and often produce gain and delay distortions below and beyond 4.0 MHz. In such cases it is necessary to employ a signal which has limited spectra to ensure that the distortion below 4.0 MHz (i.e. the most critical band for the video signal) meets requirements which are much more stringent than those above 4.0 MHz. The $2T$ pulse in conjunction with the T step accomplishes this requirement very well.

As far as ringing on the $2T$ pulse is concerned, this is quite likely to occur on microwave radio systems as a result of effects other than low-frequency cutoff. For example, in long microwave radio systems, very many echoes are generated in the frequency-modulated path by transmission lines (cable and waveguide). The result of these echoes is a random deviation in pulse skirt response which appears as a distorted ring. The effects of this distortion on signal components below 4.0 MHz must be controlled to relatively small magnitudes. The same effects will appear on the T step but may be augmented by cutoff effects acting on the higher spectral components present in this signal. It is therefore not possible to differentiate, with the T step alone, between the effects of echoes which affect the whole signal spectrum and cutoff effects which affect only the T step. Because such distortions in the lower part of the frequency spectrum are more objectionable than are the high-frequency cutoff effects, they should be controlled more tightly — which means that it is necessary to employ both test signals.

A further argument against the use of a T step alone is illustrated by Mr. Schmid's example regarding the T step graticule. The ultimate size of a T step graticule will be determined by the allowable magnitude of high-frequency distortions which cause ringing or overshoot close to the transition. When considering distortions caused by low-frequency gain and delay deviation (i.e. short-term smearing or exponential overshoots), the allowable magnitudes of the T step are much smaller. There is therefore a basic discrepancy between low-frequency and high-frequency effects in terms of the allowable distortions which prevents the exclusive use of the T step as an indicator of short-time distortion. This fact is well illustrated by Mr. Schmid's example which opposes the argument he presents when circuits with band limitations below 8.0 MHz are considered.

It is also possible that certain forms of distortion are indicated much more readily by the $2T$ pulse than by a T step. Such a case is illustrated in Figs. 1 and 2 showing waveforms for a working television network over a distance of about 2000 miles (3230 km).

Report on the SMPTE Chicago Meeting

30 April 1977

By HOWARD R. HOYT

A day-long program for Chicago SMPTE members was held on 30 April 1977, at the Marriott O'Hare Hotel. Four SMPTE Governors (John Ehrenberg, Chicago; William Smith, Detroit; Frank McGeary, Memphis; and Irwin Young, New York) were among the 172 persons registered for the meeting, as was Ed Blasko, Chicago Section Chairman.

The meeting began with *The Ark,* a film made by Howard Whalen, Film Group I of Michigan, Inc. It is an environmental film which concluded that "the cloud of foul air hanging over us is nothing but human greed."

The opening remarks to the session were made by SMPTE President William Hedden. The first speaker was Edward Wicinski, Calvin Communications, Inc., Kansas City, Mo., on the topic, "16mm vs Super 8 — Victories and Defeats." He discussed the unique characteristics and production requirements of each gauge.

The 21st Olympiad in Montreal made vast use of radio and television services. Marius Morais, Director of Engineering and Technical Services of ORTO, described the complexities of providing the means, facilities, and materials required to cater to the various needs of broadcasters who were covering the 21 Olympic sports in various locations in and around Montreal.

Film examples accompanied Ira Tiffen's presentation of "Creating Special Effects and Visual Styles Through the Use of On-Camera Filters." Mr. Tiffen, Tiffen Manufacturing Corp., Roslyn Heights, N.Y., described the following filters: fog, double fog, diffusion, half diffusion, split field, color gradation, sky control, and variburst.

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Irwin Young, DuArt Film Laboratories, Inc., New York City, answered the question, "How Good is a 35mm Blow-Up From 16mm Type 7247 Color Negative?" He summarized the discussion and film comparisons by suggesting that because of the smaller area of the 16mm format no forced processing or gimmickry is possible and that more talent and care are needed to shoot 16mm than 35mm film.

Howard Shephard, Central Dynamics, Ltd., Montreal, Canada, briefly reviewed the history of videotape switchers and mixers as an introduction to his topic, "Applying the New C. D. 480 Switcher in Video Production and Post Productions." The 480 production switcher incorporates the three switchers (title, chroma key, and background) currently available and allows a greater variety of combinations.

Pete Comandini, Image Transform, Inc., North Hollywood, Calif., described the video processing necessary to remove television defects prior to making good broadcast tapes into acceptable theater film. Technical limitations of the NTSC make it unlikely that television tape will replace film in the near future.

The topic presented by Charles Nairn, Comtech, Detroit, Mich., was "How to Handle Those Curves Hollywood Throws at Us — The Academy Curve from a Contemporary Perspective." The curve he referred to was the audio response curve for sound film. He discussed the criteria for setting up the "Hollywood curve."

Randall Fox, I.R.D. Mechanalysis, Columbus, Oh., described his experience of attempting to produce seven inexpensive industrial training films with the use of super 8 which was then blown up to 16mm. It was concluded that though the cost of super-8 film and equipment is less, the release prints of super 8 cost more and in the end, producing 16mm originally may not be more costly.

Three entertaining short films were shown following lunch: *Solo,* made by Pyramid Films; a BBC spoof, *Spaghetti Tree;* and a comedy entitled, *Krasner Norman: Beloved Husband of Irma.*

The meeting had 22 film industry sponsors who underwrote the cost of the meeting. Their support was a factor in making this an outstanding program.

Irwin Young, Du Art Film Labs, addressing the meeting.