

RED SUN & Mag Power

-RED SUN Hydrogen Revolution

-EGG Algae to H2

5c/kWh Charging

98% eff. Induction Charging

Low-Cost for Philippines

5c/kWh Charging Stations at Gas, Train Bus Stations & Ports,

Hybrid Thermoelectric SHIP BUS & TRAINS

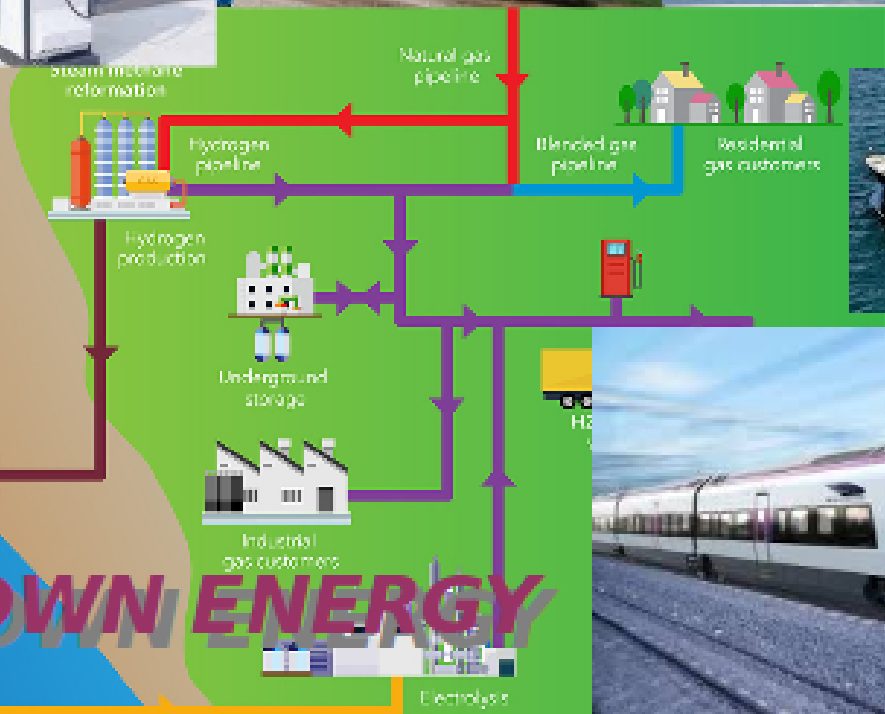
Trams/Bus - a new Hydrogen approach

MAG POWER

Hydrogen Economy

MAG POWER 32 MW Thermal Storage -

CO2 pipeline



TOP DOWN ENERGY

Power to gas

Electrolysis



MAG POWER CHARGER - 1 cent /kWh- MAG - GAS - Bus, Ferry & Train Lines



MAG POWER LINES

Retrofitting Existing Buses/Stations/Ferries/Ships

- ◆ $\frac{1}{4}$ EGG Algae to H₂ = 4.5t H₂/d = 105,000 MWh/yr
- ◆ Transportation Min.for Bus/Cargo & airports/ports
- ◆ Zero Fuel -Zero pollution & 20 db less noise

Bigger transport capacity, plus much lower cost to run trains, buses, ferries, with 5 cent/kWh charging with **Mag Power Charging Stations featuring thermal battery/Mag Gas Onboard Charging**

- ◆ Reliable: more passengers, less traffic
- ◆ Better accessibility+ interconnected sea/rail

- ◆ Chance to improve the shopping scene + **3 separate hydrogen charging systems with retail– 5 c/kWh electric car charging!**

Mag Gas works 2 years in LPG steel tanks



Mag Power

Proposal: for Complete Integrated Transport Network based-on:

Mag Power ~ INTEGRATED H2 & MAG GAS ENERGY SOLUTIONS:

- ◆ Ground-breaking Thermal Battery & Infrared Solar Thermal Desalination System
- ◆ Total Replacement for fuel & electric battery system, with MAG GAS Thermal Battery charging at 1 UC cent/kWh !
- ◆ MAG POWER Thermal Battery Runs Jet Turbine & Diesel
- ◆ Retrofit Combusted air Bus + Thermal Batteries
- ◆ Fast-charged Thermal Battery. w/Compressed Air tram
- ◆ 700 km non-stop possible for 1st time-charge – For Transportaion
- ◆ Run on wind turbine/hydro energy @remote site – For Industrial
- ◆ + MAG/MAG GAS recharging- recharge 1UScent/kWh – For Hotels
- ◆ Hybrid & electric car charging stations chg= 1 Uscent/kWh
- ◆ Retrofit Bangkok & Panama Train Stations/Bus Stations & Ports
- ◆ Desalinated water, ice, HVAC Bus/train 5 US cent/kWh charging @ all stations +

Mag Gas Recharging

5 US cents per kWh

Goal - Connect Ports, Metal & Industrial Centers, Manufacturers, Mining, Hotels & City Centers



INCIDENCE OF DERAILS AND OTHER ACCIDENTS AT TUNNELS IN MINDANAO (2001-2010)



Connect to RED SUN & MAG POWER FERRY LINES



Goal - Retrofit fleet of Mag Power Ferries Tourism, Cargo, Commerce for Trans+Logistics



Route	Travel Time
Davao - CDO	2 hours and 35 minutes
Davao - Zamboanga	6 hours and 29 minutes
Davao - General Santos	1 hour and 28 minutes
CDO to Iligan	54 minutes
CDO to Zamboanga	4 hours and 55 minutes
CDO to General Santos	3 hours and 35 minutes
CDO to Butuan	1 hour and 47 minutes
Butuan to Davao	3 hours and 4 minutes



NEWS

Phase 2 Of Mindanao Railway System To Connect Butuan, Cagayan de Oro, Laguindingan, & Iligan

H2 & MAG POWER Electric Tram ~ Catenary System

No Wires or
Catenary
System
Needed ~
H2 & MAG
GAS
Charging
onboard
+thermal
batteries =
1400 km
range-save
\$18m/mile



•H2 & MAG POWER
Tram runs without fuel

- HEALTHY
- ENERGY-EFFICIENT
- SAFE
- LOW-COST - ULR
- ECONOMICAL
- FLEXIBLE - ULR
- ATTRACTIVE
- PASSENGER-FRIENDLY
- PEDESTRIAN-FRIENDLY
- VERSATILE
- PUBLIC FUNDING
- H2 & MAG POWER brings the
HYDROGEN ECONOMY to
Thailand to enable transport!

H2 & MAG POWER Gas Re-charging & gensets
3.2 ~ 32 MW Thermal Battery enables Hydrogen



RED SUN Thermopneumatic + Mag Power Charging

The Compressed-air Engine

The compressed-air engine is a pneumatic actuator that creates useful work by expanding compressed air. A compressed-air vehicle is powered by an air engine, using compressed air, which is stored in a tank. Instead of mixing fuel with air and burning it in the engine to drive pistons with hot expanding gases, compressed air vehicles (CAV) use the expansion of compressed air to drive their pistons. They have existed in many forms over the past two centuries, ranging in size from hand held turbines up to several hundred horsepower. For example, the first mechanically-powered submarine, the 1863 Plongeur, used a compressed air engine.

APPLICATIONS:

The compressed air engine can be used in many vehicles. Some of its applications to be used as engine for vehicles are **MAG POWER** hybrids



- Moped-3 wheeler-Sm Taxi Motorcycle, eBike charger
 - RATP has also already expressed an interest in the compressed-air-0 Pollution-Operates without wires-plug
 - solves power /AC/ H2O problems- small 300kW=2 x 4m
 - Locomotives run on **MAG POWER CHARGE SYSTEM**
 - Compressed air locomotives have been historically used as mining locomotives and in various areas.
 - Buses, Trams run on hybrid thermal-elec
- Various compressed-air-powered trams were trailed, starting in 1876 and has been successfully implemented in some cases with high torque.
- Also for ferries, watercraft, gensets, aircraft

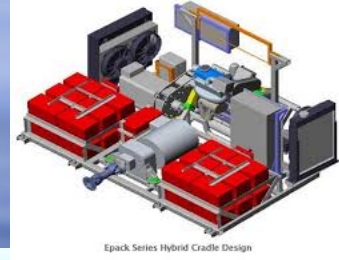


Retrofitting Existing Buses

- ◆ PPA/Efficiency Agreement, Plus agreement with Dept of Transportation for Bus/Cargo & airports/ports/other
- ◆ Environment - less pollution & noise

Bigger transport capacity, plus much lower cost to run trains, buses, ferries, with 1 cent/kWh charging with **Mag Power Charging Stations featuring thermal battery/Mag Gas**

- ◆ Reliable: more passengers, less traffic
- ◆ Better accessibility+ interconnected sea/rail
- ◆ Chance to improve the shopping + charging car
- ◆ Sustainable with renewable generation **MAG GAS ~ 1 cent/kWh**





Amsterdam



Zurich



Dublin



Nottingham

Shopping Street tramways

Oxford Street Tramway 1861

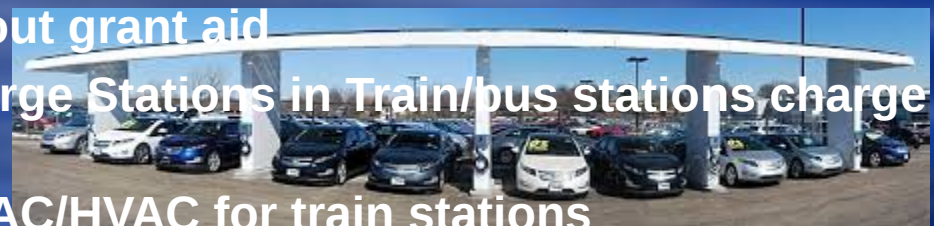


Sustainable horse traction

London's first tramway, a single track of c. 1 mile along Bayswater Road to Queensway, was opened by G. F. Train's Marble Arch Street Rail Car Co. in 1861.

Passenger volume needs full size tramway/train

- ◆ **BUT HOW TO GET IT ?** PPAs (\$150/MWh) and Nickel Refinery subsidize the whole operation including railroad operations.
- ◆ **MAG POWER Way:** Lower cost for electricity
 - ◆ Subsidized by cargo and industrial clients
 - ◆ Railroad concessions where no fuel used
 - ◆ Mining Concessions pay for running train
 - ◆ No need for government subsidies
 - ◆ Super low cost MAG POWER CHARGE STATIONS 1 UScent/kWh
- ◆ **This offer:**
 - ◆ Private promotion and Planning Permission
 - ◆ Private investment
 - ◆ Open in less than 1 yr + Ni blast furnace/billet delivery
 - ◆ Commercial operation without grant aid
 - ◆ Low-cost MAG POWER Charge Stations in Train/bus stations, charge both hybrids & electric
 - ◆ Desalinated water, ice, and AC/HVAC for train stations





MAG POWER Way- **MAG POWER** CHG STATION-1cent/kWh

- ◆ 1 – 2 km built in a day with Alstrom System
- ◆ Run all Train/bus & tramways synergistically
- ◆ Connect Philippines ports with manufacturing, hotels & buses for trans-Philippines system & cargo logistics
- ◆ This offer (including **MAG POWER LINES Buses**):
 - ◆ **EGG Acoustic Soundwalls** for city locations



No utility diversions- thru **MAG POWER 32 Mwp** mobile battery & gensets in distributed **MAG POWER Stations**

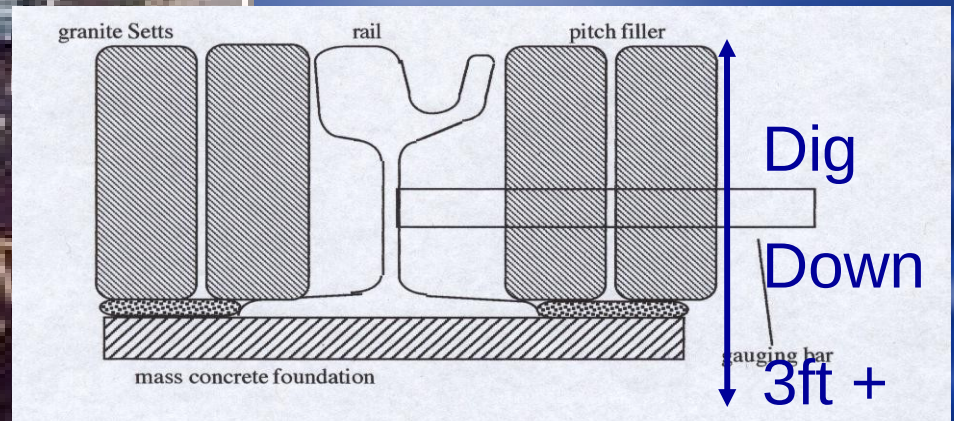
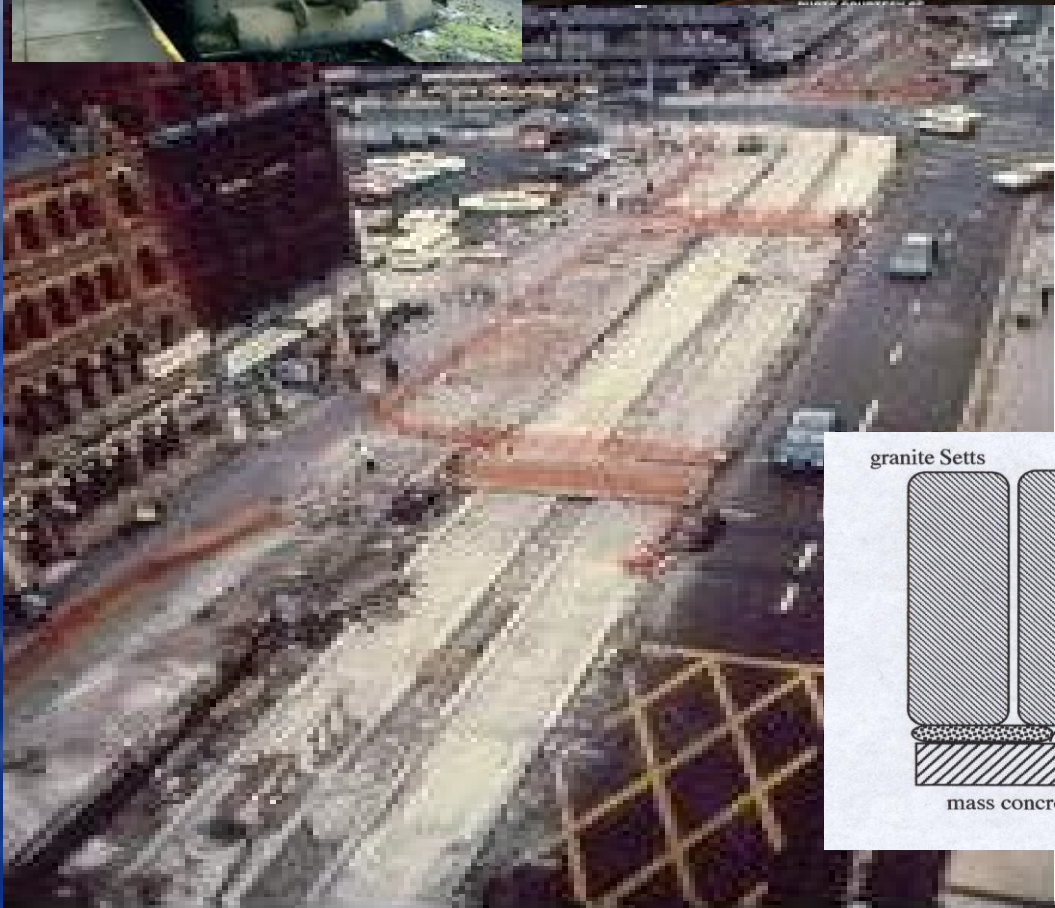
- ◆ Buses & trams recharged in minutes seamlessly!
- ◆ Trains interconnected-Ferry-Bus- all featuring low cost
- ◆ Featuring 1 cent per kWh electric/hybrid charging
- ◆ Plus water & Ice and other services offered at stations



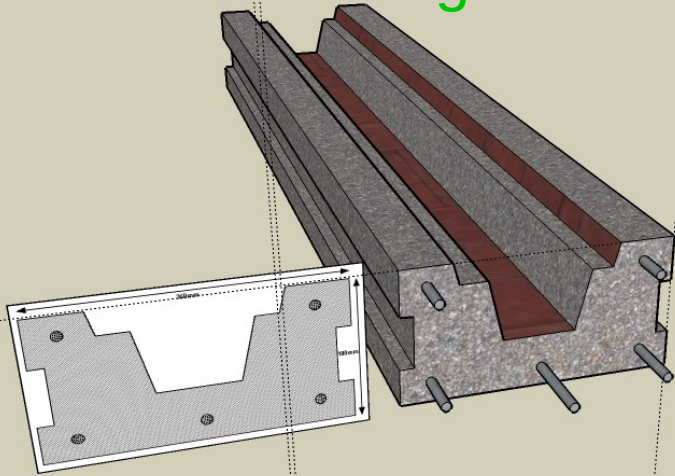
Conventional track installation



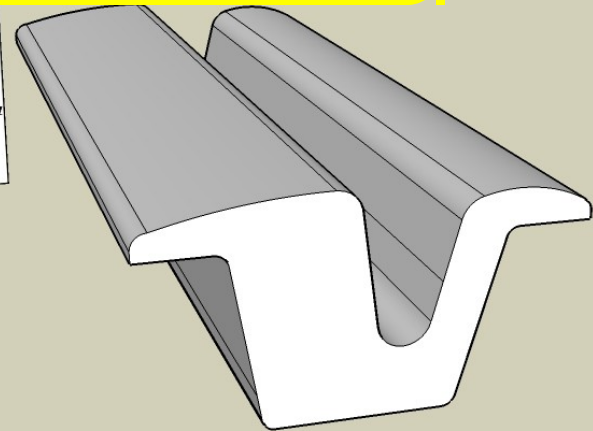
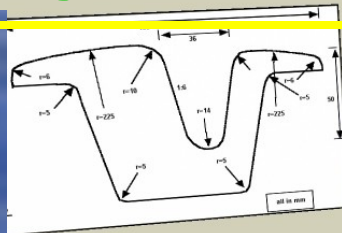
Manchester Streets - 12 month closures



Pre cast Troughs 13in by 7in



New way: LR55 track

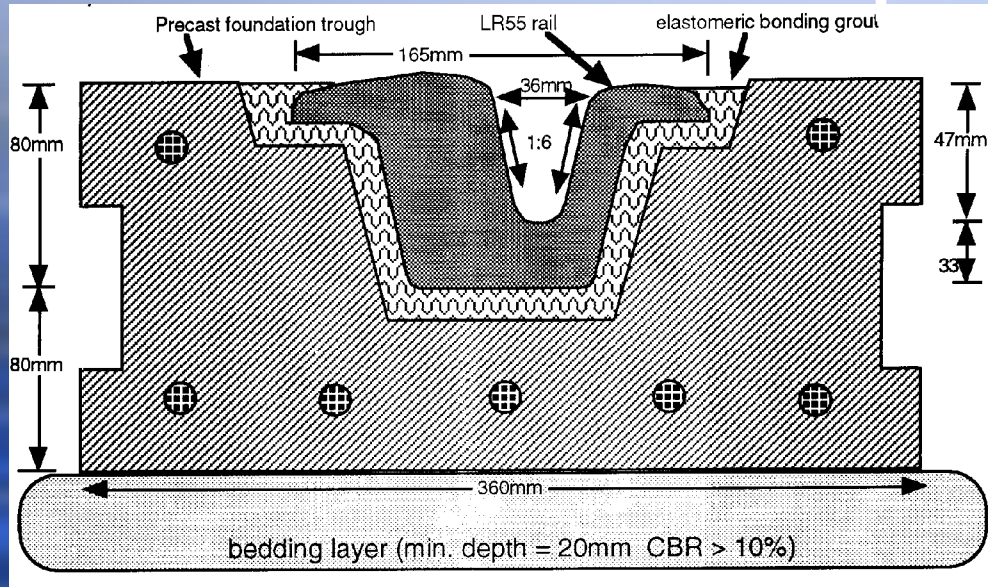


Rails only 4in deep

More information:
www.LR55-rail-road-system.co.uk



LR55 Minimises street disruption



9in deep

13in wide

Sheffield since 1996

Replaced failed track only 12 months old



The affordable City Class tram



© 2006 Alan Robson



er

City Center

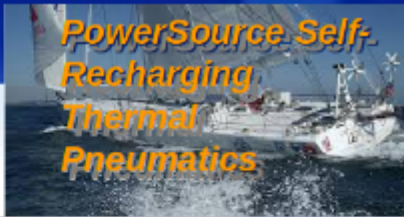
© Blackpool Trams



29m long = 200 passengers

© Blackpool Trams

What the City Class does



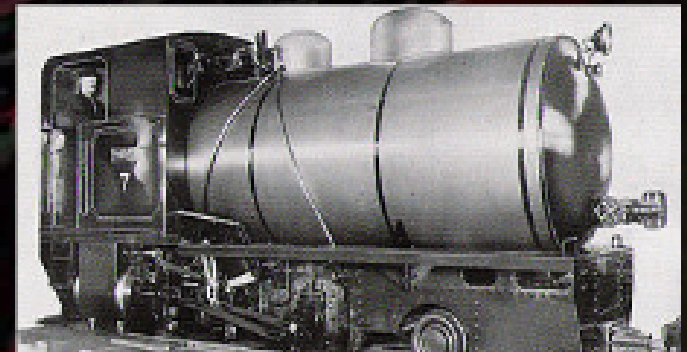
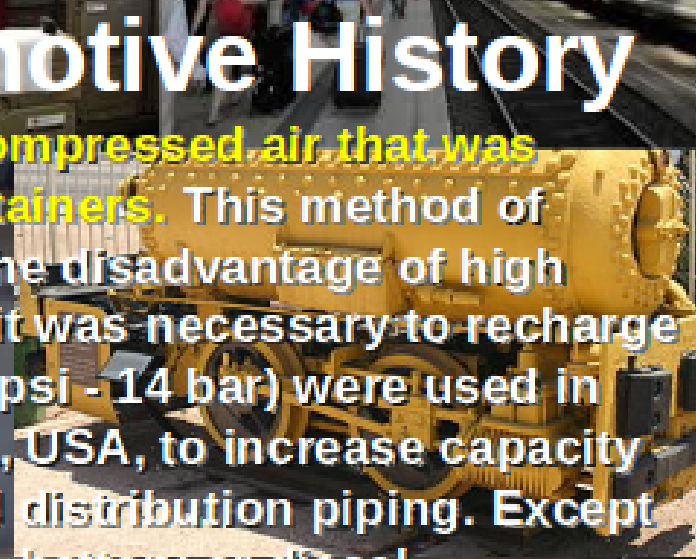
200 kW = 438 kWh	200 kg
330 kW = 723 kWh	400 kg
1.3 MWp = 2900 kWh	1,400 kg
3.2 MWp = 7,200 kWh	3,200 kg
32 MWp = 90,000 kWh	26 tons

- *200 passengers
- *2 wheelchair spaces
- *Rapid acceleration (1.5m/s^2)
- *Quiet (under 60dBA)
- *Turns 12m (40ft) curves
- *29m (95ft) long & articulated
- *Couples into most trains

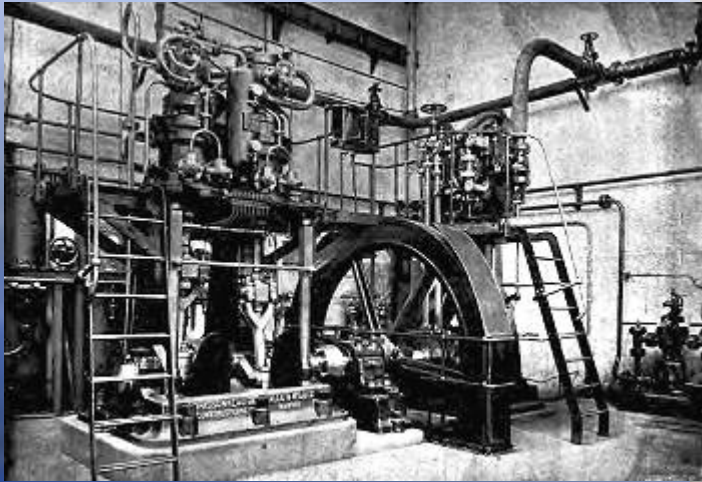
MAG POWER LINES

Compressed Air Locomotive History

Compressed-air locomotives were powered by compressed air that was carried on the locomotive in compressed-air containers. This method of propulsion had the advantage of being safe but the disadvantage of high operating costs due to very limited range before it was necessary to recharge the air tanks. High-pressure systems (up to 2000 psi - 14 bar) were used in large mines, such as Homestake in South Dakota, USA, to increase capacity and range, but required special compressors and distribution piping. Except for very small prospects and remote small mines, battery or diesel locomotives have replaced compressed air. Air locomotives offer advantages over conventional steam locomotives of lower cost per unit, cleanliness, and decreased risk from fire or boiler explosion; these are counterbalanced by the need for a source to refill the locomotive, and by the limited range afforded by the reservoir. H₂ & MAG POWER + H₂ & MAG GAS solves both supply and low power by heating air to 100°C (H₂ & MAG POWER LINES) to increase Power 10 x's over these and regular diesel engine compression systems; and; this is the future for compressed air tram and ship systems, and gives ranges in the 1400 km!



Compressed Air Trams/Buses



When one thinks about tramcars one's first thoughts are usually of electric trams, then probably horse, steam and cable. Of other motive power such as petrol-electric, accumulators, gas, oil, stored steam, clockwork, compressed air, etc., these we tend to dismiss as just experiments which lasted a few months at best. In the last case, compressed air trams, although we would be correct as far as the UK is concerned, we would be quite wrong if we look at France. There were six French cities and towns using compressed air, with Paris and Nantes having over 250 of these cars, which ran for more than 30 years. MAG POWER **LINES** sets out to put the record straight and to give details of this perfected tramway system: the Compressed Air Tram

Compressed Air Trams/Buses

Paris- They came into service as follows:

TAE 23/3/1900 Auteuil to Madeline

TG 24/3/1900 Montrouge to Gare de l'Est

TJ 27/4/1900 Passy to Hotel de Ville

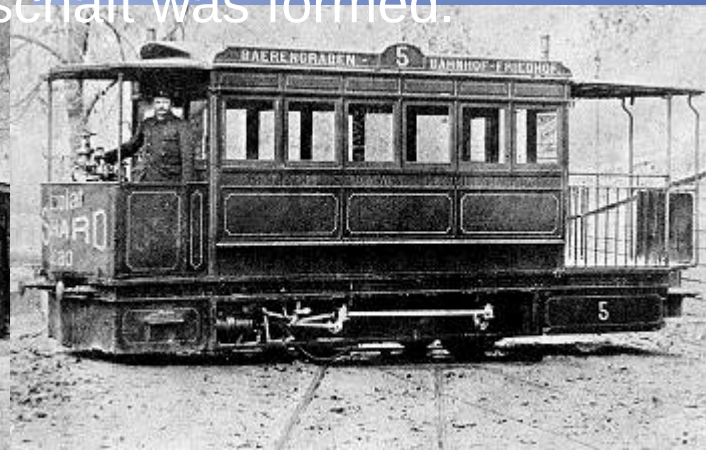
TO 26/5/1900 Auteuil to Boulogne

Driving was controlled firstly by the regulator which varied the pressure at the cylinders from 0 to 8 atmospheres. Secondly there was a three way tap which directed the supply either to the cylinders or to the brakes with a centre position for coasting. As full line pressure would be fed to the air brake, control was a little crude. Despite difficult gradients, the cars easily pulled double deck trailers weighing 9 tons unladen, and developed 35 hp using 15 kg of air per car kilometre.

The charging took place with air and steam at the terminus at Cours de Vincennes and at the stop on Boulevard de la Villette. The points were fed by mains.

Compressed Air-Trams/Buses

BERN, SWITZERLAND: Following its success in Nantes and Paris, the Mékarski company turned its eyes to Switzerland. On 1st July 1889, in a consortium with others (including Vevey and Ludwig & Schopfer), Mékarski was granted a concession to build and operate a line in Bern, and the Berner Tramway Gesellschaft was formed.



Bern Mékarski car 7 at the terminus at Bärengraben in 1895. The tram stop was opposite the depot and bear pit at the east end of the Nydeggbücke.

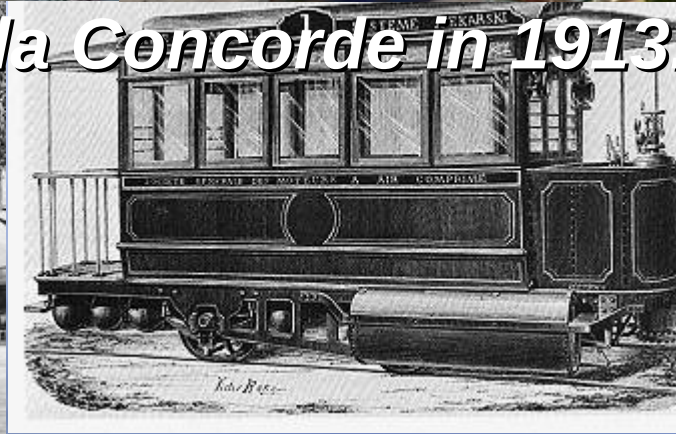
A metre gauge line of single track with passing loops, with trackwork by Demerbe & Cie. of Belgium, was constructed, running the 3.1 km. from Bärengraben via Bahnhof to Bremgarten Friedhof (the bear pit to the cemetery). Cars were reversed at termini by turntable.

Compressed Air Tram Systems



Place de la Concorde in 1913.

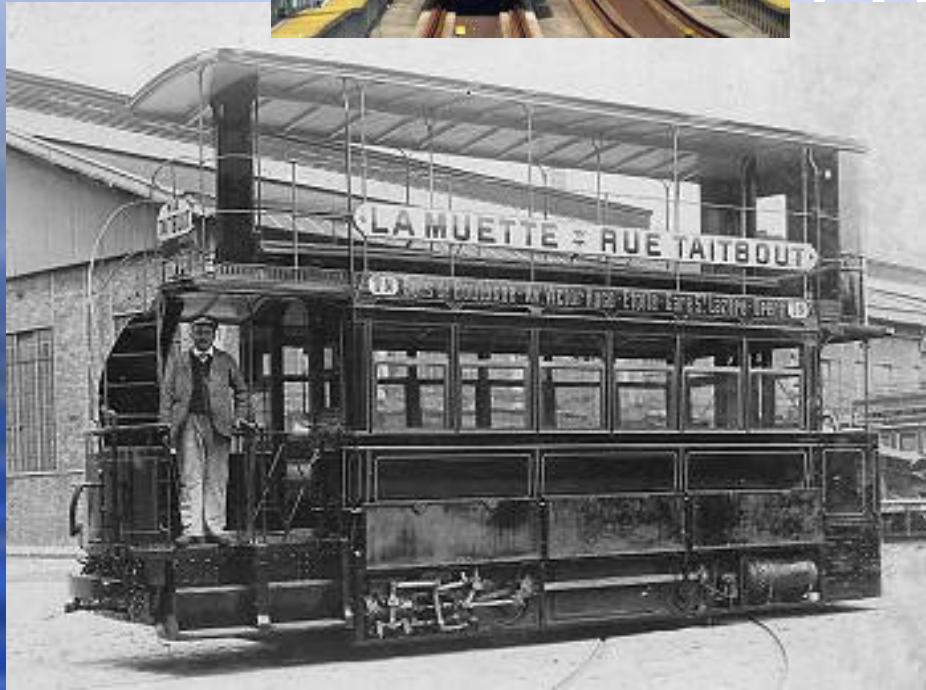
The air pressure was 5 atmospheres at the cylinders. Mékarski stated that his car would need about 70 kg of coal to charge the engine and about 5 kg to reheat H₂O



Air at 25 atmospheres was stored in eight reservoirs 0.3 m or 0.4 m in diameter, mounted transversely under the car. These were in two sets, a main and a reserve set. The bouillotte was on the front platform and was 0.35 m in diameter and about 1.5 m high. It was three quarters full of water at about 180 degrees C. at about 7 atmospheres. The car had wrought iron frames 2.8 m wide and 5.6 m long and ran on 4 wheels of about 0.7 m diameter and 2 m wheelbase. The front axle was driven by two cylinders of about 0.125 m bore and 0.25 m stroke. The car weighed 4.75 ton empty and 7 ton with 30 passengers.

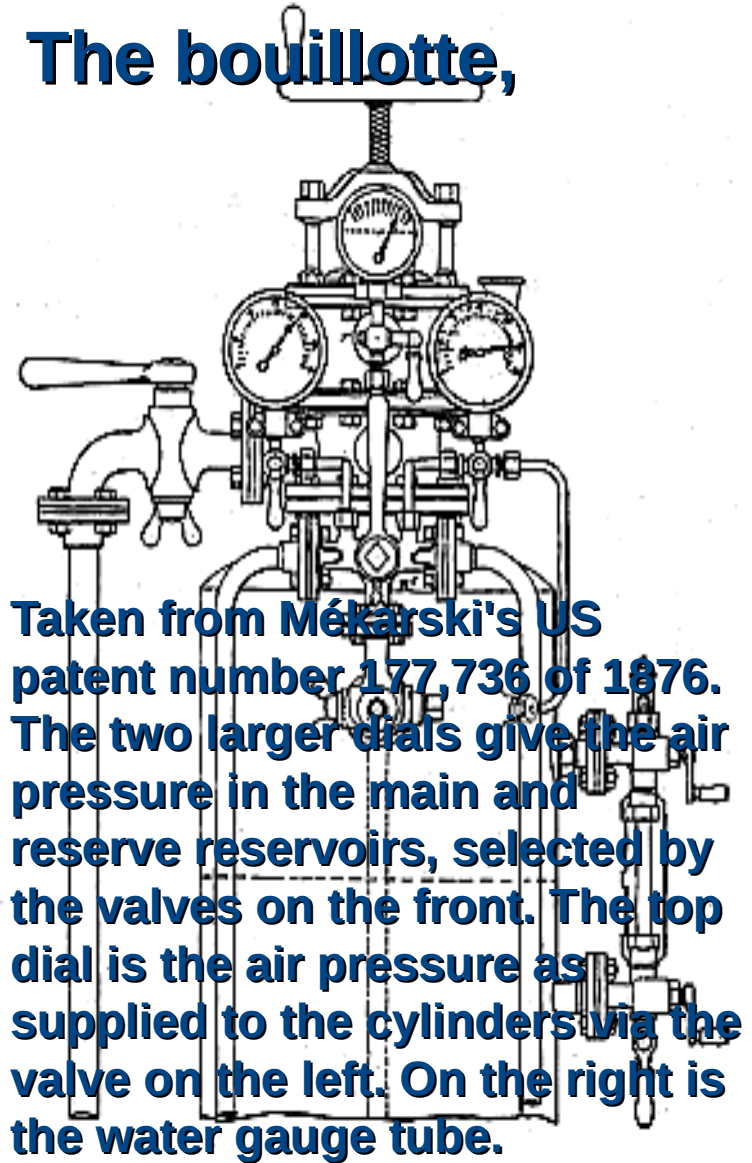


ssed Air
/Buses



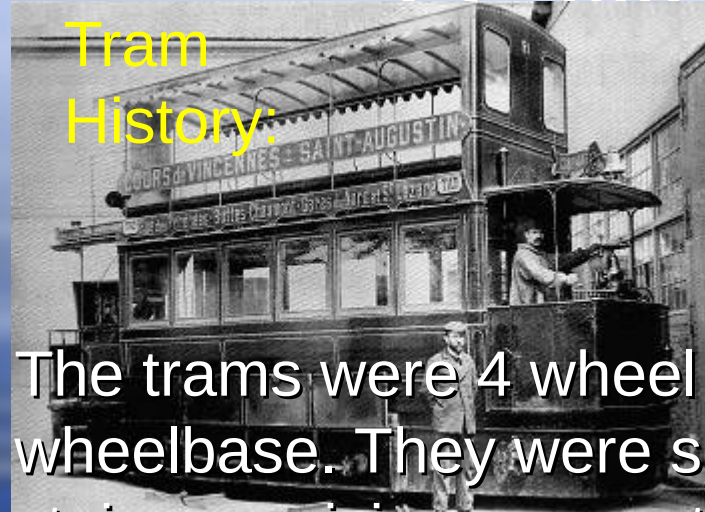
A Paris CGO 1900 series Mékarski car in 1910 with the side panels open revealing the mechanism. The destination shows route TN, La Mulette to Rue Taitbout (via Avenue Victor Hugo)

The bouillotte,

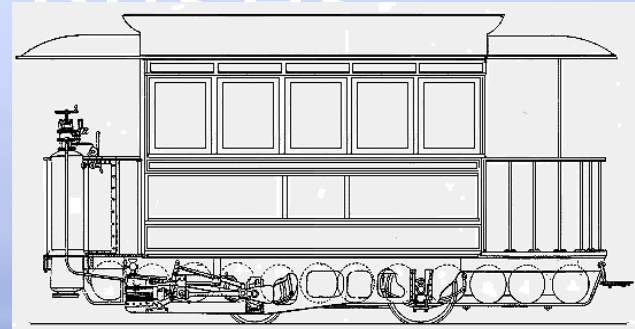


Taken from Mékarski's US patent number 177,736 of 1876. The two larger dials give the air pressure in the main and reserve reservoirs, selected by the valves on the front. The top dial is the air pressure as supplied to the cylinders via the valve on the left. On the right is the water gauge tube.

Compressed Air Trams/Buses

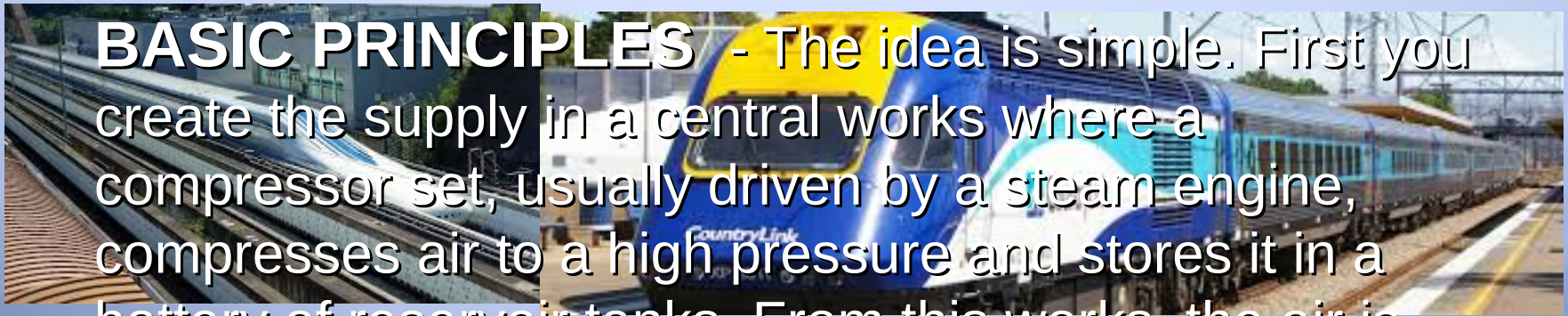


Tram
History:



The trams were 4 wheel cars with a (standard) 1.90m wheelbase. They were single ended with a rear curved staircase giving access to a top deck which had a roof but open sides, the upper deck front being closed and flat. There was a warning bell fitted to the top of the driver's canopy.

They measured 8.10m long, 2.10m wide, 4.62m high with an unladen weight of about 11.5 tons which broken down was 5.5 tons for the chassis, 4 tons for the reservoir cylinders and 2 tons for the wooden body. Each car held 50 people - inside on longitudinal seats.



BASIC PRINCIPLES - The idea is simple. First you create the supply in a central works where a compressor set, usually driven by a steam engine, compresses air to a high pressure and stores it in a battery of reservoir tanks. From this works, the air is distributed via mains, usually underground, to charge points at the tramway route termini. At these points the high pressure supply is fed in charges into the trams which themselves have reservoir cylinders or tanks which hold enough air for a complete journey. As required, air is fed via a pressure reducer and regulator to driving cylinders, similar to those of a steam loco, which drive the wheels.

Air use on the cars: For the working of the tram the air pressure is reduced from 80 atmospheres to 6 - 10 atmospheres, and is then exhausted to normal pressure.



WORKING SOLUTIONS

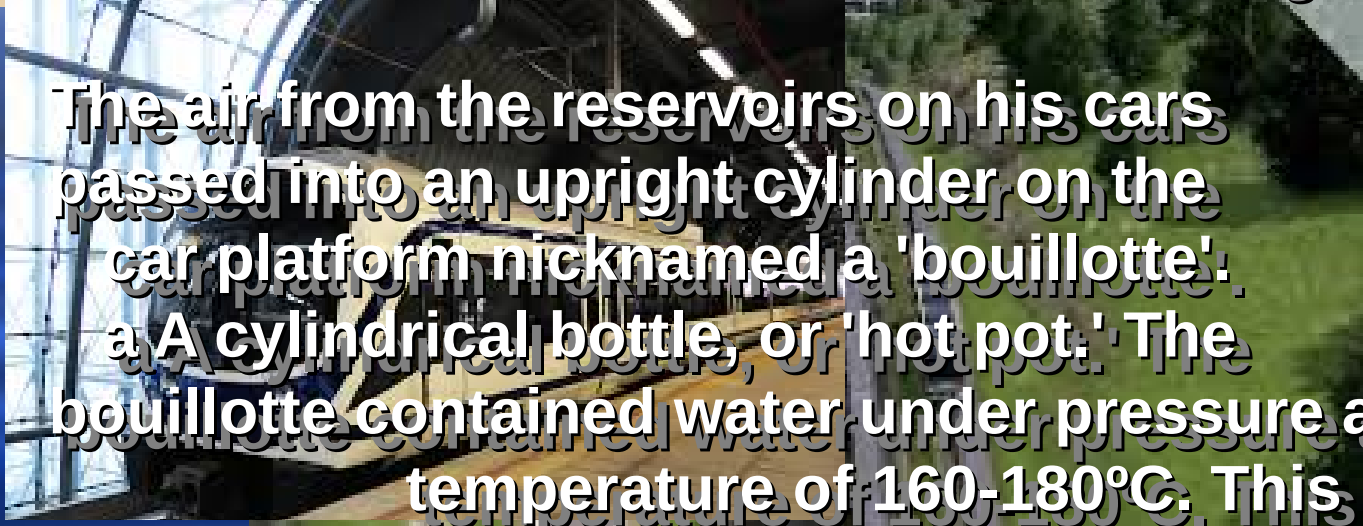
Compression: If the air is allowed to warm up too much there will be a huge waste of energy. To avoid this two methods were used. Firstly a spray of water was injected into the compression cylinders and mixed with the air in them. The spray on vaporising absorbs latent heat and keeps the unit cool. It can be shown that starting at 15 degrees C and compressing at a 4.3:1 ratio then the final temperature would be 180 degrees C with dry air and 70 degrees C with saturated air.

The second method of heat reduction was to use compression in several stages, allowing the air to cool between each. Compressors were driven by steam engines of around 100 h.p.

LOUIS MÉKARSKI - The name we will hear the most in connection with compressed air trams is Louis Mékarski, who in 1872 and 1873 took out patents for his system. All the most successful tramcars were built to the Mékarski designs.

The air from the reservoirs on his cars passed into an upright cylinder on the car platform nicknamed a 'bouillotte'. A cylindrical bottle, or 'hot pot.' The bouillotte contained water under pressure and at a temperature of 160-180°C. This not only warmed the air but also saturated it with water vapour. As this condensed on expansion, it gave up latent heat and limited the temperature fall. Plus condensation helped to lubricate the driving cylinder walls.

The Bouillotte and controls on the front platform of the earliest Mékarski cars.



Charging
with 98%
efficiency

Electrical
Induction
Charger
(Power from
the Grid)

32 MW
Thermal
Battery



Phase Changing Metal
Thermal Energy
Accumulator (Phase
Changing Copper &
Nickel Alloys)

MAG
POWER
150 years
Later....

MAG POWER Thermal Energy Storage to power
Industry with Compressed Air & Steam Power
Plants 9,600 BTUs/kWh at 63% Efficiency

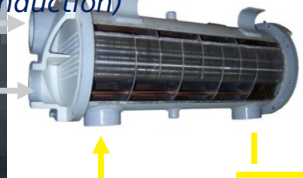
Direct Condensing Low Pressure Turbine
Generator



Steam
Gener

* High temperature
superconductor (1700-
1800 oC)

Heat Exchanger
(convective
induction)



Compressed
Air



Air

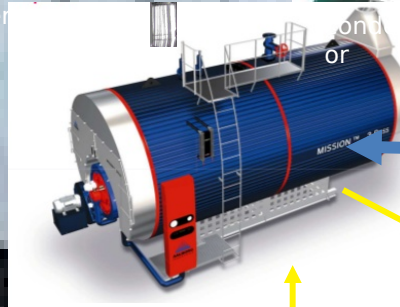
Super Heated Air Compressor at
1100 oC

Mechanical
Link



Stage 1

Stage 2



Condensor
Pump

Cooling Water
Pump



Cooling
tower

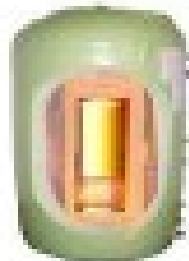


PowerSource - under the covers



PowerSource Home in its enclosure

330 kW - 450kg - 723 kWh
1300 kW - 1.5 t - 2900 kWh



150 years later...

Inside is Thermal Storage Cell w/ induction charger



System controls

700km per Charge

Under the skin, contained in attractive encasement, the basic PowerSource "Home" System includes the ceramic thermal cell, induction heater, controls, and steam turbine (with composite non-corroding pressure vessel, stainless steel expansion tank & return drive fluid container).

3 Cylinders run Tram/Bus/Truck



Turbine + cryo 400kg

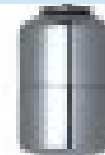
Turbine enclosure with reservoir



High pressure tank w/ integrated boiler



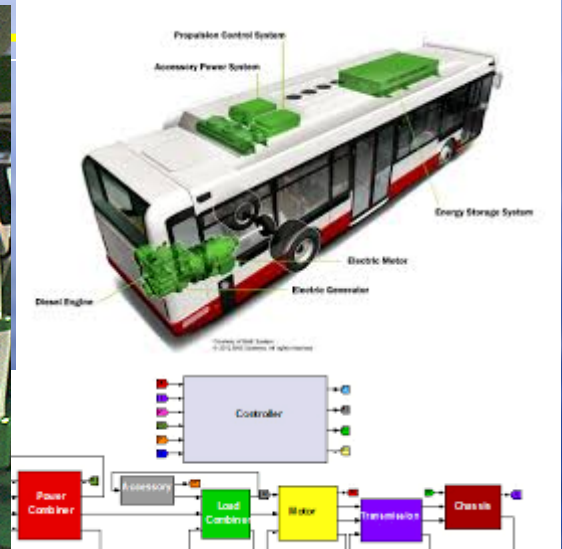
5 kW steam turbine & alternator



Expansion tank

Other Transport: Buses/Trains

Air-Hybrid Engines - Scania Truck



The most commonly used form of regenerative braking is where a vehicle's electric motor is used as an electric generator to capture the vehicle's kinetic energy, which is otherwise lost as heat when braking. The generator converts the kinetic energy into electricity that is then fed back into the vehicle's battery pack where it is stored for later use. New research suggests that pneumatic or air hybrids that instead store the energy as compressed air would be much cheaper to produce than the current crop of EVs and battery-electric hybrids and could halve the fuel consumption of ICE powered vehicles. **PowerSource** onboard thermal batteries gives 700 km trip!

Engine used as a 2-stroke compressor

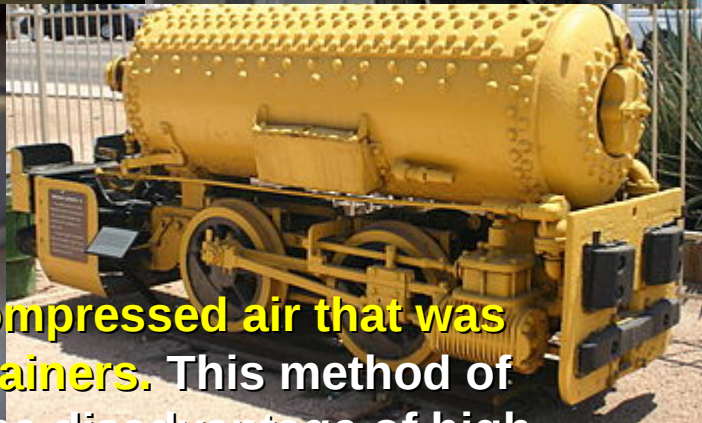
During pneumatic hybrid operation the engine can be used as a 2-stroke compressor for generation of compressed air during vehicle deceleration (compressor mode) and during vehicle acceleration the engine can be operated as an air-motor driven by the previously stored pressurized air (air-motor mode), or carry hydrovane compressor.

The compressed air is stored in a pressure tank connected to one of the inlet ports. One of the engine inlet valves has been modified to work as a tank valve in order to control the pressurized air flow to and from the pressure tank.

The air hybrid engine, which would work with gasoline, natural gas and diesel fuel-powered engines, doesn't require any expensive materials such as those used in battery packs, so they would be cheaper to manufacture. They would also take up much less space than an electric hybrid engine.

Using PowerSource onboard heat at 100°C plus regenerative, it is calculated that 48 percent of the brake energy, which is compressed and saved in a small air tank connected to the engine, could be reused later. This matches the degree of reuse of today's electric hybrids and, like current electric hybrids, PowerSource hybrid air technology would be even more attractive for slow and jerky driving, like that found on a bus in urban traffic. **PowerSource hybrid air buses in cities could reduce their fuel consumption by 60 per cent.**

Compressed Air Locomotive History

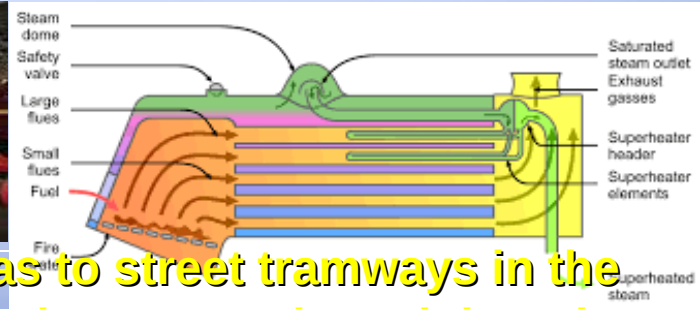


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Steam Shunting Locomotive History



1888



An early application of the fireless locomotive was to street tramways in the USA, with two types of fireless locomotive, one using ammonia and the other using stored steam. The fireless system then gained a new lease of life for industrial shunting locomotives. Any factory which possessed a stationary boiler could use it to charge a fireless steam locomotive for internal shunting operations. Fireless shunting locomotives became especially popular in Germany and some remained in service into the 1960s; and, is similar to a conventional steam locomotive, but has a reservoir, known as a steam accumulator, instead of a boiler. This reservoir is charged with superheated water under pressure from a stationary boiler. The engine works like a conventional steam engine using the high pressure steam above the water in the accumulator. As the steam is used and pressure drops, the superheated water boils, replacing the used steam. The locomotive can work like this until the pressure has dropped to a minimum useful level or the water runs out, after which it must be recharged. **The fireless steam locomotive as an environmentally-friendly superior alternative to the diesel locomotive for shunting, because diesel shunters typically spend 75% of their working time with the engine idling, with very low power requirements, while fumeless!**

MAG POWER City Class Specs

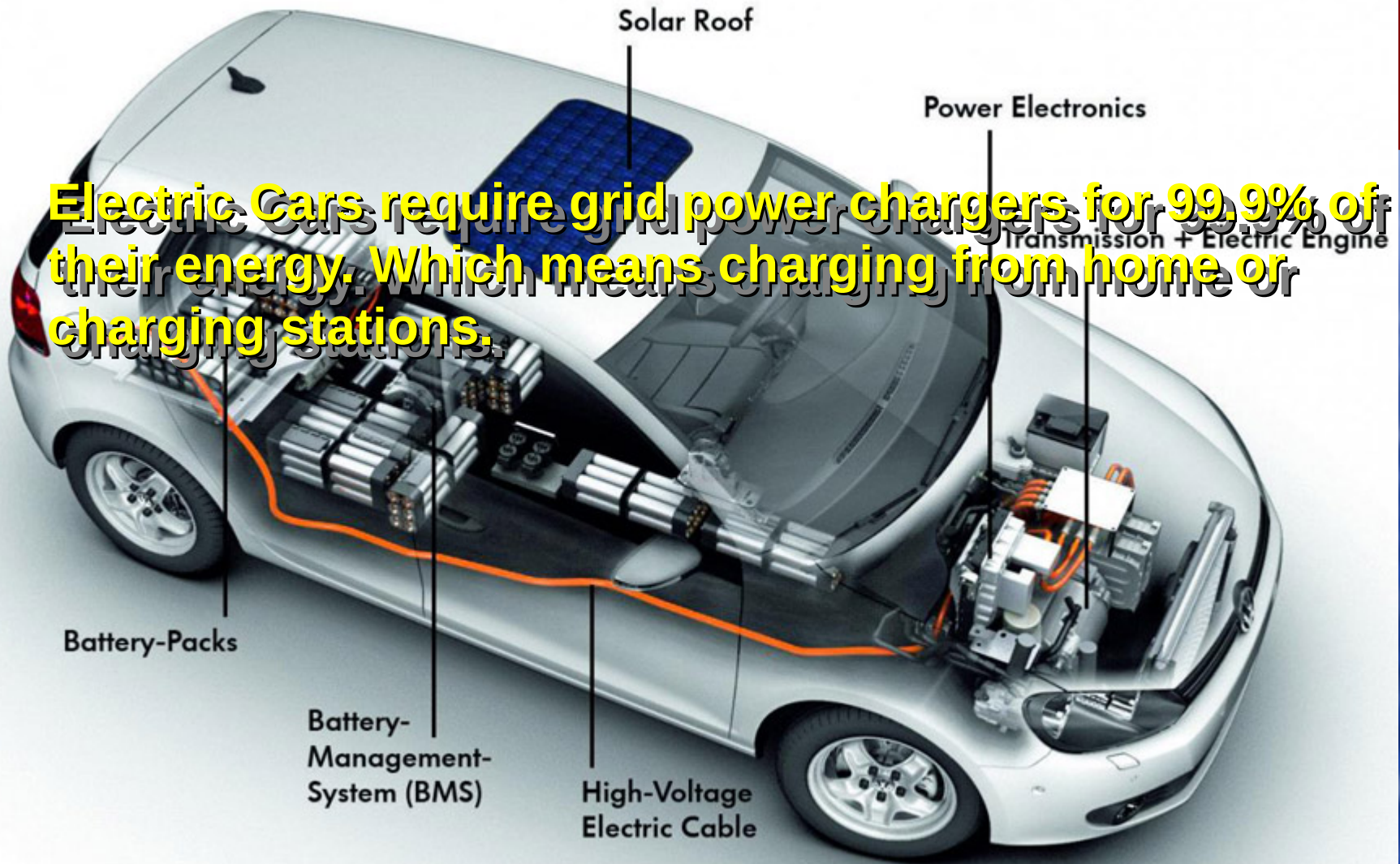
Running both Elec & Compressed-Air

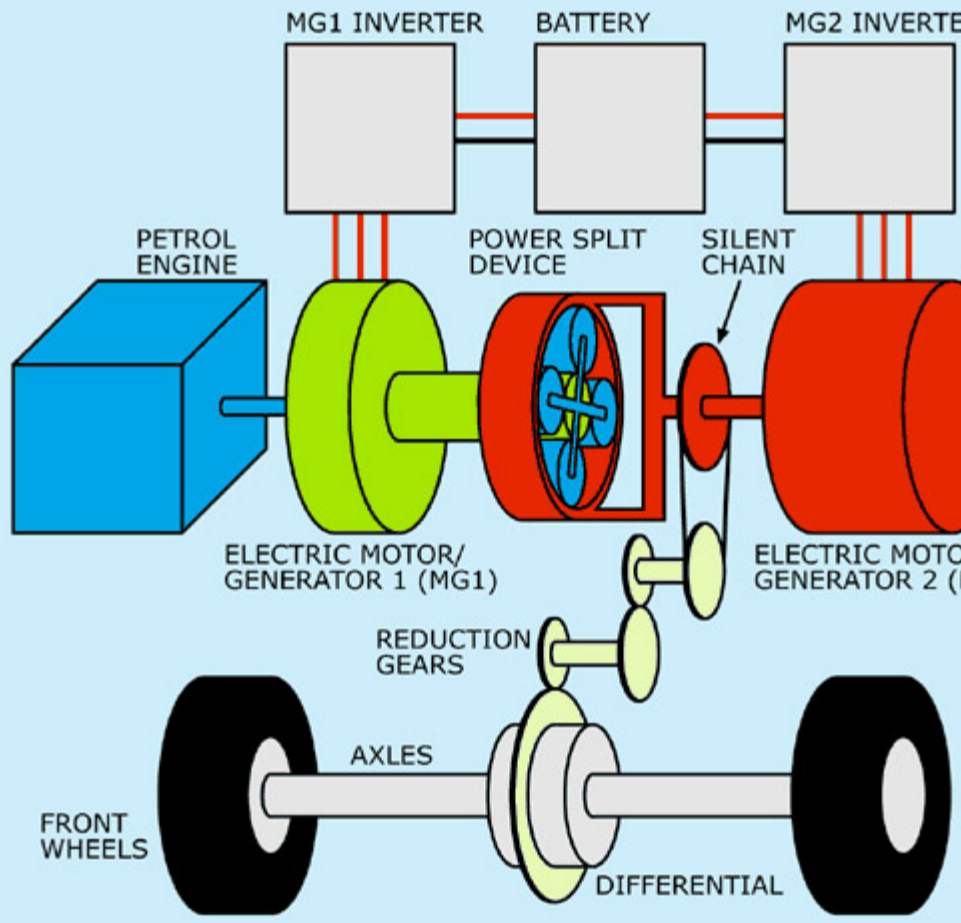
MAG POWER TRAM Specs - MAG POWER City Class Specs

- ◆ Speed 80k.p.h.
- ◆ Acceleration @ 1.2 m/s^2
- ◆ 25m minimum curve radius
- ◆ 6 – 8% maximum gradient
- ◆ 350mm floor over part of part-level access
- ◆ Doors both sides of vehicle
- ◆ Overhead 750V dc supply

- * Choice of drive controllable 70 – 100 km/h.
- * 1.5 m/s^2 acceleration, controllable for other
- * 12m track radius with 29m version
- * Up to 10% possible gradient driveline layout
- * 300mm height in low floor (70% of 29m unit)
- * up to 4 double doors each side of tram
- * Circuits adaptable to 550V – 750V dc range.

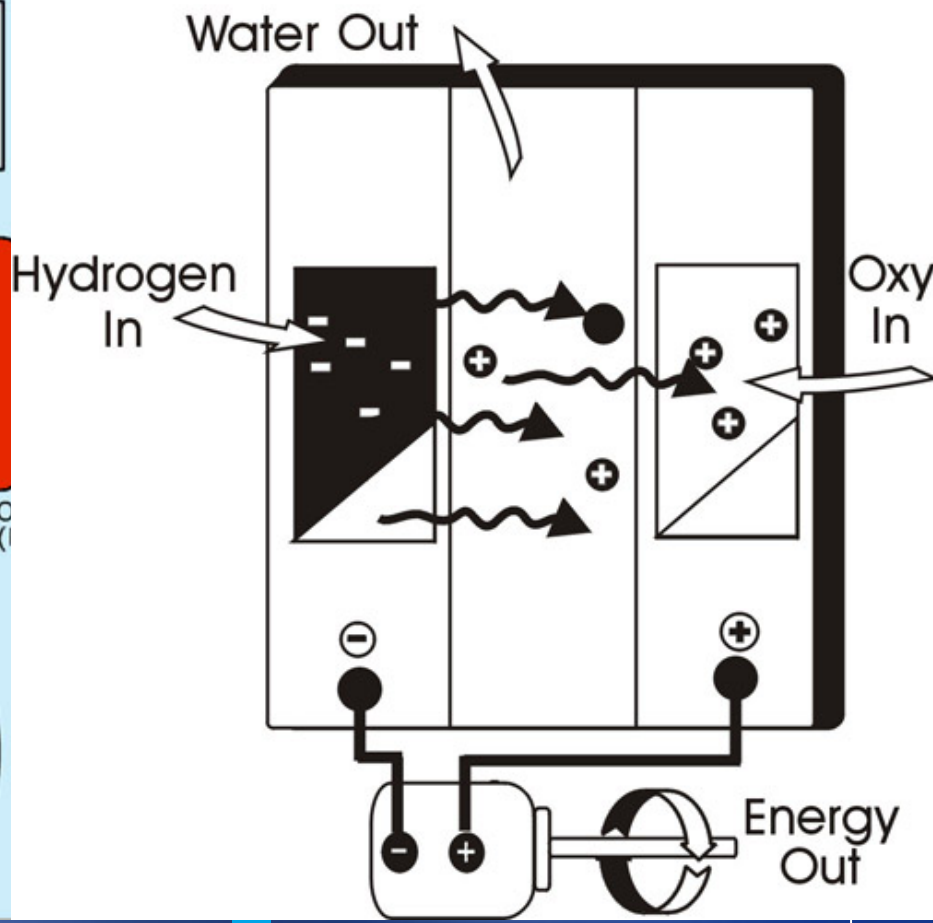
Engine Used as a 2-stroke





Typical Hybrid Set-Up is IC & Electric motor run by inverters-battery- Shaft alternator system where generators also charging battery & power is split & Still need external battery charging.

Hydrogen Fuel Cell



**Fuel Cell is simple and long-lasting
Zero Emissions
MAG GAS H gives perfect fuel @42c/kg**

MAG POWER City Class Specs

Running both Elec & Compressed-Air

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MAG POWER Electric Tram Programme

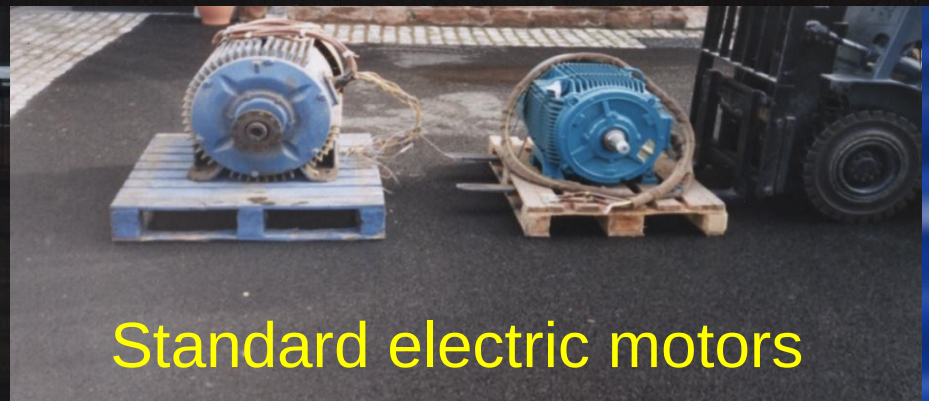
Featuring electrified Catenary wires-Lit-up with 40 MW distributed
Thermal Battery plus Genset at each train station-in 20ft cont



MAG POWER Generators
Running Electric Tramway



29 m **MAG POWER** Electric Tram



Standard electric motors

Fits around tight curves

No corners to cut, or buildings to demolish

~ Linking Shipping to Train Networks all charged by MAG
POWER CHARGE STATIONS:

~ Allows The Philippines to compete on the Global Stage for Shipping & freight

~ Meets all MARPOL VI ANNEX Regulations /Guidelines and ECA for USA & EU

~ Benefits the people of The Philippines with low cost transport & vehicle charging

~ Creates great incentives for The Philippines to go electric and hybrid!

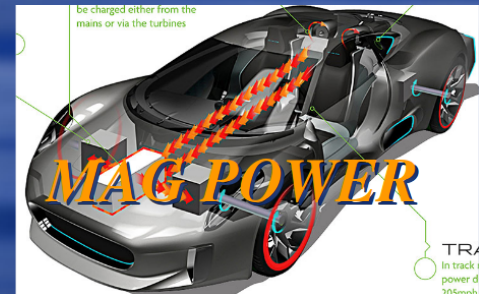
~ Charging for 1 US cent per kWh brings down running cost of electric train 90%, + charge electric and hybrid cars!

~ Great benefit to businesses and people of The Philippines



What The Philippines gets:

- ◆ 1st tramway to reduce by ½ cost to public purse retrofitting train station/ports
- ◆ Fulfills sustainability aims plus ties airport to city
- ◆ Proven to get people out of cars
- ◆ More efficient than any existing buses/trams/truck/ferry/3-wheel
- ◆ Less noise and air pollution and soot
- ◆ Renewable generation = No greenhouse gases
- ◆ Improves City Center Shopping & entertainment ctr. And relieves congestion and smog in towns
- ◆ Improves mobility for students, retirees & citizens
- ◆ MAG POWER LINES also runs cargo logistics, ports, & Airports- enabling a new manufacturing economy.
- ◆ Super Low-Cost Hybrid & Electric charging stations
- ◆ Low overhead for Train and Port Stations for charging + HVAC
- ◆ Added services- Desalinated water, ice, AC, charging, electric
- ◆ Reduction in electric train operating expenses
- ◆ New Hybrid ships, trains, trams, cars, 3-wheelers, taxis introduced
- ◆ Zero Pollution and zero oil going in Philippines & China Sea
- ◆ Greatly lowers transportation and cargo costs



6th Philippine Electric Vehicle Summit pushes stronger partnerships to electrify public and private transport

Another good news which was tackled is the tax exemption of EVs under the new Tax Reform TRAIN Law. Juan sees this as an advantage to propagate the use of Hybrid and electric cars; and; establish short- and long-term strategies to promote and standardize the use of electric and hybrid vehicles

Mag Power Charging Stations

Sales of electric cars topped 2.1 million globally in 2019 & Sales of electric cars rose by 43% in 2020 while overall car sales slumped by a fifth last year. and 100,000 more public charging stations. Of note, there are now around 3.3 million EVs in use worldwide, with China and Europe taking up 75% of these.



Mag Power



~ a perfect energy storage, MAG GAS is also a Safe Storage for Pure Hydrogen, used as a fuel for Hydrogen Fuel Cells power generation.

Mag Power Charging Systems

~ **MAG GAS** is low-flammable, cannot be ignited by a spark, and no drawbacks as leakage, permeation, diffusion and embrittlement have been observed at all, as it happens usually with the pure hydrogen.

~ Pure Hydrogen and Oxygen can be easily extracted out of compressed or liquefied MOH (LMOH) gas, on-board, on-demand, and separated by a simple molecular sieve, then applied for Electric Power Generation using Hydrogen Fuel Cell & running turbine or rotary engine

~ ~ Retrofits all gas turbine and rotary engines like Mazda Rx-8

~ Stores at 200 bar to do energy arbitrage

~ Burns up to 5500°C!

~ Runs Turbines on water with zero emissions!

~ Universal Charging MAG GAS Fuel from H₂O!

~ Runs MAG POWER Induction Battery Charging ~1cent/kWh

~ Perfect direct fuel for motorcycles & 3-wheelers

~ Runs conventional EV charging stations for pennies!

MAG GAS Hotel & Industrial Genset



350 kW Mazda Hydrogen Engine

Hydrogen Engine Genset for Charging Batteries + Brown's Gas

- Hydrogen Generations
- Tesla Turbine + AI+
- Brown's Gas
- Ohmaha Gas

$H_2O + \text{salt} + \text{Phi Frequency} = H_2$

13.56 Mhz - resonant frequency H_2

Rx8/Tesla Turbine Charge Station

Run Industrial Genset 250 kW-2 MW baseload

Modified Oxy-Hydrogen (MOH) Gas Fuel - The Ideal fuel of the future! + Costs below 1 US cent per kWh!



RED SUN & MAG GAS H2 Platform

RED SUN CHARGING STATIONS:

Heating compressed air in modified Man, GE and Cummins diesel runs generators without fuel with Combined cycle low pressure steam gives overall 53% efficiency!

Self-Charging Trains

Light &

- 2000000
- 45.2 MW
- 2.5 MW



Charging Train Stations



• 2000000

• 45.2 MW

• 2.5 MW



• 2000000



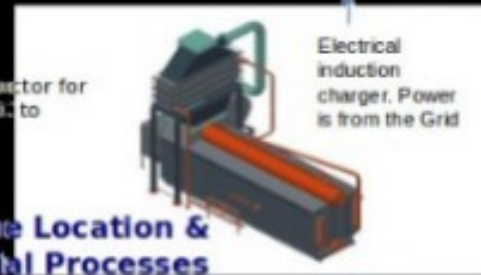
Heated Compressed Air 3x's Torque



• 2000000



• 45.2 MW



Electrical induction charger. Power is from the Grid

RED SUN ARBITRAGE: Location & Transport for Industrial Processes

1400 km Range Per Charge – 64 MW on Budd Car

RED SUN & Mag Power Conclusions

- ◆ Agreements +PPA from Govt Owned Electric Utility Co-And Concession to build 150 MW (75 MW + 75 MW – Budget €62.5 mln Phase I) and/or/efficiency contr, cargo, & mining concessions

The magic of RED SUN is heated compressed air gives twice the energy of gasoline 20 MJ/kg vs 11 MJ/kg for gasoline, and N₂ gives 3 times more-meaning triple Horsepower!

RED SUN mimics the Sun-Earth relationship by charging by induction at 98.6% efficiency!

RED SUN/PowerSource outer containment designed & guaranteed 10 yr by Thyssenkrupp!

Triple Regeneration hyper-extends range 3x's to 7 x's with onboard thermal battery-turbine charging batteries, while MAG GAS is regenerated onboard, & regenerative braking charges thermal (or electric chemical battery) also! The small size allows retrofitting to all vehicles!

With RED SUN Triple Regeneration hyper-extends range 3x's to 7 x's with onboard thermal battery-turbine charging batteries, while MAG GAS is regenerated onboard, & braking charges battery also!

This is the thermoelectric platform of RED SUN- with 1 kWh per kg energy storage- 1 M³= 1 MW. 32 MW thermal battery 18m³ costs \$650k USD/ea to manufacture in 20' container.

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RED SUN + Mag Power

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RED SUN Non-Combustion Brayton
Cycle & Diesel Retrofits – 20 to 1,000
MW Power Plants Ship & Stationary
Power Plants & Bus, Yacht, Train
Retrofit All Turbine Power Systems