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SPECIFICATION ARMY(AUST) 13

FOR

TRUCK, CHASSIS,  $\frac{3}{4}$  TON, 4x4, G.S., LAND ROVER,  
SERIES 2A, 109 INCH, V.B.

ISSUE 28

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Design Approved

19 Feb 63

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Approved for Production/  
Procurement

28 Feb 63

L. R. Wild Lt Col for .....  
(R. R. McNICOLL) Major General  
MASTER GENERAL OF THE ORDNANCE

1. SCOPE

This specification covers a Truck, Chassis,  $\frac{3}{2}$  Ton, 4x4, G.S. Land Rover, Series 2A, 109 inch, W.B.

2. APPLICABLE DOCUMENTS

Reference is necessary to the latest issue of each of the following documents.

2.1 Specifications

DEF(AUST) 29	Extinguisher, Fire Vaporizing Liquid (Carbon Tetrachloride) 1 qt.
DEF(AUST) 47A	Identification Marking of Service Equipment.
DEF(AUST) 1000	Requirements for Packaging stores for the Services.

These specifications are available from the Manager, Central Drawing Office, Department of Supply, Private Bag No.5, P.O. Ascot Vale, Victoria.

ARMY(AUST) 64	Plugs and Receptacles, 12 pin
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This Specification is available from the Army Design Establishment, Private Bag No.12, P.O., ASCOT VALE, Victoria.

2.2 Standards2.2.1 Standards Association of Australia

A.S. C300	Battery Terminals and Terminal Lugs
A.S. CA 8	Welding Code
A.S. L 8	Vinyl Coated Cotton Fabrics for Upholstery.

2.2.2 British Standards Institution

BS 3810	Colours for Ready Mixed Paints
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These Standards are available from the Standards Association of Australia in all Capital Cities.

2.3 Drawings

ADE(V)5-16	Registration Plate Mounting Holes
ADE(V)5-41	Left, Rear, Bumper
ADE(V)32-1	Front, Buffer, Grille
ADE(V)43-1	Unit/Formation Sign Holder
ADE(V)44-244	Front Wing Assembly, Left
ADE(V)44-255	Front Wing Assembly, Right
ADE(V)44-460	Rear Mud Flaps
ADE(V)110-2	Steering Damper Mounting
ADE(V)110-3	Front Exhaust
ADE(V)110-11	

2.3 (Contd)

F.V. 157949 Light, Inspection Extension  
F.V. 332151 Light Hook

These Drawings are available from Chief Superintendent, Army Design Establishment, Private Bag No.12 P.O. ASCOT VALE, Victoria.

2.4 Publications

2.4.1 A.H.V.S.C. Draft Regulations

These regulations are available for viewing at the Department of Shipping and Transport, 497 Collins Street, MELBOURNE, from the Executive Officer A.H.V.S.C. or at Police Headquarters (Traffic Branch) in all Capital Cities.

2.4.2 Handbook of Fuel, Lubricants and Allied Products for Australian Services.

This handbook is available from the Directorate of Supplies and Transport, A.H.Q., CANBERRA.

3. DEFINITIONS

- 3.1 Where the letters "MOEET" are used in this specification, they shall be understood to mean "Manufacturer's Optional Extra Equipment Item".
- 3.2 The Inspecting Officer named in this specification shall be the Director of Army Inspection or his representative.

4. REQUIREMENTS

4.1 General

The chassis shall be that used in vehicles sold on the Australian commercial market as the  $2\frac{1}{4}$  litre petrol engine driven, Land Rover, Series 2A, 109 inch W.B. modified and added to as detailed in this specification.

- 4.1.1 The vehicle shall comply in all respects with A.H.V.S.C. Draft Regulations.
- 4.1.2 Interchangeability of parts including spares shall be maintained throughout the contract. Alternative parts shall not be introduced without prior approval of the Director of Army Inspection or his representative. The vehicle components supplied shall be as standard as possible with those of Land Rovers already in service, and shall include the component modification detailed in Annex 'D'.

4.1.3 Chassis Data

The chassis shall be modified as follows.

- 4.1.3.1 The chassis shall be fitted with spring hanger brackets, etc, which will allow the later fitting of 9.00 x 16 tyres,
- 4.1.3.2 (a) The wheels shall be one piece, drop centre detachable discs incorporating a 5.50F(H) rim as specified in the Tyre and Rim Association Standards Manual.
- (b) The tyres shall be light truck and utility tyres 7.50 x 16 "Tyrex" cord or approved equivalent, 6 ply rating, with butyl tubes. The tyre treads shall be non-directional cross-country pattern, eg. Goodyear "All Service", Olympic "Pattern 31" or similar approved pattern and make.
- (c) Five wheels, tyres and tubes shall be supplied with each vehicle,
- (d) Brackets shall be fitted to allow for stowage of the spare wheel on the bonnet. The brackets shall be suitable for use with a 7.50 x 16 tyre and wheel. The bonnet spare wheel fittings shall include rubber pads for extra support.
- 4.1.3.3 A second identical fuel tank shall be fitted in the chassis, on the L.H. side immediately below the passenger seat, and the filling point shall be brought to the outside of the vehicle on the L.H. side, as is done for the standard R.H. tank. A change-over cock shall be mounted on the panel adjacent to the hand brake lever. It shall be possible to dip the tanks.
- 4.1.3.4 The engine shall be fitted with Rover eight blade fan and engine tie rod as per MOEBI No.525205.
- 4.1.3.5 The front springs shall be Rover Part No.265627 and the rear springs shall be Rover Part No.272967. Shock absorbers as used with the extended spring hanger brackets shall be fitted.
- 4.1.3.6 Front lighting and towing rings conforming to MOEBI No. E1085 shall be fitted.
- 4.1.3.7 A rotatable and lockable towing hook, to dwg No. FV332151 shall be fitted,
- 4.1.3.8 The standard front bumper shall be fitted, also robust quarter bumpers at the rear, but only if called up in official order. A front buffer grille to Drawing No. ADE(V)32-1 shall be fitted. The left rear bumper shall have a recess made in the form of a cable support as detailed in Drawing ADE(V)5-41.
- 4.1.3.9 The rear cross-member shall be replaced by one of shallower section, to give the maximum possible angle of departure. The normal power takeoff aperture may be deleted.
- 4.1.3.10 The front and rear axles shall have a heavy duty differential assembly and induction hardened axle shafts as fitted in British War Department Land Rovers.

- 4.1.3.11 Transfer case and gearbox oil level plugs shall be of the tapered thread type.
- 4.1.3.12 A quadrant hand throttle conforming to MOBEI No. 31109 shall be fitted.
- 4.1.3.13 Rubber boots shall be fitted on both front and rear propellor shafts to cover the splines.
- 4.1.3.14 The radiator grille assembly shall have two 11/16-inch diameter holes drilled in it to allow easy removal of the bolts fixing the steering relay housing to the chassis frame.
- 4.1.3.15 The hydraulic steering damper, (Rover Part No. 536743) shall be mounted as detailed in Drawing No. ADE(V)110-2.
- 4.1.3.16 The exhaust system shall be front mounted as detailed in Drawing No. ADE(V)110-3.

#### 4.1.4 Body

- 4.1.4.1 The standard front end sheet metal with front wings to drawings ADE(V)44-244D and 255D (including de-ditching tool brackets) shall be fitted up to and including the windscreen and dash panel. The doors, cargo body, roof panels, etc are not required. The driving compartment floor panels and the three seats shall be fitted.
- 4.1.4.2 Provision shall be made to secure the windscreen, when lowered to the horizontal position, by means of a 1 inch wide nylon webbing strap rivetted or stitched around the handle of the spare wheel carrier and an additional 'D' fitted to the centre top inside of the windscreen frame. The windscreen glass shall conform to MOBEI E 1080.
- 4.1.4.3 Dash vent flyscreens conforming to MOBEI No. 31106 shall be fitted.
- 4.1.4.4 A tool box shall be fitted in the space under the centre seat with provision for the storage of the set of tools and the portable inspection lamp supplied (see 4.3.5 and 4.1.5.11) by the contractor.
- 4.1.4.5 The side valances shall be deleted.
- 4.1.4.6 The bonnet shall be secured by side fastening catches.
- 4.1.4.7 All seats shall be covered with a tropic proofed PVC coated fabric to Australian Standard L8, Grade W2, and coloured Deep Bronze Green (BS 3810, Colour No.224).

- 4.1.4.8 Provision shall be provided for the stowage of the following equipments:-
- One set of wheel chains - One bag, 15 inches by 12 inches by 9 inches. (Approximate weight - 56 lbs.)
  - One tow rope - Space required - approximately 13 inches by 13 inches by 4 inches.
  - One starting handle.
- 4.1.5 Electrical Equipment
- 4.1.5.1 The standard 12 volt electrical system modified (as detailed in Annex 'A') to prevent interference with radio equipment in the vicinity, shall be fitted to the vehicle.
- 4.1.5.2 All electrical components, wiring and harness shall be suitable for continual use at any temperature within the range of 5°F to 125°F and 100% humidity conditions between 32°F and 95°F.
- 4.1.5.3 Full wiring as for a completed vehicle is required. Where the wiring cannot be fitted because the body is not fitted the wiring shall be rolled and taped to the chassis.
- 4.1.5.4 The instrument panel shall be illuminated by separately controlled lighting adequate for use by night under blackout conditions.
- 4.1.5.5 A socket (2 pin Lucas, Part No.770419 or approved equivalent) shall be provided and fitted in an approved position in the driving compartment as a means of connecting an extension light to the electrical system. This circuit shall be unswitched.
- 4.1.5.6 In addition to the instruments and controls normally fitted, the following shall be fitted.
- Water thermometer and oil pressure gauge conforming to MOEET No.E1073.
  - MPH Speedometer with provision for recording trip miles, conforming to MOEET No.E1100.
  - Two-way switch to allow fuel gauge to read from either tank.
- 4.1.5.7 Flashing type direction indicators conforming to MOEET E1211 shall be fitted, except that the flasher unit shall be capable of operating satisfactorily with two or three lamps flashing. The flasher unit shall be HELLA part No.91, PM 2/3 x 18W 12V, or approved equivalent. A driver warning device shall be fitted.
- 4.1.5.8 A black-out headlight Rover Part No.RA34 or approved equivalent shall be fitted at the front RH side of the vehicle. A convcy light Rover Part No.268616 or approved equivalent intersconnected with the black-out headlight shall be fitted in an approved location at the rear of the vehicle.

4.1.5.9 A master control switch mounted on the dashboard shall control either the standard lighting or black-out lighting as detailed below:

Standard Lighting

Black-out Lighting

- Headlights
- Parking Lights
- Tail Light
- Stop Light
- Turn Indicators
- Dash Light
- Map Reading Light
- Dashboard Plug Socket

- Black-out Headlight
- Convoy Light
- Dash Light
- Map Reading Light
- Dashboard Plug Socket

4.1.5.10 All electrical circuits shall be suitably protected by fuses or circuit breakers grouped together with a centralized junction box or terminal strip so located that it is readily accessible. The identity of each fuse or circuit breaker shall be clearly marked.

4.1.5.11 Metal guards to protect the rear turn indicator lights and tail lights shall be provided.

4.1.5.12 An inspection extension light conforming to Drawing No. FW 157949, complete with 13 ft of twin cable and 2 pin plug to suit the dashboard socket, shall be provided.

4.1.5.13 A map reading light Rover Part No. 268636 or approved equivalent shall be mounted on the dashboard in front of the Passenger seat.

4.1.5.14 The dip switch shall be relocated between the clutch and brake pedals, with the entire switch mechanism inside the vehicle. Any wiring on the floor shall be covered by a metal guard.

4.1.5.15 A twelve pin socket with cover, to Specification Army(Aust)64, shall be fitted at the LH rear of the vehicle, within a radius of 19.1/2 inches from the towing hook, as detailed in drawing ADE(V)110-11. The wiring shall be as follows:

- Pin A -- Shall be interconnected with the vehicle convoy light. Pins C and H shall be bridged with Pin A.
- Pin B -- Shall be interconnected with the vehicle stop lights. Pin J shall be bridged with Pin B.
- Pin E -- Shall be interconnected with the vehicle rear lights.
- Pins D & L -- Both these pins shall be connected separately to the "earthed" or "grounded" pole of the vehicle battery, either directly or through the metal framework of the vehicle.
- Pin K -- This is a lead for auxiliary power feed to a trailer.



4.1.5.15 (Cont'd)

- Pin H - Shall be interconnected with the left turn indicator of the vehicle.
- Pin N - Shall be interconnected with the right turn indicator of the vehicle.

NOTE: The 12 pin socket cover shall be stamped '12V' in 1/2-inch letters.

ADDITIONAL INFORMATION:

Where bridging is necessary it shall be done at the junction box or by some other approved method outside the socket.

- 4.1.5.16 The ignition switch shall be the non-locking type.
- 4.1.5.17 The battery shall have a minimum rating of 51 ampere/hour and be of the concealed link type, with terminal lugs and cable terminals (clamp type) in accordance with Australian Standard No. C300.  
  
The battery retaining cover inside length shall be 12.1/8 inches in lieu of 12.13/16 inches as normally issued with the vehicle.
- 4.1.5.18 Two windscreen wipers conforming to HONEY No. 21114 shall be fitted.

4.2 Fitting and Accessories

- 4.2.1 Centre Mirror. No centre mirror is required.
- 4.2.2 External Mirror. Two adjustable, rear vision mirrors shall be mounted, one on the right hand and one on the left hand side of the vehicle. The driver shall be able to adjust the right hand mirror without leaving the driving seat. It shall be possible to fold the mirrors and their supporting arms so that the items do not project beyond the vehicle silhouette.
- 4.2.3 Number Plates. Bolt holes shall be drilled in approved locations to suit the standard Army Registration Plate. (Dwg No. ADE(V)5-16).
- 4.2.4 Tools. The starting handle is the only item to be supplied from the commercial tool kit.
- 4.2.5 Bridge Sign Plate. One plate, to Rover Part No. 266818 shall be supplied and fitted to the front near side of the vehicle.
- 4.2.6 Unit Formation Signs. Two Unit/Formation sign holders to Drawing No. ADE(V)43-1 shall be fitted in approved locations, at the front (2 holders shall be boxed, see para 4.2.11).
- 4.2.7 Petrol Dipstick with Holder. One holder and graduated dipstick shall be supplied with each tank. The dipstick shall have a flat surface to facilitate reading of the fuel level.

4.2.8 Fire Extinguisher. One fire extinguisher, 1 qt GTC, with bracket, to Specification DEF(AUST) 29 shall be fitted in a vertical position on the scuttle, on the passenger's side and towards the centre of the vehicle.

4.2.9 Mud Flaps. Flaps to Drawing No. ADE(V)44-460 shall be fitted.

4.2.10 Instruction Plates

4.2.10.1 Metal instruction plates with photo processed lettering shall be fitted and suitably located to indicate the information necessary for the safe and proper operation of all switches and controls provided.

4.2.10.2 One plate, in accordance with Annex 'B' shall be located in the nearside glove box.

4.2.10.3 One plate, in accordance with Annex 'C', shall be located above the instrument panel.

4.2.10.4 A plate, located in the nearside glovebox, shall carry the name of the vehicle as follows:-

Nomenclature	: (Leave Blank)
Census No.	: (Leave Blank)
Chassis No.	: (as applicable)
Manufacturer	: Rover Australia Pty. Ltd.
Contract No.	: (as applicable)
Date of Delivery	: (as applicable)

4.2.10.5 The following items shall be branded with a broad arrow (See DEF(AUST)47A) in approved positions as follows:-

Item	Size of Lettering	Type
Fire Extinguisher	$\frac{1}{2}$ inch minimum	Stamp or Etch
Tyres	1 to 2 inches	moulded

4.3 Material Specifications

All materials used in the manufacture of the vehicle shall comply with the relevant Australian or British Standard Specification; where such exist, or in their absence to any standard specification approved by the Inspecting Officer.

4.4 Workmanship

Workmanship shall be in accordance with best trade practice, and shall be to the satisfaction of the Inspecting Officer.

4.4.1 Welding. The preparation for, and the application of all metallic arc welding shall be strictly in accordance with the SAA Welding Code GAS.

4.4.2 Painting. The preparation of surfaces for painting, and the painting process shall be the standard commercial processes used for Land Rover vehicles except insofar as the finishing colour shall be Deep Bronze Green (BS 381C Colour No.224) Full Gloss.

4.4.2.1 The galvanized fittings normally supplied on the commercial vehicle shall be subjected to an extra pickling process, prior to assembly. The fittings shall then be painted as specified above.

#### 4.5 Manufacturers Drawings

As a part of each contract, the Contractor shall supply one set of drawing prints of each item and assembly of parts special to this Vehicle including Rover parts modified for Army requirements. In addition drawing prints, of the general arrangement covering the complete vehicle, and all wiring diagrams shall also be supplied by the Contractor. (Excluded from these requirements are parts already shown on ADP drawing sheets).

These prints, which may be on the Contractor's own drawing sheets, shall be accompanied by a schedule listing the drawing titles and numbers, and indicating the Service name of the equipment, the CAPO number and the date of the Contract.

On completion of the contract, the Contractor shall forward the above data to the Chief Superintendent, Army Design Establishment.

#### 4.6 Tendering Data

4.6.1 Samples. The Tenderer shall submit samples of all components and all materials designated as approved components or materials. Alternatively, the Tenderer shall state the source of supply in sufficient detail in order that the components and materials can be readily checked or recognised.

4.6.2 Departures. Should the Tenderer desire to depart in any manner from the requirements of this specification, such manner of departure shall be clearly shown in the tender, together with a statement of the advantages to be gained by its adoption.

4.6.3 Warranty. Warranty and after sales service shall be stated by the Tenderer in his tender.

4.6.4 Rejection. Tenders, which are not accompanied by the information asked for above, may be rejected without further consideration.

### 5. INSPECTION AND TESTS

#### 5.1 Inspection.

The Inspecting Officer may witness any or all of the Contractor's tests or himself perform any tests or inspection necessary to ensure that the stores comply with this specification.

5.2 Tests to Specifications.

The contractor shall be responsible for carrying out any tests required by the Inspecting Officer to ensure that the Stores are in accordance with this Specification.

5.2.1 Facilities provided by contractor. The contractor shall be responsible for providing any test equipment and facilities, including accommodation, that may be required by the Inspecting Officer for the purpose of ensuring that the stores comply with this specification.

6. PREPARATION FOR DELIVERY

Packing, packaging, preservation and marking shall be in accordance with the relevant sections of Specification DLF(AUST)1000 or other requirements, as designated in the tender schedule or official order.

7. NOTES

7.1 Intended Use

These vehicles will be used with platform bodies to Specification Army(Aust)39 as machinery platforms in field workshops.

7.2 Ordering Data.

Procurement Documents should specify the following:

7.2.1 Title, number and date of this specification.

7.2.2 Details of type of preservation, packaging, identification, labelling, etc, to be used by the contractor.

7.2.3 Whether rear bumpers shall be fitted (para 4.1.3.8).

Prepared by:

Army Design Establishment,  
for the Master General of the  
Ordnance,  
Army Headquarters,  
MELBOURNE.

Copies of this Specification may be obtained from:

Chief Superintendent,  
Army Design Establishment,  
Private Bag Po.12,  
P.O. ASCOT VALE, Victoria.

RADIO INTERFERENCE SUPPRESSION

1. From the commercial vehicle, the Contractor shall remove the battery bond between the engine and chassis. This is located on the off side of the vehicle. To replace this bond, the Contractor shall fit three bonding straps located as follows:

- (a) Across the rubber engine mounting, adjacent to the generator.
- (b) Between the flywheel housing and the chassis, on the generator side.
- (c) Between the cabin floor and the transmission, adjacent to the gear lever.

2. In addition three extra bonding straps shall be fitted. Two of these straps shall be fitted on the bonnet, located on either side, to ensure that the bonnet is earthed at all times. The third additional bond shall be between the engine and the regulator mounting bracket. (Refer 7 below).

3. The ignition coil shall be removed from the bulkhead and re-located in an upright position on a bracket, between plugs 3 and 4, on the engine. The bracket shall be held by two cylinder head bolts.

4. The Contractor shall fit five 1/2 F capacitors in the following locations:-

- (a) Connected to each windscreen wiper battery terminal and earthed to the motor frame.
- (b) Connected to the battery terminal of the ignition coil and earth.
- (c) Between the 'D' terminal of the generator and earthed at the top through bolt of the generator.
- (d) Connected to the battery terminal of the ammeter.

5. Spark plugs with built-in 12,500 ohms resistors shall be fitted.

6. The standard Lucas Distributor Cap 418865 which has a built-in 12,500 ohms resistor shall be supplied.

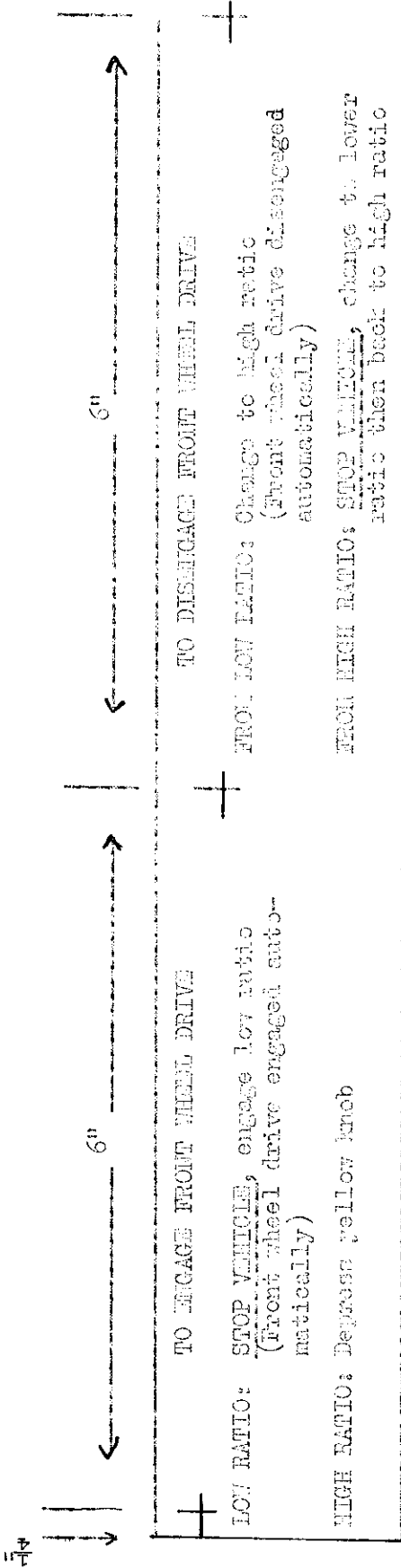
7. If not already fitted with a 12 volt Regulator RB310 Lucas No. LU37187 and Lucas Regulator Suppressor Type WL 14; these parts shall be removed and replaced by the approved items.

SPECIFICATION ARMY(AUST) 13

APPENDIX 13

<u>SERVICING DATA:</u> TRUCK - CHASSIS 3/4 Ton, 4 x 4, GS, Land Rover Series 2A, 109 in W.B.			
<u>TYRE INFLATION PRESSURES:</u>	Highway	Cross Country	Sand
Fronts:	24 lbs	18 lbs	14 lbs
Rear :	46 lbs	30 lbs	22 lbs
<u>LUBRICATION:</u> (Normal or tropical temperatures)			
Engine	GLD 110	Axles	OEP 600
Gear Box	OH 270	Swivel pin housing	OEP 600
Transfer case	OH 270	Steering box	OEP 600
Power take off	OH 270	Lubrication nipples XG	279
		Master cylinders OX (Aust)	9

ANNEX 'C'



LAYOUT OF INSTRUCTION PLATE 10 1/2" x 1 1/4"

LOCATION: On instrument panel above instruments and secured by 2 existing screws at 6-inch centres.

ANNEX 'D'

Vehicles supplied to this specification shall have the following component modification:

1. Front Seat Squabs:

The three drive screws, cup washers, and the wire stretcher shall be removed from each squab and replaced by five No. 6 by  $\frac{1}{8}$  inch, csk raised head, self tapping screws (Parker Kalon type A or approved equivalent) three in the existing holes and two midway between them. All screws shall have cup washers inserted under their heads.