



SOUTHERN FEDERATION of MODEL ENGINEERING SOCIETIES

Formed from the Federation established in 1970

www.sfmesc.co.uk

Australia Trophy to Ian Roberts



*Ian Roberts receiving the Australia Trophy
from Chairman Brent Hudson
at the Southern Federation Autumn Rally.*



*Above
A festive scene at the Southern Federation Autumn Rally*

*Below
Charlie L and a friend enjoying a run*



In this issue we bring you . . .

Southern Federation Autumn Rally at Southampton Society of ME .

2016 AGM announced for York

Australian Association of Live Steamers Trophy awarded

Visit to the Vancouver Island Society of Model Engineers.

Derek's Story

More on pipe bending

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Views and comments expressed in this publication are not necessarily those of the Southern Federation of Model Engineering Societies

EDITORIAL

After a wild and adventurous summer we are back down to earth! You must forgive my waxing lyrical about Canadian Railways but since I come from Canada and their railways are quite impressive, especially through the Rockies, I will be tempted occasionally. And indeed I have completed my summer adventures with a few words and pictures about the Vancouver Island Model Engineers and their spacious railway

Something else caught my eye this summer, it was a radio controlled Black Five running at Worden Park. I think the most striking part of the video on You Tube was where the photographer phases the film into black and white and this loco with its freight train could easily have come from the fifties. The absence of a giant driver 12 times over size completes the aesthetics. This seemed to show that new horizons can be achieved in the model engineering world combining the old and new technologies. Not new in real life of

course,, the Dockland railway have no drivers!

The experience of hosting a Southern Federation Rally in my local society has raised some questions about the long term future of such gatherings and how they might be shaped for the future. One lesson that I have learnt is how much the host will appreciate a quick phone call or email to say you are coming, or nor if plans change. The worst thing is to sit and wait to see if anyone will turn up, especially as your members may have catered for fifty guests and don't fancy hamburgers for a full month.

Anyway it appears that most if not all societies have had a good and perhaps often hectic summer and may be looking forward to a quite winter. Time to get the maintenance and improvements underway ready for next year!

One stop before we get there of course, the AGM will be hosted by the York society so now is a good time to plan your Spring break to glorious Yorkshire.

David Goyder, Newsletter Editor

CHAIRMAN'S CHAT

Gosh what a few months it has been. My committee has been dealing with members of Parliament over some proposed legislation [dealt with elsewhere in the Newsletter] sorting out members questions on boiler testing, and communication with a French Club over boiler certification . There seems to be a misunderstanding about the 14 month rule on Boiler Testing . The rule is not retrospective and you cannot try to invoke it at the certificate's expiry date . You must request it at the time of the boiler test as the expiry date on the certificate is final . I would remind you also that you cannot gain a free year every six as your hydraulic certificate expiry is final too so at four years you must revert to the original hydraulic date and start again . the fourteen months is a historical anomaly brought about as the railway companies needed time to inspect so many boilers and too few inspectors .

The Southern Federation Autumn Rally was held at Southampton track where the Australian Trophy was presented for a beautiful GWR pannier tank built by Ian Roberts of the Basingstoke club. I found out that

the attention to detail was due to Mr Roberts working on the restoration of a full size loco . I also met a couple of Isle of White club members, in fact a perfect meet in a perfect sun drenched river side location, thank you Southampton .

Lastly I understand a couple of people are questioning the fact we seem to focus on mainly railway clubs . We are "The Southern Federation of Model Engineering Societies" and that encompasses all forms of modelling and engineering . However many our clubs include a railway track of some description as a focal point . Some have a lake too perhaps a model railway, or an area to fly around . Please send in news of your other activities as it might give other clubs ideas on how to expand into other areas and gain more members . It is time to heat the workshop and to prepare for the Fosse exhibition so let's hope for a mild winter and please visit our exhibition stand .

Brent Hudson Chairman

Southern Federation of Model Engineering Societies

EVENTS, EVENTS and more EVENTS 2016

Please do let us know of your planned activity during 2016 so we can give you publicity and do remember that all your events can be posted on the Southern Federation website, that will keep all informed.

Southampton Society of Model Engineers

Hosts the

Southern Federation of Model Engineering Societies Autumn Rally

The 2015 autumn rally was held at the Riverside Park home of the Southampton Society of Model Engineers. This happens to be the home society of your trusty newsletter editor and one of the blessings of taking on the Rally is the experience of finding out that it is bl***y hard work. It is not just the activity on the day(s) itself but the preparations and planning, the frustrations and rewards and the sheer relief when it all goes well.

And before telling you about the rally itself, this might be a suitable time to comment on the whole rallying and open day tradition itself. There seems to be a growing disinterest in clubs taking visits to other clubs or often very low attendance when any interest is taken. There was a day when a club might hire a mini bus, pop a dozen locos into the luggage compartment and take off to another club. There are now too many excuses for not doing so. The general open day appears to attract a handful of visitors at best. I was surprised to find only two or three visitors other than

Southern Federation Committee members when I went to the Southern Federation Spring Rally at Hereford

On the other hand, 'themed' (or well established) gatherings seem to attract many more participants. Examples are the GL5 weekend at the Ryedale with 30 or more and the list cut off at that. Oxford's Dreaming Spires catches a lot of enthusiasm. At a purely parochial level, a North London member, joined us whilst a student in Southampton and organised a special day for us to come to North London, a great day out and well attended.

So what will influence the future for 'rallies' and 'open days'? Is it the economic factor, say the price of petrol, or the interest factor as in we are getting a bit bored with this, or the increasing age of the model engineering fraternity, too old travel now, or are there other factors? Certainly this must be a subject for much discussion as we support our model engineering activities!



Preparations well underway with tents, marquees, the BBQ and visitors galore

Back to Southampton. We held a 'Singles' day about a month prior and used it as the guinea pig for the Southern federation Rally. For the Singles day we had an approximate attendance list so we could cater for the expected visitors. For this Southern Federation

Rally we had not inkling whether we would have 5 or 50 people coming. History tells us that camper vans and caravans arrive on the preceding Friday afternoon. So we decided to keep watch for a couple of hours. At about 2 pm, I put a note on the door with my tele-

If:
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
is represented as:
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
23 24 25 26.
then

K-N-O-W-L-E-D-G-E = 11+14+15+23+ 12+5+4+7+ 5 = 96%
and
H-A-R-D-W-O-R-K = 8+1+18+4+23+ 15+18+11 = 98%
But:
A-T-T-I-T-U- D-E = 1+20+20+9+20+ 21+4+5 = 100%

More from Southampton

phone number to call me if they arrived as I live close by. Just as I was locking up Peter Squire, our Secretary of the Southern Federation arrived, bless him, we have a visitor and we had a cuppa. No caravans showed up.

The next day, Saturday, dawned a gorgeous day, especially welcome as the previous week had been wet and windy. Our loyal crew were there at 8 am to put up the tents and marquees. All went up well with one exception, our resident cook who was providing bacon butties for the workers did not get to the track until 9:30 so the butties were a little late. But by then visitors were arriving and they loved the bacon butties so in the end all were happy! Our two trade stands, "Just



Bryan Groves from Taunton ME with his newly acquired Class 17



Ian Roberts from Basingstoke prepares his Pannier No 3763. He was later awarded the Australia trophy.

the Ticket" from Salisbury and "The Rollstock Express" from Poole arrived in good time and were set up. Visitors were now arriving to our great relief, locos were steamed up and activities got under way.



Not often the Chairman gets taken for a ride but the lads from Harrington did with their 'C' stock inner circle.

More from Southampton



Tom Petch running Dave Clothier's 3" Burrell

The visiting locos and traction engine provided a wide variety of 3½", 5" and 7¼" examples as the pictures will show.

The C stock London Underground train certainly caught everyone's interest especially as it has an authentic controller in stalled.

Dave Clothier from Southampton brought his Burrell for a run around the infield



Controls from a full size driver's position



Class 47 owned by R Mainwaring from the Harlington Society

The Diesel world was represented by an attractive Class 47 shown by R Mainwaring of the Harlington Society and a Class 17 presented by Bryan Groves from Taunton shown in the previous page.

Ivan Hurst brought a selection of his rolling stock which much admired by all. These included a 25T Brake Van, an open wagon, a van and a well wagon.



Cab detail of a much modified 'Speedy'. This loco opened the Southampton track in 1962. Built between 1958 & 1961 at a cost of £50 by the late Bill Perritt who won IMLEC with her in 1976 & 1977. She ran again 1987 and 2012 in celebration of the 25th and 50th anniversaries of the raised track.



(R) Southern Railway 25T Brake Van ("Queen Mary")
(F) Southern Railway 21T Well Wagon



The model represents an LSWR Van to Diagram 1410, which were built in large quantities from 1885 onwards until the Grouping in 1923



(R) Southern Railway 12T Covered Van
(F) Southern Railway 13T Open Wagon



Dave Finn with his 3½" Hall running well

And finally Dave Finn ran his 3 1/2" GWR Hall.

As to the 'Black Swan' I will leave you to guess whether this is an authentic model or merely a curious members of the Itchen River population!



Got any bread??

Government consultation on firearms conversion .

By R.Walker

Safety Officer, Southern Federation of Model Engineering Societies.

Recently the Law Commissioners, presumably on behalf of the government, have issued a consultative document, “*Consultation Paper No 224, FIREARMS LAW, A Scoping Consultation Paper*”. It invites comments on proposals to restrict the availability of certain kinds of metal-working machinery. These are specifically tools required for converting “an imitation firearm into a live firearm” – i.e. most of the types of tools and machinery used by model engineers (and many other groups and organisations). These potentially include drills, mills, lathes, grinders, files, saws, etc.

The two specific proposals are ...

PPI3 “We provisionally propose the law be amended to focus on the ready availability of the tools necessary to convert an imitation firearm into a live firearm.”

PPI4 “We provisionally propose the creation of an offence of being in possession of articles with the intention of using them unlawfully to convert imitation firearms into live firearms.”

The first seeks to control the supply side and would potentially affect commercial traders, but it would, most likely, also affect the sale of second-hand tools.

The second seeks to control the actual possession, though it does appear to require that “intent” be proven before an offence had been committed!

Although, this information was received by members of the SFED board only four days before the expiry date for receipt of comments a formal SFED response was sent and several of the members responded in their personal capacities to the Commissioners and to some of their members of Parliament.

The period for comments is now officially ended. However, members of Societies, Clubs and individuals are encouraged to maintain a watching brief on this potentially very significant development, which would effectively ruin model engineering if it came into law in anything like its proposed form.

Of course the SFED, and presumably all law-abiding citizens, would whole-heartedly support any measure to reduce the lawlessness associated with firearms of any kind, but such a blunt and untargeted approach is unlikely to achieve very much in practice whilst simultaneously affecting very many law-abiding citizens most adversely.

R. Walker

Safety Officer, Southern Federation of Model Engineering Societies.

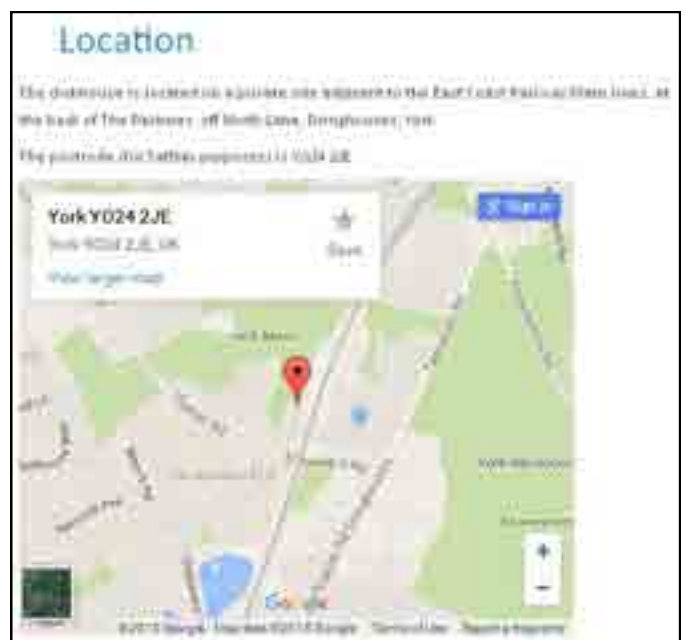
2016 Annual General Meeting 12 & 13 March 2016

The Southern Federation have been invited to come to York and visit the York City and District Society of Model Engineers Ltd for their Annual General Meeting next Spring. Where else you ask? This will turn out to be a fabulous weekend.

The York Society has existed for a long time and they have an interesting history, worth a read on their website at http://www.yorksme.org.uk/wp/?page_id=27. Towards the bottom of this page is an old cine film reproduced into You Tube that show it the way it was. Notice the jacket and tie to run your locos, such were the days.

Located just south of York station next the East Coast Main line one could not think of a better venue. I am looking forward to this one.

More news in the next issue but now we know where we travel to in the Spring



Australian Association of Live Steamers Trophy (A.A.L.S.)

This Trophy is presented to the Southern Federation of Model Engineering Societies to commemorate the Affiliation of the two Associations. It is presented for annual Competition at the Autumn Rally conducted by the Federation.

The Trophy is to be awarded to the model steam locomotive judged to be the best working example for a Commonwealth Prototype locomotive in gauges from 2½" through to 7¼".

The Trophy is open to members of Clubs/Societies affiliated to the Southern Federation, and such members may nominate their locomotive for judging. The Judges may also include other suitable locomotives present on the day, whose builders have not nominated, should they so desire?

The 2015 winner is Ian Roberts from Basingstoke with a lovely Pannier Tank No 3763. If my ABC is correct, this is a member of the 5700 class introduced in 1929



Ian Robert's 5700, class No 3763



Brent Hudson, Chairman Southern Federation, presents the Australia trophy to Ian Roberts

A Mystery Solved

You may recall that in the June newsletter, I showed you a picture of a chassis being re-wheeled in British Columbia and that the loco was attributed to Henry Greenly as his 'Northern'.



This seemed a little far fetched but strange things do happen.

The 1954 edition of Greenly's "Model Steam Locomotives" turned up a 4-6-4 'Hudson' for the Kenton Miniature Railway and a drawing by Ernest Steel of a 4-8-4 'Niagara' based on Greenly's Mountain. (Why the 4-8-4 had so many different names is another matter.) But still no trace of the Greenly 'Northern', until that is, I had an email from Eric Basire who has written a history of the Kenton Miniature Railway and who revealed all.

Eric told me that Greenly produced three American locos for the Kenton Miniature Railway, a New York Central Pacific based on components from the Flying Scotsman, a 1936 designed 4-8-4 'Northern', built in 1939 (Our Northern!) and a 4-6-4 'Hudson' in 1947. More is to be found in his book, "History of the Kenton Miniature Railway: A pioneering 7 1/4 inch gauge garden railway built in the grounds of Kenton Grange". I have bought one!

A Visit to the Vancouver Island Model Engineers

In the previous newsletter, I wrote about our family's visit to the Burnaby Railway in Vancouver during our month in Canada. The railway I was more keen to visit was the Vancouver Island Model Engineers for a rather simple reason.

I had corresponded with a chap with a Princess of Wales in 5", as I have, and we compared notes on the merits of a six wheel or eight wheel tender, both of which the Singles had at some point in their life time. We exchanged a couple of pictures that showed sylvan settings and fine raised tracks until I became curious about their club house in the back ground. I had to ask, "Your club-house looks like a Canadian National Passenger car, exactly where in the UK are you located?" Imagine my surprise when he told me this was Vancouver Island, only 5,000 miles as the crow flies. Unfortunately I never did get to meet my correspondence but this was amply made up for by the hospitality of Maurice Foord, a founder member and his colleagues.

I have taken a few extracts from quite a comprehensive history of VIME as they are known. Much of their history will not be of great interest to us in the UK but there are a few gems.

"Model engineering on Vancouver Island goes back to before the turn of the century. One of the earliest known railway live steam models was built in Nanaimo around 1896. This was a $\frac{3}{4}$ " scale 4-4-0 patterned after the E&N passenger locomotives of the day. Steamboat models were starting to appear about this time and over the years many operating models of almost any mechanical device could be found.

Many locomotive builders had small tracks in their yards for testing and running their models. In the fifties, the Victoria Society of Model Engineers was formed and a track was built on the property of Crae Allen at the corner of Cedarhill X Road and Pear Street. This club had about 20 members at its peak but membership was fading due to deaths and relocations when the property was sold for development. This prompted the folding of the club in the late fifties.

It was over 10 years later that 3 model-engineering hobbyists met in the winter of 1971-72 at a night school shop course at Fairey Technical (Victoria High School). Upon discovering their mutual interest, Maurice Foord, Bill McCoubrey, and Alex James decided to seek out others of like interest to form a new society. They began meeting at members' homes in early 1972 and by autumn the group had grown to 30 members. The Vancouver Island Model Engineers (VIME) was incorporated in September 1972 and began meeting at the Lakehill Lawnbowling Club's Clubhouse."

Jumping ahead to 1978,

Work began in 1978 on the 7-1/2" gauge ground level track with a grant from New Horizons for Seniors coming

in 1979 to assist with completion of the track and the building of four riding cars. The opening ceremony took place on June 9, 1982 with the unveiling of a Cairn near the steaming bays. The track consisted of a loop at the north end, a single-track main line and a wye at the south end. The turntable and four steaming bays were also in service at this time.

The bi-directional main line was an interesting feature until it was double tracked during our next major construction period in 1989. We had a few "cornfield meets" due to the fact that an engine driver could not see the opposite end of the single-track section when he started out. We had a manually operated signal system in operation for meets but the rest of the time operators had to keep track of who was where.

I think today the idea of a cornfield meet would be frowned upon but in those days one just ran carefully! Today VIME is located in a wonderful setting in the Saanich Historical Artifacts Society site leased from the Provincial Government and they have space for a large railway. The pictures will tell the rest of the story but notice some of the projects,

1985 BR Rail Caboose arrived on site.

1986 expansion or raised tracks led to the 'Great Bridge Project'.

1989 Bi-directional single line doubled.

1995 New raised steaming bays opened.

2003 Car Barn renovated.

2002-2007 Three 25 foot single track budes built, one 50 double track bridge, 2008 feet of 7 1/2" track laid for a new loop.

2008-2009 The roundhouse built thanks to a generous members donation.



The "Club House" a BC Rail Caboose with a Grand Trunk Western Passenger car

Vancouver Island Model Engineers, continued



From l to r, Kurt Grillowitz, Maurice Foord, John Yardley, Norm Shaw, Ed ???, Jim Friars and Bill Smith. Maurice Foord is one of three founding members



The raised track steaming bays. Maurice Foord's "Mabel" is just visible slightly left of middle.



The setting is quite unparallel in the woods, quiet and relaxing



A new facilities block for the railway, built by the students at the local building trades college with materials provided by VIME. This just seemed to be such a marvelous initiative, especially as most model engineers these days are showing their age.



The Memorial bridge carrying two tracks over a fast moving small river. This river is a salmon run and permission had to be sought from the fisheries department to build it and a certain amount of the stream had to be untouched.



Approaching the main station and roundhouse area. I doubt a British council would give us space like that!



Maurice Foord with his "Mabel". Quite a contrast to the Penny to the right.



...but one cannot help but love those massive monsters!

Derek's Story with thanks to Bob Lumb

Fog, that most peculiar phenomenon of the weather, minute particles of water held in suspension in the atmosphere. How does that work? Water is much heavier than air, yet somehow it stays suspended there albeit making everything moist it comes into contact with. It's fair to say that it's no one's favourite weather condition, some of us like the hot sun and for others it's those cold crisp days of winter that are relished, but I've yet to meet anyone who gets pleasure out of a foggy day.

Before the time when we had smokeless zones and well before the time when burning coal in our industries or in a grate at home became politically incorrect we used to have proper fog, or smog to give it its right title. A combination of fog mixed with smoke from countless coal fires and industrial power plants making visibility poor and for some breathing difficult. Those were the days when the elderly tried to avoid venturing out but for the rest of us of working age we had no choice. I spent my working life on the railways, the operating department mostly, on the footplate working from a variety of locomotive depots in the north of England. It was during my time at Wakefield in the 1950's that I had my worst experience with the problems a foggy day can create.

It was late November and I'd booked on early that Sunday, it wasn't all that often that we worked Sunday's in our link but they were running additional coal traffic to the Lancashire power stations following the cold spell we were having. The weather that year had been poor for quite some time with heavy rains throughout most of the Autumn and now frosts and fog. I think, if I recall correctly it was a 5.00 am start that Sunday. We were allowed an hour to prepare the engine prior to leaving the shed, our duty being to collect a coal train from Crofton and take it via the Standedge line to Guide Bridge sidings in the Manchester area. A bit of an unusual turn for Wakefield men, not all of them knew the Standedge road. I recall I'd struggled a bit to reach the shed that morning, the fog had descended the night before and the roads were a bit treacherous for someone like me on a push bike with black ice to contend with. My footplate companion for this duty was a young fireman, a lad called Derek who was already attending to the fire when we met on the footplate. I'd worked with Derek a few times before and we got on well considering the age difference, he was eager to learn and had the enthusiasm of youth. Our loco was one of Wakefield's many WD Austerity freight engines, good engines for the job but a bit rough riding and noisy and draughty on the footplate. Departure from the shed was on time and we quickly ran tender first the short distance to Crofton, here we were coupled up to the waiting train by the yard shunter and departed right time. It was after we had left Wakefield behind us that the fog thickened near the river at Horbury with visibility getting worse even though dawn had now broken and it was becoming daylight. On the level track approaching Healey Mills with the aid of clear signals we started to pull ahead quite steadily. There were no serious problems with sighting the signals despite the fog, after all we had plenty of time to spot them as our speed rarely exceeded 20 miles per hour, this was about normal considering our load and loco. Approaching Mirfield we were put into the goods loop where the opportunity was taken to fill up with water, some Sunday engineering work or other taking place on the track there. Then it was on through Heaton Lodge Junction and the start of some serious climbing after passing round

the back of Huddersfield station on the goods lines. Derek was doing fine, the engine pulled well and I was thinking it was going to be a smooth trip despite the weather when after leaving Gledholt tunnel the fog really did become intense. We slipped a bit climbing through the cutting at Paddock, the track was wet and ice was forming, reading the signals now started to be a problem.

Our pace was a crawl as we staggered up the Colne valley with a fair amount of slipping despite extensive use of the sanders. On the approach to Linthwaite, where the line clings to the valley side on a large embankment and a shelf cut into the hillside we were brought to a stop by an adverse signal. An upper quadrant semaphore with the arm at danger. I cursed this, getting the train on this gradient to move again was not going to be easy, the rails were wet through with icy water and the fog was swirling thickly around us. I was also rather surprised, Linthwaite signal box had always been switched out on Sunday's when I had worked this line previously, and I'd worked the line a lot when I'd been a Farnley Junction man. I could never recall the 'box in use on a Sunday. We stood there a long time, nothing happening, no change to the signal and absolutely nothing to see except the fog and the almost indistinct shape of the signal immediately in front of us. Impatience eventually got the better of me and I sent young Derek out to enquire with the 'box man why we were stood there for so long. I knew the 'box was only twenty or thirty yards in front of where we were stood and I didn't need to tell him to return immediately if he saw or heard the signal change.

However it wasn't that long before Derek returned with a bit of a story to relate.

"That bloke in the 'box is a bit of a strange one, the door was locked and when I banged on it he insisted on speaking to me outside at the top of the steps, no invite inside even though it's freezing.

Not that it felt warm in there, I'm sure that he'd didn't have the stove going, there was no heat from the inside at all when he opened the door. Bit of a funny looker as well, he looked like my old Granddad with a big walrus moustache and an old fashioned uniform on. Anyway he says we've got to stay here and await the signal, he doesn't know for how long, there's some-

thing happening up ahead.”

It must have been a good 30 minutes later and I was beginning to think about our guard at the rear of our coal train in his brake van, he must have been also wondering what was going on, when out of the gloom in front of us I began to see shapes forming with a number of flare lamps and high powered torches. A man in a large overcoat and wearing a Trilby hat approached us and indicated he was coming up into the cab. Once inside with his back to the fire he looked at us in some disbelief.

“I'm the permanent way inspector for this district, you two are a lot luckier than what you realise” he said, “if that signal wire had not failed, putting the arm to danger you and your loco and God knows how many of these coal trucks would be halfway down the embankment. There's been a landslide and this track is just hanging in thin air about 100 yards in front of you. You're lucky to be still standing, I think the signal cable must have broken, probably weakened by land movement” It was my turn to look at him in disbelief.

“What are you talking about, that signals not failed. It's been set at danger by the 'box man. We've been here longer than an hour now,” I replied, pointing at my fireman as I continued “He's been up to the 'box to talk to him and to try to find out about the delay.” This drew a blank stare “There's no one in the 'box, it's switched out. That signal box is always switched out on a Sunday.” Derek spoke out sharply at this, “There's a man in the 'box, it's only about a half hour since I spoke to him, that 'box is not switched out at all” I was looking out of the cab before Derek had finished his sentence, you could just discern the signal wire going round a pulley from the 'box before it made its way vertically up the signal post, it looked quite taut to me.

“I don't think that the signals failed” I said “the wire looks all right to me” With that remark the permanent way engineer shouted to his workmen stood at the side of the loco to check the signal, almost immediately the reply was given that the signal looked fine and appeared to have been set to danger. This caused him to look perplexed and we both decided to walk up to the signal box together to see for ourselves leaving Derek to mind the engine for a while. The signal box was in darkness, no one present and the door locked. The fog was clearing a bit by this time and you could see the signals for the other lines, it's four track all the way to Marsden and beyond and the other three were all set at clear. Just our signal for the up slow line was set at danger. In the distance, not too far away you could also see our line hanging in thin air where the landslide had occurred. I walked back to the loco then and told Derek what I had seen in the 'box and the line, he said nothing but you could see the bewildered

ment on his face.

We were relieved by Hillhouse men an hour or so later and got a lift back to Huddersfield on a engine and tool van that had been sent up wrong line with the relief crew. Derek didn't speak much on the way back other than to say just the once that he knew what he saw. What happened after that with our train, I'm not sure, I guess they worked it wrong line back down the valley. We heard later they were working three shifts a day to repair the track formation and all four tracks were back in use by that Christmas.

I didn't work with Derek again until maybe six or eight weeks later, we were rostered together for a week taking coal to Agecroft for the power station. This was routed on the other cross Pennine line via the Calder Valley. On the second day he showed me an old newspaper cutting he had, it was yellow with age.

“ I got this off my Uncle” he said as we were having a brew together in the mess room at Agecroft loco shed. “He's retired now but worked all his life on the signals mainly around Huddersfield. He kept this cutting as he knew the signal box man mentioned in the article, perhaps you would like to have a look” and he passed it over to me. I looked at the date first, it was a day in December 1942 whilst the war was still on, now just over fifteen years ago. There was a grainy photograph of a man's head and shoulders in railway uniform and a short article. A signal box man by the name of Edgar Whiteley who was employed by the LMS railway company had been found hanged in the woods near to Golcar on the outskirts of Huddersfield. The man was awaiting the result of a railway inquiry into an incident where he had admitted incorrectly setting the road for a local passenger train, this train had struck a freight held at a signal resulting in the derailment of the passenger locomotive. The article went on to say that the collision had been violent and the fireman had been killed after being thrown from the footplate, there were fortunately no further fatalities but a number of serious injuries amongst the passengers including a child who had lost a limb. The regular place of work of Edgar Whiteley was from the signal box at Linthwaite close to where the accident had occurred. At the time of his death he was suspended from duty awaiting the result of the inquiry. During investigations the police had found a suicide note at his home where he had written that the remorse was too great for him to bear and that he would have done anything he could to make amends for his mistake.

After I gave Derek the newspaper cutting back, he said “That picture is of the man I saw in the 'box at Linthwaite, that day of the landslide, no mistaking that moustache and face”.

A cold shiver went down my spine but I gave a silent thanks to Edgar and his signal.

A review of pipe bending options (Part 2 of 3)

Stuart Walker, of SMEE runs through common techniques that many of us need from time to time.

Note: We have permission to reprint this from the SMEE Journal and as it is both topical and interesting we have their gracious permission to use their article. It is quite long so it will be broken into three or so parts for our newsletter. This is part 2.

Successful bending of thin wall tube without distortion is more difficult, and internal support is worth considering. This is more problematic for small bore tubes. Bending springs have been used successfully but they are only suitable for large radius bends, and being over optimistic can lead to a situation where they get stuck and both pipe and spring become damaged. Dry sand packing was the traditional method but the pipe has to be ram packed and plugged under pressure to work properly, which is not practical for small bore tubes. Filling the tube with a low melting point alloy like Wood's metal has proved useful in the past, but as this contains unfriendly metals such as lead and cadmium the preference these days is for Field's metal which is a mixture of bismuth, tin and indium. Indium is a metal that looks like silver but is about twice as expensive. It has special uses in scientific apparatus due to its interesting properties, such as its ability to stick to glass. Like Wood's, Field's metal has a melting point of 61° C and can consequently be easily melted in boiling water. It can be purchased in ingot, pellet and wire form, the latter probably making it easier to use when filling small tubes first time round. Otherwise, it has been found best to melt the alloy in near-boiling water and use a plastic syringe fitted to the tube that is also heated in the water and allows the metal to be sucked into the tube. The suction must be held until the water cools and the metal solidifies. Field's metal is expensive and difficult to find in small quantities but suppliers can be found on eBay. The Yorkshire based Bentalloy Company is able to supply Wood's metal which they call 'Cerrobend'. More importantly, they market 'Polybend' which uses a polymer base product instead of metal. This new approach is being used for small tube bending by aerospace product manufacturers, as well as model engineers like Mick Knights who recently used some for bending the exhaust pipes for his model Hodgson 9 cylinder radial engine. Some of you may recall seeing his model at the 2014 MEX and his subsequent article in ME 9-22 Jan 2015. Whilst he managed to successfully pour the liquid into his 8 mm diameter tubes, this would be more challenging for smaller diameters and longer tubes where filling bottom up with a syringe drawing the air out of the top might be a better way, along with heated tubes to ensure a solid fill. It's interesting to see that Bentalloy

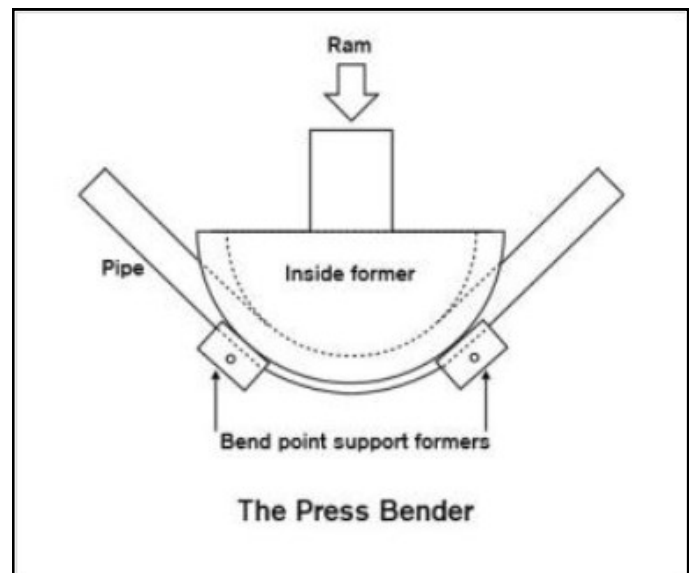
also supply a product called 'Fixture Alloy' which is another low melting point material intended for casting around delicate items that are difficult to hold for machining purposes - they tell me it's rather like machining mothballs! Before discussing the merits of various bending tools, it's worth saying that several model engineers who produce very good quality work will tell you that it's a waste of time making special tools for bending pipes less than 1/4 in. diameter. They say that all you need do is turn up a piece of bar with a groove to fit the pipe at the required bend radius, make sure the pipe is fully annealed and just pull the pipe round by hand. Whilst this might work well enough for soft copper and aluminium, it might be more of a problem for very tight bends and tougher materials.

For those with weak fingers or who wish to bend larger and tougher pipes, the following observations on a range of different approaches might be useful. For ease of reference, the approaches have been categorised as:

1. Press bending
2. Three wheel bending
3. Single wheel bending
4. Compression bending
5. Mandrel draw bending

1. Press bending

The bend is achieved by pushing a centre former against the two end supports, as shown in **Fig. 1**.

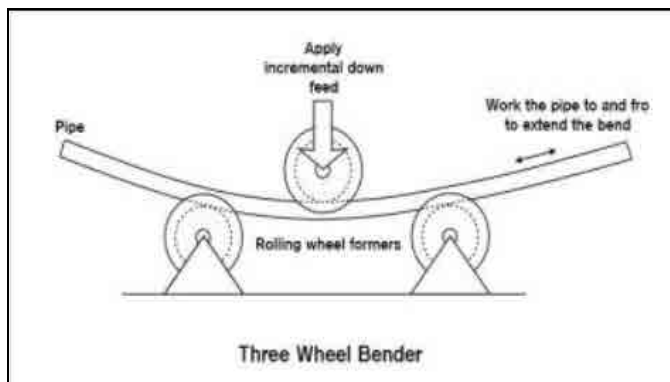


A review of pipe bending options (Part 2) cont'd

The former needs to be a good fit, as do the support formers. The former depth needs to be slightly more than half the pipe diameter with a flared lead-in to avoid chafing and make sure the lateral distortion is contained during the bending process. For bending pipes up to 10 mm diameter, small hand ratchet tools are available, but for larger pipes direct hydraulic jacks are more commonly used within a bench mounted frame. Deformation can be caused by additional tension being generated by the friction at the two support points. Whilst this can be alleviated by using a plain roller to support a flat former, there is little that can be done to better support the bend itself which can lead to a flattening on top of the bend and wrinkling on the inside when trying to achieve a bend radius of much tighter than four times the pipe diameter on thin tube. Consequently, it's best to limit the bend angle to 90°. I used one of the hand operated ratchet tools many years ago and remember being rather disappointed. It was expensive, somewhat cumbersome to use and not suitable for pipes with short ends.

2. Three wheel bending

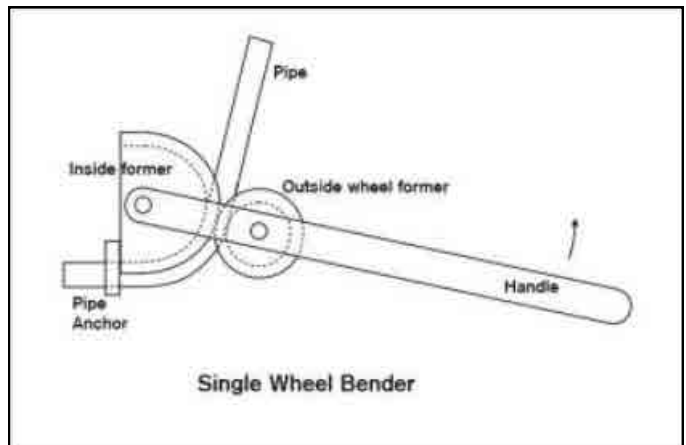
In essence this is an extension of the press bender but instead of using a static former a central wheel is used, and as the bend load is applied the pipe is drawn in and out rather like sheet metal roller. This is shown in **Fig. 2**.



The gradual application of load and free movement to and fro produces the desired bend. This approach produces less distortion than the press bender but the bend radius is normally used to produce long slow bends. However, by changing the roller configuration complete rings can be formed, although the number of useful applications seems somewhat limited. More usefully, it can be adapted to make coils by applying the

bend set in a single stroke, rather than incrementally, using a power feed for the three ring forming rollers and adding a fourth roller at the exit point to lift the tube and set the coil pitch. In fact, a fifth roller can be added to form the entry and exit bends as shown on this YouTube video: [https://www.youtube.com/watch?v=ieDrCR8xErI!](https://www.youtube.com/watch?v=ieDrCR8xErI)

3. Single wheel bending



Unlike the two preceding tools, the two formers come together at the point of bend (**Fig. 3**) and help contain distortion, this being achieved by making the grooves in the wheel formers a good fit and exactly half the pipe diameter.

This works well for bend radii of three times the pipe diameter and can easily achieve 180° bends. However, on tighter bends the frictional drag on the outside former can stretch and thin the pipe. Some proprietary benders use two small wheels with one set at the bend point and the other set back to better support the pipe being led into the bend. In common with most benders the end anchor point must be a secure fit to avoid slippage and distortion on the one hand, whilst on the other end be short enough to accommodate a double bend that has minimal straight transition between the two curves. A short temporary plug fitted to a short open ended thin walled pipe can provide useful additional support. Alternatively, fill the pipe with Field's metal as explained above. Derek Brown designed and made a very neat version of this concept which he described in *MEW 64*.

The third and concluding part of this article will appear in the next issue of the news letter. Ed

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