

MAINTENANCE MANUAL

CANADIAN MILITARY PATTERN VEHICLES



15 CWT. 4x2 30 CWT. 4x4
15 CWT. 4x4 3 TON 4x4
HEAVY UTILITY 4x4
FIELD ARTILLERY TRACTOR
4x4

General Motors Products of Canada, Limited

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Maintenance Publications Applying to Previous Vehicles

Service instructions for vehicles built prior to the issue of this manual were contained in the following "Instruction Books" and "Maintenance Manual":—

Department of National Defence (Canada)
Editions 1 to 5 inclusive

British War Department
Editions 1 to 3 inclusive

Maintenance Manual MB-C1

In as much as each new edition of the above mentioned Instruction Books was retroactive to the start of the vehicle production, the fifth edition of the D.N.D. series and the third edition of the B.W.D. series contained complete instructions on all vehicles built prior to the release of the Maintenance Manual MB-C1.

The MB-C1 Manual contains complete information for those vehicles for which it was designed. See Publications Plate.

MB-C2

MAINTENANCE MANUAL

FOR

CANADIAN MILITARY PATTERN VEHICLES

15 CWT. 4 x 2 30 CWT. 4 x 4

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HEAVY UTILITY 4 x 4

FIELD ARTILLERY TRACTOR 4 x 4



Prepared under the direction of
The Director General of Army Engineering Design
Ottawa, Canada

**General Motors Products of Canada, Ltd.****SECTION INDEX**

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INTRODUCTION

This Manual MB-C2 has been re-written and revised to include latest procedures and tools and to include all changes in design made since the MB-C1 Manual was printed. It, therefore, does not supersede the MB-C1 Manual.

All material and illustrations relating to the new design above-referred to are identified in the Manual by dots appearing in the margin opposite the text or illustrations. Material identified by dots should not be used for prior vehicles without first determining whether or not such new design, parts or assemblies, were used on the vehicles for which the information is required. All information not identified by dots may be used for all prior vehicles.

This Manual is arranged in sections as shown in the "Section Index" on the preceding page. A complete index of the individual subjects is located at the end of the Manual.

A ruled page is provided at the end of each section for the notation of service information supplied in bulletin form.

Publications Plate

- To accurately identify this Manual with the vehicle or vehicles to which it applies, a "Publications Plate" as illustrated below, has been assembled to the top of the instrument panel. This plate will be stamped with the symbol shown on the cover of the applicable manual (in this case MB-C2). The correct Spare Parts List and Driver's Handbook are indicated in the same manner.

PUBLICATIONS APPLYING TO THIS VEHICLE	
SPARE PARTS LIST	<input type="text"/>
MAINTENANCE MANUAL	<input type="text"/>
DRIVER'S HANDBOOK	<input type="text"/>

- When making reference to a Manual, Parts List or Driver's Handbook, first determine that the identifying symbol corresponds to that stamped on the "Publications Plate."

Model Identification

Model Designation	Rated Capacity and Type	Wheelbase	G.M. Series Number
C-15	15 CWT. 4 x 2.....	101"	8421
C-15A	15 CWT. 4 x 4.....	101"	8444
C-30	30 CWT. 4 x 4.....	134"	8441
C-60S	3 TON 4 x 4.....	134"	8442
C-60L	3 TON 4 x 4.....	158"	8443
C-GT	F.A.T. 4 x 4.....	101"	8440
C-8A	Heavy Utility 4 x 4.....	101"	<div style="display: inline-block; vertical-align: middle;"> <div style="display: inline-block; vertical-align: middle; font-size: 3em;">{</div> <div style="display: inline-block; vertical-align: middle;"> 8445 (Complete Body & Chassis) 8448 (Cab & Chassis Only) </div> </div>

The model designations quoted above (i.e. C-15, etc.) will be used throughout the manual to identify the specific vehicle being discussed.

The illustrations and brief descriptions on the following few pages will be of assistance in identifying the different models.

General Description

The Canadian Military Pattern Vehicles described in this manual are primarily designed for cross country service over unimproved roads and difficult grades, trailing reasonable loads if desired.

All of the vehicles described in this Manual are powered with a 6 cylinder, Chevrolet 216.5 cubic inch, valve-in-head engine.

The power from the engine is transmitted through a single dry disc clutch to the transmission, which has four forward speeds and one reverse. The transmission is then coupled to a transfer case by means of a short propeller shaft and two needle bearing universal joints (except Model C-15, which is not equipped with a transfer case). There are two types of transfer cases used; a single speed and a two speed, both equipped with a front axle declutch, so that the front axle can either be engaged or disengaged. Some vehicles are equipped with a winch, which is driven through a power take-off in the transfer case, the drive being taken through a short propeller shaft and the universal joints. On model C-GT the drive is taken through a rubber cushioned joint assembly. The engagement of the power take-off is controlled by a lever in the cab.

The drive of the vehicle is normally taken to the rear axle only; the front axle being engaged to provide traction to all four wheels only under certain operating conditions.

The front and rear axles are of the full floating type, having identical front and rear differentials. The front axle is equipped with constant velocity universal joints to enable the front wheels to be turned for steering while they are driving.

These vehicles are equipped either with run flat (R.F.) or pneumatic tires, depending upon the type of service to which they will be subjected. The different types of tires that are used are:—Run Flat, Cross Country and Sand Tread tires.

The foot brake is hydraulically operated and acts on all four wheels. On some vehicles a vacuum booster cylinder is attached to the brake linkage to assist in brake application. The hand brake or emergency brake is mechanically operated and is independent of the foot brake. The hand brake acts on the rear drive shaft of the C-30, C60-S, C-60L, C-GT and acts on the rear wheel brake shoes of the C-8A, C-15 and C-15A.

The chassis and cab are mounted to the axles on semi-elliptic leaf springs, which permit sufficient flexibility of the wheels to absorb road bumps and yet are strong enough to support the weight of the chassis, cab and load which it may be carrying.

The whole suspension is adequately controlled by double acting piston type hydraulic shock absorbers.

Assist springs are used on some vehicles to provide sufficient suspension when the vehicle is fully loaded and yet provide sufficient flexibility when the vehicle is running light.

Various types of bodies and equipment are optional with each vehicle. The following few pages will give an idea of the various options which are available.

The wiring and electrical units of all vehicles described herein are operated with a 6 Volt negative ground system.

All information essential to the proper maintenance and repair of these vehicles is contained in this Manual. All who are charged with the responsibility of performing such service, or with driving the vehicles, should study this book thoroughly and refer to it frequently.

Knowledge thus gained and applied will help to "keep them rolling".



C - 15, C - 15A

The above illustration shows a three-quarter front view of a Model C-15 (15 CWT, 4x2) Army Truck with a Van type body option.

Model C-15A (15 CWT, 4x4) has the same appearance as the C-15.

Both of these Models have a 101" wheelbase Chassis, allowing for greater "manoeuvrability" and less unsupported weight between front and rear axle.

The Model C-15A, has four driving wheels, necessitating the addition of a transfer case to drive the front axle when needed.

Some of the body options available with these Models are:—Van, Office, Water Tank, Wireless, Cable Layer, Personnel and General Service.



C - 30, C - 60S, C - 60L

The above illustration shows a three-quarter front view of the model C-60L (3 ton 4x4 lorry), equipped with a General Service body.

The Model C-60S (3 ton 4x4 lorry) is similar to the C-60L, except for the differences in wheel base, the C-60L having a 158" wheelbase and the C-60S having 134" wheelbase.

The Model C-30 (30 CWT. 4x4) has a 134" wheelbase and is similar to the C-60S except for the load capacities.

These three vehicles are equipped with two speed transfer cases to provide an additional gear ratio when needed.

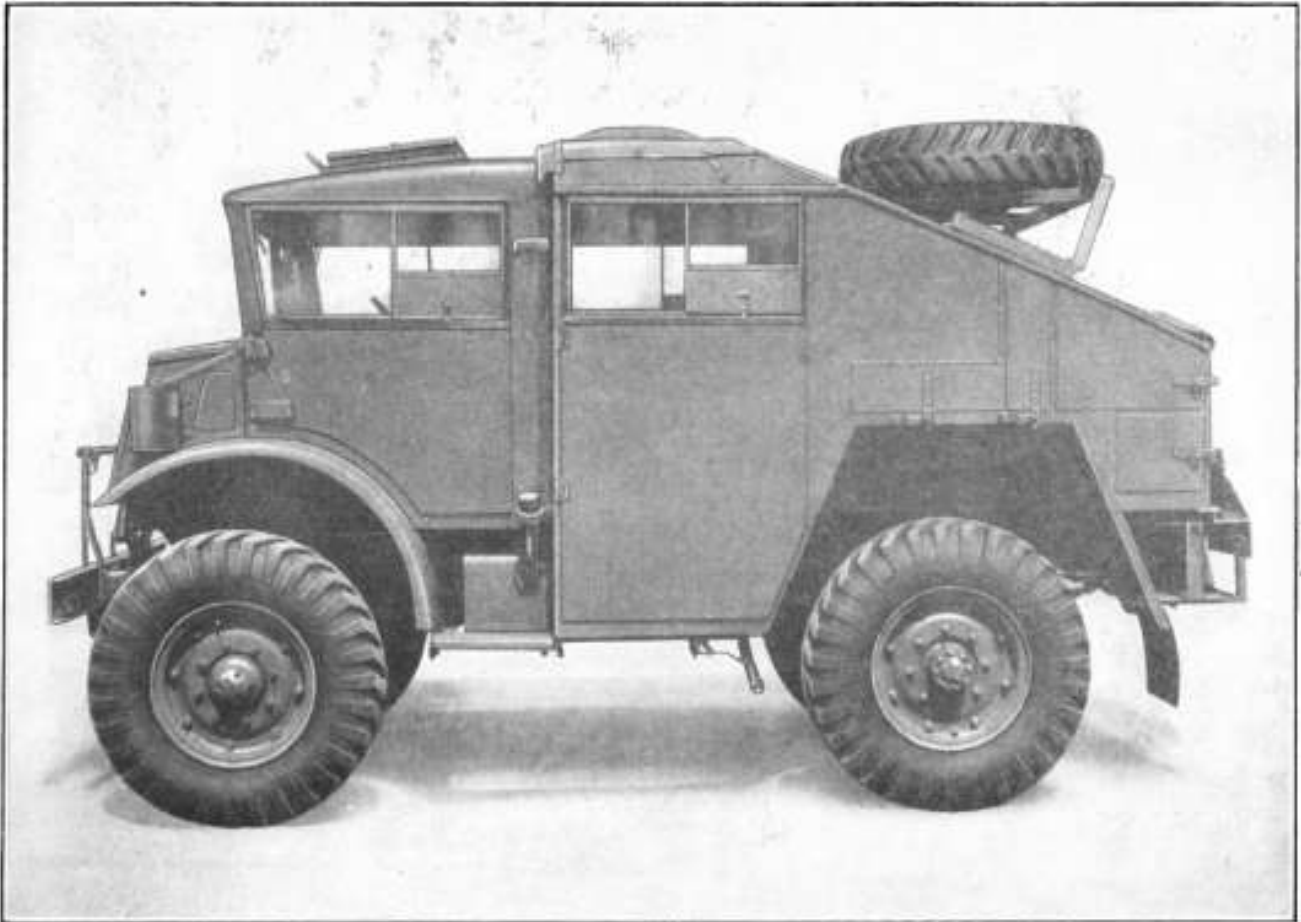
A winch option is used on Model C-30 when it is equipped with a light anti-aircraft body. A winch is also used on Model C-60S when equipped with a wrecker body and on Model C-60L when built with a General Service body having special equipment.

The various body options available with each Model are as follows:—

C-30 —Office, Light Anti-aircraft, Stores, Cable Layer, Wireless, General Service, Engineers and Derrick.

C-60S—Dump, General Service, Stores, Wrecker, Derrick and Engineers.

C-60L—Dental, General Service, Stores, Petrol Tank, Workshop, Wrecker, Water Tank, Office, Ambulance, Anti-tank Portee, Derrick and Engineers.



C - GT

The above illustration shows a Model C-GT (Field Artillery Tractor 4 x 4) which is built on a 101" wheelbase Chassis. The body is built in two halves, the front or cab half mounted on springs; the rear half mounted solidly to the frame. This permits normal twisting of the frame without undue body strain.

The Field Artillery Tractor is equipped with a power operated winch, driven from the transfer case through a power take-off and drive shaft.

This vehicle is equipped with a two speed transfer case, giving a gear reduction in addition to that of the transmission.

The Field Artillery Tractor, in actual service, is used for hauling guns, ammunition boxes and gun crew.

A portee body option can be used on the C-GT chassis, using a hand operated winch in place of the power operated type.

The portee body is equipped with a track on which a gun may be loaded for transportation.



C - 8A

The above illustration shows a C-8A (Heavy Utility 4 x 4) vehicle equipped with a "Personnel" body. This model is built on a 101" wheelbase chassis.

The chassis of this vehicle is used for three different body options namely: Personnel, Ambulance and Wireless. The chassis and cab only is used for various body options.

The Personnel body has seating capacity for six men and the driver.

NOTE—The C-8A chassis is provided on certain orders with a standard Canadian Military Pattern cab instead of with a complete body as illustrated.