

# FIRE COVER

ISSUE No. 230

NOVEMBER 2020

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*Lest We Forget*



**THE OFFICIAL JOURNAL OF  
THE FIRE BRIGADE SOCIETY**



# FIRE SCALE

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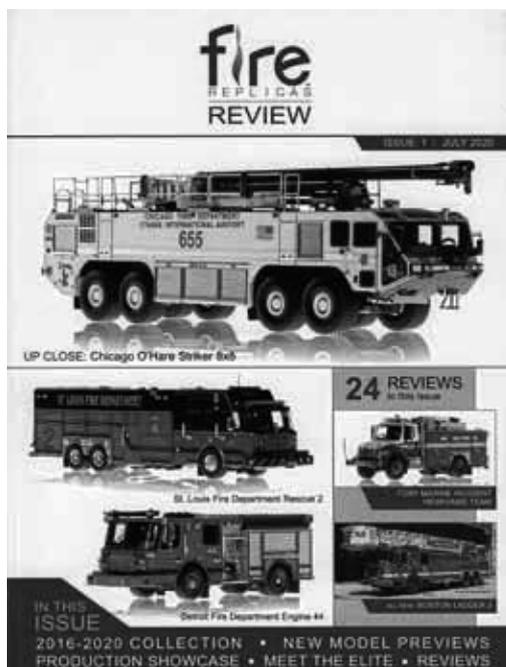
As Rosenbauer's Revolutionary Technology (RT) Hybrid Fire Engines go into service Wiking, Germany, has released details of a 1/43rd scale model of the vehicle they will be marketing. The general release will be red carrying the 'Rosenbauer R' logo. Exclusively for Rosenbauer's Fans Shop an authentic liveried version will be available that being 'Feuerwehr Berlin'. It is believed that other liveries for the model RT will be made available at a later date. Both releases are priced at 79 euro plus carriage.

This year saw the end of the Pompiers partwork, by Hachette, with model No 150.

A new partwork featuring light fire engines was promised to follow.

In two regions of France a 'test series' has been launched and although the releases proposed feature some vans in various fire brigade liveries and roles, included are some very interesting items.

The first model is priced at 2.99 euro and is a Peugeot J7, 'Ambulance de Réanimation' (van), number 2, at 7.99 euro, is a Saviem TP3, 4 X 4, CCFL (forrest firefighting) and number 3, at 15.99 euro, the price for the rest of the series, is a Citroen Type HZ, 'Tub', VASB (fire brigade ambulance). A number of free gifts come at various stages of the subscription. Model number 4 is a Land Rover Defender 110, with crew cab, VIMP (light fire engine). A future release is a vehicle rarely modelled, a Cornhill 4 X 4. All the releases will be in a constant 1/43rd scale.



Since their debut in 2016, releases from Fire Replicas (USA) have featured in Fire Scale. In June 2020 Fire Replicas published the 'inaugural issue' of 'Fire Replicas Review', a 100 page, 28cm X 21cm, book which not only catalogues all their releases to June 2020, some 119 different vehicles, it showcases a number of the models and how they are developed and produced. A selection of the 'elite collectors' of the range also features in this first edition and all the collectors designated 'elite' received a complimentary copy.

Autocult, Germany, specialise in 1/43rd scale models of unusual vehicles, often 'one-offs'. If you browse through past Fire Scales you will see some of their fire engine releases. Their last two releases follow and in my opinion what beauties they are!

**'The former pride of Vaihingen'** During 1924, there was a discussion led by the Mayor of Vaihingen to study the needs for the construction of a new fire engine and authorize the funds to build and place it into service for the city and surrounding towns. There is no doubt that many technical aspects were discussed such as chassis length, engine size, and a list of equipment to be carried. Most importantly, a plan was needed to pay for such a civic vehicle purchase. Historical records have been found that indicate that Vaihingen and the surrounding communities pooled their resources to raise the amount of 31,360.90 Marks. This amount had been collected by the time that the order for the new fire truck was purchased from the German firm Benz-Gaggenau.

The city fathers opted to purchase a Benz Type 2 CSN chassis that was powered by a 40 horsepower engine. The truck was designed and assembled according to the detailed specifications provided by the city staff. The engine drove a three-stage central water pump that was connected by a powerful transmission that could be engaged when needed. A large hose reel was located at the rear of the truck body and wooden ladders were carried on the side of the body. Add all of the required fire tools and eleven firemen and the gross vehicle weight totaled 2.5 tons on the scales. With a mere 40 hp under the hood, the Benz fire truck struggled to attain a top speed of 50 km / h.

On June 3rd of 1925, the fire brigade in Vaihingen received their new fire fighting vehicle. Officially designated as "Automobilspitze Benz-Gaggenau" (motorised self propelled pump), it was painted bright red and quickly became the pride of the fire protection association, where it served well into World War II. The last active fire station it served with was with the fire brigade in Salamander located in Kornwestheim. The end of active duty came when the old Benz 2 CSN was retired to The Fire Department Museum in Winnenden. To this day, it is on display and admired by all who visit. It truly reflects the spirit of a time that has long since passed. There is no roof over the vehicle interior and firefighters of the period simply endured the weather regardless of the season. Those were the days!



Autocult No 12011, 1/43rd scale, 1925 Benz-Gaggenau Type 2 CSN Fire Engine and the actual vehicle now in fire department museum in Winnenden. A limited release of 333 models. Photograph of actual vehicle courtesy Autocult.

**'The Special One'** After World War II and under the lead of General Franco, Spain expedited its aim of a self-sufficient economy. This affects almost all branches of economy and therefore also the automotive industry. For the manufacture of trucks the state-owned factory 'Empresa nacional autocamiones sociedad anonima', better known as 'ENASA SA', was founded. Shortly after 'ENASA SA', took over the production of 'Hispano Suiza' and its model '66 G' that was marketed under the name Pegaso on the domestic market. In 1954 a 140-hp-strong diesel engine was introduced into the range which allowed acceleration to a top speed of almost 80 km / h. During this time many fire departments were equipped with new emergency vehicles and such vehicles were fitted with a covered driver's cabin - except one!

It is not known what exactly moved the company 'Mining Metallurgical Society', based in the Sierra Morena, to order a 'unique truck' that differed so much from the conventional fire trucks and one that had nothing in common with series production vehicles. There are two possible reasons for the design adopted: The first is that the fire truck was only used on the company premises and therefore did not need to meet the rules and regulations of the vehicle registration centre and second, the ease and speed to enter and exit the vehicle saving valuable time at an incident. What resulted was a unique design and certainly worthy of the mantle 'The Special One'.



Autocult No 12008, 1/43rd scale, 1959 Pegaso 140DCI Mofletes Fire Engine and the actual vehicle when in service. A limited release of 333 models. Photograph of actual vehicle courtesy Autocult.

In 2021 Autocult will be releasing a model of another 'one-off design' for a fire engine, the Diamond T. of 'Hamden Fire Department', USA.

Although based on a unique vehicle, Autocult's model of the Pegaso is not the only model of this vehicle available. It has also featured in the Salvat partwork 'Pegaso Camiones' as release No 49. An image of the front cover of the magazine the model came with follows.



FBS South Eastern member, Kieth Swaffer, has alerted me to a number of 1/72nd scale model kits.

Available from ACE Models is item FV651 an Alvis Salamander 6 X 6, RAF MK6 Crash Tender and from Hasegawa a Rosenbauer Panther 6 X 6 Airfield Rescue and Fire Fighting vehicle.

Matador Models have available in 1/72nd scale kits, item 76CS-15, Dodge 'NFS' Dam Unit, item 76CS-16, Fordson 7V, 'NFS', Wheeled Escape Unit and item 76CS-17, a Merryweather Wheeled Escape Ladder.

### Model Photograph Parade



Fire Replicas, item FRO64, 1/50th scale, 1970 Mack CF, 50 foot 'Telesquirt', Fire Department New York's, Engine 70. A limited release of 175 models



Fire Replicas item FR086-14, 1/50th scale, New York City Police Department's ESS14, 2007 Ferrara Igniter Haz-Mat Command Unit, a limited release of 250 models



Eligor 1/43rd scale, item 116288, Renault D15 / Gimaex, FPTS (Road Rescue Tender), 'SDIS 72',



Eligor 1/43rd scale, item 116287, Renault C380, P6X4 / Gallin / FMOGP (Foam-Tender), 'SDIS 55'



Richmond Toys Hampshire FRS's Volvo FL6-14 Water ladder



Another model from the French part-work 'Collection Berliet', by Hachette, No 65, 1/43rd scale, 1950 Berliet GLCK 10R towing a trailer monitor.....from that era when coachwork mattered!

## UNVEILING A REVOLUTIONARY FIRE APPLIANCE

By Serge Amores y Martinez Armored

(Translated by Mike Smith and adapted for Fire Cover by Mike Smith and Ralph Horton)

The first fire appliances incorporating new technology appeared in the 1980s in the form of the FALCON pump, 22 examples of which were manufactured mainly for Austria, Germany and Switzerland. This was a new concept vehicle from Rosenbauer with a spacious cab, a front mounted pump, rear engine and two axles, each with single wheels.



The "Falcon" 4x4 pump, the first Rosenbauer "Concept Fire Truck" from the 1980s. All photographs by Serge Amores y Martinez Armored

2016 was Rosenbauer's 150th anniversary and at a spectacle worthy of Hollywood a new fire appliance, the Concept Fire Truck, (CFT), was presented to the press and to fire service specialists from around the world.

The object was to put on the market an exceptional fire engine incorporating new equipment based on tested research and combining the latest in electronic and ergonomic technologies. The CFGT toured specialist exhibitions, impressing the most demanding of users.

September 23rd 2020 was an important date in Rosenbauer's history and one to remember in the world of the latest firefighting techniques. It was the official presentation of Rosenbauer's revolutionary RT fire appliance, a spectacular uniting of all the companies developing new technologies at Linz in Austria.



The prototype Rosenbauer RT 4x4 in Austrian fire service livery. This appliance meets all the various European standards for fire appliances

'Until next time, compliments of the season, good collecting and keep safe'.



*The four prototypes at Rosenbauer's Leonding factory for a press conference on 23 September 2020.*

The RT appliance was developed from the CFT by Rosenbauer, which has brought to firefighting a completely innovative vehicle incorporating 21st century features. The RT is a result of close collaboration amongst all the experts at Rosenbauer, Leonding, Austria.

### **A fire engine for the future**

#### **1. Driving – combining, pleasure, safety and innovation**

The main characteristic of the RT is its advanced kinetic 4x4 drive. The chassis carries 550kg of high-tension LI-ION batteries with two steering axles and independent suspension for each wheel. This lowers the vehicle's centre of gravity considerably. The two Volvo Penta electric motors/generator 490hp with acceleration comparable to that of Panther airfield crash tenders with their 1000hp diesel engines.

The automatic gearbox has only two ratios giving assured acceleration on or off road over all terrains.

The appliance has a 3.80m wheelbase (extending to 4.0m or 4.40m on certain models), is 7/60m long (7.90m on certain models) and 2.35m wide, and if just the front axle is steered it has a turning circle of 15m, whereas European standard 1846 specifies a maximum of 17m. When both axles are steered the turning circle is only 12.5m. This ability is very useful when the appliance is deployed in the restricted central areas of some large cities. Their steering also allows the vehicle to move in a diagonal crabwise manner.

#### **2. Ergonomics and the human body**

The chassis and suspension can be adjusted according to the terrain. These adjustments can be carried out whilst the vehicle is moving and allow a road clearance between 25cm and 35cm and 47 cm in all terrain mode, which is equally useful for driving through floods. The cab is very roomy allowing 4 crew members to sit opposite each other across the cab, with a 5th crew member behind facing forwards. The driver and officer have seats which swivel through 90 degrees enabling them to turn around if the appliance is being used as a forward control unit.

The space saved by the absence of an internal combustion motor under the cab makes for greater comfort and reduces noise and allows wide internal steps. Thanks to the variable ground clearance and the wide steps BA wearers can exit the cab in complete safety.

Access to the cab is helped by handrails and strips of LED lights on the steps and ceiling designed to avoid creating shadows. Seats are ergonomic and adjustable with built-in security for BA sets in case of accident.

There are no surfaces in the cab which might injure the crew.

The bodywork incorporates 7 spacious lockers. These have an overall height of 2.70m with electric folding steps and shutters and LED lighting strips inside and out.

The exterior and the area around the appliance are also well lit to enhance the crew's visibility and enable them to work safely.

There is no provision for working on the appliance roof. To this end the ladder can be unloaded by using a remote control at ground level. Equipment is stowed on the vehicle in such a way that no crew member needs to get on its roof.

#### **3. Operating the RT**

Its computerised control system is central to the whole concept of the RT fire appliance. Both driving and firefighting operations are all controlled by the onboard computer via push buttons identified by pictogrammes. Everything is centralised on one touch-screen. This screen with its 17 buttons is situated alongside the officer-in-charge's front seat and can be equally easily seen by all the crew members in the cab. An additional control panel is also situated in the pump compartment at the rear of the appliance. All commands are sent using the individual pictogrammes, this makes for ease of comprehension and avoids language problems. All commands can also be monitored from outside the appliance by using a tablet with the Rosenbauer "EMEREC" app.

#### **4. Cab - forward control unit**

The spacious cab, combining the driving position and crew accommodation, can easily be transformed into a mobile control room to direct operations from the actual fireground. The driver's and o-i-c's seats rotate through 180 degrees to face the other crew seating. This allows all members of the crew and representatives from other emergency services to control operations and see on the central digital display details of the incident. The cab can also access the Tetra or Astrid communication networks enabling, in real time, all actions at an incident to be relayed and reports and information passed on from the appliance.

### **5. Minimal emissions and interactive safety**

The cab's design ensures the highest levels of passive and active safety in the event of an accident. The driver has a large panel linked to accident and safety issue warnings, including wide-angle electric exterior mirrors which avoid blind spots, a look-out system for cyclists and pedestrians and wide-angle rear view cameras, which allow the driver to monitor the rear of the appliance and crew members working there.

The electric motor drive means that the vehicle's emissions are very low. Unfortunately, however, they are not totally negative as brakes and tyres produce small particles and dust.

Nevertheless, thanks to a recovery system driven by the motors debris from braking can be reduced by an operation that anticipates brake usage. Cutting pollution and its devastating effects in urban areas is something fire appliances must play their part in.

### **6. The Rosenbauer hybrid system**

The RT has one or two high-tension batteries fitted at the lowest point on its tubular chassis. These batteries each have a capacity of 50Kwh to drive the vehicle and keep its essential functions operating. Vital material such as positive pressure ventilation, submersible pumps, lighting and the ladder (un) shipping gear, can be operated by the appliance's 18KW batteries. The pump works by its own generator or, when necessary, via the diesel engine. Short duration operations, around 30-60 minutes, account for some 90% of fire service turn-outs and, for the RT, consume 100KWh. For longer jobs the diesel engine drives the generator, keeping the pump going and recharging the batteries. The 6 cylinder BMW diesel can produce 200KW (272 hp).

The RT can be recharged on station from either a standard charging column or a rapid charger. Only ¼ hours is needed to give the high tension batteries 50 to 90% of a full charge.

### **7. More than just an ordinary major pump**

This fire engine carries all the gear to deal with urban fires and accidents. Depending on specification, 1,000, 1,600, 2,000 or 4,000 litre water tanks can be fitted, as can 40 to 400 gallon foam tanks. The N25 and N35 (2500-3500lpm at 10bars) low and medium pressure, or the low/high pressure N/ NH35 (400lpm at 40 bars), pumps can be fitted to customers'

requirements. A combination with a "FixMix" 2.04 CAFS foam proportioner, or an external induction system, are also options. The charging points are located in the lower parts of lockers 3 and 6 (behind the electric steps), whilst the RM15C monitor (1,500 lpm and mounted on the bumper or on the roof) or RM35 (3,500 lpm and roof mounted only) complete the firefighting equipment.

The bodywork is composed of streamlined, self-supporting, riveted aluminium covered in strong polyester fibre. The 7 locker shutters are aluminium and electrically operated.

All firefighting operations work through the CAN-BUS "Logistic Control System", which gives complete interactive management of both operations and the vehicle.

### **8. World marketing potential**

The first three RT appliances for the fire services of Amsterdam-Amstelland, Berlin and Dubai, have just been delivered and in the coming months (after crew training) will be operational. The Amsterdam appliance will be based at Hendrk fire station whilst the Berlin machine will go to Berlin-Mitte fire station and afterwards around the city to districts where there is traffic congestion and a high number of short duration incidents.

Rosenbauer has tested the potential for sales to certain fire services around the world. Apart from the three cities that have already ordered prototypes, Toronto, San Francisco, London, Paris, Munich, Madrid, Copenhagen, Gothenburg, Linz, Vienna, Tokyo, Singapore and Auckland all seem well suited to the RT's new concept of firefighting, whilst the cities of Vancouver, Portland, Canberra and Los Angeles are showing particular interest in this type of technology. Furthermore, Los Angeles City has just ordered its first RT which is under construction at the Leonding factory in Austria. It should also be noted that the Rosenbauer RT has passed all the tests to comply totally with NFPA standards. These requirements are extremely strict for fire appliances operating in continental America. This opens the way for RT exports via the Rosenbauer America branches in Minnesota and South Dakota. Rosenbauer already has experience of meeting NFPA standards with its new range of Panther 4x4, 6x6 and 8x8 Airfield Rescue and Fire Fighting vehicles, sold for several years in continental America.



*The interior of the RT' cab is particularly spacious and ergonomic and accommodates a crew of 7 in complete safety*

# ROSENBAUER'S DELIVERS 'REVOLUTIONARY TECHNOLOGY'

Through the pages of Fire Cover we have followed Rosenbauer's journey in the development of an 'environmentally friendly' fire engine. Starting as the 'Concept Fire Truck'(CFT), now evolving into the 'Revolutionary Technology' Fire Truck (RT), this vehicle is set to become a common place in fire and rescue services around the world as did the AT (Aluminium Technology) fire truck, which became the Advanced Technology fire truck. Let us pose the question now...which will be the first UK FRS to purchase the RT and how long will it be before this happens? However, we are not inviting suggestions!

Amsterdam's, RT pump on a Rosenbauer 4x4 hybrid chassis with a 4,100mm wheelbase powered by two "Drive Power" 180 KW electric motors supplied by two 50 kWh 'high tension' batteries and a BMW 200kW "Range Extender" diesel engine. The NH35 pump can operate at 3,000 litres per minute (l / min) at 10 bars and 250l / min at 40 bars, all in accordance with European Standard EN 1028. The water tank holds 3,000 litres and the overall measurements of the appliance are 7,600 x 2,350 x 2,900mm. All photographs FBS International member Serge Amores y Martinez Amore



This RT pump, for Berlin, on a Rosenbauer 4x4 hybrid chassis with independent pneumatic suspension and a 4,100mm wheelbase. This vehicle is fitted with two Volvo Penta electric motors as well as two "Advanced Driveline" batteries. The cab can accommodate up to seven firefighters including the driver. The N25 pump has a capacity of 2,000l / min at 10 bars and is driven by electricity or by a BMW diesel engine. The water tank holds 1,200l with a 100l foam tank. The appliance's equipment is rounded off by a CAFS generator and a demountable hose-reel with 200m of 70mm hose at the rear



Destined for Dubai Civil Defence is this pump on a basic RT 4x4 chassis with a 4,400 mm wheelbase and variable ground clearance of 175 to 470mm according to ground conditions. The high / low pressure N / NH35 pump can work at 3,500l / min at 10 bars and 250l / min at 40 bars. This RT model has two tanks, one carrying 4,000l of water and the other 400l of foam with a "FixMix 2.0A" foam system. A 1,500l / min RM15C monitor on its cab roof completes the appliance