



NORTHERN DISTRICTS MODEL ENGINEERING SOCIETY (PERTH) INC.

January — February 2020

Sandgroppers 2019 weekend

WITH a state-wide total fire ban in place and the maximum temperature predicted to reach a November record of over 40°C, Saturday 9 November was never going to be quite the day we expected!

Traction engines and coal fired steam locos couldn't run, so apart from a couple of diesel electric outline locos there was little activity on the track. Instead, the day turned into a convivial talkfest under the covered patio, with a good number of members and visitors coming and going throughout the day, and several interesting static exhibits.

The garden railway enthusiasts managed to get a few good runs going and there was quite a bit of interest from other members who would normally have been into the "bigger stuff". Some were even tempted over to the "dark side" with offers to drive Garth Caesar's Garratt — we won't mention names!

Despite numbers being down on previous years, Saturday night dinner in the club room was attended by over 30 people with plenty of excellent food and several nice touches like chocolates and a glass of port to finish off with. Another convivial gathering.

Sunday was somewhat cooler so several steam locos were running. There was a happy party atmosphere as the Smith family and others had birthday parties going for friends and relatives with lots of excited kids having a great time.

Our thanks go to Sue Smith and Peter Smith for all the hard work they put into organising this event.

Article by Jim Clark



Above: Lots of interest in the garden railway... Photo: Geoff Wilkinson



Above: Ken Austin's magnificent Baldwin loco was a good talking point.

Below left: No more time for talking while tucking into the excellent dinner!

Below: The Smith family in action on Sunday. Photos: Jim Clark

| Inside this issue: | |
|---------------------------|----|
| President's report | 2 |
| Sandgroppers | 4 |
| Tasmania | 5 |
| Early valve gear | 7 |
| Rail Heritage WA | 9 |
| The 'odd couple' | 10 |
| More Sandgroppers... | 12 |



More details and photos on pages 4 and 12

December 2019 President's Report

WELL, the energy sapping heat this December has made its mark on the end of 2019, with very hot weather and total fire bans having an effect on our usual end of year activities.

The Sandgroper weekend became a 'Diesel Day', and this was supplemented by a lot of action and interest in the Garden Railway, these little locomotives being the only steam to run on the Saturday.

Sunday saw some cooler weather and a relaxation of the fire bans, however many of the visitors had already left and Sunday wasn't very well attended. Many thanks to Sue and Peter Smith, who ran a very well organised event with ample lunches and a fantastic evening meal for all to enjoy.

Paul Costall has prepared the schedule for 2020 with holiday runs planned for 7 January and 21 January. He has recently emailed all members to get enough drivers and to fill the other positions necessary to run safely on those days. Please take the time to respond to Paul and make these events successful. One of the most important preparation items for these run days, is to ensure that the leaf litter has been cleared from all the tracks prior to steaming up.

The January public run is scheduled to take place on Australia Day, 26 January. This could prove to be a very busy day, so please make an effort to attend if you can. Lesley has advised that she is unable to attend to the kiosk duties on that day, so if there are any volunteers to help out, please let Sue Smith know.

We have been advised that David Rapley has now formally taken over the presidency of Westside BMX. We are planning to have an informal meeting with their executive committee early in 2020 with the view to establishing a good working relationship for the future.

Below left: Charles Coppack and Lyall Austin laying the first tile.



Below centre: Ron Casotti cuts in the last tile.

Right and below: The refurbished meeting room and new reading room area.
Photos: Geoff Wilkinson



President's Report

By Geoff Wilkinson

The NDMES treasurer, Sue Smith, has now finally cut over the club finances from a spreadsheet to an on-line system. The spreadsheets have now been discontinued after running the finances in parallel for the past couple of months. This new system will provide more flexibility for maintenance of the finances, and will provide the ability to more easily put the club finances up on the screen at club meetings, as was done at the December general meeting.

The clubroom upstairs has now been painted and carpeted, and a bit more clean-up will make it much more functional for members. The Internet is up and running and we intend to acquire a couple of computer terminals for member's use, in conjunction with the functioning reading room. This is a slow process as we want to ensure we get the right equipment and software that can be properly used.

The refurbishment effort has now moved down to the kitchen area where the counter has been lowered, and an air conditioner has been purchased to make a more comfortable work area. The next clubroom project is an upgrade to the foyer area.

Many thanks to Charles Coppack, Ron Casotti and Lyall Austin for their initiatives and efforts in achieving the recent clubroom upgrades — see photos below.

In closing, I would like to extend Christmas wishes to everyone, and let's all look forward to a productive and happy 2020.

Geoff Wilkinson, president



Log sheets for club locos

Spare forms can be found in the club loco folder on the shelf near the sign-in book. **Steve Reeves**

Sandgropers 2019

UNFORTUNATELY it was a 41 degree day on the Saturday, so we were unable to run any solid fuel locos. So it was a sit around and talk day.

Nevertheless there was a good turn out of members and visitors. Several people brought along their latest projects to show — see photos.

Later in the day both the garden railway and the boiler group ran their gas fired equipment, putting on a good show.

The evening ended with a nice dinner which was well attended.

On the Sunday, the day was much cooler, so the ground level track was in use. Allen Ward and the Smiths had their extended families attending, as many in the group were celebrating birthdays. Peter Smith ran 'Billy', and the club steamer and diesel were in use as well as 'Waterloo'. I also had my traction engine going as a working display.

This also was an excellent day out.

Article and photos by Steve Reeves



Above: Peter Smith driving his recently completed Wombat 'Billy', with Sue providing helpful advice from the rear!



Left: Ken Austin is building a Baldwin 2-6-6-2 tank in 7 1/4" gauge. It is very impressive and is coming along nicely.



Right: Also progressing well is Keith de Graauw's Phantom. He brought along parts for the smokebox.

Sandgropers wrap-up report

WE were pleased with the weekend despite the weather. Everyone seems to have a good time chatting, eating and drinking. Saturday night dinner was great: good food, good company and a little port and chocolates to finish off — what more could you ask for!

Sunday was a little short on club members but the birthday parties in the centre picnic area were lovely to see, with all the children riding the trains and having fun and eating lots of yummy food.

We were also pleased with the positive feedback from members and visitors to the Sandgropers event, which took a number of months to organise.

We would like to thank those who supported this event with their contributions of time, effort and food donations.

And thanks again to all those who attended!

Sue and Peter Smith

Transportation to Tasmania (cont...)

Continued from the November-December 2019 issue

The opportunity in Tasmania — heritage

Tasmania also hosts the very unique Abt rack railway, now called the West Coast Wilderness Railway. The railway runs from Queenstown to Strahan and was once the route for carrying copper for the Mount Lyell Company's mining operations to the port of Strahan. Three of the five original steam locos have been restored and are the centrepiece of this major tourist attraction.

The opportunity in Tasmania — modern day

TasRail is a freight only operator, with the last passenger train having run in 1978. Many people over here have fond memories of taking the Tasman Limited from the north end of the state to Hobart and vice-versa. The current TasRail network consists of 611km of single line track. There are 6 defined lines on the network:

- The Western Line, running from the port of Burnie to Launceston via Western Junction;
- The South Line, running from Western Junction to Brighton Hub (about 26km north of Hobart)
- The Bell Bay Line running from East Tamar Junction (in Launceston) northwards towards George Town and the Port of Bell Bay;
- The Melba Line, which runs south out of the port of Burnie to Rosebery on the west coast;
- The Fingal Line which branches off the South line at Conara and runs to (surprise, surprise!) Fingal;
- and finally the Derwent Valley Line which runs from Bridgewater Junction (near Brighton Hub) to Boyer. This route used to continue much further, but only 12km is currently operational.

OUR NETWORK AND TERMINALS



The prime commodities carried by TasRail are intermodal traffic between Burnie, Brighton and Boyer, coal from Fingal to Railton and Boyer, cement from Railton to Devonport, mineral concentrates from Rosebery to Burnie, logs from Brighton to George Town and aluminium ingots from George Town to Burnie.

TasRail also owns the shiploader at Burnie, which transfers the ore concentrates on to waiting ships.



Above: One of the restored rack railway steam locomotives on the West Coast Wilderness Railway. Photo: Jim Clark

It was not long before I was getting stuck into the task of letting contracts for packages of work for track renewal, bridge and culvert works, level crossing upgrades, coastal erosion schemes and track ballast and formation renewals.

Funding for all the works was provided via equal contributions from the Australian and Tasmanian Governments. \$120,000,000 had been allocated to TasRail to invest in the 4 year period from 2015 to 2019. We refer to the works as the Infrastructure Investment Program. The funding between 2015 and 2019 was referred to as "Tranche 1". This distinguishes it from the Tranche 2 funding which we were delighted to have secured from the respective Governments, which will take us through to 2023.

We continue to work closely with the two governments to continue the network rebuild, with a view to securing further capital funding.

We did spend the Tranche 1 funding very wisely and as a result have seen some very tangible improvements in asset performance. One of our key measures of the track asset is the number of temporary speed restrictions imposed on the network. Currently over 90% of the network runs at its designed line speed, which is a very strong position to be in.

The June 2016 Floods

Within a month of me joining TasRail, we were dealt a major blow by mother nature. On Saturday the 5th and Sunday the 6th of June, the heavens opened over the northern part of Tasmania. Our network suffered from embankment washout and structural damage at many locations.

The story continues in future issues...

Article by Gilbert Ness

Progress on donated 'Blowfly'

A 5" gauge 'Blowfly' locomotive built by the late Ted Symonds was generously donated to the NDMES by his wife. Ted was a floor manager for the ABC and built a track around his house where he used to run the loco. Clive Chapman remembers going there with a few others for enjoyable steam-ups on the private track.

Ted built and tested the boiler for the loco with some assistance from club members. When recently tested at a boiler group day, it was all still in working order although in need of some maintenance and boiler re-certification.

Paul James and Clive Chapman have taken on the job of restoring Ted's loco to its former glory, starting by stripping it down to the bare chassis. The platingwork has been repainted with assistance from Ron Collins, and a number of small parts like safety valves have been re-made. Some of the fittings such as the hand water pump have been relocated to improve appearance and for ease of use.

In December the loco completed a successful trial steam test at the club track and now only requires a few minor adjustments. It will be available for club members to use on club run days and should be an enjoyable engine to drive.

Many thanks to the Symonds family for their generous donation and to Paul and Clive for their work on restoring it.

Article and photos by Jim Clark



Above: Clive Chapman carrying out the initial testing of Ted's 'Blowfly' boiler prior to restoration.



Left: Paul James working on cladding the boiler, with the rebuilt chassis in the background.



Right: All smiles from Paul and Clive, posing with the repainted and re-assembled 'Blowfly', which has now been appropriately named "Ted" with a decal on each side tank.

Simplex locomotive for sale

FOR SALE: 5" gauge Simplex loco, with riding car, some tools, fuel and oil.

Former NDMES member Ken Dines is downsizing his workshop, and as he can no longer use his Simplex loco (*see photo at right*) he is offering it for sale, hopefully to pass it on to a good new home.

Asking \$4,000 or reasonable offer. For more details, please contact Ken by phone on 9531 2468. He is located in Pinjarra.



Valve gear of early locomotives

MOST club members will be aware that I am building, with Ron's help, a working steam model of the Liverpool Manchester Railway "Lion". Built in 1838 it was sold in 1847 to the Mersey Dock and Harbour Board and remained there until it was restored in 1929.

The "Lion" hauled trains in the centenary celebrations of the Liverpool Manchester Railway, it appeared in films and when it was due for heavy repairs it was retired to the Museum of Liverpool.

You might well ask, why build a working model of the "Lion"? The reason was that I mistakenly assumed it would be easier to build than a modern steam locomotive. I soon discovered it is more difficult as it is a series of problems, one of which is the valve gear.

Most model makers are familiar with the main classes of valve gear: Link (Stephenson), Radial (Hackworth) and Walschaerts, but what types of valve gear were used before the "Stephenson Link"?

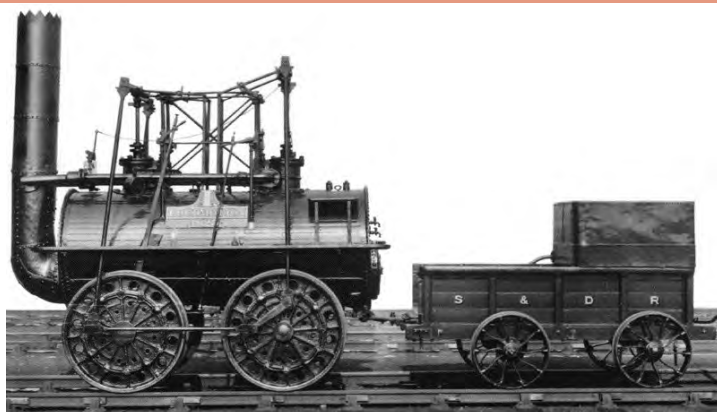
Steam engines were developed in the 1700s by James Watt and others, but unfortunately his use of patents stifled development and it was not until his patents ran out in 1800 that there was an explosion of innovation leading to mobile steam engines: the locomotive.

It is accepted that the first practical locomotive was built by Richard Trevithick. His first attempt was a road vehicle without any steering, and after it ran into a ditch, it blew up. His next vehicle, in 1802, ran on rails at Coalbrookdale iron works in Shropshire, then he built one in 1803 for the Pen-y-Darren iron works in Wales.

A simple valve control with a provision for reversing was urgently needed. The first control was a loose eccentric. The eccentric had a concentric slot, a stud moved freely in the slot until it reached the end of the slot where it drove the valve gear. One end of the slot set the valve gear eccentric for one direction and when the stud moved to the other end of the slot the valve gear eccentric was set for the opposite direction.

Unfortunately these locomotives could not be reversed from the cab and had no provision for using the expansion of steam so it was not an ideal solution. One early locomotive had five handles and a foot-pedal to control the valves when reversing the locomotive!

Railway development required innovation and capital. By 1818 capital was available in the North East and George Stephenson built the first public coal railway, the Stockton & Darlington Railway. It was opened in 1825 with a single locomotive and 150 coal wagons on a single track.



Above: A photo of "Locomotion No.1" as used on the Stockton & Darlington Railway.

Photo: Taken from a postcard in Bill Walker's collection.

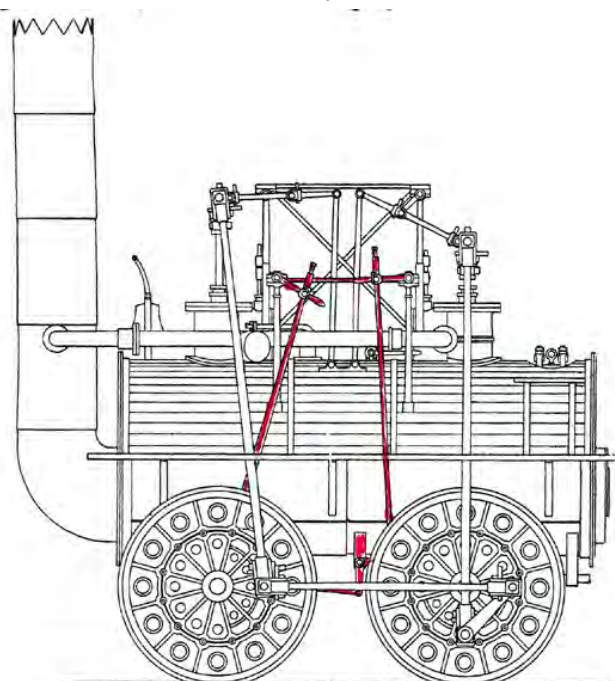


FIG. 3—"LOCOMOTION NO. 1"—STOCKTON AND DARLINGTON RAILWAY, 1825.

Above: A contemporary diagram of the locomotive, with the rods and handles used for the valve gear highlighted in red. The driver would stand on the running board along the side of the boiler, not behind it. *"The British Steam Railway Locomotive (from 1825 to 1925)" by E.L.Ahrons p.2*

The locomotive, "Locomotion No. 1", a Killingworth type locomotive had two vertical cylinders, that caused hammer blows to the rails. The slide valve gear was driven by a single eccentric and it had a notch or reversing disc at the side connecting with a lug on the wheel. Rods connected the eccentric to the front and back valves. Two starting handles were used by the locomotive driver to disengage the valve rods for starting and for reversing, when he would move the valve rockers by hand.

To be continued in future issues...

Article by Bill Walker

Notes from the Boiler Group

THE activities of various members who come to the boiler group are varied and wide ranging. There is usually something different and surprising to see and talk about.

Recently, Tom Hardy, who was (and still is) a highly accomplished woodworker before venturing into model engineering, brought along a very large turned wooden urn — *see photos at right*.

The patterns were built up by gluing blocks of different types of wood together to form segment rings, which were then glued on to previously glued rings and turned, building up the urn in two halves. The two halves (top and bottom) were finally glued together to produce this quite astonishing result. Unlike veneer inlay, the patterns extend right through the walls to the inside, which is also turned and finished to a high standard.

Back to a steam and boiler theme, Clive Jarman brought in a very nice 5" gauge model of "Lion" (a.k.a. "Titfield Thunderbolt") that he now owns.

More next year!

Jim Clark



Above: Now here is something you don't expect to see at a boiler group day!

This incredible wooden urn is by Tom Hardy.

The photo above left shows some of the fine detail of the intricate pattern.



Left: Inspiration for Bill Walker, who is currently building a 7 1/4" version of "Lion". Here is the 5" model.



Lyall Austin (centre) recently celebrated a birthday and brought in a cake for morning tea. Charles Coppack (left) volunteered to light up the candle with a blowtorch — well, how else would you do it at the boiler group?

Tom Winterbourn (right) is acting Safety Officer. *All photos: Jim Clark*

Thank you, Ron

THE last boiler group meeting for the year ended with a brief presentation by Phill Gibbons on behalf of the members to Ron Collins (*see photo below*) of a gift voucher and beer, as a token of appreciation for his hospitality in hosting the boiler group days.

Ron's generosity in providing help, advice and encouragement is greatly appreciated by everyone.

This is the spirit of model engineering at its finest!



Railfest at Rail Heritage WA

STEVE Reeves' Railfest article in Steamlines for November-December 2019 was slightly incorrect in that Rail Heritage WA was founded in 1959 and is thus celebrating **60 years** of preservation efforts in 2019.

The Editor has suggested that while correcting this, a description of RHWA's purpose and activities would be of interest to readers.

Rail Heritage WA is the founder of rail preservation in WA, starting life as the Australian Railway Historical Society (WA Division), later adopting the RHWA business name as being more descriptive of the society's goals. RHWA is a not for profit incorporated body receiving funding from memberships, museum entry charges, donations and grant funds. In 2019 our efforts were recognised with a WA State Heritage Award.

When the society started, most items were steam engines and rolling stock from the WA narrow gauge network. This is still the largest part of the collection, and now increasingly includes diesel engines, standard gauge items and electric trains. RHWA is adapting to a changing world and new audiences, and will need to continue this to remain relevant.

Throughout the museum's history all its work has been undertaken by volunteers, without the assistance of paid staff. The museum is a testament to the efforts and determination of the members to meet the challenges associated with the preservation of items large and small.



Rail Heritage WA's museum site at Railway Parade Bassendean. *Photo: Geoff Higham*

The vision of RHWA is to "facilitate access for present and future generations to the history of railways in Western Australia" and it does this by diverse means including:

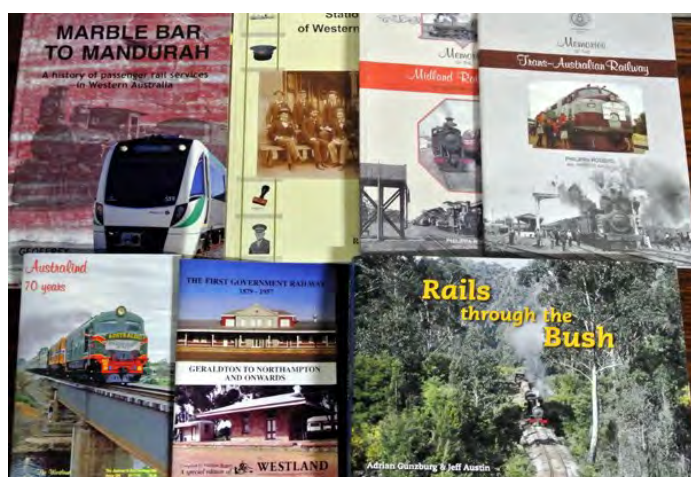
- ◆ Collecting, restoring, maintaining and interpreting Western Australian railway items;
- ◆ Encouraging and promoting an interest in the history of WA railways;
- ◆ Providing public access to the railway history of WA, including research in family history, and to our museums;
- ◆ Supporting other organisations and communities around WA to preserve and share the rail history in their local area;
- ◆ Providing on-line public access to a digitised, catalogued photographic collection, currently some 25,000 images;
- ◆ Promotion of key railway milestone events.

RHWA currently has two museum sites: the museum at Railway Parade, Bassendean and at Boyanup Station yard. Recently a major track upgrade to include standard gauge trackage was carried out by a Lotterywest grant funded contractor which, coupled with our Rail Safety Board accreditation, is further developing our Bassendean site.

At Boyanup we are rebuilding the old goods shed to permit display and protection of the "Leschenault Lady" train with G233 being rebuilt to running condition and the coaches repainted. Efforts to start the Wheatbelt Heritage Rail working museum at Dowerin are currently in abeyance.

Bruce Keay

Photos reproduced courtesy of Rail Heritage WA



RHWA provides many written publications on railway related issues.

Photo: Philippa Rogers

About Rail Heritage WA

In addition to the information provided above by Bruce Keay and the annual Railfest that some of our members attend, the railway museum in Bassendean is open on Sunday and Wednesday afternoons between 1pm and 5pm, admission \$9 or \$7 for concession holders. For more information visit their website: <http://www.railheritagewa.org.au/>

The bonding of an 'odd couple'

THIS story is about two men. One, an academic; the other, a retired Scottish instrument maker. One an affable man known to most of us; the other a gruff, independent character who did not suffer fools gladly. Not a lot in common, you'd think.

But you'd be wrong. After several months of "mis-trust" and impatience by the chain-smoking Scot, the pair became firm friends, in awe of each other's skills and achievements. In fact, when the machinist passed on, his family asked his new friend and "last apprentice" to deliver the eulogy at the funeral service.

The two characters in question are our Canadian member Doug Pitney and Ted "Eddy" Sturgeon, late of East Victoria Park.

Eddy, a fine model engineer, would probably not be known to many of us, other than Ed Brown, the two having worked together in the engineering department at Vickers-Hoskins in Bassendean.

Eddy arrived with his family and all his worldly possessions (including a Myford ML-7 lathe) from Glasgow in the '60s. From his time as a tool-maker, Eddy made full use of his supervisor's directions to "build something of your own if you have run out of jobs for the company... don't stand around puffing on a fag."

Doug credits Eddy with being the spark that ignited his interest in model engineering. "If it interests you, you can build it," Eddy said. "But I have never turned a lathe on," said Doug.

"B.S. ... let's get started!"

But let's start this story in the late '90s. Doug, who holds a PhD, has devoted his academic career to lecturing and researching mathematics at Okanagan University College (Kelowna, Canada) and at the University of WA.

When "retirement" started to occupy his thoughts, he visited a model boat show in South Perth.

Then one day, some members of a model boat club in South Perth where Doug had visited suggested he make himself known to a portly gentlemen getting out of a Landcruiser with his Great Dane.

"I approached this 5ft 4in man, built like a rugby prop with a fag hanging from his lips, but he wasn't very accommodating!" Doug said. "I suggested he made model engines."

"Where you from," he barked. "Canada" Doug said.

"Oh, do you want to see one (a model engine)?"

"Of course," Doug replied.

Eddy then reached into the back seat of his 4WD and produced an air-cooled V8 engine, no bigger than 3½

Doug holds the very same copy of "Strictly IC" magazine that Eddy Sturgeon gave him in 2000 and which inspired him to build his radial aero engine.

The engine was featured on the front cover and the first set of detailed drawings were inside the magazine.



inches long, which he had built on his well-worn ML-7, intermittent drill press and trashed bandsaw.

No CNC, DROs or power cross-feeds here... not even collets, four-jaw chucks or milling machines. Just an expert and the basics.

"I was gob-smacked... now to make friends!" said Doug. "I asked Eddy if he wouldn't mind me going to see his workshop, but he showed little interest in having me there. However, we did exchange phone numbers.

"Then, after about a month, he rang to say I could come over to his workshop the next Tuesday afternoon.

"The workshop was unbelievable! It was absolute chaos and the lathe Eddy was using was the absolute basic Myford ML-7, with no cover for any of the moving parts. Today, Health and Safety would have a field day!

"Then one day in, I think, 2000, I received a phone call from Eddy asking me what I was doing the following Saturday morning. "Nothing", I said. So Eddy said "Be here at 8am. I've got something I think you might be interested in." I was also told if I was going to be late, don't bother coming!

Doug was there at 8am and Eddy showed him the latest edition of "Strictly IC", a US model engineering magazine. On the front page was a picture of a seven-cylinder radial aero engine. Eddy said: "We'll make two, one for you and one for me," Doug recalled. He opened up the magazine and there was the first set of detailed drawings with the next five editions carrying the subsequent drawings.

"We worked on the project for the next three years, every Wednesday, Saturday and Sunday, 8 till 4.

(Continued on page 11)

The 'odd couple' (cont...)

(Continued from page 10)

"I had never used a lathe before," said Doug. "Eddy made the first cylinder and I made notes and took pictures. He then turned to me on completion of this first cylinder and said: 'I want 13 more!'"

Sadly, Eddy died when the aero engine projects were about 75 per cent complete, so Doug finished his back in Canada.

He did, however, use Clive Chapman's workshop and milling machine to complete some of the parts while in Perth. Doug had earlier met Clive when, in search of "steam", he visited South Perth's Mend Street jetty to look over the paddle steamer "Decoy". Clive was the ship's engineer.

Doug said, in general terms, Eddy taught him a big lesson in humility and to appreciate the knowledge people other than PhDs had. "His knowledge used to knock me out," he said. "He turned out some of the most beautiful things I have ever seen.

"I was proud to be known as Eddy Sturgeon's last apprentice!"

In his will, Eddy left Doug a dividing head, a piece of equipment that won a Scottish engineering prize in the late '50s.

"I use it almost every day. It is a most unbelievable piece of equipment," he said.

Eddy's impact on Doug's life was immense and it resulted in him taking on a number of other model engineering projects. Some of these will be featured in the second part of this article in the next edition. We will also tell you how Doug became a much-loved member of an old ladies ceramics group — all in the name of model engineering!

To be continued in the next issue...

**Article by Tom Winterbourn,
photos courtesy Doug Pitney**

Right: The seven-cylinder radial aero engine made by Doug, with Eddy's inspiration and help.



Above: The dividing head made by Eddy and left to Doug in his will. Doug described it as a most unbelievable piece of equipment.

Technical Matters with Phill Gibbons will return in 2020...

OUR long-running series of technical articles by Phill will return in the New Year. The first subject next year will be water treatment and the storage of steel boilers, which has already generated quite a lot of email correspondence amongst members.

We will distil this (to coin a phrase) to produce some informative guidelines on the principles behind water treatment and corrosion, together with a variety of methods for storing steel boilers. There are quite a number of options and opinions, depending on your preferences and the nature and frequency of boiler use.

In the meantime, here is another practical and useful hint from the man himself — a simple way to make the exhaust manifold junction on a two cylinder loco.

Right: Just use a standard Tee fitting available from Bunnings, with straight pipe stubs from each cylinder.



Left: Slide the Tee piece over one of the pipe stubs, fix it in place then slide it into the middle across both stubs. Replace the olives with Viton O rings, tighten and Bob's your proverbial! Phill Gibbons

More from Sandgropers 2019



Above: Gathering for a few drinks and a chat outside before Saturday night dinner.
Above left: Geoff Wilkinson had his 5" gauge loco running on Sunday.



Left: Garth Caesar steaming some of his Gauge 1 rolling stock.
Below left: Another of Garth's very nice locos, this time electric.



Right: From the very big — Ken Austin's part built $7\frac{1}{4}$ " Baldwin...
Below: ...to the very small — Garth's Gauge 1 model of the same Baldwin as Ken is building.
Photos: Jim Clark



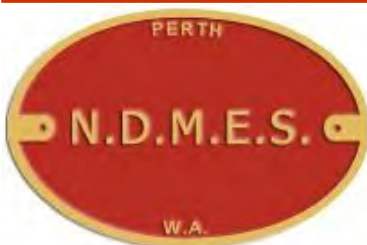
DISCLAIMER

Steamlines is the newsletter of the Northern Districts Model Engineering Society (Perth) Inc. and is published by volunteers for the sole purpose of disseminating news and information relating to the hobby of model engineering for the personal enjoyment of interested parties.

Any statements made or information given are the personal opinions of the individuals credited and do not represent the policy, procedures or position of the Society or of any other organisations on any matter unless they are specifically identified as being formal statements on behalf of the Society or such statements are credited to an elected representative of the Society's executive committee acting in their official capacity.

Any photographs published may have been taken out of context or posed or edited or modified to enhance their entertainment value or visual appeal and do not implicitly or explicitly depict the standard operating procedures and safe working practices of the Society.

Copyright remains with the original authors and photographers and the content must not be reproduced in whole or part for any purpose other than the personal entertainment of the recipient.



Northern Districts Model Engineering Society (Perth) Inc.

All correspondence to:-
PO Box 681
Balcatta
Western Australia 6914
www.ndmes.org.au