



IS IT A TREE?

PARRY NEWS

OCCASIONAL NEWSLETTER
ISSUE NO 82

July 2021

COVID 19 DEACTIVATION TO BE OFFERED FOR NEW RAIL VEHICLES

Purging Out the Stale Breath Aerosol from Passenger Compartments and Replacing it by a Clean Atmosphere to Restore Normal Passenger Numbers in Trains and Trams

Just Vaccinate and Ventilate?

Near total dependence on providing protective vaccinations against the original Wuhan Virus is, in the view of the PPM firm, not all that can be done. As scientific evidence has unfolded particularly regarding the fast-mutating capability of the Covid 19 pathogen - policy has been moving towards, 'We'll have to learn to live with it!' as is accepted with other common respiratory ailments and provide better ventilation. Come on!

Biocidal German Research

In autumn 2020 Dr Chris Hampson, a long term Parry Associate turned up some results of German research into the deactivation, usually by autoclave, of Covid 19 Virus by a combination of heat and high pressure steam. The research concerned optimising the reuse of previously-infected hospital linen and uniforms.

SCRUFFY HAS DIED

Ever present since 2007, Scruffy, the Belgian Shepherd, kept an eye on the Parry Home and office until, at the human equivalent of 110 years old, he quietly left the scene. Much missed by all his friends.



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THE SEATS ARE BACK



Mid July 2021 - Stourbridge Class 139 Railcar interiors returned by Operator to a normal seating plan after Covid 'distancing' restrictions eased.

Extrapolation of the results revealed that, at a somewhat higher temperature than the normal 134 degrees C, dry air has the same lethal effect. R&D design is in progress on a method of using hot dry air against harmful micro organisms, not just Covid 19.

Heat Exterminates Viruses

Pumping super heated air into a passenger compartment would not be practicable, but the technical features of the solution very conveniently concentrated on a 'sweet spot'. After the briefest contact between super heated air and micro organisms (one third of a second) takes place not in the open but within a pulse of very high pressure from a sudden mechanical force applied to securely enclosed air.

Released and returned to ambient pressure, the air *temperature* drops to normal and is breathable.

The importance of sterilisation to new air entering the vehicle via the system will be explained to passengers so as to provide maximum assurance over the safety of what they will be breathing in when on board. The Science Page 8.

INTERMEDIATE TECHNOLOGY AND THE TRIANGLE OF DESPERATION

Fritz Schumacher, a highly intelligent student working as a labourer during the war, gained a special understanding which was really just Common Sense. A young Anglo-German Rhodes scholar with an enquiring mind arrived at insights which are leading to inventions urgently needed in 2021. See Pages 4 and 5 to understand how these can address the current World situation.



WHAT A DIFFERENCE A DECADE MAKES!

In the years 2020-21, overwhelmed by the impact of a major Pandemic, the Government as never before has intervened into the finances of private sector firms in order to help them stay in being ready to 'Bounce Back' when circumstances recover. What a difference this has been from what happened a decade earlier following the 2008 Financial Crisis, the Government were content to let loose a ravenous pack of 'restructuring professionals', including lawyers and liquidators, not just carrion-eaters that have a natural role, but those spotting the opportunity of directors experiencing not business insolvency, but interruptions in cash flow. Unscrupulous professionals applied every trick in the book to terrify business owners to give into the complexities of breaking up what were otherwise viable enterprises.

Editorial by John Parry MBE

As a well known former Prime Minister said, 'You have enemies! Good, that means you have stood up for something in your life'. Being over 21 John Parry should be old enough to look after himself, but just occasionally an outside intervention comes from Higher Ground and it is great to be able to refer to it. In July 2019 one of the most respected Railway Journals, Modern Railways, provided a three page illustrated description of what had happened in the 10 years since PPM's Class 139 railcars entered franchised rail service in the West Midlands. The record five million passenger journeys indicates a service well bedded down and popular with its users. But despite the exceptional reliability, cutting edge environmental performance why has there been no further take up? According to Modern Railways, there has been, instead - quote:-

'Little Help

'As organisations preferring big expensive projects with big expensive technical support, very few people in the industry have an incentive to be economical. The UK is not called 'treasure island' for nothing.

'Little Praise

'Despite 10 years of scoffing, there are plenty of urban developments where a simple light rail system would be a major advantage. For little feeder services or smaller towns, the Parry People Mover has a niche market and (should be saluted) for breaking the mould of light rail and providing living proof that there are solutions'.

Getting It in The Neck

But the opposition to the PPM concept provoked more than scoffing, As the unfortunate George Floyd experienced in Minneapolis, enemies; banks, public servants and even rail people also applied their knees!

Why did Victorian railwaymen hate-light rail so much?

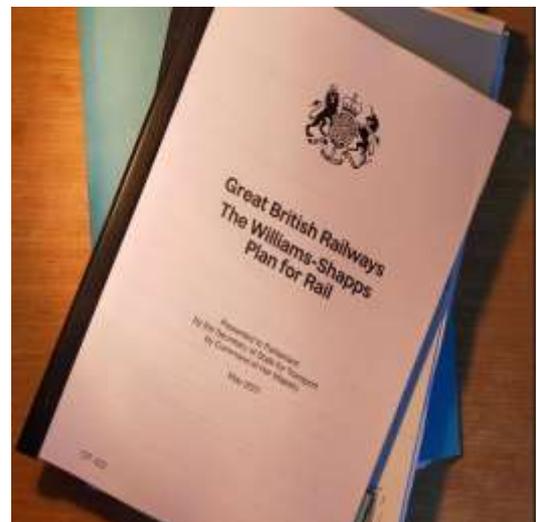
Because while using steel wheels and rails in street, trams especially did what could have been performed by branch line train services. Imbued with 'steam culture' almost as strict as Old Time Religion, 'not doing it properly' still prevails in some minds today.

Following the extraordinary, unjustified and unprovoked assault on its former engineering licensors, JPA in 2013 has kept PPM in damage-limitation mode while devising a technical and business strategy which best responds to an ever-shifting UK transport environment. At least the 'goalposts' have now settled down into what seem to be carefully considered policies prescribed in the Great British Railways report which is, in effect, a new Transport White Paper. The salient points that should guide future R&D and business development activities include:-

- accelerating the progress of innovation
- favouring procurement from UK sources
- measures to attract back the missing passengers.

Most of the UK Government's R&D finance has to pass through a swamp inhabited by beings that want it to stay there as long as possible so they can feed on it and are not really interested in getting things finished and into the market. This hunger exists for the variety of specialists in the submission of bids for valuable grants. To be cynical, 'Slow is Beautiful'. By the time the work is finished, one might even have moved on or even retired and left far behind the possibility of being shown up to have been sloppy or stupid.

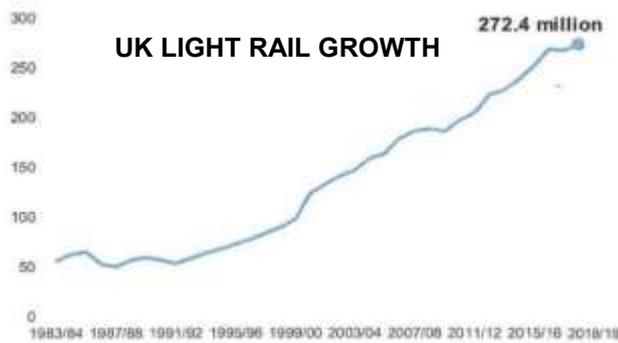
How different from the attitude of the professionals has been the behaviour of the authorities to the 2020-21 Coronavirus Pandemic! Everything possible is now being done to avoid the wasteful starving out of companies that could have a good future.



HEAVY OR LIGHT RAIL? OR BOTH

Earlier in 2021 the Stourbridge Shuttle operation was a resounding winner of the 'World Cup of Trams' Competition, organized by UKTram, the award going to the Operating Company, Pre Metro Operations Ltd. Trams are light rail and such is the debate about the slow progress of introducing this environmentally-responsible mode that the promoters, designers and manufacturers have had to respond to opportunities emerging elsewhere.

During the build up to the 2019 General Election, Prime Minister, Boris Johnson, made a strong case for a 'Beeching Reversal' initiative because so many Northern and Midlands constituencies now no longer have stations and lines. This may have contributed to the erosion of the 'Red Wall' of Labour-held constituencies seen in the election result. Restoring public rail services on lines not used for that for 60 years is not a small task. Question: return to heavy rail or to a new form of rural light rail? **PROOF OF THE PUDDING**



Taken from the official figures light rail use has grown strongly, but had there been a less expensive form also available, the achievement could have been many times as large.

MARKET RESEARCH AND DESIGN WORK WHICH LED TO THE TRAMTRAIN WHICH LOOKS LIKE A STREETCAR



New Orleans Streetcar from the 1920s is actually a modern vehicle

The politically-important Restoring Your Railway activity, which has Department for Transport financial backing, will have many promoters that already run private railways using historic equipment. Reflecting the elegant appearance of New Orleans popular streetcar system coachwork of such appearance could fit into the traditional context of a British preserved railway.

Jo is five millionth shuttle passenger

Report by Megan Archer
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AND now arriving at platform one – passenger number five million!

The Express & Star, the Black Country's main newspaper, made a big story out of the milestone of five million passenger journeys being passed by the Stourbridge Shuttle service operating PPM's Class 139 light railcars. The passenger recorded as taking the journey was awarded a Certificate presented by the Chairman of the Operating Company, PMOL.



Jo Aldred became passenger number five million on the Stourbridge Shuttle, which runs between the town centre and junction

The event took place in August 2018. 6 million have now travelled.

The 'Town Branch' is as much part of the Heavy Rail Network as the West Coast Main Line and, although heavily derogated so as not to have to comply with the rule book of Group Standards needed to operate fast, heavy trains on complicated lines, the service is part of the passenger count of Britain's railways, running at half the cost.

INTERMEDIATE TECHNOLOGY REVIVAL

An Agenda of Tasks for Ordinary People to Save the World - with Technology Inventions

Covid, Climate and Livelihoods

If there were ever a time, it is now to heed the analysis of Attenborough and others, not just that our fragile planet is at risk. The lives of 7 billion humans matter too. Vast personal wealth will not be a protection if everything comes unravelled. Think of Marie Antoinette with her cakes! Billionaires plan joy rides into space while 'noises-off' are three Desperate Factors that are intruding. *No one* is immune.

(Factor 1) The Wuhan Virus with which much of the World is at war has a long way further to go. Two centuries ago the world as now was already replete with renewable energy, in the headlong rush of the Industrial Revolution (Factor 2) we burnt so much entrapped carbon we have irreversibly heated up the Climate. (Factor 3) Impacted upon by Covid and deteriorating conditions in mega-cities desperate people are turning to criminality, insurrection and migration.

Who was Fritz Schumacher?

In 1939, Intermediate Technology's founder was in the 'wrong country' which turned out to be the right one for him, Britain. Though just a young German student at Oxford he decided not to go home. An quietly-spoken statistician with an interest in economics and technology, he was rounded up as a potential enemy agent but guaranteed by a fellow student sent to work on an estate farm.

Fritz alongside others in the labour gang used machines and tools but while most intellectuals would be diffident, he took a close interest in what work is like for ordinary people. Years later everyone wanted to hear about his analyses and he tried too hard to respond, giving lectures in many countries. It is a tragedy that he, having been able to develop his ideas for only 30 years, died exhausted ON a Swiss train in 1977.

Straight after the War he had served as a translator at the Nuremburg Trials and had then been recruited into a top position in British Industry dealing with energy supply strategy at the NCB. Prime Minister Nehru learned of his perceptions about technology and invited Fritz to India. Later the Pakistan Government asked Fritz to visit with two colleagues one of whom, was Parry (ITDG was formed earlier in 1966). The name was changed to 'Practical Action' in 2006 and the organisation has become a powerful international agency with representation in several countries.

Intermediate Technology based on knowing how things work, is easily translated into processes that can be applied by planners but readily adopted by the artisans in a shanty town. Faced with the three great perils; disease, climate change and the poor with no bread on the table, it is now the task of Fritz Schumacher's successors, other innovative and practical minds, to meld these factors together and come up with remedies.

Parry, having been closely associated with the Charity from the beginning, has always kept the Intermediate Technology entity in being.

Innovation in the Intermediate intermediate form of Technology has lapsed into localised non-transferable forms, unsuitable for the programmes of major development agencies. However, and this has been set down as policy, should new technologies that address the vision of ***the poor themselves becoming the Planet's Biocidal Technology Fighters and Carbon Reduction Heroes*** get developed and refined, Practical Action may be able to apply them. Re-launch of Intermediate Technology Ltd will be supported by share capital to be used for the development of tools and equipment that apply measures which confront the threatening factors of an out-of-control Pandemic and pollution harm from CO2 from coal and diesel.

In each case the activities will justify either the public paying a living wage or for the activity itself being able to generate revenue.

Normal commercial means will be used to bring new equipment into the markets where it will be used. If a convincing case is made, development-aid funding can assist procurement of the equipment if there is evidence that the approach will have significant effect.

WHAT TO DO NEXT? INVENTIVE MANUFACTURING

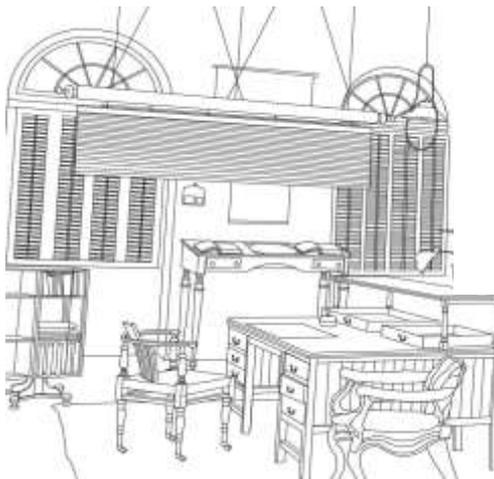
The case is clear for a range of new products and methods to emerge to confront and break what could be called 'A Triangle of Desperation' (the Pandemic, over-carbonised, polluted climate and the loss of disadvantaged peoples' livelihoods) is highly significant and calls for the means for urgent Research and Development. Turn to the 'Cradle of the Industrial Revolution' where from the Middle Ages there were located extraordinary amounts of indigenous skills and tools-of-the-trades attracting talented people from elsewhere e.g. Telford, Watt and Trevithic. They and thousands of others came from afield in order to get things done. This unusual propensity continues today and has begun to be mobilised. The setting up of the Black Country Innovative Manufacturing Organisation at Castle Hill, Dudley (BCIMO) can become the mother and father of inventions. At least £1 million of funding will be needed to kick start targeted activities, taking inventions through to test facilities, sorting out the snags, then commercialising through tooled-up manufacture and capable distribution networks. IT Ltd can define and assemble the ingredients needed for this, working alongside BCIMO.

Inventing ourselves out of trouble requires the capabilities of an international all-rounder, Richard Pearman, with battle-hardened veterans in support, can help.

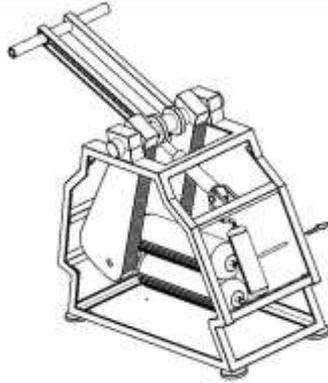


1) EXTERMINATING THE VIRUSES

Cooling the room with manual effort with potential to sterilise stale air



A traditional 'Punka' hand-operated fan



Pendulum Air Compressor

Applying the mechanism of a swinging pendulum and with forces concentrated at the fulcrum, human effort can produce compressed air in useful quantities.

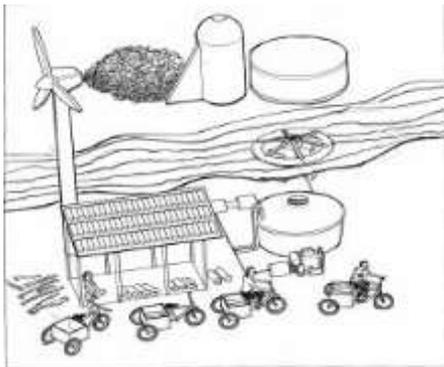
2) FREE ENERGY FROM WIND

A money tree which supplies energy in three different ways



The money tree rotating slowly and safely on a vertical shaft will accumulate energy into store. Using high gearing it will run a compressor manufacturing high pressure air supplying a 'hot' feed and a cool feed to the building. Release of air under pressure will also operate a low watt electricity generator for LED lighting in the adjacent building. Heat, cold and power cost money.

3) A BUSINESS BASED ON DECARBONISATION



Supplying renewable energy as a business. Using compressed air as a household battery and means of temperature control

With energy-harvesting equipment installed, an entrepreneur will be able to collect and distribute energy in cylinders using manual transport distributing these by cargo bike to householders with a source of cool air for preserving food running a low watt generator of electric power.

4) REMOVING AN ENVIRONMENTAL HAZARD

Turning waste from being a pollutant into something useful, thermal insulation in non loadbearing applications.



A brick so light it can hang on a piece of cotton and one which floats on water

Long term experiments and testing have established the practicability of gathering and shredding plastic and other lightweight waste as a substitute for heavy aggregate in concrete used for walling. The end result is also a better thermal insulator and lighter to transport. The brick hanging on the piece of cotton held by Julie, PPM's bookkeeper, is made from shredded newspaper.

INTERMEDIATE TECHNOLOGY MACHINES DESIGNED AND MADE IN THE UK AND USED WORLDWIDE IN 50 COUNTRIES



A new town in East Africa, although orthodox in appearance, is one of the pathfinders for intermediate technology design and engineering which, at the same time, addressed the issues of environmental sustainability and livelihoods. The building elements seen are blocks, interlocking tiles, ridges and paving materials and are all manufactured on small manually operated machines and the men and women that work with them were from the shanty settlements in the area. Finance and planning was supported by international aid with a new micro-finance mortgage organisation set up for the purpose which has expanded and has offices in most towns and cities of the country.

BRITAIN SHOWS ITS ABILITY TO RESUME A ROLE AS RAIL INDUSTRY EXPORTER

Dilemma for Burton upon Trent locomotive manufacturer with orders bursting at the seams. Factory needs to be three times bigger than it is. Export orders have been piling in from all over the world.

Clayton Equipment Ltd was originally founded pre war and for a period operated as a component of the Northern Group of Rolls Royce, Derby. The friendly relationship between Clayton and PPM began 25 years ago when the Aerospace Group even provided training for the Parry technical team in designing out risk.

Steve Gretton, the then Engineering Director and since 2006 the proprietor with the company in private hands as a result of a management buy-out, took a close interest in the environmentally-advanced thinking of the PPM venture and seeing applications for Clayton's own product range, including battery powered locomotives, Steve saw opportunities for ever more challenging requirements for longer range locomotives in mining and tunnelling.

PPM's Class 139 light railcars derive their traction torque from heavy flywheels in the chassis. Clayton's recent success in range-extension derives not on flywheels, but by maintaining the level of traction current with an on board generating set.

Clayton's success has not just been by simply being good engineers. While for many British firms influenced by a background commentary of the Nation becoming a 'Post Industrial' society, why bother making things?, export sales activity by UK businesses declined especially after joining Europe. By contrast, as an effective communicator as well as having a business brain, Steve Gretton has travelled the World looking for sales, and the sales have come.

While always keeping in mind the prospect of diversification into the development of passenger rolling stock, Steve Gretton joined forces with PPM's John Parry on investigation and promotional visits to the Middle East and Far East.



Gretton and Parry outside a prospective customer's factory in Anatolia.



One of a batch of five Clayton 90t hybrid locomotives under trial at Chasewater Railway where PPM have also historically commissioned their hybrid railcars.

FOR WHAT REASON WAS THE TRIBRID CONCEPT DEVELOPED?

TRIBRID technology derived from the successful engineering of the Class 139 light railcars now operating each day at Stourbridge will enable designers of a wide range of rail vehicles attain a kind of performance in low cost operations that previously would only have been possible at high capital expense. Hybrid locomotives are being marketed successfully by Clayton Equipment using a small *diesel* engine which provides continuous charging. For PPM public transport rolling stock instead of modern diesel there is the choice of introducing zero emission technology. Clayton-manufactured PPM passenger vehicles can use *compressed air* as a battery charging energy source. The TRIBRID goes a step further by supplementing the train's traction motor with short powerful boosts of *kinetic energy*. This is contained in a spinning 500 kg flywheel providing over 100 hp for extra acceleration. The flywheel adds to the traction current from the batteries whenever the train needs to accelerate away from a station.

Conventionally, motive power delivered quietly and without pollution has required a permanent electrical infrastructure to feed traction current to motors on board the vehicles.

A large array of traction batteries can only supply energy for a few hours however before the vehicles have to be taken out of service to be recharged. The store of compressed air on board can be topped up so rapidly passengers will not perceive any delay.

LOCAL ORGANISATIONS AND FIRMS AND THE NEW BASE FOR INNOVATION CHALLENGE

Keeping Going Despite Everything

PPM is assembling a manufacturing partnership to fast track the building and commissioning of a first of class single coach tramtrain which is planned to have an historic 'New Orleans' profile. The specification is a flywheel hybrid with compressed air + flywheel powered gen set which extends the range of Clayton's thin plate lead acid battery powered bogies. The engineering design should provide for the option of a compressed air traction power which does not just keep the batteries charged, but provides ample quantities of fully-sterilized air for the passenger compartment of the train. This is simultaneously being purged by separate roof-mounted ventilation equipment. The science behind this is explained on Page 8.

BCIMO at Dudley

Whilst so much of the British nation has over the years lost the plot as far as practical things are concerned, a painful lesson learned during the 18 months during which the Coronavirus Pandemic blighted our lives. While quite a lot of people took to the idea of lockdown and no longer having to go to work, but there needed to be others that had no option but to keep going flat out. Manufacturing and construction including the frantic efforts to rearrange premises and create new places. Forging ahead with a project first discussed in 2012 between Network Rail, PPM, Warwick University to provide a design, development, testing and technical support facility for light rail innovations has called for the establishment of a management organization. Rather than concentrate exclusively on rail transport, there are prospects for hand-holding and supporting the inherent propensity for inventing things in the area.



Scene of progress including the completed railway test track at the Dudley Centre which is being managed by the Black Country Innovative Manufacturing Organisation strongly supported by the Authorities including the West Midlands Mayor and Leadership of Dudley Council.



Dudley Councillors during recent visit to the project site.. Above Photos: Credit: Dudley News



Where it all began, the Shuttle service at Stourbridge keeps rolling along, now with a smart new livery - an iconic vehicle. Photo: Credit: Black Country Chamber of Commerce

AT WAR WITH A VIRUS: APPLYING SCIENTIFIC METHOD

By July 2021 a new virus had already killed over 4000,000 human beings. Now to counter attack. The question 'how?' John Parry asked the non Executive Chairman of Intermediate Technology Ltd, Rev Prebendary Mike Kneen, recently retired as Team Rector of Leominster in Herefordshire.

Not always a clergyman, Mike's earlier scientific work demanded familiarity with bacteria and viruses (in the Water & Sewerage Industry) and Dr Lesley Kneen, his wife, is a GP, so who better to ask which route to take to deactivate Covid 19 when it is on the move i.e. in aerosol drifting above passengers' heads? 'Not by freezing' was 'the Kneens' first surprising comment. Micro organisms such as spores and viruses can 'hunker down' in some of the coldest conditions like in Antarctica and reemerge ready to thrive once temperatures rise.

Another Parry associate, Dr Chris Hampson, ex senior scientist at Morgan Ceramics, went searching and discovered work in progress focused on destroying the contagion from the Coronavirus in hospital laundry work. A German University linked to a hospital dealing with the Coronavirus crisis has been conducting a research programme how to return hospital linen, towels, bedding and expensive uniforms completely sterilised having been in the presence of virus infection on the wards.

Hospitals use autoclaves and steam at 134 degrees centigrade, well above normal boiling point which kills the Coronavirus but damages textiles after a few cycles.

German Research Unlocks the Temperature Question

The work on thermal Coronavirus inactivation has been carried out by Martin Hessling, Katharina Hoenes and Christian Lingenfelder at Ulm University of Applied Science in Germany. While aimed at linen recovery this also revealed that application of steam is not essential for total virus deactivation. Using dry, hot air at a higher temperature is needed, but not that hot. Analysing and extrapolating the results in the research graphs working on a 0.001% survival rate -

Temp C	Time
100	7.8 mins
120	1.4 mins
140	16.8 secs
160	4.0 secs
180	1.1 secs
200	0.3 secs

The implications are that, even with a very brief pulse of infected air, providing the virus is subjected to 200 degrees Centigrade, it will not survive.

UK Industry Involvement

There are things to solve if it is necessary to create pulses of very hot air in a rotating machine. how do you lubricate the moving parts? Another of PPM's shareholders, Dr Michael Holmes, one of the founders of the space technology engineering specialists, Alletra of Sheffield Park, Sussex, knows. Lubrication does not have to be wet. A form of 'grease' has been developed by the firm and used by manipulators which will function in extreme conditions of heat and cold, in low Earth orbit on the International Space Station.

For train passengers, once air is transferred from large-scale storage alongside the track into pressure cylinders on board, the compressed air has already been fully sterilized. That procedure will have been completed at the time when, using cheaply-available renewable energy, the air will have passed through powerful compressors bringing the temperature to over 200 degrees Centigrade so the virus will have been deactivated.

There is an important requirement for a retro-fit version of the biocidal technology which can be installed as an ancillary to existing vehicles. These can be trains, buses or ambulances. The key to the development is to avoid the need for the large sudden call for torque to produce the high pressure and temperature. The approach taken will be to draw from the vehicle's power loom at a steady low rate, then release a spike of energy.

Verifying the Outcomes

Senior NHS staff in Sandwell and Birmingham are interested in the Biocidal initiative. Ambulances and inter hospital transport are in constant use.

Birmingham now has a Clean Air Zone. Rather than stay out in the surrounding street, clean air should be inside the vehicles.

Don't Ventilate, Exterminate!

