Introduction to Radio

Darren Hughes
This eight week ‘Introduction To Radio’ course gives you an insight into the skills required to produce a radio show. You will learn about script writing, playout systems, programme production, presenting and learn how to practically produce a radio show. The training is offered as an evening course and runs at numerous times throughout the year. All learning materials are supplied and there is no cost associated with the training.
Course Outline

**Week 1** – Course introduction, Brief history of Radio, What is Radio, *Class Interview*

**Week 2** – Show Construction, Show Formats, Show Deconstruction, Roles within Production Team, *Pitching 101*

**Week 3** – Technical Radio, Introduction to Logic and DAW recording

**Week 4** – Documentary Scripting, *PSA Scripting, Recording, Editing & Playback*

**Week 5** – Play Out Systems, *Live Mixing*

**Week 6** – Interview Techniques & Deconstruction, Ethical

**Week 7** – *Show Collation, Show Scripting*

**Week 8** – Peer Pitching, *Show Collation, Show Scripting & HAND IN*
The Radio Show Assessment

To produce a 28 minutes 00 second radio show. It must…

- Use class taught techniques, such as musical beds.
- Include interviews, Vox Pops, and Jingles.
- Be about ‘Wrexham’
- Have a 60% 40% music/speech split
Course Outline

- It must NOT...
  - Be over or under the set time limit
  - Have unethical or unsubstantiated content
  - Have a ‘Dance’ or ‘New Music’ theme.
History of Radio

a brief history
History of Radio
History of Radio

- Invented by Marconi in 1894
- First demonstrated in Britain in 1896
- By 1899 news was being transmitted across the Channel
- BBC formed in 1922
- Commercial radio starts in 1973
- BBC launches digital radio (DAB) in 1995
- Community radio launched in 2002
What is Radio?
Radio is when communication meets entertainment, providing media entertainment and news to local and national broadcasts.
What is Radio?

- Different Tiers of Radio?
  - Three Tiers of Radio
- BBC British Broadcast Corp
- Commercial
- Community
What is Radio?

- **BBC British Broadcast Corp**
  - Public Service, funded by a license fee and run by a national corporation.
What is Radio?

- Commercial
  - Commercial station financed by national and local spot advertisement or sponsorship, and run by a public company. Often a Generic formula and simulcasted to many stations.
What is Radio?

- **Community**
  - Local broadcast, run via volunteers with a short broadcast area, funded by government grants and sponsors.
What is Radio?

- Missed Anyone?

- (The Unofficial) **The Fourth Tier** / or (Other)
  - Internet Radio, Student Radio, Restricted Service License (RSL) etc
Class Interview

Class Exercise
In pairs, have an informal interview, noting the 5 most important items of information (in order of importance) from your interviewee.
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Last Week

- Course Introduction
- Brief history of Radio
- What is Radio
- Class Interview
Brief history of Radio

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What is Radio
- Radio is when communication meets entertainment, providing media entertainment and news to local and national broadcasts.

Tiers of Radio?
- 3
  - BBC
  - Commercial
  - Community
This Session

- Show Construction
- Show Formats
- Show Deconstruction
- Pitching 101
Show Construction

- **Music**
  - Vetted music, and either chosen by the Musical Director, producer or Presenter

- **Links**
  - Presenters dialogue which links the music

- **Beds**
  - Audio background, used under dialogue
Show Construction

- Stabs / Jingles
  - Catchy promotion clips

- Sound Effects
  - SFX, used mainly in Radio Plays and Radio 1 style news

- Vox Pops
  - Vocal Populace, small clips of questions asked to public.
Show Construction

- Podcasts
  - Online streaming of popular shows
Show Construction

The Concept

The Pitch

The Scripting

Pre Production
Show Construction

Recording
Post Production
Advertisement
Play out
What is Show Formats?

Format is the use of different styles, construction techniques and structure along with basic concept of the show to create a complete show.
Show Formats

- Styles
  - Radio 1
  - Radio 2
  - Radio 4
Radio 1

Loud, pop-based bed, with a lot of stabs and sound effects to create an interesting atmosphere. Language contains a lot of regional accents and slang. (16 – 24)
Show Formats

- Radio 2
  - Still containing a musical bed, but this is quieter in the mix. Less sound effects, with a better use of the English language (compared to Radio 1). (25-40)
Show Formats

- Radio 4
  - Limited amount of musical beds, and music, most shows are speech based with a full grasp of the English Language
Listen to the following clips of popular British radio stations and make notes on what construction techniques they have used to create the style. Think of the possible target audience of these shows.
Class Pitch

Class Exercise
Pitching 101

SELL SELL SELL

Who? Audience
What? Content
Where? Location
When? Time
Why? Need
Pitching 101

In pairs, brainstorm a show pitch, Pitch to the class.

Things to consider…..Pre-recorded sound clips, Guests, Music, Props.

Fashion & Clothing
Travel & Holiday
Film & Theatre
Cooking & Food
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Last Week

- Show Construction
- Show Formats
- Show Deconstruction
- Pitching 101
This Session

- THE TECHNICAL LECTURE
  - YAY!
- Production Meeting
Gain - Gain is a measure of the ability of a circuit to increase the power or amplitude of a signal from the input to the output.

Frequency - Frequency is the number of occurrences of a repeating event per unit time.

dB / dB SPL / dB A - The measurement of sound.

Feedback - When a loop exists between the audio input and output.
Glossary

- **Polar Pattern** - The microphones directionality
- **Op Amp** - Operational Amplifier
- **Distortion / Clipping** - Amplitude distortion is when the output amplitude is greater than the systems limit
- **Reverb** - Reverberation is the persistence of sound in a particular space after the original sound is removed. A reverberation, or reverb, is created when a sound is produced in an enclosed space causing a large number of echoes to build up and then slowly decay as the sound is absorbed by the walls and air.
Microphones

- **What is a microphone?**
  - A microphone is an acoustic-to-electric transducer or sensor that converts sound into an electrical signal.

- **What does this mean?**
  - Uses vibration to create an electrical signal proportional to the vibration.
Microphones

There are three major types of microphone

- **Dynamic** - electromagnetic induction
- **Condenser** - capacitance change
- **Ribbon** - electromagnetic induction
Dynamic Microphone

- Moving-coil microphones use the same dynamic principle as in a loudspeaker, only reversed.
- A small movable induction coil, positioned in the magnetic field of a permanent magnet, is attached to the diaphragm.
- When sound enters through the windscreen of the microphone, the sound wave moves the diaphragm.
- When the diaphragm vibrates, the coil moves in the magnetic field, producing a varying current in the coil through electromagnetic induction.
Dynamic Microphone

Cross-Section of Dynamic Microphone

Sound Waves

Wires carrying electrical audio signal

Magnet

Coil

Diaphragm
Here, the diaphragm acts as one plate of a capacitor, and the vibrations produce changes in the distance between the plates. There are two types, depending on the method of extracting the audio signal from the transducer.
Condenser Microphone
Condenser Microphone

The voltage maintained across the capacitor plates changes with the vibrations in the air, according to the capacitance equation \(C = Q / V\), where \(Q\) = charge in coulombs, \(C\) = capacitance in farads and \(V\) = potential difference in volts.

Simply.

A capacitor has two plates with a voltage between them. In the condenser mic, one of these plates is made of very light material and acts as the diaphragm. The diaphragm vibrates when struck by sound waves, changing the distance between the two plates and therefore changing the capacitance. Specifically, when the plates are closer together, capacitance increases and a charge current occurs. When the plates are further apart, capacitance decreases and a discharge current occurs.
Condenser Microphone

- **Positives’**
  - Better response to most frequencies
  - Better fidelity of the recordings
  - Normally getter choice of polar patterns

- **Negatives’**
  - More expensive
  - Needs an additional +/-48 (aka Phantom Power)
  - May start to get a greater mechanical noise floor
Ribbon Microphone

Ribbon Microphone - Front View

- Corrugated Ribbon Element
- Magnet Structure
- Step-Up Transformer
Polar Patterns

Cardioid Pattern
Polar Patterns

Omni Pattern
Polar Patterns

Figure of 8 Pattern
Polar Patterns

Shotgun Pattern
Recording Environments

- How will the room effect the recordings?
  - Things to Consider
  - Reverb of the room
  - Windshield
  - Vocal Popping
  - Power Supply (?)
What is Gain?

Gain is a measure of the ability of a circuit to increase the power or amplitude of a signal from the input to the output.

What is the Noise Floor?

What is Distortion?
Side Note

- Recording Format
  - 44.1kHz Sampling Rate
  - 16 Bit Depth

- Wav / MP3
  - Wav is a uncompressed audio file (no change in “quality”)
  - MP3 is a compressed file and quality may drop
    - MP3 320 Kbps
Production Meeting
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- The technical lecture
  - Microphones
  - Polar Patterns
  - Recording Environments
  - Gain structure

- Production Teams
This Session

- Scripting Documentary Radio
- Production Meeting
Scripting Documentary Radio

- Scripting Documentary Radio
- Production Meeting
What is Documentary Radio?

- Frequently to do with contemporary issues (such as Race Relations or Urban Development). The program might explore in detail a single aspect of one of these subject which broadly attempts to examine how society copes with change.

- The main advantage of the documentary approach over that of a straightforward talk is that the subject is made more interesting and brought alive by the involving of more people.
Planning

The question of how long the program should be. It may be that the brief is to produce for a 30-minute or one-hour slot, in which case the problem is one of selection, of finding the right amount of material.
Working Title: ‘The Return of the Trawlermen’

Aim:
- To provide the listener with an understanding of the impact which changes in the deep-sea fishing industry over the last 10 years.

Duration: 30 minutes

Information: Annual figures for shipping tonnage, men employment, turnover and profit.
Content:
- Historical account of development in the 10 years:
- Technological changes, searching, catching, freezing methods
- ......

Key Questions:
- What has happened to the men and the ships that used to work here in large numbers?
- ......
Planning Notes

- Interview Sources:
  - Trawler Federation
  - Docks and Harbour Board
  - …..

- Reference Sources:
  - Newspaper
  - Library
Example One

1 Sound Effect: Rattle of anchor chain. Splash as anchor enters water.

2 Narrator:

The motor vessel Polar Star drops anchor for the last time. A deep-sea trawler for the last twenty-four years she now faces an uncertain future.

Outclassed by a new generation of freezer shops and unable to adapt to the vastly different conditions, she and scores of vessels like her are now tied up – awaiting either conversion or the scrap yard.

In this programme we look at the causes of change in the industry and talk to some of the men who make their living from the sea. Or who, like their ships, feel that they have come to the end of their working life.....
Example Two

1 Skipper Matthews:

I've been a trawler skipper for eighteen years – been at sea in one way or another since I was a lad. Never thought I'd see this. Rows of vessels tied up like this, just rusting away – nothing to do. We used to be so busy here. I never thought I'd see this.

2 Narrator:

The skipper of the Grimsby Polar Star. Why is that in the last few years the fishing fleet has been so drastically reduced? How have men like Skipper Matthews adapted to the new lives forced on them? And what does the future look like for those who are left? In the programme we try to find some of the answers…
The ending

There are limitless alternatives, here’s some suggestions;

1. To allow the narrator to sum up – useful in some types of schools programme or where the material is so complex or the argument so interwoven that some form of clarifying resume is desirable.

2. To repeat some of the key statements using the voices of the people who made them.

3. To repeat a single phrase which appears to encapsulate the situations.

4. To speculate on the future with further questions.

5. To end with the same voice and actuality sounds as those used at the opening.
Production Meeting