1993 PROCEEDINGS

47th Annual
Broadcast Engineering
Conference Proceedings

National Association of
NAB
BROADCASTERS®

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Las Vegas, Nevada
April 18–22, 1993

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April 1993

Dear Industry Engineer:

On behalf of NAB's Engineering Conference and Advisory Committee, we are pleased to present the *1993 NAB Broadcast Engineering Conference Proceedings*.

NAB's 47th Broadcast Engineering Conference features useful and informative presentations to help you cope with the challenges facing our industry. The conference focuses on the practical applications of existing technologies, the new opportunities offered by emerging technologies, such as data broadcasting and interactive television, and professional development for engineering managers.

Data broadcasting technologies offer new opportunities for both television and radio. In addition to the Radio Broadcast Data System (RBDS), technologies such as CouponRadio, NHK's high capacity FM subcarrier, Interactive Video Data Service (IVDS), and TV Data Systems (TVDS) present real potential for increased station revenue.

The management training element of this conference is particularly important as engineers continue to face the challenges of developing long range strategic plans while running a station on an ever-shrinking budget. To be successful they must maintain a sharp technical edge without losing a clear vision of business realities.

We again welcome the participation of the Society of Broadcast Engineers in programming five sessions for the conference. This year also marks the first participation of the Institute of Electrical and Electronics Engineers' (IEEE) Broadcast Technology Society which has created two sessions discussing the development of broadcast standards. We also welcome the continuing strong participation of the international broadcast engineering community providing a global perspective on the broadcast industry.

Please share your comments and suggestions for our conference. Feel free to call or write at any time.

Best regards,

Michael C. Rau
Senior Vice President
Science and Technology
National Association of Broadcasters

Charles Dages
Chairman, NAB Engineering Conference
and Advisory Committee and
Vice President, Engineering
CBS Television Network

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Group Vice President
Electronic Industries Association
Consumer Electronics Group
Washington, District of Columbia

*Paper not available at the time of publication.

DIGITAL AUDIO SYSTEMS

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*Paper not available at the time of publication.

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Gregory M. Coppa
CBS Engineering
New York, New York

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Fort Worth, Texas

*Paper not available at the time of publication.

DIGITAL AUDIO WORKSTATION NETWORK—A REPLACEMENT FOR AUDIO CARTS AT CBS TELEVISION NETWORK

Gregory M. Coppa
CBS Engineering
New York, New York

Abstract **- CBS has implemented an automated Digital Audio Workstation Network (DAWN) cart system for record and playback of audio announcements within their Broadcast Origination Center (BOC). DAWN, which replaced antiquated NAB carts, provides CBS with a high quality reliable audio cart system that has streamlined audio cart management.**

1. INTRODUCTION

In June of 1991 CBS began distributing its Network television signals from a fully automated Broadcast Origination Center (BOC). BOC provided CBS with a program and commercial integration facility that allowed for origination of up to ten networks, all under computer control.

The BOC design included state of the art equipment: multicassette D2 library management systems, networked video still stores and Local Area Network (LAN) based machine control. Yet, at the heart of the BOC audio system was an old workhorse -- the NAB cart, complete with its twenty-four volt control interface, Cinch Jones type connector and characteristic wow and flutter.

The time was right for replacing this workhorse but was the technology? Not during the initial design phases of the BOC. At NAB 1991 CBS saw a demonstration of a Gentner Communications product -- DAWN: Digital Audio Workstation Network, that seemed to meet some basic BOC design requirements -- it was PC based, easily automated, would accept a playlist downloaded from automation, play carts from the list when commanded and finally it potentially could streamline cart management thereby reducing costs. Thus, CBS decided to use the DAWN product to replace the NAB carts.

A description of the CBS DAWN system follows. Section 2 discusses the DAWN hardware, section 3 details the audio workstation software and examines the operation of DAWN at CBS.

2. DAWN HARDWARE

DAWN is a local area network of audio workstations. The network consists of a file server, audio workstations, a remote access server, automation interface computers and a programmable PC keyboard. A block diagram of the LAN showing a typical workstation interface appears in Figure 1.

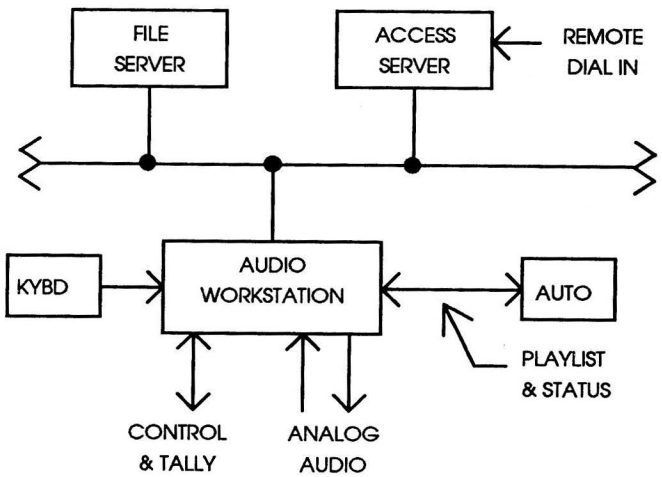

Figure 1. DAWN system block diagram.

The CBS DAWN system has eight audio workstations. Six of these supply the ten BOC channels and are under automation control. A workstation dedicated to the BOC announce booth is a cart record location. The last workstation, located at CBS Hollywood, is a remote record location.