Active Fireless Locomotives Worldwide - August 2021

Eddie Barnes wrote to suggest that I should include the real working fireless locos in Europe in the list of remaining real working steam locos worldwide (Bosnia, China & Indonesia). I agree especially as the remaining working Indonesian steam locos are now all fireless. A start point for fireless locos is:
https://www.internationalsteam.co.uk/europe.htm#Fireless
This was last updated on November 2019 but many reports are much older than that.

Wikipedia has a general article of Fireless Locos
https://en.wikipedia.org/wiki/Fireless_locomotive
of note is that the term fireless doesn't just refer to steam fireless locos but includes compressed air and ammonia powered locos.

The reproduction compressed-air loco at Statfold 'Issin Sid' is now an exhibit in the museum there. Seen here in 2009

Active fireless locos are now restricted to Austria, Germany, Indonesia and Slovenia. If you know of any additions to this list, please let me know.

Austria
Papierfabrik Mondi, Ulmerfeld-Hausmening
The paper factory uses a fireless steam loco, usually on working days on around 3 kilometres of track. Parts of the operation can be seen from the railway station. I heard that they usually shunt around 30 wagons per day. There loco was built in 1987 in Meiningen, East Germany. After WW 2, Austria had 39 fireless locos on standard gauge; this is the last one to remain active. Here's a link to YouTube: https://youtu.be/bRqEI-AYkK4
The latest report I found was from 2020. (Martin Fritz)

I visited on 13/4/15. On arrival from Amstetten, the loco was shunting behind other wagons in the sidings. It then started back to the factory and I nipped across the OBB tracks. The fireless driver saw me, stopped and drove back towards the station so that I could get a nice ¾ run-past photo of the loco. No request needed! Moral: keep your camera visible and you may get some treats! Of course, this sort of thing has happened countless times over the years. But it is still a great pleasure when railway staff show generosity to us railfans. Here it is on my personal photo run-past (Geoff Warren):

Eddie Barnes provided another photo and the explanation below:

The last "real" working steam locomotive in Austria is a 0-6-0 fireless owned by the Mondi paper factory at Ulmerfeld-Hausmening (Lower Austria) and which is used to shunt between the factory's own sidings and the exchange sidings at the adjacent ÖBB station.

The working locomotive is of the familiar FLC type, of which 202 examples

were built at Meiningen between 1984 and 1988. It was renamed “WALTER” upon its transfer to Ulmerfeld-Hausmening in the mid-2000s. Built as Meiningen 03158 (FLC-14944) in 1987

My photo is from a brief visit in July 2018, but to the best of my knowledge (and reports from 2020) the locomotive remains in service. Shunting operations can be observed from areas of public access around the station, but I believe it is possible to write to the factory to arrange a visit to their premises.

Travelling from Linz, I arrived shortly before 08:30 on a sunny Tuesday morning to find the locomotive already outside the factory and in steam. Sandwiched between freight wagons behind the station it was not photographable. Around 09:15 it began to move off, making a single trip to the sidings (between the factory and the ÖBB running line towards Kastenreith) to exchange one set of Transwaggons for another. Having picked up its new load, the locomotive then ran back to the rear of the ÖBB station, before reversing into the factory. There were no further movements for the rest of the morning. (Eddie Barnes)

Germany
There is still some "real" industrial steam in Germany - as long as you regard fireless locos as "real" steam!

Romata, Amsdorf
One of them is at "Romonta" (near Amsdorf), which is a waste processing plant. They receive regularly train-loads of material (for example all the way

from the Stuttgart 21 railway project), move them with their fireless loco into their premises and dump it into a huge pit of a former open-cast coal mine. I was there not so long ago; attached photos were taken on 10th May 2021. (Elmar Pfannerstill)

See also https://youtu.be/BymUpfj83ic

Sodawerke Stassfurt
One or two others are at Sodawerke Stassfurt. I managed to take a tele-shot of one of them on 22 Feb 2019. I have not heard of anybody seeing them in action during the recent years. (Elmar Pfannerstill)

Ineos Solvents Germany, Herne
Another one is at Ineos Solvents Germany GmbH in Herne. Recently I made two, however, unsuccessful attempts to capture it. The first photo (not included here as unsuccessful) shows the situation on 4th May 2021 where you can still get a glimpse of it, the second one was taken on 10th June when apparently the fireless is locked in the shed on the left and a diesel is waiting for taking over the duties (unfortunately). (Elmar Pfannerstill)

The chemical factory "Ineos Solvents Germany" uses a fireless loco on many (but not all) working days for shunting on a couple of hundred meters of track. Parts of the operation can be seen from a public level crossing. They also have a diesel for backup.
You Tube clip: https://youtu.be/lVrKFgCBRXA
also: https://youtu.be/k-8JYQ28flk
(Martin Fritz)

I have visited three times and seen action twice. On these occasions, the start was punctual at 07:30. I recommend it as an evocation of "post-WW2" West Germany of the 1960s/ 1970s! Take the tram to Herne Mitte and get out in a typical 1960's tram subway. You emerge into a typically bland post-WW2 rebuild of the Bahnhofstrasse (deserted of shoppers at 07:00). Walk 10 minutes down the Neustrasse, turn left and there it is, the factory with its steam loco. Here is on 24/02/2014. (Geoff Warren)

According to https://tinyurl.com/anfh474 the loco is Sasol's #5, built by Krupp (3350/58).

A topical footnote: one of the major products of this factory is isopropanol (isopropyl alcohol). Ineos is one of the major suppliers of this chemical. It is one of the three anti-viral compounds that are approved for hand-sanitising products and thus extremely widely promoted in the covid19 era! Choose an isopropanol based hand-sanitiser, and there is a chance that it was steam-hauled! (Geoff Warren)

Another use: as known under the initials "IPA", it's often recommended to clean model railway tracks and locos. Of course, it should not be confused with the "IPA" that's the beverage containing ***ethanol…*** which is also made (on an industrial scale) at Herne. (Geoff Warren)

Großkraftwerk Mannheim

The power plant "Großkraftwerk Mannheim" used to use fireless locos. I tried to see them from a public footpath alongside the Rhine river in 2013, but no luck (despite of a dark-green shape that I could make out in the far distance, that did not move). I do not know if the locos are still active there. (Martin Fritz)

A tricky one! As is widely reported, most coal arrives on the river. Rail transport is used mainly when water levels are too low or high for safe navigation, and thus unpredictable. Viewing from the opposite bank of the Rhein is relaxing (boring?). There are many cargo ships passing and 'Guten Tag's' from dog-walkers, but the photo opportunities are not great, to put it

mildly. (Geoff Warren)

I have tried three times. At the third attempt, on the afternoon of 10/10/2019, loco GKM 5 was being steamed – see below. But after some time, the staff went away. So did I, because I was sleepy after the overnight flight from Addis Ababa (!) Next day, GKM 5 was unmoved and cold. (Geoff Warren)

Papierfabrik Schoeller, Osnabruck,
One visit – 17/04/2015 - I peered along the line from the gates and saw that the loco was there. At the factory gate, the security guard phoned the driver at home on his break. My German was just up to understanding that he would be back later for a mid-day trip. The visit was done in good time for the train to Rheine, then Emden, and a successful visit for steam on the Borkumer Kleinbahn. (Geoff Warren)

Other Potential Active German Fireless
There is a list of fireless locos in Germany on Wikipedia:
https://de.wikipedia.org/wiki/Liste_in_Deutschland_vorhandener_Dampfspeicherlokomotiven
Supposedly there are a few more operable (see column "betriebsfähig / ja"). An interesting one is the only D-coupler at "Grosskraftwerk Mannheim". This is a "rare catch" as it's operating just occasionally and can normally only be photographed across the Rhine waters.

Last year Ad van Steen had two nice reports on Lok-Report:

https://www.lok-report.de/news/deutschland/aus-den-laendern/item/18582-niedersachsen-felix-schoeller-group-in-osnabrueck.html

https://www.lok-report.de/news/deutschland/aus-den-laendern/item/17785-nrw-die-dampfspeicherlok-nr-5-von-ineos-herne.html

You may try google translator. You will know what is meant with 'steam storage locomotive'. (Elmar Pfannerstill)

I have not been in person to a fireless operation since 2019, and coverage on the fireless locos in German magazines and Internet platforms is sparse, but from the few reports I learn that all operations remain active: Osnabrück, Herne (SASOL), Amsdorf (ROMONTA), Stassfurt and Mannheim.

Osnabrück, Herne and Romonta have only one fireless loco each, and a diesel for substitute. In general they prefer the fireless over the diesel. When the fireless loco is in maintenance or in need of repairs the diesel gets active.

Stassfurt and Mannheim have spare fireless engines. At both places the fireless does not leave the premises of the company, so opportunities for photo and video are rather limited.

The excavations at Stuttgart are finished. The spoil material that the Romonta fireless hauls from Roeblingen to Amsdorf now originates from the new city tunnel at Munich. (Andreas Ilert via Rob Dickinson)

Java

Semboro near Jember, East Java

2 O&K locos built as fireless have not been used for the last 2 seasons and it appears that the method of bringing cane to the mill train has changed so that fireless are no longer required.

2	0-6-0F	OK	11739/1928
3	0-6-0F	OK	11927/1929

Details from https://www.internationalsteam.co.uk/trains/javalist.htm

By request, although no longer in use, here are photos of both the Semboro fireless taken in 2017.

Pagottan (or Pagotan) near Madiun, East Java
3 fireless conversions of O&K 0-10-0T are still used - possibly only 2 at one time. They were converted to fireless in 2011 but initially with conventional boilers (not necessarily originally theirs as at least one had a shorter boiler before conversion). I believe all 3 have received new locally made 'fireless' boilers and work with 2-3 small diesels propelling cane to the mill train from the truck yard.

All 3 fireless were in action at Pagottan in 2017.

No. 6 waiting to propel cane wagons to the mill train where the individual

wagons will be cable hauled the last few feet to the unloader.

No. 7 at the charging point

No. 8 with its nose embedded in a cane wagon ready to propel to the mill train.

The builders details for these locos are:

6	0-10-0T	OK	10606/1923	converted to fireless 2011
7	0-10-0T	OK	11139/1925	converted to fireless 2011
8	0-10-0T	OK	10442/1923	converted to fireless 2011

Details from https://www.internationalsteam.co.uk/trains/javalist.htm

Note that while 6 & 7 have inside frames, No. 8 has outside frames. All 3 locos have geared drive to the front and rear axles which mean that they look like 2-6-2T locos but when the loco slips as it often does propelling a long train of cane wagons, the front and rear axles also rotate showing that they are linked by gears.

Slovenia
TE-TOL Ljubljana
I've heard back from my friends Metod and Štefan in Slovenia about the status and prospects for LBV-04, the fireless loco at TE-TOL Ljubljana. The good news is that it is in pretty good condition and in use. The power station still burns coal and biomass, but work has started on building a gas-fuelled turbine on an adjacent site, which means that coal operations will reduce. They think that LBV-04 will operate either until its maintenance becomes prohibitively expensive or until TE-TOL stops burning coal, which they speculate might happen in 5 to 10 years.

Regarding access, seeking permission in advance means that you can be be sure of seeing it, but I don't know how easy that is to do these days. Štefan arranged my first visit for me in 2002 with my wife and son (then aged 15) and we got footplate rides out to the exchange sidings. However, it is possible to see action from a public path through allotments on both sides of the line outside the power station boundary. The throat of the power station sidings is outside the boundary so the loco does come just outside from time to time and does make trips to the exchange siding when required. It's largely a matter of luck. In 2015 we just missed it running outside so Štefan took me in on the lineside to get a few shots - the loco crews were friendly and didn't mind, but a security guard soon appeared. He let me take pictures while Štefan negotiated in Slovene, but we didn't get any further. I wouldn't recommend this now - best to stay outside and if the loco crew see you then they may well decide to come outside the boundary. This is a link to the satellite images that shows the path - and multiple images of the loco, which was clearly working at the time!
https://www.google.co.uk/maps/@46.0583176,14.5488528,192m/data=!3m1!1e3?hl=en
(Tim Edmonds)

As mentioned by Tim Edmonds and others, there is a public footpath just outside power station gates. When in use, the loco often comes quite close. Eventually it must move outside the gates to reach the recharging point. 100% of the track is visible from the main line, so if arriving by train from the east, you can survey the scene. The power station chimney is clearly visible from Ljubljana station. No smoke means no steam – therefore no fireless! (Geoff Warren)

Other
China
Benxi Steelworks
Benxi Steelworks employed a number of 0-4-0 fireless locomotives including No.9, seen here at the works on 11 March 1992. The loco is thought to have been built in Japan in 1919 and is now preserved at the steelworks.
http://www.railography.co.uk/photos/china_ind/benxi/files/92-31-20.htm

Cuba
Cuba had a number of fireless operating into the early 2000s. One of note was a fireless conversion of a tender loco at Noel Fernandez mill:
https://www.internationalsteam.co.uk/zafra/Fernandez01.htm

None survive as active and some have been moved to the Museum conversions at Marcelo, Patia and Comas mills. Others went to Cristina and other places and some of the luckiest places that made heavy use of them like Brasil, Marta Abreu, etc managed to keep one for themselves and have since been displayed in town, around the ex Sugar Mill grounds (Oscar Jalice)

Espartaco 1130 0-4-0F OK 6854/1914

Espartaco 1131 0-4-0F BLW 43277/1916

Marta Abreu (rear view) 1239 0-4-0F BLW 54270/1921

Marta Abreu (front view)

Bolivia had 4 fireless. 1170 is BLW 42842/1916

Bolivia 1172 is OK 5083/1912

Screen grabs from my 3 Cuba Sugar Mill DVDs.

Brasil Sugar Mill 1368 0-4-0F BLW 53876/20

Brasil Sugar Mill 1370 0-6-0F Hen 20120/23

Photos by Roland Beier from the website https://internationalsteam.co.uk/zafra/index.htm used with permission.

Czech Republic

A few years I heard about fireless locos in the Czech Republic, but I have no details on that. (Geoff Warren)

http://www.rypn.org/forums/viewtopic.php?f=1&t=40324&start=30 provides a photo of one but suggests they finished in 2014. The location is Usti nad Labem. The same page also has a discussion on fireless including those once used in the USA.

Serbia

Fireless require a steam source and it is obviously desirable that a works complex is already producing an excess of steam. Fireless locos work best for shunt operations that don't take them too far from their steam charging point. However, at least one fireless loco was used on passenger trains over a short branch in Serbia.

In Lucani, near Cacak one fireless locomotive works in an explosive factory. This was originally class JZ 62-678 but was converted at Sinvoz, Zrenjanin. Zoran was here in May 1998. They use this loco for freight transport from station Dragacevo (main line Beograd - Bar) to factory (3,5 km), as well as for passenger transport - "workers train", using two wagons. In September 2001, fireless LBV-001 still in use although in bad condition and with some bullet holes in the cab after the NATO attacks.'
https://www.internationalsteam.co.uk/trains/serbia01.htm

The above text suggests that the loco worked 3.5km and possibly 7km between charges. I am not aware of any longer fireless runs. Roland Beier has provided a photo along with another Serbian fireless photos(next page).

It's fairly certain that this loco is now out of use.

The passenger fireless at Lucani presumably seen at the electrified mainline junction at Dragacevo. It's based on a Yugoslavian-built USA tank (class 62)

"Viskoza" Loznica have two fireless locomotives 53-46 and 53-47. They are 0-6-0F, build 1956, in "Ateliers de Construction La Meuse Selessin" Liege. The works numbers 5346 and 5347 are used as their running numbers. 53 46 was

working in September 1999. © Roland Beier

United Kingdom
I photographed a derelict fireless at the Tanfield Railway in 2008 (see next page). Unless Tanfield has other fireless locos, it is described as follows:

This was built by Hawthorn, Leslie in 1929 as works No. 3746, an 0-6-0 and supplied to the Oldham Electricity Works. It finished its working life at Huncoat power Station near Accrington as Huncoat No. 3.
https://www.geograph.org.uk/photo/6887040

For other Brirtish survivors, see:
https://en.wikipedia.org/wiki/List_of_fireless_steam_locomotives_preserved_in_Britain

One notable example is "Lord Ashfield" (Andrew Barclay works no. 1989 of 1930) at the Museum of Science and Industry in Manchester. It ran in limited service in the 1990s sharing a steam supply with the stationary exhibits.[20] The Ayrshire Railway Preservation Group has rebuilt its Andrew Barclay 0-4-0 fireless locomotive (Works Number 1952 of 1928). The engine returned to service in 2015, and operates as part of a demonstration freight train.[21]
https://en.wikipedia.org/wiki/Fireless_locomotive

Elsewhere
Does anyone know of any more fireless active anywhere else in the world? Russia or former Soviet states? I can't find any references to fireless locos in Vietnam or North Korea.

Background Information
In case anyone is not aware, the principal behind a fireless loco is not just to insert steam into the boiler under pressure and use it until the pressure drops to near atmospheric pressure but that warm water is placed in the pressure vessel (it's not really a boiler) before the steam is added. As the steam is used up, the reduction in pressure causes the water to boil and this produces more steam. In that way, a proper fireless loco can perform far more work than if only steam was added to an empty pressure vessel.

See http://www.whippanyrailwaymuseum.net/exhibits/equipment/engines-a-powered-rail-equipment/fireless-cooker-0-4-0f-no-7240 for more details on how they work.

Compared with a conventional steam loco or a diesel loco, a fireless loco can be clean and green. Using spare steam is an inexpensive source of power that might otherwise be wasted and steam produced by sustainable means could make a fireless as green as an electric loco. Given that, it's perhaps surprising that so few are left in use. They have the added advantage of not producing flames and sparks which steam, diesel and electric are capable of. However,as part of the evolution of specialised railway locos, flame-proof diesels and electrics were developed which in most cases replaced fireless steam locos in situations where fires and explosions were a concern.

The advantages for fireless locos are many; they are easy to drive (compared with conventional steam locos) and require only one crew member, are much less likely to suffer boiler explosions, use free or inexpensive steam as fuel, do not waste fuel when they are sitting not working and have fewer parts to fail or need replacing. However, the need for an outside steam source (not available at all industrial locations) and the need to return to charge (possibly after far less work than a steam or diesel loco) are disadvantages which limited their use to a few specialised locations such as power stations, sugar mills, steel works and munitions factories.

Oddities
A streamlined fireless:
https://en.wikipedia.org/wiki/Fireless_locomotive#/media/File:RR72.20.1A_PP&L_Fireless_No._4094-D_Front_Side.JPG

0-8-0F:
https://en.wikipedia.org/wiki/Fireless_locomotive#/media/File:Henschel24939-1952.jpg

2-8-0F converted from a tender loco:
Noel Fernandez, Cuba https://youtu.be/mEe_Or7dfIs

Fireless tram loco:
https://tinyurl.com/8t8y9pd9

Narrow gauge fireless on roadside mineral tramway:

https://tinyurl.com/9wdndte4

For a wide range of fireless locos in action, search YouTube for:
https://www.youtube.com/results?search_query=fireless+steam+locomotive

John Raby
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