SKYWaves

Aug, Sep, Oct 2025
Issue 2

Whyalla Amateur Radio Club Inc. Quarterly Newsletter

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Inside this issue:

WEATHER-BALLOON WASTE CHALLENGES AUSTRALIAN COAST

Never mind space junk from decommissioned satellites. Right here on earth, pieces of weather balloons have been found littering one beach in Australia.

Remnants of latex rubber weather balloons and foam boxes with scientific instruments washed up recently on the southwest coast of Victoria, where they were discovered by beach patrol crews. According to local media, the half-dozen or so balloons were carrying a radiosonde to measure temperatures, wind speed, wind direction and relative humidity. The balloons had been launched from Tasmania for a research project hosted by the Commonwealth Scientific and Industrial Research Organisation, the Australian Bureau of Meteorology and the US Department of Energy. The launch site on the northwest tip of Tasmania is considered the location of the planet's purest air, making it a preferred spot for scientists' climate studies.

Heath Powers, the project's operations manager, said in an Australian Broadcasting Corporation report that scientists are testing more eco-friendly ways to conduct these studies without creating such an impact on marine life.

CITY POLICE STATIONS PREPARE TO ADD AMATEUR RADIO

In West Bengal, India, law enforcement officials in one city are adding amateur radio shacks to police stations. Now they are busy getting volunteers trained and licensed to use them. We have an update from Graham VK4BB.

"Two months of ham radio training began in late April for civic volunteers who assist at the 26 police stations throughout the city of Barrackpore. The sessions are being conducted by Srayan Mondal, VU3ZHF, Pashupati Mondal, VU3ODQ, Dipak Chakraborty, VU2TLW and Jayanta Baidya, VU2TFR -- all members of the West Bengal Radio Club".

The training is designed to prepare the volunteers for the exam leading to the ham radio certificate from the Ministry of Telecommunications. Radio shacks are expected to be set up at each of the 26 police stations and the police central office.

The police commissioner told local media that adding wireless communication to the various modes used by law enforcement will be especially helpful for disaster response.

Traffic Light Circuit

Here's a clever circuit using two 555's to produce a set of traffic lights for a model layout.

The lighting sequence follows the Australian standard. The red LED has an equal on-off period and when it is off, the first 555 delivers power to the second 555. This illuminates the Green LED and then the second 555 changes state to turn off the Green LED and turn on the Orange LED for a short period of time before the first 555 changes state to turn off the second 555 and turn on the red LED.

A supply voltage of 9v to 12v is needed because the second 555 receives a supply of about 2v less than rail. This circuit also shows how to connect LEDs high and low to a 555 and also turn off the 555 by controlling the supply to pin 8.

Connecting the LEDs high and low to pin 3 will not work and since pin 7 is in phase with pin 3, it can be used to advantage in this design.

Whyalla Amateur Radio Club Website:

http://vk5bwr.ddns.net

Members who do not as yet have their password for access to the members' pages can apply through the website email portal.

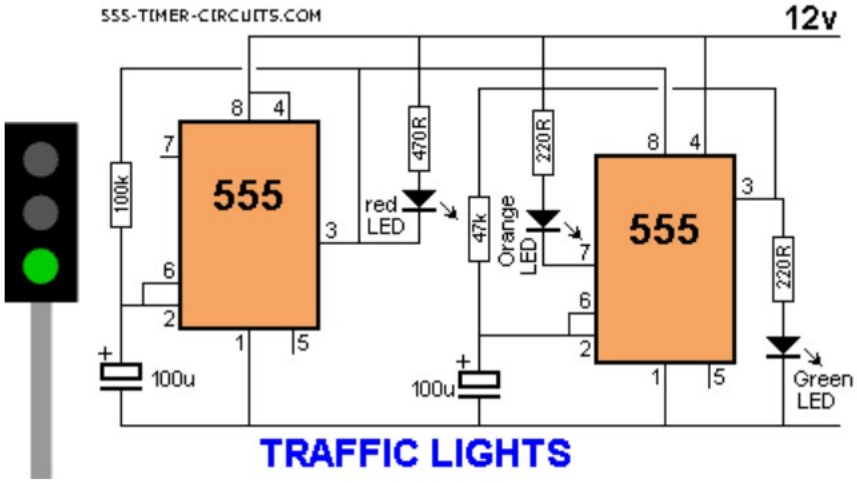
The above photo was taken a very long time ago. A veerrryyyy long time ago. Early 80's I should think. The members from L to R are:

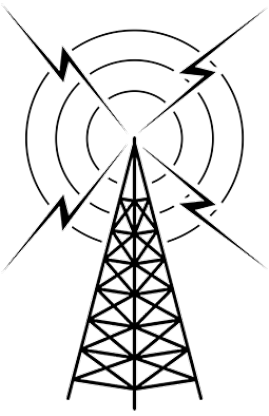
Top Row:

John Groffen, Jim Cooper?, Horrie Wright, Derek Nelson, Frank House (SK), Terry Baker (SK).

Bottom Row:

Dawn Baker, Pat Jolly, Peter Baker (SK), John Thompson, Eric Baker (SK).





Meetings, Events and Field Days

August 2025

M	Tu	W	Th	F	Sa	Su
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

September 2025

M	Tu	W	Th	F	Sa	Su
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

October 2025

M	Tu	W	Th	F	Sa	Su
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

August

06/08/25 (Wed)	WARC RMN Net	RMN
13/08/25 (Wed)	WARC Social Night	Social Night
16/08/25 (Sat)	ILLW & RD Contest	Contest
17/08/25 (Sun)	ILLW & RD Contest	Contest
20/08/25 (Wed)	WARC ZOOM Mtg	ZOOM
27/08/25 (Wed)	Club Mtg Night	Meeting
30/08/25 (Sat)	ALARA Weekend Contest	Contest

September

03/09/25 (Wed)	WARC RMN Net	RMN
10/09/25 (Wed)	WARC Social Night	Social Night
17/09/25 (Wed)	WARC ZOOM Mtg	ZOOM
24/09/25 (Wed)	Club Mtg Night	Meeting
20/09/25 (Sat)	Scout JOTA	Event
21/09/25 (Sun)	Scout JOTA	Event

October

01/10/25 (Wed)	WARC RMN Net	RMN
08/10/25 (Wed)	WARC Social Night	Social Night
15/10/25 (Wed)	WARC ZOOM Mtg	ZOOM
29/10/25 (Wed)	Club Mtg Night	Meeting

Field Day or Contest?

There are Field Days and there are contests. What is the difference?

A **Field Day** is a contest especially for portable stations. Amateurs competing in Field Days find a good location, usually on a hilltop, and often camp out overnight. Apart from having fun, Field Days are the ideal opportunity to check out your equipment in the field and to experiment with light weight, easily transportable equip-ment and antennas.

All contests have one main purpose - to get plenty of stations on the air and to increase the opportunities for making contacts.

Field Day stresses emergency preparedness.

Frequently, entire radio clubs get involved and assemble a portable radio station in a field or park. Some might use quickly deployable portable antennas while other might erect more elaborate radio masts and towers supporting several antennas, Generators or solar power provide electricity to amateur radio transceivers, which may be located in tents, cars, recreational vehicles, or other portable shelters.

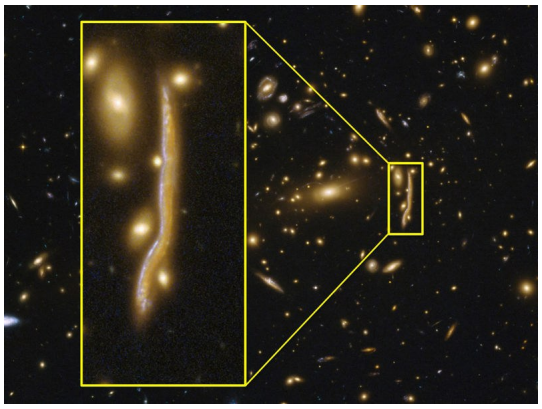
The club does hold several field days through the year, most notably, the Lighthouse and Lightship Week End and several field days.

A PULSAR PACKS A PUNCH INTO OUR GALAXY

We heard about a distress call that came in via radio - but this wasn't exactly a local call or even a conventional DX call. How about.... 26,000 light-years from Earth?

It's known as the Snake, the nickname by which astronomers identify one dense, elongated filament in the centre of our Milky Way galaxy. It apparently has suffered fractures in two places.

At best as scientists can tell, a fast-rotating neutron star known as a pulsar collided with the Snake at a not-too-shabby 1–2 million miles per hour and caused a fracture that disrupted the Snake's magnetic field, releasing radio emissions from the site of the impact.



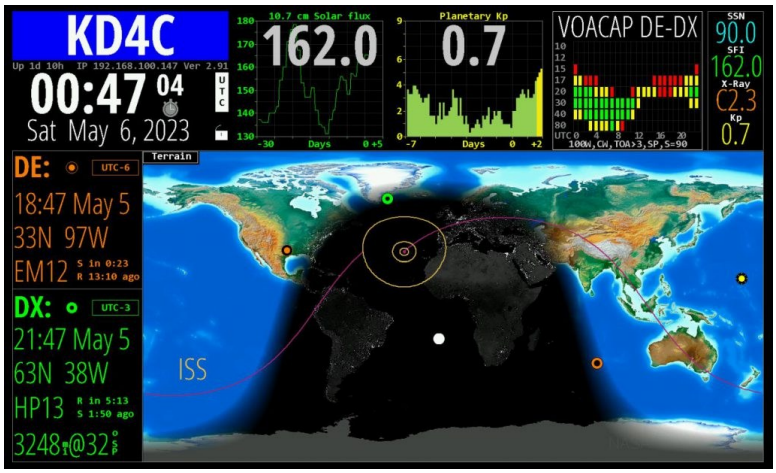
NASA's Chandra X-ray observatory and the MeerKAT radio array in South Africa studied the Snake, which is 230-light-years long, to get a better picture of what scientists compare to fractures in bones. Radio astronomers combined their findings with those of an observatory in San Agustin, Mexico and recently released a paper in the Monthly Notices of the London-based Royal Astronomical Society describing the event.

Scientists study filaments such as the Snake to understand their roles in how stars are formed.

Whether the Snake can heal is another question altogether. Cosmic veterinarians don't make long-distance house calls.

HAM CLOCK

Source: KD4C's Ham Radio Waves



What if I told you that there was once a big wall-mounted device (called a GeoChron) that cost hundreds, even thousands, of dollars, and that many hams coveted it as the ultimate shack accessory. And what if I told you that said GeoChron gave you an up-to-date DX map of the world and showed light/dark areas, sun position, and grey line, and was the first thing a non-ham noticed when walking into a ham's shack for the first time, getting "oohs and aahs". Now, what if I told you that, instead of having to buy a big expensive gadget, all that capability and much much more is now available in a single piece of software, and that software is FREE and runs on a Raspberry Pi. So now for $15 (Raspberry Pi or Pi Zero) and a bring-your-own HDTV or computer monitor, you can have the ultimate shack accessory!

This software is packed with so many helpful features that I'm going to have a hard time describing them all here.

1. In addition to a Local or UTC clock, it's a real-time Map of the World, that shows sunlight position and illumination, and the current position of the "grey line".
2. It displays information about your selected "DX" station, including position, grid square, short path and long path range and rotor bearing, current weather, and time.
3. It has helpful "widgets" for propagation (SFI, Sunspots, Planetary K, DRAP, Sun imaging – pretty much any propagation related statistic.
4. It can monitor and display live spots from the DX cluster and POTA and your spots from PSK Reporter.
5. It has built-in orbital predictions to show when your favourite ham satellites are going to be overhead. Plus, you can view and control the entire display in a web browser on your network (if you have the big image on a wall HDTV).

Oh and did I mention that the software has a full API so you can control it from other software (more on this later)? Now I'm exhausted from trying to describe the features, and I'm sure I missed some.

Now surely by now you're asking "how can I get such a thing?" Well, the hardest part is getting your hands on a Raspberry Pi. A Raspberry Pi Zero will work just fine, and they have been available every other week at MicroCenter – You will have to be diligent and check the website. You will also need a MicroSD card. The process is fairly simple, even if you've never done much with a Raspberry Pi: 1) Install Raspberry Pi OS (there are a bunch of YouTubes on how to do this), and 2) go to the HamClock page, select the "Desktop" tab, and follow the easy instructions. The User Guide is fully documented so you can figure out all the things that you can configure and click on!

Because this is Linux, I will warn you now that it's not the usual Microsoft "double click the installer" app – there are some "command line" instructions (I think a total of 4). Do not let this scare you off! The result is worth it to have this on your shack wall. I recommend that you just run it "full screen" and just use the built-in HDMI out of the Pi (you might need an adapter) and just pump the display into a wall-mounted HDTV or a spare computer monitor with an HDMI input. But you can also just stick the Pi under the desk and run it in

Install HamClock

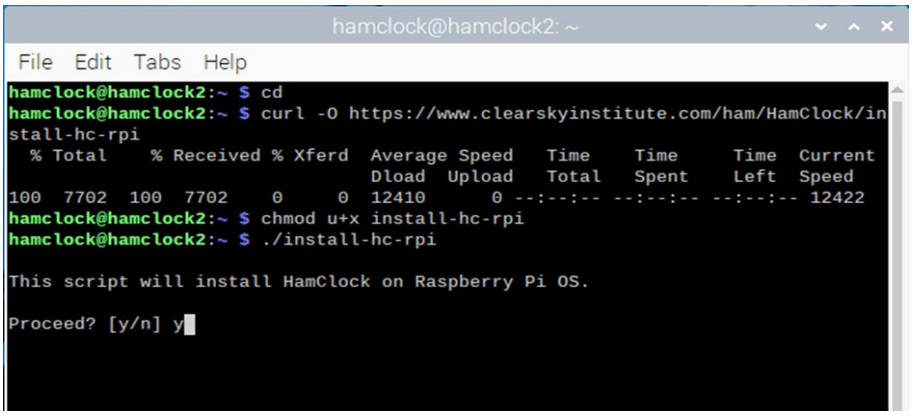
Once you have successfully rebooted, open the terminal again. We'll use the provided script to install HamClock.

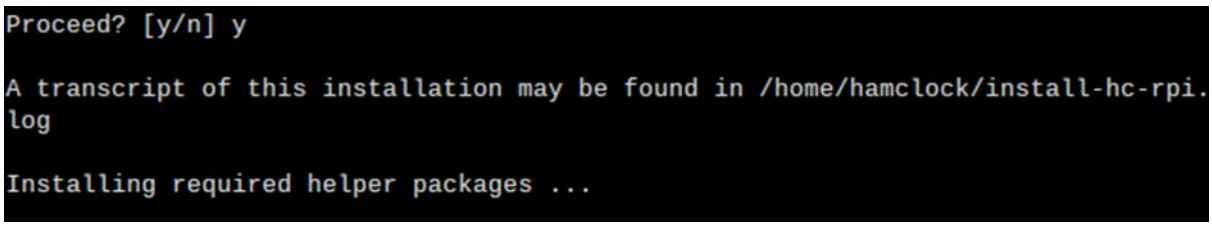
Enter the following commands.
Note – the curl command is curl -O. It's a capital letter O, not a zero (0). Ideally copy and paste these commands to make sure you enter them correctly. If you get even one character wrong, it will fail.

```
cd

curl -O https://www.clearskyinstitute.com/ham/HamClock/install-hc-rpi

chmod u+x install-hc-rpi

./install-hc-rpi
```

Click y to proceed and hit enter.

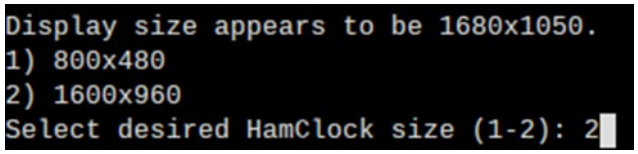
This will appear to hang on Installing required helper packages but it's just slow to complete.



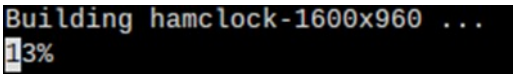


After the helper packages install, you will be asked if you want to build for web access only. If you are building this on a Raspberry Pi with a monitor attached, **you should answer n to this question.**

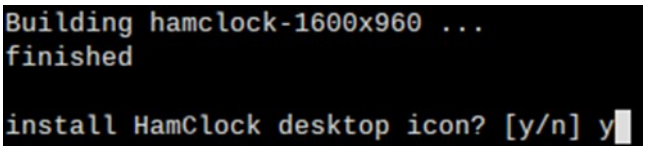
When this has completed, it will ask what resolution you want to use. You'll notice here that it has detected I have a display that's 1680×1050 and so it offers me the available resolutions. You should always pick the highest resolution that your monitor can support and in most cases this will mean 1600×960. If you have your Pi connected to a 4K display then you'll also be offered 2400×1440 and 3200×1920 so again, pick the best one.



HamClock will now build and give you a handy progress indicator. Now is a good time to grab a cup of tea or coffee and perhaps a digestive biscuit to dunk while you wait for this stage to complete. On older Pi's, this will take a long time and may appear to have hung. Be patient and wait, it **will** complete.



Answer 'y' to the question about installing a HamClock desktop icon.



Answer 'y' (or 'n') to the question about the User Guide (an online version is always available from

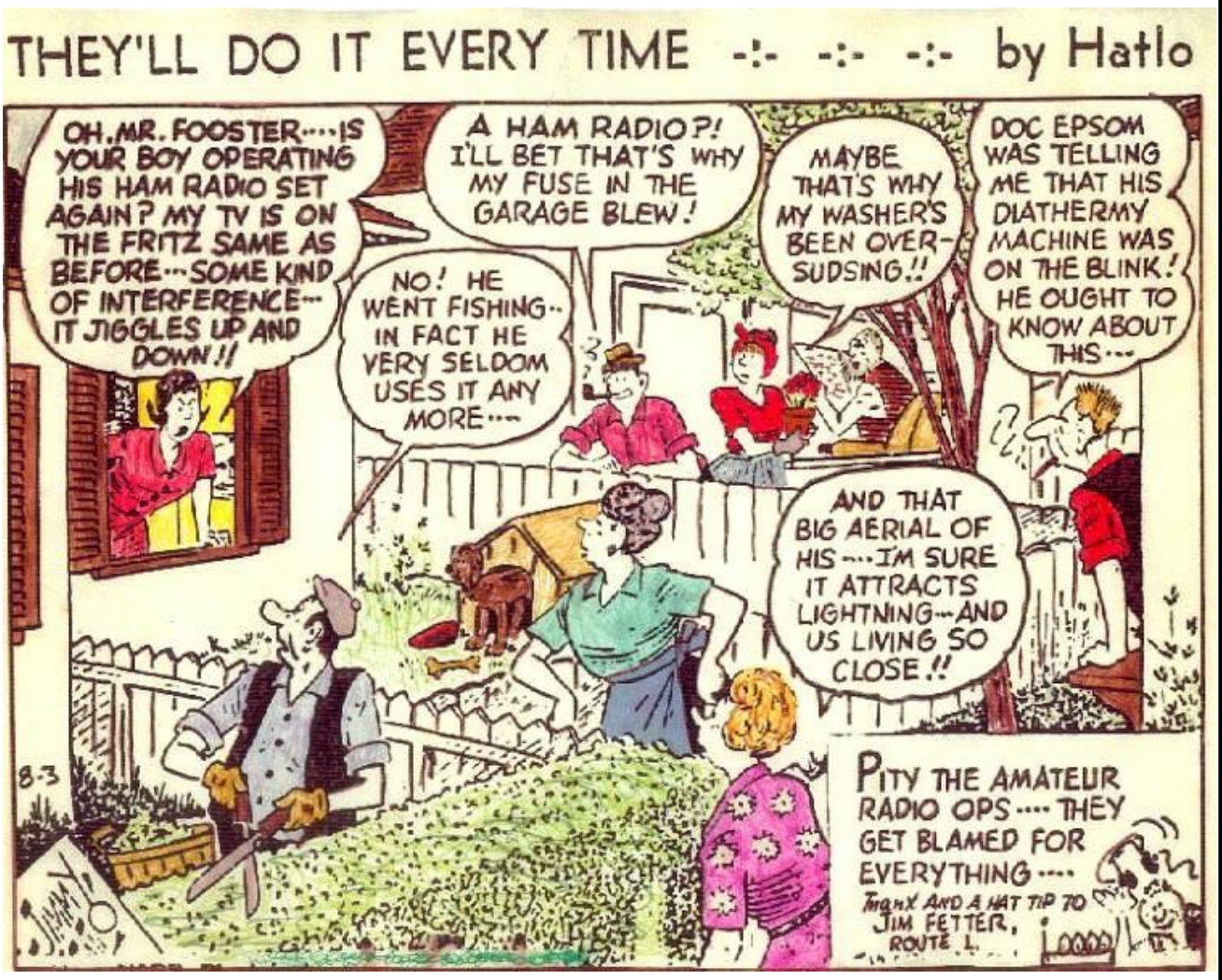
https://www.clearskyinstitute.com/ham/HamClock/HamClockKey.pdf

```
install User Guide on desktop? [y/n] y
```

Answer 'y' (or 'n') to the question about auto starting HamClock.

```
start HamClock automatically each time Pi is booted? [y/n] y
```

Assuming it's all worked correctly, you'll have a message saying that HamClock installation is complete.



NEXT Issue due November 2025