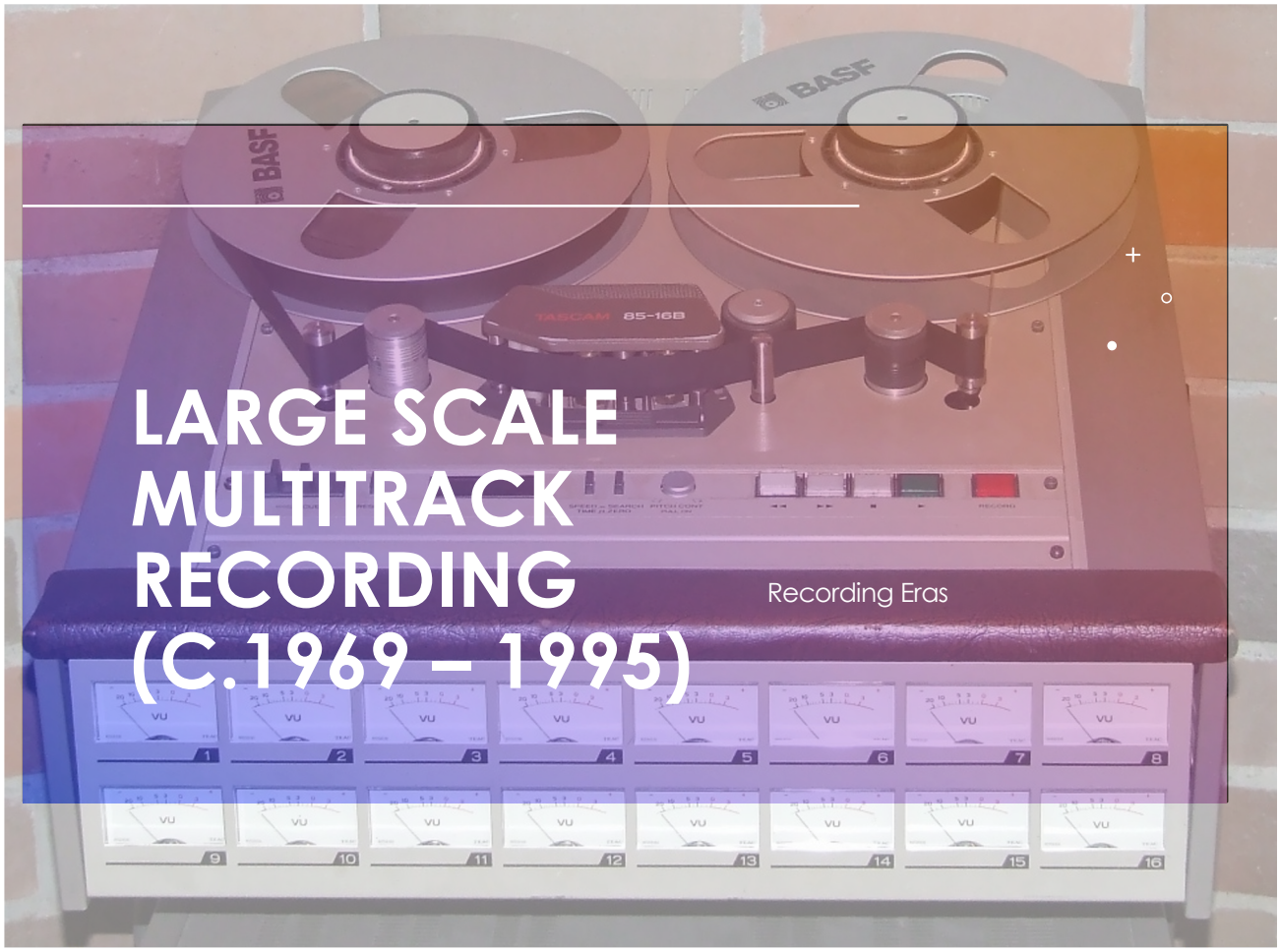


LARGE SCALE MULTITRACK RECORDING (C.1969 – 1995)

Recording Eras

Analogue Multitrack Tape

- A multitrack tape would have multiple '**lanes**' that allow for independent recordings onto several tracks at once
- The **wider** the tape and the **faster** it ran, the **higher** the quality of audio production
- Domestic tape recorders would use tape **¼-inch** thick whereas studio machines would use up to **2-inch** thick tape

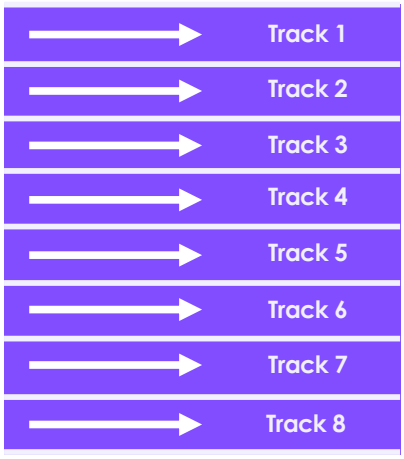


Diagram: 8-track tape

- The multiple lanes also allow for recording at different times for the purpose of overdubbing
- The higher quality also meant less hiss would be present and that there would be a better high frequency response

- Tape saturation is the result of an overloaded magnetic tape and occurs when the signal is too loud when entering the record head of the tape machine
    - An increase in input volume can't recreate an equivalent increase in magnetisation
    - Can often sound like light compression and is often desired which is evident of the fact that this distinct sound is emulated today with digital plug-ins

Editing Tape

- In order to edit analogue tape, it needs to be physically cut and spliced together
- The **angle** at which the tape is cut determines the **smoothness** of the fade between the two sections

-Splicing is joining the edited sections back together

The Clavinet

- Plucks strings when a key is triggered
- The vibrations of the strings are captured by pickups
- Output is sent through an amplifier

Clavinet - https://www.youtube.com/watch?v=c7CY6aJtegc
https://www.youtube.com/watch?v=0CFuCYNx-1g

The Electric Piano

- When a key is pressed, hammers hit thin metal reeds
- The vibration of the reeds is captured by an electromagnetic pickup
- Output is sent through an amplifier

Top: Wurlitzer https://www.youtube.com/watch?v=RICK6UJi6tE
Bottom: Rhodes https://www.youtube.com/watch?v=qNX_34JQ1nU

The Hammond Organ

- The original Hammond organs generated sound using electromagnetic pickups that captured the sounds of tonewheels
- The Leslie Speaker works by rotating a baffle chamber in front of a loudspeaker
- Hammond organs produced after the 70's used intergrated circuits to generate sound

Hammond Organ w/ Leslie Speaker: https://youtu.be/GYstmRGD4J0?t=17 (Leslie Speaker switch between Chorale and Tremolo https://en.wikipedia.org/wiki/Leslie_speaker)

Tonewheel = Electromechanical mechanism that generates musical notes by using a motor to rotate disks that generate different frequencies. These would then rotate near an electromagnetic pickup

The Mellotron

- When a key is pressed, a length of magnetic tape is pulled across a playback head
- When the key is released, the tape springs back to its original position

Mellotron: https://youtu.be/HdkixaxjZCM?t=56

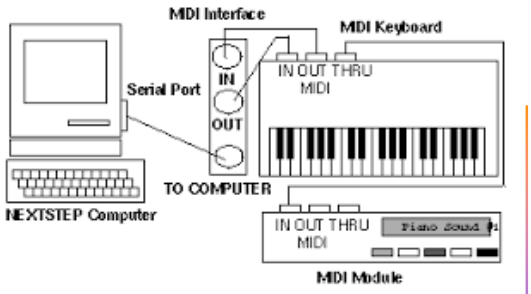
The Drum Machine

- Drum machines came with pre-set rhythms
- Also allowed users to program and store custom drum grooves

Top - Roland CR 78: https://www.youtube.com/watch?v=Wd3HIdipohw
Bottom – Linn LM-1: https://www.youtube.com/watch?v=h9fcGpVNxOc
- Became a staple of 1980's pop (Notable artists include Michael Jackson and Prince (especially))

MIDI

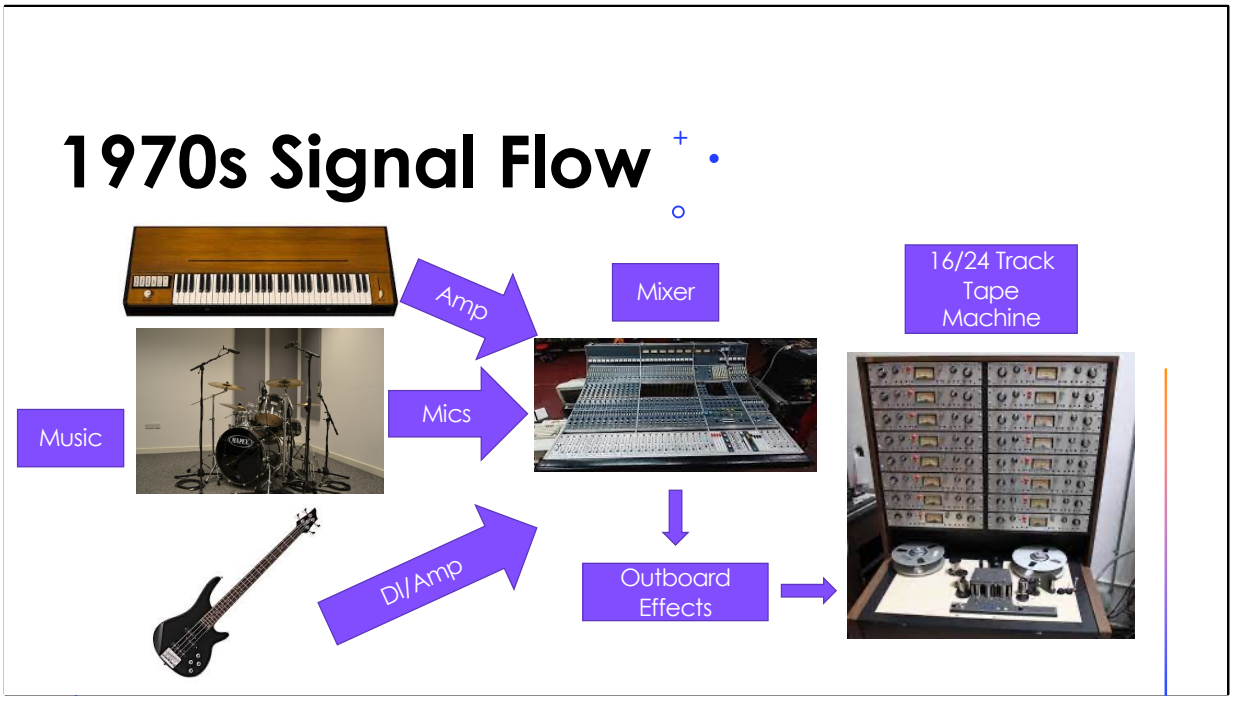
- Stands for Musical Instrument Digital Interface
- The protocol was standardised in 1983
- Allows for various different electronic musical instruments to communicate with one another



Protocol = Set or rules/system

Before this, synthesisers were very expensive and different units weren't compatible with one another due to manufacturers working independently

Electronic musical instruments include: drum machines, synths, samplers, effects units



Mixer = Neve 8058 (Had built in EQ, Pre-Amps, Aux tracks and busses)

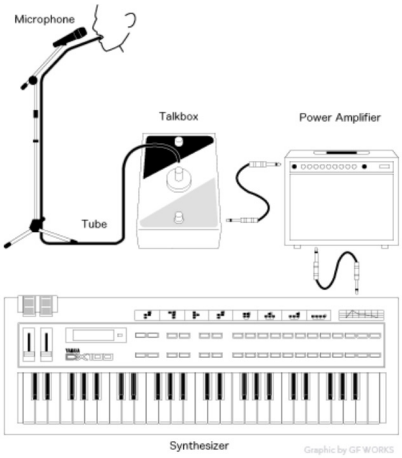
Outboard effects include: EQ, Compression, Plate Reverb, ADT

1970s Recording Process

- Multitrack recording was the norm
- The rhythm section would sometimes be captured live using acoustic panels to minimise spill
- Drums would be close miked
- Bass guitar and synthesisers would be captured using either DI or Amplifiers
- Vocals would be multitracked

Due to the increased number of tracks available there is an overall increased clarity of parts
This increased number of tracks also allows for more liberty to experiment and record with multiple microphones

The Talk Box



Directs sound from a synth into the mouth. The frequency content of the sound is shaped by the shape of the mouth


TikTok
TALKBOX ONLY

The Vocoder

Used a lot in the late 70s to early 80s as a musical instrument but was used as early as the 30s to synthesise human speech


TikTok
@thatgirlbuzz


TikTok
@chaysounds

Consumer Formats

1968
Microcassette and Mini Cassette

1971
Quadraphonic Vinyl Record

1978
Laser Disk

1982
Compact Disk (CD)

1987
Digital Audio Tape

1988
AIFF Format