



Michael Dolan

In this column, we provide interesting historical briefs from the Journal articles of days past. The purpose of this column is primarily entertainment, but we hope it will also stimulate your thinking and reflection on the Society's history, how far we have come in the industry, and (sometimes) how some things never change. This column has been sponsored by Television Broadcast Technology, Inc., since March 2001: <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7257346>

25 Years Ago in the Journal

The November 1991 *Journal* published in “Sampling-Rate Conversion of Video Signals” by Ajay Luthra and Ganesh Rajan reported that “Encoding analog component video to a composite signal is an established practice. Improvements are constantly being made in encoding techniques, with the result that the quality of the encoded video is closer to that of the component source. Encoding digital components to digital composite signals involves an additional step besides coding: the sampling-rate conversion. The sampling rates of component video signals (CCIR Rec. 601) are 13.5 Msamples/sec and 6.75 Msamples/sec, for the luminance and the color difference signals, respectively. The sampling rates for NTSC and PAL composite video signals are 14.3181818 Msamples/sec and 17.734475 Msamples/sec, respectively. Clearly, decoding digital composite signals into digital component signals (CCIR 601) will also involve the sampling-rate conversion. This task of sampling-rate conversion further complicates the issues related to the quality of the output video. It introduces a new class of distortions, called linear

time varying distortions, in the output signal.” For the full article, see <http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=7234348>

50 Years Ago in the Journal

The November 1966 *Journal* published in “A Stop-Action Magnetic Video Disc Recorder” by Adrian B. Ettlenger and Price E. Fish reported that “The past few years in television coverage of sports events have been marked by a number of advances in technique to give the home viewer a better understanding and enjoyment of the action. Football coverage, because of its commanding importance in network sports broadcasting, has been a major focal point for technical innovation. One important example is the isolated camera with immediate video-tape replay, which was introduced by CBS on its broadcast of the 1963 Army-Navy game...During its 1965 National Football League coverage, CBS made extensive use of a stop-action effect. Used during recorded replays of sports action, the visual effect of a “frozen” still-frame may be created at will, held for any desired interval, then followed by a resumption of the continuous action. The effect is achieved by a video disc recorder (made by MVR Corp.) which incorporates a channel capable of 20 seconds

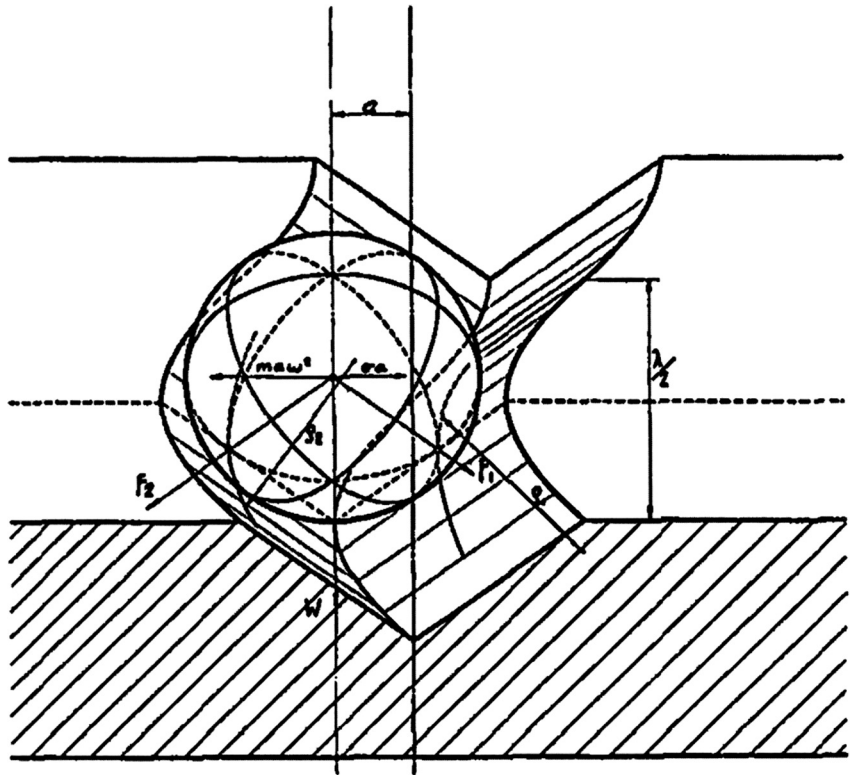
of continuous recording, combined with an additional single frame storage channel. The unit incorporates appropriate video switching logic to provide smooth transitions between the modes of operation and to insure transmission of a standard composite video and synchronizing signal.” For the full article, see <http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=7262918>

75 Years Ago in the Journal

The December 1941 *Journal* published in “On the Playback Loss in the Reproduction of Phonograph Records” by O. Kornei reported that “The performance of a pick-up stylus with a spherical point, riding in a laterally modulated record groove, is discussed from the point of view of the elastic Properties of the record material. After introducing certain permissible simplifications, the elastic deformations of the two supporting groove walls are calculated, under the influence of the steady vertical pick-up force, the stylus inertia, and the stylus stiffness. Due to the fact that both forces and geometry are different on the two walls the respective elastic deformations are also found to be different for both walls. This fact results in a displacement of the pick-up stylus from the position which it would assume in an ideally rigid record groove and is responsible for the difference between the reproduced amplitude and the recorded one. Playback loss and translation loss are thus explained and quantitatively predicted.” For the full article, see <http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=7252834>


100 Years Ago in the Journal

The October 1916 *Journal* published in “Condensers, Their Contour, Size, Location, and Support” by C. Francis Jenkins reported that “Surprisingly little literature has been written on the subject of condensing lenses, and none at all with regard to their use in motion picture projecting machines. Investigators outside our own art have so far failed to observe that the problem is not the same in a motion picture projecting machine that it is in a stereopticon lantern, a difference resulting from the necessity for the use of a shutter with the motion picture projector...Condensing lenses are employed because it is practically impossible to illuminate the film directly. When we get a cold light it may perhaps be feasible, though this is debatable. But for the present, condenser lenses, for gathering the diverging rays of the luminant and converging them on the picture aperture, continue to be used...This seems incredible, but comes about probably because the heat rays, the light rays, and the color rays, which had, therefore, been more or less separated, so criss-cross and mix-up at this point



Spherical stylus tip in rigid record groove (Fig. 1 JSMPE, December 1941, p. 572).

that there are not enough directed rays to carry a defined image to the screen...let me encourage you to original research, for the field is full of opportunity for profitable investigation. Stop a moment and think of it; no material change has been made in the mechanism,

and no change, whatever in the principle involved in projecting machines since the first projecting machine was deposited in the US National Museum twenty odd years ago.” For the full article, see <http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=7309019> 

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