

WASC 1916

NG Transport to/
from Summerfield
1950's / 1960's

MR. R. Taylor
Royal Gunpowder Mills
Walkham Abbey.

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| WARGM Co. | |
| Date Rec'd | 22 MAY 2002 |
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| Action Letter of Thanks sent | Copy |

Philip Verity
16 The Hardies
Holmer Green
Bucks HP15 6TG

Sunday 21st April 2002

Dear MR Taylor

Following our visit on Thursday to RGM my father asked me to make the enclosed photocopies and forward them to you. He was the driver of PGK 611 while at Summerfield Research site, Kitterminster, and was particularly thrilled to see 'her' again.

He is convinced that somewhere at R.O. Summerfield there will be the original nitroglycerine cylinders.

Please pass on particular thanks to Paul (I'm sorry I didn't get his surname) who made us welcome and went out of his way - missing lunch - to ensure we were looked after. It was his suggestion that we forward these copies to you, so perhaps you would show him.

All four of us thought the presentation of the site was both excellent and engaging with obvious efforts targeted at the young. We spent four very enjoyable hours, although I think my 86 year old dad slightly overdid it!


cont'd

I have suggested to my father that he might record his reminiscences - my mother is trying to master WORD on the PC so it may take time.

Should you wish to contact him directly, which I'm sure he would enjoy:-

H. R. VERITY (Bert)
10 Loweswater Rd
Burlish Park
Stourport-on-Severn
Worc's DY13 8LL.

Again thanks for a great day out.
Hope the attached is interesting.

Yours sincerely


The Fodens Last Run

Our Foden truck used for casting liquid transfer in the early days of Summerfield made its last journey recently. The vehicle was driven onto a low loader and whisked off by the army to its new home the Museum at the Royal Gunpowder Mills, Waltham Abbey. "So what", you may ask - why feature some ancient truck in the Thruster? Well this one has an interesting history and some unique design features.

To quote from an article that Ian Johnstone wrote for "Truck Magazine" some years ago:

"An explosive as sensitive as nitroglycerine would not normally be permitted on public roads but PGK 611, a 1955 Foden, operated with a special dispensation from the Home Office. For years it trundled back and forth around the back roads of Britain without incident.

The Foden was specially built and equipped by Streetly Garage, Birmingham, on a Foden chassis. Streetly Garage later became Satterthwaite Ltd, and is widely known as a leading specialist in old Foden vehicles.

The lorry design, although special, was similar in many ways to petrol tankers. Everything electrical, combustible or hot was placed in front of a firewall. The fuel tank was squeezed in between the cab and the firewall, and the exhaust was right at the front, just behind the bumper.

The firewall itself was made of heavy-gauge steel and designed to give the crew a warm feeling of security, but a warm feeling is all that it would give. In the words of Commander Frank Morgan, the

manager of Summerfield at that time: **'If the payload had detonated, all that would have been left was a hole in the ground!'**

Along the outside of the vehicle there are a number of lockers containing emergency equipment, red flags on poles, flashing beacons, and intriguingly a sack of cotton waste which would be used to block up road drains and prevent spillages getting into the sewers. Also on the outside of the vehicle were several remote engine stop controls.

The cab was timber-lined and fitted with two seats, though most of the space was taken up by the Gardner 4LW engine. The enormous steering wheel was completely horizontal with the speedometer in the hub. There were no other driver's instruments. A gauge was installed in the cab to monitor the payload temperature. Nitroglycerine becomes even more sensitive when the temperature is close to freezing. Should the temperature get very low, special steps were to be taken. What were these steps? Bloody great big ones!



The drivers were issued with special instructions and information:

'Casting Liquid is a very POWERFUL explosive.'

'No smoking when loaded.'

'Remember the inside of the vehicle is equivalent to an explosive operation building, and must be treated as such, cleanliness and careful handling are essential.'

The lorry used to leave Summerfield at 5.00 a.m. and drive to South Wales by a serpentine route, avoiding habitation wherever possible. Five aluminium tanks with a capacity of 1000lb each, would be filled with de-sensitised nitroglycerine at Caerwent. The floor behind the rear axle would be released, a special rubber mat placed on the ground and the tanks put on the mat one at a time. The containers were then lifted off the mat with the vehicle's own travelling crane hoist and secured in the cargo bay with bracket clamps.

All the fittings in the cargo bay were manufactured from phosphor bronze and the bay itself was made of aluminium. This combination of metals reduced the risk of sparks and friction. Rubber overshoes had to be worn when working in the back of the lorry to prevent static build up.

10 miles after leaving the Caerwent depot the crew would stop and check the load and then stop and check it again every hour on the way. The lorry would arrive back at Summerfield at 7.30 p.m.

Now, it's only about 180 miles round-trip to Caerwent from Summerfield, so why did it take 14 hours? Because the gearing and axle ratios were chosen to restrict the top speed to 20 mph.

Drivers Bert Verity and Bob Davies have told me how they were frequently overtaken by cyclists, how the traffic used to tail back for miles sometimes and of the verbal abuse they got from other motorists who had no way of knowing what they were carrying in the back of the truck, and why they were going so slow.

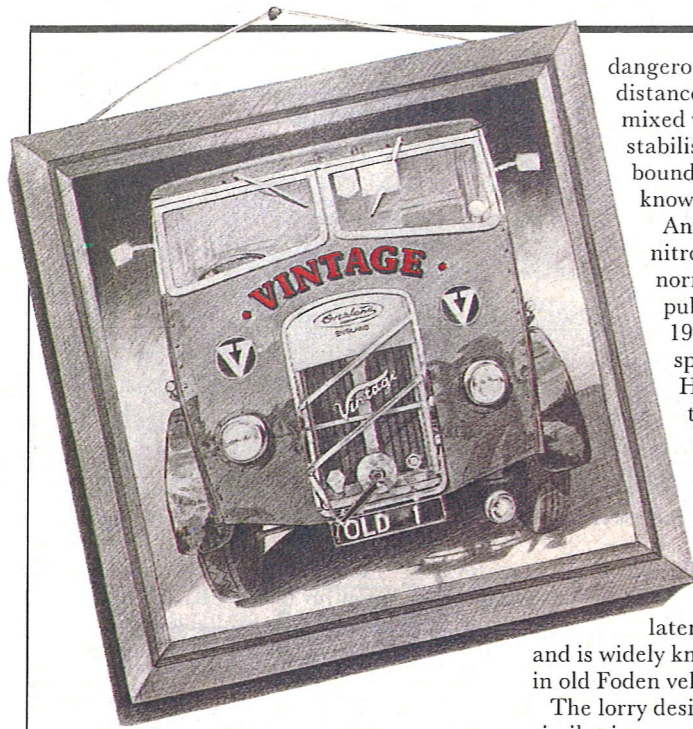
Alan Millard, now-retired mechanic, had to stay on duty all the time the lorry was on the road, ready to rush to its assistance if it should breakdown. The moment the lorry came through the factory gates, the factory horn would sound and Alan would jump on his bike and head home. Luckily Alan was never called on, the lorry proved to be 100% reliable, not even a puncture.

The last time it went on the road was in 1972 when it made a few special trips to Clydeside, a three-day journey at 20mph."

As our pictures show, the old girl still starts (with a little help from Bill Barnsley and Brian Griffiths), albeit a little smokily, and was able to get onto the low loader under its own power.

(We will tell you more about the Waltham Abbey Museum in next months issue)





dangerous to pump. At a safe distance from the plant the NG is mixed with other chemicals to stabilise it, at that stage the NG bound for Summerfield was known as Casting Liquid.

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Along the outside of the vehicle there are a number of lockers containing emergency equipment, red flags on poles, flashing beacons, and intriguingly a sack of cotton waste which would be used to block up road drains and prevent spillages getting into the sewers. Also on the outside of the vehicle were several remote engine

- Bottom, PGK 611 regularly made a 180-mile round trip with a lethal cargo of nitroglycerene
- Below left, a special rubber mat was used to hoist the drums of NG to prevent static building up
- Below, all fittings in the cargo bay are made of phosphor bronze, the bay is of aluminium to stop sparks

Ian Johnston discovers a '55 Foden that carried high explosives in secret

In the classic 1953 trucking film *The Wages of Fear*, Yves Montand joined a band of misfits and outcasts in a desperate attempt to transport nitroglycerine across Guatemala. The film relates the sometimes fatal consequences of driving lorry-loads of a very sensitive explosive across mountains. However, this was just a film, loosely based on the adventures of the real-life French adventurer Georges Arnaud; nitroglycerine could never be transported by road in any civilised country, could it?

Shortly after *The Wages of Fear* was released, regular routine shipments of nitroglycerine were being made on the roads of Britain. It is only now, more than 20 years after the last journey was completed, that the story of PGK 611 and its high-risk cargo can be told.

In 1951, a mothballed ammunition factory at Summerfield, near Kidderminster, was reactivated to develop a new kind of rocket propellant for guided missiles, one of the ingredients for which was nitroglycerine. Summerfield did not have the equipment for making nitroglycerine and so it had to be imported from the Royal Ordnance Factory at Caerwent in South Wales.

Nitroglycerine is an unusual explosive in that it is a liquid, it is however quite easy to make the first time, but you have to be pretty good to survive long enough to make it a second time, as the old saying goes:

'There are old explosive experts, and there are bold explosive experts, but there aren't any old, bold explosives' experts.'

Nitroglycerine is always manufactured at the top of a hill and it flows from the plant under gravity, because it is too

stop controls.

The cab was timber-lined and fitted with two seats, though most of the space was taken up by the Gardner 4LW engine. The enormous steering wheel was completely horizontal with the speedometer in the hub. There were no other driver's instruments. A gauge was installed in the cab to monitor the payload temperature. Nitroglycerine becomes even more sensitive when the temperature is close to freezing. Should the temperature get very low, special steps were to be taken. What were these steps? Bloody great big ones!

The drivers were issued with special instructions and information:

'Casting Liquid is a very POWERFUL explosive,'

'No smoking when loaded'

'Remember the inside of the vehicle is equivalent to an explosive operation building, and must be treated as such, cleanliness and careful handling are essential.'

The lorry used to leave Summerfield at 5.30am and drive to South Wales by a serpentine route, avoiding habitation wherever possible. Five aluminium tanks with a capacity of 1000lb each, would be filled with de-sensitised nitroglycerine at Caerwent. The floor behind the rear axle would be released, a special rubber mat placed on the ground and the tanks put on the mat one at a time. The containers were then lifted off the mat with the vehicle's own travelling crane hoist and secured in the cargo bay with bracket clamps.

All the fittings in the cargo bay were manufactured from phosphor bronze and the bay itself was made of aluminium. This combination of metals reduced the risk of sparks and friction. Rubber overshoes had to be worn when working in the back of the lorry to prevent static build up.

10 miles after leaving the Caerwent depot the crew would stop and check the load and then stop and check it again every hour on the way. The lorry would arrive back at Summerfield at 7.30pm.

- Below, the fearless crew of, from left, Bob Davies, Alan Millard and Bert Verity
- Right, the old Foden was geared down to a maximum road speed of 20mph for safety
- Top right, the only drivers' instrument was the speedo located in the steering wheel hub
- Top left, PGK 611 was powered by an old Gardner 4LW engine - it's still going strong
- Middle right, the tool kit is still intact, complete with special Gardner spanners
- Middle left, the original tyres which have covered 75,435 miles are still fitted to the 1955 Foden

Now, it's only about 180 miles round-trip to Caerwent from Summerfield, so why did it take 14 hours? Because the gearing and axle ratios were chosen to restrict the top speed to 20mph.

Drivers Bert Verity and Bob Davies have told me how they were frequently overtaken by cyclists, how the traffic used to tail back for miles sometimes and of the verbal abuse they got from other motorists who had no way of knowing what they were carrying in the back of the truck, and why they were going so slow.

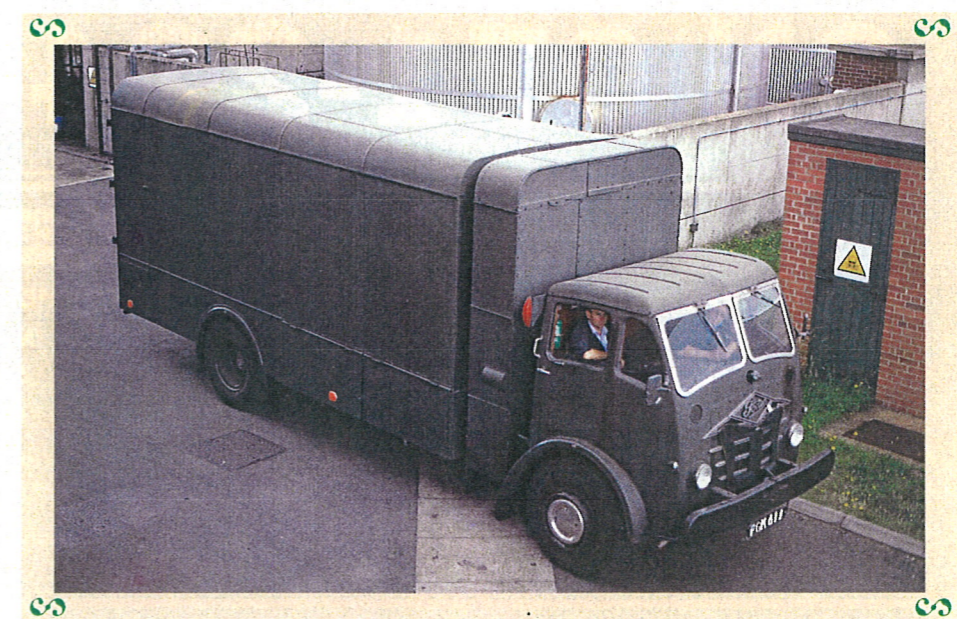
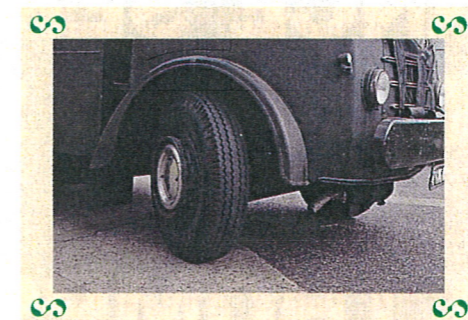
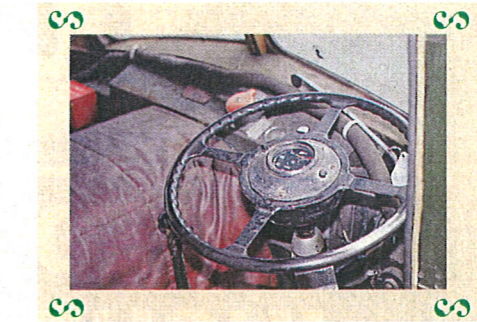
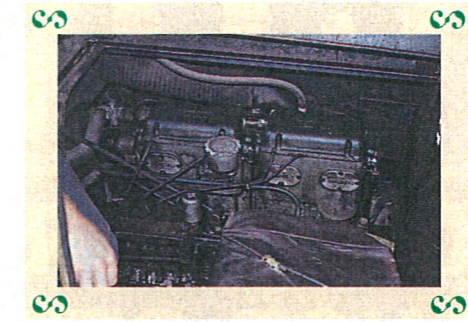
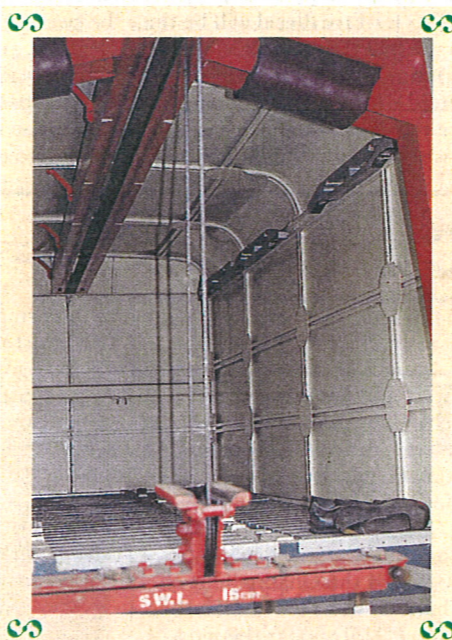
Alan Millard, now-retired mechanic, had to stay on duty all the time the lorry was on the road, ready to rush to its assistance if it should breakdown. The moment the lorry came through the factory gates, the factory horn would sound and Alan would jump on his bike and head home. Luckily Alan was never called on, the lorry proved to be 100% reliable, not even a puncture.

The Foden is still in existence. It is still at Summerfield where rocket motors are made to this day, although nitroglycerine is no longer imported. The last time it went on the road was in 1972 when it made a few

special trips to Clydeside, a three-day journey at 20mph. Every month for 20 years it has been inspected and driven a mile or two round the site. The engine sounds as sweet (and loud) as it ever was. Overall, the old Foden is still in excellent condition for its age.

It has 75,435 miles on the clock, almost all the emergency equipment is still fitted - even the tool kit with the special Gardner spanners, and emergency parts-kit including a spare injector, valve spring and piston-rings. Royal Ordnance, which now owns Summerfield, considers PGK 611 surplus after 20 years without use. If any conservation group or museum would be interested in acquiring the vehicle, they are invited to contact the writer of this article on 0562 824061.

In *The Wages of Fear* Yves Montand and his band got paid \$5000 a head for delivering their load of nitroglycerine. Bert Verity and his fellow drivers were paid £7 2s 3d a week. There's no justice is there? Mind you Bert, Bob and all their colleagues lived to tell the tale.





(Left) PGK 611 with current mechanic/driver Bill Barnsley at the wheel. It has notched up 75,435 miles – and still has plenty of rubber on the original tyres!

(Above) Drivers Bob Davies and Bert Verity with mechanic Alan Millard (centre) display some of the essential kit they carried



The Wages of Fear

IN THE CLASSIC 1953 trucking film *The Wages of Fear*, Yves Montand joined a band of misfits and outcasts in a desperate attempt to transport nitroglycerine across Guatemala. The film relates the sometimes fatal consequences of driving lorry loads of a very sensitive explosive across mountains.

However, this was just a film, loosely based on the adventures of the real-life French adventurer Georges Arnaud. Nitroglycerine could never be transported by road in any civilised country – could it?

Shortly after the *Wages of Fear* was released, regular routine shipments of nitroglycerine were being made on the roads of Britain. It is only now, more than twenty years after the last journey was completed, that the story of PGK 611 and its crew can be told.

In 1951, a mothballed ammunition factory at Summerfield, near Kidderminster in the West Midlands, was reactivated in order to develop a new kind of rocket propellant for guided missiles. This propellant was solid, but one of the ingredients used in its manufacture was nitroglycerine. Summerfield did not have the equipment for making nitroglycerine and so it had to be imported from the Royal Ordnance Factory at Caerwent in South Wales.

Easy

Nitroglycerine is quite easy to make the first time, but you have to be pretty good to make it a second time. As the old saying goes:

“There are old explosives experts, and there are bold explosives experts, but there are no old bold explosives experts.”

All the myths about NG fostered by *The Wages of Fear* and sundry Clint Eastwood films are absolutely true.

Nitroglycerine is always manufactured at the top of a hill and it flows from the plant under gravity, because it is too dangerous to pump. At a safe distance from the plant the NG is mixed with other chemicals to stabilise it. At that stage the NG bound for Summerfield was known as casting liquid.

Thrill! to our story of desperate men driving their deadly cargo!

Gasps! as their lorry hits every bump!

Tremble! as they stop for pie and peas!

Ian Johnston relates the fascinating tale of a nitroglycerine lorry which plied the backroads of Britain in the 50s and 60s.

An explosive as sensitive as nitroglycerine would not normally be permitted on public roads but PGK 611 operated with a special dispensation from the Home Office. For years it trundled around the back roads of Britain without incident.

PGK 611 was built specially for the job in 1955 by Streetly Garage, Birmingham on a Foden cabin chassis.

The lorry design, although special, was similar in many ways to petrol tankers. Everything electrical, combustible or hot was situated in front of a firewall. The fuel tank was squeezed in between the cab and the firewall, and the exhaust was right at the front, just behind the bumper. The firewall itself was made of heavy gauge steel and designed to give the crew a warm feeling of security, but a warm feeling is all that it would give.

In the words of Commander Frank Morgan, the manager of Summerfield at that time: “If the payload had detonated, all that would have been left would be a hole in the ground.”

Along the outside of the vehicle there are several lockers containing emergency equipment, red flags on poles, flashing beacons and, intriguingly, a sack of cotton waste

which would be used to block up road drains and prevent spillages getting into the sewers.

The cab was timber lined and fitted with two seats although most of the space seemed to be taken up by the Gardner 4LW engine. The enormous steering wheel was completely horizontal with the speedometer in the hub. There were no other driver's instruments. The fuel gauge was outside, on the tank itself.

A gauge was installed in the cab to monitor the payload temperature. Nitroglycerine becomes even more sensitive when the temperature is close to freezing. Should the temperature get too low special steps were to be taken – great big ones!

Driving

Driving the lorry required real skill. The clutch pedal had two positions, half way down to disengage a gear, then all the way to engage the next. This was so difficult that if a gear was missed, the driver would often have to stop the vehicle completely and start again from stationary.

The drivers were issued with special instructions and information.

“Casting Liquid is a very POWERFUL explosive”

(£7 2s 3d a week at Summerfield...)

“No smoking when loaded” and

“Remember, the inside of the vehicle is equivalent to an explosive operation building, and must be treated as such, cleanliness and careful handling are essential”

The lorry used to leave Summerfield at 5:30 am and drive to South Wales by a serpentine route, avoiding centres of population wherever possible. Five aluminium tanks with a capacity of 1000 lbs each, would be filled with de-sensitised nitroglycerine at Caerwent.

The floor behind the rear axle would be released, a special rubber mat placed on the ground and the tanks put on the mat one at a time. The containers were then lifted off the mat with the vehicle's own travelling crane hoist and secured in the cargo bay with bracket clamps. There was a catch tank under the floor to prevent spillage should any or all the tanks leak.

All the fittings in the cargo bay were manufactured from phosphor bronze and the bay itself was made of aluminium. This combination of metals reduced the risk of sparks and friction. Rubber overshoes had to be worn when working in the back of the lorry to prevent static build up.

Ten miles after leaving Caerwent the men would stop and check the load and then check it again every hour. The lorry arrived back at Summerfield at 7:30 pm.

It is only about a 180-mile round trip to Caerwent from Summerfield, so why did it take 14 hours?

The answer is simple: the gearing and axle ratios were chosen to restrict the top speed to 20 mph. Drivers Bert Verity and Bob Davies relate how they were frequently overtaken by cyclists, how the traffic used to tail back for miles sometimes and the abuse they got from other motorists who had no way of

knowing what they were carrying and why they were travelling so slowly.

Retired mechanic Alan Millard says he had to stay on duty all the time the lorry was on the road, ready to rush to its assistance should it break down. The moment the lorry came through the factory gates, the factory horn would sound and Alan would jump on his bike and head home. Alan was never called out as the lorry proved to be 100 per cent reliable – not even a puncture.

No longer

PGK 611 is still at Summerfield, although the site no longer imports nitroglycerine. The last time it went on the road was in 1972 when it made a few special trips to Bishopston – a three day journey at 20 mph.

Every month for 20 years it has been inspected and driven a mile or two round the site. The engine sounds as sweet (and loud) as it ever was. Overall the vehicle is still in excellent condition. The timber lined cab is a little shabby, the varnish is peeling off and the paintwork has turned dull.

Apart from the cab roof which has been replaced with a new GRP one, and the addition of direction indicators the vehicle is original – even down to the tyres, despite the 75,435 miles on the clock.

After 20 years without use PGK 611 is now considered surplus to requirements and a good home is being sought.

• *In the Wages of Fear Yves Montand and his band of down-and-outs got paid \$5000 a head for delivering their load of nitroglycerine to snuff out an oil fire. Bert Verity and his fellow drivers were paid £7 2s 3d a week. There's just no justice – but then again Bert, Bob and all their colleagues lived to tell the tale...*