

Table IV. Threshold of perceptibility of interference at the frequency $F_0 - F_{sc}$ (SECAM).

Color	White		Yellow		Cyan		Green		Magenta		Red		Blue	
	R	B	R	B	R	B	R	B	R	B	R	B	R	B
Line Interference frequency, MHz	4.89	5.05	4.44	4.78	3.90	4.26	3.82	4.36	4.09	3.86	4.01	3.97	3.48	3.45
Threshold of perceptibility δ , dB	28	30	43	36	38	43	43	44	39	40.5	32	34	37	36

SECAM system are given in Table III.

It can be concluded from a look at the findings in Table III that, in the first place, the unavoidable moiré for SECAM signals is on the whole substantially less than the threshold of perceptibility and that, in the second place, moiré on the green bar in line D_R' is closer to the threshold of perceptibility than in any other case. This means that measurement of the unavoidable moiré should be made at a frequency of 3 MHz while recording the signal at a frequency equal to that of the color subcarrier for the green signal in line with signal D_R' .

The threshold of perceptibility for interference $u(F_0 - F_{sc})$ is given for the SECAM system in Table IV. The smallest value of the threshold of perceptibility also corresponds to the green color signal. Since the perceptibility of the interference is just about the same on lines D_R' and D_B' , it is convenient to evaluate the interference $u(F_0 - F_{sc})$ by the green color signal on the

red line. Measurements in that case should be made at a frequency of 3.82 MHz.

During the measurements for HB-625 SECAM, the modulator carrier frequency should be set at 8.46 MHz (green), the frequency of the modulating signal at 4.64 MHz, and its peak-to-peak level at 420 mV ($u_y = 700$ mV). Measurements should be made at the 3.82 MHz (δ_2) and 3 MHz (δ_1).

Conclusions

In order to make objective evaluations of the moiré in video recording, it is necessary to measure two parameters which characterize the different types of interference noise. This selection is essential in producing and using VTRs. It is furthermore necessary to additionally specify which of the color bar test signals is used for measurements and what the recording standard is. A study of the perceptibility of moiré has made it possible to determine the most critical colors in this regard: red and

cyan for PAL (100/0/75/0) and green for SECAM (100/0/75/0).

References

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3. M. Felix, "Moiré Effects in Professional Video Tape Recorders," *Electronics Letters*, 9: No. 19, 17-19, 1973.
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120th SMPTE Technical Conference and Equipment Exhibit

29 October—3 November 1978, Americana Hotel, New York City

Program Chairman John Zeman of Eastman Kodak Co. has announced several changes in the scheduled sessions during Conference week. The Sound sessions, both theatrical and television, have been moved to Thursday, all day, and the Thursday Film Production will now be held on Wednesday afternoon. Following is the revised technical program for the week.

Monday morning — *General Overview*;

Tuesday morning — *Laboratory Practices I* and the *PBS Satellite System*, concurrent;

Tuesday afternoon — *Laboratory Practices II* and *Satellite Equipment and Delivery Systems*, concurrent;

Wednesday morning — *Lab Practices III* and *Digital Television*, concurrent;

Wednesday afternoon — *Film Production* and *Film-to-Tape and Tape-to-Films Transfers*, concurrent;

Thursday morning — *Theatrical Sound* and *Video Production*, concurrent;

Thursday afternoon — *Special Effects* and *Editing and Television Sound*, concurrent;

Friday — Open, so that SMPTE committees wishing to may hold their meetings.

The Equipment Exhibit, which is expected to be the largest one ever held at a New York Conference, will open at 3 p.m. on Monday and continue through Thursday.

On Sunday evening, Eastman Kodak Co. will again host a social to be held in the Eastman Kodak Gallery. They will also sponsor the refreshments at the Fellows' Luncheon on Tuesday. Agfa-Gevaert N.V. will sponsor the Monday Get-Together Luncheon for all registrants and Hazeltine Corp. will provide the music and entertainment at the Wednesday evening banquet. Coffee Club sponsored by Philip A. Hunt Chemical Corp.

The Papers Committee, under the direction of Editorial Vice-President K. Blair Benson, Video Corp. of America, is putting together an exciting and informative program with the theme *Imagery — Today/Tomorrow*. Executive Vice-President Robert M. Smith, Du Art Film Laboratories, will open the technical sessions with a welcome to all attendees. Tentatively, a panel discussion on satellite distribution of

commercials and programming and its effect on television commercials is being planned. Also to be included in the morning session will be a report by Engineering Vice-President Roland J. Zavada, Eastman Kodak Co., on the SMPTE Standards Program, explaining why we are in the standards business and why the Society should interface with other societies and the government in this crucial area.

Tuesday morning, concurrent with Laboratory Practices, will be a program on the PBS Satellite System. Topic Chairman Daniel Wells, Public Broadcasting Service, has put together a complete program on their advanced system, with information about the five-year engineering effort that has taken place on their Satellite Interconnection system. Highlights of the proposed papers to be presented include discussions and descriptions of: the new satellite distribution system, from its development through its implementation; details of the system design, technical specifications, testing and quality, as well as its advantages over terrestrial distribution systems; the process used in siting the system's 150 earth terminals and associated terres-

trial microwave and cable interconnects, as well as the installation planning of the system; the augmentation of the PBS Technical Center facilities to provide multichannel operation necessitated by the requirement to originate programs to four transponders on the satellite; the design of the computer-controlled switching system to be employed by the Technical Center; and the operation and maintenance aspects of the system, including personnel training, documentation, and repair and system operations. In the afternoon, Topic Chairman for Equipment and Delivery Systems Robert Tenten, Home Box Office, reports his session will include, among other subjects, future satellite systems and remote control of satellite earth stations.

Don Donigi of Du Art Film Laboratories, Harold Freedman of Technicolor, Inc., and Frank Giovannell of Bebell Bebell are all topic chairmen for Laboratory Practices, which will run from Tuesday morning until Wednesday noon. These sessions, which are concurrent with television sessions, will include papers on advancement in chemical technology, engineering and operation of new equipment, and special techniques in handling original camera material, as well as many other subjects of a technical nature, including a system for edge numbering.

Digital Television Topic Chairman, Frederick M. Remley of the University of Michigan will have paper presentations on digital video recorders, frame stores and memory, analog-to-digital and digital-to-analog converters, methods of measuring distortion, digital time-base correctors and digital audio.

Film Production Chairman Dick DiBona of General Camera will include as part of his session Panavision's approach to film production, which will include a demonstration, films, and paper presentation.

Laser beam recording, a telecine projector, tape-to-film and film-to-tape will be some of the topics to be covered on Wednesday afternoon in Richard Marcus' session on Transfers. Also included will be papers on some of the latest technology in this art from leading companies currently engaged in this exciting industry.

The newest techniques in video production, an electronic graphic system used at the Super Bowl and other sporting events, a portable videocassette recorder for ENG and continuous motion color film telecine using CCD line sensors will be a few of the topics covered in the Thursday morning Video Production Session, according to Video Production Chairman Robert McAll, Vital Industries.

For Thursday morning, Topic Chairmen for Theatrical Sound Norman Prisant of Magna-Tech Electronic Co., Inc. and Ralph Friedman of Magno Sound are planning a program that will encompass all aspects of this subject. A new optical sound recording channel, stereo theater sound and automated sound effects retrieval are some of the topics included.

In the afternoon, Topic Chairmen for Television Sound Mark Schubin of Lincoln Center for the Performing Arts, Bob Lifton of Regent Sound Studios Inc., and James Townsend of WGBH-TV in Boston will have paper presentations including the following topics: digital audio; an inexpensive method of stereo simulcasting; a method of television sound dynamic range enhancement; current information on DATE, a four-channel hi-fidelity sound system for television network transmission; an update on stereo simulcasting.

Special Effects and Editing, concurrent with Television Sound on Thursday afternoon, will round out this exciting and informative program on *Imagery — Today/Tomorrow* for all SMPTE attendees.

Friday is being held open for any SMPTE committee meetings, to enable everyone to attend the sessions during the week.

Standards & Recommended Practices

Approved American National Standard

On 2 May 1978 the American National Standards Institute approved an American National Standard in the video tape recording field, C98.1-1978, Dimensions of 2-in Video Magnetic Recording Tape, which is a revision of ANSI C98.1-1963.

Inasmuch as compliance with American National Standards is purely voluntary, the standard will become truly effective when broad publicity is given to its existence. The Institute and the Society would appreciate any personal influence to promote its use where such action is appropriate. Copies of the standard may be obtained for a nominal fee from the American National Standards Institute, 1430 Broadway, New York, NY 10018.

Approved SMPTE Recommended Practices

The Executive Committee for Standards Approval, acting on behalf of the Board of Governors, approved two SMPTE Recommended Practices on 4 August 1977: RP 75-1977, Specifications for Flutter Test Film for 35-mm Three-Track Sound Reproducers, Magnetic Type, and RP 76-1977, Specifications for Flutter Test Film for 16-mm Sound Reproducers, Magnetic Type. Both are transformations of withdrawn American National Standards; RP 75 replaces ANSI PH 22.98-1963 and RP 76 replaces ANSI PH 22.113-1966. Practices are available from Society Headquarters for \$1.50 each.

Approved International Standard

The International Organization for Standardization (ISO) recently approved an International Standard, the technical content of which is published here for your information. ISO 3820-1978, Cinematography — Sprockets for 8-mm Type S Motion-Picture Film — Dimensions and Design, does not have a comparable American National Standard but is in accord with SMPTE Recommended Practice on 8-mm Type S (Super 8) Sprocket Design, RP 55-1974.

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Reaffirmed American National Standards

The American National Standards Institute approved reaffirmation of two American National Standards on 2 May 1978: PH 22.83-1972, Specifications for Location and Spacing of Edge Numbers on 16-mm Motion-Picture Film, and PH 22.148-1967, Specifications for Film Image Area Used for Review Room Viewing of 35-mm and 16-mm Motion-Picture Prints Intended for Television Transmission. — Alex E. Alden, *Manager of Engineering Services*.