

Vehicle Practice

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FIBREGLASS BOOMS AND ACCESSORIES INSPECTIONS, MAINTENANCE AND REPAIR

Practice:

1.0 INTRODUCTION

- 1.1 The following is a procedure defining the maintenance of FRP (fibre reinforced plastic) surfaces on aerial devices and digger derricks. The FRP surfaces include: lower arm insert, upper boom section, glass jib (if equipped), and manual or hydraulic 3rd extensions.
- 1.2 It establishes the procedure for visual inspection, periodic cleaning, waxing and reconditioning and refinishing of FRP surfaces. It includes those units being overhauled and remounted at the Vehicle Transfer Centre and those currently in operation.
- 1.3 Note Maintenance and Repair of F.R.P. Personnel Buckets is covered separately in VP 03-07.
- 1.4 **The users of equipment are responsible for maintaining a clean and safe boom. Each member of the crew shares the responsibility.**
- 1.5 The supervisor responsible for the vehicle is to ensure the maintenance is performed as outlined in this practice.

2.0 WEEKLY VISUAL INSPECTION AND CLEANING EXTERIOR FRP SURFACES

- 2.1 Inspect all FRP surfaces on a weekly basis in conjunction with the weekly vehicle inspection.
- 2.2 Check for contaminants such as dirt, oil, grease, conductor tar, etc. and clean as required
- 2.3 If FRP cleaning is required, this is a list of products that can be used: Trojan Remove TRL-01, Spray Nine, Neo Clean - Stores # 00-08-2120. The Protective Equipment Test Centre is using PF145 P-T Technologies Inc. purchased from K&D Industries. Most of these products can be obtained through NSP Stores.
- 2.4 Check for any damage (cuts, bruises, gouges, cracks, etc. shown in Appendix 1) to the FRP surfaces. Record on the Driver's Inspection and Checklist.

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Fleet Services



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3.0 **CLEANING AND WAXING OF AERIAL DEVICES AND DIGGER/DERRICKS FRP SURFACES (CLASS 4, 5 AND 6)**

- 3.1 If water lying on the FRP boom is no longer beading but streaking, clean and wax as required. Additionally, build up of salt, oil or other contaminants are cause to do a thorough cleaning and waxing.

Instructions for Cleaning

Clean the exterior FRP surface using portable power washer or power/steam device noting that:

- the temperature of the water must not exceed 85°C
- the stream of hot water is not to be concentrated on one spot for a long time
- a strong detergent, Heavy Duty Cleaner Ultra Stores #00-08-4500 (supplier: Leading Chemical Mfg.) is to be used or equivalent
- a strong degreasing agent is not to be used with either cleaning device

Note: Clean exterior of both the insulated upper boom and lower boom insert if equipped.

- 3.2 After having used the portable power washer or power/steam device, if necessary, wipe the RFP surface with a cloth and Trojan Remove TRL-01, Spray Nine or Neo Clean Stores #00-08-2120 to remove any oil film (from hydraulic hose breakage, etc.) or other remaining dirt contaminants.
- 3.3 After all cleaning, thoroughly rinse the RFP surfaces with clear water.
- 3.4 Wax the boom using method for applying wax similar to waxing your car, use a liberal amount of wax, rub in well, allow to haze over then buff with a clean soft dry rag. Be sure to buff all areas waxed. One of the following waxes to be used: Polysshell, Blue Poly, Raindance, Excalibur, Star Brite and Resin Glaze.

4.0 **ANNUAL CLEANING AND INSPECTION**

- 4.1 The Service Centers will inspect and clean interior of all booms on Class 4, 5 and 6 vehicles, and have repairs and painting done as required. This will be done at the time of "B" Service Inspections.

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Instructions for Cleaning

Clean the interior of the FRP and steel surface using portable power washer or power/steam device noting that:

- a special nozzle is used to spray water at 90° to hoses and rods
- the temperature of the hot water must not exceed 85°C
- the stream of hot water is not to be concentrated on one spot for a long time
- a strong detergent, heavy duty cleaner Ultra Stores #00-08-4500 (supplier Leading Chemical Mfg.) is to be used or equivalent
- a strong degreasing agent is not to be used when cleaning the RFP booms

4.2 To permit adequate drainage, booms are to be positioned approximately 45° with respect to the ground.

5.0 REPAIRING OF FRP SURFACES

Refer to Appendix II, note repairing of FRP surfaces and complete painting is to be done by approved fibreglass and painting contractors.

6.0 REFINISHING OF FRP SURFACES

Refer to Appendix III.

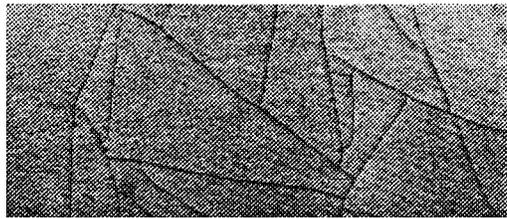
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APPENDIX I

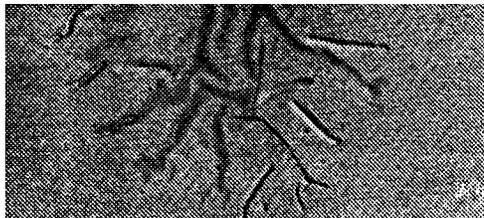
CLASSIFICATION OF DAMAGES

1. **Surface Damage Types** (damage to gel coat only)

i) gel coat crazing



ii) gel coating wrinkling

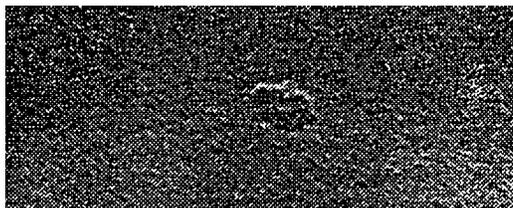


iii) light spots with surface roughness (caused by impact blows)

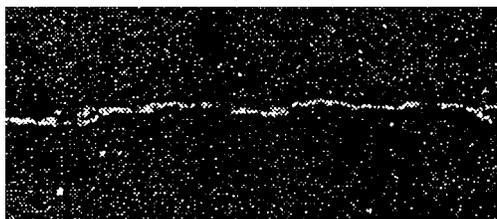


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- iv) Small surface ruptures (not through gel coat layer)
(caused by impact blows of sharp objects)



- v) Surface cracks (within the gel coat layer)



2. Major Damage is classified as cracks through the gel coat in excess of the depths noted for type V surface cracks. Major damage is to be reported to the Fleet Technical Services.

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APPENDIX II

1.0 Repairing of FRP Surfaces

- 1) Repairs to be completed in temperatures above 20°C.
- 2) Repairing steps as per surface damage:

Type	Description of Damage	Repairing Steps
i)	gel coat crazing and wrinkling	3 - 9
ii)	light spot with surface roughness	3 - 9
iii)	small surface ruptures	10 - 14
iv)	gel coat crack repairs	10 - 14

Gel Coat Crazing and Wrinkling and Light Spots with Surface Roughness (Damage Type I and II)

- 3) Remove all contaminants from the surface of the FRP using a cloth and Trojan Remove TRL-07, Spray Nine, Neo Clean - Stores #00-08-2120 or PF145.
- 4) Block-sand the damaged area (use a belt sander for surface damage over large area) using garnet paper (non-metallic).
- 5) Roughen the outer gel coat surface only. Do not sand to the extent of removing the gel coat to the glass fibres.
- 6) Wipe the damaged FRP surface with a cloth and FRP or epoxy solvent per manufacturers recommendations.
- 7) Repair the damaged area with a epoxy resin patching kit (available from A. B. Chance Co. or equivalent), applied as a putty mixture.
- 8) A piece of scotch cellophane tape pulled tightly over the repaired area will produce a smooth surface.
- 9) After the patch has set according to the patching kit instructions, remove the cellophane tape.

Small Surface Rupture and Gel Coat Crack Repairs (Damage Type IV and V)

- 10) Remove all contaminants from the surface of the FRP using a cloth and Trojan Remove TRL-01, Spray Nine, Neo Clean - Stores #00-08-2120 or PF145.

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- 11) Use an orbital sander to V-out the damaged area using Garnet paper.
- 12) Do not allow the sander to cut into the glass fibres nor come in contact with collector rings.
- 13) Clean and repair the damaged area using:
 - 1) FRP Booms: use a fibreglass filler, (Tiger Hair) or equivalent, applied by brush with the proper curing agent
 - 2) Epoxy Booms: use an epoxy resin patching kit (available from A.B. Chance Co. or equivalent), applied as a putty mixture
- 14) After the patch has set according to the product instructions, remove any excess cured resin by block-sanding sandpaper: as in (4)

2. **Safety Precautions when Handling Cleaning Solvents and Epoxies**

Read and comply with product instructions (Material Safety Data Sheet), provide adequate ventilation, be aware of flammable liquid and vapours, wear suitable gloves and approved respiratory protection.

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APPENDIX III

1. Refinishing (Painting) of FRP Surfaces

- 1) Block-sand the FRP surface lightly with non-metallic Garnet paper.
- 2) Clean and wash entire surface with a solvent wash to remove dirt and wax.
- 3) Mask off the surrounding surfaces to protect areas not to be coated.
- 4) Using spray equipment, apply approved epoxy or polyurethane paint in accordance to manufacturers label instructions.

2. Resins used on Typical Common Aerial Devices and Derrick/Diggers

(No resins to be substituted unless approved by Fleet Technical Services)

Model	FRP Surface	Resin (with converter)
Pitman-Hotstik (aerial device and Pitman derrick/diggers)	lower arm insert insulated upper boom section Glass jib insulated levelling rods	Glidden 13045 orange (Glidden 5242 converter)
Holan Bronco (aerial device)	lower arm insert insulated upper boom section Glass jib insulated levelling rods	Glidden 5260 yellow (Glidden 5242 converter)
King TKII, K10 derrick/diggers Other King Models K14, K16	extension boom and control rods	Glidden 5260 yellow (Glidden 5242 converter) Glidden 6200 white (Glidden 6232 converter)
Telelect (aerial device digger/derricks)	lower arm, insulated upper boom section and jib	Glidden 6200 white (Glidden 6252 converter)
Altec (aerial device)	lower arm, insulated upper boom section and jib	Glidden 6200 white (Glidden 6252 converter)
Versa Lift	lower arm insulated upper boom section and jib	Dupont 7372 white Dupont 6759 yellow