

FEEDBACK FRIDAY

COMPONENT 1

2 areas of significant misjudgment:

1. Depth of field-position and placement of your elements. This includes front and back. You are not being assessed on how creative you are with the use of field but how close it comes to commercial and stylistic standards.
2. Management of spectrum(EQ)-Divide your elements up in Hi, Mid and Low. This will give you a sense of which instruments will have masking issues. You then need to balance your Hi, Mid and Low content to have an even balance across the spectrum. Too much Lows=muddy mix. Too much Hi=bright, tinny mix. Too much Mid=harsh, honky mix

If it's gone wrong start again, you should have several version by now. Never delete a mix, always create alternatives. Always check on different systems and HAVE A REFERENCE!!

Top most annoying issues:

1. An unorganised Logic Project-YOU HAVE TO SUBMIT THIS. If it's a mess you WILL be marked down.
2. Noise on tracks-breathing heard when the vocalist is not singing, guitar noise is common issue.
3. Bad audio edits-top and tailing. Audio clicks. Use the fade tool, Use crossfade if you splice too sections together.

FRIDAY 16TH NOVEMBER

FEEDBACK FRIDAY

COMPONENT 3

Obviously caught you all off guard with this one. Highest mark was an E. This is a true reflection of where you current at and the work that needs to go into revising and listening. Remember all the material will be unheard, you therefore have to have a good sense of style and the technology related to it.

Section A was better than Section B(essays)

Things that you need to revise:

Vocal Production-capture i.e double tracking, layering, backing vocals, proximity effect; ADT, pitch-shifting, auto-tune, sampling, vocoder, panning(L C R); Bus Reverb, Delay on phrases or words(ping-pong, multitap)

EQ-HPF, LFP, sweeps. Hi. Mid. Low. Creative FX using EQ

Dynamic Processing-Limiter, Gate, Compression(Heavy, pumping, side-chaining)

Essays:

RECORDING TECHNIQUES(CAPTURE)

Analogue Tape

DAW

Evidence!!

TECHNOLOGY

Electric Guitar

Keyboard(organ, mellotron, clavinet, DM7, Rhodes)

Synthesis(Waveforms, Filters, Env

Sampling(cut, paste, jitter, triggers, filters, pitch mapped)

Evidence!!

FX

Delay, Reverb, Phaser, Flanger , Compression,

Evidence!!

FRIDAY 16TH NOVEMBER

25%

FEEDBACK FRIDAY

COMPONENT 4

SUBMITTING YOUR FILES

If you don't submit your work in the correct folder, it won't be marked. This applies to the exam. I cannot help you if you leave the room without submitting work. UNACCEPTABLE.

AUDIO EDITING disaster-What happened to fades? When fades are used, it's too long. This is basics that you should be getting by now.

DOUBLING

Panning is not enough. Very short delay and slight detuning will get the doubling effect.

35%

FRIDAY 16TH NOVEMBER

HOUSE MUSIC

Component 3

WHAT IS HOUSE MUSIC?

- Discuss in pairs.

AIMS

Sub-Genres

Acid House
Hard House
Tech House
Deep House
Garage

- To recognise the key features of house music
- To understand its significant on the development of electronic dance music
- Study key artist and how it development to create sub-genres

HISTORICAL CONTEXT

- Started in the late 70s in Chicago at the Warehouse Club
- New York DJ Frankie Knuckles combined electronic synth based sounds(from bands like Kraftwerk) with disco and funk to produce the house sound.
- Knuckles(and other DJs like Ron Hardy and Marshall Jefferson), used the emerging technology of the day-Roland's TR303 bass synth and 909 drum machine.
- Jesse Saunders and Vince Lawrence releases the first recognised house album in 1983 featuring "*Love can't turn around*"
- Jefferson releases the most sampled Chicago house track in 1986-"*Move your Body*"
- DJs Pierre, Spanky and Herb Jackson releases *Acid Tracks* in 1987 which features real-time control of the TR303 bass, which becomes the legendary sound of Acid House.

TASK 1: LISTENING-COMPARE THE PRODUCTION TECHNIQUES OF THE 2 EARLY HOUSE TRACKS

"Move your Body"



"Acid Tracks"



KEY FEATURES

- Four-on-the-floor bass drum and off-beat hi-hat patterns
 - Vocal samples and often influenced by Soul
 - Generally in 120 bpm
 - Synth bass lines and lead synths
 - Regular pop song structure-verse chorus
 - TR909 drum machine and TB303 synth bass
 - Orchestral stabs(including Staccato, syncopated synth or piano stabs)
 - Programmed hi-hats
 - Snare rolls
-

KEY TECHNOLOGY



TR-909 Rhythm Composer

- Sounds-Kick, Snare, Claps, open and closed Hi-Hats, Rim shots, Ride and Crash Cymbals.
- Each part of the drum has a separate output, ideal for sending the drum sounds to a mixer to be individually mixed.
- Each sound can be manipulated using synth controls e.g. tune, attack, decay
- Built-in pattern sequencer

<https://www.youtube.com/watch?v=ydCDro4YerY>



TB-303

- Monophonic analog bass synthesizer
- Built-in pattern-based step sequencer
- One oscillator with 2 waveforms-Ramp(Sawtooth) and Square
- Bass-line must be programmed in rather than performed.
- This allows the user to manipulate the VCF and Env controls

<https://www.youtube.com/watch?v=rt71d5LIV5M>

Task 2-Have you been listening?

DESCRIBE THE STYLISTIC FEATURES OF HOUSE MUSIC

House

- Tempo generally between 120 and 140 bpm
- Prominent four-on-the-floor kick drum
- Derived from Disco with
- Kick fills and
- Extended breakdowns
- Off-beat hi-hats
- Sparse texture
- Electronically generated bass lines (SH-101, TB-303)
- Use of vocal samples
- Staccato, syncopated synth or piano stabs

HOUSE MUSIC SUMMARY

INSTRUMENTATION:

- Drum machines(Roland TR-808 and specifically the TR909)
- Drums and percussion Samples
- Synthesizers(Roland TB303 synth bass)
- Samplers(Vocals, Stabs, Piano Stabs)
- Turntables
- Vocals

TECHNOLOGY AND PRODUCTION:

- Computer-based sequencers to create the music
- Cheaper technology makes music production more accessible
- Electronic instruments used include: Drum machines, samplers and synthesizers
- Use of a wide variety of effects including: reverb, delay, distortion, chorus, side-chain compression, vocoders,

PERFORMANCE AND ARRANGEMENT:

- House has an up-beat tempo in excess of 120bpm and up to 140bpm
- Four-to-the-floor bass drum and hi-hat emphasis on the off-beat quavers (similar to disco)
- Synth stabs or syncopated staccato stabs on piano
- Use of synth for bass lines
- Synth riffs and pad chords
- Samples taken from a range of instrument and vocal recordings
- Anthemic or epic feel
- Rapping used on some songs
- Soul influenced vocals are common
- Structures are built on building up and breaking down textures and rhythmic elements

COMPARE THE PRODUCTION TECHNIQUES OF THE FOLLOWING TRACKS

Duke Dumont I Got U



David Guetta Titanium



Draw a structure table for both songs and compare the musical structure. Briefly describe the texture in each section

STARTER

DISCUSS THE PRODUCTION TECHNIQUES OF THIS TRACK

" Acid Tracks "

- ❑ Recording techniques i.e. capture(5 marks)
- ❑ Technology i.e. synth techniques, sampling...(5 marks)
- ❑ FX-compression, flanger, reverb, delay (5 marks)
- ❑ Production-balance, blend, stereo field (5 marks)



STARTER

EVALUATE THE IMPACT THESE DEVICES HAD ON HOUSE MUSIC AND HOW IT HAS INFLUENCE CREATING DANCE MUSIC TODAY.

WRITE IT DOWN!!



STRUCTURE TASK

Duke Dumont / Got U



5 marks for each section.

- Import audio file into the project(5 marks)
- Use BPM counter to match the bpm to your project(5 marks)
- Use markers to map out the structure(10 marks)
- Use the pattern sequencer Ultrabeat to copy the drum pattern(5 marks)
- Listen and copy the chord progression and input the data accurately retaining the feel. (5 marks)

Challenge: creating a harmonically contrasting section.

CREATIVE FX TASK

Duke Dumont / Got U



Scenario

Create an 8 bar *Acid House style* introduction using the Duke Dumont / Got You chords as the stimulus. You must retain the tempo and rhythm of the chords, however, you must use a TR 909 style drum pattern and a TB 303 bass line. You must use real-control to change the parameters(cut-off and resonance) on the bassline.

The introduction must start with a filter effect on the piano(similar filter to verse section on I Got U), that slowly rises and ends at bar 8. You must use a snare roll at the end of bar 8 that leads into the first verse.

Mark scheme.

- ❑ Open an existing Logic project (5 marks)
- ❑ Save as an alternative project-*your name_acid house*(5 marks)
- ❑ Use of LPF on the chords(10 marks)
- ❑ Create a TB 303 bass synth sound that follows the chord pattern, using one oscillator(sawtooth) (10 marks)
- ❑ Assign cut-off and resonance to rotary encoders on the midi controller and record real-time control of filter and resonance.(10 marks)
- ❑ Stylistic snare roll fill in bar 8 (5 marks)
- ❑ Save project in Component 2 folder and bounce as stereo 16 bit 44.1kHz wave file.(5 marks)

COMPONENT 2 HOUSE TRACK

You will create a house track using all of C2 criteria for Brief 3

- Minimum 6 samples
 - Idioms and colloquialisms should have a theme-e.g. a certain region or nation, author or play-write. This can't be random idioms that are not connected
 - Must be 3 minutes exactly
 - Contain all the stylistic features of House(or a Subgenre)
 - Start with mapping out your structure and in your notes section explain why you have chosen this structure(refer to wider listening)
-

COMPONENT 3: LISTENING AND ANALYSING EXAM

A Level Music Technology

AIM AND OBJECTIVES

- Understand the requirements for Component 3(written exam)
 - Explore the development of recording between 1930-1963
-

COMPONENT 3 CONTENT

Skills, knowledge and understanding

You are required to demonstrate the ability to:

- comment on the music production tools and techniques used to capture sounds, including musical instruments
- use aural discrimination to identify and evaluate music technology elements in unfamiliar works
- analyse critically and comment perceptively on music production techniques from a range of source material and their impact on music styles
- apply musical elements and language, for example structure, timbre, texture, tempo and rhythm, melody, harmony, tonality and dynamics within the context of music technology
- produce informed written responses about equipment used in unfamiliar commercial recordings by identifying effects used and their core settings.

THE EXAM PAPER(25% OF YOUR QUALIFICATION)

This paper comprises two sections: A and B and all questions are compulsory.

- One audio CD with the unfamiliar commercial recordings to accompany questions on the paper will be provided per student.
- **Section A:** Listening and Analysing (44 marks) – four questions, each based on unfamiliar commercial recordings supplied by Pearson
- **Section B:** Extended written response (16 marks) – one comparison question, which uses two unfamiliar commercial recordings supplied by Pearson

TASK: LISTENING

LISTEN to Sweet Home Chicago by Robert Johnson

In which decade was this song recorded? Give 3 reasons why you have come to this conclusion.

If the song was re-mastered today which techniques would be used to enhance the recording

-**narrow frequency range**-no low end and high end.

-**noise**-poor signal-to-noise ratio(SNR). High level of surface noise from the needle and disc capture method. Hiss present as levels are turned up to get as much signal as possible

-**imbalance between vocal and guitar**-one microphone technique meant that the recording was captured live and there was no mix stage

Re-mastering possible processes:

-**stereo widening/ reverb** to simulate a stereo field

-**Noise reduction algorithm** to remove unwanted surface noise

-**EQ /Exciter** to enhance frequency range

-**Multiband compressor/ limiter** to increase average level and reduce dynamic range.

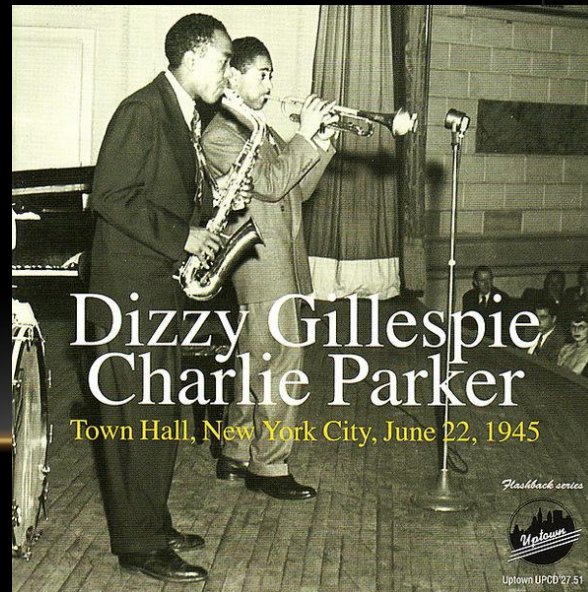
DIRECT TO TAPE **MONO** RECORDING(1930-1963)

1930s and 40s Styles-**Jazz**

-start of the **Swing** era e.g. Benny Goodman and Glen Miller

-developed into **Big Band**, which had more sophisticated orchestration e.g. Duke Ellington and Count Basie

-**Bebop**, a more complex and experimental form e.g. Charlie Parker and Dizzie Gillespie



THE 1930s: CAPTURE METHODS

- Record in a **LIVE SPACE** environment-at the venue, a rehearsal space. The acoustics of the room was recorded too and therefore careful consideration of room size.
- Recordings were usually for **RADIO BROADCAST** and therefore performances were recorded a **broadcast STUDIO**
- **ONE MICROPHONE** (often a ribbon) to record the entire band. Proximity to the microphone would determine how loud the instrument would be. Soloist would step forward to ensure they are heard over the band. The **PLACEMENT OF PLAYERS** around the microphone would determine the overall balance.
- A single performance (*1 take wonders*)-**no overdubbing, no editing, no processing**. Recording dependent on what the musician played.
- The beginning of **electric recording**-**narrow frequency range, high signal-to-noise ratio, mono**



Acoustic recording

Electric recording

necessary to “nearly crack our throats singing into that hated horn.”⁴¹ Baur’s recollection describes three major benefits of electrical recording: (1) better-sounding records, (2) less strain on the performer, and (3) less time to make a record. However, the new process also posed certain challenges. Nathaniel



1930 TECH INVENTORY

Microphones



- **RCA 44 Ribbon Microphone**
- bi-directional(figure of 8)
- used in broadcast and is still one of the most sort after microphones today



- **RCA 38 Ribbon Microphone**
- Figure of 8 and Cardiod pick up pattern
- extensively used in film and radio



- **WESTERN ELECTRIC Ring and Spring Carbon Microphone**



- **WESTERN ELECTRIC 639a** cardioid Ribbon microphone
- invented in 1939
- Other models called the “8 ball” and “salt shaker”

Mixers



- **RCA OP-7** broadcast mixer
- **4 channels**
- **Mono**

Recording Format and capture

- Nuemann Disc **Cutting lathe**
- Metal masters(78 rpm)



Dynamic processing- engineers riding the gain in real-time

FX-live and broadcast rooms

Processing?!

EQ-filters to eliminate problems recording to discs

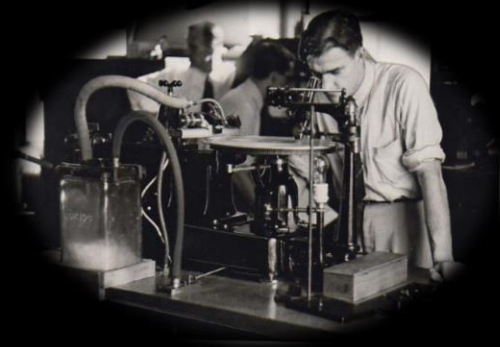
DIRECT TO TAPE **MONO** RECORDING

Simple Signal Path

Single Ribbon
Microphone



Mono 4 channel
Mixer



Disc Cutting Lathe-
cuts metal master



JAZZ

Ragtime

Dixieland

swing

bebop

Cool

fusion

1920s Acoustic Recording

The Dixieland Jazz Bands consisting of approx. 6 members(cornet, clarinet, trombone, banjo or piano), made it's way up north from New Orleans to Chicago(and New York). Early Jazz recording were **acoustic**(horns attached to a **stylus directed imprinting on a disc**). Louis Armstrong emerged as one of the leading jazz artists(trumpet virtuoso) with his recording of West End Blues regarded as one of the best record of its time.

1930s The Swing Era

Small jazz groups became larger dance bands and jazz orchestra consisting of up to 15 or more players(reeds, brass and rhythm sections). These were known as "Big Bands". Leading composers and arrangers became band leaders, Duke Ellington and Count Basie, and were key to the development of the genre. Radio broadcast was crucial to the increasing popularity of swing music. Music by Benny Goodman and Glenn Miller filled the airwaves. Recording were **electric** at this stage. One or two microphones were used to capture the entire band.

1940s A New Direction

Post WW II, the big band swing music started to lose momentum and band leaders could not afford to finance a large ensemble. Jazz reverted back to the smaller ensembles and a more complex performance based style emerged. Led by Dizzy Gillespie(trumpet) and Charlie Parker(saxophone) the virtuosic, less accessible, jazz called Bebop.

MUSICAL CHARACTERISTICS OF JAZZ

- **Swung** and Shuffle rhythms
- Syncopation
- Extensive use of **improvisation**(simple and complex)-virtuosic playing
- Use of the 12 bar blues and AABA 32 bar song structure
- Blues scale and Modes for melodic lines
- Extended chords(9th , 11th and 13th)
- Chromatic Chords and Reharmonisation
- Walking bass



Rhythm Section:

Drums

Double Bass

Piano

Hollow body Electric Guitar

Brass Section:

Trumpet

Trombone

Reed Section:

Saxophone

Clarinet

Essential Listening:

- *West End Blues-Louis Armstrong and the Hot Five*
- *Mood Indigo- Duke Ellington*
- *Jumpin' at the Woodside-Count Basie*
- *Sing Sing Sing-Benny Goodman*
- *In the Mood-Glenn Miller*
- *The Bird-Charlie Parker*
- *So What-Miles Davis*
- *Soul Bossa Nova-Quincy Jones*

LEGENDS OF JAZZ

- Jelly Roll Morton
- Louis Armstrong
- Duke Ellington
- Count Basie
- Benny Goodman
- Glenn Miller
- Dizzy Gillespie
- Charlie Parker
- John Coltrane
- Thelonius Monk
- Miles Davis



BLUES

Delta Blues

Chicago

Urban blues Dance-hall blues

Rhythm and blues

Classic blues

Detroit

1920s The First Recordings

Blues originated from black slavery and the songs told of hardship, suffering and injustice. The guitar was often used to accompany the singing using bending and sliding(bottleneck) techniques to give the guitar an expressive “voice-like” quality. This soon developed as a solo blues instrument. Charley Patton was one of the first to record his songs. He groaned and yelled his songs that established what is known as Delta blues. Other singers that further developed the sound and moved up north were John Lee Hooker, Muddy Waters and Howlin’ Wolf.

1930s The Blues grow in popularity

Robert Johnson records his songs in a hotel in San Antonio. Brunswick Records set up a temporary studio in 2 rooms. The record is established as the most influential blues record. Johnson mysteriously dies in 1938 at the age of 27.

Another style of blues emerged from the 20s into the 30s was the blending of blues and song forms with early jazz. Powerful and strong voices of Ma Rainey and Bessie Smith could be heard over a loud bands. The purpose was for entertainment and dance-halls and less personal the solo Delta blues.

1940s More styles develop.

Blue artists like Muddy Waters and Howlin’ Wolf moves up to Chicago and further develops the harsh sound of down-home blues(Delta Blues). The Chess record label releases blues classics such as Hoochie Choochie Man and Got My Mojo working. John Lee Hooker based in Detroit receives international success with his primitive boogie style. At the same time artists like Fats Domino, Ike Turner and Louis Jordan are developing the dance-hall blues which was known as rhythm and blues. A electric guitar driven style was led by BB King, T-Bone Walker and Otis Rush all of which influenced what was to become POP MUSIC.

BLUES

- Call and Response
- 12-bar blues structure
- Chords I-IV-V
- Use of 7ths chords
- Blues scales(flattened 3rd, 5th and 7th of a major scale)
- Use of slides and bends
- Derived from the spiritual and work songs
- Extensive use of guitar and harmonica
- Shuffle Rhythms
- Expressive solos
- Influenced many genres-Jazz, Rock 'n Roll, Rock....



LEGENDS OF BLUES

- Charley Patton
- Robert Johnson
- Bessie Smith
- John Lee Hooker
- Muddy Waters
- Howlin' Wolf
- Fats Domino
- Louis Jordan
- BB King
- T Bone Walker



THE PICTURE SHOW A RECORDING SESSION OF A BLUES ARTISTS. EVALUATE THE RECORDING TECHNIQUES USED.(20 MARKS 20 MIN)



Pen and pad
time
write it up

Context:	
Early electric recording session possibly 1930s because there is use of a carbon microphone(ring and spring) that was popular in broadcast at the time. Furthermore, there is a disc-cutting lathe behind the engineer and he appears to be setting levels on a box shaped mixer, similar to the portable broadcast mixer of the 30s. Record companies traveled around the country to find artists to record the next hit. Setting up a temporary studio in rooms(e.g. hotels) was popular at the time.	
Carbon Microphone "Ring and Spring"	Narrow frequency response/high signal to noise ratio compared to condenser microphones which has high sensitivity good SNR and a wide frequency response.
A single microphone to pick up both sound sources	Microphone placed closer to the mouth of the singer to balance the sound between the singer and guitar. Vocals will be louder than the guitar. 2 or more microphones would be used in pick up both sound sources and the balance would be done in the mix stage.
All recording equipment in the same room with no acoustic treatment.	Reflection from the walls, ceiling and walls provides a natural ambience from the room. Noise from equipment in the room can be present in the recording. Artist would record in a purpose built acoustically treated studio tom control the room ambience. The recording equipment(e.g. DAW/Tape Machine and Mixing Console) would be housed in a control room to reduce the unwanted noise picked from the equipment.
Close microphone technique(6-12 inches)	Reduce the ambience and noise from the room/ stronger signal/pick up the fret noise from the guitar/ noise from movement of the artist.
No pop filter	Popping could cause audio spikes(peaks) in the recording. Vocalist is singing slightly above the diaphragm to reduce unwanted peaks. Audio peaks can cause the needle to jump off the disc during recording. A pop filter would be used in contemporary recordings and a HPF to reduce low frequency rumble.
Low microphone/off axis response	Off axis response from singer moving away from the microphone during the performance. Will effect the frequency response
Mono Recording	1 channel/No stereo field and depth/recorded on 78rpm wax disc/No stereo playback system at the time. Possible stereo microphone technique can used on the acoustic guitar to add depth of field.

LISTENING DIARY DUE FRIDAY 11TH JANUARY

Jazz and Blues-Essential Listening

Listen to minimum 5 tracks. You must set aside at least 30 minutes for each track. Try to find the earliest recording of the track and comment on the following:

1. -FREQUENCY
2. -DYNAMIC RANGE
3. -NOISE
4. -STEREO FIELD
5. -Compare it to today's production techniques.

Due: Monday
28th January

- West End Blues-Louis Armstrong and the Hot Five
- Mood Indigo- Duke Ellington
- Jumpin' at the Woodside-Count Basie
- So What-Miles Davis
- Soul Bossa Nova-Quincy Jones
- Down the Dirty Road Blues-Charley Patton
- Boom Boom-John Lee Hooker
- Nobody Knows When You're Down and Out- Bessie Smith



COMPONENT 2 TOMORROW

You will be updating your Logic Notes section of your Project. Make sure you have the following:

- 3 reference tracks-Artist/Band Name; Song Name; Style/genre/Length; Techniques you intend to emulate in your Track
- Structure with brief description of the mood of each section including techniques that stylistic and meet the brief
- List of samples(minimum 6)
- Chord Bank-minimum 2 keys or modes
- Chord Progressions-minimum 4 chord progressions

TASK: LISTENING

In which decade was this song recorded? Give 3 reasons why you have come to this conclusion.

Describe the style of music and discuss the vocal techniques used

If the song was re-mastered today which techniques would be used to enhance the recording

Re-mastering possible processes:

- stereo widening/ reverb to simulate a stereo field
- Noise reduction algorithm to remove unwanted surface noise
- EQ /Exciter to enhance frequency range
- Multiband compressor/ limiter to increase average level and reduce dynamic range.

COUNTRY

Hillbilly

Country and
western

Bluegrass

Western swing

Folk.

Rhythm and
blues

1920s The First Recordings

Country music is rooted in the folk music brought by white settlers in the US. It established itself as a distinctive southern style which adapted many folks styles such as narrative ballads, dances of variety styles, spirituals and blues. Jimmy Rodgers and The Cardinal Family record the first country record.

1930s The Blues grow in popularity

Jimmy Rodgers was the first country star making *hillbilly* music makes his first record in 1927. He learnt from the black (blues) musicians of the day and incorporated guitar and banjo in his songs. He was known for his yodeling(*My Loving Gal Lucille*). The songs were sentimental, with a romantic and reverence for the West and images of carefree cowboys. Country music remained the province of the southern whites i.e. a limited market. Cowboy movies further develops styles as the soundtracks were released on vinyl.

1940s More styles develop.

Western Swing drew inspiration from Big Band, Dixieland and Blues. It would consist an eclectic mix of saxophones, piano and a Hawaiian instrument, the steel guitar. Bob Wills was dubbed the King of Western Swing. Blue Grass incorporated fiddle and banjo, a form of hillbilly music that has Great Britain and Western African Origins. Bill Monroe made the from popular.

THE 1940: CAPTURE METHODS

- Purpose built recording facilities for research. Developments in stereo and recording techniques. First stereo movie but no stereo recordings yet, as playback systems were mono(jukeboxes and home record players)
- Experiments into splicing and cutting tape, results in editing recording sessions in the late 40s
- Improved quality of microphones. Multiple pick-up patterns are being produced.
- Multi-microphone techniques. Spot mics and ambient mics used for ensembles.
- Improvement in formats. Long Play(LP) and Extended Play(EP) disc allow for more playback time on records
- Making the transition from disc to analogue tape as the new recording format. Cheaper to retake performances, therefore multiple recordings to get the best take-**no overdubbing**
- Development of **electric recording-improved frequency range but still narrow, high signal-to-noise ratio, mono, limited dynamic range**

Electric recording

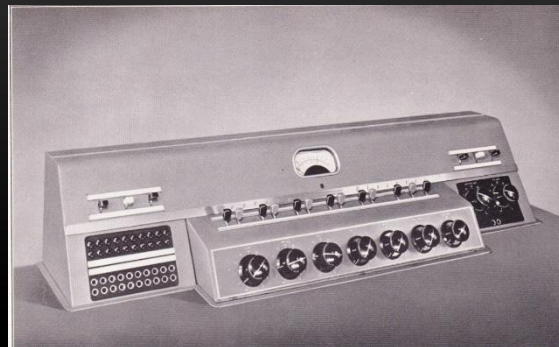


1940 TECH INVENTORY



- NUEMANN U47
- first condenser microphone with switchable pick up patterns
- invented in 1947
- also known as a Telefunken microphone

Mixers



- Western Digital 7 channel mixer
- **WE-25A**

Recording Format and capture



- **WESTERN ELECTRIC 639b**
- Dual diaphragm with multiple pick up pattern
- Ribbon microphone
- Improvement from the 639a

- Nuemann Disc **Cutting lathe**
- Metal masters(78 rpm)

- Ampex Multitrack Recorder



Processing?!

EQ-filters to eliminate problems recording to discs

Dynamic processing-
Limiter amps are used in broadcast but not in the studio

FX-live and broadcast rooms

EVALUATE THE RECORDING TECHNIQUES USED.(20 MARKS 20 MIN)



Pen and pad
time
write it up

POPULAR MUSIC

1950 Ballads and Novelty Songs

The pop charts in the early 50s were measured by sheet music sales rather than record sales. The attention was soon to shift. Tin Pan Alley in New York referred to the street where music publishers had offices and was continually busy and noisy with songwriters trying to be published. Artists such as Bing Crosby, Nat King Cole, Vera Lynn and duo Les Paul and Mary Ford dominated the charts with their sentimental ballads and cute novelty songs. Bing Crosby is an influential figure in the development of music technology, firstly he established the "crooner" singing style which exploited the microphone and he funded the development of magnetic tape in the US with a company called AMPEX.

The other side of the tracks

Music that was not making charts at the time and not seen as Pop music was Blues and Country. The dance-hall version of blues became known as Rhythm and Blues. R&B were solely for the black community and became known as *race* records. These records were becoming more popular amongst the white community. Equally country had the niche white market of the South and the style was viewed as unsophisticated to the people up north.

However, these 2 styles would soon combine to make what we know as Rock 'n Roll

ROCK 'N ROLL

1950 Ballads and Novelty Songs

Mid 50s Rock 'n Roll established itself as a musical force. Early rock 'n roll was essential R 'n B sung and performed by white musicians. Sun Records, a Memphis recording studio owned by Sam Phillips, was hugely influential in the development of the style. Phillips recorded a vast amount of blue and country music in the early 50s and always felt that if a white performer could have the same feel and rhythm of black music, he would make some serious money. In walks Elvis Presley at 19 yrs old and cuts a record at Sun Records. His first single was recorded in 1954 "That's Alright Mama", a blues song first written and performed by Arthur Crudup. Elvis goes onto make 5 records with Phillips and then signs a deal with the major label RCA. This of shuffle rhythms, back beat(snare on 2 and 4) and 12 bar blues was a feature of the style and was incredibly popular with teenagers. Billy Haley, a country musician, had huge success with Rock around the Clock and Shake Rattle 'n Roll both of which is considered to lay the foundation for Rock 'n Roll artists.

The invention of the solid body electric guitar and experimentation with analogue tape recording was key to the development and sound of the 50s and rock 'n roll in particular. Chuck Berry and Bo Diddly had a more edgy guitar driven sound which inspired musicians in the late 50s.

The 45rpm record also established itself as the standard format allowing 3:30 minutes of play time with an A and a B side. Therefore, setting a standard for the pop song.

THE PICTURE SHOWS A RECORDING SESSION IN THE 50s. EVALUATE THE RECORDING TECHNIQUES USED. (20 MARKS 20 MIN)

Component 4 style exam question.



Pen and pad time write it up

STARTER



Context:	
<p>In the 1950s significant advancements was being made in recording technology. Analogue tape machines made recording cheaper and faster, allowing more time in the studio for the artist to perfect their performance. Engineers started using more than one microphone for recordings, therefore adding more clarity to instruments compared to the one mic technique. However, by todays standards the resources where limited as multitrack recording was not available and all recordings were in mono and released on vinyl.</p>	
Ribbon microphone	<p>Fairly narrow frequency response compared to the modern day condenser microphones. Often a fixed bi-directional polar pattern compared to the flexibility of multiple pick patterns of modern microphones. Very delicate and sensitive with no pad switch and therefore cannot handle high SPL. Suitable for vocals in this set up as the RCA ribbon microphones were tailored for broadcast and had a good high frequency response and rolled off the low end.</p>
Two microphones used 1 for the lead vocal and 1 for the backing vocals	<p>Lead vocal clarity and independent level control. This gives the engineer the flexibility to blend the lead with the backing vocals. Modern day techniques would have sufficient microphones for each backing vocal thus giving the engineer more control over the levels of the harmonies. Lead and backing vocals will be overdubbed and there would be no bleed from the other performers.</p>
Close microphone technique(6-12 inches)	<p>Reduce the ambience and noise from the room/ stronger signal/less bleed from the performers. Backing vocals are placed either side of the figure of 8 microphone and the positioned to get the best blend between the vocal harmonies. Lead Vocal a few feet away from the backing vocals to reduce bleed</p>
No pop filter	<p>Popping could cause audio spikes(peaks) in the recording. Audio peaks can cause the needle to jump off the disc during recording. A pop filter would be used in contemporary recordings and a HPF to reduce low frequency rumble.</p>
Low microphone/off axis response	<p>Off axis response from singer moving away from the microphone during the performance. Will effect the frequency response</p>
Mono Recording	<p>1 channel/No stereo field and depth/recorded on mono tape/No stereo playback system at the time (but was available)</p>

THE 1950: CAPTURE METHODS

- Purpose built recording facilities to capture performances.
- **Multi mic techniques** allowed for a more focused sound. Spot mics combined with ambient room mics.
- **OVERDUBBING** available on 2 track analogue tape recorders. Vocal could be mixed in on a separate track which improved the clarity of the vocals. This also allowed for delay effects to be added later.
- Editing a recording is possible and sections could be **punch-in** and **out** instead of doing the entire take over. Thus saving time in the studio as well as the studio becoming part of the creative process.
- The engineer starting to become part of the creative process ushering in a new role in the studio-the **mix engineer**
- Quality improved, less surface(crackle and needle clicks), however, the signal-to-noise ratio was poor and signal levels had to be high(or “hot”) introducing hiss and **tape saturation**(a type of distortion)
- **Mono** recording-stereo playback device where not available yet. Multiple speed record players became available to ensure you can playback your records in any format(33 ¹/₃, 45 and 78 rpm).



1950 TECH INVENTORY

Solid body guitar rack



- Fender Telecaster 1951



- Fender Precision Electric Bass 1951



- Gibson Les Paul 1952



- Fender Stratocaster 1954



- Gibson Les Paul 1957 featuring the new "humbucking" pick up.

Recording Format and capture



- Ampex 200 **MONO** Tape Machine and its successor the 300

Microphones



NUEMANN U47 condenser



- Shure Unidyne 55S often associated with Elvis Presley

Mixers



Processing?!

EQ-filters to eliminate problems recording to discs

Dynamic processing- Limiter amps like the Fairchild was available for broadcast not recording

FX-echo chambers and tape delay (slap back echo)

DAKOTA STATON: *A LITTLE YOU*

C3-LISTENING
AND ANALYSING

FIND A 50S SONG AND WRITE 2 **EXPLAIN** EXAM STYLE QUESTIONS. YOU MUST INCLUDE THE **MARK SCHEME**

Ideas:

- tape delay questions
 - solid body guitar questions
 - analogue tape questions
 - vinyl format and speed questions
 - microphone questions
 - recording technique questions
 - echo chamber reverb questions
-

END OF LESSON REMINDER

Snap it up



Component 1

ARRANGE A 1-1 SESSION WITH. CHECK YOUR DIARIES.
AT LEAST 1 SESSION THIS HALF AND ANOTHER BEFORE
SUBMISSION AT THE END OF TERM.

Component 2

**COMPLETED DRAFT BY THE END BY FEBRUARY HALF TERM. THIS
MUST BE 3 MINUTES AND MEET THE CRITERIA(SYNTH, SAMPLING,
CREATIVE FX).**

MAKE SURE YOU LOGIC PROJECT NOTES SECTION IS UPDATED. THINK
ABOUT HOW YOU WILL VARY **HARMONY** IN YOUR PIECE FOR NEXT
LESSON. YOU WILL ADD TEXTURAL TO YOUR STRUCTURE.

Component 3 Listening and Analysing Mock Exam FEBRUARY 12th
START REVISING....

ACOUSTIC AND FOLK

1960s The Folk scene

The folk community in New York embraced songs of social protest and perceived the rock 'n roll scene trite. It was considered to be artistic with a sense of integrity, discussing social injustice. Established artist in previous years were Woody Guthrie, Big Bill Broonzy and Leadbelly. It was the 1962 release of Bob Dylan album *Bob Dylan* that folk music rose to prominence. Dylan later combined his prolific songwriting skill with rock, which was not considered traditional folk, as he used electric instruments in *Bringing it Home*. His music had a tremendous impact on pop music with his lyrical content and the poetic value would provide yet another vehicle for the serious song writer.



EARLY ROCK

The British Invasion

The success of Rock 'n Roll paved the way for R'n B and blues across the Atlantic in Britain. At this time Rock 'n Roll was on the decline losing it's gritty edge in favour of a more produced riff based pop music. The focus on solo artist swung to the vocal groups e.g. the Drifters, the Coasters and the Beach Boys. Bands such as the Beatles, Rolling Stones, The Animals and Manfred Man began to emerge in the early 60s. They started releasing cover versions of R 'n B songs e.g. *Twist and Shout* the Isley Brothers(1962) and *Roll over Beethoven* Chuck Berry(1956)covered by the Beatles(1963), and *Route 66* Nat King Cole(1946) covered by Rollin' Stones.



SOUL MUSIC

Soul Music

R 'n B started adopting high production and presentation of the mainstream music. This was to ensure that they made the crossover to the pop charts. **MOTOWN** in Detroit and **STAX** in Memphis were the 2 record labels were key to the production of Soul. Berry Gordy, founder of Motown was key to the production line of hits. He used a house band called the Funk brothers to play on almost all the label's records. STAX house band was Booker T and the MGs, also known for ushering in the sound of the Hammond organ in popular music. Productions would be large with the inclusion of strings and brass. Soul music placed emphasis on a strong vocal delivery. Songs were tailored for radio air play and therefore emphasis was placed on the upper frequencies by adding tambourine and hand claps. Songs favoured the Tin Pan Alley and jazz formula of AABA(32 bar song) rather than the blues. They were distinctly catchy and danceable. Phil Spector exploited the production of the style by having elaborate recording sessions with several instruments playing the same part thus creating the **WALL OF SOUND** technique. Soul music produced numerous hits in the 60s e.g The Supremes Baby Love(64), The Temptations *My Girl*, The Marvalettes Please Mr Postman.



THE ROLE OF THE PRODUCER

<https://www.youtube.com/watch?v=LRmRBrnQg8o>

In the 60s the role of the producer becomes more prominent. The technology within the studio becomes part of the creative process and recording techniques take centre stage in the production line of chart topping songs. One producer particularly made significant advances in recording techniques, **PHIL SPECTOR** and the **WALL OF SOUND**.

The **WALL OF SOUND** was an elaborate recording techniques. Phil Spector used **MULTIPLE PLAYERS** to play a part usually played by just one player. For example he would have 6 or 7 guitar electric players, 3 pianist all playing the same part. He would include lush string and brass sections. The sound would be put through **ECHO CHAMBERS** that produced a wash of sound. However, he still maintained the clarity between parts, which made him a sort of producer.

Phil used a collection of musicians called the **WRECKING CREW**



Brian Wilson(Beach Boys) is admits to be inspired by Spector, thus birthing the age of the concept album.



LET'S PAUSE FOR SOME HISTORY OF AMPLIFICATION

1904: John Ambrose Fleming discovers 'the simplest valve' - 'The Diode'

1906: Lee De Forest invents the 'Triode' Valve by increasing the electrode count inside the valve by one. Modulation between the cathode and anode enabled current or voltage gain. This was then used in telephone communication and radio.

1927: First widely produced commercial valve amplifier. A very small amp with a large speaker cone. They were relatively quiet. It was typically introduced in the 1920s along with cheap guitars in 'bundle' sets.

1950s and 1960s: 'The Golden Age of Amplification'. The building of valve amp units was refined and developed. Amps were larger and louder. Classic and still desirable amps such as the Fender *Deluxe* and *Twin Reverb* (pictured), the Marshall *Super Lead* (pictured) and the Vox AC30. Various budget 'Department Store' amps also gained popularity such as the Danelectro and Silvertone lines developed by Sears. These are still also used and desirable today.

Mid 1960s onwards: The growing use of transistor technology soon changed amplification. As silicon transistor technology was cheaper to manufacture it soon became a standard in amplification. This brought a decline in valve technology across the industry and things such as HiFi equipment soon also were mostly built with transistor technology. 'CRT' Televisions were one of the last mainstream products to be produced using tubes. However, valve amplifiers are still built today due to popular demand and the sound quality offered by them.

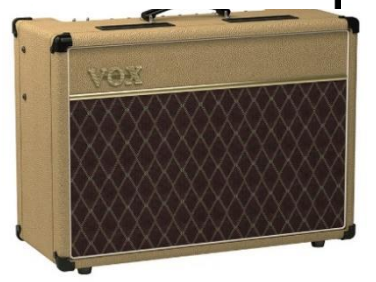
Vacuum Tube(Valve) vs Solid State(Transistor)

Valves were used since the earliest days of electrical amplification. It started out as a simple diode and later evolved into a triode which was more stable. Valves have to heat up and requires time to run consistently. When driven the signal is distorted adding colour and harmonics to the tone. This type of distortion is considered warm and desirable, where as transistors have no moving parts and the distortion(clipping) is harsh. Transistors are cheaper and smaller and therefore forms the basis of most electronic amplification.

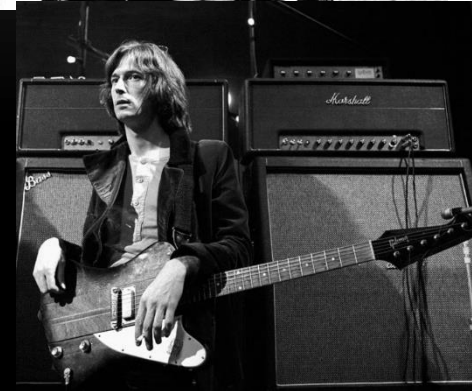
Power turns the amplifier on. As it is a valve amp, these valves take time to charge the grid to a less negative state and so standby is used to keep the tubes in this state but cut the output and other working parts of the amp.



AMP CABINET



Sound of the
60s VOX AC 15
,30 and AC100



Fender Blackface Super
Twin



THE 1960S: CAPTURE METHODS

- Purpose built recording facilities to capture performances. Most studio built special rooms called echo chambers to add reverb.
- **MULTI MIC TECHNIQUES** allowed for a more focused sound. Spot mics combined with ambient room mics. Producer became more ambitious by layering several parts. They would make use of **SUB MIX** to group several microphones(instruments) to one track to ensure there is sufficient tracks for other parts
- **OVERDUBBING** on 4 track recorders. Studio would have more than 1 tape machine and bounce 4 tracks to 1 track on separate machine to make space for overdubs. Thus allowing for layers and more complex arrangements
- Editing a recording is possible and sections could be **punch-in** and **out** instead of doing the entire take over. Thus saving time in the studio as well as the studio becoming part of the creative process.
- Engineer would be responsible for sub mixes and bouncing tracks. Careful attention was placed on tape speeds and they had to be in sync to ensure there are no fluctuations in pitch and time
- Quality improved, however, gain levels were high to ensure good signal to noise ratio. Tape saturation and hiss were still prevalent in the recordings. Dynamic range was limited to the analogue tape machine and the transfer to vinyl.
- **Mono** recording-stereo playback device where not available yet. Multiple speed record players became available to ensure you can playback your records in any format(33 ¹/₃ , 45 and 78 rpm).



GROUP TASK: COMPARISON ESSAY AND MARK SCHEME

- In groups of 3, create a comparison question and mark scheme
 - Find two versions of a 1960s song. The original recorded in the decade and another recent recording or remix
 - Think about the capture, FX and mix.
-

EARLY
MULTITRACKING
65-69

THE CONCEPT RECORD

Bands/Artist started experimenting with technology and specifically analogue tape. The Beach Boys' **Brian Wilson** was inspired by the Phil Spector and starting recording **GOOD VIBRATIONS**. The song consisted of multiple takes and sessions, and he slowly pieced the song together. This would not be possible in previous decades. The song also used the **THEREMIN** and was the most expensive production at the time. The song was released in **1966** and became an instant chart topper.

The Beatles stopped touring and wanted to produce music that could not be performed live. They released Sgt. Pepper's Lonely Heart's Club Band, which is widely regarded as the first **CONCEPT ALBUM** and the start of psychedelic rock. The album also uses the **MELLOTRON** keyboard, a tape based replay keyboard instrument.

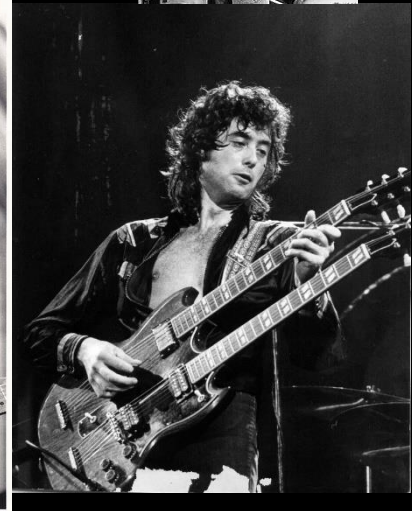
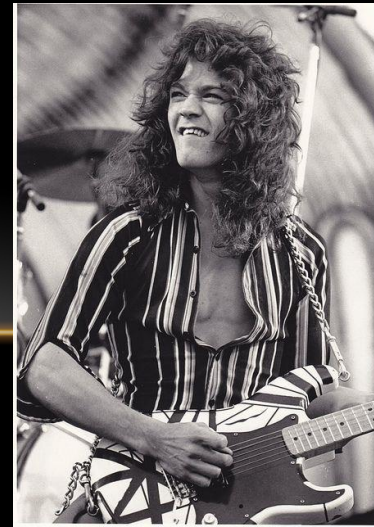
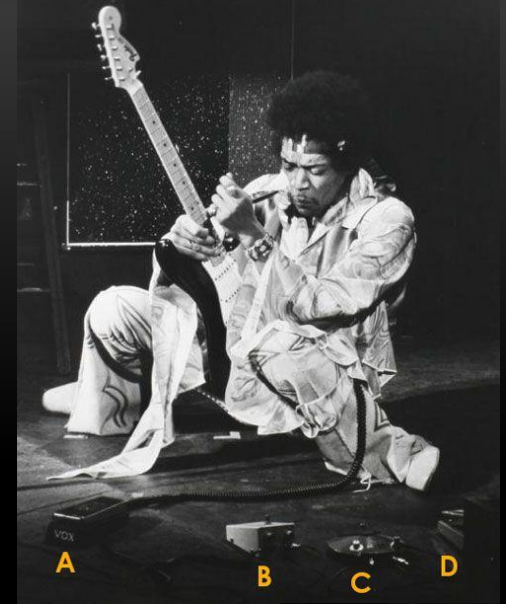
The recording studio is established as a creative tool in popular music. Songs can be pieced together using multiple sessions and takes. The producer is integral to the success of the song.



EARLY
MULTITRACKING
65-69

THE RISE OF THE GUITAR HERO

As bands and artists move into the recording studio to explore the technology, live performance is developing into a more theatrical and virtuosic experience. The solid-body electric guitar as the sound of rock 'n roll and many artists were exploiting and extending the sound and capability of the instrument. In the late 60s, Jimi Hendrix paved the way for electric guitar virtuosity with his flamboyant performances. Amps, at this stage, came with built-in effects like **TREMOLO**, **SPRING REVERB** and they were purposefully overdriven to create distortion. Simple **FUZZ** pedals were used in the early 60s e.g. Keith Richards in *Satisfaction*. However, effects pedals were increasing in popularity because of guitarist like Hendrix. He famously used **OCTAVE** pedals, Vox Cry Baby **WAH-WAH** (Purple Haze '67) and a Uni-Vox **CHORUS** pedal (Fire and Purple '68).
Examples of guitar heroes-Eric Clapton, Jimmy Page, David Gilmore...and the list continues



The virtuosic guitar driven music led to further developments and experimentation in the 70s i.e. progressive and psychedelic rock. It would also influence other styles like funk, disco and reggae.

1960 TECH INVENTORY

PEDAL BOARD



- Vox Cry Baby Wah-Wah



- Maestro Fuzz Pedal



- Uni-Vibe Chorus Pedal



- Jim Morris Octave Pedal



- Uni-Fuzz U-250 Fuzz pedal

RECORDING FORMAT AND CAPTURE

- Studer J37 1inch 4 track tape machine



Microphones



NUEMANN U47 condenser



- Shure Unidyne 55S often associated with Elvis Presley

MIXERS
EMI REDD
CONSOLE



Processing?!

EQ-filters to eliminate problems recording to discs

Dynamic processing-
Limiter amps like the Fairchild was available for broadcast not recording

FX-echo chambers,
tape delay, tape based modulation effects.

ICONIC KEYBOARDS

HAMMOND ORGAN

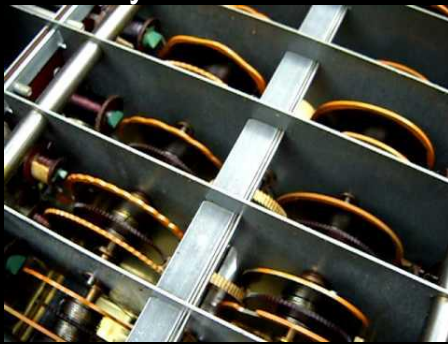
Drawbar Organ

In 1933, the Hammond organ was the first polyphonic electronic keyboard. It uses revolving discs spinning(**Tone wheel**) in a magnetic field to produce a simple waveform that can be used in combination(**DRAWBARS**) to produce a variety of tones colours.



Timeline

1935–1938	The first Hammond in production. The A model
1936–1942	The B-A and B-C models
1949	B-2 model
1954	B-3 model. The most popular model
	C2 and C3 models were around at the same time.



Hammond introduced the **B3** model in the 50s and established itself in jazz and popular music.

Hammond is usually played through a unique rotary speaker called a **leslie**



Organ emulator plug-ins



Listening:

- The Sermon-Jimmy Smith(1959)
- Green Onions- Booker T and the MGs(1962)
- A Whiter Shade of Pale-Procul Harum(1967)
- Light My Fire-The Doors(1967)

WURLITZER

The Stage Piano

The Rudolph Wurlitzer Company is an American company which produced various different instruments. They used inventor's Benjamin Miessners amplified Upright Piano as the basis of the EP110



Timeline

1955	EP-110, 111 and 112 enters production. Most models came with a built-in tremolo system
1962	EP-140A first solid state
1968	The lighter, plastic bodied EP-200 is released
1972	The legendary 200A is in production.
1978	The 200B is released which become the final version



The sound is created by a **hammer** hitting a thin **metal reed**. The action is build to be as close as possible to a piano.

Wurly
emulator
plug-ins



Listening:

What I'd Say-Ray Charles(1959)

Heard it through the Grapevine-Marvin Gaye(1966)

The Logical Song-Supertramp(1979)



FENDER RHODES

The Stage Piano

Invented by Harold Rhodes, the electric piano evolved and became popular after the joint venture with Fender in 1959. The Rhodes Mk1 launched in the 70s is the sound that can be heard on countless recordings.

The sound is created by a **hammer** hitting a thin metal rod called a **tine**. The action is build to be as close as possible to a piano.

The Mark 1 came in 73(**Suitcase**) and 88 key versions and included an 80w amp and speaker.



Timeline

1965-69	Sparkle-Top Models-Silver self-amplified Fender Rhodes EP
1969-1974	Fender Rhodes Mk1
1975-79	Fender name is dropped Rhodes Mk 1
1979-82	Rhodes Mk II-III
1983	Rhodes Mk IV
1984	Rhodes Mk V
1987	Roland buys the Rhodes Trademark

Rhode emulator plug-ins



CLAVINET

Electric Clavichord

Invented by Ernst Zacharias for the Hohner company, the clavinet is an electric keyboard with a distinctive sound that can be heard on countless classic albums since the 1960s



This unique instrument has strings are mounted on a metal harp under the keybed, and a rubber hammer underneath the front of each key presses the string against a metal anvil mounted on the harp structure. The string vibrations are converted to an electric signal via two electromagnetic pick-ups(giant guitar pickups)



Timeline

1964	Clavinet I The model was to have a built-in amp and speaker system.
1964	Clavinet II
1968	Clavinet C White Top with Red Tolex. Each pickup in this model has two magnets; this gives the "C" a unique tone. This model was used on Stevie Wonder's "Superstitious"
1968	Clavinet L The rarest of all Clavinet Models. The key colors are reversed
1971	Clavinet D6 This is arguably the most popular clavinet and "THE" model to have. Improvements over previous models include:* Four tone switches for sound shaping * Sliding mute lever
1977	Clavinet E7 Black on Black. This model includes better shielding and a noise filter added into the circuit. The case was slightly redesigned; The flip top lid was replaced with a metal cover and the switch panel was moved up

Listening:

- Attractive Girl-The Termites(1967)
- Shoo-Be-Doo-Be-Doo-Da-Day-Stevie Wonder(1968)
- Superstition-Stevie Wonder(1972)
- Use Me-Bill Withers(1972)



Clav
emulator
plug-ins

DX7

Digital Synth(FM synthesis)



Timeline

1983	Yamaha releases the DX7 digital synthesizer.
1989	The last DX7 was produced.

The Yamaha Corporation manufactured and released digital keyboard in 1983 and went on to become the best selling keyboard of all time. It used FM synthesis and user never really went beyond the preset sounds, as it had a complicated interface.



The DX7 was the first instrument to incorporate a ROM chip to save user presets. This as well as the inclusion of MIDI functionality made it flexible and popular with consumer selling over 200,000 units

FM synthesis was developed by John Chowning, a professor at Stanford University, in 1967. It uses the old telecommunication method whereby a frequency of a waveform, called the **CARRIER**, is changed by modulating the frequency with a **MODULATOR**. Modulators can be **HARMONIC** and **INHARMONIC**. The later used for bell-like and percussive sounds. The technology was used in early synths such as the Synclavier and Yamaha GS1, however, the DX7 was much cheaper and therefore more accessible to the working musician.

Listening:

- Under the Stars-Brian Eno(1983)
- What's Love Got to Do With It(Flute and Keyboard parts)-Tina Turner(1984)
- Saving All My Love for You-Whitney Houston(1985)
- Take on Me-Aha(1985)
- Les Mis the Musical(1985)



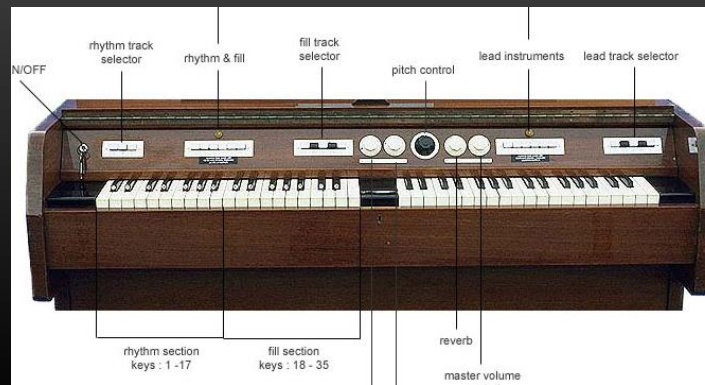
DX7
emulator plug-ins



MELLOTRON

Tape-based sampling keyboard

The Bradley brothers formed a company called Mellotronics (Melody and Electronics) and developed the existing tape-based replay technology into a mass produced product. In 1963 the Mellotron Mark 1 was born featuring 2 36 key polyphonic keyboards. One to play the lead and the other the accompaniment.



Timeline

1963	Mellotron Mark 1
1964	Mellotron Mark II launched with some minor modifications
1970	The M400 finally made the instrument a fully portable gigging keyboard and was the most popular model



Each key pressed would trigger a length of tape that run for 8 secs and then quickly rewind. Master tapes for the Mellotron were recorded in London by Alan Stagg and Glyn Johns which included solo instruments like flutes, cellos and brass, string and choir groups.

Listening:

Nights in White Satin-Moody Blues(1967)
Strawberry Fields Forever-The Beatles(1967)
Wonderwall-Oasis

PROGRESSIVE ROCK

Prog Rock

PROG ROCK was an attempt to elevate rock music to a new intellectual level. It was an album based genre with large scale composition and extended solos. It followed in the footsteps of Sgt Pepper with many concept albums telling epic stories or embracing over-arching themes.

King Crimson's *In the Court of the Crimson King* album was one of the most significant prog rock releases in 1969. The album made use of electronic sounds such as **SYNTHESIZERS** and the **MELLOTRON** keyboard.

Pink Floyd's *Dark Side of the Moon* in 1973 was a huge commercial success. The concept album combined lush production with sound fx and an eclectic musical style, creating a dark, atmospheric world.

Rock at this point was a huge commercial success and live concerts were played in huge arenas with massive sound systems. The stadium rock scene was flourishing with rock bands selling merchandise and albums at their concerts.

Bands such as Yes, Genesis, the Moody Blues and Emerson, Lake and Palmer made significant contributions to Prog Rock. This also led to a sub-genre **SYMPHONIC ROCK** which combined elements of classical music and rock. Mike Oldfield's *Tubular Bells* (1973) is an example of the fusion of styles at its best.

GLAM ROCK emerged as the alternative to the serious route rock was taking. Its music was simple and catchy with **IMAGE** being the main concern: Glitz, Glamour, Make-up and asexuality. Concerts became fashion shows and it was largely a British phenomenon. The movement had some serious exponents which gave the genre some credibility for example **DAVID BOWIE** and **ROXY MUSIC**

2. Gentle Giant: The Advent Of Panurge

Question Number	Question	Mark
2(a)	When was this track recorded? Put a cross in the correct box.	1
	Acceptable Answers	
	B. 1966-1975	

Question Number	Question	Mark
2(b)	How is the style of this music best described? Put a cross in the correct box.	1
	Acceptable Answers	
	D. Prog Rock	

Question Number	Question	Mark						
2(c)	Describe the panning of the following instruments between 0'48" and 0'57".	3						
	Acceptable Answers							
	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%;">Bass guitar</td> <td>Centre</td> </tr> <tr> <td>Organ</td> <td>Right / R</td> </tr> <tr> <td>Piano</td> <td>Left / L</td> </tr> </table>		Bass guitar	Centre	Organ	Right / R	Piano	Left / L
	Bass guitar		Centre					
	Organ		Right / R					
Piano	Left / L							
Ignore additional qualifying words								

Question Number	Question	Mark
2(d)	Which term best describes the vocal texture between 0'17" and 0'22"? Put a cross in the correct box.	1
	Acceptable Answers	
	D. Polyphonic	

Question Number	Question	Mark
2(e)	Name the solo instrument that enters at 1'51".	1
	Acceptable Answers	
	Trumpet / cornet / flugelhorn	

3. Genesis: Can-Utility And The Coastliners

a)(i) Which of the following guitars has been used in the intro?

(1)

D. Twelve string

(ii) Name the percussion instrument used at 0'06".

(1)

Finger Cymbals / Zills / Sajat / Tibetan Tingsha Bells / Antique Cymbals / Crotales

b) Describe how the ambience changes on the vocal at 0'45" on the words "We heed not flatterers".

(1)

- More reverb is added
- Longer reverb

c) A mellotron has been used in the instrumental beginning at 2'06".

Describe the workings of a mellotron.

(3)

- Analogue tapes/magnetic tapes
- Pre-recorded sounds
- Short recordings / 8 second recordings
- A range of pitches
- Mounted on a rack for interchangeability

- Played through individual playback heads
- Triggered by a keyboard
- Tapes were automatically rewound when the key was released
- Different sounds on different parts of tape
- Max 1 mark for describing working of tape mechanism e.g capstan and pinch rollers

d) Identify two FX pedals that have been used on the guitars between 1'45" and 1'49".

(2)

- Distortion / fuzz / overdrive
- Swell / volume
- Chorus / phaser

e) Which phrase best describes the bass line between 2'11" and 3'10"? Put a cross in the correct box.

C

(1)

f) *Name the musical term for the articulation of the organ solo beginning at 4'08".

(1)

Staccato / Stacc / Marcato / detached / détaché

Accept only these spellings

(Total for question 3 = 10 marks)

HEAVY METAL

Heavy Metal

Influential to the development of heavy metal was a band called Led Zeppelin. Ex-Yardbird guitarist Jimmy Page and singer Robert Plant took harder, tougher personality to rock with high volume distorted guitar, screaming vocals, driving rhythms and ultra-fast guitar solos. This was often termed as heavy or hard rock. Image was a key selling point with the black leather, denim, long hair and crucifixes all part of the brand. At this stage rock was playing in large stadiums with massive sound systems.

Black Sabbath, led by the eccentric Ozzy Osbourne, was the definitive heavy metal band making their debut in 1970. The onstage antics with dark and sinister themes attracted legions of fans. Metal development in the 80s split into many sub-genres—Death Metal, Thrash Metal and Punk Metal.

Metal is known for intricate rhythms featuring double-bass pedals, virtuosic lead guitar solos and screaming vocals with a wide (even operatic) range. Eddie Van Halen used the two-handed tapping technique in 1978 opening up new possibilities for the electric guitar solo. The performance consists of a rapid sequence of hammer-ons and pull-offs.

Key artists: Black Sabbath, Iron Maiden and Metallica

Section B

Question Number	Question	Mark
5(b)(i)	Name two performance techniques being used by the lead guitarist between 3'17'' and 3'51''?	2
	<p>Acceptable Answers</p> <ul style="list-style-type: none"> • String bends • Vibrato • Hammer-ons • Pull-offs • Picking / plucking • Slides / glissando 	

Question Number	Question	Mark
5(b)(ii)	Suggest two ways the distortion on the lead guitar could have been achieved at the time?	2
	<p>Acceptable Answers</p> <ul style="list-style-type: none"> • Pedal / booster (accept brand names) • Overdriving the valves • Turning up the gain / drive / volume / amp <p>Accept: lead / distortion / high gain channel</p>	

DISCO

Disco

DISCO emerged for the discotheques of New York City. It catered of predominately black and gay clientele who were interested in dancing the night away in converted warehouses and **CLUBS**. The music was uplifting and the lyrical content was about dancing, love and sex. The disco sound found its roots in Philly soul and funk. The **LUSH STRING** arrangement, **BRASS STABS**, **OFF BEAT HI-HATS** and **SOULFUL VOCALS** were combined with the distinctive four to the floor kick drum. **GLORIA GAYNOR** released one the earliest disco hit "Never Can Say Goodbye" in 1974. Her producer Tom Moulton deliberately extended three of her songs "Honey Bee", "Never Can Say Goodbye" and "Reach out, I'll be There" to fit one side of an album for a non-stop mix. This was the first album produced specifically for the club.

DONNA SUMMERS and Giorgio Moroder was another successful producer/singer partnership. Summer's Love to love you baby was extended to a 17 minute club classic with sexually charge vocals and sweeping(featuring breathy moans and sighs) and lush string arrangement. In **1977**, their hit " I Feel Love" served as a blueprint to what was to follow-House and Techno.

CHIC led by Nile Rodgers and Bernard Edwards had a string of hits with Good times being the most significant. The bass line is famously used hip hop's first commercial record on the Sugarhill Gang's " Rapper's Delight". 1977 Disco reached it's height of popularity with the release of the movie **SATURDAY NIGHT FEVER**. The music was exclusively played in nightclubs, however, the movie propelled disco(and the Bee Gees) in the limelight and it was a commercial success. Songs like Night Fever and **STAYIN' ALIVE** sold well off the back of the movie. This was also ushered in the decline of disco as it became formulaic and uninteresting. Add to the growing anti-disco campaign the music moved in a new synthesizer direction.

PUNK

The music in the mid 70s(early disco and prog rock) did not reflect the disaffected youth of Britain. Although it was a distinctly British phenomenon the influences of punk came from the other side of the Atlantic. Groups such as Velvet Underground and Stooges(led by Iggy Pop), lacked the virtuosity and complexity of arena rock bands. The sound was raw and with simple chord progressions. In the US, the Ramones set the blueprint for punk with it's bare essentials-simple chord progressions with catchy tunes, all played at a fast tempo.

Malcom McLaren managed the New York Dolls until they split up in the mid-70s and went on to manage the most influential punk bands the **SEX PISTOLS**. The Pistols released their first album in **1976-ANARCHY IN THE UK**. Other punk bands-the Clash, the Damned, the Buzzcocks and Siouxi and the Banshees.

Punk had a "DIY" raw sound to it. It made use of the a standard drums, bass and distorted guitar set up . The vocals were often loud and screaming, with some political agenda. Lyrics reflected the angry, frustrated and disillusioned young people of the time. Musically it was reaction to the lush fantasy world progressive rock has created. Rock bands such as Yes, Genesis and Led Zeppelin made use of electronic instruments and technology available at the time and played in large stadiums. Punk established itself in small clubs and pubs.

Acceptable Answers

- Recording two performances (1) of the same material (1) by the same person (1)
- On two separate tracks
- Played back simultaneously

Description of ADT max one mark

Question Number	Question	Mark
5(e)(ii)	ADT has not been used to create this effect. What evidence is there to support this statement?	1
	Acceptable Answers	
	<ul style="list-style-type: none"> • The performances are not identical • There are pitch / rhythmic differences • Chorusing 	

Question Number	Question	Mark						
5(f)	The wide dynamic range of the vocal has been controlled with compression. Briefly describe the following three parameters of a compressor.	3						
	Acceptable Answers							
	<table border="1"> <tr> <td>Threshold</td> <td> <ul style="list-style-type: none"> • Sets the amplitude at which the compressor is triggered • Usually set in decibels / dB <p style="text-align: right;">(1)</p> </td> </tr> <tr> <td>Ratio</td> <td> <ul style="list-style-type: none"> • Sets the amount of gain reduction / compression • Ratio between input and output volume <p style="text-align: right;">(1)</p> </td> </tr> <tr> <td>Attack</td> <td> <ul style="list-style-type: none"> • The speed with which compression acts <p style="text-align: right;">(1)</p> </td> </tr> </table>	Threshold	<ul style="list-style-type: none"> • Sets the amplitude at which the compressor is triggered • Usually set in decibels / dB <p style="text-align: right;">(1)</p>	Ratio	<ul style="list-style-type: none"> • Sets the amount of gain reduction / compression • Ratio between input and output volume <p style="text-align: right;">(1)</p>	Attack	<ul style="list-style-type: none"> • The speed with which compression acts <p style="text-align: right;">(1)</p>	
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Attack	<ul style="list-style-type: none"> • The speed with which compression acts <p style="text-align: right;">(1)</p>							

Question Number	Question	Mark
5(g)	Suggest two ways the distortion on the electric guitar could have been achieved on this recording.	2
	Acceptable Answers	
	<ul style="list-style-type: none"> • Pedal • Overdriving (the valves) • Turning up the gain / drive / volume (on the amp) • Lead / distortion / high gain channel on the amp 	

REGGAE

Before 1970, reggae was little known genre. It was derived from **SKA** and **ROCKSTEADY** in the small island of Jamaica, and like blues it stemmed from hardship and poverty. Lyrics we often politically fueled. In 1973 Jimmy Smith starred in the film *The Harder They Came*, which featured just reggae music. Bob Marley and the Wailers release *Catch a Fire* in the same year and in 1974 Eric Clapton released a cover of *I shot the sheriff* which propelled reggae music in the spot light.

Producers such as King Tubby and Lee Scratch Perry worked with “dub” recording techniques. They would remix songs with just the instrumental versions removing the vocals(or dropping it in and out with reverb and delay effects. **DUB** versions would often be used as backing for “toasting”(DJs who spoke or chanted over the music in a rhyming fashion). **TOASTING** is a big influence on rapping .

Reggae had simple chord structure with emphasis on the beats 2 and 4. Chords would be played on the off beat and usually had electric guitar, organ, bass, vocals and drums. Often snare drums would be tuned so that it sounds like a timbale.

- Baffle boards or acoustic panels / reflection filters
- Vocal booth
- (hyper) cardioid mic / figure of 8

- Mic facing away from other performers
- Increased distance between performers
- Place microphone close to vocalist
- Closed shell headphones for vocalist
- Reduce monitoring levels
- reduce low frequencies using EQ / HPF

e) Identify the pitch range of the lead vocal between 0'55" and 1'08". Put a cross in the correct box.

(1)

Answer : B

f) Describe **two** possible problems when recording brass instruments.

- High SPL
- Distortion
- Wind on the mic

(2)

g) Identify the modulation effect used on the melodic synth starting at 7'10".

Vibrato

(1)

STARTER

- Log into MTEXAM
- Answer the Questions for Space Oddity and Human
- Audio files are on the desktop
- You have 15 minutes to complete both

David Bowie : Space Oddity

Question Number	Question	Mark
3(a)	What technique is used by the electric guitarist in the intro (e.g. at 0'26")? Put a cross in the correct box.	1
	Acceptable Answers	
	B Harmonics	

Question Number	Question	Mark
3(b)	What is the interval between the two vocal parts in the first verse from 0'37" to 0'50"? Put a cross in the correct box.	1
	Acceptable Answers	
	C Octave	

Question Number	Question	Mark
3(c)	Name the volume modulation effect used on the guitar at 1'12"?	1
	Acceptable Answers	
	Tremolo	

Question Number	Question	Mark
3(d)	This track features the use of a 1960s keyboard instrument to play string parts. What is the name of that instrument?	1
	Acceptable Answers	
	Mellotron	

3(e)	Two orchestral instruments are added to the texture in the middle eight from 2'13". What are they?	2
	Acceptable Answers	
	Flute Violin	

6MT02
11

Question Number	Question	Mark
3(f)	There is a change in the ambience of the vocals throughout the repetition of the words "Can you hear me, Major Tom?" from 3'35" to 3'45". Describe that change.	1
	Acceptable Answers	
	Amount of / depth of reverb is increased (added)	

Question Number	Question	Mark				
3(g)	This track was recorded in 1969. Outline three musical and/or technological features that support this statement.	3				
	Acceptable Answers					
	<table border="1"> <tbody> <tr> <td>Musical Feature</td> <td> <ul style="list-style-type: none"> Hippy, psychedelic vibe Shifting time signatures Extended form, more than verse/chorus structure Instrumental interludes 'Arty' quasi-orchestral feel / experimental Loose drum feel Rhythmically loose / vague </td> </tr> <tr> <td>Technological Feature</td> <td> <ul style="list-style-type: none"> Use of Mellotron Use of Stylophone (<u>primitive</u> / <u>analogue</u> synth sounds) Extreme panning Exaggerated use of FX </td> </tr> </tbody> </table>	Musical Feature	<ul style="list-style-type: none"> Hippy, psychedelic vibe Shifting time signatures Extended form, more than verse/chorus structure Instrumental interludes 'Arty' quasi-orchestral feel / experimental Loose drum feel Rhythmically loose / vague 	Technological Feature	<ul style="list-style-type: none"> Use of Mellotron Use of Stylophone (<u>primitive</u> / <u>analogue</u> synth sounds) Extreme panning Exaggerated use of FX 	
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The Killers : Human

Question Number	Question	Mark
4(a)	Is this song in a major or a minor key?	1
	Acceptable Answers	
	Major	

Question Number	Question	Mark																		
4(b)	Complete the table below to describe the production and arrangement at the given points in the song. Give one reference to instrumentation and one reference to the use of technology in each box.	6																		
	The sections are shown in the table below, and an example has been given for you in the first section.																			
	Acceptable Answers																			
	<table border="1"> <thead> <tr> <th>Time</th> <th>Instrument</th> <th>Use of Technology</th> </tr> </thead> <tbody> <tr> <td>0'00" to 0'07"</td> <td>(Muted) <u>guitar</u> (1)</td> <td>Looped sample</td> </tr> <tr> <td>0'07" to 0'21"</td> <td>String pad</td> <td>Filter has a <u>low</u> cut-off frequency. (1)</td> </tr> <tr> <td>0'21" to 0'35"</td> <td>String pad</td> <td>Filter cut-off frequency <u>rises</u>. (1)</td> </tr> <tr> <td>0'28" to 1'02"</td> <td><u>Bass / Kick</u> drum added (1)</td> <td>Panned <u>centrally</u>.(1)</td> </tr> <tr> <td>1'03"</td> <td><u>Snare drum</u> (1)</td> <td>Long, dense reverb effect.</td> </tr> </tbody> </table>		Time	Instrument	Use of Technology	0'00" to 0'07"	(Muted) <u>guitar</u> (1)	Looped sample	0'07" to 0'21"	String pad	Filter has a <u>low</u> cut-off frequency. (1)	0'21" to 0'35"	String pad	Filter cut-off frequency <u>rises</u> . (1)	0'28" to 1'02"	<u>Bass / Kick</u> drum added (1)	Panned <u>centrally</u> .(1)	1'03"	<u>Snare drum</u> (1)	Long, dense reverb effect.
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1'03"	<u>Snare drum</u> (1)	Long, dense reverb effect.																		

Question	Mark
Which word best describes the scale used on the words "And I'm on my knees looking for the answer" (0'49")? Put a cross in the correct box.	1
Acceptable Answers	
C Pentatonic	

6MT02_01
1106

Question Number	Question	Mark
4(d)	Identify the dynamic processing applied to the whole mix and describe how this affects the music.	2
	Acceptable Answers	
	<ul style="list-style-type: none"> • (heavy, high ratio) compression / limiting • Pumping • High perceived volume • Sounds punchy • Narrow dynamic range • Evens out volumes of the whole mix 	

HIP HOP(AND URBAN)

Hip Hop(also known as rap music) was born in the Bronx, New York. It started as largely an underground party movement with DJs playing old funk and soul records instead of Disco that was being played in the glamorous clubs. Kool Herc(considered the father of hip hop), Afrika Bambaataa and Grandmaster flash where the early pioneers of style that changed the way music was produced. DJs would find the instrumental breaks of a song and extend it by repeating the section. This was often done by having 2 of the same vinyls(in their sacred crates) and crossfading between it. The technique invented by **KOOL HERC** was called "*the merry-go-round*". **GRANDMASTER FLASH** was the first DJ to touch the record while it was playing and marked the spot where the break was and could accurately return to the desired section. This made for smoother transitions between breaks as well as created something new from existing songs. In addition to this he created the **SCRATCHING** techniques. DJs for the first time became artists in their own right.

All DJs had a hype man to talk and keep the crowd entertained during a set. Often they would emulate radio DJs and Jamaican **TOASTING** and talk with rhythm and rhyme. This eventually developed into rapping.

Hip hop was initially only available on bootleg cassettes of live performances at house and block parties. In 1979, the **SUGARHILL GANG** released **RAPPER'S DELIGHT**, which became a huge commercial success and put the music on the map. They rapped over Chic's bass line and drums.

HIP HOP(AND URBAN)

Grandmaster Flash and the Furious Five released the socially conscious **THE MESSAGE(1982)** depicting life in the ghetto. It also featured synth sounds and programmed drums.

The use of the electronic sound was taken further by **AFRIKA BAMBAATAA**. He combined the sound of Kraftwerk and hip hop on his record Planet Rock. This became known as electro.

In 1984, **RUN-DMC** their first record on the **DEF JAM** record label. Co-owners Russell Simmons and Rick Rubin became one of the most influential labels in hip hop. Def Jam had **BEASTIE BOYS** and **PUBLIC ENEMY** on the roster. Beastie Boys was the first white hip hop group and combined rock samples from AC/DC and Led Zeppelin in their 1986 album License to Ill.

In the same year, the song that completed the crossover appeal of hip hop was Run-DMC and Aerosmith's collaboration in Walk this Way. Public Enemy was known for their hard-hitting anti-white establishment, politically fueled lyrics, epitomized in their release Fight the Power.

In LA a different hip hop scene developed influenced by the real life narrative of hardship and politically fueled lyrics. Ice T released a record that set the ball rolling for hard-hitting edgy style. NWA was the first group that established gangsta rap with explicit lyrics of guns, sex and violence. They were the first group to be banned in certain states and parental advisory for lyrics on records. Solo artist such as Snoop Doggy Dogg and Tupac took the LA gangsta rap scene to a more commercial audience.

THE 80S

YOU CAN DIVIDE STYLES INTO 3 CATERGORIES:

1. Post Punk guitar-spawned Goth Bands and Indie Rock
2. Technology-influenced styles-House, Techno, Hip Hop
3. Pop Styles

COMMERCIAL POP

Solo Artist and Girl/Boy Bands

“Straight-Pop” borrows from a number of styles/genres, however, the production line and manufactured nature gives Pop it’s distinct character. Pop artist in the 80s used the rise of the music video and evocative lyrics and visuals to brand and sell the product. Madonna, Michael Jackson and Prince were all key figure in 80s pop as a solo artist. Although they had artistic control over their projects, they paved the way for multiple producer led artists with a small army of songwriters.

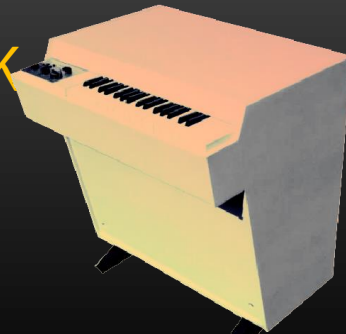
Stock, Aiken and Waterman were a trio of producers who masterminded a series of hits with multiple artists e.g. Jason Donovan, Kylie Minogue and Rick Astley.

Boy Bands formed a key part of commercial pop in the 80s. Groups such as the Monkees and the Jackson 5 in the early 70s paved the way for groups like New Kids on the Block, Bros and Wham. The golden age of boy bands were the 90s with groups like Backstreet Boys, Take That, N’Sync, Westlife, Boyz II Men....

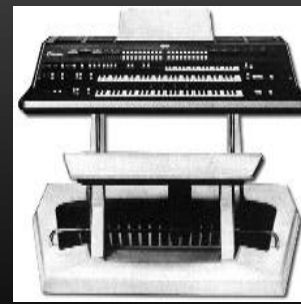
Girl Groups equally dominated the pop charts in the 80s and 90s. Inspired by groups such as the Supremes, the Marvalletes and the Crystals in the 60s, groups like Bananarama, the Bangels and the Pointer Sisters. The 90s ushered in some supergroups such as TLC, Destiny’s Child, Spice Girls, En Vogue and Wilson Phillips.

1970 TECH

SYNTH RACK



Mellotron M400
1970 first fully portable version of the keyboard.



- Yamaha-GX1- big expensive analogue poly synth 1973



Minimoog 1970
analogue synth



- Korg VC-10 Vocoder 1978



- Korg PS-3100 analogue poly synth 1977



The Heil Talk Box 1973



- Sequential Circuits Prophet 5 analogue polyphonic synth 5 voice 1978



- Fairlight CMI digital Sampler 1979



Roland MC-8 Microcomposer 1977, the first microprocessor-based digital sequencer



- Roland CR-78 Drum machine 1978

MICROPHONES

NEUMANN U47 released in 1949 set the standard for tube condenser microphones. The update the **U67** in 1960 formed the basis for the legendary **U87** first released in 1967 and the U87A(1986) is the most well-known microphone today. In the 1965, the company released the KTM, the first **FET** (field effect transistor) microphone. Later they developed the concept of phantom power which rendered the power supply unnecessary. They launched a FET version of the legendary **U47** in 1969



U47



U67



U87



U47 FET



C-12



C-412

AKG C-12 released in 1953 started to make it's way into the studio as one of the legendary tube microphones. 1971 signaled the end of the line for the C-12, with the C12a being the last vintage tube model. This was the same year when the first **FET** large diaphragm condenser was introduced, the **412**, which used **PHANTOM POWER** instead of external power supply. In the late 70s the **C414 EB**(extended bass) appeared as an update to the C412.



C-414 EB

LEGENDS AND LEGENDARY MICROPHONES



NEUMANN
U47



AKG C12



1970 TECH

MIXING CONSOLES



- **Wessex A88 console with the 1073 Neve pre-amps 1970**



- **BCM10 console with Neve pre-amps 1971**



- **Neve 8048 32 channel mixing console 1974**



- **Neve 8058/68 in line monitor console 1976**



- **AIR Montseratti mixing console 1978, built for Sir George Martin**



- **SSL(Solid State Logic) 4000 B 1976 and 1979 the legendary 4000 E**



- **The legendary 80-series continue with the 8078 in 1978**

FX AND SPECIALIST GEAR



Lexicon Delta T-101 digital delay line 1971. Lexicon later releases a digital reverb unit in 1978



- Lexicon releases the now legendary 224 digital reverb unit in 1978



Mu-Tron III 1972 paved the way for auto-wah pedals. Best known for its use on the clavinet on Stevie Wonder's Higher Ground Album.

- 1974 Roland releases the robust and sturdy **RE-201 SPACE ECHO**, which combined a tape machine echo mechanism with a built in spring reverb at an affordable price.



WELL-ESTABLISHED STUDIO LEGENDS



FAIRCHILD 660/670
Released in the 50s but became a staple after the Beatles used in the 60s



PULTEC EQP-1A
Released in the 50s but became a staple after the Beatles used in the 60s



TELETRONIX LA-2A
Released in the 50s but became a staple after the Beatles used in the 60s

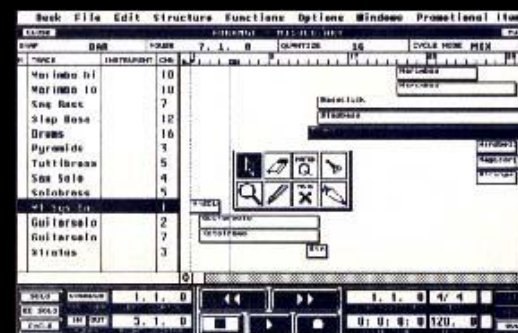
ENTER THE DAW.....

- Digital Audio Workstations roots are in digital sampling. 1979 Fairlight released the the CMI(Computer Music Instrument) which was a sampler and synthesizer with a CRT monitor. It ran on a basic operating system and has a step sequencer



- In the early 80s with Apple II, Atari ST and Commodore Amiga had better processing power which could handle digital audio editing. Digidesign launched Sound Designer(1984) which was software used to edit samples for samplers such as the E-mu Emulator II and the Akai S900. It eventually was bundled with Mac-compatible hardware to form Sound Tools(1986). Pro Tools 1.0 was released in 1991 and in 1995 Digidesign merged with Avid. Pro Tools 5(1999) was the first version to integrate a MIDI sequencer

- Steinberg Research start in 1984 and was one of the first to adopt the new MIDI protocol. The first release called Multitrack recorder was unsuccessful, however, the Pro 16 with a 16 track sequencer and real-time recording was a powerful package for its time. In 1986, Pro 24 added 8 more tracks and more sequencing features. Pro 24 came to an end in 1989 with the release of Cubit but later renamed Cubase. In 1992, Cubase Audio arrived and integrated MIDI sequencing and Audio recording.



C-Labs(also known as Emagic) released a MIDI sequencing package called Notator in 1988. Emagic releases a cross-platform version in 1993 called Notator Logic. They decided to drop the Notator and just called in Logic. In 1995, Emagic releases a PC version of Logic and continued to release PC/Mac versions until 2002 when Apple bought Emagic. At the time Logic version 6 was released.

Acceptable Answers
A

Question Number	Question	Mark
6(b)	What term best describes the synths heard in the intro?	1
	Acceptable Answers	
	A Analogue	

Question Number	Question	Mark
6(c)	There are slides in the notes in the bass line between 0'27" and 0'33". How is this achieved?	1
	Acceptable Answers	
	Any 1 of: Pitch bend / pitch wheel / glide / portamento / modulation	

Question Number	Question	Mark
6(d)	The two higher synth lines from 0'07" to 0'16" have been spread across the stereo field. Describe two ways in which this may have been achieved.	2
	Acceptable Answers	
	Any two of: <ul style="list-style-type: none"> • Auto-panning • Stereo delay • Ping pong (delay) 	

Question Number	Question	Mark
6(e)	Early Hip Hop used the distinctive sounds of a particular drum machine. What is the name of that machine?	1
	Acceptable Answers	
	D TR-808	

Question Number	Question	Mark
6(f)	Apart from using drum machines, how were rhythm tracks typically constructed in early Hip Hop? Acceptable Answers Scratching / sampling / looping / live musician / beat boxing / previous recordings	1
Question Number	Question	Mark
6(g)	A brass section features on this recording. Complete the sentences below which refer to recording a brass section. Acceptable Answers	6
	(i) Brass sections can be hard to record because of their high SPL. SPL stands for Sound Pressure Level (1)	
	(ii) Another common switch found on mics is a rumble filter or HPF. HPF stands for..... It removes frequencies. high pass filter low/bass less than 80-150Hz (2)	
	(iii) If you use a condenser mic, you should switch on the <ul style="list-style-type: none"> • pad (switch) • -10(dB) (switch) • -15 (dB) (switch) • -20(dB) (switch) • -30(dB) (switch) to make it less sensitive. (1)	
	(iv) To reduce spill onto the other tracks, you could use either or Any two of the following:	

	<ul style="list-style-type: none"> • separate booth • acoustic screens • overdubbing • directional mics • headphones • close micing • gating 	(2)
--	---	------------

Question Number	Question	Mark
6(h)	What word best describes the rhythm of the triangle part from 1'17" to 1'31? Acceptable Answers D Syncopated	1

STARTER

- Log into MTEXAM
 - Answer the Question the Club Dance Question
 - Audio files are on the desktop
 - You have 15 minutes
-

Question Number	Question	Mark
6(a)	Describe the filtering of the laser sound in the intro.	2
	Acceptable Answers	
	<ul style="list-style-type: none"> Filters out high frequencies / high cut filter / LPF Decreasing cut-off / decreasing frequency High resonance / high Q / high peak / resonant Filter envelope / short attack 	

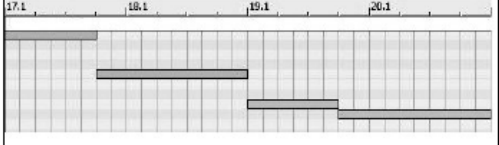
Question Number	Question	Mark
6(b)	Listen to the words 'blow, blow, blow' at 1'06". What is the interval between the lead vocal and the lower vocal?	1
	Acceptable Answers	
	<ul style="list-style-type: none"> Octave Accept any valid description	

Question Number	Question	Mark
6(c)	Which of the following best describes the melody of the first three notes in the chorus (1'28" - 1'33")? Put a cross in the correct box.	1
	Acceptable Answers	
	<ul style="list-style-type: none"> A. Chromatic 	

Question Number	Question	Mark
6(d)	The singer uses a breathy quality in the chorus (1'28" - 1'54"). Describe how this has been emphasised using technology.	3
	Acceptable Answers	
	<ul style="list-style-type: none"> Volume automation / volume raised (on breath) HF boost / HPF / low cut / description of finding and boosting breathy frequencies Enhancer / exciter (Breath) Samples added Compression (1) with low threshold (1) Reverb / delay if correctly qualified 	

Question Number	Question	Mark
6(e)	Describe how the instrumentation changes between the last line of the verse (1'21"-1'28") and the start of the chorus (1'28"-1'35").	4
	Acceptable Answers	
	<ul style="list-style-type: none"> Thin drum texture in verse / Full drum texture in chorus Synths added in chorus Arpeggiated (synth) added in chorus (Synth) Pad(s) added in chorus Vox is doubled in chorus Thin bass timbre in verse / Full bass timbre in chorus Bass drops out at end of verse and re-enters in chorus 'Swoosh' filter sweep in verse only Ascending pitch staccato synth in verse only 	

Question Number	Question	Mark
6(f)	Identify the effect that makes the lead vocal sound robotic between 2'58" and 3'07".	1
	Acceptable Answers	
	<ul style="list-style-type: none"> Vocal transformer Robotize Melodyne Autotune Pitch correction Flex pitch VariAudio Allow Vocoder or Talk box If more than one answer is given, accept first answer only	

Question Number	Question	Mark
6(g)	Which of the following best represents the bass line between 0'33" and 0'40"? Put a cross in the correct box.	1
	Acceptable Answers	
	<ul style="list-style-type: none"> A. 	

Question Number	Question	Mark
6(h)	Describe the delay on the word 'air' from 4'13".	2
	Acceptable Answers	
	<ul style="list-style-type: none"> Timed delay / set to half a bar (minim). Allow between 800-900ms Multiple repeats / high feedback Repeats become quieter Repeats remain central in stereo field Some change in EQ / HPF 	