



March 1965



March 1966



March 1969

Vol 13 March 2016



Keeping the Memory Alive

# THE TRACKERS' CROTRAK NEWSLETTE

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## NASA and the Omega Speedmaster ctd.

*From the now defunct website "clubspeedmaster.com".*

The general requirements were that the watch be a chronograph, anti-magnetic, waterproof, and shock-resistant. The case must be finished for non-reflective characteristics, and the crystal of the chronograph must be anti-reflective so that the dials could be easily read under light levels ranging from three foot-candles to direct, unfiltered sunlight.

Accuracy requirements both in the face up and face down positions should be plus or minus 6 seconds in a 24 hour period. The watches were then subjected to the specific environmental tests which included vacuum testing, oxygen atmosphere testing, low temperature, acceleration, random vibration test, electromagnetic induction tests, and a humidity test. The specific test parameters are listed as follows:

1. **Vacuum testing.** The chronograph shall be subjected to a vacuum of  $1 \times 10^{-6}$  Torr or better for a total of 72 hours. During the first 10 hours of testing the temperature of the items shall be increased to 160 (+/-10) degrees F. The temperature shall then be returned to 78 (+/-10) degrees F for the remainder of the test.
2. **Oxygen Atmosphere/Temperature Test.** The test items shall be placed in atmosphere of 95 +/-5 percent oxygen at a pressure of 5+/-0.1 psia and a temperature of 155 +/-5 degrees F for 72 hours. Gas samples extracted from the chamber area shall be analyzed for organic and CO content per test number 6 of D-NA-0002.
3. **Low Temperature.** The test items shall be lowered to 0 +/- 5 degrees F. This temperature shall be maintained for 10 +/-0.5 hours. The test items shall be allowed to return to ambient before functional testing.
4. **Acceleration.** The test items shall be subjected to 20's +/- 2 g's in each direction of the three (3) perpendicular axes.
5. **Random Vibration.** The test items shall be installed in a fixture and submitted to 7.8 g's RMS for 5 +/-0.1 minutes, as defined in figure 2 in each of 3 axes. The test fixture with the test items shall then be submitted to 3.2 g's for 12 +/-0.1 minutes as defined in figure 1, in each of the 3 axes [Note: Figures not provided].
6. **EMI Test.** The test items shall be subjected to all applicable requirements of Mil-STD-461A, if an electromechanical movement is employed.
7. **Humidity Testing.** The test items shall be submitted to a humidity test per MIL-STD-810B, Method 507, Procedure I, except minimum temperature shall be 68 deg F and maximum temperature shall be 120 deg F.

These tests were completed by November 1972, and the Deputy Administrator of NASA, George Low, in his letter to the Assistant to the President at the White House, Jonathan C. Rose, stated the results of the spaceflight qualification test.

*"The Bulova chronograph stopped three times during the humidity test, and stopped again during the acceleration test. Based on our criteria, the Bulova chronograph therefore, has not been qualified for use on the Apollo 17 mission... We will continue to use the Omega watch in the Apollo program".*

*To be continued*

## Whereabouts?

**A**s a result of Paul Dench supplying his "staffing list", augmented courtesy Brian Milne, the "Whereabouts" table of those for whom we have no contact details has expanded to more than one page. Thanks to those who have sent updates.

C Abott	Cheryl? Dixon	Vera Kastropil
Eric Ainsworth	L Donkin	John Keane
Gay Albon	John Draper	Mike Keen
Bill Arbery	Mike Dresser	Jim Keenan
Allan Barber	Bruce Duff	John Kelman
John (Allan) Barber	I Dunleavy	Gloria Klarie
Matt Barber	Dave Elliot	Roy Mallinson
Keith Barnard	J Erickson	Bob Marr
Barrow	Ian Few	Keith Mathieson
Deidre Beaumont	Ian Findlay	Alec Matthews
Elizabeth Beckett	G Francis	K McCarson
Keith Beveridge	Ben Franklin	Ian McDonald
Michael Billings	David Froom	S McDonald
G Bond	Jamie Gardiner	Frank McGregor
S Boyce	L Gardner	Eileen McLaughlan
Bill Boyle	S Garner	Don McLellan
B Bradley	G Carrick	Nola Meiklejohn (O'Byrne)
Phil Brindley	C George	R Miller
Hans Britz	Joe George	Ray Mills
Dave Brooks	Richard Govern	Marilyn Milner (Gobby)
T.F.A Brown	Brian Gray	Sharon Morgan (Todd)
W Brown	Ann Green	J Murray
J Burdett	Terry Haggett	Dennis Naylor
R Burdett	Peter Hardwicke	Gloria Neal
Robert Burns	Ron Harmes	Ellie Nichols
Joy Cameron	Anne Harvey (Brookes)	K Elton Nickerson
Geoff Cardwell	D Hatch	Graham Nielsen
John Cawthrey	Gail Heileman	John Noble
Brian Clifford	Ernie Hindley	? O'Brien
Keith Clifton-James	Dave Hine	Joan Oats
Barbara Cobcroft	A Holgate	W Oliver
Jim Crossland	Phyllis Hook (Watson)	Denis Owens
Noel Cunningham	J Hopkins	John Paddon
F Dawes	Deidre Howard	Diane Pitman (Housley)
Andrew Dempster	B Hughes	John Platten
Jean DeVis	Ed Humphreys	D Powell
Marilyn Dick	B Hunter	M.J.K Power
Olive Dick	D Hutchins	Wendy Puccinelli
Neville Dippell	Ian Jones	Lorna Quinn

*The quest continues; the list has got a bit shorter, thanks to George Allen; Sue van Dongen et al. I have been given information concerning the possible whereabouts of a few of these, but so far have not been successful in obtaining, or confirming, details. The last Reunion Dinner brought out some missing persons, but there are also a few who do not wish to be contacted.*

## Whereabouts? ctd.

Roger Ramsden	George Sefton-Bellion	Christine Thomas
A Rees	D Selby	Howard Thomas
Dave Rendell	Ron Shand	Jack Thompson
Frank Rice	Fred Sharland	Patsy Thompson (Nolan)
Doug Richards	? Sheehan	Larry Tomkins
D Richardson	Jeff Shuttleworth	Frank Toomey
Harry Richmond	Ray Skender	Mike Travell
Ralp Richmond	Lyn Smart (Willis)	Ernst Uhl
Dave Rickards	J Smith	Tony Vingerhoets
G Riley	George Small	Dave Walker
Brian Robinson	P Smith	Tom Ward
Lynne Rosser	Roger Smith	Mrs B Ward
Ted Rosser	Dave Standbury	N Wardle
Lindsay Sage	John Stanton	A Watermeyer
Stewart Sands	Bill Smythe	Irene West
Ron Sargeant	Hazel Snook (Howse)	Bernie Wilbourne
Bob Scott	Barbara Stephenson (Vernon)	Glen Williamson
Lorraine Scott-Malcolm (Erlandsen)	Barbara Teahan	Garnet Wilmott
Michael Scott-Malcolm	Barbara Teasdale	Brian Wilson
Russell Schwarzer	Des Terrill	Ray Zatorski
Dorcas Sefton-Bellion		

## Last of Catch the Buzz DVDs

The last of the "Catch the Buzz!" DVDs are now available for just \$5.50 plus postage from the museum.

It features:



- Carnarvon Airport Welcome;
- Kids Q & A;
- Cocktail Party, which includes Buzz's inspirational speech, and
- Opening of museum

It is a great memento if you were there; if you weren't ...you'll wish you were! But at least now you'll feel part of one of Carnarvon's biggest events.

Please order through the website at:

<http://www.carnarvonmuseum.org.au/buzz.html>



## From A Carnarvon Viewpoint - ctd.

### Gemini IV

America's first EVA

**4 - 8 June 1965 AEST**

*By Hamish Lindsay*

**Command Pilot:** James McDivitt

**Pilot:** Edward White II

**Backup crew:**

Command Pilot: Frank Borman

Pilot: James Lovell Jr.

**Fact Box**

Gemini spacecraft number 4.

Launch: 1515:59 UT 1015:59 USEST Thursday 3 June 1965

(0115:59 AEST 4 June 1965)

Splashdown: 1712:11 UT Monday 7 June 1965 (0312:11 AEST 8 June 1965)

Splashdown location: 27° 44'N by 74° 11'W

Mission duration: 97 hours 56 minutes 12 seconds

(4 days 1 hour 56 minutes 12 seconds.)

Inclination: 32.5°

Orbits: 66 orbits 62 revs

Apogee: Between 257 and 283 kilometres.

Perigee: Between 158 and 161 kilometres.

Period: 88.94 minutes.

Total distance travelled: 2,590,561 kilometres.

Spacecraft weight: 3,570 kilograms

EVA: 21 minutes by pilot.

Originally the first Gemini EVA, for Extra Vehicular Activities, commonly called a spacewalk, was scheduled for Gemini VI, but due to the Russian Aleksei Leonov's walk on 18 March 1965, and the American spacewalk suits and systems were announced as ready for use ahead of schedule, NASA began looking at bringing the spacewalk forward.

Although Grissom and Young had tried unsuccessfully to depressurise the cabin and open the hatch during one of their Gemini III simulations, the NASA hierarchy did reluctantly agree to have White stand up on his seat, but after Leonov's walk President Johnson is supposed to have snarled, "*If the guy can stick his head out, he can also take a walk. I want to see an American EVA.*"

**The EVA plan was kept secret**

Although there had been references to an EVA in Gemini IV, first stated in January 1964 and it was publicly mentioned by Gemini Deputy Manager Kenneth Kleinknecht at a press briefing in July 1964, NASA management were not committing themselves: "*...we shouldn't be putting guys in a vacuum with nothing between them but the little old lady from Worcester and her glue pot*", they warned, referring to the seamstresses at the suit manufacturing plant of the David Clark Company, in Worcester, Massachusetts.

So a Gemini IV EVA was kept a secret with only people directly involved in the know.

*To be continued*

## The Carnarvon Space Festival 2012 ctd.

By Hamish Lindsay



Gwoonwardu-Mia Luncheon  
Photograph Terry Kierans

Then, to end the visit we were taken back to Terminal 3 at the airport at around 1600, and headed for Perth, to end a very successful, memorable festival.

When I stepped down from the plane at Canberra airport and the winter cold bit me, for a moment I wished I was back in Carnarvon.

I would like to thank Phil Youd, and his team for his vision of developing the museum and inviting us, and looking after us so well; and Paul and Joan Dench for offering their wonderful hospitality during our two nights in Perth.

## LOS



Bill left the New Zealand Navy in 1960 and moved to Australia, living in Bridgetown WA, before Bill joined the Tracking Station and moved to Carnarvon.

Singing was one of Bill's great joys. His last outstanding performance was when he sang the NZ National Anthem at the 2015 Anzac Service on Port Macquarie's Town Green.

Bill passed away in December 2015.



**Extracts from  
"Recollections From My Years At Carnarvon"**

*David Johns*

**S** PAN staff ctd.

At SPAN we often worked at a relaxed pace and although we were conscientious and did our work to a high standard, there was usually time for a joke and a laugh; and sometimes the place was more like a beach party than a work area.



**The End of SPAN**

Don left Carnarvon in 1973. I worked at SPAN for three and a half years and was there until July 1974, when the SPAN equipment was dismantled and packed in boxes and sent temporarily to storage and then to the CSIRO Radio Physics Heliograph site at Culgoora (near Narrabri) NSW.

I moved to Culgoora to operate a temporary solar observatory (with a staff of five) and in 1977 the Ionospheric Prediction Service built a permanent solar observatory in the CSIRO grounds and we installed the Razdow telescope. I worked there until 1986 and I now work in Canberra.

I visited the Culgoora Solar Observatory recently. The CSIRO site is now The Australia Telescope site with a massive set of interferometer aerials on a 5-km rail track.

At the solar observatory, the Razdow telescope is still going well.



Calgoora Razdow Installation

The big change has been that the equipment has been automated and

the data has been digitised so that the observatory now has a staff of one but is producing a better quality of output than we did at SPAN Carnarvon with a staff of eight. That is the way technology has gone.

I enjoyed my time at Carnarvon. They were mostly good times, with some ups and downs. I have recorded some of recollections below, not necessarily listed in any particular order.

**Living Conditions**

For about the first year that I was at Carnarvon, I lived in unit 7 at the back of the Port Hotel. About a dozen trackers lived in the units at the back of the hotel. There was also a common room there and we sometimes socialised in the common.

There was an open are of kikuyu lawn besides the units and in the centre of the lawn was a septic tank with the top elevated about a foot above the ground. A rose vine grew over the top of the tank and somewhat disguised the tank's purpose and the septic tank was always politely referred to as "*the rose bowl*".

I well recall that on hot summer evenings, when the air hung dense and still, there was no mistaking the aromas that emanated from the rose bowl and hung around the units.

Life at the Port Hotel was interesting. The hotel was owned and managed by Wilson Tuckey. Wilson was in his thirties. He was energetic, ambitious, loud, was the town mayor and had other business interest around town. Some people found Wilson overbearing but I liked him and respected his can do attitude.

While I was living at the Port Hotel, Wilson bought a big run down empty shop in the main street, gutted it and built it into an arcade of classy shops.

*To be continued*

## Apollo: Where Are They Now?

*Thanks to Tony Sala for providing this. One of his hobbies is to see as many as he can, first-hand.*

The Apollo Command Module Capsules are on display at various sites throughout the U.S. and the world.

Some of the Apollo Lunar Modules were deliberately targeted to impact the Moon to provide artificial moon-quake sources for seismic experiments. The list below gives the locations of these displays, and impacts where applicable; plus links to NASA's *Master Catalog* for descriptions and details of the missions (for those of you reading the pdf version of these newsletters).

### [Apollo 6](#)

Command Module  
Fernbank Science Center, Atlanta, Georgia

### [Apollo 7](#)

Command Module  
Frontiers of Flight Museum, Dallas, Texas

### [Apollo 8](#)

Command Module  
Chicago Museum of Science and Industry, Chicago, Illinois\*

### [Apollo 9](#)

Command Module "Gumdrop"  
San Diego Aerospace Museum, San Diego, California

### [Apollo 10](#)

Command Module "Charlie Brown"  
Science Museum, London, England\*

Lunar Module "Snoopy"  
In heliocentric orbit

### [Apollo 11](#)

Command Module "Columbia"  
The National Air and Space Museum, Washington, D.C.\*

Lunar Module "Eagle"  
Jettisoned from the Command Module on 21 July 1969 at 23:41 UT (7:41 PM EDT). Impact site unknown.

\* Visited by Tony Sala

*To be continued*

## ACROBITS '73

### PSYCHELIRIUM TREMENS

And BIRDS were winged creatures like robins and swallows,  
 When FUZZ was a substance that felt like lint,  
 And BREAD came from bakeries, not from the mint,  
 When SQUARE was a ninety degree angle in form,  
 And COOL was a temperature not quite warm,  
 When ROLL meant a bun, and ROCK meant a stone,  
 And HANG UP was something you did on the phone,  
 When CHICKEN meant poultry, and BAG meant a sack,  
 And JUNK, trashy castoffs and old bric-a-brac,  
 And JAM meant preserve that you spread on your bread,  
 And CRAZY meant barmy, not right in the head,  
 And CAT was a feline, a kitten grown up,  
 And TEA was a liquid you drank from a cup,  
 And SWINGER meant someone who swang on a swing,  
 And PAD was a soft sort of cushiony thing,  
 And WAY OUT meant distant and far, far away,  
 And a man couldn't sue you for calling him GAY,  
 When DIG meant to shovel and spade in the dirt,  
 And PUT ON was something you did with a shirt,  
 When TOUGH described meat too unyielding to chew,  
 And making a SCENE was a rude thing to do,  
 Words once so sensiblie, sober and serious,  
 Are making the freak scene like sychedelirsus.  
 It's GROOVY man, GROOVY --- but English it's not,  
 Methinks that the language has gone to the POT.

~~o~~



### MY JOURNEY TO AUSTRALIA

by D.A. Pettinger, U.S.B.

The final decision to emigrate is an extremely tough one to make, as no doubt some of the people who read this article will know only too well. I eventually decided it was what I wanted to do and set about applying for an Assisted Passage. Several months passed during which the correspondence to and fro between myself and the Chief Migration Officer at Canberra House in London, would easily have sunk the proverbial battleship.

*To be continued*

## Nvidia sinks moon landing hoax using virtual light

*Courtesy CNET*

To the conspiracists, it may never have happened — or didn't happen like NASA said it did — and oh by the way, we duped the Russians into losing the space race.

Voxel global illumination, however, proves them wrong, says Nvidia. The technique, which the new GTX 970 and 980 can tap into, lets developers use dynamic lighting that will bounce, diffuse and reflect in real-time with unprecedented fidelity when new objects are added to a scene.

Nvidia's GPUs are enhanced chips that allow graphics cards to more effectively and efficiently take data from a central processing unit, or CPU, and turn it into moving images on a display. In other words, voxel global illumination is the perfect rendering tool to tackle moon landing hoaxes that often use as evidence for their claims lighting discrepancies with NASA photography.

The result is a near-perfect replication of the 1969 Apollo 11 landing site. Nvidia tackled some of the most persistent claims used to support a moon landing hoax, starting with the notion that astronaut Buzz Aldrin couldn't have been illuminated when descending the ladder to the moon's surface if he was hidden from the sun by the spacecraft.

After talking with many engineers and NASA employees, Nvidia discovered



One popular claim by those who say the moon landing was a hoax is that astronaut Buzz Aldrin, photographed here by fellow astronaut Neil Armstrong, could not have been illuminated, because he was in the shadow of the Apollo Lunar Module.

NASA

that there were two key factors, both of which could be addressed using voxel global illumination.

*To be continued*

# 10<sup>th</sup> Picnic Day

*"No more Reunion Dinners ..."*

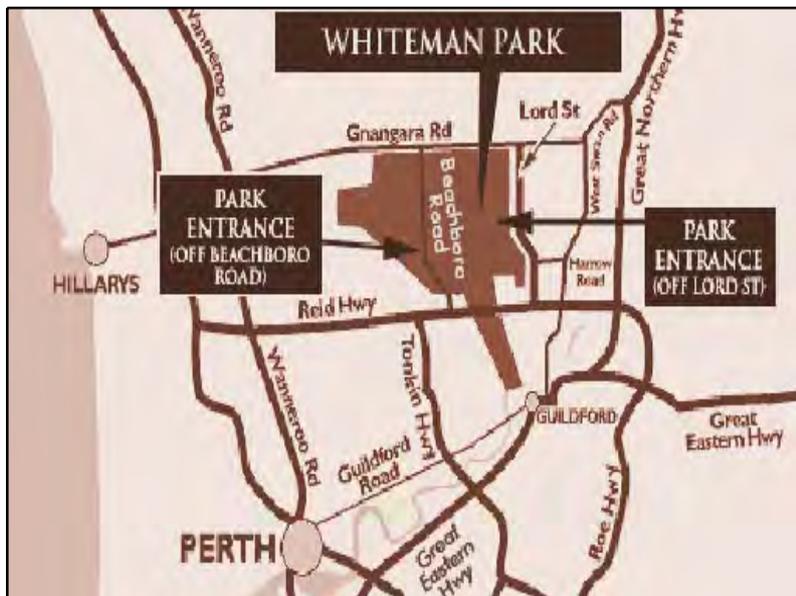
**S**o ...the Perth Chapter of the CRO Trackers will be holding their tenth annual picnic / barbeque at:

**Whiteman Park, Mussel Pool, Shelter V**  
(it's under cover)

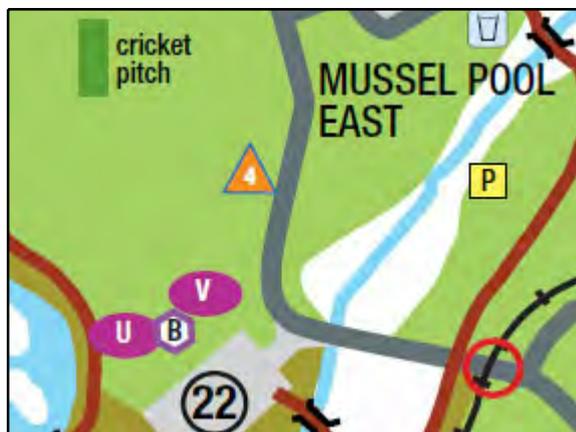
some 20 kms and 25 minutes from the Perth CBD.

- Date:** Sunday April 3<sup>rd</sup> 2016 (1<sup>st</sup> Sunday after Easter)
- Time:** Kick off 11 am WST
- BYO:** Everything

**Look out for the banner at Shelter V**



... and for those who get lost



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

# Keeping the Memory Alive

## 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 by W&K Painting of Egan St, Carnarvon*

*Photograph by Phil Youd - Edited by Terence Kierans*

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

**M**y sincere thanks to all of those who have contributed to the website so far;  
listed at: [http://crotrak.com/thank\\_you.htm](http://crotrak.com/thank_you.htm) .

If undelivered, please return to:  
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