

CHAPTER 112

CLEANING INSTRUCTIONS – LAND ROVER 110 GS 4X4 VEHICLE

- 112.1 This chapter provides basic and specific cleaning requirements for selected vehicles. Where there is a specific requirement or need to highlight particular problem areas detailed cleaning guides are provided as tables and figures in this chapter.
- 112.2 This section deals with the cleaning of the basic Land Rover 110,4x4 vehicle. The section is structured as follows:
- a. exterior of vehicle;
 - b. driver's cabin;
 - c. seatbelts;
 - d. cargo body;
 - e. cargo body tool box;
 - f. cargo body rear quarter panel;
 - g. rear quarter panel hole;
 - h. engine and engine compartment;
 - i. harmonic balancer;
 - j. fuel system;
 - k. wiring loom support bracket;
 - l. battery box;
 - m. transmission and drive-line components;
 - n. universal joint;
 - o. chassis;
 - p. rear cross members;
 - q. tray channels;
 - r. suspension;
 - s. winches and wire ropes;
 - t. tarpaulins;
 - u. camouflage nets; and
 - v. tyres (new, old and spares).

Exterior of Vehicle

112.3 The cleaning instructions for the Land Rover 4x4's exterior, as illustrated in Figure 112-1, include the points detailed in Table 112-1.

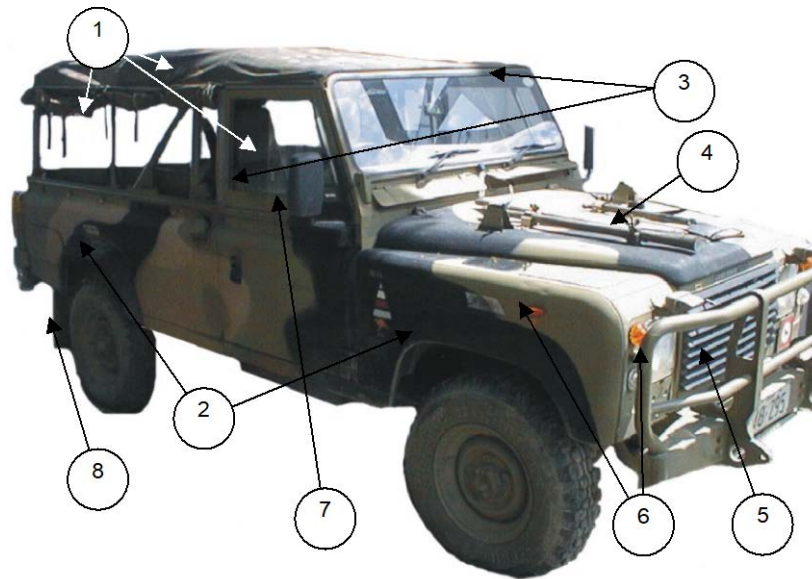


Figure 112-1: Land Rover 4x4's Exterior

Table 112-1: Cleaning Instructions for the Land Rover 4x4's Exterior

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Remove canopy and bows and clean with pressure washer. Clean the hollow sections of the canopy bows by using flushing water through the tubes with a pressure washer. CES and clean.	
2	Remove the side flares for cleaning.	0.5
3	Remove the CES and clean. Ensure the hold down brackets and the nylon straps and buckle loops are separated and cleaned.	
4	Remove the grill and high-pressure air or pick clean the radiator to ensure there are no seed or insect debris embedded. Inspect behind number plate and tactical signage and flush hollow tubing on brush guard.	
5	Damaged lights or where light seals are compromised are to be removed and cleaned of all soil, plant or insect matter.	0.5
6	Remove the mudflaps and clean; if damaged dispose of.	
7	If vehicle is fitted with a winch, remove and clean the winch rope. Clean the winch drum. Ensure winch propeller shafts, uni joints, and pillow block bearing are clean and free from dirt, dust, plant and insect material.	2.5
8	Flush out behind mirrors – damaged mirrors are to be removed.	
9	If fitted, remove tread plates on top of front mudguards to facilitate cleaning.	

Driver's Cabin

112.4 The cleaning instructions for the Land Rover 4x4's driver's cabin, as illustrated in Figure 112-2, include the points detailed in Table 112-2.

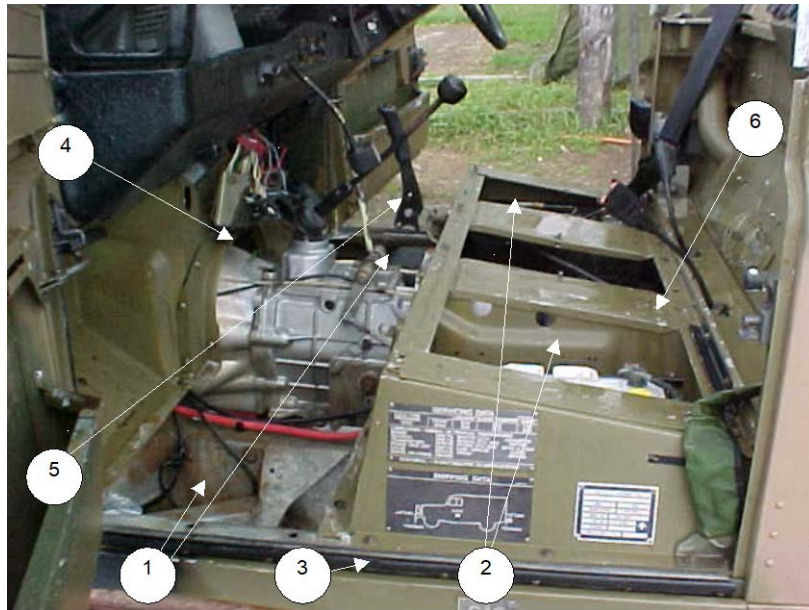


Figure 112-2: Land Rover 4x4's Driver's Cabin

Table 112-2: Cleaning Instructions for the Land Rover 4x4's Driver's Cabin

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Remove the cabin seats. Seats and bases are to be refitted after inspection.	1.0
2	With seats and seat bases removed, remove the floor access panels under cabin seats. Attention to the area topside of fuel cell will be required.	
3	Clean top of fuel tank through access panel under seat. Area on top of the fuel tank to the rear of the tank requires particular attention to clean.	
4	Clean under the rubber seals on the doors, bonnet etc, to ensure there is no seed, soil or insect debris. Any damaged door seals should be removed and disposed of.	0.2
5	Brake and clutch pedal covers are to be removed to facilitate cleaning and then replaced after inspection.	1.0
6	The handbrake dust cover is to be removed.	
7	The weapons carry rack is to be removed to facilitate cleaning.	0.5
8	Remove dash pad to access ventilation/demist ducts.	0.1
9	Critically inspect the dash pad covering and, if damaged or cracked, dispose of.	4.0
10	Thoroughly clean ducts and flex tubing to remove all dust, seed, plant and insect material.	
11	Remove dash panel and air blow all BRM from behind dash. Remove insulation tape where directed to facilitate cleaning.	

12	Critically inspect dash and instrument panel wiring looms. If the individual wires in the loom are loosely bound by the outer covering, that is, insulation tape or heat shrink, the outer covering is to be removed and disposed of.	
13	For wiring looms that are bound by insulation tape, remove and dispose of the insulation tape.	
14	All the cabin area is to be vacuumed and air-blown clean.	

Seatbelts

112.5 The cleaning instructions for the Land Rover 4x4's seatbelts, as illustrated in Figure 112-3, include the point detailed in Table 112-3.



Figure 112-3: Land Rover 4x4's Seatbelts

Table 112-3: Cleaning Instructions for the Land Rover 4x4's Seatbelts

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Do not remove the seatbelt assembly. Expose the entire length of each seatbelt and wipe with a dry rag. Ensure the assembly housing is free from dirt, dust, insect and plant material.	

Cargo Body

112.6 The cleaning instructions for the Land Rover 4x4's cargo body, as illustrated in Figures 112-4 and 112-5, include the points detailed in Table 112-4.

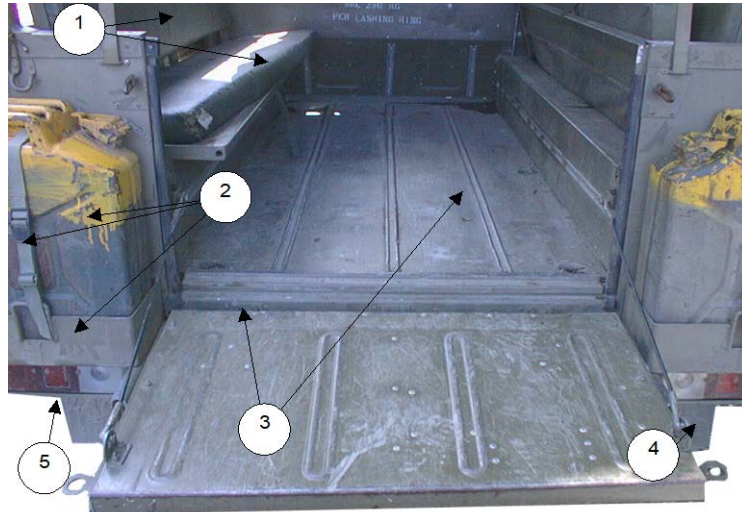


Figure 112-4: Land Rover 4x4's Tray and tail-gate



Figure 112-5: Land Rover 4x4's Rear Interior

Table 112-4: Cleaning Instructions for the Land Rover 4x4's Cargo Body

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Seat cushions are to be removed and cleaned. Damaged seat cushions are to be disposed of.	
2	Fuel and water Jerry cans are to be removed and holders are to be cleaned. Straps and buckles are to be cleaned of all soil, plant and insect matter. Attention is to be paid to the loop areas of the straps, at the buckle end.	
3	Remove the metal floor slides to allow cleaning of soil and debris from underneath.	1.0
4	Tail gate and seat tubing to be flushed with water until clean.	
5	Check around the light fitting for soil, plant and insect debris. Damaged light fittings are to be removed and disposed of. Remove both tail-light fittings to enable the rear cross member to be flushed out where it adjoins the chassis rails.	0.5

Cargo Body Toolbox

112.7 The toolbox, as illustrated in Figure 112-6, forms an integral part of the cargo body and the method for cleaning is detailed in Table 112-5.

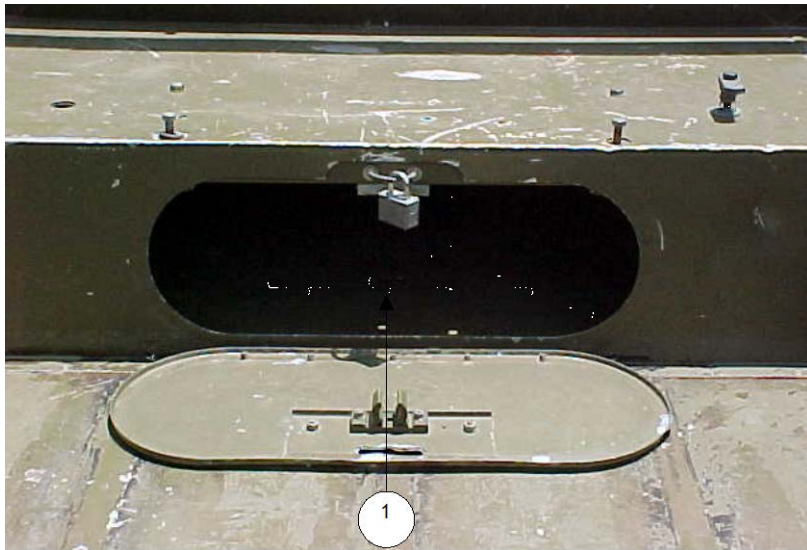


Figure 112-6: Land Rover 4x4's Toolbox

Table 112-5: Cleaning Instructions for the Land Rover 4x4's Cargo Body Toolbox

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Drill a hole in the cargo body toolbox, from underneath the vehicle, to allow water to drain.	0.1
2	Drill a hole in the bottom of the toolboxes, located on both sides of the vehicle in the rear quarter panel, to allow water to drain.	0.2

Cargo Body Rear Quarter Panel

112.8 The rear quarter panels, as illustrated in Figure 112-7, form an integral part of the cargo body and the method for cleaning are detailed in Table 112-6.



Figure 112-7: Land Rover 4x4's Rear Quarter Panel

Table 112-6: Cleaning Instructions for the Land Rover 4x4's Rear Quarter Panel

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Drill a hole in the rear quarter panel, on both sides of the vehicle, to facilitate the cleaning of the tray cross member. Refer to Figure 112-7 above for details.	0.5

CAUTION
Do not drill holes into chassis.

Rear Quarter Panel Hole

112.9 The cleaning instructions for the Land Rover 4x4, location of rear quarter panel hole, as illustrated in Figure 112-8, include the points detailed in Table 112-7.



Figure 112-8: Land Rover 4x4 – Location of Rear Quarter Panel Hole

Table 112-7: Cleaning Instructions for the Land Rover 4x4 – Location of Rear Quarter Panel Hole

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Inside view of holes drilled through rear quarter panel for location of drill hole.	
2	Hollow tube behind panel collects debris and must be flushed out with a flexible nozzle.	

CAUTION

Do not drill holes into chassis.

Engine and Engine Compartment

112.10 The specific cleaning instructions for Land Rover 4x4's engine and engine compartment include those points detailed in Table 112-8.

Table 112-8: Cleaning Instructions for the Land Rover 4x4's Engine Compartment

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	All seals on the bonnet area are to be cleaned	
2	Clean the engine compartment and engine to ensure they are free of dust, built up dirt and grease, insect and plant material. Ensure any engine openings / breathers are taped or plugged to stop ingress of water. Ensure the starter motor and alternator are covered and taped to stop ingress of water. Do not direct high-pressure water jets at any of the engine openings/breathers, or at any of the electrical/electronic components.	
3	Remove the brake booster assembly and pedal pivot housing and check to ensure the housing is free of insect or plant material. Remove the clutch pedal pivot housing cover and check to ensure the housing is free of insect or plant material.	2.0
4	Remove heater assembly and clean heater core to remove all dirt, dust, plant and insect material. Clean heater ventilation fan housing to ensure it is free from dirt, dust, plant and insect material.	2.0
5	Remove the air cleaner flexible line from the air plenum in the right-hand front mudguard assembly and ensure it is free from insect and plant material.	0.5
6	Remove and dispose of the air cleaner element. Replace the air cleaner element with a new part.	
7	Remove the radiator to facilitate cleaning. The radiator is to be high-pressure air-cleaned to remove seed and then washed down by a low-pressure water high-volume wash; Bent radiator grills may require heat treatment to burn any embedded seed material (using heat shrink guns). It may be necessary to use brushes or pick insect and seed matter out from between the veins on the radiators.	

Harmonic Balancer

112.11 The cleaning instructions for the Land Rover 4x4's harmonic balancer, as illustrated in Figure 112-9, include the point detailed in Table 112-9.

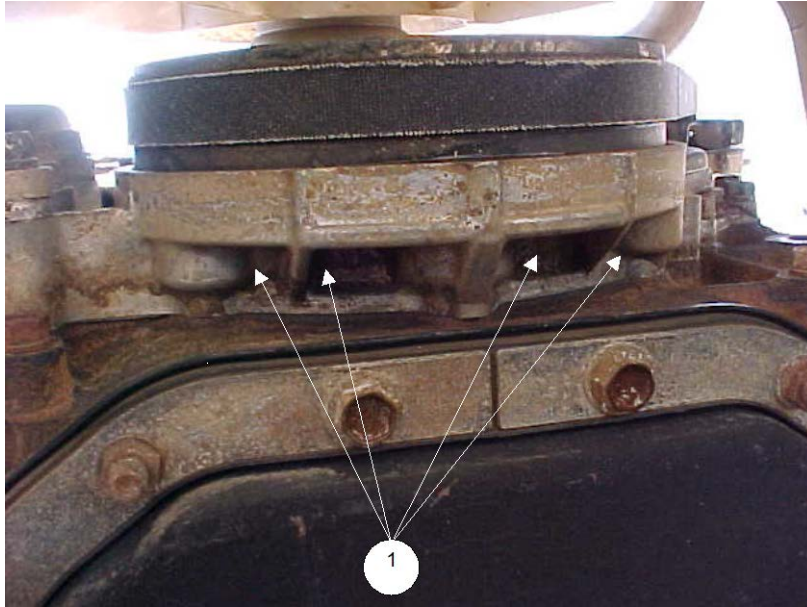


Figure 112-9: Land Rover 4x4's Harmonic Balancer

Table 112-9: Cleaning Instructions for the Land Rover 4x4's Harmonic Balancer

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Cast mouldings on the harmonic balancer housing collect large amounts of dirt and grease and must be thoroughly cleaned.	

Fuel System

112.12 The cleaning instructions for the Land Rover 4x4's fuel tank, as illustrated in Figures 112-10 and 112-11, include the points detailed in Table 112-10.

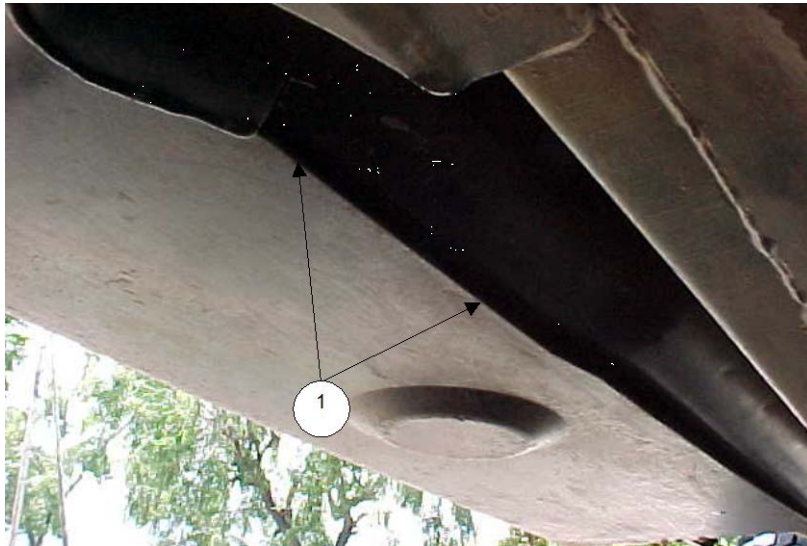


Figure 112-10: Land Rover 4x4's Fuel Tank

Table 112-10: Cleaning Instructions for the Land Rover 4x4's Fuel System

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	The area between the fuel tank and the fuel tank skid plate is difficult to clean and requires extensive flushing with water using a flexible	

	nozzle. Ensure the cavity between the skid plate and the underside of the fuel tank is thoroughly cleaned and free from foreign material.	
2	Ensure the upper surface, particularly the blind hole cast in the top of the fuel sedimenter, is clean and free from foreign material. Figure 112-11 below refers to this serial.	



Figure 112-11: Typical Land Rover 110 Fuel Sedimenter

Wiring Loom Support Bracket

112.13 The cleaning instructions for the Land Rover 4x4's wiring loom support bracket, as illustrated in Figure 112-12, include the point detailed in Table 112-11.



Figure 112-12: Land Rover 4x4's Wiring Loom Support Bracket

Table 112-11: Cleaning Instructions for the Land Rover 4x4's Wiring Loom Support Bracket

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
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1	The support bracket for the wiring loom is to be removed to facilitate cleaning of the wiring loom and behind the panel area.	0.2
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Battery Box

112.14 The cleaning instructions for the Land Rover 4x4 battery boxes, as illustrated in Figure 112-13, include the points as detailed in Table 112-12.



Figure 112-13: Land Rover 4x4 Battery Box

Table 112-12: Cleaning Instructions for the Land Rover 4x4 Battery Box

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Cargo Variants. Remove the battery from the compartment under the passenger's seat and clean the leads and battery box. The battery box should be free of dust, seed, plant and insect material.	1.0

Transmission and Drive-line Components

112.15 The cleaning instructions for the Land Rover 4x4's transmission, as illustrated in Figure 112-14, include the points detailed in Table 112-13.

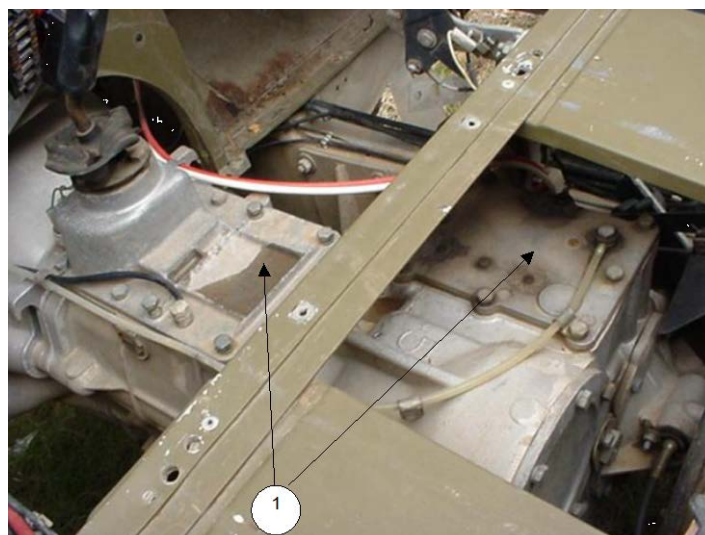


Figure 112-14: Land Rover 4x4's Transmission (Top View)

Table 112-13: Cleaning Instructions for the Land Rover 4x4's Transmission

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>

1	Thoroughly clean all sides of the transmission and transfer case assembly. Care must be taken to thoroughly remove all grease and dirt from the top of the transmission as seeds collect in this area.	
2	Ensure the cavities formed in top of the casting of the extension housing from the third differential to the front axle propeller shaft, in the area around the vacuum switch, are clean and free from dirt, dust, insect and plant material.	
3	Remove BRM in the area of the small engine mount underside of the seat passenger position.	

Universal Joint

112.16 The cleaning instructions for the Land Rover 4x4's universal joint, as illustrated in Figure 112-15, include the point detailed in Table 112-14.

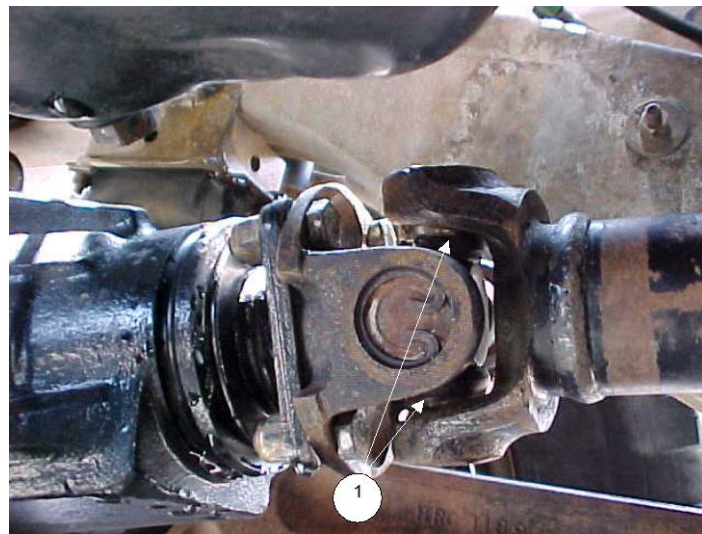


Figure 112-15: Land Rover 4x4's Universal Joint

Table 112-14: Cleaning Instructions for the Land Rover 4x4's Universal Joint

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Remove all grease from universal joints as these areas collect soil, plant and insect debris.	

Chassis

112.17 The cleaning instructions for the Land Rover 4x4's chassis, as illustrated in Figure 112-16, include the point detailed in Table 112-15.

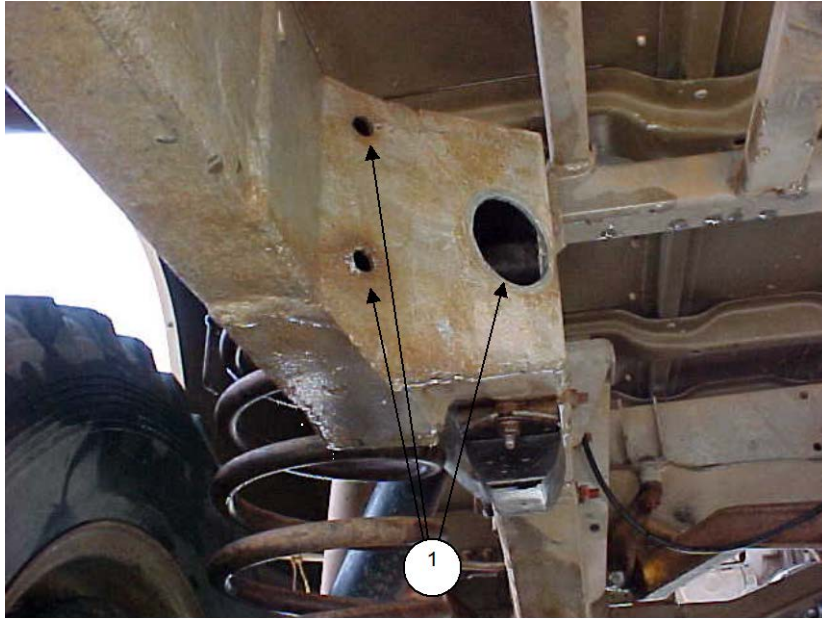


Figure 112-16: Land Rover 4x4's Chassis

Table 112-15: Cleaning Instructions for the Land Rover 4x4's Chassis

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Flush through chassis holes until clear water is seen exiting.	
2	Pay attention to areas near floor cross beam U channel. The channel will have a small hole as part of the assembly process and will require to be flushed.	

Rear Cross Members

112.18 The cleaning instructions for the Land Rover 4x4's rear cross members, as illustrated in Figure 112-17, include the point detailed in Table 112-16.

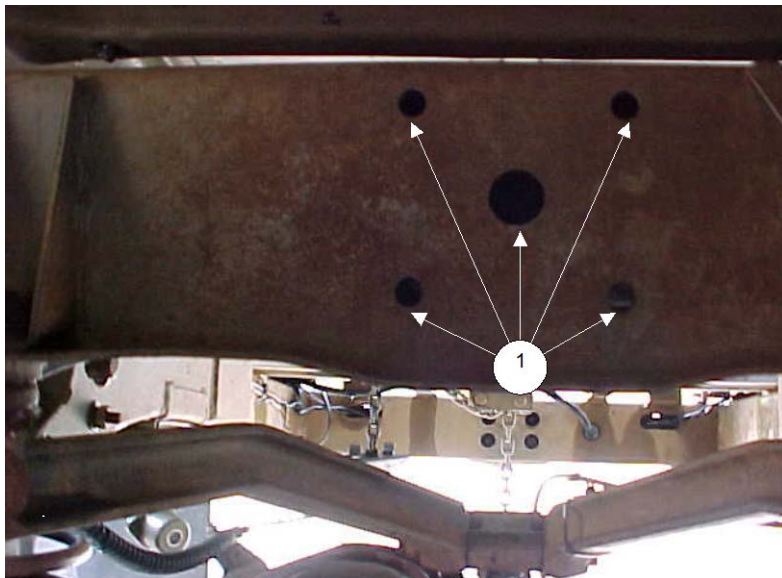


Figure 112-17: Land Rover 4x4's Rear Cross Members

Table 112-16: Cleaning Instructions for the Land Rover 4x4's Rear Cross Members

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Flush the rear cross member through the access holes with a flexible nozzle. Flush through until clear water is seen exiting.	

Tray Channels

112.19 The cleaning instructions for the Land Rover 4x4's tray channels, as illustrated in Figure 112-18, include the points detailed in Table 112-17.

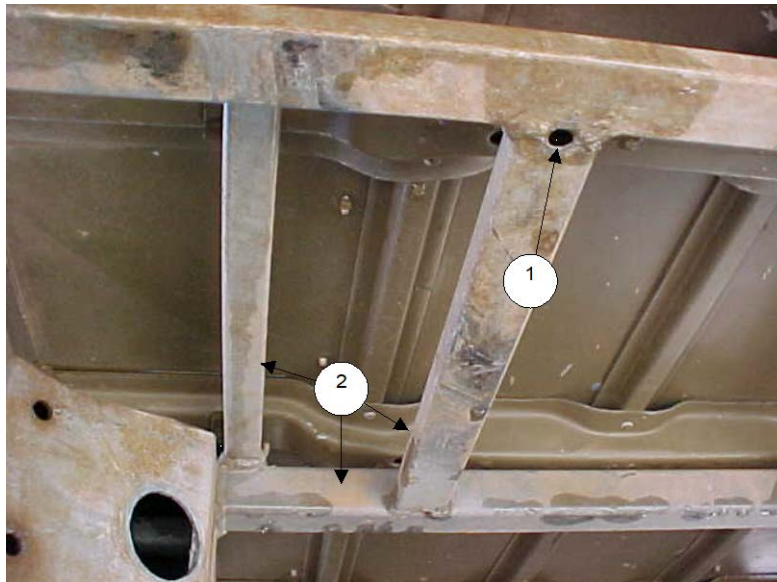


Figure 112-18: Land Rover 4x4's Tray Channels

Table 112-17: Cleaning Instructions for the Land Rover 4x4's Tray Channels

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Tray channels are to be flushed through the access holes.	
2	Remove all debris off the top of the tray channelling.	
3	Floor channels are to be flushed and can be accessed from the side or rear	

Suspension

112.20 The cleaning instructions for the Land Rover 4x4's coil springs, as illustrated in Figure 112-19, include the points detailed in Table 112-18. (Figure 112-19 shows the surveillance vehicle rear coil spring; however, the critical area for this task is the same.)



Figure 112-19: Land Rover 4x4's Coil Spring

Table 112-18: Cleaning Instructions for the Land Rover 4x4's Coil Springs

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Mud and other debris collect in the spring seat, where the spring is mounted to the axle assembly, and is difficult to remove from the base of the rear springs. Ensure that this area is cleaned well using pressure washer.	

Winches and Wire Ropes

112.21 The cleaning instructions for winches and wire ropes, as illustrated in Figure 112-20, include the point detailed in Table 112-19.



Figure 112-20: Land Rover 4x4's Winch Assembly

Table 112-19: Cleaning Instructions for Land Rover 4x4's Winches and Wire Ropes

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	All items are to be extended to full length and subject to a high-pressure water clean using degreaser, if required, to remove all soil, plant and insect matter	

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<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
2	The winch drum is also to be degreased and subject to a high-pressure water clean	
3	All winch ropes, wire ropes and slings are to be re-oiled after inspection. An application of a protective covering (plastic bag) may be required to protect the refurbished ropes and cables	

Tarpaulins

112.22 The cleaning instructions for the tarpaulins include the points detailed in Table 112-20.

Table 112-20: Cleaning Instructions for Tarpaulins

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	All tarpaulins are to be given a brush down, brush scrubbing and hose cleaning, paying particular attention to the seam areas and then hung so as not to contact the ground for drying	
2	All ropes and universal dispatch straps are to be extended to their full length and wiped or washed clean of all soil, plant and insect matter Attention to attachment points and fixtures and tension devices is required Personnel are to inspect and remove all twigs, foliage, and so on that has become embedded in the rope fibres	
3	Velcro panels and seams (where fitted) are to be brushed and washed to ensure all seed, plant and soil material is removed	
4	Canvas bags are to be turned inside out and checked for burrs, seeds and insects;	
5	Where fitted, poles, knuckles and pegs are to be subject to a high-pressure water clean to remove all soil, plant and insect matter (ants, spiders and mud wasps are of particular concern)	
6	If tarpaulins have not been used during the entire deployment, then the requirement is for all tarpaulins to be unrolled, brushed and swept clean to ensure no vermin or insect infestation and then subject to inspection	
7	If vehicle is fitted with a winch, the rope should be wound off the winch drum and the rope, drum and guides/rollers cleaned.	
8	If vehicle is fitted with a winch, the rope should be wound off the winch drum and the rope, drum and guides/rollers cleaned.	
9	Winch cables cleaned and re-oiled after they have been inspected.	

Camouflage Nets

112.23 The cleaning instructions for camouflage nets include the points detailed in Table 112-21.

Table 112-21: Cleaning Instructions for Camouflage Nets

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Removal of grass and debris may be achieved by use of a petrol powered blower/vacuum in the first instance, use of water should be avoided.	
2	Heavily soiled camouflage nets may require further scrubbing and a dip in an approved detergent/ disinfectant (one in 20 solution). This has been achieved in the past by using trailers with required additive.	
3	Depending on the degree of contamination and diligence in the cleaning process, camouflage nets may require three or more trailer dips to achieve the required DA clearance.	
4	Drying is to be achieved by hanging the camouflage net so that it does not come into contact with the ground.	
5	Nets are to be inspected to ensure that all plant material is removed.	
6	Camouflage poles are to be brushed or swept clean; and metal joiners are to be removed, cleaned and inspected.	

Tyres (New, Old and Spares)

112.24 The cleaning instructions for Tyres (new, old and spares) include the points detailed in Table 112-22.

Table 112-22: Cleaning Instructions for Tyres (New, Old and Spares)

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	All tyres are to be washed and scrubbed to remove all BRM.	
2	Damaged tyres are to be inspected and their suitability for return to Australia determined. If necessary, damaged tyres (for example, perished, cracked or split) are to be removed and disposed of in accordance with the tyre disposal policy.	
3	Cracked tyres have the risk of containing BRM therefore perished tyres are to be subject to disposal.	
4	All tyres are to be treated with an approved residual insecticide after cleaning.	
5	Fitted tyres that are damaged should be replaced with new tyres.	
6	Used and fitted tyres on rims are to be individually verified that the tyres are on rims, inflated with beading sealed and that the tyres are clean, free of water and other BRM.	
7	Tyres that are not fitted to rims are to be stored in such a manner that water cannot collect inside the tyre. The preferred DA solution is that tyres are stored within containers. Tyres not fitted on rims will require fumigation on return to Australia.	
8	DA considers a Non-Commercial consignment of tyres to contain a maximum of 8 tyres (inclusive of the wheels on the vehicle) and may be imported with an accompanying vehicle. If tyres are to be transported back to Australia in containers or crates, please refer to the DA BICON (Biosecurity Import Conditions system) internet site (http://www.agriculture.gov.au/import/online-services/bicon) for the commodity "tyres".	

ANNEXES:

- A. Cleaning Instructions – Surveillance and Patrol Vehicle Variant
- B. Cleaning Instructions – Personnel Carrier Variant
- C. Cleaning Instructions – Fit For Radio (FFR) Variant
- D. Cleaning Instructions – Senior Commanders Variant
- E. Cleaning Instructions – Truck Survey Variant
- F. Cleaning Instructions – Special Forces Patrol Vehicle Variant
- G. Cleaning Instructions – Land Rover 4x4 Defender 110 TD5 Variant
- H. Cleaning Checklist – Land Rover 110 4X4

ANNEX A TO CHAPTER 112

CLEANING INSTRUCTIONS – LANDROVER 4X4 SURVEILLANCE VEHICLES

1. This annex provides basic and specific cleaning requirements for selected vehicles. Where there is a specific requirement or need to highlight particular problem areas detailed cleaning guides are provided as tables and figures in this annex
2. The cleaning requirements that follow are in addition to those points for the Landrover 110 vehicle that are included Chapter 112 of this publication.
3. Some vehicles may have extensive, additional approved modifications and will require further disassembly to complete the cleaning process.

Exterior Areas

4. The cleaning instructions for the Surveillance vehicle's exterior, as illustrated in Figures 112A-1 to 112A-6, include the points detailed in Tables 112A-1 and are indicative of the requirements for this variant of Landrover 110.



Figure 112A-1: Surveillance Variant with Canopy



Figure 112A–2: Surveillance Variant with Canopy Cargo Roof Frame



Figure 112A–3: Surveillance Variant - Canopy and Rear Seat Removed, Spare Tyres fitted



Figure 112A–4: Surveillance Variant - Canopy and Rear Seat Removed



Figure 112A-5: Surveillance Variant with Gun Mount and Canopy



Figure 112A-6: Surveillance variant with gun mount - no canopy

Table 112A-1: Cleaning Instructions for Surveillance Vehicle

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Remove all CES prior to cleaning and individually clean.	
2	Remove canopy and all canvas covers. Thoroughly clean all canvas and rollover protection structure.	
3	Remove the blast plate mounted below the rear propeller shaft.	
4	Ensure chassis and cargo body support members are free from dirt, dust, insect and plant material.	
5	Ensure area between the blast plates and cargo body wheel arches are thoroughly cleaned and free from dirt, dust, plant and insect material.	
6	Remove the snorkel and ensure the cap and tube are clean and free from plant and insect material.	
7	Remove the dash pad. Critically inspect the dash pad covering and, if damaged or cracked dispose of.	

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<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
	Critically inspect dash and instrument panel wiring looms. If the individual wires in the loom are loosely bound by the outer covering (insulation tape or heat shrink), the outer covering is to be removed and disposed of.	
8	For wiring looms that are bound by insulation tape, remove and dispose of the insulation tape.	
9	Critically inspect the gun mount and manhole to ensure they are free from dirt, dust, plant and insect material (refer Figures 112A-5 and 112A-6).	
10	Refer to Chapter 5 for detailed cleaning guidelines	

Rear Interior Areas

5. The cleaning instructions for the Surveillance vehicle's rear exterior, as illustrated in Figures 112A-7 and 112A-8, include the points detailed in Tables 112A-2 and are indicative of the requirements for this variant of Landrover 110.



Figure 112A-7: Surveillance Variant – Canopy Removed Rear Exterior



Figure 112A-8: Surveillance Variant – with Canopy Rear Interior

Table 112A-2: Cleaning Instructions for Surveillance Vehicle Rear Exterior

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Remove covers and cushions (if fitted) from the seats in the rear and inspect and clean (refer Fig 112A-7). Damaged seat cushions are to be disposed of.	
2	Clean bare seat benches and extension arms (refer Fig 112A-8).	
3	Clean ceiling, floor and the rear of front seat.	
4	Clean bench-seat tie up straps and ensure they are free of BRM.	

Rear Wheel Arch Blast Plates

6. The cleaning instructions for the Surveillance vehicle's Rear Wheel Arch Blast Plates, as illustrated in Figure 112A-9, include the points detailed in Table 112A-3 and are indicative of the requirements for this variant of Landrover 110.



Figure 112A-9: Surveillance Variant Rear Wheel Arch Blast Plates

Table 112A-3: Cleaning Instructions for Surveillance Vehicle Rear Wheel Arch Blast Plates

1	With cabin floor panels removed ensure blast plates located in front of fuel tanks are free from dirt, dust, plant and insect material.	
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Light Lenses and Infra-red Filters

7. The cleaning instructions for the Surveillance vehicle's Light Lenses and Infra-red Filters, as illustrated in Figure 112A-10, include the points detailed in Table 112A-4 and are indicative of the requirements for this variant of Landrover 110.



Figure 112A-10: Surveillance Variant Light Lenses and Infra-red Filters

Table 112A-4: Cleaning Instructions for Surveillance Vehicle Light Lenses and Infra-red Filters

1	Remove the lenses or infra-red filters from additional lighting to ensure light housings are free of dirt, dust insect and plant material.	
2	Dispose of damaged lights and lenses.	
3	Flush hollow tubing on Front Bumper assembly.	

Coil Spring Seats

8. The cleaning instructions for the Surveillance vehicle's Coil Spring Seats, as illustrated in Figure 112A-11, include the points detailed in Table 112A-5 and are indicative of the requirements for this variant of Landrover 110.



Figure 112A-11: Surveillance Vehicle Variant Coil Spring Seats

Table 112A-5: Cleaning Instructions for Surveillance Vehicle Variant Coil Spring Seats

1	Ensure coil spring seats on front and rear axle assemblies are clean and free from foreign material.	
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Left-hand Side Fuel Tank Skid Plate

9. The cleaning instructions for the Surveillance vehicle's Left-hand Side Fuel Tank Skid Plate, as illustrated in Figure 112A-12, include the points detailed in Table 112A-6 and are indicative of the requirements for this variant of Landrover 110.



Figure 112A-12: Surveillance Variant Left-hand Side Fuel Tank Skid Plate

Table 112A-6: Cleaning Instructions for Surveillance Vehicle Left-hand Side Fuel Tank Skid Plate

1	Ensure the cavity between the skid plate and the underside of the left-hand fuel tank is thoroughly cleaned and free from foreign material.	
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Fuel System Sedimenter

- The cleaning instructions for the Surveillance vehicle's Front Mudguard Tread plates as illustrated in Figure 112A-13, include the points detailed in Table 112A-7 And are indicative of the requirements for this variant of Landrover 110.



Figure 112A-13: Surveillance Variant Fuel System Sedimenter

Table 112A-7: Cleaning Instructions for Surveillance Vehicle Fuel System Sedimenter

1	Ensure the upper surface and the blind hole cast in the top of the fuel sedimenters are clean and free from foreign material.	
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Front Mudguard Tread plates

11. The cleaning instructions for the Surveillance vehicle's Front Mudguard Tread plates, as illustrated in Figure 112A-14, include the points detailed in 112A-8 and are indicative of the requirements for this variant of Landrover 110.



Figure 112A-14: Surveillance Variant Front Mudguard Tread plates

Table 112A-8: Cleaning Instructions for Surveillance Vehicle Front Mudguard Tread plates

1	Remove the tread plates from the top surface on the front mudguard to facilitate cleaning.	
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ANNEX B TO CHAPTER 112

CLEANING INSTRUCTIONS – LANDROVER 4X4 PERSONNEL

CARRIER VEHICLES

1. This annex provides basic and specific cleaning requirements for selected vehicles. Where there is a specific requirement or need to highlight particular problem areas detailed cleaning guides are provided as tables and figures in this annex.
2. The cleaning requirements that follow are in addition to those points for the Landrover 110 vehicle that are included Chapter 112 of this publication.
3. Some vehicles may have extensive, additional approved modifications and will require further disassembly to complete the cleaning process.

Exterior Areas

4. The cleaning instructions for the Personnel Carrier vehicle's exterior, as illustrated in Figures 112B-1 to 112B-4, include the points detailed in Table 112B-1 and are indicative of the requirements for this variant of Landrover 110.



Figure 112B-1: Personnel Carrier Variant Exterior



Figure 112B-2: Personnel Carrier Variant Rear Exterior



Figure 112B-3: Personnel Carrier Variant Front Seating



Figure 112B-4: Personnel Carrier Variant Rear Mid Seating



Figure 112B-5: Personnel Carrier Variant Rear Interior



Figure 112B-6: Personnel Carrier Variant Dash

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Table 112B-1: Cleaning Instructions for Personnel Carrier Vehicle

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Refer to Chapter 5 for detailed cleaning guidelines.	
2	Thoroughly clean all internal areas. Remove front seats and cushions and clean individually (see Figure 112B-3). Damaged seat cushions are to be disposed of.	
3	Remove cushions from the bench-seat in the middle of the cabin and inspect and clean (refer Figure 112B-4). Damaged seat cushions are to be disposed of.	
4	Remove cushions from the bench-seats in the rear of the cabin and inspect and clean (refer Figure 112B-4). Damaged seat cushions are to be disposed of.	
5	Clean bare seat benches and extension arms.	
6	Clean ceiling, floor and the rear of front seat.	
7	Remove dash panel and air blow all BRM from behind dash. Remove insulation tape where directed to facilitate cleaning (see Figure 112B-6).	
8	Inspect and clean window seals.	
9	The rear door seal is to be removed and cleaned. Critically inspect the door seal; if damaged - removed and disposed of.	

ANNEX C TO CHAPTER 5

CLEANING INSTRUCTIONS – LAND ROVER 4X4 FITTED FOR RADIO (FFR) VEHICLES

1. This annex provides basic and specific cleaning requirements for selected vehicles. Where there is a specific requirement or need to highlight particular problem areas detailed cleaning guides are provided as tables and figures in this annex.
2. The cleaning requirements that follow are in addition to those points for the Land Rover 110 vehicle that are included Chapter 112 of this publication.
3. Some vehicles may have extensive, additional approved modifications and will require further disassembly to complete the cleaning process.

Exterior Areas

4. The cleaning instructions for the FFR vehicle's exterior, as illustrated in Figure 112C-1, include the points detailed in Table 112C-1 and are indicative of the requirements for this variant of Land Rover 110.
5. Some vehicles may have extensive, additional approved modifications and will require further disassembly to complete the cleaning process.



Figure 112C-1: FFR Variant Exterior

Table 112C-1: Cleaning Instructions for FFR Vehicle's External Areas

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Members handling secure communications equipment must be of the applicable security clearance to handle the equipment. Commanders should make reference to the Defence Security Manual.	
2	Remove canopy and all canvas covers. Thoroughly clean all canvas and rollover protection structure.	
3	Refer to Chapter 5 for detailed cleaning guidelines.	

Antenna Fittings

6. The cleaning instructions for the FFR vehicle's antenna fittings, as illustrated in Figures 112C-2 to 112C-4, include the points detailed in Table 112C-2 and are indicative of the requirements for this variant of Land Rover 110.



Figure 112C-2: FFR Variant Rear Exterior



Figure 112C-3: FFR Variant Rear



Figure 112C-4: FFR Variant Side Antenna Mounts

Table 112C-2: Cleaning Instructions for FFR Vehicle's antenna fittings

1	The antennas should be removed and antenna mounts cleaned.	
2	The antennas should be removed and cleaned.	

Internal Areas

7. The cleaning instructions for the FFR vehicle's interior, as illustrated in Figures 112C-5 and 112C-6, include the points detailed in Table 112C-3 and are indicative of the requirements for this variant of Land Rover 110.



Figure 112C-5: FFR Variant Interior – Radios Unfitted

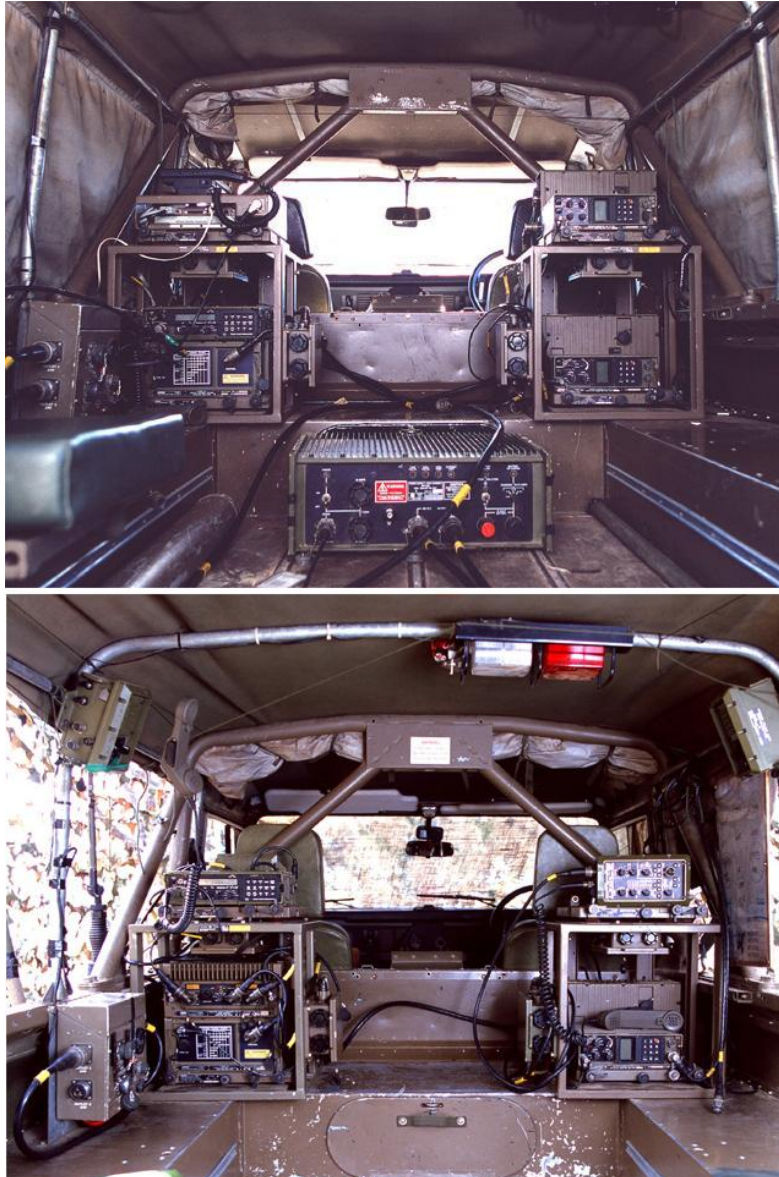


Figure 112C-6: Land Rover 4x4 FFR Interior – Radios Fitted

Table 112C-3: Cleaning Instructions for FFR Vehicle’s internal Areas

1	Air-sealed communications equipment is required to be cleaned externally of all BRM by wiping down with a damp cloth	
2	Internal component items are to be cleaned by air blow or vacuum cleaning using cleaning brushes, if necessary	
3	Handset covers are to be removed and cleaned if possible	
4	All cables are to be wiped down with wet/dry rags to remove soil, plant and insect matter	
5	All air filters on communications equipment re to be replaced or cleaned off all BRM as appropriate.	
6	Remove the radio batteries and clean the battery leads, cradles, and battery boxes. These should be free of dust, seed, plant and insect material. Remove all batteries (including auxiliary batteries).	
7	Refer to Chapter 5 for detailed cleaning guidelines.	

Battery Box

8. The cleaning instructions for the Land Rover 4x4 FFR battery boxes, as illustrated in Figure 112C-7, include the points as detailed in Table 112C-4.

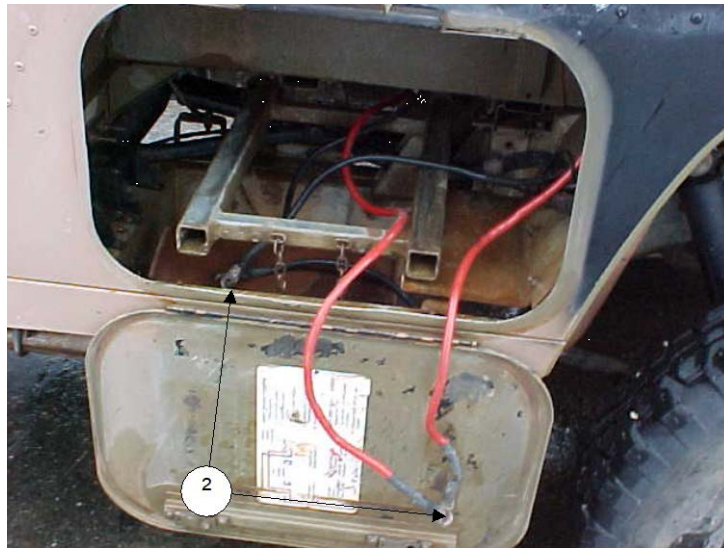


Figure 112C-7: Land Rover FFR Battery Box

Table 112C-4: Cleaning Instructions for the Land Rover 4x4 FFR Battery Box

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Remove the radio batteries and clean the battery leads, cradles, and battery boxes. These should be free of dust, seed, plant and insect material.	1.5

ANNEX D TO CHAPTER 112

CLEANING INSTRUCTIONS – LANDROVER 4X4 SENIOR COMMANDER VEHICLES

1. This annex provides basic and specific cleaning requirements for selected vehicles. Where there is a specific requirement or need to highlight particular problem areas detailed cleaning guides are provided as tables and figures in this annex.
2. The cleaning requirements that follow are in addition to those points for the Landrover 110 vehicle that are included Chapter 112 of this publication.
3. Some vehicles may have extensive, additional approved modifications and will require further disassembly to complete the cleaning process.

Exterior Areas

4. The cleaning instructions for the Senior Commander vehicle's exterior, as illustrated in Figures 112D-1 and 112D-2, include the points detailed in Table 112D-1 and are indicative of the requirements for this variant of Landrover 110.



Figure 112D-1: Senior Commander Variant Exterior



Figure 112D-2: Senior Commander Variant Rear Interior

Table 112D-1: Cleaning Instructions for Senior Commander Vehicle

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Thoroughly clean all external areas and rollover protection structure.	
2	Remove cushions from the bench-seats in the rear of the cabin and inspect and clean (refer Fig 112D-2). Damaged seat cushions are to be disposed of.	
3	Clean bare seat benches and extension arms.	
4	Clean ceiling, floor and the rear of front seat.	
5	Clean bench-seat tie up straps and ensure they are free of BRM.	
6	Inspect and clean window seals.	
7	The rear door seal is to be removed and cleaned. Critically inspect the door seal; if damaged - removed and disposed of.	
8	Refer to Chapter 5 for detailed cleaning guidelines.	

ANNEX E TO CHAPTER 112

CLEANING INSTRUCTIONS – LANDROVER 4X4 TRUCK SURVEY VEHICLES

1. This annex provides basic and specific cleaning requirements for selected vehicles. Where there is a specific requirement or need to highlight particular problem areas detailed cleaning guides are provided as tables and figures in this annex.
2. The cleaning requirements that follow are in addition to those points for the Landrover 110 vehicle that are included Chapter 112 of this publication.
3. Some vehicles may have extensive, additional approved modifications and will require further disassembly to complete the cleaning process.

Exterior Areas

4. The cleaning instructions for the truck survey vehicle's exterior, as illustrated in Figure 112E-1, include the points detailed in Table 112E-1 and are indicative of the requirements for this variant of Landrover 110.



Figure 112E-1: Truck Survey Variant Exterior



Figure 112E-2: Truck Survey Variant Exterior



Figure 112E-3: Truck Survey Variant Exterior

Table 112E-1: Cleaning Instructions for Truck Survey Vehicle

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Refer to Chapter 5 for detailed cleaning guidelines.	
2	Members handling secure communications equipment must be of the applicable security clearance to handle the equipment. Commanders should make reference to the Defence Security Manual.	
3	Air-sealed communications equipment is required to be cleaned externally of all BRM by wiping down with a damp cloth	
4	Internal component items are to be cleaned by air blow or vacuum cleaning using cleaning brushes, if necessary	
5	Handset covers are to be removed and cleaned if possible	
6	All cables are to be wiped down with wet/dry rags to remove soil, plant and insect matter	

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<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
7	Thoroughly clean all external areas and rollover protection structure.	
8	Remove cushions from the bench-seats in the rear of the cabin and inspect and clean (refer Figures 112E-3 and 112E-4). Damaged seat cushions are to be disposed of.	
9	Clean bare seat benches and extension arms.	
10	Clean ceiling, floor and the rear of front seat.	
11	Clean bench-seat tie up straps and ensure they are free of BRM.	
12	Inspect and clean window seals.	
13	The rear door seal is to be removed and cleaned. Critically inspect the door seal; if damaged - removed and disposed of.	

ANNEX F TO CHAPTER 5

CLEANING INSTRUCTIONS – LAND ROVER 4X4 SPECIAL FORCES PATROL VEHICLES (SFPV)

1. This annex provides basic and specific cleaning requirements for selected vehicles. Where there is a specific requirement or need to highlight particular problem areas detailed cleaning guides are provided as tables and figures in this annex
2. The cleaning requirements that follow are in addition to those points for the Land Rover 110 vehicle that are included Chapter 112 of this publication.
3. Some vehicles may have extensive, additional approved modifications and will require further disassembly to complete the cleaning process.

Exterior Areas

4. The cleaning instructions for the Special Forces Patrol vehicle's (SFPV) exterior, as illustrated in Figures 112A-1 to 112A-6, include the points detailed in Tables 112A-1 and are indicative of the requirements for this variant of Land Rover 110.



Figure 112A-1: SFPV's with Canopy



Figure 112A-2: SFPV's Front and Bumper



Figure 112A-3: SFPV's Snorkel



Figure 112A-4: SFPV's Side Lower

Table 112A-1: Cleaning Instructions for SFPV's

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Remove all CES prior to cleaning and individually clean.	
2	Remove canopy and all canvas covers. Thoroughly clean all canvas	

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<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
	and rollover protection structure. Clean canvas as for “tarpaulins” in Chapter 5.	
3	Remove the blast plate mounted below the rear propeller shaft.	
4	Ensure chassis and cargo body support members are free from dirt, dust, insect and plant material.	
5	Ensure area between the blast plates and cargo body wheel arches are thoroughly cleaned and free from dirt, dust, plant and insect material.	
6	Flush hollow tubing on Front Bumper assembly (see Figure 112A–2).	
7	Remove the dash pad. Critically inspect the dash pad covering and, if damaged or cracked dispose of. Critically inspect dash and instrument panel wiring looms. If the individual wires in the loom are loosely bound by the outer covering (insulation tape or heat shrink), the outer covering is to be removed and disposed of.	
8	For wiring looms that are bound by insulation tape, remove and dispose of the insulation tape.	
9	Remove the snorkel and ensure the cap and tube are clean and free from plant and insect material (see Figure 112A–3).	
10	Clean all underside areas ensuring that all areas are free of BRM (see Figure 112A-4).	
11	Remove all CES is removed from the side carry cages prior to cleaning and individually clean (see Figure 112A-5).	
12	All ropes and universal dispatch straps are to be extended to their full length and wiped or washed clean of all soil, plant and insect matter. Attention to attachment points and fixtures and tension devices is required.	
13	Personnel are to inspect and remove all twigs, foliage, and so on that has become embedded in the rope fibres	
14	Velcro panels and seams (where fitted) are to be brushed and washed to ensure all seed, plant and soil material is removed	
15	Remove roll-down flaps (see Figure 112A-6 No 1). Refer to Paragraph 8 below for cleaning instructions.	
16	The radiator dust screen is to be removed, cleaned and inspected to ensure it is free of insects, seeds and other plant material (see Figure 112A-6 No 2)	
17	All winch items are to be extended to full length and subject to a high-pressure water clean using degreaser, if required, to remove all soil, plant and insect matter (see Figure 112A-6 No 3) The winch drum is also to be degreased and subject to a high-pressure water clean; and All winch ropes, wire ropes and slings are to be re-oiled after inspection. An application of a protective covering (plastic bag) may be required to protect the refurbished ropes and cables.	



Figure 112A-5: SFPV's Side Carry Cage



Figure 112A-6: SFPV's Winch

Rear Exterior Areas

5. The cleaning instructions for the SFPV's rear exterior, as illustrated in Figures 112A-7 and 112A-8, include the points detailed in Tables 112A-2 and are indicative of the requirements for this variant of Land Rover 110.



Figure 112A-7: SFPV's – Rear



Figure 112A-8: SFPV's External and Internal Bracket Mounts

Table 112A-2: Cleaning Instructions for SFPV's Rear Exterior

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Remove covers and cushions (if fitted) from the seats in the rear and inspect and clean (refer Fig 112A-7). Damaged seat cushions are to be disposed of.	
2	Clean bare seat benches and extension arms	
3	Clean ceiling, floor and the rear of front seat.	
4	Clean bench-seat tie up straps and ensure they are free of BRM.	
5	Remove all tarpaulin covers and inspect and clean.	
6	Ensure all internal and external brackets/mounts are clean and free of BRM (see Figure 112A-8).	

External Spare Tyres (if Fitted)

- The cleaning instructions for the SFPV's external spare tyres (if fitted), as illustrated in Figures 112A-9 and 5-10, include the points detailed in Table 112A-3.



Figure 112A-9: SFPV's External Spare Tyres



Figure 112A-10: SFPV's External Spare Tyres

Table 112A-3: Cleaning Instructions for SFPV's External Spare Tyres (if Fitted)

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Remove spare wheel assemblies from mounts on the cargo body.	
2	Ensure the spare wheel assemblies, and the covers are clean and free from dirt, dust, plant and insect material.	
3	All tyres are to be washed and cleaned IAW Chapter 5.	

Suspension

- The cleaning instructions for the Land Rover SFPV's 4x4's suspension, as illustrated in Figures 112A-11 and 112A-12, include the points detailed in Table 112A-4.



Figure 112A-11: Land Rover SFPV's 4x4's Front and Rear Suspension

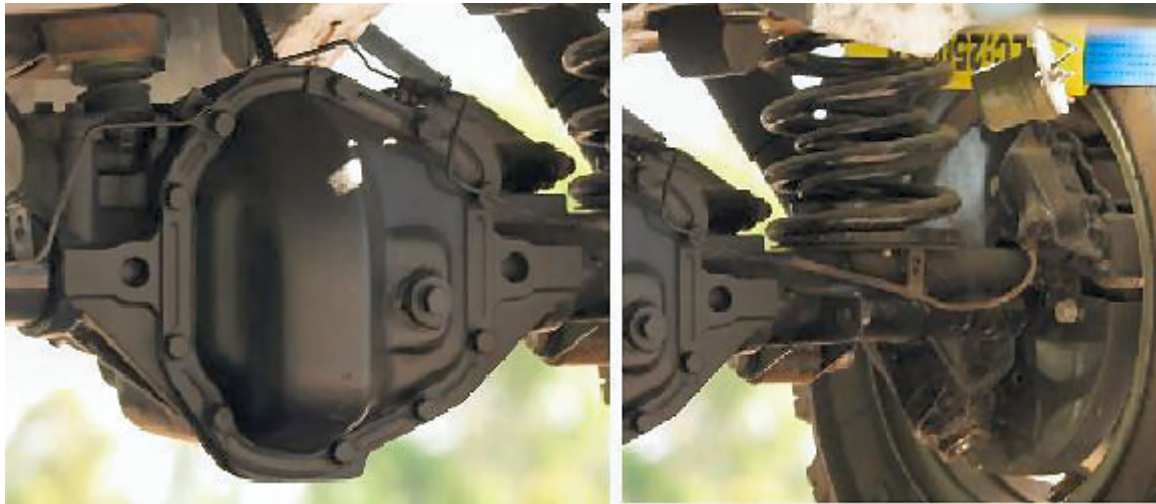


Figure 112A-12: Land Rover SFPV's Diff and Rear Suspension

Table 112A-4: Cleaning Instructions for the SFPV's Suspension

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Mud and other debris collect in the spring seat, where the spring is mounted to the axle assembly, and is difficult to remove from the base of the rear springs.	
2	Ensure that this area is cleaned well using pressure washer.	

Light Lenses and Infra-red Filters

- The cleaning instructions for the SFPV's Light Lenses and Infra-red Filters, as illustrated in Figures 112A-13 to 112A-15, include the points detailed in Table 112A-5 and are indicative of the requirements for this variant of Land Rover 110.



Figure 112A-13: SFPV's Front Light Lenses and Infra-red Filters



Figure 112A-14: SFPV's Rear Light Lenses and Infra-red Filters



Figure 112A-15: SFPV's rear and Front Canvas Light Covers

Table 112A-5: Cleaning Instructions for SFPV's Light Lenses and Infra-red Filters

1	Remove the lenses or infra-red filters from additional lighting to ensure light housings are free of dirt, dust insect and plant material.	
2	Remove roll-down flaps (see Figure 112A-15).	
3	All roll-down flaps are to be given a brush down, brush scrubbing and hose cleaning, paying particular attention to the seam areas and then hung so as not to contact the ground for drying	
4	All ropes and universal dispatch straps are to be extended to their full length and wiped or washed clean of all soil, plant and insect matter.	

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	Attention to attachment points and fixtures and tension devices is required	
5	Velcro panels and seams (where fitted) are to be brushed and washed to ensure all seed, plant and soil material is removed	
6	Dispose of damaged lights and lenses.	
7	For wiring that are bound by insulation tape, remove and dispose of the insulation tape (see Figure 112A-16).	



Figure 112A-16: SFPV's Electrical Wiring

ANNEX G TO CHAPTER 5

CLEANING INSTRUCTIONS – LAND ROVER 4X4 DEFENDER 110

TD5 VARIANT

1. This annex provides basic and specific cleaning requirements for selected vehicles. Where there is a specific requirement or need to highlight particular problem areas detailed cleaning guides are provided as tables and figures in this annex.
2. The cleaning requirements that follow are in addition to those points for the Land Rover 110 vehicle that are included Chapter 112 of this publication.
3. Some vehicles may have extensive, additional approved modifications and will require further disassembly to complete the cleaning process.

Exterior Areas

4. The cleaning instructions for the Land Rover 4x4 Defender 110 TD5 vehicle's exterior, as illustrated in Figures 112G-1 to 112G-6, include the points detailed in Table 112G-1 and are indicative of the requirements for this variant of Land Rover 110.



Figure 112G-1: Land Rover 4x4 Defender 110 TD5 Exterior



Figure 112G-2: Land Rover 4x4 Defender 110 TD5 Rear Side Exterior



Figure 112G-3: Land Rover 4x4 Defender 110 TD5 Front and Rear Exterior



Figure 112G-4: Land Rover 4x4 Defender 110 TD5 Side Stowage Bays



Figure 112G-5: Land Rover 4x4 Defender 110 TD5 Snorkel



Figure 112G-6: Land Rover 4x4 Defender 110 TD5 Spare Tyre Mount

Table 112G-1: Cleaning Instructions for Defender 110 TD5

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Refer to Chapter 5 for detailed cleaning guidelines.	
2	All tools are to be fully removed and extended to facilitate cleaning.	
3	Remove any jerry-cans, etc and clean individually (see Figure 112G-4). If fuel; drain and clean all external areas. If water; jerry-cans are to be scrubbed, and sprayed inside with	

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
	chlorinated water (400 parts per million) and then allowed to air dry before inspection.	
4	Clean storage bay and framework ensuring all areas are free from BRM (refer Figure 112G46).	
5	Remove the snorkel to facilitate cleaning (see Figure 112G-5).	
6	Spare tyre to be fully removed and to be cleaned as per "Tyres (New, Old and Spares)" below (see Figure 112G-6).	
7	Tyre cover (if fitted) to be fully removed and to be washed and scrubbed to remove all BRM.	
8	All externally fitted items of equipment to be removed and both the items and the mounting brackets to be cleaned of all BRM	
9	Frame areas are to be washed with high-pressure water utilising a flexible nozzle.	

Battery Box

- The cleaning instructions for the Land Rover 4x4 Defender 110 TD5 battery boxes, as illustrated in Figure 112G–7, include the points as detailed in Table 112G–2.



Figure 112G–7: Land Rover 4x4 Battery Box

Table 112G–2: Cleaning Instructions for the Land Rover 4x4 Defender 110 TD5 Battery Box

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Cargo Variants. Remove the battery from the compartment under the passenger's seat and clean the leads and battery box (see Figure 112G-7). The battery box should be free of dust, seed, plant and insect material.	1.0

Internal Areas

- The cleaning instructions for the Land Rover 4x4's driver's cabin, as illustrated in Figures 112G–8 and 112G-9, include the points detailed in Table 112G–3.



Figure 112G–8: Land Rover 4x4's Driver's Cabin Dashboard



Table 112G–9: Cleaning Instructions for the Land Rover 4x4’s Driver’s Cabin

CAUTION
ELECTRICAL COMPONENTS
 Do not use water or steam to clean any interiors areas of the cabin compartments – Clean only under the supervision of a qualified technician.

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Remove the cabin seats. Seats and bases are to be refitted after inspection.	1.0
2	Brake and clutch pedal covers are to be removed to facilitate cleaning and then replaced after inspection.	1.0
3	The handbrake dust cover is to be removed.	
4	Remove dash panel and air blow all BRM from behind dash. Remove insulation tape where directed to facilitate cleaning (see Figure 112G-8).	
5	Do not use water or steam to clean any interiors areas of the cabin compartments – Clean only under the supervision of a qualified technician (see Figure 112G-9).	
6	Critically inspect dash and instrument panel wiring looms. If the individual wires in the loom are loosely bound by the outer covering, that is, insulation tape or heat shrink, the outer covering is to be removed and disposed of.	
7	All the cabin area is to be vacuumed and air-blown clean.	

Vehicle Body

7. The cleaning instructions for the Land Rover 4x4’s vehicle body, as illustrated in Figures 112G-10 and 112G-11, include the points detailed in Table 112G–4.



Figure 112G-10: Land Rover 4x4 Defender 110 TD5 Rear Interior



Figure 112G-11: Land Rover 4x4 Defender 110 TD5 Rear Interior Seating Stowed (Left) and Down (Right) Positions

Table 112G-4: Cleaning Instructions for the Land Rover 4x4's Vehicle Body

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Remove cushions from the bench-seats in the rear of the cabin and inspect and clean (refer Figure 112G-4).	
2	Damaged seat cushions are to be disposed of.	
3	Clean bare seat benches and extension arms.	1.0
4	Clean floor and all other surfaces.	

Winches, Wire Ropes and Slings

8. The cleaning instructions for Winches, Wire Ropes and Slings, as illustrated in Figure 112G-12, include the point detailed in Table 112G-4.

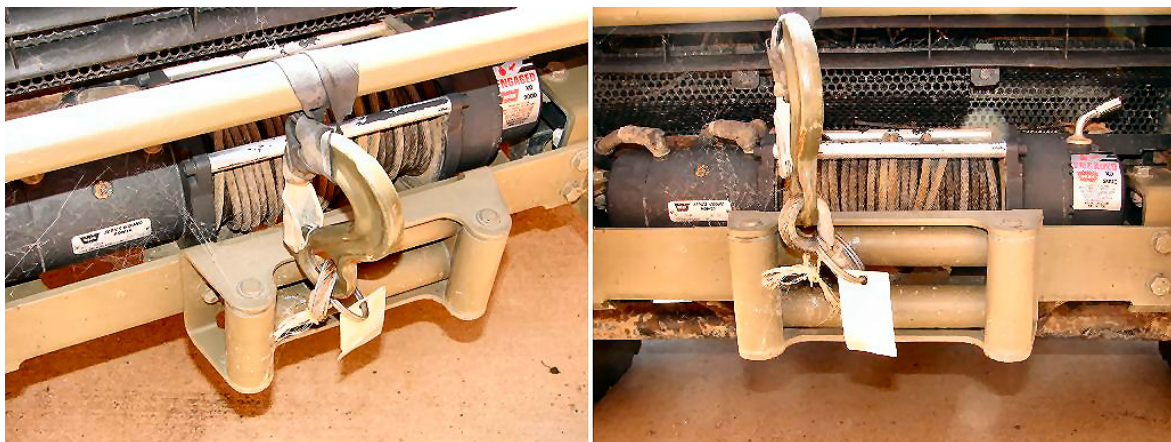


Figure 112G-12: Land Rover 4x4's Defender 110 TD5 Winch Assembly

Table 112G-4: Cleaning Instructions for Land Rover 4x4's Defender 110 TD5 Winches, Wire Ropes and Slings

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	All items are to be extended to full length and subject to a high-pressure water clean using degreaser, if required, to remove all soil, plant and insect matter	
2	The winch drum is also to be degreased and subject to a high-pressure water clean	
3	All winch ropes, wire ropes and slings are to be re-oiled after inspection. An application of a protective covering (plastic bag) may be required to protect the refurbished ropes and cables	

Engine Bay

9. The cleaning instructions for engine bay, as illustrated in Figure 112G-13, include the point detailed in Table 112G-5.



Figure 112G-13: Land Rover 4x4's Defender 110 TD5 Engine Bay

Table 112G-5: Cleaning Instructions for Land Rover 4x4's Defender 110 TD5 Engine Bay

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Refer to Chapter 5 for detailed cleaning guidelines.	

**ANNEX H TO CHAPTER 112
CLEANING CHECKLIST – LANDROVER 110 GS 4x4 VEHICLE**

All serials may not be specific to all Landrover 110 GS 4x4 vehicles

Vehicle Registration No:

<i>Serial</i>	<i>Description</i>	<i>Tick</i>
Exterior Areas		
1	Canopy removed and bows cleaned with pressure washer.	
2	Side flares removed and cleaned.	
3	All CES removed and cleaned.	
4	Grill removed and the radiator high-pressure air or picked clean.	
5	Number plate and tactical signage inspected.	
6	Damaged lights or where light seals are compromised have been removed and cleaned of all soil, plant or insect matter.	
7	Mudflaps removed and cleaned or if damaged, disposed of.	
8	Winch, winch drum and cabling cleaned.	
9	Behind mirrors flushed and damaged mirrors removed.	
10	Tread plates on top of front mudguards removed and cleaned.	
Cabin		
1	Seats and floor mats removed and cleaned and the cabin floor cleaned.	
2	Floor access panels under cabin seats removed and topside of fuel cell cleaned.	
3	Rubber seals on the doors, bonnet, etc, have been cleaned and any damaged door seals removed and disposed of.	
4	Brake and clutch pedal covers have been removed and cleaned.	
5	Handbrake dust cover has been removed and cleaned.	
6	The weapons carry rack has been removed and cleaned.	
7	Dash Panel removed and behind dash area air blown.	

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Serial	Description	Tick
8	Ventilation ducts have been unscrewed and air-blown clean.	
9	Wiring looms have been checked, cleaned and any insulation tape removed.	
10	The cabin area has been vacuumed and air-blown clean.	
11	The seatbelt assembly has been exposed and cleaned.	
Cargo Body		
1	Seat cushions have been removed and cleaned; damaged seat cushions disposed of.	
2	Fuel and water Jerry cans have been removed and holders, straps and buckles cleaned.	
3	The metal floor slides have been removed and the underneath area cleaned.	
4	The tail gate and seat tubing have been flushed clean.	
5	Lights and mirrors cleaned and damaged items removed and cleaned	
6	All apertures, tie-down points, and twist lock housings in tray body flooring cleaned with high-pressure water from a front and rear aspect	
7	Cargo body toolboxes have been drained of water	
Engine Bay		
1	All seals on the bonnet area have been cleaned.	
2	Engine bay area cleaned of all contaminant.	
3	Brake booster assembly and pedal pivot housing removed and cleaned.	
4	Clutch pedal pivot housing cover removed and the housing cleaned.	
5	Heater assembly removed and heater core cleaned.	
6	Heater ventilation fan housing cleaned.	
7	Air cleaner elements removed and disposed of.	
8	The upper surface of the fuel sedimenter has been cleaned.	
Underneath Areas		
1	Cast mouldings on the harmonic balancer housing cleaned.	
2	The area between the fuel tank and the fuel tank skid plate has been cleaned.	

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Serial	Description	Tick
3	The cavity between the skid plate and the underside of the fuel tank has been cleaned.	
4	The support bracket for the wiring loom has been removed and the wiring loom/behind panel area cleaned.	
5	All sides of the transmission and transfer case assembly have been cleaned.	
6	Cavities formed in top of the casting of the extension housing from the third differential to the front axle propeller shaft, in the area around the vacuum switch have been cleaned.	
7	The small engine mount underside of the seat passenger position has been cleaned.	
8	Universal joints have been cleaned.	
9	Chassis holes have been flushed clean.	
10	The floor cross beam U channel has been flushed clean.	
11	The rear cross member through the access holes have been flushed clean.	
12	Tray channels have been flushed clean.	
13	The tray channelling has been cleaned.	
14	Floor channels have been flushed clean.	
15	The spring seat, axle assemblies, and suspension springs have been flushed clean.	
	Battery Box	
1	The battery box has been cleaned.	
2	The radio batteries have been removed and the battery leads, cradles, and battery boxes cleaned.	
	Tarpaulins	
1	All tarpaulins have been given a brush down, brush scrubbing and hose cleaning, with particular attention to the seam areas and then hung so as not to contact the ground for drying.	
2	All ropes and universal dispatch straps have been extended to their full length and wiped or washed clean of all soil, plant and insect matter.	
3	Attachment points and fixtures and tension devices have been cleaned.	
4	All twigs, foliage, etc that have been removed from ropes.	
5	Velcro panels and seams (where fitted) have been brushed and washed clean.	
6	All canvas bags have been turned inside out and cleaned.	

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<i>Serial</i>	<i>Description</i>	<i>Tick</i>
7	Where fitted, poles, knuckles and pegs have been high-pressure water cleaned and are free of insects.	
8	Unused tarpaulins that have not been used during the entire deployment, have been unrolled, brushed and swept clean to ensure no vermin or insect infestation and then subject to inspection.	
	Camouflage Nets	
1	All grass and debris have been removed.	
2	Heavily soiled camouflage nets have been further scrubbing and a dipped in an approved detergent/ disinfectant (one in 20 solution).	
3	Drying has been achieved by the hanging the camouflage net so that it did not come into contact with the ground.	
4	All nets have been inspected to ensure that all plant material is removed.	
5	All camouflage poles have been brushed or swept clean; and metal joiners have been removed, cleaned and inspected.	
	Tyres (New, Old and Spares)	
1	All tyres have been washed and scrubbed to remove all BRM.	
2	Cracked/ perished tyres have been assessed for disposal.	
3	All tyres have been treated with an approved residual insecticide after cleaning.	
4	All fitted tyres that were damaged have been replaced with new tyres.	
5	Used and fitted tyres on rims have been individually verified that the tyres are on rims, are inflated with beading sealed and that the tyres are clean, free of water and other BRM.	
6	Tyres not fitted to rims have been stored in such a manner that water has not collected inside the tyre.	
7	The consignment contains a maximum of 8 tyres and is to be imported with an accompanying vehicle. The consignment contains more than a maximum of 8 tyres and will not be imported with an accompanying vehicle. (Delete whichever is not applicable)	

Signed

Date:

Name: