

# You can get a radio licence!

## You think you can't but I promise you can!

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## A moment just for me

- James (he/him), a.k.a. EI6LJ, a.k.a. PROGRAM\_IX in most online places
- A4 member for 18 months, hanger-on for some time longer
- Too many hobbies (see title)
- Web developer man
- Known for saying: “You can make art! I promise!”
  - (I have a whole other presentation about this)

## What is ‘radio’, anyway?

- We're not going that deep, I am not a physicist
- Radio waves are in the air all around us
- They are emitted by many electronics and received by many other electronics (not always desirable. . . )
- They can carry data and so they are used to transmit messages
- You don't want to inhale them, which is good, because you can't

## Why should I care?

- Technology has come a **long** way since the first radio broadcasts...
- (nobody would think of using original radio techniques for sending text data today)
- ...but radio is still in active use for many things even so!
- It is both dated and 'current', simultaneously (that's a radio joke)
- There is still a lot to explore, and it's a field with many passionate amateurs — maybe someday even you!

**What does that mean? Is it pirate radio? It is, right?**

- (Everyone asks this)
- This is not pirate radio!
- Amateur radio is strictly for hobby/fun use
- (You're not even really supposed to discuss personal beliefs on the air)
- Amateur radio is generally for contacting other amateurs only, apart from in emergencies, and,
- **Amateur radio is never for broadcasting to the public**

## Who are these amateurs?

- People who might have used radio in their jobs in the past but maintain the interest
- People who want to have emergency knowledge of a robust technology
- People who think radio is cool
- Me

# What are they even doing?

- Sending Morse code thousands of miles to chat
- Speaking on radio voice bands to chat
- Using text modes like Teletype to chat
- Taking part in contests to make as many 'contacts' (short chats) as possible in a short time

# Let's talk about Morse

'Short' and 'long' signals, combined in sequences



## Brief history of Morse code

- Developed by Samuel Morse/Alfred Vail c.1837-1844
- Used on electrical telegraph system created with Joseph Henry
- Needed to work with only 'on or off'
- Originally only numbers with a codebook
- Vail added the alphabet later based on English letter frequency
- Significant revisions since but still similar today!

## Sending Morse code

- Basically turning on and off a constant tone
- Also known as 'CW' operation for the 'carrier wave' that transmits the signal
- This allows it to travel **really** far compared to other radio modes, and with less power!
- Specific low-power Morse operation is called 'QRP' after a signal meaning 'reduce transmitter power'
- Several types of key available, most basic is just a button
- Generally agreed you want to try and achieve 10 words per minute at least to communicate in the real world

## Making a ‘contact’

- Find a frequency that's designated for Morse/CW
- Check the frequency is not in use (listen and confirm)
- Send general call
- (Someone replies with their callsign)
- Acknowledge their call with callsigns/greeting
- Exchange other info, signal reports, etc.
- Make small talk before signing off

# Making a 'contact' (Morse detail)

- QRL? DE EI6LJ
- CQ CQ CQ DE EI6LJ EI6LJ EI6LJ K
- (reply) EI6LJ DE EI9AAB KN
- EI9AAB DE EI6LJ NAME JAMES KN
- (signal reports etc.)

## Morse code, LIVE

- I only have audio Morse today, apologies
- It can be transmitted as vibration or light flashes too!
- Once there was a spy who tried to blink it...
- **WARNING: LOUD BEEPS WILL BEGIN NOW!!!**
- Let's try 'A4 SOUNDS' (.- ....- / ... --- ..- -. -... ...)
- Let's do my name (--- .- -- . ... / .... . ... -. .. -.)

## So how do I get a licence?

Great question. Luckily I have all these slides.

# Become a member of the IRTS

- Irish Radio Transmitters Society
- They administrate licence exams
- They advocate to maintain 'self-regulation' and amateur radio bands
- [www.irts.ie](http://www.irts.ie)
- Membership is €25 for a 'shortwave listener' (unlicensed) and €30 for licensed (some accessible rates as well)

# Become a member of the NSWLC

- National Short Wave Listeners Club
- Affiliated officially with the IRTS - free membership for IRTS members
- Focused on *learning* - both for the licence exam and in general
- Membership is free for IRTS members and €30 for others
- There may be local clubs to join as well, which are invaluable resources themselves

# Attend NSWLC classes

- Usually October - May
- Two hours, one night a week (online)
- Experienced tutors with huge radio knowledge
- High pass rate for attendees!

# Study the Study Guide

- Written by NSWLC and IRTS experts
- Covers all the topics on the HAREC curriculum
- Will be very useful when actually trying radio
- Completely FREE PDF on [www.irts.ie](http://www.irts.ie)

# Optional: Pass the Morse code test

- Morse code certification exam to prove competence at 5 words per minute
- 15-20 minutes with a tester (can be online), cost €20
- Must **receive** 75 characters at 5 words per minute
- Must **receive** 5 groups of 5 numbers at 5 words per minute
- Must **send** 75 characters at 5 words per minute
- Must **send** 5 groups of 5 numbers at 5 words per minute
- Mistakes are allowed but limited in receiving
- Mistakes are allowed but limited **unless corrected** in sending
- *Note: this exam used to be much harder...*

# (How did I get through this test?)

- Android app Morse Mania (Duolingo-ish)
- lcwo.net - Learn CW Online
- Listening to MP3/WAV/video files of Morse code (www.arrl.org practice files) *at target speed*
- Practice sending on my own using software and/or a key
- For the sending section: get comfortable with corrections (send 6-8 dits in a row)

# Pass the HAREC exam

- HAREC certification exam (technically not a 'licence exam')
- Usually one in May/June and one in November/December
- €50 or €25 for repeat/disability/unemployed/retired
- 2 hours
- 60 questions
- 4-option multiple choice
- No negative marking
- 2 sections which **each** have a pass mark of 60%
- Therefore, overall **minimum** pass mark of 60%

# Apply for an Amateur Station Licence

- Use ComReg's eLicensing website
- Your HAREC certification should appear here once you pass the exam
- This enables you to apply for your licence
- Licences are for life and are €100, or €30 if you have disability allowance/pension

# Receive your callsign

- It will begin **EI** as it is an Irish licence
- You have no say in your callsign's characters, they are sequentially allocated
- If you passed the Morse code test, you will have a shorter callsign by one character (like me)
- When you die you are said to have 'gone Silent Key' and you may see '(SK)' appended in references to deceased radio operators by callsign
- A family member can 'inherit' your callsign if they get licensed, otherwise it is retired

# Get on the air???

- I've tried, but I haven't managed this myself yet (antenna problems)
- Use someone else's station/callsign with their supervision (you can do this before getting your own licence!)
- Set up a simple radio with antenna, or handheld radio
- **Listen** to what's out there to get used to how things go
- Make some contacts!

## Questions?

No promises. . .