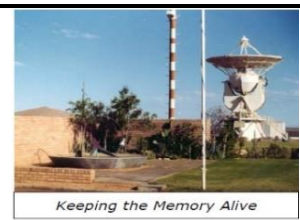




CROnICLE

MARCH 2021 - VOLUME 23



Note from the Editor

By Lauri Glocke

Hi Everyone

I trust all our CRO Trackers are keeping well!

Whilst it is good to read all the stories and anecdotes from our Carnarvon NASA Tracking station days, Paul Linnane (Jr), has kindly started a series of articles (WHAT'S UP IN SPACE) outlining some of the current space exploration developments planned or in progress. Paul says it is not intended to be exhaustive or technical, but rather a layman's overview.

Our thanks to Paul for his contribution to our CROnicle.

The CRO Trackers memoirs make for some interesting reading and I am going to kick this edition off with those from Lloyd Brown. It was Lloyd that asked me when I took over the CROnicle from Terry, if I knew what happened to the stories the trackers had sent to Paul. It was a timely question because it was about that time Paul and Joan's son, Phil, asked me if I wanted them. So, we have them now and some of them are quite lengthy so I will need to run them in a series.



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Lock in the date

Hope to see you all there!

Laraine (Lauri) Glocke

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CRO Trackers Memoirs

Stories that were written by CRO Trackers for Paul Dench when he was collecting memoirs from the Carnarvon Trackers anticipating they may be used in his and Alison Gregg's book.

RIP Paul and Alison - sadly missed and always remembered by Carnarvon CROTrackers.

Lloyd Brown – The first of a few memoirs

From: "inkwell" <inkwell@optusnet.com.au> Sent: Saturday, March 13, 2004 8:34 PM

The most significant things I can think of re the history of good old CRO are:

1. Lew Wainwright had to make a decision before the Gemini (or was it Mercury?) missions whether or not to get the Fremantle Port Authority to modify their wharves to accommodate NASA tracking ships. He did so at a cost of \$30k but the ships never docked because they built CRO - or went somewhere else. The incident was before my time. I know of it because we got the bill from the Freo Port Authority circa 1970 and I had to work out what to do with it. Like a good Public Servant, I sent it to Canberra. People who might have more info are Lew Wainwright, Bob Leslie who was head of American projects, and Milton Turner who was my predecessor as DOS Admin Officer. If any of them are still alive they would probably still be living in Canberra.

2. The contribution of Wilson Tuckey in building the Port Hotel units for CRO should not be overlooked. Again, it was before my time, but I understand that he was the only businessman in Carnarvon with the guts enough to risk his capital in building accommodation for the trackers. This info emerged when we were building the houses in Morgantown thru the R&I Bank and I think it is pretty accurate.

Do you have Paul Oates' address? His wife (Gillian) the one who caused a bit of a stir at CRO when she arrived died a few months ago. Paul is now thinking of returning to England to live. He told me that Ray Jacomb and Arch Nicholson are both dead. Sic Transit Gloria Mundi.

I loved Carnarvon. It broke my heart to leave the place.

I've got lots of anecdotes about my time at CRO, which I'll contribute at another time.

Lloyd Brown (Cont.)

Sent: Monday, March 15, 2004 3:27 PM

Did I say Arch Nicholson? I meant Arch Morrison (I think). He was a Scottish engineer who used to come to CRO from Canberra quite often. I'm not sure whether he ever interacted with AWA face to face but he and Jacomb were really tight. He was a good stick though. On one of the Apollo Missions Jacomb wanted to go home early. At that stage I was his chauffeur because of his eye. By the way how is his eye?? He never drove after he lost the sight of that eye and on that basis, I talked myself into a parcel of overtime. Anyway, Ray wanted to leave before LOS. So I arranged with Greg Tacey in Comms to send our ritual TWX after LOS and home we went. But Tacey stuffed up and sent it before LOS. Next day we got a small reprimand from Arch Morrison in Canberra, who had spotted our pécadillo. As the resident DOS (hasn't the meaning of that acronym changed) smart mouth (not a big field to pick from) I had to go into bat for CRO. I replied with a verse from Omah Kyam "The moving finger writes and having writ moves on. Nor all your piety nor wit can etc etc." Back came this gem of a TWX from Arch: "I saw what moving finger wrote. No wonder it moved on. Before you had your LOS, your final Twx had gone." We surrendered.

The modifying of the Freo wharves for the tracking ships which never used them was a top level and critical decision. \$30k was an enormous amount of money in those days. (I can still remember the furor when the Station Social Club cost of petrol went up from 35 cents per GALLON to 38 cents !!!!) In the absence of a clear direction from NASA, who had really given DOS the monkey, Wainwright effectively had no option but to go ahead. But he must have really earnt his pay cheque that week. You didn't mention him. Is he still alive? What about Bob Leslie, who was head of DOS American Projects Branch??

We are in touch with Paul Oates - particularly after Gillian's recent death. Good to hear Ray Jacomb hasn't shuffled off this mortal coil. Give him my regards when you see him. He must be doing it tough in UK though with an income in \$AUS.

More of Lloyd's memoirs to come in the next edition!

From A Carnarvon Viewpoint – ctd.

Gemini IV

America's first EVA – By Hamish Lindsay

Splashdown.

At 3,230 metres the main parachute burst out and the two astronauts braced themselves for the 1,500 metre two-point suspension mark when the Gemini III crew were flung forward to crack their helmets on the windows. This time the crew lurched forward, but neither knocked their helmets against anything.

The recovery ship, the carrier USS *Wasp*, had to move 238 kilometres to the west of the original position, to accommodate this change. Gemini IV dropped into the Atlantic 81.4 kilometres from the target at midday (12:12 pm UEST) on Monday 7 June (0312:11 AEST 8 June 1965) watched by one of the recovery helicopters. Gemini IV went around the Earth 66 times in just over 4 days covering a distance of 2,590,561 kilometres.

Summary.

This mission was declared a great success, the doctors were elated, and the critics who predicted that the astronaut would become unconscious, experience vertigo, or disorientation as soon as he stepped out of the spacecraft were silenced. White said that his desire to do strenuous work, such as using the exerciser, dropped as the flight progressed. McDivitt reckoned this was probably due to lack of proper sleep due to the disturbances from the companion's activities. They should have slept at the same time instead of alternately. It was a good thing they did the spacewalk at the very beginning of the flight when everyone was fresh.

All the systems, computers and procedures in the new Mission Control in Houston had worked to perfection.

And the Americans had caught up with the Russians.

References:

Tracking Apollo to the Moon by Hamish Lindsay.

Carnarvon and Apollo by Paul Dench and Alison Gregg.

Failure is not an Option by Gene Kranz.

A Walk in Space. NASA booklet. US Government publication. No author or date.

On the Shoulders of Titans : A history of Project Gemini by Barton Hacker & James Grimwood.

NASA SP-4203.

NASA websites.

EXTRACTS FROM
“RECOLLECTIONS FROM MY YEARS AT CARNARVON” – ctd.

BY DAVID JOHNS

16 An incredible but true story – part 2

I said, “what happened to you Bill, you look like you have been roughed up”. He smiled and said, “Well I was roughed up, I fell in the ocean”. Bill then told me a story that left me speechless, and I will narrate it here as accurately as I can remember.

On the previous weekend, Bill and his wife were being visited by their daughter and son in-law. It was nice weather, so they went for a drive up to the blow holes, on the coast, about 50 km north of Carnarvon. The Blow holes is a hole in the rock, about 30 metres inland where the incoming waves compress the air under a rock shelf and a mixture of pressurised air and spray blow vertically through the hole and into the air. On a good day, depending on the sea that is running, the spray will consistently blow 25 metres into the air. In the area of the blow holes, the coastline consists of a rocky shelf about 30 metres wide at sea level and then a cliff of about 3 metres in height and then smoothish rocks running back to dunes. Being at sea level, the waves crash across the shelf and cover it with a mass of angry foaming water and then the waves recede and expose a surface that has been cut and abraded by a million years of savage waves that have sculptured the surface to be like the cutting edge of a giant rasp and there are a million sharp edges and rocks that could cut to the bone.

For about the next twenty kilometres north from the blows, the coastline has the same character with the ledge varying erratically from 20 metres wide to 80 metres wide and the cliff height varying from as little as 2 metres up to ten metres in height but always the shelf is a formidable mass of sharp and cutting rocks. At times when the tide was out, and if you were wearing heavy boots, you could go down onto the rock shelf and grab a few oysters, but it was a dangerous place to linger, and you didn't stay there long.

On this particular day, Bill and his family were at the blow holes for a while and then they drove north for about ten kilometres to where a pastoralist's fence met the sea.

Bill and his family were walking along the rocks above the cliff edge. There was an average sea running with waves breaking across the shelf but there was no sign of what was to follow. As the water receded Bill tried to stand firm but it was all over in a few seconds as he was knocked off his feet and bundled across the rock shelf and out into the deep water. Bill did not know what to do.

Bill must have been on a lower piece of cliff than the others for suddenly he found the water was rising around him. It was a big wave but not an angry crashing wave, more like a localised rise in the sea level than a wave. All of the shelf was covered with deep water and the water rose over the cliff and swirled around Bill.



He thought of trying to catch a wave back to the cliff but even if he did that, it would then carry him back out over the rock ledge again and he had been lucky to survive that once and he might not be as lucky next time. Bill's wife and daughter and son in-law wanted to help but what could they do. They remembered that back at the blow holes there was a lifebuoy on a post for such occasions and so Bill's son in-law jumped in the car and raced back to get the lifebuoy. When he returned he made signs to bill that he was going to throw the lifebuoy out with a rope so he could pull Bill back. Bill swam a bit closer to the ledge and his son in-law waited on the cliff edge, waiting for the right wave to throw the lifebuoy onto and have it float out to Bill. But the sea was in a deceptive mood and although normal waves would crash across the ledge, about every ten or fifteen minutes there would be a big wave where the whole sea would rise, and deep water would flow across the shelf. When Bill's son in law saw the right wave coming, he got as close to the cliff edge as he dared and prepared to throw the lifebuoy when suddenly he too was surrounded by water and then knocked over and washed out to sea.

To be continued....

“AT WORK AND AT PLAY”

in Carnarvon Western Australia, from November 1965 to February 1972.

Snippets of Stories of Geoffrey and Lynette Broom (Dec'd)

Info & Memories 1

Sent 23 Apr 2004

Hi Paul & Joan,

A bit of background information for you Paul, to start with. I have just sent an e-mail to Terry for inclusion in the CRONicle, but some of it is stuff you need to know.

I was recruited in England (by Les Paige) as was Alan Gilham and Leo Overington, and we three met up in a hotel in London where we were given a two-week course on Carnarvon Tracking Station by I think his name was Dick Simon, or Simons, and Dave Brookes. Dick was the station M & O at the time and told us all about FPQ6, ACQ AID, SPAN, OPS etc., and nothing about USB. We were interested in USB of course but nobody knew anything about it at that time - that was why we were on our way to The States, to learn!! We had a test at the end of each week, couldn't see what for or what good it was, but it was required by Dick. Sometimes during the course in London Dave did the teaching and we managed to get him to tell us about Australia and what it was really like at Carnarvon (and we still turned up there!!!!), which didn't seem to please Dick a whole lot. At the end of the two weeks, we all flew on Qantas to the USA, except for Dick who I think went back to Carnarvon. And yes, families were left behind in England. My wife Lynette gave birth to our first child - a daughter - while I was in Dallas.

After the States we had three weeks back in England then we three new recruits all went on the same plane to Perth, had a week there to buy a houseful of things, then we all drove up the long road to Carnarvon at about the same time.

Now, a bit about memories. You can edit them or put them in "as is" but tell me if this is the style of thing you are looking for.

Reminiscences of The Yeti.

First off I suppose I had better explain how I came to be known as The Yeti, as it was a nickname I acquired early in my stay and it stayed with me till I left. After we had installed the USB equipment and got it all working, and we had tracking assignments to do, one assignment was through the night. The equipment areas at the Tracking Station were air conditioned, much to the disgust of the wives who thought we men had it easy working in air conditioned comfort, but the truth of the matter is that the air conditioning was solely for the benefit of the millions of electronic components that went to make up all the tracking systems. The cold air was sent along under the flooring and came up through the equipment cabinets, cooling the components on the way. Occasionally the air conditioning equipment got a bit carried away and the result was usually that things became far too cold. The night in question, I was sitting at my console, working away (?), and I had on a very large pullover with a very large collar. I also had a beard, which probably helped the impression.

"AT WORK AND AT PLAY" - cont.

I was able to pull the collar right over my head like a hood and did so that night in an effort to keep warm.

Well, my counterpart came back into the room and saw me sitting at the console and said, very loudly, "There's a bloody yeti sitting at the servo console!!", and the name stuck, tighter than glue, from that moment on.

More will come in due course Paul if that is what you are looking for.
Remember me to Alan.

Best Regards, Geoff & Lyn.

Reply to Info & Memories 1

25 Apr

2004

Hello Geoff & Lyn,

Your notes are quite the right stuff. It fills in quite completely the recruitment saga and sounds typical Dick Simons. Tell Lyn I would like to hear her story of the temporary loss of a husband and the ultimate move to Carnarvon.

I remember that hairy pullover and sort of imagined that it had something to do with the Yeti image. I shall look forward to more notes on your time together in Carnarvon - some technical recollections and band stories, I hope, and your reactions to Carnarvon and the locals.

Regards
Paul & Joan Dench

Next Edition is CRO 04

“CHIT CHAT” – From our Trackers

In the December edition I asked if anyone knew who “Bill” was, a policeman mentioned in David Johns’ piece, (16. An incredible but true story).

I’m please to say I did get a response from Lloyd Browne who said, “The only ex-copper I knew who worked at CRO was named Riley. Not sure of his first name - could have been Bill or George - or who he worked for - Harry Whitworth??. He had been a copper in the UK and David Johns description fits him to a "T" - quietly spoken, a teetotaler in his mid-40s. I remember him at our table at a Trackers' Ball, whimsically tolerating my drunken antics and - as possibly the only sober gent in the hall - cleaning up afterwards.”

Can you help identify the people in this (Port Hotel) picture?

This photo was taken in the Port Hotel rec Room in the 1960s. We have been able to identify Stewart Sands (back left), Doug Shaw RCA, top of Helen Haselhurst’s blonde hair and Mike Billings and that is the best we can do.

John Ford has a slide scanner now and has gone through his old slides of the 60s/70s. John is sending me any he has relating to CRO, mostly equipment or equipment with people. I will add them to the Photo library that I intend to put together with all the photos I have from Terry Kierans’ drives and those other trackers have sent me.



WHAT'S UP IN SPACE?

Paul Linnane (USB 1969-70)

While 2020 was a very difficult time for everyone on Earth, activities undertaken in space continued, albeit not quite “business as usual”. It is no longer essentially the United States of America and Russia as the only active participants. It may surprise you how much activity is undertaken (or planned) in various forms of space activity and how many participants are involved.

Despite the 2020 global pandemic, 44 launches in Earth orbit or deep space were attempted by US providers (not just NASA) with 40 successes. China launched 39 attempts with 35 successes, Russia achieved 17 successful launches without a failure, while European-built launchers reached orbit four times from five attempts. India launched two successful orbital missions, Iran conducted two orbital launch attempts with one success, and Israel launched a single, successful orbital mission.



In 2020 there were three major space missions to Mars launched by the United States, China and the United Arab Emirates (UAE).

The UAE's *Hope* reached Mars in early February and entered orbit around the Red Planet after a seven-month journey covering 494 million kilometres. It was launched from a Japanese space centre. The *Hope* orbiter has already commenced sending photos back to Earth. *Hope* was put in a wide orbit so it could study the planet's weather and climate systems, which means it also will see the planet's full disk. This was not possible with the previous orbits that needed to be closer to the planet's surface to allow high resolution photography.

A couple of days after the *Hope* orbiter, China's *Tianwen-1* also successfully entered orbit around Mars with its cameras and particle analysers scheduled to conduct surveys of the planet and look for potential landing sites in preparation for a mid-year landing.

The NASA mission to Mars, with its *Perseverance* rover landed on the Red Planet on 18 February, with its new terrain relative navigation system scanning and analyzing the terrain below, and then matching it up with maps in its database to prepare for touchdown.



The two main objectives of the mission are to look for evidence of past microbial life, and to test new technology such as a miniature robotic helicopter named *Ingenuity*.

Perseverance is about the size of a small SUV and can cover more ground than previous NASA rovers because it doesn't need to constantly stop and wait for instruction to arrive from Earth. It is another step in developing autonomous robots with this rover having the ability of “thinking while driving”, with onboard computing able to process the cameras'

images to generate a 3-D map of the terrain.

Tianwen-1 also has a degree of autonomous control capability with its scientists pre-setting an entry program on the probe. As it approached Mars, the probe finished the orbital entry process by itself.

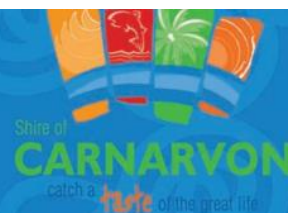
In the next CROtrak edition, I will look at the rise of privately funded space development.

THE DISH

This is the latest update on the OTC Dish on the condition of it and the funding needed to restore it. This article is from the Carnarvon Shire Community Newsletter. Thank you to all the CRO trackers who offered to write letters of support for the funding applications when it was 'rumoured' that it may have to be demolished. Nice to know that our WA and Eastern State CRO trackers are keen to help in supporting the Carnarvon Space and Technology Museum and saving this iconic dish.

From the Council Meeting

EDITION 42 / MARCH 2021



COUNCIL COMMITS \$500,000 TOWARDS FUNDING APPLICATION FOR MAINTENANCE WORKS ON THE OTC DISH

The Space & Technology Museum (Museum) has made a request to the Shire to support a funding application for major structural repairs to the OTC-Dish. With the Shire being the owner of the OTC-Dish, formal support from the Council is required to proceed with the funding application. The grant includes a special condition of a 25% cash contribution of the total project cost.

A Structural Condition report (report) of the OTC-Dish, prepared by Blacktop Consulting Engineers has been presented to Council with the purpose of the report to identify the current condition of the steel, concrete and infrastructure and prioritise further inspection and repair work to target problem areas. The intention of the proposed works will improve the structure of the OTC-Dish which will assist the Shire in ongoing maintenance. The estimated cost of the structure repairs is \$2m and includes

ITEMS	Estimate budget ex GST
Steelwork Repair Works	\$ 220,000
Steelwork Painting	\$ 740,000
Concrete Pedestal Remediation Works (60m ²)	\$ 100,000
Scaffolding to Underside of Reflector (30x30x30M)	\$ 660,000
Project Manager	\$ 99,000
Sub total	\$ 1,819,000
Project contingencies – 10% of estimate project budget	\$181,000
Total	\$2,000,000

Table 2: Total Estimate budget OTC-Dish structural repair works incl. Project Manager & Contingencies

Council. The working group has met on several occasions and has identified the need for the Museum to apply for the Building Better Regions Fund (BBRF) Round Five from the Federal Government.

The need to repair and maintain the OTC-Dish has been a financial hurdle for the Shire. The historical significance of the site, the success of the Space & Technology Museum and the commercial potential of the OTC-Dish are important to consider the request from the Museum. The BBRF funding provides an opportunity to make a significant financial contribution to the project.

The Museum will apply for a total of \$2,000,000.



Since recently the OTC-Dish has received significant international attention. In December 2020, the Museum was approached by a Canadian space and defence company, Thoth Technology Inc (Thoth).

Thoth has indicated it would like to make substantial investment into the Carnarvon OTC-Dish to further expand its capabilities into the Pacific. With the Carnarvon OTC-Dish they will be able to 'range into Resident Space Objects in geostationary orbits'. This will require installing state of art equipment and further structural improvements to the dish. Thoth has estimated the proposed works will require between \$ 6 and \$ 8 Million. Thoth has undertaken a similar project in Canada together with the Canadian Institute for Theoretical Astrophysics at the University of Toronto. A historic dish was revitalised to establish a successful pulsar research program.

Thoth has lobbied for support from State Government and provided an introductory letter to Hon. Dave Kelly, Minister for Water, Fisheries; Forestry; Innovation and ICT; Science. Thoth explained their intent and the need to support the structural works on the OTC-Dish.

Another significant event, which should be noted, is the Hybrid Solar Eclipse (Eclipse) on 20th of April 2023. This type of Eclipse is considered the 'King of Eclipses' [1]. When the sun, moon and the earth's discs will all align resulting in magnificent site. The best and only viewing point in Australia will be in Exmouth. Exmouth is the one of only four locations worldwide where the event can be witnessed on land. A significant influx of visitors to the region, including Carnarvon is expected.

The Space & Technology Museum is likely to benefit from this Eclipse, assuming the Eclipse will attract 'space fanatics' from across the world. Being able to offer a visit in and around the antenna (OTC-Dish) which assisted NASA's space program in the 60th & 70th will encourage people to come and stay in Carnarvon. Something the whole town will benefit from.

LOS - (Loss of Signal)

It is with great sadness that we continue to need a page to acknowledge our CRO Trackers who have passed since our December CRONicle.

Ted Cockram

I had an email from Ted Cockram's son Greg, to say, *"sadly after a long struggle with his health, dad passed away peacefully on Saturday, 2/1/21."*

It was of some comfort to hear Ted's passing was peaceful; he will be missed at our annual BBQ/Picnic we have each year in Whitman Park.

Our sincere condolences to Ted's family and friends.

Megan Limb (Evans)

Sadly, Megan passed away on 23rd January after a long illness.

Megan was known to many trackers as Meg Evans and was the OIC's Secretary; she was headhunted for the position in the 60's and was in Carnarvon for three years. Megan and Chris had been married for 52 years (they married in 1968).

Megan's husband, Chris, was so devoted to Megan, he was such a stalwart in nursing Megan at home until she passed.

Our deepest condolences go to Chris, Charmaine, and Justin, also to all Megan's family and friends.

Bob Hocking

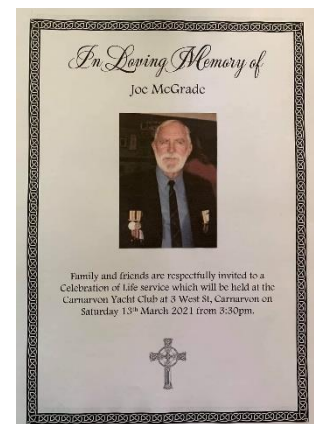
Bob passed away on 22nd February just one day after his 91st birthday. A memorial service was held on Thursday, 4th March in Midland.

Sincere condolences to Betty and our thoughts are with Betty and Bob's family and friends.

Joe McGrade

I have just seen a post on the Carnarvon Facebook page that Joe McGrade has passed away. A celebration of Joe's life was held at the Carnarvon Yacht Club on Saturday 13th March. Joe was the Housing Officer and worked in the town office.

Condolences from CRO Trackers go to Joe's family and friends.



CRO Trackers 14th Picnic Day

"No More Reunion Dinners...."

So ...the Perth Chapter of the CRO Trackers will be holding their 14th annual picnic / barbeque at:

Whiteman Park, Mussel Pool, Shelter V

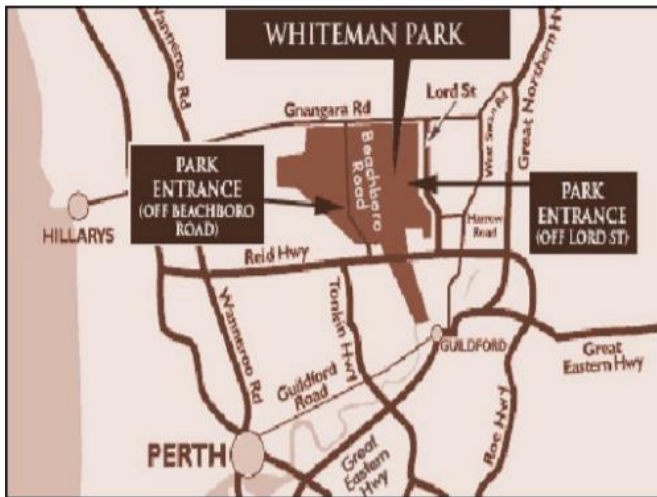
(it's under cover) some 20 kms and 25 minutes from the Perth CBD.

Date: Sunday April 11th, 2021 (1st Sunday after Easter).

Time: Lift-off 11 am WST

BYO: Everything

Look out for the banner at Shelter V



CRO Trackers at the 13th Picnic

And if you get lost



Please note: Donations to defray the cost of hiring will be accepted, gratefully, on the day. Thank you.

KEEPING THE MEMORY ALIVE



Carnarvon Tracking Station 1964 - 1975



Present Day

[Click for full size](#)

*Mick and Sue Coffey's Carnarvon Steel Supplies of Cornish St Carnarvon fabricated and donated the sign
Signwriting generously donated by W&K Painting of Egan St, Carnarvon
Photograph by Phil Youd - Edited by Terence Kieran*

[Click here to commence entry to the original station](#)

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98 Ogden St
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