and designers planning new auditoriums or modifications of existing structures. Devised by M. R. Schroeder of the Bell Laboratories Acoustics and Visual Research Department, the method is described in a paper which was presented at the 62nd Meeting of the Acoustical Society of America held during November in Cincinnati and Dayton, Ohio.

In explaining the method, Dr. Shroeder said that he first studies the plan drawn up by the architect, then selects a point on the stage and from it draws the major paths that would be traveled by sound waves to a seat in the audience. Calculations are then made of the time it would take sound to travel over these paths to the listener, and from these calculations the reverberation time can be known. This information is stored in the computer together with a program instructing the computer to treat any sound put into the computer the same way the auditorium would treat the sound. A sample of speech or music is recorded on digital magnetic tape and the tape fed to the computer. The output tape is then fed to another machine which converts the digital information into an analog multitrack sound tape which can be played on a multichannel tape recorder playback. When played back in a specially designed room without echo or reverberation, evaluation can be made of the acoustics of the auditorium as planned by the architect, and the plans can be modified, if necessary, to provide better acoustics.

These notices are published for the service of the membership and the field. They are inserted three months, at no charge to the member. The Society's address cannot be used for replies.

Positions Wanted

Audio-Visual Specialist. Extensive communications background: motion pictures, radio, audio-visual techniques. Over 5 yrs experience in motion-picture production and direction, script writing, editing and industrial audio-visual department administration. Secondary experience as radio news, script and continuity writer and in editing and writing of technical reports, proposals and brochures. Age 29, married, B.S., M.S. in Audio-Visual Communications. Willing to relocate. Resume on request. P.O. Box 502, Stamford, Conn.

Instrumentation and High-Speed Photography Coordinator. All military and civilian equipment and techniques; motion-picture and still; also metric applications. Resume on request. Reply to Photo, c/o Mercurio, 28-17 Astoria Blvd., Long Island City 2, N. Y.

Production Manager. 14 yrs extensive background aircraft and missile industry: administrative and management, aerial, public relations, high-speed, research and development, publications, missile field-test project photo supervisor, motion pictures and stills, color and black-and-white; photography for advertising agency; production manager for photographic operations including 16mm sound stage and location, commercial stills, audio-visual film-strips, sound and color. Motion pictures include more than 70 half-hour TV productions among others. Additional experience includes photo-journalism, college instructor in photography, working knowledge of graphic arts as related to photography; B.S. and M.S. degrees. Married, children, willing to relocate, resume on request. Reply to Photography, Box 2255, Abilene, Texas.

Assistant to Executive in Photographic Field. Extensive experience in aerial photography with over 4,500 hrs pilot time, photographic interpretation, photogrammetry, photographic instrumentation, motion-picture production and photographic research and development. Member Am. Soc. Photogrammetry, SMPTE. Age 43, married. Resume on request. P.O. Box 4476, Pensacola, Fla.

Lab Tech. Motion-picture color timer, B&W timer, printer, neg. worker. Working knowledge as cameraman, operated optical and animation cameras, set up color printing operation in large laboratory. Loyal and hardworking, wishes position in motion-picture production organization or laboratory outside New York metropolitan area. Full resume on request. P.O. Box 145, Fort Lee, N.J.

Positions Available

Exchange Job—TV Cameraman. German TV cameraman in Munich, Germany, TV studio would like to exchange job for 1 yr with TV cameraman in New York, Washington or Philadelphia, including fully furnished apartment in beautiful section of Munich. Write: F. Sittl, München-Bogenhausen, Buschingstrasse 45 XII, Germany. Additional information in New York from: Ursula Heemann, 123 East 39 St., New York 16. YU 6-5478.

Film Technician. Competent, experienced man for technical evaluation of film and to maintain quality control in large film video-tape operation. Send resume and references to: Supervisor of Recording Services, WTTW, 1761 E. Museum Drive, Chicago 37, Ill.

Theatre Sound Engineer. Indian company requires sound engineer for theatre installation and service. Administrative and sales experience desirable. Please send resume and salary requirements in full confidence to: Cinefones, 3 New Queen's Road, Opp: Opera House, Bombay 4, India.

Television Specialists. Require professionals for planning, executing and operating closed-circuit mobile television equipment, and to direct work of other television specialists and technicians. Requires travel in United States. Send resume and inquiries to General Dynamics/Astronautics, P.O. Box 1128, Dept 130-60, San Diego 12, Calif. Attn: Warren B. Jones, Jr., Employment Mgr.

Motion-Picture Sound-Recording Engineers. Motion-picture unit, industrial, requires alert soundmen for staff. Must know all phases of sound recording, transferring, mixing and theory. Send resume and inquiries to General Dynamics/Astronautics, P.O. Box 1128, Dept 130-60, San Diego 12, Calif. Attn: Warren B. Jones, Jr., Employment Mgr.

Color Motion-Picture Printer with experience. Will consider related experience in film handling, negative splicing and other laboratory skills.

Motion-Picture Laboratory Technician with experience in 35mm color processing.

Filmstrip Cameraman. Fully experienced, familiar with Oxberry equipment. Able to work without supervision.

Color Timer for filmstrip laboratory, experienced. Salary open on all positions. Reply to: M.G., 68-46 Groton St., Forest Hills 75, N.Y.

Motion-Picture Equipment Maintenance and Repair Men. Experienced with Mitchell, Arriflex, etc. cameras, Moviolas, projectors, lighting equipment, machine shop, optical and audio equipment. Good salary and opportunity. Florman & Babb, 68 West 45th St., New York 36.

Design Engineer — Electromechanical Photographic Systems. Position responsibility includes designing and engineering components of production electromechanical photorecording equipment. Components consist of shutters, film transport mechanisms, lens servos, etc. Formal mechanical engineer's training or acquired equivalent coupled with basic electrical and electronic theory essential. Must be familiar with design and production problems of castings, components, plastic moldings, screw machine parts, etc. Tektronix, Inc., growing manufacturer of electronic instruments, provides excellent compensation including profit sharing and benefit programs. Write giving details of experience and training to: Dan Thompson, Professional Placement, Tektronix, Inc., P.O. Box 500, Beaverton, Oregon.

Sound Transmission Engineer. Familiar production and dubbing mixing, variable-area cross-modulation tests, and installation techniques for new motion-picture studio in British Columbia. Mild weather, good working conditions. Hollywood resident preferred. Salary commensurate with experience. H. M. Tremaine, 9658 Haddon Ave., Pacoima, Calif. EM 9-0386.

Rental Manager. Man to take full charge equipment rental department for Eastern Dealer. Experience handling cameras, lenses, lights, recorders, motors, editing, processing and printing machines etc. necessary. Good salary and advancement. D. J. Capano, S.O.S. Photo-Cine-Optics, 602 W. 52 St., New York 19.

Résumés / Resumenes / Zusammenfassungen

The Society is grateful to the following authors for supplying translations: Frank A. Comerci—*French, Spanish, German;* L. G. Cox—*French, German;* Lucas G. Lawrence—*German;* John H. Conover—*French, Spanish, German.* Translations contributed by Pablo Tabernero are also gratefully acknowledged.

Le concept du "Flutter Index"

FRANK A. COMERCI [1]

L'effet subjectif du "Flutter" sur le programme audio est examiné. Cette information est analysée pour indiquer la validité de l'emploi d'un seul nombre, le "Flutter Index" (indexe de la variation de fréquence) comme mesure de la dégradition relative de qualité introduite dans l'audio-enregistration par le "Flutter" observé dans l'équipement en question. Un standard IRE (Institute of Radio Engineers) proposé pour le mesurement du "Flutter Index," basé sur l'information ci-dessus, est discuté.

Un indicateur de pleurage et de battement à grande portée

L. G. COX [9]

On décrit comment est conçu et comment fonctionne un instrument destiné à l'observation oscilloscopique des variations de fréquences à la sortie des appareils de reproduction des sons. L'instrument indique la déviation instantanée plutôt que la déviation moyenne ou que celle de la racine de la moyenne des carrés, en ce qui concerne les fréquences d'essai situées entre 500 cps et 20 kc. Une boucle asservie permet la détection automatique des glissements de fréquences sur ±20% de la fréquence d'essai.

Télécommande pour caméras cinématographiques

LUCAS G. LAWRENCE [13]

La simplicité classique de l'interrupteur "tout ou rien" subit des modifications considérables en vue de son emploi sur les caméras à télécommande et/ou à commande sans surveillance utilisables sans l'intervention d'un spécialiste humain. L'auteur discute l'incorporation d'éléments constitutifs qui, au moyen de données impressionnées sur film à bande magnétique, sont capables d'assurer à la caméra un graissage monocoup, de régler l'objectif à longueur focale variable et à accouplement selsyn, de permettre un rajustement électromagnétique continu de la griffe-tirette, de mettre la caméra en route et de l'arrêter à des intervalles préréglés et, finalement, de faire un enregistrement de toutes les fonctions de commande exécutées par le système. Ce genre d'intelligence secondaire est utile chaque fois qu'un enregistrement cohérent de représentation doit être obtenu pendant des périodes de temps extra-longues. La bande magnétique est précodée avec des fréquences audio données dans des conditions de chambre noire et est lue par les moyens habituels de lecture. Des résonateurs accordés permettent le discernement approprié et transmettent le signal d'entrée à un déclic électronique associé.

Comment les caractéristiques de surface des films négatifs en couleurs influent sur la qualité de l'image

DAAN ZWICK [15]

Le négatif cinématographique traité est considéré comme un objet dans un milieu d'air. A cause de l'indice de réfraction différent entre l'air et le film, la surface peut être optiquement importante. L'auteur décrit la relation entre les surfaces lisses et les anneaux de Newton. Il explique aussi les effets de la rugosité de surface en s'appuyant sur de nombreuses sources. Il signale aussi l'influence des conditions de tirage, notamment la spécularité, la laque et la "vanne liquide." L'article discute,