QUA FARC

August 2025

Franklin Amateur Radio Club Inc.
NZART Branch 10

VOLUME 34 ISSUE 8

President: Peter Henderson ZL1PX
Vice President: Steve Doell ZL1TZP
Secretary: Tom McDonald ZL1TO Ph. 09 238 8580
Committee Members: Mike Jane ZL1UOM, Ted Doell ZL1BQA, Gary Landon ZL1WGL, Frank Male ZL1AMQ, Steve Spring ZL1SPR
Examiners: Tom ZL1TO, Peter ZL1PX
Web page: http://www.qsl.net/zl1sa
Webmaster: Steve ZL1TZP

Committee meets on the first Tuesday of each month (excepting January) at 7.30 PM in the clubrooms.

Subscriptions: Individual $20, Family $30, due December
See club secretary for bank account number

Nets: HF Sunday 9 AM, 3.700 MHz (Mike ZL1UOM); VHF Sunday 9.30 AM, 146.900 MHz (Peter ZL1PX); DMR on TalkGroup 5301, Wednesday 7.30 (Steve ZL1TZP)

20 YEARS BEHIND BARS

At our last meeting, John Hodgkin ZL1UDH, spoke on his time in the Department of Corrections. John served 20 years with the service rising in rank to Principal Corrections Officer with a team of Officers and responsibility for a section of a prison.

John worked in low, medium and high security prisons all over New Zealand, but not in maximum security prison Paremoremo. The one important message John left with us is that life in prison is NEVER an easy option. A prison cell does not have much space. In addition, prisoners must 'earn' privileges. These are activities or placements that can be given or taken away by prison management. They might include phone calls, TV time, extra exercise sessions, more visitor time, a hobby, recreational activity or a move from a solo cell. A prisoner wanting a privilege must show he/she is worthy by following prison rules.

For his last seven years in corrections, John was able to pass on his knowledge and experience in the role of Training Officer at the National Learning Centre in Upper Hutt. Here, prison officers learn about maintaining the safety and security of the prison. They build the skills to encourage prisoners to make positive changes in their lives. Throughout all this, they must be observant, alert and able to remain calm under pressure. It's not for everyone and up to a fifth of trainees may elect not to continue. When new officers go back to their prisons, there is follow up training in specialized areas like prison negotiation, dog-handling, tactical communications or de-escalation techniques.

Prison is an uncomfortable but necessary institution in our community. We don't want to go there but we need to feel that those who do are getting the best chance to turn their lives around. You navigated the topic brilliantly, John, showing us a detailed picture of the difficulties but also leaving us with a sense of robust and healthy prison-craft in action.

BUILD UP TO OUR NEXT MEETING

2 July to Simon Watt-Wyness ZL1SWW

Hi Simon, Our club members have been discussing VHF field day on 6/7 December. We have a number of new members, myself included, who have never taken part in a VHF weekend although we do enjoy Jock White Field Days each year in February and there is usually a good turnout. One member, Steve ZL1TZP, met with Vaughan ZL1VH recently and set up an Excel file to record the scoring. Would you be willing to help motivate our newer members and increase our knowledge of VHF events by chatting to the club on one of our general meeting nights?

3 July to Peter Henderson ZL1PX

Hi Peter, I could run through a Powerpoint deck on VHF contesting that I did some time back and expand a bit more on it as needed. I guess I could come out on the night. I know Pukekohe OK as I have Counties energy as one of my customers out there and know where the clubrooms are. Probably good to put some faces to callsigns etc. Let me know of a date that could work.

4 July to Simon Watt-Wyness ZL1SWW

Thanks for your reply, Simon. Tuesday 19 August would work for us. We have a screen HDMI and Internet available. There is off street parking behind the club. Our formal meeting runs 7.30 to 8.00 then the floor is yours. Much appreciated.

Simon Watt-Wyness writes the **VHF Scene** column in Break-In. There is much detail on contest results. In the May/June issue, for example, ZL4ES and Zl1GSG achieved a DX mileage of 758 Km on 2m. Simon also writes about the hardware (is that the right term in radio?) with tips on valve technology and circuit boards. Simon will address our club on Tuesday 19 August after our general meeting at 7.30 PM. Get ready to be motivated to want to take part in VHF-UHF Field Day on the weekend of 6/7 December.

JUST SOME OF OUR ADDITIONAL UPCOMING EVENTS

MOTAT Live Communications Day – Sunday 21 September, two on-site Morse stations on 144.200 MHz manned by Neil ZL1NZ, Paul ZL1AJY from NZ Net CW group and Peter ZL1PX. Visitors to Motat send their name in Morse code and hear it transmitted back to them from the second station. Fun for kids!
Franklin Positive Age Expo – Friday 3 October at Indian Hall Community Centre, Pukekohe, 10 to 3. We have stall at the largest retirement exhibition in the country. More than 2000 senior visitors explore their options while watching Line Dance, Tai Chi or Flexercise on stage. Free coffee and sandwiches on offer. Fun for seniors!
JOTA – Saturday 18 October, Franklin scouts enjoy JOTA at Bombay Scout hall, Bombay, 10 to 2. Scouts talk to other scouts in NZ, Australia and groups further overseas using DMR, HF and VHF. Fun for scouts!
VHF Field Day – Bombay Scout Hall Reserve, Paparata Road, Bombay – Saturday 6/7 December – Bombay scouts return the favour by offering us a high elevation chance to score points on 2m and 70 cm contests.
Ham Cram Study Weekend – We are currently organising to do ham cram study weekends in 2026. Study for two days, sit your exam on Sunday and have your call sign in time for the club's next VHF net.

JOCELYN AND THE PULSAR

Jocelyn Bell among the dipoles, 1966.

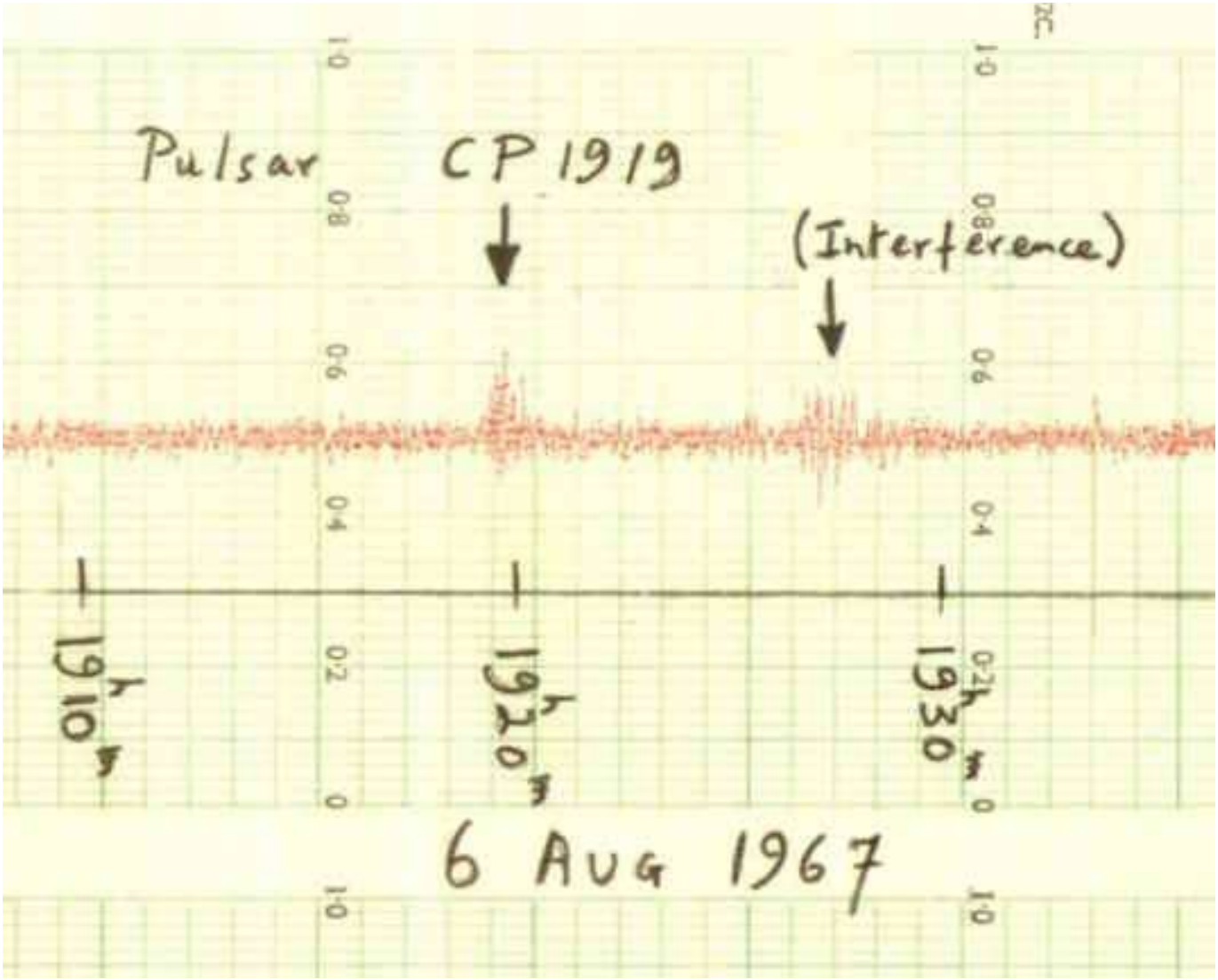
In 1965, Mullard Radio Astronomy Observatory, near Cambridge, England became a hive of activity. Radio Astronomer Antony Hewish of Cambridge University had obtained a grant of £20,000 to build an Interplanetary Scintillation Array on the site. This was Hewish's own invention. He intended to use it to conduct a major sky survey in the non-light electromagnetic spectrum.

Jocelyn Bell working at Jodrell Bank 1964.

Most of the construction involved a sledge hammer. Hewish's student teams hammered hundreds of posts into the ground in even rows over 4 acres of land. They attached masts and strung 4,096 long wave dipole antennas, 3.7 metres in length, between them. Most students were men but one, Jocelyn Bell, who could also swing a sledge hammer, was responsible for coax connections. The dipoles were cut to resonate at 81.5 MHz since Hewish had determined this was the best frequency to detect rapid fluctuations in radio signals

Jocelyn Bell was 24 years old, a graduate from Cambridge University. She was the only female among the astronomy graduates selected for the project, though before this she has worked on the new Jodrell Bank antenna. She reported later she suffered from 'Imposter Syndrome'. She thought she had been wrongly appointed. She didn't have the ability. Sooner or later she would be found out and asked to leave. Because of this, she checked and rechecked every coax connection so that she could not also be accused of poor 'work-woman-ship'.

The array was completed in July of 1967. To her great relief it worked immediately. The coax connections were important because the array 'steered' by phase adjustment. As signals arrived at different times at different dipoles, electromagnetic relays switched in and out different lengths of coax to synchronize phase across groups of dipoles. Extending a coax cable by 900 mm, for example, would rotate the phase on a dipole by around 90 degrees When this was applied to groups of dipoles it made the array 'steerable'. It could be 'aimed' at different areas of sky over time and scan the northern sky in a single day.



Portion of 2 miles of paper trace showing first appearance of PSR B1919 +21

Jocelyn Bell was also responsible for analyzing the paper trace recorder after the scans. On Sunday 6 August, she found a smudge in the recording. She had become used to recognizing arc welders, badly suppressed cars or sparking thermostats. This smudge wasn't one of those. She thought it was some new object in space. Others in the team, including Antony Hewish, thought it was either an error in her antenna connections or a local earth signal.

Still suffering from imposter syndrome and not wanting to be responsible for creating an error in the project, Jocelyn dedicated herself to reviewing more than 2 miles of paper trace readouts to see if the smudge re-appeared. It took three months but she found the smudge still there. The team also ran the trace recorder at a faster speed to capture detail on this strange new object. From this they discovered it sent a strong radio pulse every 1.3 seconds, which lasted for 0.3 seconds and it varied its visibility over a number of weeks. They calculated it was more 1,000 light years from Earth, keeping its position among the stars.

Since then, we have learned pulsars are collapsed stars in which fierce gravity has shrunk to an immensely dense iron core. When they collapse their angular momentum translates into high rotation speed. Iron in the core creates powerful electromagnetic beams that spurt from north and south magnetic poles. Jocelyn's pulsar, now known as PSR B1919 +21 spun at 1.3 times per second but pulsars have since been found which spin at more than 700 Hz.

Who got the Nobel prize for this discovery? In 1974, Antony Hewish and colleague Martin Ryle received the Nobel Prize for Physics for their work on plasma scintillation effects and discovering the pulsar. There is still controversy over this with many saying Jocelyn should have shared the prize.

Antony Hewish, Nobel prize in Physics 1974

Antony Hewish felt differently. He likened his role to being the captain of ship on a voyage of discovery. If they found some new land or continent, he didn't think the crew deserved a special award for that. It was the captain who should be lauded. His view was "Jocelyn was just doing her job. If she hadn't found it, she would have been negligent."

And what did Jocelyn think? She has said if she had received the Nobel, it would all have been over in a single weekend of celebrations in Stockholm. Not getting Nobel meant she could enjoy the many awards she received later. Asked why she and not someone else found PSR B1919 +21, she told her questioner "it came from so many years of being the only woman in the room." To combat that self-doubt, she had tackled the work with "an intense attention to detail".

Jocelyn Bell, August 2011

STILL GOING STRONG AT 75

On Friday 5 August, we celebrated our 75th birthday at Mr Henry in Patumahoe. Twenty four members and friends attended. We suspect John ZL1AQS, who was secretary in 1962, was the longest serving office holder in the room. There were also six presidents: Bob ZL1BZ, Fred ZL1SP, Mike ZL1UOM, Tom ZL1TO, Gary ZL1WGL and Peter ZL1PX. That says something about ham radio's contribution to longevity.

Our newest YL member Trish journeyed from remote Klondyke Road to attend so it was a pleasant surprise to her there were three other YLs also at the birthday. The four YL's lined up here are: Helen ZL1HOW, Lynette ZL1LL, Trish ZL1TTM and Durlene ZL1ULK.

Bob ZL1BBZ has been our longest serving president, beginning his first term when he arrived in Franklin to work at the steel mill in 1967. Bob served 17 terms altogether as President. Bob like to travel with his radio equipment which meant he sometimes needed a different call sign when operating outside New Zealand. In our picture he explains to Mike ZL1BEV some of the call signs he used on his travels.

John ZL1AQS served as secretary from 1962 to 1968. John is the nephew of Ian Sexton one of the original founders of the club. Here John talks with Gary who was president from 2021 to 2123. Gary has provided us with the use of his farm for our many successful Field Days over the last decade.

What follows are four wide angle shots taken by Steve ZL1TZP while we waited for our first course.

A great night, enjoyed by all! We hope the club continues to thrive for the next three quarter of a century.