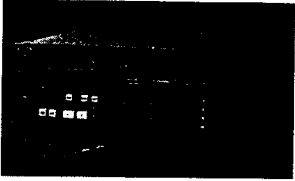**SONY PRO AUDIO
REP TRAINING**

- PCM-7040 DAT Recorder

**SONY PRO AUDIO
REP TRAINING**

- **PCM-7040 DAT Recorder**
  - **Timecode Overview**
  - **PCM-7040 Recorder Features**
  - **Competitive Product Outlook**
  - **Applications and Solutions**
    - **Memory Jog Sound**
    - **9-pin Remote Control**
    - **2- Heads Versus 4- Heads**
    - **Quality of Construction**

**SONY PRO AUDIO
REP TRAINING**

- **What is Timecode?**
  - **Binary code with time
    information stored on audio and
    video recordings**

**SONY PRO AUDIO
REP TRAINING**

- **What is Timecode?**
  - **It's a continuous audio signal
    that can be stored on a dedicated
    track of a recorder**
    - **What does it sound like?**
      - Let's hear it!

**SONY PRO AUDIO
REP TRAINING**

- **What is Timecode?**
  - Timecode (like your watch) contains
    hours, minutes and seconds, but also
    has additional information called
    frames
- **What are frames?**
  - Frames are fractions of a second and
    relate to how many 'pictures per
    second' occur in a video or film
    picture

**SONY PRO AUDIO
REP TRAINING**

- **What is 30 frames per second?**
  - **When you watch a video picture
    for 1 second**
    - Approximately 30 separate still
      pictures are displayed
    - These 'frame' pictures change fast
      enough so that your eye can not
      detect when the picture changes
      from one to another

SONY PRO AUDIO
REP TRAINING

- **What is Timecode?**
  - **The way frames are counted. depends your location and the video standard used**

Location	Video Standard
US	NTSC
Europe	Secam / Pal
Japan	NTSC

SONY PRO AUDIO
REP TRAINING

- **What is Timecode?**

Popular Timecode Types

Frames Per Second	Timecode Type	Use
29.97	SMPTE	for Color Video in the US
30	SMPTE	for B&W Video in the US
24	SMPTE	for Film in the US
25	EBU	for Video and Film in Europe

SONY PRO AUDIO
REP TRAINING

- **Why are TC frames used?**
  - **Each picture or "frame" can be located for editing purposes**
    - **For example**
      - At 01h 00m 00s 05f you may waht to transition from one video pictura to another
      - Or a separate audio transport with matching audio may need to be synchronized to the picture

SONY PRO AUDIO
REP TRAINING

- **How is Timecode used?**
  - **During Recording**
    - **Separate audio and video recorders are supplied with a common timecode**

| Video Recorder |
| Time Code Generator |
| Audio Recorder |

SONY PRO AUDIO
REP TRAINING

- **How is Timecode used?**
  - **During Playback**
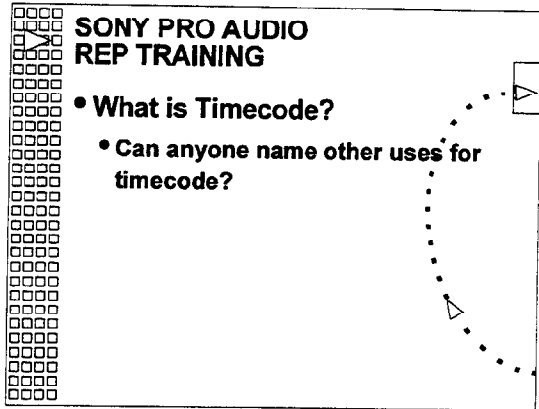   - **The separate audio and video transports need to be synchronized so that lip sync can be achieved**

Audio Recorder	Transport Control
Video Recorder	Timecode Playback
Editing Controller	Transport Control

SONY PRO AUDIO
REP TRAINING

- **Can the PCM-7040 Manage all of these Timecode Challenges?**
  - **In a Single Word, YES!**
    - **All TC Frame rates and reference standards are supported for recording and playback**
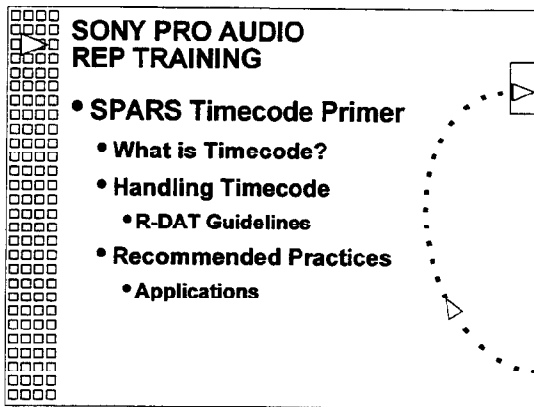
SONY PRO AUDIO REP TRAINING

- **What is Timecode?**
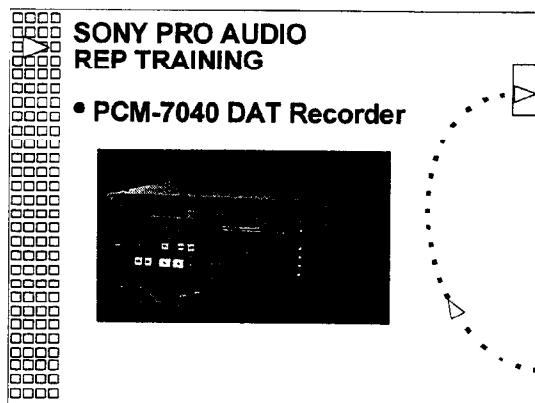 - **Can anyone name other uses for timecode?**

SONY PRO AUDIO REP TRAINING

- **SPARS Timecode Primer**
  - **What is Timecode?**
  - **Handling Timecode**
    - **R-DAT Guidelines**
  - **Recommended Practices**
    - **Applications**

SONY PRO AUDIO REP TRAINING

- **PCM-7040 DAT Recorder**

SONY PRO AUDIO
REP TRAINING

- **PCM-7040 DAT Recorder**
  - **List Price:** **$8,900.**
  - **Dealer Price:** **$6,000.**
  - **Product Positioning**
    - **Replaces the previous model**
      PCM-7030 and PCM-7050
    - **Includes all features of PCM-7030**
      and PCM-7050 as standard

SONY PRO AUDIO
REP TRAINING

- **PCM-7040 DAT Recorder**
  - **New Features**
    - **Newly Designed Transport**
      - **Offers improved tape handling**
    - **Start ID Level Sync**
      - **Includes level threshold selection**
    - **Date and Time Recording**
      - **Displays Date/Time recorded by**
        Date/Time equipped DAT recorders

SONY PRO AUDIO
REP TRAINING

- **PCM-7040 DAT Recorder**
  - **'Sampling' of Key Features**
    - **Auto display of tape time code type**
    - **Application specific menu presets**
    - **9-Pin memory jog control**
    - **Print error log via RS-232**

SONY PRO AUDIO
REP TRAINING

- **PCM-7040 DAT Recorder**
  - **Competitive DAT Recorders**
    - **Tascam**
      - **DA60MK2, List $6,499.**
        - **Relaunched DA-60 with functional 9-pin and continuous TC in assemble rec. is now possible**
        - **Transport mechanically not robust**
        - **No memory control by 9-pin**

SONY PRO AUDIO
REP TRAINING

- **PCM-7040 DAT Recorder**
  - **Competitive DAT Recorders**
    - **Fostex**
      - **D15, List 4k (with tc and 9-pin)**
        - **Limited use from 2 head design**
        - **No internal TC generator**
      - **D25, List $8K**
        - **Priced down successor to D20B**
        - **D20B limitations remain in D25**
      - **D30, List $10,995.**
        - **Nice large display with soft keys**

SONY PRO AUDIO
REP TRAINING

- **PCM-7040 DAT Recorder**
  - **Competitive DAT Recorders**
    - **Otari**
      - **DTR-90T $10K**
        - **Memory not included**
        - **Launched with several technical limitations, mainly 9-pin**
        - **Currently, sales volume is very limited**

SONY PRO AUDIO
REP TRAINING

- **PCM-7040 DAT Recorder**
  - **Why do video post professionals choose the PCM-7040 over competitive DAT recorders?**
    - Reliable 9-Pin Transport Control
    - Mem Jog from the Video Editor
    - Professional 4 - Head Deck
    - Rugged Transport Construction

SONY PRO AUDIO
REP TRAINING

- **What is 9 Pin Transport Control**
  - **Basic Remote Transport Control**
    - FF,RW, Stop, Play,Rec, Eject
    - Reading TC position
    - Cueing (Locating), Synchronizing
  - **9-Pin is an Industry Nickname**
    - Proper Name
      - RS-422 serial control using Sony P2 protocol (Yes Sony invented it!)

SONY PRO AUDIO
REP TRAINING

- **PCM-7040 DAT Recorder**
  - **9 Pin Transport Control**
    - End users know when they plug the 9-pin control port of their editing controller into a PCM-7040 that proper transport control is possible

SONY PRO AUDIO REP TRAINING

- **PCM-7040 DAT Recorder**
  - **WE ARE NOT SAYING**
    - Other DAT recorders don't work
  - **WE ARE SAYING**
    - Sony's invented the Sony 9-pin control protocol
    - Sony's experience in 9-pin control results in reliable operation and advanced features

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SONY PRO AUDIO REP TRAINING

- **PCM-7040 DAT Recorder**
  - **Why is 9-pin Reliability Important?**
    - If control or synchronization problems occur, significant downtime is likely
    - Time is money
      - On-line video post time is often in excess of $500. per hour

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SONY PRO AUDIO REP TRAINING

- **9 Pin Transport Control?**
  - Examples of Advanced 9 pin Control using the PCM-7040
    - Report tape errors to the controller
    - RAM memory jog control
    - Access to DAT's unique features
      - Internal TC chase synchronizer
      - Set up menu data read/write

**SONY PRO AUDIO
REP TRAINING**

- **PCM-7040 DAT Recorder**
  - **Control of Memory Jog from the video editor (ie: 9-pin)**
    - **Sony PCM-7040**   **Yes**
    - **Otari DTR-90**   **Yes**
    - **Fostex D-30**   **Yes**
    - **Fostex D-25**   **No**
    - **Tascam DA-60** MK2   **No**
    - **Fostex D-15**   **No**

**SONY PRO AUDIO
REP TRAINING**

- **PCM-7040 DAT Recorder**
  - **What is Memory Jog ?**
    - **How is it different from Shuttle?**
      - Let's Listen

**SONY PRO AUDIO
REP TRAINING**

- **What is memory Jog used for?**
  - **Precisely locating to a point on the tape**
  - **Frame accurate marking of edit in-points controlled from the video editor**

SONY PRO AUDIO
REP TRAINING

- **PCM-7040 DAT Recorder**
  - **Why is jog so important?**
    - **Music beds don't have a sync point established in advance**
      - Jog to the beginning of music, mark in
    - **For tapes without TC requiring lip sync**
      - Find a door slam on the picture, and find the door slam on the DAT, mark in

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SONY PRO AUDIO
REP TRAINING

- **PCM-7040 DAT Recorder**
  - **Why is jog so important?**
    - **Without high quality jog sound, users must revert to the hunt and peck method of finding appropriate edit points**
    - **Memory jog control saves time**
      - Hunting / Pecking can take up to several minutes
      - Several minutes can cost $50. of time for every precise DAT audio edit needed

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SONY PRO AUDIO
REP TRAINING

- **2 Head Machines CAN NOT**
  - **Record Timecode Separately**
    - Post Striping TC Not Possible
  - **Record Audio Separately**
    - Using existing TC, recording audio only can't be done!
  - **Punch In Audio "on the fly"**
    - Bad Sound at Record In Point
  - **Confidence Monitor**
    - Listening of tape while recording

SONY PRO AUDIO
REP TRAINING

- **Without 4 Heads**
  - Punching into record for audio or TC only isn't possible
    - This means the machine is only suitable as a player only
  - Inserting SMPTE timecode on an existing tape is not possible
    - What do you do when the producer says, Let's send out a DAT to the composer with the the Edit master's timecode on it?

SONY PRO AUDIO
REP TRAINING

- **Why 4 Heads**
  - Not to mention any names

  # (FOSTEX D15)

  # (HAS 2 HEADS)

  is not suitable for video post where insert recording onto DAT is a common place activity

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SONY PRO AUDIO
REP TRAINING

- **Quality of Construction**
  - Transport Quality
    - Simply Put
      - Machines that cost more generally have higher quality transports
    - PCM-7040
      - DAT data grade transport originally designed for the vigorous task of data recording

**SONY PRO AUDIO
REP TRAINING**

- **Quality of Construction**
  - **Transport Quality**
    - Improper tape handling due to transport problems can result in tape damage and cause trouble playing back master recordings

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**SONY PRO AUDIO
REP TRAINING**

- **Quality of Construction**
  - **Transport Quality**
    - High budget film and video program productions simply can not afford to lose original DAT recordings
    - The $2K saved by initially purchasing a lower cost 4head tc DAT machine (Name and Model Not Specified) in the end may not be a cost savings!

**SONY PRO AUDIO
REP TRAINING**

- **Quality of Construction**
  - **Transport Quality**
    - We are <u>NOT</u> saying
      - Competitors transports are bad
    - We are saying
      - Very high quality transport mechanisms come at a price

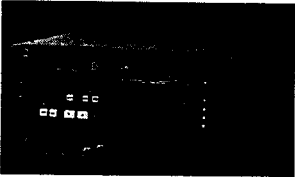**SONY PRO AUDIO REP TRAINING**

● **PCM-7040 DAT Recorder**

  ● **Summary**

    ● Sony 9-pin Control

      ● **RELIABLE AND PROVEN**

    ● Memory Jog Control

      ●**SAVES TIME**

    ● 4 Head Recorders

      ● **NEEDED FOR RECORDING**

    ● Quality of Construction

      ● **PRO END USERS CAN NOT COMPROMISE**

SONY PRO AUDIO REP TRAINING
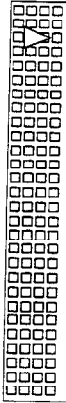
● **PCM-7040 DAT Recorder**

SONY PRO AUDIO REP TRAINING

● **PCM-7040 DAT Recorder**

  ● **HANDS ON EXERCISE**

    ●**Equipment**

      ● **PCM-7040 DAT Recorder**

      ● **SMS-1P Speakers**

      ● **15 Minute Tape**

        • Narration Program

        • Music Track

**SONY PRO AUDIO
REP TRAINING**

- **PCM-7040 DAT Recorder**
  - **HANDS ON EXERCISE**
    - **Store and Recall Menu Preset 1,2**
    - **Menu Select TC Ref and Tape TC**
    - **Exercise in Locating Tight Spots on Tape**
      - By Both Cueing and Mem Jog
        - Beginning of billiard balls sound
        - Beginning of 2nd beat in Music track
    - **Move point and play from memory**