TO ALL UNITED KINGDOM CAR & COMMERCIAL VEHICLE DISTRIBUTORS,
MAIN DEALERS, DEALERS & RETAIL DEALERS
TO ALL TRACTOR DISTRIBUTORS & RETAIL DEALERS

Dear Sirs,

PRESERVATION OF VEHICLES

We enclose Publication No. AKD 1213A which supersedes our Booklet AKD 1212 circulated during May 1959.

As you know our Producing Factories are devoting a great deal of attention to the winterisation of vehicles and the information contained in the accompanying Booklet has been compiled in close co-operation with them.

Will you please bring this to the notice of all your Staff who are concerned in this most important subject.

Yours faithfully,
for BMC SERVICE LTD.

[Signature]
J. B. Cawthorn
SERVICE TECHNICAL MANAGER
The Preservation of Vehicles in Open Parks

Cars, Trucks, and Tractors
INTRODUCTION

The Preservation of Vehicles in Open Parks

CARS, TRUCKS, AND TRACTORS
Preservation of Vehicles
(Cars, Trucks, and Tractors)
in Open Parks

Section 1

Treatment of Unprotected Cars for Winter Storage

Any vehicles stocked by Dealers but not winterized at the factory must be preserved in accordance with the following procedure if they are to be stored in the open.

Preparation
The vehicle must be thoroughly washed over-all, including the underside, and dried; the underside should be thoroughly blown off with compressed air.

Engine Bay
The power unit and all visible parts of the transmission unit, also all ancillary equipment, must be sprayed with B.M.C.-type 4D oil (Shell Ensis 152 or Duckhams Q.6167).

Bright Trim
Brush all parts with Autokote F/W wax protective and after it has hardened, spray the entire body with Autokote B2; these Autokote materials are obtainable from Astor Boisselier & Lawson Limited, 9 Savoy Street, Strand, London, W.C.2.
All windows should be masked during this operation; but it is essential that all bright trim, including window finishers, should receive a double coating of wax.

**Underbody Surfaces**

Spray the entire underside of the vehicle, including suspension units, with type 1B/2 preservative, 'Crodalac,' obtainable from Croda Limited, Cowick Hall, Snaith, Goole, Yorkshire.

Care must be exercised to avoid spraying brake discs with the protectives.

**Equipment for Spraying Protectives**

The various protectives referred to above can be sprayed with conventional equipment of the type available in most service stations. A suitable low-pressure gun is the Binks with TM-type air cap, material nozzle 63B, No. 28 needle, pressure on material 12–14 p.s.i., air pressure 30–40 p.s.i.

Equipment which can be used for spraying the engine bay and under-surface of the body only is the Bullows Hydravane rotary compressor with the L80 gun.

In the absence of a compressed air line the engine bay and underbody protectives may be applied with a paraffin or penetrating oil gun of the Kismet or Tecalemit type and all the protectives can be applied with a hand-pumped siphon-type gun.
Section 2

Parking Conditions for Open Storage

1. All storage sites should be level and well drained with a hard-standing surface.
2. Areas should be suitably fenced and security should be maintained.
3. Care must be taken to avoid parking vehicles under trees; hedges should be maintained to prevent damage to paintwork.
4. Vehicles must not be stored in areas near to industrial processes and/or where liable to industrial airborne fall-out, to avoid contamination of paintwork and bright finishers.
5. Parking of vehicles must be in an orderly manner with sufficient room to enable the doors to be opened without damage to adjacent vehicles and to avoid overlapping of bumpers.
6. All doors, windows, bonnets, boot lids, and fuel filler caps must be kept properly closed and locked to avoid ingress of water. It is advisable, however, to lower a window slightly in very hot weather to enable the car to 'breathe'.
7. All loose equipment and carpets should be securely stored and, in the case of cars, such items should be locked in the boot.
8. Equipment should include facilities for tyre inflation, battery charging, and general maintenance.
9. Regular inspection of vehicles in storage should be made to ensure the factory-fresh condition is maintained; B.M.C. personnel will visit sites to advise on storage requirements.
Section 3

Preparation of Vehicle on Arrival at Storage Area

1. Mark the date of arrival at the site on the inside of the windscreen glass (or in some other appropriate place in the case of a tractor) in grease crayon.

2. Provide each vehicle with a car history card. IMPORTANT—This card should be so placed within the vehicle as to be available for ready inspection.

3. Inspect for damage and deterioration. Rectify as possible. Record irregularities which cannot receive immediate attention on site.

4. Check oil level in air cleaner where applicable.

5. Rectification.

(a) Corrosion
Examine for traces of rust on metal surfaces, e.g. under bonnet and chassis parts; where found, apply one of the following type 2C protectives:

- Duckham’s
- Shell
- Croda
- Wakefield Dick
- Fletcher Miller

Q.6066.
Ensis 256.
GP 1283.
No. 1.
Rodol 8843.

(b) Bright Trim
Examine preservative coatings on exterior bright trim and, where the protective has suffered in transit, touch in as necessary. Touching in should be done with Autokote F/W by brushing; two coats should be applied allowing at least 30 minutes interval between coats.
(c) **Paintwork**

Examine the vehicle generally for accidental chipping of paintwork; wash any damaged areas with cold water to remove any gross contamination and when dry, brush in with Autokote B2.

6. Inhibit power units as follows, if delivered to the site under their own power, and after final parking while warm:

(a) **Petrol and V.O. engines fitted to tractors**

(i) Remove the sparking plugs and, with the piston of each cylinder in sequence at the bottom of its stroke, introduce the correct amount of preservative engine oil via the sparking plug orifice by spraying, to ensure that the oil does reach the bores and piston tops; a pressure gun with spinner nozzle is preferred. Replace the sparking plugs after treatment. A suitable pressure gun is the A.I.D. Model 2 obtainable from Air Industrial Developments Limited, Shenstone, Staffs., operating at an air pressure of 50–60 p.s.i. with 10–20 p.s.i. pressure on the material container. The correct amount of preservative oil is:

- **A type engine** ..... 10 c.c. per cylinder.
- **B type engine** ..... 15 c.c. per cylinder.
- **C type and all others** ..... 25 c.c. per cylinder.

10 c.c. is about four teaspoonfuls, and experiment will quickly relate the performance of the spray to the required quantity.

Suitable preservative oils for the purpose are:

- **Duckham’s** ..... Q.6220 Oil.
- **Esso Petroleum** ..... Esso T.S.D. 578 Oil (S.A.E. 20).
- **Mobil** ..... Infilrex 109 Oil (S.A.E. 20).
- **B.P. Ener gol** ..... Ener gol Protective Oil 20.
- **Shell** ..... Ensis 20 Oil.
- **Castrol** ..... Castrol Storage Oil 20.

(ii) Completely seal the air cleaner intake, exhaust tail pipe, and petrol tank air vent with masking tape.
(b) **Diesel engines**

(i) Check the level of lubricating oil in the injection pump cambox.

(ii) Disconnect the fuel feed (inlet) pipe from the fuel lift pump and proceed as follows:

**C.A.V. equipment**

Remove the hexagon plug from the main C.A.V. fuel filter head and the drain plug from the filler body and drain off the contents. Replace the drain plug, fill the filter body with $\frac{1}{2}$ pt. of Shell Fusus Oil, and replace the hexagon plug.

If fitted with D.P.A. distributor type pump, this should be drained as follows:

Mechanical governor—remove the pump housing side cover and drain completely with a syringe; replace the cover.

Hydraulic governor—remove the fuel return connection from the top of the pump housing and drain with a syringe; replace the connection plate.

**SIMMS equipment**

Hold the main Simms fuel filter body, remove the filter body centre-screw, and allow the fuel oil to drain off. Refit the filter body centre-bolt and secure the body correctly. Fill the filter body with $\frac{1}{2}$ pt. of Shell Fusus Oil through the priming plug in the head of the filter casting.

(iii) Start up the engine and run at **idling speed** only until all the Shell Fusus Oil is used up and the engine ceases to run of its own accord. This will be 14 minutes approximately.

(iv) Reconnect the fuel feed (inlet) pipe.

**No attempt must be made to start the engine once this stage of the treatment has been completed.**

(v) Inject $\frac{1}{2}$ oz. (15 c.c.) of H.D. 20 oil via the decompressor or injector hole (whichever is the more convenient) of each cylinder.

(vi) Turn the engine by **hand** several times, ensuring that no dirt can be drawn into the cylinders.
(vii) Replace the decompressor screws or injectors.
(viii) Completely seal the air cleaner intake with masking tape.
(ix) Completely seal the exhaust tail pipe with masking tape.

**NOTE.**—Petrol, V.O., and diesel engine inhibition must be repeated every time an engine is run during storage. Therefore avoid disturbing engines unnecessarily.

(c) **Hydraulic power unit (Tractor)**

Depress the lift-arms of the hydraulic power unit to the ‘full down’ position to ensure that the piston is at the bottom of the cylinder, remove the travelling lock plunger situated in the top of the hydraulic power unit casing, and spray into the hole a protective solution until unprotected parts are covered. After the operation the lock plunger must be replaced and locked by centre-punch marks in two places diametrically opposite in the thread between the plug and the top cover casing.

Suitable protective solutions are as listed in Para. 6 a (i).

In spraying, effective atomization of the preservative oil is required to secure optimum coverage. Pressure-operated spray guns are therefore preferable but in default a suitable hand spray is acceptable.

The treatment should be carried out every three months or after a tractor has been moved under its own power, irrespective of whether the hydraulic system has been used or not.

7. **Fuel Tank**
   Drain the fuel tank of each vehicle to avoid the formation of gummy residue.

8. **Batteries**
   Remove the battery and transfer to the battery maintenance store.

9. **Tyres**
   Adjust tyre pressures to a figure 25 per cent. above the normal running pressures specified in the handbook supplied with the vehicle or tractor.

10. **Brakes**
    Engage bottom or reverse gear, or employ other suitable means to prevent movement of the vehicle while parked. **IMPORTANT.**—Do not use the hand
brake for this purpose. Hand brakes should be left off to relieve the mechanism from stressing over long periods, and to prevent icing up at low temperatures.

11. Radiators
   
   *Home Market:* If filled with anti-freeze do not drain; check the specific gravity to ensure that the glycol concentration exceeds 30 per cent.
   
   *Export Market:* There is no necessity to drain the cooling system of anti-freeze unless this is a requirement of the shipping authority; the concentration of anti-freeze used during the winter months is adequate to meet world-wide conditions.

12. Windows
   
   See that all windows are closed, except the driver’s, which should be left 1 in. open to allow the interior of the car to breathe during the summer months. All windows should be closed during the winter. This is a general recommendation for temperate and cool climates. Obviously it is capable of considerable modification according to local climate and season. The essential is that local practice should ensure that the body interior has some opportunity of breathing without inviting the ready entry of dust, rain, or snow.

13. Doors
   
   See that all doors are properly closed and locked.

   **NOTE.**—A number of the foregoing recommendations are discretionary in the case of vehicles which it is known definitely will remain on the site for only three weeks or less. They should be applied to all vehicles which will stay on site for three weeks or longer. Immediate use of a vehicle history card, the marking of the vehicle with its date of arrival, the transfer of the battery to the battery maintenance store, and the attention to tyre pressures are, however, regarded as essential for all vehicles. The first two are in the interests of proper records of vehicle movements and the third because battery condition will be an unknown factor dependent upon what has happened to the vehicle previously.
Section 4
Monthly Attention

1. **Tyres**
   Adjust the tyre pressures to the correct parking figures.

2. **Body and trim**
   Roll the vehicle forwards or backwards through a quarter of a revolution of the wheels to bring a fresh area of the tyre into contact with the ground. Alternatively, jack up and turn each wheel through a quarter of a revolution. In either case, the date of the operation should be recorded, preferably on the wall of the tyre (or of the tyre gaiter where fitted) at the point nearest the ground so that the second successive move does not bring the original area into contact with the ground again.

   Examine the vehicle for signs of deterioration; rectify as practicable and/or take measures to restrict further development in those cases where immediate attention is judged essential. Attention to general paint rectification is best left, other things being equal, until the vehicle is being finally prepared for sale, and perfunctory attempts at patching or recovery with the limited resources available on the site are not normally to be commended.
Section 5
Attention Immediately Prior to Removal

1. GENERAL
   (a) Masking tape. Remove from air cleaner intake, exhaust tail pipe, and fuel tank air vent.

   (b) Cooling system. If filled with anti-freeze, check the level and top up if necessary. If drained, flush out, taking particular care to see that all drain cocks are unobstructed. Close the cocks and fill up with water. In climatic conditions where frost may be expected, fill the system with a recommended anti-freeze.

   (c) Battery. Check electrolyte level and condition of charge, recharging and greasing terminal posts where necessary; avoid over-tightening the clamping screws.

   (d) Tyres. Examine, where necessary, recording any surface cracks and/or unsatisfactory condition of the tread on those areas which have been in contact with the ground. Adjust pressures to normal.

   (e) Oil. Check levels in engine, gearbox, and back axle and also the transmission casing of the tractor.

   (f) Hydraulic system. Brakes and clutch—check the levels in the supply tanks; check the action of the foot and hand brakes, and clutch.

   (g) Wheels. Check securing nuts for tightness.

   (h) Electrical equipment. Check the operation of all lights and accessories.

   (i) Fuel tank. If storage has been prolonged, examine for sludge; if found, refer to Appendix II.
(j) General. Examine for defects and deterioration and record for attention of the Dealer.

2. DIESEL UNITS

   Procedure to be adopted after long periods of storage before putting engines into service (including CKD and replacement units).

   (a) Masking tape. Remove from air cleaner intake, exhaust tail pipe, and fuel tank air vent.

   (b) Fuel system. Bleed thoroughly.

   (c) Valve rocker gear. Liberally cover with HD 20 lubricating oil.

   (d) Engine. Start up and run under part throttle, i.e., above idling—approximately 1,000 r.p.m.—until thoroughly warmed up before driving off.
Section 6

Removal of Barrier Coatings

These requirements relate solely to the removal of the protective coatings, and are additional to the normal attention required prior to the removal of the vehicle from storage.

One of the following procedures must be used after hosing off accumulated dirt.

1. (a) Swab with white spirit, using a soft cloth; do not use excessive solvent or allow the solvent to soak into the wax any longer than is necessary.

   (b) Repeat, using a soft cloth soaked in white spirit; this will remove remaining wax and ensure a satisfactory gloss.

2. (a) Swab with Ardrox 607, supplied by Brent Chemicals Limited, Commerce Road, Brentford, Middlesex, diluted in the ratio of one part Ardrox 607 to six parts paraffin, using a soft cloth or synthetic cellulose sponge, e.g. 'Spontex'; alternatively the material may be spray applied, suitable equipment being the pressurized spray unit reference number BCP.53 also obtainable from Brent Chemicals Limited.

   (b) Gently work the liquid into the wax with a synthetic cellulose sponge working from the bottom of the vehicle upwards.

   (c) Wash the treated surfaces with warm water (100°-120° F.) to complete removal of the wax.

3. (a) Spray with, or sponge in gently, an approved emulsifying agent, e.g. Ardrox 607, or Old Salt from Penetone-Paripan Limited, P.O. Box No. 10, Egham, Surrey, at the recommended dilution; suitable equipment is supplied by Brent Chemicals Limited, Cat. No. BCP.53. Do not soak longer than is necessary, 20-30 minutes normally being sufficient.
(b) Steam clean the treated surfaces with wet steam comprising approximately 75 per cent. hot water and 25 per cent. steam supplied from an approved generator, the 'Handy-Dandy' model supplied by Wickham Industrial Equipment Limited has been found satisfactory, using a 3 in. flat jet fitted with a rubber shroud.

(c) Remove any trapped water with compressed air and wipe over with a chamois leather; any traces of wax remaining should be removed with B.M.C. Car Polish.

4. (a) Fill the detergent tank of an approved type of steam generator (see 3 [b]), with neat Gensol 15 supplied by Fletcher Miller Limited, Alma Mills, Hyde, Cheshire.

(b) Proceed as in 3 (b) and 3 (c), adjusting the detergent control valve to give a rate of feed of 1-1/4 gallons of detergent per car.

Other detergents approved by B.M.C. for this purpose may be used, in which case the rate of feed must be adjusted, so that the dilution of the resultant mixture complies with the makers' recommendations for that material.
Appendix I

Lucas Battery Storage, Maintenance, and Preparation

1. CHARGE
   Maintain consistently in 80 to 100 per cent. fully charged condition by giving freshening charge at least once per month. This freshening charge should be at half the normal charging rate and should be continued until the specific gravity remains constant for three hours.

2. TOPPING UP AT SUB-ZERO TEMPERATURES
   Top up with distilled water or pure melted snow. If possible, do this on charge with cells gassing, so that the distilled water mixes with the acid before it can freeze.

   NOTE.—A non-gassing cell may be topped up if the level is already at the top of the plates and if only a teaspoonful of water is added at a time. Never top up a non-gassing cell if the level of the electrolyte is below the top of the plates.

3. PREVENTION OF FREEZING
   Never allow the specific gravity of the electrolyte to fall below the figures quoted in the table at the temperature shown.

<table>
<thead>
<tr>
<th>Specific gravity</th>
<th>Temperature of electrolyte</th>
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<tbody>
<tr>
<td>1.150</td>
<td>-9.5° C.</td>
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<tr>
<td>1.200</td>
<td>-17.7° C.</td>
</tr>
<tr>
<td>1.225</td>
<td>-23° C.</td>
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<tr>
<td>1.245</td>
<td>-29° C.</td>
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<tr>
<td></td>
<td>+15° F.</td>
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<td></td>
<td>-10° F.</td>
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<td>-20° F.</td>
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4. LUCAS DRY-CHARGED BATTERIES
   No intermediate maintenance required. To put into service, break the seals and fill the cells to the top of the separators with pure dilute sulphuric acid of
S.G. 1·275 at 15·5° C. (60° F.) Batteries which have been stored at 15·5 to 37·8° C. (60 to 100° F.) may be put into service immediately. Batteries stored in temperatures lower than 15·5° C. (60° F.) should be allowed to stand in a warm room until room temperature is attained.

NOTE.—Lucas dry-charged batteries are up to 90 per cent. charged, but if time permits after filling up a freshening charge at 4 amps. is beneficial.

Appendix II

Removal of Gum Deposits in Petrol Tanks

If petrol is allowed to stand in fuel tanks for an excessive period, gum deposits may develop. Two suggestions for solvent solutions are given, solution (b) being the more effective.

(a) Equal parts of acetone and methylated spirits.
(b) Equal parts of acetone, methylated spirits, and benzole.

Additionally, proprietary preparations marketed by the well-known oil companies are available.

If either of the two solutions is allowed to stand in the fuel tank up to 24 hours the solvent action should be complete. Draining and flushing should then obviate the necessity for removing the tank from the vehicle. In severe cases fuel supply lines, petrol pumps, and carburetters may require internal cleansing.

NOTE.—In no circumstances should caustic solution be used for removing any deposits in tanks and fuel supply systems.