December 1968

December 1972

Keeping the Memory Alive

Vol 12 December 2014

THE TRACKERS' CRONICLE

Included in this issue:

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NASA and the Omega Speedmaster ctd.

From the now defunct website "clubspeedmaster.com".

1962 Test Program

In 1962, NASA began the search for a wristwatch that could be worn by the Gemini and Apollo astronauts. NASA purchased watches from several companies and devised a series of stringent tests and procedures that were to be followed to the letter, to test them. These were known as "Qualification Test Procedures" and a (necessarily) abridged version follows below. The only watch that survived this testing to a satisfactory level was the Omega Speedmaster Professional.

It is significant to note that this was a standard, production line model which was purchased over-the-counter, incognito at a Houston jewelry store.

A: The watches will be wound immediately prior to each testing phase.

B. The stopwatch feature should be operated during each test and during periods between tests. The stopwatch operation should be recycled immediately before and after each test and when delays occur, at two to six-hour intervals between tests.

C: Time accuracy checks should be made before after each test, at one-hour intervals during testing (when possible) and at two to' six-hour intervals between tests, if testing delays occur.

D: In conjunction with each time check, the watches should be inspected for damage to the case, crystal, dial, strap and buttons, and for the presence of moisture underneath the crystal.

E: A watch should be withdrawn from further testing if the following failures occur:

Complete watch operation failure with no restart capability

Complete stopwatch operation failure with no restart capability

Two watch operation failures of any type even though restart capability exists

Cracked or broken crystal

Broken winding stem or stop watch controls

Watches which had been successful during the pre-selection phase underwent a total of 11 different tests...

1. **HIGH TEMPERATURE:** 48 hours at a temperature of 160°F (71°C) followed by 30 minutes at 200°F (93°C). This under a pressure of 5.5 psia (0.35 atm) and relative humidity not exceeding 15%.
2. **LOW TEMPERATURE:** Four hours at a temperature of o°F (-18°C).

To be continued

Whereabouts?

As 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
Eric Ainsworth
Gay Albon
Bill Arbery
Allan Barber
John (Allan) Barber
Matt Barber
Keith Barnard
Barrow
Deidre Beaumont
Elizabeth Beckett
Keith Beveridge
Michael Billings
G Bond
S Boyce
Bill Boyle
B Bradley
Phil Brindley
Hans Britz
Dave Brooks
T.F.A Brown
W Brown
J Burdett
R Burdett
Robert Burns
Joy Cameron
Geoff Cardwell
John Cawthrey
Brian Clifford
Keith Clifton-James
Barbara Cobcroft
Jim Crossland
Noel Cunningham
F Dawes
Andrew Dempster
Jean DeVis
Marilyn Dick
Olive Dick
Neville Dippell

Cheryl? Dixon
L Donkin
John Draper
Mike Dresser
Bruce Duff
I Dunleavy
Dave Elliot
J Erickson
Ian Few
Ian Findlay
G Francis
Ben Franklin
David Froom
Jamie Gardiner
L Gardner
S Garner
G Carrick
C George
Joe George
Richard Govern
Brian Gray
Terry Haggett
Peter Hardwicke
Ron Harmes
Anne Harvey (Brookes)
D Hatch
Gail Heileman
Stan Hills
Ernie Hindley
Dave Hine
A Holgate
Phyllis Hook (Watson)
J Hopkins
Deidre Howard
B Hughes
Ed Humphreys
B Hunter
D Hutchins

Ian Jones
Vera Kastropil
John Keane
Mike Keen
Jim Keenan
John Kelman
Roy Mallinson
Bob Marr
Keith Mathieson
Alec Matthews
K McCarson
Ian McDonald
S McDonald
Frank McGregor
Eileen McLaughlan
Don McLellan
Nola Meiklejohn (O'Byrne)
R Miller
Ray Mills
Marilyn Milner (Gobby)
Sharon Morgan (Todd)
J Murray
Dennis Naylor
Gloria Neal
Ellie Nichols
K Elton Nickerson
Graham Nielsen
John Noble
? O'Brien
Joan Oats
W Oliver
Denis Owens
John Paddon
Diane Pitman (Housley)
John Platten
D Powell
M.J.K Power
Wendy Puccinelli
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
A Rees
Dave Rendell
Frank Rice
Doug Richards
D Richardson
Harry Richmond
Ralp Richmond
Dave Rickards
G Riley
Brian Robinson
Lynne Rosser
Ted Rosser
Lindsay Sage
Stewart Sands
Ron Sargeant
Bob Scott
Lorraine Scott-Malcolm (Erlandsen)
Michael Scott-Malcolm
Russell Schwarzer
Dorcas Sefton-Bellion
George Sefton-Bellion
D Selby
Ron Shand
Fred Sharland
? Sheehan
Jeff Shuttleworth
Ray Skender
Lyn Smart (Willis)
J Smith
George Small
P Smith
Roger Smith
Dave Standbury
John Stanton
Bill Smythe
Hazel Snook (Howse)
Barbara Stephenson (Vernon)
Barbara Teahan
Barbara Teasdale
Des Terrill
Christine Thomas
Howard Thomas
Don Thompson
Jack Thompson
Patsy Thompson (Nolan)
Larry Tomkins
Frank Toomey
Mike Travell
Ernst Uhl
Tony Vingerhoets
Dave Walker
Tom Ward
Mrs B Ward
N Wardle
A Watermeyer
Irene West
Bernie Wilbourne
Glen Williamson
Garnet Wilmott
Brian Wilson
Ray Zatorski

Catch the Buzz

The "Catch the Buzz!" DVDs are now available for sale at the museum. Cost is $22.00 plus postage. 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

CARNARVON SPACE & TECHNOLOGY MUSEUM

From A Carnarvon Viewpoint - ctd.

Gemini III

The first Gemini manned flight.
24 March 1965 AEST
By Hamish Lindsay

Carnarvon's first pass.

Our first pass was at 0:50:27 GET (0114:27 AEST). Chris Kraft advised Capcom Conrad to give the spacecraft a GO for a second orbit. After a technical discussion Grissom said, "*I believe I see a light from Perth.*"

Conrad, "*Roger. I understand you see a light from Perth. We'll have a radiator status...*"

First orbit change of a manned spacecraft.

At 1:33:00 GET (0157:00 AEST) during the first pass over Corpus Christi, Texas, Grissom fired two 38.5 kilogram rockets of the Orbit Attitude and Manoeuvring System (OAMS) for 74 seconds to slow Molly Brown down by 15.5 metres/second and drop it down into a nearly circular orbit of 156.1 kilometres perigee by 169 kilometres apogee. That was a reduction of 56.3 kilometres, the first orbital manoeuvre by any manned spacecraft. This burn was longer than any on Mercury, as their thrusters weren't built for long burns and they didn't carry enough fuel.

Texas Capcom, "Texas standing by for your manoeuvre."

Young, "Do you want me to give Texas a mark when you start burning?"

Grissom, "I will. Twenty seconds to burn. You got that Texas?"

Grissom, "Three seconds."

Grissom, "Mark."

Young, "Okay. They appear to be firing good."

Capcom, "Roger. Texas confirms OAMS thruster firing."

Grissom, "A bolt just stuck up against the instrument panel. How much time to go?"

Capcom, "Molly Brown, how are your attitudes holding?"

Grissom, "Perfect."

Young, "Mark. 44 seconds to go."

Grissom, "They sure burp a lot, don't they? That may be attitude thrusters though. Probably what it is."

Young, "Okay."

Young, "Coming up on one minute.....Mark."

Grissom, "7 feet per second to go."

Young, "A minute..... five."

Grissom, "What did we do? Burn down....give me a mark."

Young, "Okay..... 4....3....2....1....Mark."

Grissom, "Thrusting complete."

Capcom, "Roger. Confirmed manoeuvre complete."

Young, "That burn was one minute and fourteen seconds by our watches."

A first for a manned spacecraft. "That was a big event, really a big event," Grissom said later.

To be continued

The Carnarvon Space Festival 2012 ctd.

By Hamish Lindsay

And of course coming to even more modern times, we heard about two or three weeks ago the most exciting and amazing news that Western Australia will co-host the square kilometre array radio telescope.

This is arguably the largest project that humanity has ever undertaken, certainly in the sciences. We are going to have five thousand radio telescopes in two continents, looking deep to understand the evolution of the

"SKA overview" by SKA Project Development Office and Swinburne Astronomy Productions

Universe from 13.7 billion years ago. Looking at how stars and galaxies formed, and really exciting, looking into the atmosphere of planets circling other stars – to look for the molecules that are signs of life such as methane so we might not know if there are little green men and women out there, but we would get some hint whether we were the only place in the Universe that has life and one can hardly imagine that that would be the case.

But let's get more specific to Carnarvon. What an important part you have played. It's just great to know that from 1963 onwards this was the largest non-US based site for tracking what was happening in the exciting space missions for the 220 people based here. And the jewel in the crown, of course, was the Apollo missions, with Dr Buzz Aldrin stepping onto the Moon – that's the jewel in the crown but we have lots of pearls in the crown too – the Skylab, you'll see a little piece of it inside, that landed near Balladonia; SPAN, the Solar Particle Alert Network important to watch for solar flares so we don't get all our communication systems blacked out in the fifteen hours it takes for those particles to swoop out towards us from the Sun. Observations of Jupiter and the Giotto Mission that flew past Halley's Comet that we all saw so well from down here. And let me tell you now that we have a wonderful scientist just attracted to Western Australia from Imperial College, London, Professor Phil Bland, whose working at Curtin Uni, who actually now has a piece of comet collected when the subsequent mission actually bumped into a comet and collected some pieces and brought them back. But without Giotto doing its work we couldn't have kept moving forward. And, of course, Woomera, was busy testing rockets, but by golly, they were being tested here as well, and tracked from this very station.

HAD Rocket and Launcher
Photo - Glen Secombe

To be continued

Extracts from "Recollections From My Years At Carnarvon"

David Johns

SPAN work and equipment

The SPAN site was located a bit less than a kilometre west of the T&C building; about a hundred metres west of the entry boom gate. SPAN was an acronym for the Solar Particle Alert Network.

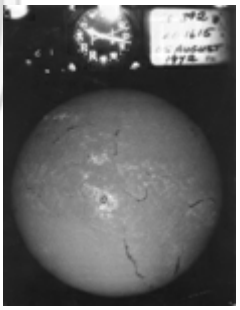
NASA had built a SPAN station at Carnarvon WA, Canary Islands Spain, and at Boulder USA so that the sun could be monitored 24 hours a day. All of the SPAN sites monitored the sun while ever it was above their horizon, so even during cloudy weather, the overlap of the sites meant that the sun was being monitored all of the time, except on the odd occasions when there was simultaneously bad weather at more than one site.

The SPAN building was a brick and cement building about 18 metres by 9 metres which contained office and storage space, racks of electronics equipment and a well equipped photographic dark room. There was a telescope located in a small circular shaped building with a rotating astronomical dome roof on the northern end roof of the SPAN building.

The main equipment at SPAN was a 5-inch diameter refracting telescope with a special narrow band optical filter set at the primary Hydrogen spectrum emission line. The telescope had been made by an inventive scientist named Razdow so the telescope was known to all as "the Razdow telescope".

The telescope was mounted on an hour angle/declination mount which means that it was on an axle exactly parallel to the earth's axis and as the earth rotated forward the telescope would rotate backwards at the same speed so that it would stay pointing at the same spot in space, that is, at the sun. If it was set pointing at the sun at the beginning of the day, it would point to the sun all day. A small tracking telescope with internal light sensors was mounted on the side of the main telescope and sent tracking corrections to the main telescope drives so that they automatically compensated for small tracking errors and changes in declination. At sunset, the telescope would be reversed back to the eastern horizon to be ready for the next day.

In simple terms, the sun is a giant thermo-nuclear furnace. It has a centre temperature of about 13 million ^{o}C and a surface temperature of about 6,000 ^{o}C.



The solar surface has localised hot spots that flare and spit off X-rays and electron and proton radiation which sprays out through the solar system and is known as the solar wind.

The part of the solar wind that passes near the earth becomes trapped in the earth's magnetic fields and is absorbed in the upper atmosphere which causes radio propagation disturbances, magnetic storms and visible polar auroras but almost none of the solar radiation penetrates down to ground level so terrestrial man is protected from solar radiation.

However, if man is outside of the earth's atmosphere and magnetic field and on his way to the moon, or worse still, walking on the surface of the moon where there is no atmosphere and no magnetic field, man has no effective protection from solar radiation.

To be continued

The Fisherman Who Rode a Horse

Completion of an extract from the autobiography of Ken Watters.

Two items that I would dearly love to have now were a large floor to ceiling antique sideboard that could grace the best living rooms in the country and a huge free-standing grandfather clock. As Dad said they would never have fitted inside the house in Carnarvon anyhow but what a shame we never put them into storage. The old Lloyd house has since burnt down with the loss of a little girl's life. I don't know if the clock and sideboard were in the house at the time but if they were their loss would have paled into insignificance alongside the loss of the family living there at the time.

Christmas of '67 was a very quiet one; it was the first that Judy and I had together. My move to Perth was rapidly approaching and I was spending all my spare time trying to catch up with my mathematics, physics and other subjects that I knew would be essential if I was to make a good start at WAIT. The time soon came to leave and I loaded up the VDub and said my farewells to family and friends and headed south for the start of a new adventure.

Skylab

MEMORANDUM

To: OPERATIONS SUPERVISORS

From: Company Manager
File: CM 28/6.13; 476
Date: 7th August 1973.

SUBJECT: DELETION OF REFERENCE TO REVOLUTIONS

1. In future, all reference to revolutions is not acceptable. Where the subject matter is committed and consequently infers this type of activity, a suitable replacement will be used. Useful words which indicate this can be found but the circumstance under which they are used should be referred for endorsement to the Group Supervising Engineer concerned or the C.E.E.

2. Where no suitable word can be found, all possible alternatives will be submitted and I will personally select another one.

(P.C. DENCH)
COMPANY MANAGER.

cc Site Engineers
CEE
TRAK
DATA
L. Brown (DOS)

ACROBITS '73

PRESIDENT'S REPORT

As your first Lady President I must say how pleased I am to accept this honour. Is this a further step to 'Equality for women?'. I wouldn't mind the 'equal pay' part, but I'm not so sure about the rest of the equality. Joking apart I realise that this is a responsible position and I will do my best to be worthy of your confidence.

So far since their election your committee, without my help have arranged two functions. Both of these were well organised, well attended and well received by the members present. Only people who have worked on committees know just how much effort, both mental and physical, go into the organisation of each and every occasion designed and presented for our enjoyment and entertainment.

This brings me to an interesting observation. In order to acquaint myself more fully with the Social Club procedure I have been browsing through some of the old records and find that quite a number of the 'Old Stalwarts' of the CTSSC are still with us. What a pity that their experience in Social Club matters is hidden behind so many doors. I hope that before very long some of you will come forward and give your present committee the benefit of your valuable experience.

Our next project is the Annual Ball (earlier this year due to Skylab).This of course is the, biggest and most important event in the year. I do hope that as many of you as possible will give us your help, particularly on the 'morning after'.

Your help, suggestions or criticism will be welcomed, and you all know how to contact me.

Norah of Logistics.

Steven Batty with his prize winning Collie "Solo"

EDITORIAL

I am delighted with the support received for this issue and it is obvious that it will not be possible to use al1 the material that has come to hand.
I must thank all our contributors and the typing staff for their effort in producing this issue. Many thanks again to all who contributed, keep the articles coming.

Geo. Allan

Opening of Museum - Phase 2

"And ex-trackers of Australia shall think themselves accurs'd, they were not here"

(With apologies to Shakespeare)

Official Opening
Photograph by Laraine Glocke

We left home at the ungodly hour of 5 am to find our way to the Skippers' terminal in Valentine Road. My trusty GPS failed me this time and we didn't arrive until the official close of booking in at 6:30 am. However all was well and caught up with Teeny Bopper so we could fly in adjacent seats.

Phil invited me in to meet Andy Tomas whom I found to be very relaxed and informal. After a brief chat I looked round the VIP lounge and only noted another five ex-trackers, namely Paul Dench, Laraine Glocke (aka Teeny Bopper), John Harmsen, John Lambie and Wendy Yarnold. So few compared with two years ago.

Andy and Lauri Glocke

TB and I were flying on a privately booked regular flight and arrived in Carnarvon to await the chartered VIP flight and transport to The Fascine Lodge to deposit our luggage. The official bus then transported us to the sparkling new cafe at the Heritage Precinct, One Mile Jetty, to attend a function held for supporters and sponsors of the Museum and other dignitaries, including the Shire President; who among other things, greeted and presented Andy Thomas.

Andy Thomas with Shire President Karl Brandenberg
Photographer unknown

After the official speeches we were let loose on a delightful repast of tasty snacks, generously provided by a bevy of volunteers. It was here too that I caught up with Mick Coffey who has been such a generous donor and volunteer worker for the Museum.

On my return to the motel I collected my luggage and was driven to my accommodation, kindly provided by Sue van Dongen.

After a hasty unpack I slept for a couple of hours in preparation for the night's festivities at the Woolshed, while Andy gave a talk and answered questions at St Mary's.

Andy Thomas at St. Mary's

To be continued

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

My sincere thanks to all of those who have contributed to the website so far; listed at: http://crotrak.com/thank_you.htm .

Quotations

"I'd like to say I was smart enough to finish six grades in five years, but I think perhaps the teacher was just glad to get rid of me."
~ Alan Shepard

"I fully expect that NASA will send me back to the moon as they treated Sen. Glenn," and if they don't do otherwise, why, then I'll have to do it myself."
~ Pete Conrad

"Science has not yet mastered prophecy. We predict too much for the next year and yet far too little for the next 10."
~ Neil Armstrong

"But I'm the only one who can paint the moon, because I'm the only one who knows whether that's right or not."
~ Alan Bean

Keeping the Memory Alive

And from the crew of Apollo 8, we close with good night, good luck, a Merry Christmas, and God bless all of you — all of you on the good Earth.

A very merry Christmas,

and a healthy and prosperous New Year

to you and your families

from the editor.

If undelivered, please return to:
CRO Trackers
PO Box 93, Quinns Rocks, WA 6030