



Technical Bulletin

Date of Issue: 31 July 2015

SUBJECT: Australian Defence Force Mercedes Benz G Wagon Vehicle Emergency Access Guide

Introduction

1. This Technical Bulletin identifies the construction features of the Australian Defence Force Mercedes Benz G Wagon (ADF G Wagon) fleet of vehicles that are above the build standard of a civilian vehicle.
2. This Technical Bulletin is intended for the Australian State and Territory Emergency Services to be used as a guide when required to perform the extrication of casualties from an ADF G Wagon.

Recommendation

3. Australian State and Territory Emergency Services are encouraged to incorporate the information detailed in this Technical Bulletin in to ongoing training and skills maintenance programs for their emergency services personnel, to ensure all personnel are aware of the various construction variations of the ADF G Wagon, and how these may affect extrication options.

Vehicle Identification

4. The ADF G Wagon fleet of vehicles can be identified by their distinguishable camouflage paint scheme and their 'Australian Defence Force' number plate, as shown below in Figure 1. All the G Wagon vehicles have a six figure Army Registered Number or ARN that starts with the figures '40'.



Figure 1: ADF Registration Number

5. There are five base vehicle types of the ADF G Wagon fleet. These base vehicles are shown below in Table 1.



G Wagon 4x4 Carryall
Lightweight
Registered Number starts with
400 XXX



G Wagon 4x4 Carryall Hardtop
Registered Number starts with
401 XXX



G Wagon 4x4 Station Wagon
Registered Number starts
with **402 XXX**



G Wagon 6x6 Dual Cab
Registered Number starts with
404 XXX and 407 XXX



G Wagon 6x6 Carryall Light
Registered Number starts with
405 XXX

Table 1: ADF G Wagon Base Vehicle Types

6. Of the base vehicle types, there are two variants of the G Wagon 6x6 Carryall Light that are fitted with modules or loads, at the rear of the vehicle. These variants are shown below in Table 2 and are the only modules used to transport passengers.

7. **Note:** The Ambulance module can be accessed through the module rear doors and/or the module roof escape hatch, neither of which have additional strengthening. The Surveillance vehicle has a soft top cabin, fitted with an integral ROPS, above the driver and passenger, as well as at the front of the module.



G Wagon 6x6 Surveillance and
Reconnaissance
Registered Number starts with
403 XXX



G Wagon 6x6 Ambulance
Registered Number starts
with **406 XXX**

Table 2: G Wagon 6x6 Carryall Variants

Vehicle Construction

8. The ADF G Wagon fleet are constructed using a stepped ladder frame chassis design where the vehicle body or cabin sits upon a conventional ladder frame. Every ADF G Wagon has areas of the vehicle body / cabin fitted with additional high strength steel that is used to support an add on armour appliqué kit. This high strength steel is fitted during the production of the vehicles and is not visible to the naked eye.

9. The additional high strength steel is located:

- a. In each A, B and C Pillar;
- b. Above each side door; and
- c. On the engine firewall.

Vehicle Features

10. The ADF G Wagon fleet of vehicles are not fitted with any type of air bag or Supplementary Restraint System.

11. **Fuel.** All ADF G Wagon's are diesel fuelled, with two fuel tanks bolted beneath the vehicle frame.

- a. The fuel capacity for the two fuel tanks is **150 litres**.
- b. The G Wagon 6x6 Surveillance and Reconnaissance vehicle has an additional diesel fuel tank located above the rear axles, between the vehicle chassis and the module. This additional tank gives this vehicle a fuel capacity of **380 litres**.

12. **Batteries.** All ADF G Wagon's have at least three, 12Vdc Sealed Lead Acid, Absorbed Glass Mat batteries fitted within the vehicle body.

- a. The two vehicle start batteries are fitted beneath the vehicle bonnet, on the passenger side of the vehicle engine bay, close to the firewall, as shown below in Figure 2.

Two 60 Ah starter batteries are in the engine compartment.



Figure 2: Vehicle Start Batteries, located beneath the vehicle bonnet

- b. The third battery is located inside the cabin, below the centre console as shown below in Figure 3. Access to this battery is from the rear of the centre console, behind the driver and passenger seats. A T25 Torx key is required to remove the battery cover.



Figure 3: Centre Console Battery location

- c. If the batteries can not be accessed, all ADF G Wagon's are fitted with a battery isolation switch, that is located on the passenger side of the centre dash next to the gear shift lever, as shown below in Figure 4. The switch will isolate the earth return of the 24 Vdc electrical system.

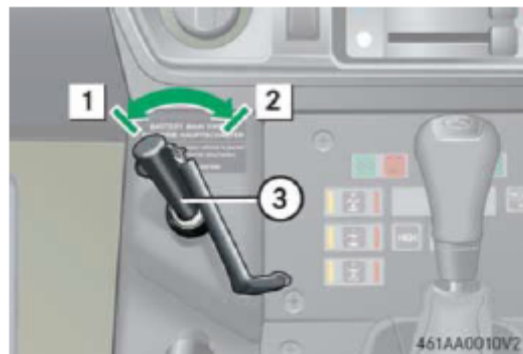


Figure 4: Battery Isolation Switch on Centre Console

13. **Seats.** All ADF G Wagon's are fitted with manually adjustable seating. The ADF G Wagon seat's have manual adjustment controls and can be unbolted from the floor pan if required.

Cabin Access

14. **Glass.** Neither the windscreen or side windows are toughened; therefore, normal glass management techniques can be performed.
- a. With the front windscreen removed, a 'Steering Wheel Lift' is achievable.
- b. A 'Dash Board Roll' is not particularly effective on the ADF G Wagon fleet due to the inherent strength of the strengthened firewall and the fleets' ladder frame construction.

15. **Doors.** A vertical spread of the cabin doors, utilising hydraulic spreaders may be performed utilising normal practices. Note: Due to the size of the gap between the doors and the pillars, as shown below in Figure 5, this technique may prove difficult.



Figure 5: Small door gap

16. If a vertical spread of the cabin doors proves to be ineffective, the doors can be removed by 'slicing' the external door hinges utilising hydraulic cutters, as shown below in Figure 6.

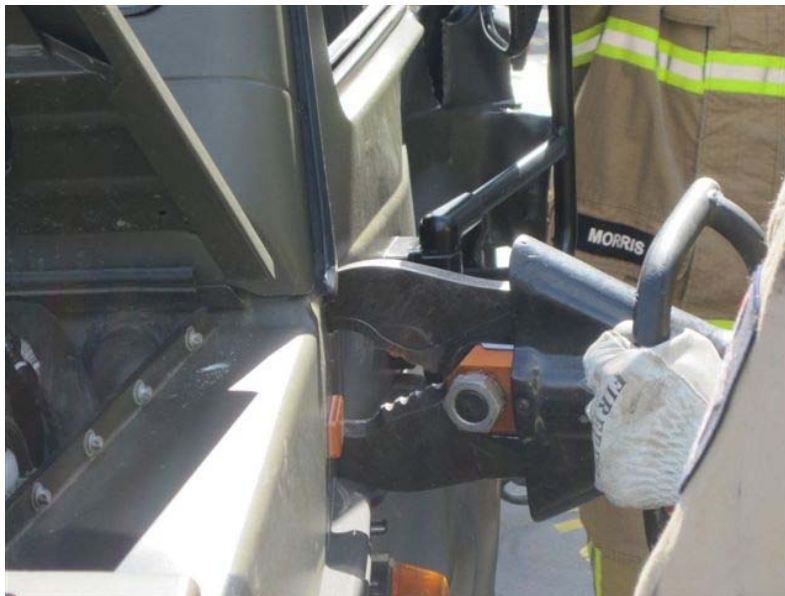


Figure 6: Remove doors by slicing through door hinges

Roof Peel or Flap Access

17. There is no technical reason that a roof flap cannot be performed if required.
18. **The A Pillars.** The A pillars of the ADF G Wagon fleet are strengthened, but can be cut utilising hydraulic cutters.
 - a. It is recommended that the cuts are made as close as possible to the top of the A pillars, just below the gutter of the roof as shown below in Figure 7 by the **RED** dashed line.
 - b. Alternatively, cuts are able to be made at the bottom of the A pillars, below the black bolt hole cover, shown below in Figure 7 by the **RED** line solid line.



Figure 7: Recommended A pillar cutting points

19. **The B Pillars.** The B pillars of the ADF G Wagon fleet are strengthened, but can be cut utilising hydraulic cutters.
 - a. For the **G Wagon 4x4 Station Wagon** and the **G Wagon 6x6 Dual Cab** variants, it is recommended that several cuts are made as close as possible to the top of the B pillars, just below the roof gutter.
 - b. The first cuts should be made on 45 degree angles, as shown below in Figure 8, by the **RED** dashed lines.
 - c. The second cut, as indicated by the solid **GREEN** line in Figure 8, should be made as close as possible to the top of the B pillars, just below the roof gutter.

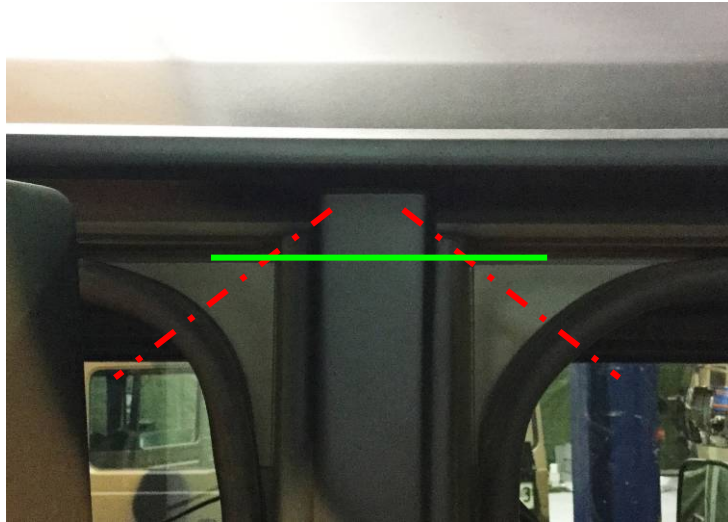


Figure 8: Suggested B pillar cut positions

- d. To completely remove the B pillars from the **G Wagon 4x4 Station Wagon** and the **G Wagon 6x6 Dual Cab** variants, it is recommended that the B pillars are cut below the bottom door hinge, as shown below in Figure 9.

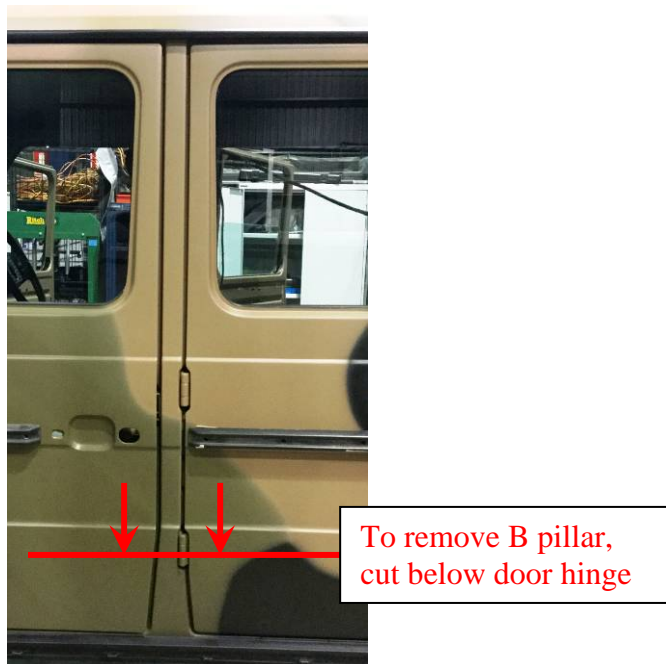


Figure 9: B Pillar remove suggest cut position

- e. **B Pillar.** For all other variants of the ADF G Wagon:
- (1) There is no additional strengthening between the B pillar and the rear of the cabin.
 - (2) It is recommended that the cuts are made approx 10 cm below, and parallel to the roof gutters, as indicated by the **RED** line in Figure 10.



Figure 10: C Pillar

- (3) However, if cuts are made at 90 degrees to the roof gutter, from the side of the vehicle upwards towards the roof, additional strengthening may be encountered and it is recommended that cuts are made as close as possible to the rear of the cabin wall.

20. **The C Pillar.** The C pillars of the **G Wagon 4x4 Station Wagon** and **G Wagon 6x6 Dual Cab** variants are strengthened, but can be cut utilising the hydraulic cutters. It is recommended that the cuts are made as close as possible to the top of the pillar, just below the gutter of the roof.



Figure 11: Station Wagon C pillar Figure 12: 6x6 Dual Cab C pillar

21. **The D Pillar.** The D Pillars of the **G Wagon 4x4 Station Wagon** and the **G Wagon 4x4 Carryall Hardtop** variant are not strengthened and can be cut utilising hydraulic cutters.

22. If required, a rescue saw fitted with an abrasion disk can be used to cut through the strengthened pieces.

Lateral Access

23. Within the limits of the vehicle and with consideration of the component weight, it is possible to create a lateral access path in many situations.

Review

24. All Australian State and Territory Emergency Services' are encouraged to review the information contained within this Technical Bulletin on a regular basis and are requested to provide advice to the ADF on improvements or updates required as well as for any incorrect information that may be contained in this document.

ADF Points of Contact

25. Should any Australian State and Territory Emergency Services' wish to provide updates or recommendations for this Technical Bulletin, they are encouraged to contact the ADF G Wagon Sustainment Manager as follows:

G Wagon Sustainment Manager
Land Vehicle System Branch
Land Systems Division
Capability Acquisition and Sustainment Group
Defence Plaza Melbourne, VIC, 3000
Ph: (03) 9622 2877
GWagon.LLC@defence.gov.au

26. An alternate Point of Contact is:

Director of Logistics – Army (DLOG-A)
Army Headquarters
R1-4-A023, Russell Offices
P.O. Box 7901
Canberra BC, ACT, 2610.