

Walter Murch's other film credits include; "Gimme Shelter" (1970), "American Graffiti" (1973), "The Godfather Part II" (1974), "The Unbearable Lightness of Being" (1988), "Call From Space" (1989), and "House of Cards" (1992).

We are pleased that Mr. Murch has accepted our invitation and his presence will definitely add to what is going to be a very exciting evening.

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PART I

MOVING PICTURES THAT TALK

HOW IS IT POSSIBLE?

By Mark Ulano, C.A.S.

Last summer, I was asked to deliver a talk to the California Antique Phonograph Society on the early history of film sound. Ed Somers asked if I would be interested in expanding my talk to be applicable to the professional film

sound community through the CAS and also serialize the general topic as a column for the CAS Journal. So here I am at what seems to be the beginning. Some knowledge of the history of the phonograph, a vast area of study in its own right, would be helpful to the reader and is beyond the scope of this series. I recommend Allen Koenigsberg's **THE PATENT HISTORY OF THE PHONOGRAPH** (second edition) for the most concise and recent historical survey, or the flawed but wonderful **FROM TIN FOIL TO STEREO** by Read & Welch.

It is enough to say here that the tin foil phonograph was invented by Thomas Edison in 1877. It was a stretched diaphragm with a needle mounted to the center of it. The tin foil was wrapped around a brass cylinder which had a spiral groove. The cylinder was mounted on a threaded shaft and the needle rode in the groove as the shaft was turned, driving the cylinder across the fixed position of the needle. The user would speak into the diaphragm causing it to vibrate. Since the needle was in contact with the tin foil, the diaphragm's vibrations would be recorded as indentations in the foil. After the recording, the needle would be reset, to the beginning of the groove and the shaft was turned again, the indentations passing across the needle causing the needle to vi-

brate the diaphragm in a similar fashion to the original sound thus creating audible playback of the recording. This is the basic phonographic principle which drove the technology until the advent of the compact disk.

Here we are, professionals in the World of Film Sound and yet what do we really know about the genesis of our work? This is the question I asked my self when, at the end of a long day, I looked at my sound cart and realized how little I knew about it's history. Most of what I *did* know came from hearsay and popular culture optimized by the **SINGING IN THE RAIN** version of the transition into sound films.

This was in the back of my mind while on location for a feature film in Portland. I was browsing in one of the many used bookstores when I came upon a cache of early film books. There were wonderful items like the rare and massive, 620 page, two volume tome, **CYCLOPEDIA OF MOTION PICTURE WORK** (1911) by David Hullfish which includes a large **Talking Pictures** section giving an in-depth survey of the state of the art of film sound circa 1911. From another book in the group I learned that the motion picture studios had funded a technical school to train a film sound work force in the late 1920's. Each student was given his own binder and as he attended classes he was given a technical paper covering the individual class' content. Here was a complete set of these papers in an original

continued on page 4



Moving Pictures That Talk, continued...

binder. It was the preliminary draft for the first bound volume issued in 1931 by the Motion Picture Academy called **RECORDING SOUND FOR MOTION PICTURES**. I knew this because there were copies of the 1931 and the 1938 editions in the group. (The changes in just 7 years were just enormous.) Another book, **THE TALKIES** by Arthur Edwin Krows (1930) had a twenty page film sound bibliography including both books and periodicals. These and other significant works, about eight in all, formed the core of a new area of research for me and made me realize that a whole body of literature existed on this subject dating back to the 1870's and no one seemed aware of it, especially people like myself who currently work in the film sound disciplines: I was hooked.

I began to specialize in sound related subjects while seeking out early published works of the cinema more systematically from dealers around the country. I also decided to create and publish a historical bibliography of film sound literature, something I am still working on.

Allen Koenigsberg, an old friend and publisher of *The Antique Phonograph Monthly*, generously guided me towards an important reference book written by Harry M. Geduld called **THE BIRTH OF THE TALKIES: From Edison to Jolson** (1975). This extensively researched and well written book has been my Rosetta Stone, establishing a legitimate chronology, rich with foot notes leading to much primary material.

It had to start somewhere, the first inklings...

The popular perception is that film sound burst on the scene with Warner Brothers' **THE JAZZ SINGER** starring Al Jolson in 1927. In truth, **THE JAZZ SINGER** represents the beginning of real commercial acceptance of the transition to sound films.

It didn't just happen out of the blue. Actually, sound with film as an idea seems to have started fourteen years before the invention of the motion picture, during the phonograph's infancy. The December 22, 1877, issue of *Scientific American* contains the earliest printed report of Edison's new tin foil phonograph, just days old, commenting:

"It is already possible by ingenious optical contrivances to throw stereoscopic photographs of people on screens in full view of an audience. Add the talking phonograph to counterfeited their voices, and it would be difficult to carry the illusion of real presence much further."

Responding to this article the next month in *Nature* (January 24, 1878) Wordsworth Donisthorpe, and English inventor lets loose with: *"Ingenious as this suggested combination is, I believe I am in the position to cap it. By combining the phonograph with the Kinesigraph I will undertake not only to produce a talking picture of Mr. Gladstone which, with motionless lips and unchanged expression shall positively recite his latest anti-Turkish speech in his own voice and tone."*

Not only this, but the life-size photograph itself shall move and gesticulate precisely as he did when making the speech, the words and gestures corresponding as in real life. Surely this is an advance upon the conception of the Scientific American! ...

...I think it will be admitted that by this means a drama acted by daylight or magnesium light may be recorded and reacted on the screen or sheet of a magic lantern, and with the assistance of the phonograph the dialogues may be repeated in the very voices of the actors.

When this is actually accomplished the photography of colors will alone be wanting to render the representation absolutely complete, and for this we shall not, I trust, have long to wait."

Although not wrong about the eventual result, the world waited about fifty-seven years for sync sound, 3-color Technicolor films (**BECKY SHARP** 1935). Nonetheless, Wordsworth helped define the path of the future. Never mind that there was no such thing as moving pictures or even celluloid roll film for that matter. Nor that his Kinesigraph would remain Vaporware until 1889 at which time it didn't work anyway. What counted was that the public desirability of such a device created the inevitability of its ultimate invention. Although no one really knew where it would lead, the sporadic race was on.

continued on page 8

A New Recipe for Post-Production

"Just add a quick release date and Mix"

Tracking the Tracks on Last Action Hero

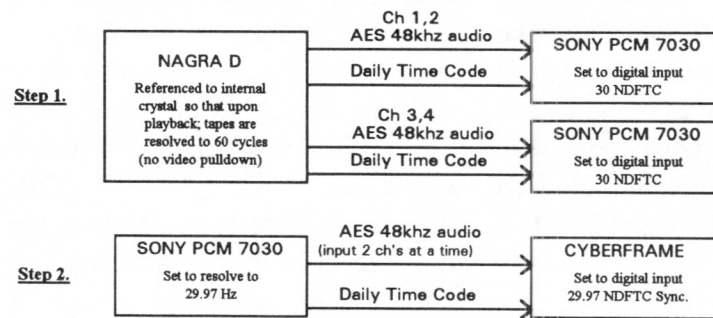
by Richard Lightstone, C.A.S.

In our last issue of The Journal, I promised a comprehensive follow-up to the discussion of Lee Orloff's use of the Nagra D, on Last Action Hero. I wanted to trace how his four channels of production track were utilized in the post production of the film.

The making of any motion picture is costly enough, now add to that the cost of using Last Action Hero to platform an entirely new release format; Sony's Dynamic Digital Sound System. This system entered an already crowded marketplace; Dolby A (70mm), Dolby SR (35mm), Dolby SR-D, and DTS.

Sony has to be lauded for its full support of their new un-tested system (that is in the marketplace) through a big budgeted feature. They wanted the production tracks recorded not only digitally, but with another new un-tested proprietary format in the Nagra D. Add to this recipe an extremely short post-sound editorial and mix schedule; - six weeks from the end of principal photography to the release date.

Jerry Ross of Acme Soundworks, the Supervising Sound Editor, had a crew cutting for the final mix and temp dubbing for the preview simultaneously. There were also



Last Action Hero - Transfer chain for dialogue editing

reshoots in the middle of the dub, requiring more sound editorial changes. They needed many editors and assistants cutting in numerous editing rooms, operating around the clock seven days a week, and three dubbing stages at Sony. Cindy Marty supervised the dialogue, the ADR was supervised by Lauren Palmer, Jay Wilkensen was the effects supervisor and Mark Pappas supervised the Foley. Mark had two foley crews working simultaneously, made up of, Dan O'Connell, Gary Hecker, Jimmy Ashwell, Zane Bruce, Joey Cibella and Jackson Schwartz.

In order to edit the production tracks, they had to be loaded into the CyberFrame (commonly referred to as the WaveFrame). To do this they went through two steps.

Step 1, (See the accompanying flow chart) was transferring the 1/4" Nagra D audio to time coded DAT's. This step was necessary because the Nagra D could not resolve at the video rate,

59.94 Hz. They used two Sony PCM 7030's for recording. Since the Nagra D has 4 channels of audio, two DAT's were necessary. The transfers used the AES standard for digital audio.

The time coded DAT's were set to record external, 60 based non-drop frametimecode, fed to it by the Nagra D. The Nagra D was resolved to it's internal crystal at 60 Hz.

Step 2, involved loading the DAT's into the Cyber Frame. This was also accomplished digitally using the AES standard. The DAT's were fed NTSC video, so that their speed could be resolved to 59.94 Hz. The speed change was necessary since the videocassettes that were used for editorial, underwent the video pull down in the telecine process. The CyberFrame was set for 29.97 NDFTC while the loading occurred. As the audio was loaded into the CyberFrame, the time code off the DAT's was also loaded. By changing the speed of the DAT, the time base of the daily time code was changed from 30 to 29.97.

Once the sound editors had the tracks in their uncut form on the CyberFrame, it was time for Cindy Marty, the supervising dialogue editor to go to work. "The Nagra D tracks sounded really great, they were clean and pure," says Marty. "On a movie with the

continued on page 6

A New Recipe, continued...

kind of schedules they have now a days, four tracks is almost overwhelming. You're listening to four options, what is your best track, this selection process takes four times as long." Cindy goes on to explain, "This gave me the choice of taking either a track off the boom mic or the wireless, which meant we didn't have to ADR. John McTiernan, the director, is not a fan of dialogue replacement. He would not allow us to use it unless a track was completely unintelligible."

Cindy cautions, "If the director and producers know ahead of time that using the Nagra D, with four channels will mean four times the time to post the dialogue, then it's an advantage. But generally when they get down to post - they don't care, they don't have the time, they just want it done."

Despite the extensive use of computer based non-linear sound editing with the CyberFrame, the tracks went to 35mm mag, because at that time the stages were not equipped to handle M-O's (Magneto Optical disks). 35 mag was the fastest form because of the numerous changes to picture, right up to the last days on the dubbing stage. "You can always jump on a synchronizer and make changes right there," explains Cindy. "When we are dealing with new forms of technology and you are under a tight time crunch, there is no time to figure out why your video tape cutting copy doesn't match your picture editors picture. The electronic systems as of yet do not have a way of matching to the traditional "edge-code" system

of picture and sound."

The CyberFrame dialogue tracks were laid back to multiples of 6 track mag, as many as four. Main dialogue was on the first 6 track, then alts (alternative dialogue stems) on the second 6 track. 'No-Noise', or processed dialogue on the third 6 track and then ADR on the fourth 6 track. This was pre-dubbed down to two 6 tracks, Dialogue and ADR. The effects were specially designed to utilize all of the 8 channels of the SDDS system. Since no one had ever mixed to that format before, they ended up pre-dubbing to both a 6 track and a 3 track to accommodate

all 8 channels. The film was released in three formats, the 35mm was in SDDS and Dolby-SR and the 70mm prints were in 6 channel Dolby 'A'.

"The effects were recorded primarily on DAT, although some effects remained in an analog form, because I feel that certain effects, like gun shots, sound better that way," explains Jerry. "We wanted the sound on this film to be huge. Because of the time restraints some of the details and subtleties we wanted could not be achieved. We mixed great sounding pre-dubs, but then came more picture changes, which altered the results for

continued on page 10

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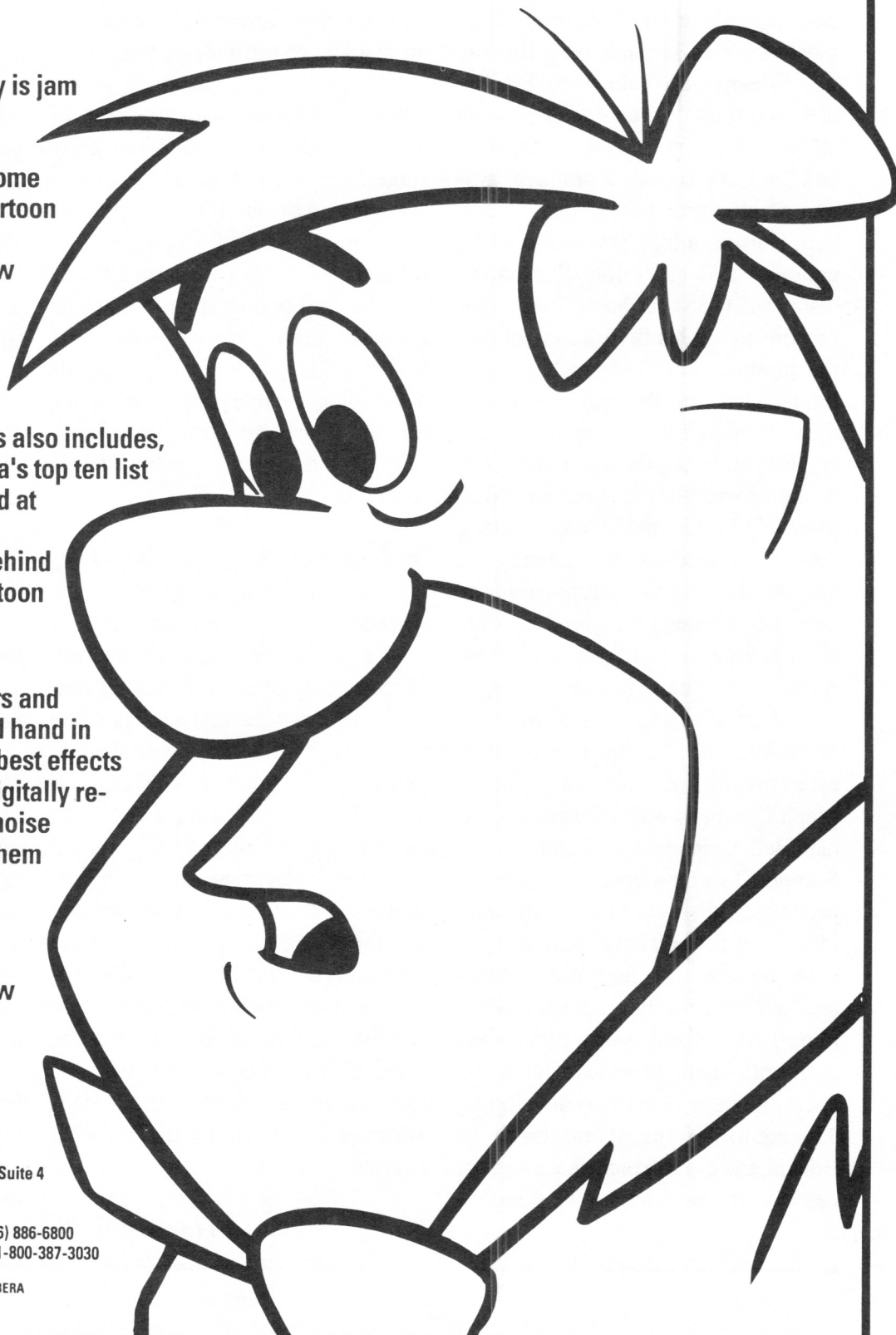
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Moving Pictures That Talk, continued...

The 1880's...

The 1880's saw a lot of technological development and at the forefront of most of it was Thomas Alva Edison, The Wizard of Menlo Park. For the first two thirds of the decade, things like the telephone, telegraph, the light bulb and developing a practical system of electrical power distribution kept Edison, a high stakes industrial gambler, and his wildly fluctuating resources (\$\$\$) far away from what he considered his favorite invention, the phonograph. William Kennedy-Laurie Dickson, the real inventor of the motion picture (while in Edison's employ) and later, the silent, most significant partner of the Biograph Company (D.W. Griffith's Alma Mater), claimed that Edison didn't really get interested in talking pictures until the late 1880's when he revived his dormant interest in the phonograph. This revival was stimulated by the legitimate fear of losing control over his invention. The Bell and Tainter interests (the future Columbia Phonograph Company with Alexander Graham Bell, Chichester Bell and Charles Sumner Tainter behind it) had approached Edison with a significantly improved form of the phonograph with the idea of selling it as a business dictation machine called the Graphophone. Edison, a man of no small ego, told them to take a hike and spent the next year or so developing 33 patents for the phonograph. To Edison, the motion picture was an accessory or visual analog of the pho-

nograph and he supported its development as such. The idea of photographing motion was years away from becoming a medium for story telling. Edison's business philosophy was centered around the idea that money was to be made by the sale of machines. His Kinetoscopes would eventually become visual versions of his phonographs. During the early stage he proved to be fairly slow in recognizing the limited riches that lie ahead in the sale of software. This reveals itself in his lukewarm attitude towards the phonograph as a machine for mass entertainment as well as the foot dragging he displayed towards developing a viable projection device for film, fearing destructive competition to his sale of peepshow Kinetoscopes.

By the end of 1888, Tom had his improved cylinder phonograph on the market, in competition with Bell & Tainter and as 1880 draws to a close, Edison's employee, W.K.L. Dickson, has built a device that strikes close to being a sync sound, single system, motion picture camera/viewer,... almost. It was still years away from having any commercially practical form, the viewer needed a microscope to see the pictures and joining it to the phonograph hadn't happened yet but *The Wizard* was finally putting his money where his mouth was and the pictures *moved*. Dickson had some of his remembrances of these early years published in the **SMPE Journal** (precursor to the SMPTE Journal) in 1933:

"Edison's idea... was to combine the

phonograph cylinder or record with a similar or larger drum on the same shaft, which drum was to be covered with pin-point microphotographs which of course must synchronize with the phonograph record.... I just slotted the aluminum drum and wrapped a sheet of Carbutt's stiff sensitized celluloid over it. This proved quite satisfactory... The pictures were sharp and good..."

However, before this single shaft, microphotograph with phonograph went much further, Dickson shifted to reel to reel 3/4" wide celluloid making possible much longer periods of time to be photographed and much higher resolution pictures to be made. Sync sound would have to wait a little longer.

In 1887 William Friese-Greene, the British film pioneer, claimed to have been experimenting with synchronizing his phonograph with his experimental film equipment with less than satisfactory results. Although he did not succeed he did ponder, *"...Why should not moving pictures be combined with records of other sounds - all sounds, speech, traffic, the thud of horses' feet on the turf, the striking of the ball on bat at a cricket match, the sounds of human speech? Synchronization of sound and sight was surely only a matter of improvement in mechanism."*

Friese-Greene contacted Edison proposing collaboration on developing synchronized sound films. He was asked to send all his research and

continued on page 9

Moving Pictures That Talk, continued...

drawings to Edison. Happily he sent Edison copies of his patent papers anticipating a fruitful partnership and that was the last he heard from Edison. Edison claimed that he never saw such papers. But when Edison applied for his Kinetoscope patent in 1891 he did so only in the US. One could surmise fear of not standing the test of novelty in England because of Friese-Greene's prior patent. (In my next article we'll take a look at Edison's patent Caveat IV).

In 1888, Eadweard Muybridge met with Thomas Edison in New Jersey. Muybridge always claimed that his meeting was to discuss combining his Zoopraxiscope, the device he used to project motion studies of animals and humans, with Edison's phonograph. Of course Edison denied this. Gordon Hendricks, author of **EDISON: THE MOTION PICTURE MYTH** does some tracking of Muybridge's visit to Edison and finds verification of Muybridge's claim in a June 3, 1888 article in the New York World noting Muybridge's scheme met with Edison's approval and his intention to perfect it.

Things start to get a little fuzzy here as Edison travels to the Paris Exposition in 1889. While there he meets Etienne Marey, another inventor in early motion pictures. Marey shows Edison his primitive projection device, a machine using a disk of sequential photographs around a circumference, more importantly, it used a "single camera" process, a great advance over Muybridge's 24 camera device. Augustine Le Prince also

obtains a British patent at this time for a functioning single lens motion picture camera/projector and likewise openly shares his achievement with Edison in the spirit of science and with the hope of support. It just wasn't in the cards. Marey went on to other things and Le Prince mysteriously disappeared forever.

Aside from not being much interested in partnerships, Edison only grudgingly acknowledged others for their intellectual or practical contributions even though he personally was the patron of the invention rather than its inventor. There were many contributors to the motion picture's birth.

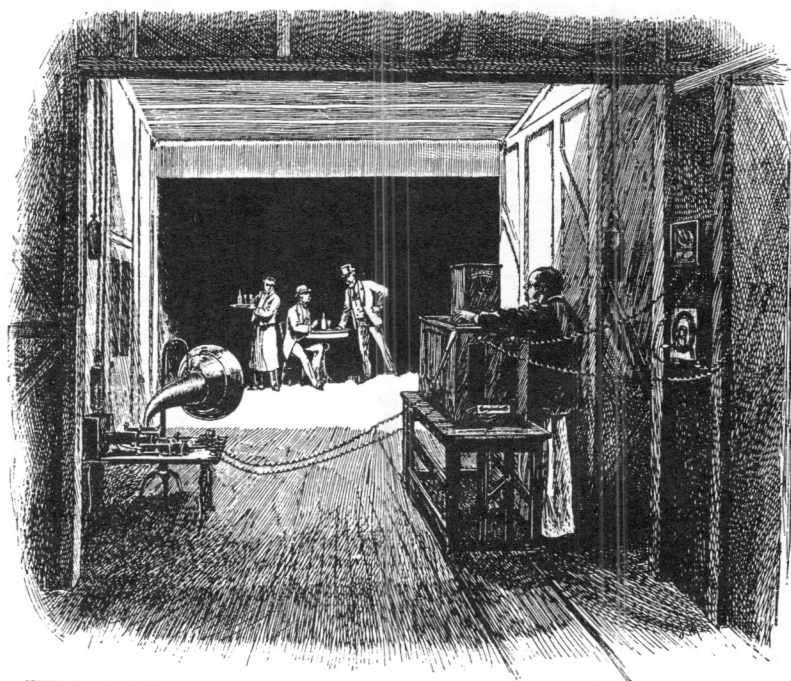
In October of 1889, Edison returns from Paris. In 1895, Dickson writes this recollection, just shortly before his irreconcilable estrangement with Edison (this after 14 years together).

"The crowning point of realism was

attained on the occasion of Mr. Edison's return from the Paris Exposition of 1889, when Mr. Dickson himself stepped out on the screen, raised his hat and smiled, while uttering the words of greeting, Good morning Mr. Edison, glad to see you back. I hope you are satisfied with the Kinetophonograph."

Sync sound projection in October of 1889? Not likely. None of the subsequent developments give any reason to verify this grandiose assertion. Still, the thrill of the idea rings with magic and after all, it *was* very good press.

In the next issue we will take a look at the Kinetophonograph, the 1890's and wonder aloud if sync sound films really happened before the beginning of the 20th century.



DRAWN BY E. J. MEER.
INTERIOR OF THE KINETOGRAPHIC THEATER, EDISON'S LABORATORY, ORANGE, N. J., SHOWING PHONOGRAPH AND KINETOGRAPH.

November 23rd. Meeting Digital Sound & Picture

by Edwin J. Somers, C.A.S.

I have seen the future and it is now

The tour of Digital Sound & Picture with our hosts Nancy and John Ross, C.A.S., was a very real eye opener for me. I had heard the term tapeless dubbing before, however I wasn't quite prepared for the technology incorporated in this facility. John has ten sound editing suites, two Dubbing stages, a Foley stage, and an ADR stage, all linked by a high speed LAN. (Local area network) The large dubbing stage features a Euphonix CSII three position, fully automatic, mixing console controlled with Seven Doremi Labs Digital Audio Workstation Nucleus (DAWN) systems, a large selection of external audio processing devices, and a 35 mm microprocessor controlled Sendor high shuttle speed projector. A 600 CD effects library is available on a Geffen Systems Storage carousel that is linked to the local area network with complete indexing and rapid access. Recording is done on 2.2 gigabyte removable hard disks in the machine room, and archiving is done on "A" DAT. The ease of use and tremendous power of this system becomes very evident when witnessing how easy it is to move a piece of production dialogue or a sound effect. By merely highlighting the audio on the Macintosh based digital audio workstation on an "Interactive Mixers Tracksheet" displayed in front of the mixers, you can place it anywhere

instantaneously. A task requiring more effort and time in conventional systems. What really sets this facility apart from others, is the use of digital all the way through the mix. In more traditional facilities the digital stage is stopped at editorial. It is very rare that you find a studio using all digital completely through the final mix. ♦

A New Recipe, continued...

the final mix. We were under tremendous pressure to complete the final. We have to do everything we can to get studios, directors and producers to try and avoid these condensed schedules. It allows a lot of places for mistakes and a lack of an

overview to see or in this case hear how all the elements work."

Although faster and easier to use, new computerized sound editing technology doesn't result in less manpower. Multiple picture changes, also cut on computerized systems, come in ever increasing frequency, this results in more sound editors needed to keep up with the re-conforming of the tracks. Last Action Hero had a complicated shooting schedule of over 100 days that ended up pushing post production closer to the release date. This created the need for larger post sound crews, who

continued on page 11

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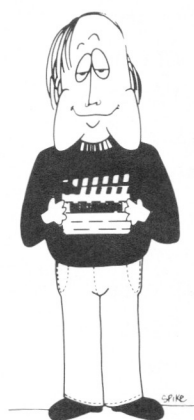
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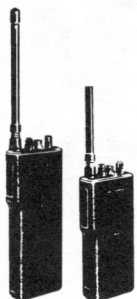
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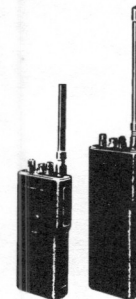
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Next Issue

The CAS 30th.
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The Jim Webb
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Early Film Sound
Part II
by Mark Ulano, CAS



The History
of the CAS
Part I
by Ed Somers, CAS

A New Recipe, continued...

worked long arduous hours to meet the deadline.

Despite the drubbing that Last Action Hero received in the press, according to Variety's Box Office tracking, it still went on to gross \$50,000,000 in North America and total \$141,000,000 worldwide. This placed it at number 12 in last years Box Office 100. ♦

A Note from the President

Some of you have not paid your Dues yet! Please save us the cost of a second notice, that's a total waste of reasources. The Cinema Audio Society, cannot operate without your help. In that very same way, it is your Organization. We are only able to operate through the help of Membership Dues, Ads, and Sustaining Member support.

Advertising Space is available in the Journal of the

Cinema Audio Society.

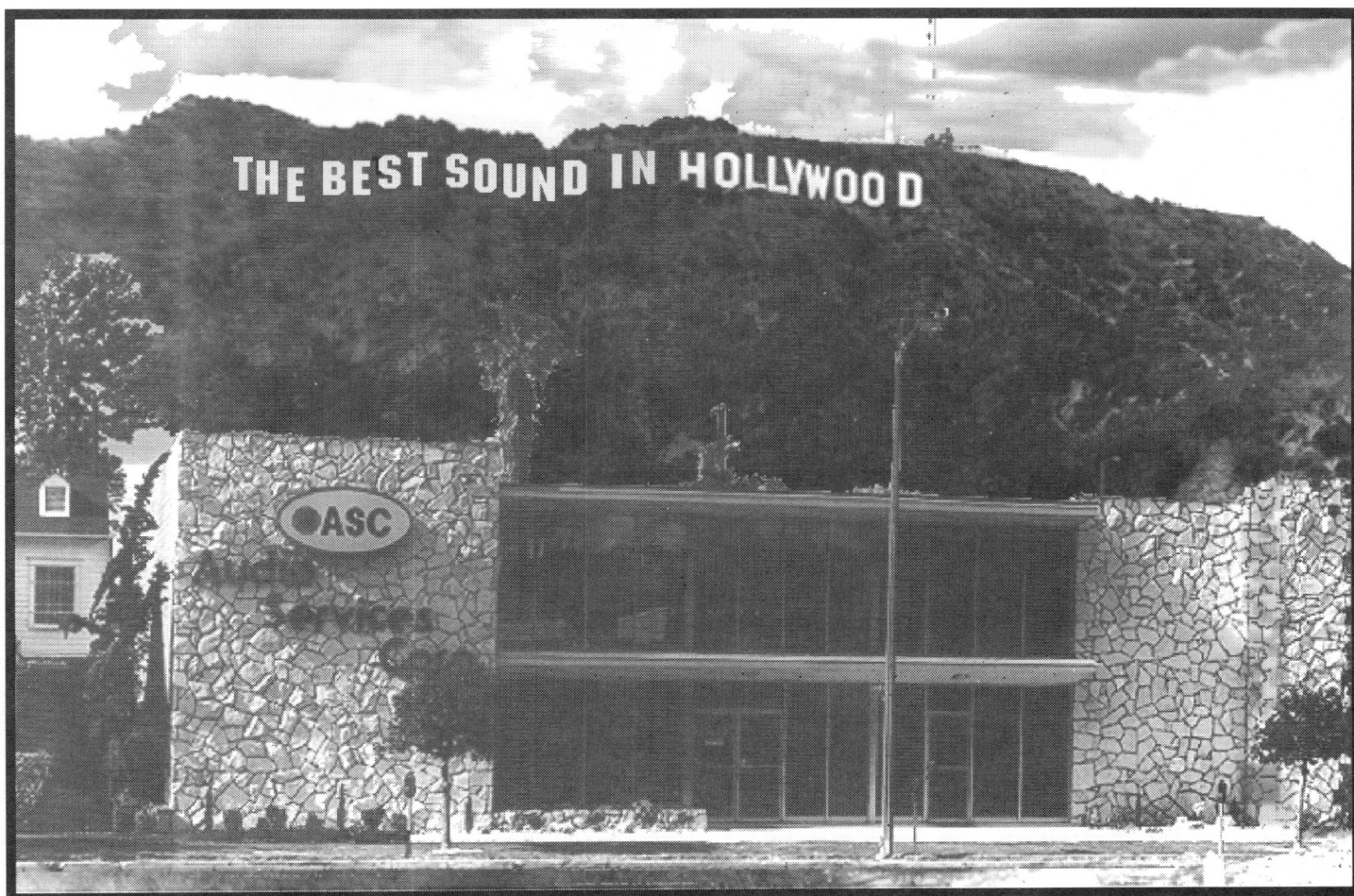
Full page	\$350.
1/2 Back page	\$250.
1/2 page	\$200.
1/3 page	\$130.
1/6 page	\$70.

Classified ads of a non-commercial nature are available at no charge to members. Press releases, announcements, product data, company news, and personal tid-bits are welcome.

Contact:

Laura Long

C.A.S. Business Manager, for details
(818) 752-8624



THE CINEMA AUDIO SOCIETY
P.O. Box 1390
Hollywood, CA 90093

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“Dedicated to the Advancement of Sound”