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 is sponsored by Television Broadcast Technology, Inc., since March 2001: http://ieeexplore.ieee.org/document/7257346

25 Years Ago in the Journal

The March 1998 *Journal* published in "Basic Function of Integrated TV Services for ISDB" by K. Usui, K. Kai, M. Ueno, A. Ohya, and T. Isobe: "NHK has been investigating Integrated Services Digital Broadcasting (ISDB)… If broadcasters are to accommodate the diversification of interests and tastes of viewers, then inevitably television must incorporate interactive capabilities as well as support the passive reception of programs…ISTV is a comprehensive information terminal capable of receiving not only ISDB services, but also various information services offered to the home through existing broadcasting media and telecommunication media…: The television receiver includes a home server with sufficient digital storage media that can hold up to about 2 hr of programming, including multimedia data. All basic operations can be performed with simple point-and-click procedures using a remote control." For the full article, see: https://ieeexplore.ieee.org/document/7245821

50 Years Ago in the Journal

The March 1973 *Journal* published in "Television Technical Facilities at Maison de Radio-Canada" by B. D. Baldry, G. A. Byrne, and R. Savard: "Integrated circuit techniques and a systems approach are making it possible to centralize equipment and facilities at Maison de Radio-Canada and to permit them to be assigned as needed. Such centralizing is desirable to meet the timing requirements of color TV, but it requires remote control of switching, delegation, machine control, and so on. Particular attention is given to a Program Routing Switcher (which routes program audio and video from source to distribution) and a Control Assignment Switcher (which handles the point-to-point assignment of intercom, pulses, and remote machine control). A minicomputer is employed to control the Program Routing Switcher and perform code translations and validity checks; provision has been made to computerize the Control Assignment Switch also. Other systems and subsystems treated include studio vision mixers, TV audio consoles, the TV intercom system, live camera channels, and VTR and telecine chains." For the full article, see: https://ieeexplore.ieee.org/document/7233487

75 Years Ago in the Journal

The March 1948 *Journal* published in "Synthetic Sound on Film" by Robert E. Lewis and Norman McLaren: "An analysis of both hand-drawn and machine-made soundtracks is presented… Of fundamental importance is the fact that synthetic soundtracks for the first time enable a composer to hear his composition as written rather than through artists' interpretation. Three basic methods are presented: (1) hand drawing directly on the film, (2) frame-by-frame photography of drawings and patterns, and (3) mechanical generation by machines, such as the harmonic integraph, which are coupled to a variable area or density modulator registering on the film…The harmonic integraph is to be differentiated from the analyzer in that the latter reduces known tones to the basic components, whereas the integraph synthesizes these basic components into an integrated and recorded waveform. Shown schematically is a very simple generator consisting of a drive on two crank eccentrics in harmonic relation (shown out of phase **[in Fig 9]**)." For the full article, see: https://ieeexplore.ieee.org/document/7235866

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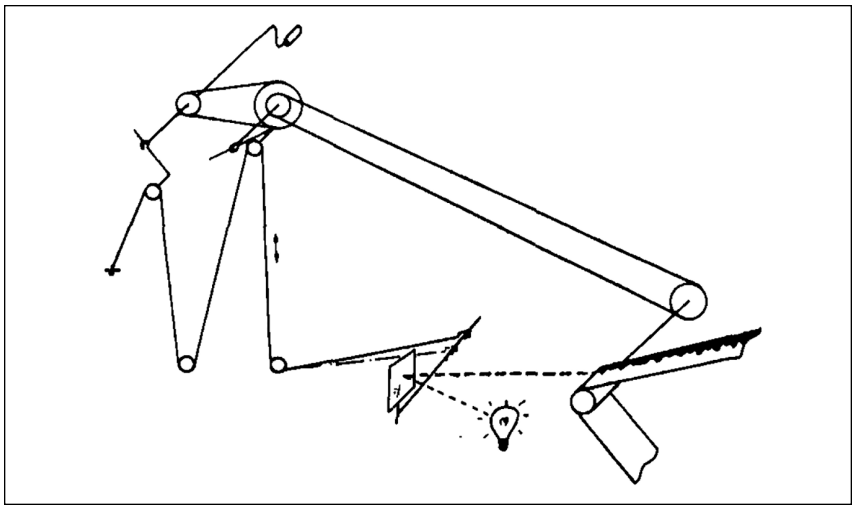

The harmonic integraph is to be differentiated from the analyzer in that the latter reduces known tones to the basic components whereas the integraph synthesizes these basic components into an integrated and recorded wave form. Shown schematically is a very simple generator consisting of a drive on two crank eccentrics in harmonic relation (shown out of phase). The output of the cranks is added by the pulleys on the string which in turn operates the recording system driven interlocked with the crank drive. The strength of each harmonic is regulated by the leverage of the recording mirror. A basic weakness in this type of machine is the virtual improbability of any transient effects (Fig. 9 from *JSMPE*, March 1948, p. 245).

100 Years Ago in the Journal

The May 1923 *Journal* published in "The Phonofilm" by Dr. Lee DeForest: "Contrary to the popular idea, the history of attempts to record sound vibration photographically is not new. It dates back almost as far as the birth of the telephone itself. In 1879, Prof. Alexander Graham Bell and his associate, Tainter, succeeded in telephoning a short distance over a beam of light, using as a transmitter a very small mirror attached to a diaphragm…The first successful attempts to photograph sound were those of the German, Ernst Ruhmer. As a transmitter, Ruhmer employed the speaking area, shortly before invented by another German, Simon. Strong telephonic currents from a powerful microphone were superimposed on the direct current across the arc, producing sufficient fluctuations in the arc light to permit a crude photographic record upon a cinematograph film which was driven at a very high speed, several meters per second. Ruhmer's work was carried on in 1906 and 1907." For the full article, see: https://ieeexplore.ieee.org/document/7230089