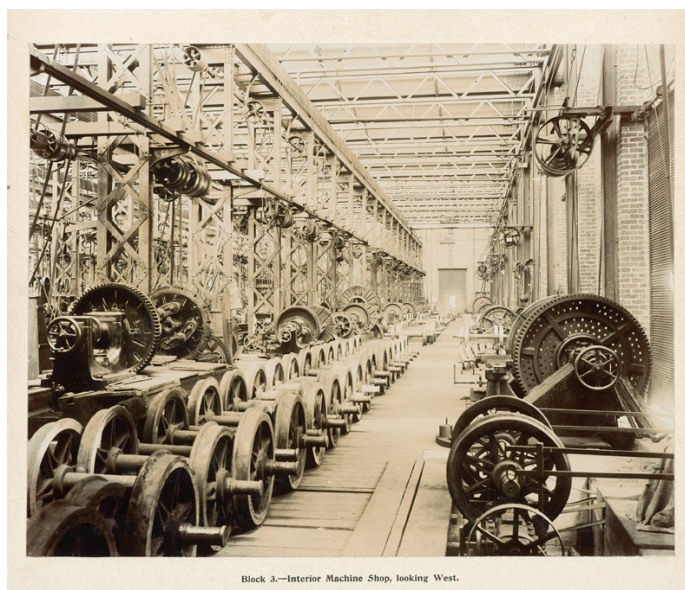


OLD PLOUGHS AND PISTONS

Newsletter of the Machinery Preservation Club of W.A. (Inc.)

www.machinerypreservationclub.com.au

PO Box 1471, Midland 6936



Block 3.—Interior Machine Shop, looking West.



Block 3.—Interior Erecting Shop, South-West angle.

PRESERVING FOR THE FUTURE

Vol.18 No.3

September 2018

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MONTHLY MEETINGS: 1st Wednesday of each month (except January) from 7.00pm, Block 3 clubroom.
NOTE: WORKSHOP PLAY DAY. Each Tuesday morning join us for a Sausage sizzle \$5.

SHOWS for 2018

IMPORTANT! To comply with NHMA Safety Guidelines, all personnel must hold a current NHMA Insurance. ! **PLEASE REGISTER YOUR INTEREST IN ATTENDING ANY OF THESE SHOWS AND FOR FURTHER INFORMATION** contact Steve Barlas or Max Leggett.

8th Sep. CORRIGIN SHOW – Contact Max Leggett for details if you wish to attend **Not club event**

16th Sep. HOTHAM VALLEY RAILWAY FESTIVAL – Dwellingup Train Station. Set up before 9am runs to 3.30-4pm

30th Sep. WHAT A TOOL AT MUNDARING – The show is between Mundaring Hotel and Men Shed on Jacoby St.

6th Oct. SWAN VIEW Show – Brown Park, Amherst Road, Swan View. Set up time 8.30am Show runs 10am – 8pm

6th Oct. TOODYAY SHOW – Set up time 8am – 9am (**trailer not required, Traction Engine only**)

13th Oct. PERTH HILL'S FESTIVAL Old Station Road Karragullen set up time between 8am and 9am club trailer _____

20th Oct. KELMSCOTT SHOW – Set up time 8am – 9am Rushton River Park Club Trailer _____

20th Oct. WUNDOWIE IRON FESTIVAL on Football Oval web site

21st Oct. WAROONA SHOW – Engine enthusiasts invited, organised by the TOMC and Waroona Lions **Not club event**

2nd-3rd Nov. CANNING SHOW – Show Ground. Albany Hwy. Set up Thursday/ Friday am club trailer _____

PRESIDENT'S REPORT by **Ralph Thomas**

News from around the Club.



This once again has been a busy period for the MPC. While it has been quiet on the rally side things, at our Clubroom we have been very industrious. I have appealed through my contacts list for items required by the club. We have been fortunate enough to receive donations by members and non-members alike; a pedestal drill, a bench grinder, a dial gauge, carburettors for the Crossley, a floor washer and a very nice Hornsby engine. We are indebted to these benefactors for their generosity. Letters of thanks have been sent on behalf of the MPC. We have also received a good win from the Thornlie Tafe; of two Petter diesel engines and a large quantity of machinery instruction literature. A lot of these were tractor related and will very likely be offered to other like-minded organisations.

Hornsby restoration: The newly donated Hornsby engine has been given the go-ahead for restoration by the Committee, and it will be a very valuable asset when completed. I have appealed for a set of wheels and an injector amongst other things.

Electrical Safety: In the interest of members work safety and the law; it was also agreed by the Committee to have all electrical equipment tested and tagged. This will include any electrical appliance used at the Workshop and owned by members. You will be kept informed regarding progress as and when it will be implemented.

Forklift operators. We are in need of more licenced operators, so the Committee is looking into the training of suitable participants. If you think you would like to be trained as an operator, please contact Max Leggett.

Sweeper: The sweeper is in need of new batteries. As this is an important and necessary piece of equipment, it will be done asap.

"Bert" the Traction Engine. Bert is in the process of having his livery redone and a check over before representing the MPC at the Royal Show. Looking very smart.

Other Restorations. There are several other projects in the pipeline. If you would like to volunteer to take one of these on, please talk to Keith Chappell.

Politicians' Visits. We have had another Politician visit which was arranged by the Hon Donna Faragher MLC following her last visit. She arranged for the Shadow Minister for Planning

Liza Harvey MLA and the Shadow Minister for Heritage Tony Krsticevic MLA to visit us.

The weather was not kind to us, and they all arrived in pouring rain; however, the atmosphere was warm and cordial. They joined us for morning tea, scones, and cakes compliments of Judy Bellotti, Brenda Wallis and Wendy Thomas. I introduced the Ministers to the Members, and this was followed by the presentation of Bob Wallis's new book, the "Machines of Midland" written by him, on behalf of the MPC. Keith Chappell and Max Leggett then explained to the Ministers our situation at the Workshops, with other comments coming from the floor.



We are confident they took all comments on board and will do what they can to assist us in securing a permanent home at the Workshop Precinct. A tour of our Clubroom was then enjoyed by the Ministers. We had several of our engines running, which they found most interesting. It should be noted here that Tony Krsticevic's Father worked as a carpenter at the Workshops. Lisa and Donna tried their hands at



blacksmithing and lathe work, (a bit more



practice here would be handy) with plenty of photos being taken. As they all had other commitments, they had to leave us all too soon for their next

appointment. From Members comments afterwards, we felt we were left with a lot of positive feelings. This was the most Politicians we have had in one visit ever at our Clubrooms. Following is the email I received from Donna last evening.

"Dear Ralph

Thanks so much again for having us along today – it was a great opportunity for Liza and Tony to hear more about your fabulous Club!

I have just put something up on my Facebook page and will be putting an article in my enews on the visit.

The letter to the Minister will be in the post this week!

*Kind regards and thanks again,
Donna"*

Next week, we will have the pleasure of a visit by the Liberal Member for Hasluck, the Hon. Ken Wyatt MP.

To Members who are celebrating an anniversary, a birthday, not enjoying the best of health, the loss of a loved one, or going on holiday, we wish you well and look forward to your company during the forthcoming Show season.



Vale: It was also sad to hear the passing away of Mike Harris's son Nathan. Gone suddenly at the early age of 28. The funeral had a massive attendance and the MPC was well represented with Ralph & Wendy Thomas, Keith Chappell, Graeme and Alison Burgess, Les Smith, Bob and Brenda Wallis. Our condolences to Mike, Val and the family.

DEAN FREIND: Sympathy to long time member Kim Freind, on the sad passing of his brother Dean, after a long illness.

Ralph and Wendy Thomas represented the MPC at his funeral.



IAN STEWART: Ian passed away peacefully on the 15th August 2018 after a long battle with Parkinson Disease. His wish for a private Family funeral was honoured with his

Steam Roller there to see him off last Friday. For those of you not familiar with the Name of Ian Stuart, he was the founder of the TOMMS Magazine. He was also the big influence, using his journalistic experience, in establishing the NHMA at Lake Goldsmith in 1987. It was there Wendy and I first met Ian and his devoted Wife Kate and have remained good friends since then.

I was lucky enough to visit him last year when I was attending an NHMA meeting at nearby Woodford, in Queensland; sadly, that was to be our last time together. Ian was honoured at the NHMA AGM in Maitland, NSW, on 8th April 2016. I hope to have a fitting eulogy for the NHMA website soon.

Club housekeeping.

Should any member require access to the clubrooms other than normal open times, following is a list of key holders. Ralph Thomas, Dave Ashfold, Robert Brayshaw, Michael Harris, Keith Chappell, Eric Rose, Bryan Wilson, Ross Morton, Nathan Miller, Ian Lyon, Max Leggett, Buster Fourie, Graeme Duncombe and Les Jones.

EDITORIAL by Les Jones



I recently received a compliment on the OP&P from an eastern states reader, plus a reply from a non member on my advert for rusty farm implements. It's great to see our little newsletter has spread its wings with more and more readers. That brings to mind a couple of problems with publishing the OP&P, as you are aware the Newsletter comes out quarterly in March, June, September and December. To keep the publication within that routine I need to implement a deadline for articles to be sent to me no later than the 1st day of those months. Please try to keep the article as brief as possible to keep the newsletter down to 10 pages. On some occasions, this might not be

possible, so I will then split the article into separate parts to continue in the next edition. I've also been an enthusiastic member of the MPC coming up to 10 years now and editor of the newsletter through most of that period, seen many changes some good and some bad. While on occasions we will whinge about the club but don't see the benefits in socialising, friendships, hobbies, access to knowledge and most important health which has been incalculable to me and Diane. So I will like to thank all the members for that, especially the long serving ones for their friendship over those many years.

Now onto interesting subjects, I will be adding a few additional articles to the newsletter "Innovations that changed our lives" plus excerpts from the "Newsletter Past" and "Toolbox Chatter". It will depend on member's response if I continue with them.



Since recently picking up a Delco Farm Lighting plant I will start the ball rolling with "Farm Innovations" and as time goes by will expand into Machine Tooling, Railways, Marine and Aviation. Let us know if you like or dislike.

"Farm Innovations."

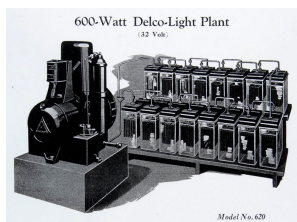
Normally with new methods that changed the farmer's life, we think of things like Reapers and Tractors but disregards or maybe take for granted electricity, so for the first instalment I will deal with the first 32Volt Light Plant.



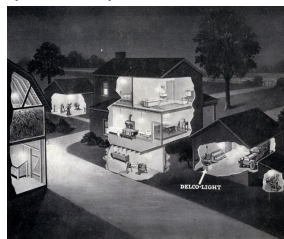
Delco Farm Light Plant

In 1910 most major cities in the United States had either DC or AC town power, the rural towns which made up 55% of the population had no electricity and used oil lamps, kerosene fridges, hand pumps, hand washers and charcoal irons for household chores (hard to image).

In that same year Charles Kettering wanted to make life easier for his mother and coupled a generator to



an early petrol engine and connected them to a bank of 16 wet cell batteries, the combination was so successful that it started him on a career in electricity. He opened up a business and called it Dayton Engineering Laboratories Company (DELCO), His research and development



continued with innovations such as Dynamo/Starter motors, Lighting plants with auto start for when batteries get down to 29 volts, Positive Crankcase

Ventilation so no fumes remain inside the house and the first Coil/Battery ignition system and independent electric starter motors. His innovation and designs were so prolific that he held the second most patents in the US, just behind Edison who had over 1,000 patents followed by Kettering and then George Westinghouse with 600.

In 1916 DELCO sold its first 32V Light Plant and it was an instant success, eventually expanding the range from a small 1 1/4hp 600W to a large 3,000W unit which would power whole townships.



GM in 1918 saw the potential in Kettering's inventions and bought his business, quickly implementing his starter motor and battery/coil ignition into their up market Cadillac. At that time most cars were hand cranked for starting and magneto ignition. Kettering remained in the operation as the head of the GM electrical research division from where he developed a range of 32V appliances to supplement their plant sales i.e. Fridges, Fans, motors, radios, tools to name a few.

On a side note Kettering developed a 4 cylinder air cooled light plant engine (model 15C3) which was so successful that GM tried to install it into their Chevrolet cars, calling them "Copper Cooled" due to the cooling fins.



Unfortunately it was a complete disaster with overheating when the cooling fins got blocked and lack of lubricating oil when driving up steep

inclines. It holds the unwanted record of being the first automotive recall in that industry with only 4 vehicles ever being returned to their original owners.

Even with the 32V Lighting Plants having such massive success their days became numbered when the rural communities were progressively put on the various electrical grids so the need for lighting plants died off. Finally in 1947 the Delco 32V Farm Light Plant was discontinued after manufacturing close to 500,000 in the 29 years of production and holding 55% of the market but Kettering's legacy continues to this day with the GM electrical division adopting his brand name AC DELCO REMY.

"NEWSLETTER PAST"

Since members spend so much time together, socialising at shows, national rallies and play days, wouldn't it be great if we knew each other's background. So, to start the ball rolling I've put in my profile that I ran in an earlier newsletter. (Shown in *Italic* from Vol.1 April 2012). Maybe some other members would like to add their profile.

(Ed:) Sorry about any typing errors in the below excerpt as it was my very first newsletter, you can see why Wendy took on the proof reading.

"THIS IS YOUR LIFE"

THIS QUARTERS PROFILE IS LES JONES

I was born in 1949 in a little semi detached house in a suburb of Sydney called Cammeray, in those days it was a working class area with no sewerage, an outside dunny that backed onto the N/S lane way. There was a corner deli, had no car only trams/buses to get around, no computers or TVs, in fact our neighbour was the first person with a TV. He was an ex Navy sparky who converted a green radar screen to watch the first shows. I still visualise dissecting grid lines even when watching our current 55" plasma, boy how times have changed.

I was educated at Crow's Nest High School with only average results except History and Mechanical Workshops which I excelled in. I used to sit out the back and marvel at the large Sunderland flying boats

that would skim across our roof on the way to Norfolk Island which explains me seeking an apprenticeship



with Qantas Airways. In that era, 1st year apprentices mainly got the lunches and swept the floors

but they did supply me with a set of tools in a box (Ed. Yes Keith I still don't know how to use them) which was deducted from my weekly pay of 8 pounds 6 shillings boy was I rich.

I met my wife Di as a teenager and we got married, unable to afford a house in Sydney we left for Perth to start a new life and family. The Nullarbor was rough in those days but eventually we made it. The first 12 months were hard, no friends or family, me falling in and out of jobs as a car mechanic, until I finally got a job as a Beaurepaires tyre rep, which allowed us to start a family (1boy and girl) and build a house in Forrestfield which we stayed in for 32 years. I was eventually re-employed by Qantas at Perth Airport and worked as a kitchen hand until a position came available in Engineering. I found ground support much more interesting as aeroplanes seldom break (Ed. well not while I was working there)



Progression was rapid with me taking over the workshop manager's position. (Ed.



That's me and my crew in the photo)

I recently retired from Qantas and we decided on a tree change and built a new house in Oakford mainly to house my ever

increasing collection of farm machinery. This is where the MPC comes in, my interest in history and machinery drew me towards joining the MPC where I've found the volunteers magnificent and met some great friends, well that brings me up to date and I hope my biography was of interest.

SHOW REPORT – Mundijong Community Fair by Les Jones

The MPC didn't have any shows in this quarter so included the Mundijong Fair. This is an annual event where the main road through town is closed off with vendors and exhibitors showing their wares. The machinery display is run by the Hugh Manning Tractor Museum which has common members with our club. Dudley Jenson had his Ruston Hornsby SPB and just completed Lister D, Peter Adams who looked after and ran the Video entertainment, myself and Di with a display of small 2 stroke engines. Ex member David & Jan Pether with their old faithful, Lister



Junior (**Ed. Where is that big brass tap?**). Ralph and Wendy took their Rope Maker and gave myself and Dan Huston some training on its usage.

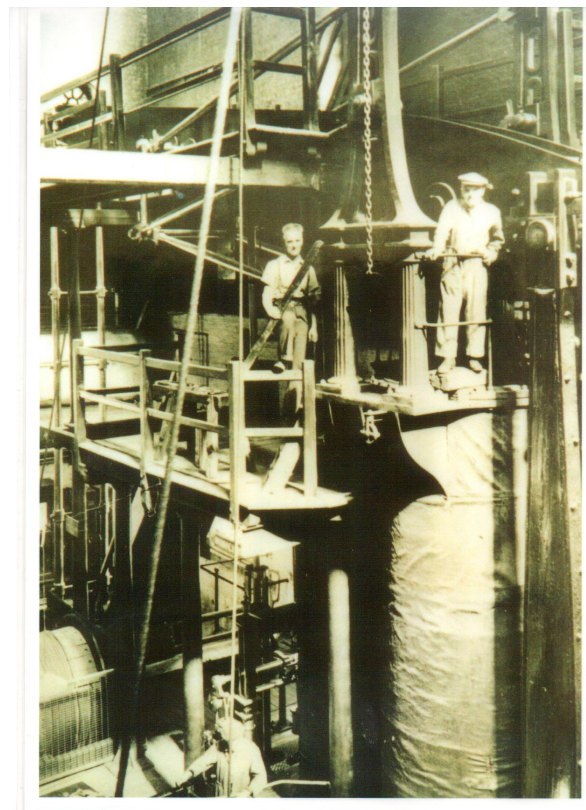
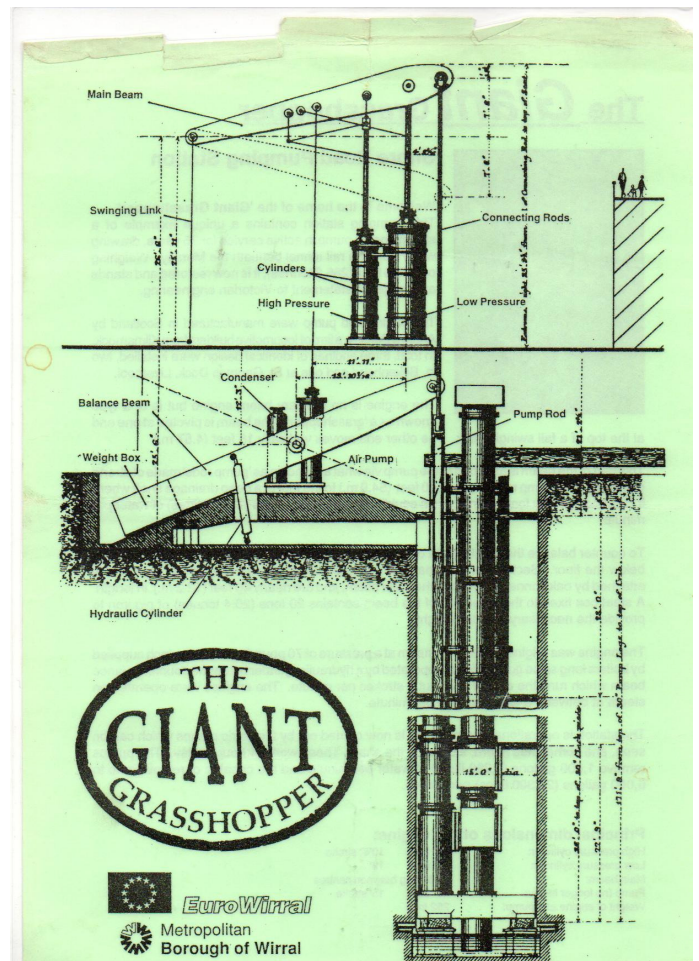
While the engine display wasn't that big, it did bring much attention with the museum's large 10hp Hornsby and a drag saw display with a rare 2 man chain saw. Surprisingly what drew the most attention is the Tractor Museum's junior member Logan Stubbs, who had a display with a tiny mining stamp driven by a Villiers engine. Just goes to show as long as the display is making a lot of noise and has many moving parts it will draw attention. You don't have to spend thousands on a Hit and Miss engine.



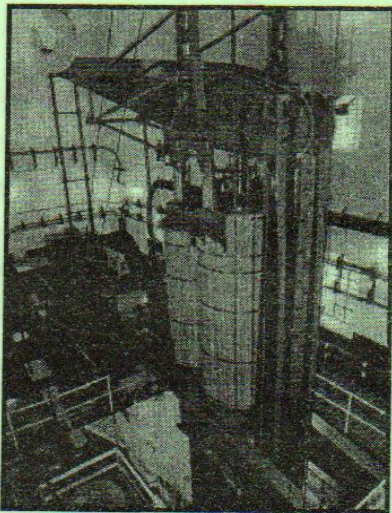
The Giant Grasshopper by Eric Coates

I with some other volunteers and paid staff used to look after this beast before I emigrated in 2005 and since the Global Financial Crisis it has been closed down due to the local council losing millions on the stock exchange. (**Ed. Have added the description on the Grasshopper in the next**

page, due sizing requirements, for us buggers with bad eye sight.)



The *Giant* Grasshopper



Shore Road Pumping Station

Welcome to the home of the '**Giant Grasshopper**'.

This pumping station contains a unique example of a steam engine pump in active service for 75 years, drawing water from the rail tunnel beneath the Mersey. Weighing over 260 tons (265.2 tonnes), it is now restored and stands as a majestic statement to Victorian engineering.

The engine and pump were manufactured in Scotland by Andrew Barclay, a firm of locomotive builders from Kilmarnock. In total, three engines of identical design were installed, two in Birkenhead and one at St. Georges Dock, Liverpool.

The engine is no ordinary beam engine but is of a type known as a 'grasshopper'. The beam is pivoted at one end at the top of a fall swinging link. The other end moves vertically 15 feet (4.57 m.)

This part of the beam is attached to the pump via what are known as 'pump rods' made of strong oakwood. The pump rod plunges 180 feet (54.9 m.) to the foot of a deep drainage shaft where it is connected to a force pump, which could remove 3,500 gallons (15,925 litres) of water per minute.

To counter balance the great weight of the pump rod in the shaft, a second beam is mounted below the floor. Sections of this beam can be seen beneath the iron grating. One end is attached by oak connecting rods to the main beam, and are nearly 40 feet (12.2 m.) in length. A steel box fixed to the other end of the beam contains 20 tons (20.4 tonnes) of pig iron to provide the necessary counter weight.

The engine was originally driven by steam at a pressure of 70 pounds per square inch supplied by boilers long since gone. It is now operated by a hydraulic cylinder below the counter balance beam which runs the engine at about 3 strokes per minute. The engines were operated on steam at between 3 and 6 strokes per minute.

The station is operational and pumping is now carried out by 2 electric pumps which can be seen, and sometimes heard, alongside the shaft. These work 24 hours a day. The pumps remove 1,600 gallons (7,280 litres) of water per minute and are capable of removing up to 6,000 gallons (27,300 litres) per minute.

Principal dimensions of the engine:

High pressure cylinder:	36" bore	10'6" stroke
Low pressure cylinder:	55" bore	13'
Main beam:	32'6" long between centres	
Pump (no longer in situ):	40" bore	15' stroke
Weight of engine and pump:	262 tons	

FOR CLUB APPAREL. Contact Ralph or Wendy

Polo Shirts – Bottle Green – with Pocket, Name and Logo. \$30.60 each.

Polo Shirts – Gold – with Pocket, Name and Logo. \$33.55 each. Without Pocket. \$28.60 each.

Caps – Bottle Green – with Logo. \$14.70 each.

Hats – Wide Brimmed – with Logo. \$20.20 each.

Jackets – Bottle/Gold – Lightweight – with Logo. \$47.10 each.

Overall – Action Back – Bottle Green – with Logo. \$95.00 each.

Coverall – Bottle Green – with Logo. \$123.00



A POEM BY MAX LEGGETT

There's movement in the station
Down at the MPC
Things are getting sorted
The way they're meant to be

Ralph is buzzing around
All over every one
Members are very busy
To get all the jobs done

Keith is now the curator
Keeping tabs on all the gear
It's amazing what we've got
When we sorted through the lot

Eric is now Mr Safety
As well as the instrument guru
We now need to follow the rules
If you want to use the tools

Buster is the machine shop man
If you want to use his gear
He needs to check your plan
And once the jobs done
The cleaning must be done

Ian runs the store
A place for everything
And everything in its place
Need I say any more?

Graeme is Mr fixit
It's never a fuss
He just gets on with it
Not like some of us

Mike is our kitchen bitch
As we oldies know
The MPC members won't go
Unless we have our sausage sizzle

Les does our newsletter
Even he says it could be better
It's up to us to provide the input
Otherwise it could go kaput

Dave and co provide the steam
Boy what a team
Don't get in the road
When the engine is on fire

Just stand back and admire

George, now he's the man
What he doesn't know
Doesn't matter a damn
All he needs

Is someone to give him a hand?

(Ed.) You forgot to include the most important member in the poem, namely yourself. But very well done.

FOR SALE



1. Rotary magnetos various types \$200ea.
2. Magneto instruction books i.e. ML, RS1, CK1, CK2 **Refer Norm Robins 9458 8899**



1. Vane tuning machine VA205 for petrol vehicles \$250
2. Various Cooper RV parts **Refer Les Jones 0407945398**

1. Books on the pictorial history of the Midland Railway Workshop. Many never seen photos of the Workshops early years. \$22 ea limited number available **Contact Bob Wallis to view and place orders.** 94596425

WANTED



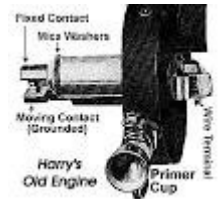
1. 32Volt tooling and appliances **Refer Les Jones 0407945398**
2. A cartoonist with a sense of humour to include in the OP&P on a

regular basis, willing to work for peanuts. Apply to editor via Email.

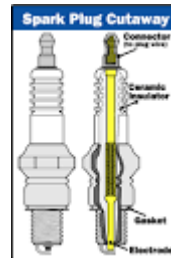
TOOLBOX CHATTER

Since getting into restoring vintage stationary engine for over 10 years, I'm spending more and more time with fixing ignition systems. A question that keep popping up. "What is the difference between Igniters and Spark Plug ignition on vintage engines"? I will try and keep the answer as simple as possible without going to much into Magnetic induction and reverse EMF.

1. IGNITER or "Make and Break" ignition is used in early low compression engines. It consists of a set of points that is situated within the combustion chamber and either a Low Tension magneto, Dynamo or a single wound induction coil and battery, sometimes both which supplies an electrical current when a control rod initially closes the points. This allows current to flow and then opens at the correct piston position producing the spark and igniting the fuel mixture.



2. SPARK PLUG or "Gap Jumping" took over from the Igniters when engine manufactures began chasing more Horse Power for a given size by increasing the compression ratio. The manufacturers used either a High Tension magneto or Buzz Coil with a battery. Both induce high Kilovolts to jump the gap at the spark plug under high cylinder pressure. The magneto and Buzz coil require primary and secondary windings of different size and number of turns that induce high voltage when the points open. In the case of the magneto that is at the Max Magnetic Flux point.



With the Buzz Coil, it doesn't use permanent magnets to induce the electric current, instead uses a battery and 2 coils with points that rapidly close and open continuously, which collapses the magnetic field around the coils and induces the current. The earth circuit on the Buzz Coil is the means of controlling the ignition point via contacts on the flywheel, cam gears or rods.

Ed. It's a bit of brief explanation and I hope it clears up some questions.