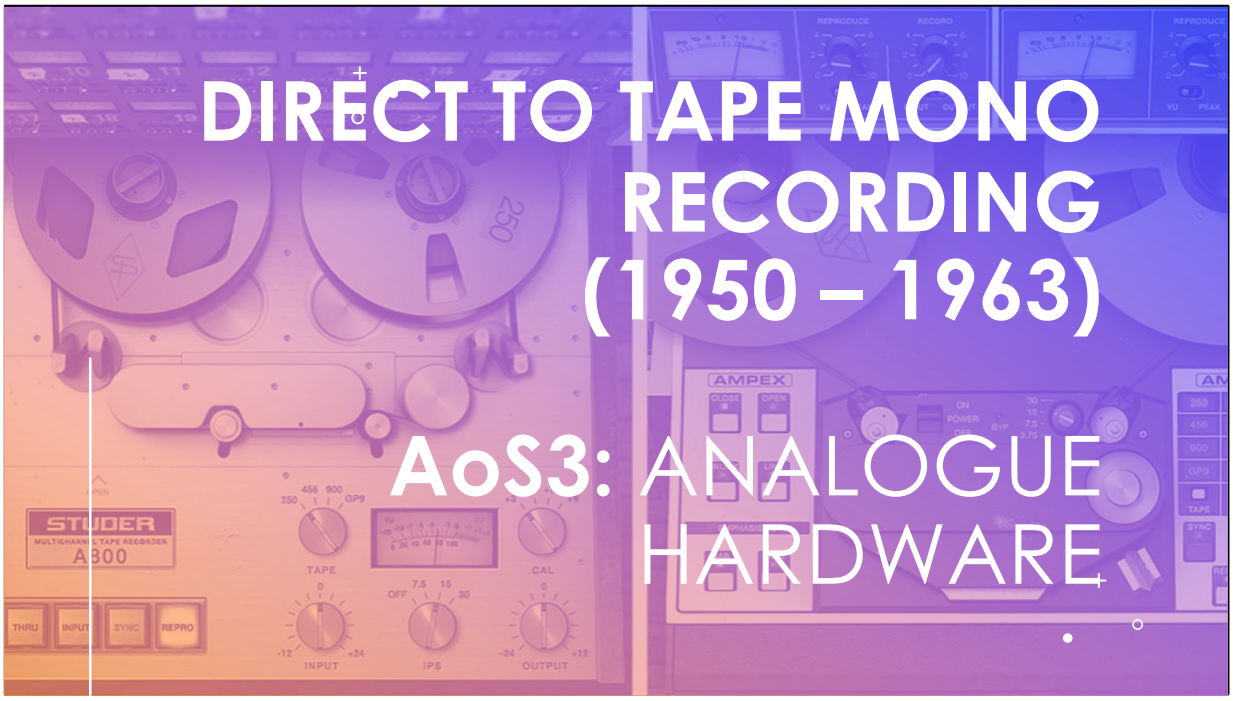


DIRECT TO TAPE MONO RECORDING (1950 – 1963)

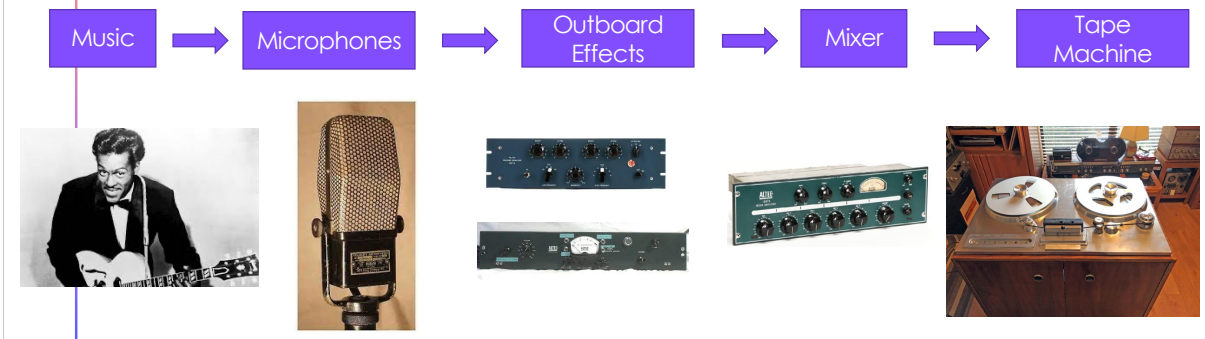
AoS3: ANALOGUE HARDWARE

1950s Recording Process

- **Complete** performances recorded in **one take**
- Levels and balance were primarily controlled by th**e positioning of the performers**
- Recordings were often **mixed 'on the fly'**
- Very little post production would be applied

- Recordings would take place in a single live room will all performers present
  - Headphone monitoring had not been invented yet
  - Acoustic baffles would sometimes be used to help absorb some of the sound
- A small number of microphones would be placed around the performers
  - Utilising the dead spots of microphones and positioning instruments at appropriate distances from the microphones was essential
- Mixing 'on the fly' meant that the recorded levels could not be changed after the fact and that they were all summed together to create a single electrical signal
- Any post-production that was applied would have to be applied to the whole mix

1950s Signal Flow



Ribbon mics(RCA 40) (Figure-8 polar pattern)

Outboard effects include EQ (Pultec EQ), Compression (Altec 436C), Tape Delay, Reverb

Mixer (Altec 1567A Mixer)

Tape machine (Ampex 200)

Tape machines were commonly stereo machines but the final mixes would be mono productions

The stereo machines would usually be used to capture the vocal on one channel, and then all other instruments on the other so as to allow the engineer to change the volume of the backing relative to the main vocal before committing it to tape

Monophonic Recording

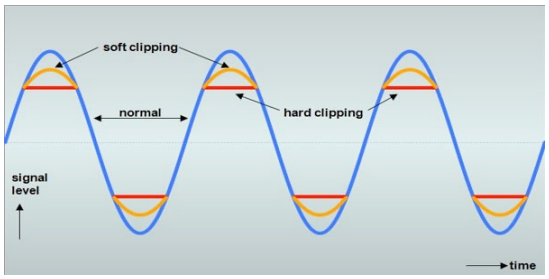
- Also known as **'full-track'** recording
- Multiple channels would have been recorded onto a **single track**
- 2/3 track recording started to develop in the mid 1950s

- Most professional recordings would have been done in mono due to the cost of equipment
    - The industry was slow to catch on to new advancements in technology
    - Most consumer playback mediums were mono (i.e. gramophones)

- Multiple takes would be taken from start to finish
    - If something went wrong they would have to record a whole other take
    - Basic editing was possible by splicing together different pieces of tape (uncommon however)

Tape Saturation

- Tape machines work by using **magnetic tape** and **iron oxide powder** to replicate sound waves
- If an audio signal **exceeds** the point at which the tape can accurately map out the waveform, **clipping** occurs
- Can cause the audio to sound as if **light compression** has been added



- Positive and negative peaks of the graph have their amplitude range shortened
- Also causes some harmonic distortion creating a unique warmth to the sound

Consumer Formats

1949

45 RPM Vinyl Record (Mono)

1950

16 RPM Vinyl Record (Stereo)

1958

Tape Cartridge (Mono/Stereo)

1962

Compact Cassette Tape