

SPECIFICATION

Highly autonomous cross-country workshop and servicing van

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The invention relates to a highly autonomous so-called cross-country workshop and servicing van intended to be included in an autonomous motorized unit travelling in desert regions or regions little equipped with fixed stations for servicing and repairing automobile vehicles.

An autonomous unit for transporting persons and in particular troops usually comprises transport vehicles proper, medical vehicles (ambulances), supply vehicles (mobile) and equipment vehicles, this unit being capable of satisfying all its needs and existing in a completely autonomous manner. However, it is desirable to add to these units breakdown and servicing vans for maintaining the vehicles of the unit in perfect condition so as to avoid any breakdown which might adversely affect the progression of said units.

The present invention provides an automotive van comprising chassis means, a driving cab located in front of an enclosed workshop containing servicing equipment and power lines extending and power lines extending forwardly to a motor-generator set positioned between the cab and the workshop enclosure for supplying power to said equipment, said driving cab and workshop being secured to said chassis means, and said motor-generator set being removably mounted on said chassis means, for alternative use to supply power to said equipment, or autonomously to supply power externally after removal from the van.

The layout of the van enables the workshop to be used without the inconvenience of locating the motor generator set in it, and also provides a good distribution of load on the van which is important when travelling over a rough terrain.

In the preferred embodiment the workshop is provided in its front wall with an opening or openings through which the power lines pass.

According to a preferred embodiment, the generating set is removably mounted on skis fixed by bolts and nuts, this set being capable of being used on the ground in an autonomous manner.

According to a feature of the invention, an air compressor is removably fixed above the generating set and is also disposed between the driving cab and the front side of the body of the van.

A workshop and servicing van according to the invention is shown by way of a non-limitative embodiment in the accompanying drawings in which:

Figure 1 is a side elevational view of the van, and *Figure 2* is a top plan view of the van shown in *Figure 1*.

The breakdown and servicing vehicle to be described is designed to be included in a company of vehicles intended to travel in desert regions or in any case in regions which have not been supplied with service and maintenance stations, said vehicle having the feature of being highly autonomous and consequently having a large range of action (1 600

km).

The van comprises a driving cab 1 partly shown in dot-dash lines and a body 2 supported by the same chassis or by two independent chassis.

The van has an electric generating set 3 interposed between the driving cab 1 and the front end side 4 of the body, the position of this generating set allowing a good distribution of the loads and subsequently a good attitude of the vehicle when travelling over rough terrains, irrespective of whether the generator set is present or not.

This generating set is removably mounted on skis 5 by detachable fixing means, such as nuts and bolts, so as to be capable of fixed to the skis or placed on the ground for supplying in an autonomous manner the electric current for the apparatus or for the lighting of a camp.

This generating set, when it is fixed on the van, supplies current to the servicing or breakdown equipment inside the body 2, the volume of which is fully available owing to the fact that the generating set is located outside the body. For this purpose, the front end side 4 of the body is provided with openings for the passage of lines or pipes connecting the servicing and breakdown items of equipment to the generating set.

In order to have also available a pneumatic power, the van also comprises an air compressor 6 which in the presently-described embodiment is removably fixed above the generating set by a support 7 and detachable fixing means such as nuts and bolts.

This air compressor is also interposed between the driving cab 1 and the front end side of the body 2 so as to distribute the loads and avoid reducing the inside volume of the body:

The generating set has an exhaust with a silencer 8 connected to the exterior by an exhaust pipe 9, this exhaust pipe terminating in an outlet pipe 10 which projects from the body.

The servicing equipment comprises two benches 11 and 12 parallel to the lateral walls 13 of the body and carrying in particular a press for the scraping of tire inner tubes 14, a vulcanizer 15 for repairing the inner tubes, a driller support 16, and oil pump 17, an oil filling pipe 18 and a cistern level 19.

These benches also carry a grease pump 20 and one or more vices 21. The body is also provided with a brake bleeder 22, a fire extinguisher 23, a jerrican 24 containing brake oil, a grease tank 25 and an oil cistern 26 located under the bench and filling the space under the latter.

As shown in the accompanying drawings, the body is also provided with two sets of three reels of hose with a gun 27 located under each bench 11 and 12. These reels of hose are located in front of openings 28 formed in the lateral walls 13 of the body so that the flexible hose 29 wound on these reels can be freely unwound outside the body for lubricating the differential axles and the gearboxes of the vehicles to be serviced or repaired.

The body is provided with a pipe 29 for filling a drinking water tank 30, the tank being of large capacity (200 litres) and located under the floor of the body, and provided laterally with two fuel tanks 31 of a capacity for allowing the vehicle to travel over

long distances, for example 1 600 km.

All these servicing and breakdown means are supplied with electric current by the generating set 3 and with compressed air by the compressor 6. For this purpose, the front end side 4 of the body is provided with openings for the passage of connecting conductor lines and pipes and the flexible hoses 28 of the reels are respectively connected to the grease or oil tanks. In order to facilitate the handling of the electric apparatus, electric sockets supplying 6, 12 and 24 volts may be provided inside the body so that the apparatus may be connected in a simple manner, the voltage and the amperage of the generating set being read off from a control panel 31 inserted in the front end wall 4 of the body and visible from inside the latter.

The breakdown equipment comprises the aforementioned items of equipment to which there may be added an electric driller, a welding station, a grinding wheel, a battery charger and any other item required for the immediate mechanical repairing of a broken-down vehicle.

This vehicle has the feature of including, in itself, all the means for servicing or repairing vehicles which form a motorized company travelling in regions which are little or insufficiently equipped with service stations, this vehicle in association with medical vehicles and troop-transporting vehicles and mobile supply vehicles constituting an autonomous unit capable of staying for a long time in desert regions remote from built-up regions or towns.

CLAIMS

1. An automotive van comprising chassis means, a driving cab located in front of an enclosed workshop containing servicing equipment and power lines extending forwardly to a motor-generator set positioned between the cab and the workshop enclosure for supplying power to said equipment, said driving cab and workshop being secured to said chassis means, and said motor-generator set being removably mounted on said chassis means, for alternative use to supply power to said equipment, or autonomously to supply power externally after removal from the van.

2. A van as claimed in claim 1, wherein the generating set is removably mounted on skis for supporting said set during autonomous use on the ground.

3. A van as claimed in claim 1 or 2, wherein an air compressor is removably fixed above the generating set and is also interposed between the driving cab and the front end side of the workshop enclosure.

4. A van as claimed in any of claims 1 to 3, wherein the vehicle has lateral walls having openings and the servicing equipment comprises at least one reel of hose with a gun placed in front of the openings formed in the lateral walls of the vehicle, a brake bleeder, a press for scraping tire inner tubes, a vulcanizer, a battery charger and at least one bench, these apparatus being operated electrically or by compressed air.

5. A van as claimed in claim 4, wherein said at

least one bench is disposed alongside a lateral wall of the vehicle, the bench carrying a vice and a driller support which is supplied with power by the generating set, a grease tank and an oil cistern being disposed under the bench and connected to the reel of hose through pumps.

6. A van as claimed in claim 4 or 5, comprising two reels of hose provided with guns disposed between the grease tanks and the oil cisterns, said reels of hose being connected to said tanks and serving to service the differential axles and gearboxes of vehicles to be serviced or repaired.

7. A van as claimed in claim 1, wherein the repairing equipment comprises a driller, a grinding wheel, benches, vices, a welding station and a battery charger supplied with power by the generating set.

8. A van as claimed in claim 1, arranged and adapted to operated substantially as described with reference to the accompanying drawings.

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The breakdown equipment comprises the aforementioned items of equipment to which there may be added an electric driller, a welding station, a grinding wheel, a battery charger and any other item required for the immediate mechanical repairing of a broken-down vehicle.

This vehicle has the feature of including, in itself, all the means for servicing or repairing vehicles which form a motorized company travelling in regions which are little or insufficiently equipped with service stations, this vehicle in association with medical vehicles and troop-transporting vehicles and mobile supply vehicles constituting an autonomous unit capable of staying for a long time in desert regions remote from built-up regions or towns.

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3. A van as claimed in claim 1 or 2, wherein an air compressor is removably fixed above the generating set and is also interposed between the driving cab and the front end side of the workshop enclosure.
4. A van as claimed in any of claims 1 to 3, wherein the vehicle has lateral walls having openings and the servicing equipment comprises at least one reel of hose with a gun placed in front of the openings formed in the lateral walls of the vehicle, a brake bleeder, a press for scraping tire inner tubes, a vulcanizer, a battery charger and at least one bench, these apparatus being operated electrically or by compressed air.
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6. A van as claimed in claim 4 or 5, comprising two reels of hose provided with guns disposed between the grease tanks and the oil cisterns, said reels of hose being connected to said tanks and serving to service the differential axles and gearboxes of vehicles to be serviced or repaired.

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