

INFORMED SOURCES e-Preview August 2020

To provide some light relief in these testing times, this month's column see an old favourite return and there's a copy- and-keep list of the Laws. But there is also more analysis on the Emergency Measures Agreements which are keeping the railway running.

Who runs the railway 2020

Passenger costs challenge testy Treasury

Innovation follies of 2020

Informed Sources Laws 2020.

New train TIN-Watch

In the May 1997 Informed Sources I published a three- column table with 17 footnotes. It compared the managing directors of the 25 privatised passenger rail franchises with their British Rail opposite numbers from 1995.

With railwaymen - and they were all men - still running most of the railway, the obvious question was could this dominance last? Would managers from outside the industry, with their entrepreneurial flair, take over?

Readers wanted to know, too. 'Who runs the railway' became a regular feature in the early years of privatisation as we sought to answer this question.

As the period covered got longer, the work need to update entries and research the backgrounds of new appointments increased, However, if I shirked my duty for too long, readers would ask what had happened to 'Who runs', so it was back to the grindstone.

Then came a parallel problem. As the franchise structure evolved and franchise ownership changed over time, each year required more columns. Fitting the table across a two page spread in Informed Sources, not to mention over 70 footnotes became a very tight squeeze.

But readers cannot be denied and 'Who runs the railway 2020' appears this month. I have deleted 1990s entries, which are now over two decades old. The table starts in 2000, and provides snapshots at five year intervals.

In 2012, I added a table of Network Rail Route Directors. For 2020 we have the new devolved railway and I commend the comparison of the earlier years with 2020 if you want to understand Andrew Haines' philosophy.

Colour coding is used to identify managers' backgrounds. Blue for those with railway careers, red for bus bandits and green for incomers from other industries.

Colour coding led to me referring to the top management echelons in successive tables as 'a sea of blue', a phrase which has become shorthand for the dominance of railway professionals running the industry. This year's tables reveal the sea of blue to be as broad and wide as ever.

Costs of Emergency Measures challenge government

On July 1 Transport Secretary Grant Shapps Tweeted, 'As the country cautiously moves out of lockdown, it's good to see @NationalExpress resuming coach services by deploying Covid safe practices. Helping Britain to get moving once again!'. But his Department's message for potential rail travellers was 'don't'. Or, rather, 'Consider all other forms of transport before using public transport'.

So while the return of coach travel was welcomed and quarantine restrictions lifted on holiday makers returning from abroad, having sat tight-packed in an aircraft with no social distancing, train travel, for all but essential workers, continued to be discouraged..

Not until 13 July did the message at stations and on train operators' web-sites start to change reflecting the theme of the government's new advertising campaign 'travel safely this summer'. The aim of the campaign is to get people out of their houses and start putting money into the economy.

Why this belated change? Well, the Emergency Measures Agreements (EMA) with the Train Operating Companies, under which DfT takes all the revenue and covers each TOC's costs, is proving very expensive with all those near-empty trains. DfT needs people to start travelling by train so that fares can start to off-set the cost of EMA.

Based on my analysis in the May column, the EMA payments are costing the Government around £25million a day. To provide some context I have worked out the cost per journey for those almost-empty trains. Some of the long distance operators are in three figures.

Which brings us to the speed with which the passenger business can recover from the current situation. Senior railway managers are unanimous that the industry has to start growing revenue.

Costs are essentially fixed, at least for the present, so the marginal cost of extra passengers is small. The longer the industry depends on hand-outs, the greater the risk of service cuts and withdrawals.

My final piece of analysis tries to estimate how long it could take to wean the railway off the EMA life support. The general view seems to be 18 months to two years.

No one knows how rapidly commuters, business and leisure travellers will return to a railway which has, until recently, been the subject of a high profile campaign portraying it as a high risk form of transport. I estimate that if the passenger business can achieve a compound quarterly ridership growth of 40% we could be off EMA by the first quarter of 2022.

That said, it seems likely that a substantial proportion of passengers will not return to their regular commute until next year, some for fewer days a week and others not at all.

For leisure travellers, particularly over longer distances, mandatory face coverings may be a deterrent and reinforce perceptions of risk. And the longer it takes for revenue to recover, the more time there will be to attack the fixed cost- base.

Mixed bag of 'innovations';

As you may have noticed, I am a sceptic when it comes to 'innovation', not least because I have been around for a while and remember stuff. There's a classic example in the latest round of innovation funding just announced by the Department for Transport and Innovate UK.

According to the press release 'Inventors have come forward with a host of ambitious projects to transform rail travel'. £9.4 million is being shared between 25 projects. Obviously some of the 25 are worth pursuing, but one that triggered my inconvenient memory was 'the first railway footbridge

made entirely from fibre reinforced polymer (FRP)'.

So this will be the first railway FRP footbridge since what was claimed to be the first FRP composite bridge installed at a mainline station in the UK, replaced the steel footbridge at Dawlish station in 2011.

And that was the first all FRP footbridge to be installed since the 2007 footbridge at St Austell which was also claimed to be the first structure on the UK rail network to be entirely constructed from FRP materials.

Given that when you walk round the Infrarail exhibition suppliers of structural composites are thick on the ground, funding the third 'first' railway FRP footbridge in the last 13 years really merits the attention of the National Audit Office.

Next to catch my eye was a proposal that initially sounded bonkers but was at least backed by some solid theoretical research. Steamology Motion Ltd is offering zero-emission power for existing rail freight locomotives based on a hydrogen-fuelled steam turbine generator.

Steamology's proposed system burns hydrogen in oxygen to produce the steam which drives a turbine. This, in turn drives an alternator to produce electricity.

Academic studies of this concept have looked at power stations, with energy provided by liquid hydrogen. What Steamology calls its W2W (Water 2 Water) system uses compressed hydrogen and oxygen gas in tanks.

A demonstration is proposed using the turbine power generator as a range-extender to charge the battery packs of a Vivarail Class 230. You have to admire Adrian Shooter and his team for leaving no options unturned when it comes to power, although pure diesel is now off the agenda.

Since the team behind Steamology also produced the holder of the world speed record for steam powered cars, I can't begrudge it a modest £400,000 to build a demonstrator.

Adhesion continues to fascinate researchers and what intrigued me in the list was the cryptically named 'Improved railway operations through train-mounted water addition'.

CoCatalyst Limited's proposal, known as Water-Trak, is based on spraying a small amount of water onto the contaminated rail-head to improve traction and braking.

So you're going to improve adhesion by wetting the rail? Well yes.

A recurrent criticism of much current research work is that it is re-inventing the wheel. What the team behind Water-Trak has done is rediscover the wheel.

Back in the 1970s work on adhesion at British Rail Research included studying the effect of water on the coefficient of friction between wheel and rail. This used a rolling rig to measure adhesion between wheel and rail. Tests showed that spraying water on damp rail increased adhesion.

Laboratory tests were followed in 1979 by the installation of a trackside water-spraying system at Bearsted Bank, near Maidstone. This was a known leaf-fall problems-site.

Adhesion on the test section and was compared with an adjacent untreated section of track. Where the untreated section recorded adhesion values down to 0.04, the lowest figure on the test section with the water spray was 0.11.

And there it rested, until in 2013, CoCatalyst was involved in a Rail Safety & Standards Board study of low adhesion. This led to a joint study with Sheffield University revisiting the BR work.

A trial installation followed with the water sprayed from the vehicle. The Water-Trak equipment was installed on a Class 117 DMU.

Tests at Long Marston validated the concept and the latest tranche of funding covers installation of Water-Trak on the Porterbrook Hydro-flex Class 319 demonstrator. In partnership with Northern Rail the aim is to track test the system during this year's leaf fall period.

So there you are. While funding the innovative third composite footbridge leaves my general cynicism unshaken, Water-Trak suggests that if you kiss enough frogs you may find a prince.

Informed Sources Laws 2020.

Some phrases published in this column have become common parlance in the railway industry - boiling frogs and bionic duckweed for example. Also frequently quoted is Informed Sources Third Law - 'Always mistrust schedules based on the seasons'. Other Laws have been quoted over the years, but there have been suggestions that I make them up as I go along.

So this month I have written down all 11 Laws with an explanation of how they came about. For example, the Third Law resulted from years of reporting on the Advanced Passenger Train (APT) which was always going to enter revenue service 'in the Spring' or 'in the Autumn' but never 'on 3 April' or even 'the first week in October'.

An even on today's railway, tying deliveries of pretty well anything down to within a month is an achievement. One of Informed Sources' central missions is to hold delivery promises to account - and the Third Law rarely fails.

Anyway here they are and I hope you find the stories behind them entertaining, if not informative.

New train TIN-Watch

Very little to report this month. The only bathtub curves around are Japanese Sentos: reliability growth with most manufacturers is emulating shower trays.

Last month I suggested that with fewer services being run, Depots would have the chance to carry out modifications to their new fleets. An Informed Source at the sharp end reminded me that I had overlooked the impact of social distancing on Depot throughput. This obviously affects the amount of work that can be done, which, in turn, has been reflected in longer times on depot for overnight servicing. Fewer trains serviced overnight is then reflected in availability.

So while the reduced timetable has indeed meant fewer trains are coming in for servicing, the restricted depot capacity, due to social distancing means that the it would not have been possible to have coped with the full timetable anyway. This reduced availability could be a limitation when it comes to restoring timetables.

Roger's blog

Even though I've been getting out and about, I still haven't seen a train properly, that is, a train running past in full view, since lockdown,. So while my Modern Railways colleagues have used outdoor locations for their contributions to our Zoom videos and podcasts, I have been sat in the conservatory. I must try to get out too for next month.

As well as helping to keep in touch with readers, our video reports are fun to make. This month's Zoom conference was the first to suffer from what on TV they call 'bloopers'.

Our method is to start with a trial run, where we each say our piece, and see how long it takes. Then we start recording with the aim of fitting the contributions from the Editor, Ian Walmsley and me into 5-6 minutes.

We got off to a good start when the timekeeper, who shall remain anonymous, forgot to trigger the timer for the trial run. Then in 'live runs we took turns to interrupt the procedure with extraneous noises from smart phones, timers and computers.

Meanwhile there are various webinars in the coming weeks, including a virtual demonstration of the Water-Trak system mentioned above.

As a bit of lock-down light relief I have been running a weekly Bookshelf Challenge on twitter (@Captain\_Deltic). This is based on the card game Ex Libris where you have to identify a novel by its first and last lines.

I started with 'I tried to run a railway' which was much too easy. Then I thought I might throw people off the scent with book about steam traction, but that was also too easy. Geoffrey Freeman Allen's 'British Railways after Beeching' was also identified straight away. So, as I write this I am pondering the final challenge in the series - perhaps something technical.

Finally, some signs of a return to some form of normality. As we recover from Covid, the programme of the Fourth Friday Club awards events and conferences has been rescheduled as follows:

Rail in the North of England Conference, York, 2 October  
Railway Industry Innovation Awards, London, 23 October  
Golden Spanner Awards, London, 27 November  
Rail in Wales & the West Conference, Bristol, 22 January 2021  
Rail in the Midlands Conference, Birmingham, 26 February 2021  
Golden Whistle Awards, London, 26 March 2021

Entries are invited for the Railway Industry Innovation Awards, with a deadline of 31 August - the entry form is at <https://www.keymodernrailways.com/article/railway-industry-innovation-awards-2020-entry-form>.

More details about all the Fourth Friday Club events can be found at <https://www.keymodernrailways.com/fourth-friday-club>.

Our rolling stock show, Modern Railways RVE, will take place on 5 November in Derby, and visitor registration is now open at [www.rve-expo.co.uk](http://www.rve-expo.co.uk).

That's all for now, except a reminder that you don't have to enter for the Golden Spanners, every fleet on the network takes part - like it or not!

Roger