

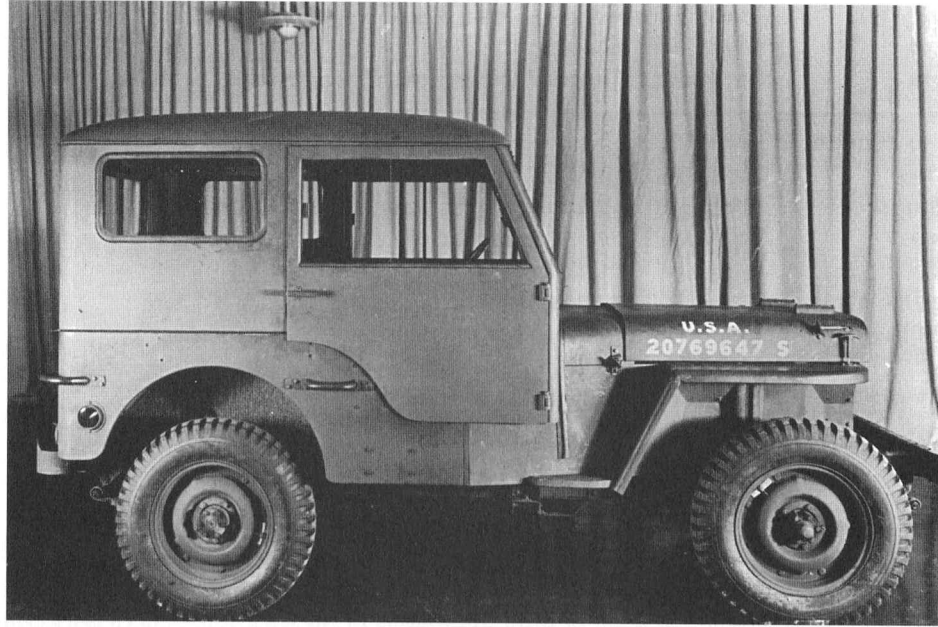
# THE MILITARY JEEP

Model MB - GPW

*An illustrated guide to its features  
and evolution, 1941-1945*

By Lawrence Nabholz

**REVISED EDITION**



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## TERMINOLOGY

In relation to months of the year:

- Early - January, February, March, April
- Mid - May, June, July, August
- Late - September, October, November, December

In relation to changes in parts:

- Early - Parts used at start of production.
- Standard - Parts used in the majority of vehicles. Std.=Standard
- Late - Parts used late in production.

In this book the single word GUARD means radiator guard.

A reference like this: 803 p14 means TM9 803 page 14

1803A means TM9 1803A

It is recommended that the reader obtain copies of TM9 803, TM9 1803A and B.\*

The word "JEEP" is a trademark of the Chrysler Corporation, it was in common usage as early as 1938 (a type of Santa Fe Railroad locomotive). Its use in this book is for the sole purpose of identifying a military vehicle built in the years 1941 through 1945.

\*These three manuals are available as a single publication from Portrayal Press.

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# CONTENTS

This book is arranged by contracts as this seems to be the best way to define the evolution of the vehicle, and illustrate its changes. Years are also shown. In some years vehicles were built on several contracts, each contract slightly different. One contract of Ford extended over part of three years. With only slight differences, the vehicles of this contract were basically identical.

## MB

<b>CONTRACTS</b>	<b>PAGE</b>	<b>YEARS</b>	<b>PAGE</b>
W-1 .....	5, 7, 9	1941 .....	5, 7, 9
W-2 .....	11	1942 .....	11, 13
W-3 .....	13	1943 .....	15, 17, 19
W-4 .....	15, 17	1944 .....	21, 23, 25, 27
W-5 .....	19, 21, 23, 25, 27	1945 .....	29, 31, 33
W-6 .....	29		
W-7 .....	31, 33		

## GPW

Pre-Production .....	35	Pre-Production .....	35
F-1 .....	37, 39, 41	1942 .....	35, 37, 39, 41, 43, 45, 47
F-2 .....	43, 45, 47	1943 .....	51, 53
F-3 .....	49	1944 .....	55
F-4 .....	51, 53, 55	1945 .....	57, 59
F-5 .....	57, 59		

## CHRONOLOGY

- 1940 Nov. Contracts issued for 1500 pilot models each to Bantam, Ford and Willys  
1941 June Willys delivers first of 1500 model MA. Serial numbers 78401-79900  
July Following field testing of the pilot models, the QMC Indicates interest in 16,000 of the Willys design to be produced by Ford on a negotiated price contract. OPM refuses the QMC proposal and directs that competitive bids be received from all companies involved. Willys is the low bidder. QMC prefers to award contract to Ford because of slow delivery on the pilot Willys contract. OPM again refuses. A late bid by Checker Mfg. Company in collaboration with Bantam is rejected since they had not produced their own pilot model. William S. Knudsen, the Director of OPM, directs that contract go to Willys with an option to increase by 50%.
- Aug. Willys delivers last of 1500. And begins design work on an improved model which became the MB.  
Ford proposes that it be given the contract for the additional 8000.  
These would be model GP. OPM rejects this proposal.
- Sept. Willys builds an additional 50 pilot models, serial numbers 85501-85550
- Oct. Willys offers to assist an additional source for the standardized design (MB) by sharing engineering drawings, patents, etc. The only condition was that this other source could only furnish vehicles to the U.S. government.
- Nov. Willys was advised that Ford would be the other source.  
MB enters production.
- 1942 Feb. GPW enters production.
- Apr. Ford produces the largest quantity in a single month 11,195. At this time Willys was producing for Canada, Russia and China.
- Aug. QMC policy will be that all future contracts to either Ford or Willys will be in such quantities that both companies will be in a 50/50 position as regards deliveries.
- QMC - Quartermaster Corps  
OPM - Office of Production Management
- William S. Knudsen- Ford Motor Co. 1910-1921, General Motors 1922-1940. President of GM 1937-1940. With U.S. Government as head of OPM in 1940. In January 1942 he received a direct commission as Lt. General. He was the first person to receive that rank as a direct commission. This was unusual in that he was foreign born. With that rank, his pay increased from \$1 a year to \$9,872 a year!

## MB CONTRACTS

SERIAL NUMBERS	CONTRACT	DATES OF PRODUCTION
100001 - 118XXX	W-1	November '41 - February '42
118XXX - 142XXX	W-2	February '42 - May '42
142XXX - 204XXX	W-3	May '42 - January '43
204XXX - 289XXX	W-4	January '43 - December '43
289XXX - 402XXX	W-5	December '43 - December '44
402XXX - 456XXX	W-6	December '44 - July '45
456XXX - 459851	W-7	July '45 - September '45

All data is approximate, included are 11,000 vehicles built for other nations and other than U.S. Army.

### MB SERIAL NUMBER RANGE BY MONTHS IN THOUSANDS - Last three digits omitted

	1941	1942	1943	1944	1945
January		108-116	200-206	293-301	402-412
February		116-122	206-216	301-310	412-420
March		122-132	216-222	310-319	420-430
April		132-140	222-230	319-327	430-438
May		140-147	230-238	327-337	438-445
June		147-155	238-246	337-346	445-451
July		155-165	246-254	346-356	451-456
August		165-170	254-261	356-366	456-459851
September		170-178	261-269	366-375	
October		178-185	269-278	375-383	
November	100001-101	185-192	278-286	383-392	
December	101-108	192-200	286-293	392-402	

These are frame numbers; engine numbers do not match. Generally, engine numbers are higher due to the large quantity of MB engines being used in other applications.

See graph page 84



## CONTRACT W-1

Nov. '41 MB

Prior to serial number MB103546

Best technical reference:  
TM-10-1206, TM-10-1207

Body: ACM type 1, fuel tank stone guard with square corners  
Guard: Early type A-2858 (see cover photo)  
Steering wheel: Early type A-535 (black)  
Hood: Early type A-2836 with under hood air deflector A-2977 and jute seal  
Hood blocks: Early type A-2922 (green rubber)  
Frame: Early type A-1142 with welded assembly battery support A-1138  
Windshield: Early type (short) A-2796 Windshield-top fasteners A-2924  
Windshield to hood catch: Early type, long A-2989  
Fenders: Early MB type with attached radiator side air deflectors  
Springs: Front-8 leaf, rear-9 leaf with MA type rebound clips  
Rear Ax clamp: Early - two screw hole mounting  
Top bow pivot: Early A-2901 with thumbscrew A-2473 (5/16 NF thread)  
Footman loops: Early, some with square shoulders  
Wheels: Early A-1799  
Rear axle shaft: Early, with end flange cut away to match hub  
Reflectors: C-B Tiger eye  
Skid plate: Early, narrow  
Firewall radio filter group: Early, A-1517 with hinged door.  
Firewall insulator: Three pieces A-2580, A-3132, A-3157  
Firewall grommets: Rubber, in various sizes  
Tie rod end seals: Rubber A-843  
Buckles, shovel, ax and top stow: Brass, showing patent date in early 1900's  
Front top bow bracket: Top bolt is unusually short 5/16 NC x 1/2, only two used per vehicle. Nut on bottom bolt is special nut 3/8 NC, oversize across the hex portion.  
Clutch Housing: MA type  
Top and doorway curtain: Willys type construction

### Author's comment:

Vehicles on this contract are the most difficult to restore properly due to the many changes and the hard-to-find rubber and brass parts.



## CONTRACT W-1

Nov. '41 MB

Prior to serial number MB103546

Muffler: Early, round A-1146

Transmission: Early, right side fill and drain plugs

Frame serial number plate: On left frame member gusset behind bumper

The six round head screws visible above the right side body step are for the early type fire extinguisher bracket.

Under frame skid plate: Early, narrow without additional exhaust pipe guard

Spring shackle bushings: Early, with pressed-in grease fittings

Windshield glass: Each pane is identified with the logo of the manufacturer L-O-F and date in the lower outboard corner

Under hood air deflector: Type I used with early windshield

Blackout marker lights: early type base

Parking brake: Small drum.

Windshield adjusting arms clamping: Cup and rubber washer.

### The T-84 transmission

Prewar, the T-90 was the heavy-duty option in Willys trucks.

There are several possible reasons why it was not used in the MB.

Cost: Willys was trying to keep the price of the vehicle down for favorable comparison in the initial bidding.

Chassis design: The chassis of the MA with a column shift T84 set the dimensions of the MB chassis including power plant location and drive shaft lengths.

Field servicing: The rebuild of the T-90 required a special tool to position the 88 needle rollers. The T-84 was simple to repair, needing only the A-1492 wrench that was included in the tool kit. This wrench fitted the "Bristol" head socket screws for the shift rail forks.

Weight: Willys was trying every means to reduce the vehicle's weight.

Height: The lesser height compared to the T-90 allowed for greater ground clearance and a lower body floor.

The T-84 was adequate for the original 1940 concept of the 1/4 ton 4x4. To be used for reconnaissance and as a prime mover for the 37mm gun, it was not designed for the many difficult jobs it performed.

Its faults were: Shift rails in the case limited the size of the gears; small case meant small lubricant capacity (partly corrected with the late case marked "H"); use of "free-roll" bushings in the cluster gear; use of a ball bearing on the output shaft permitting end play to develop.



## CONTRACT W-1

Dec '41 MB

Typical of MB103546-MB118600

Windshield: Std. type (tall)

Hood: Std type - Note screw heads at front for under hood air deflector

Doorway strap eyebolt: Vertical- MB positioning

Floor seals, transmission, transfer shift levers and accelerator pedal: Rubber

Seat cushions: Early, with padding only -no springs. Zippers in all cushions

Fire extinguisher: Right side on bodies without glove box

Light switch knobs: Metal with engraved lettering filled in white

Ignition switch: Key type - Key marked "H700"

Choke-throttle knobs: Metal, two part construction (some brass) with raised letters. Letters painted white

Gages: Autolite

Speedometer: Autolite with early dial

Generator: Early, with oil cups at front and rear

Fuel tank: Early, with small cap

Rear seat: No provision for tire pump

Tool locker covers: Each have two short hinges

Body: Caged nuts and tapping blocks were not used on early bodies except for driver-passenger seats, front fenders and hood

Transfer shift levers: Small diameter A-968,A-969

Under hood air deflector; Type II used with std. windshield

### MB Hardware

Hex head bolts have various head markings depending on the manufacturer.

Among those in use in '41 through '43 were TR, <sup>A</sup>TR, <sup>C</sup>TR, AA, <sup>TR</sup>20

In '44 and '45 the usual marking is EC.



## CONTRACT W-2

Feb. '42 MB

Typical of MB120700-MB146774

Best technical reference:  
TM10-1512,1513

Early '42 GPW is similar but with Ford in rear panel and with either early Firestone or Ford tires.

Body: Fuel tank stone guard with rounded corners.  
Windshield to dash clamps are cast bronze.  
Rubber tail light grommet (A-627) not painted.  
Early fire extinguisher bracket (one band clamp) mounted left side on vehicles with glove box.  
Steering wheel: Early, black plastic.  
Spare wheel support: Std. type with lock.  
Wheels: Std. type.  
Firewall insulator: Type II.

Author's comment: This was a Defense Assistance contract with the majority of the vehicles being built for other nations. Russia, China and Canada. It included the rarest MB's (lowest production quantity). Serial numbers MB118600-120700. See page 21.

This picture illustrates the problem of dating a vehicle using the registration number. With its std. wheels and glove box, it would have a serial number higher than MB120700 (W-2) but it has a registration number from contract W-1. Does it have the early guard or the std. guard? There is no way to know.



**CONTRACT W-3**  
**May '42 MB**

Typical of MB from  
MB125809-MB163750

Photo taken in North Africa

Guard: Std. type  
Front fender: Willys type without holes for radiator side air deflectors  
Hood blocks: Rubber  
Windshield cover: Std. Willys type. In this photo it is being used to store personal items!  
Muffler: Std. type oval  
Blackout marker lights: Std. type base  
Windshield adjusting arms clamping: A-4260 "waved" washers used after Aug. '42

**Universal Joints**

Missing from most JEEP tool kits is the grease gun adapter A-6151 (early) or A-11765 (late). The reason for including this item in 500,000 tool sets tells an interesting story about JEEP development by Willys. The U-joints of the MA did not have grease fittings. To lubricate the joints, the prop shafts had to be removed from the vehicle, each joint removed from the shaft, and each joint disassembled for cleaning. And using great care that none of several hundred needle rollers were lost! Then came repacking, reassembly and installation. It is doubtful if very many vehicles received this service. The arrival of the MB with grease fittings was welcomed by mechanics. The push type grease gun furnished in the tool kit could not develop high pressure that would damage the fragile cork seals of each journal. But not so with the high pressure power grease guns of shops. See page 46. To prevent this damage, the adapter was to be used between the power gun and the fitting. High pressure was not possible because the coupler did not lock on the fitting but merely pressed against it. The late type adapter locked on the grease gun.

Proper installation of U-joints is with all three fittings of each shaft in approximately the same plane.



**CONTRACT W-4  
JUNE '43 MB**

Typical of MB after mid-'42

Photo taken in England

Best technical reference:  
TM10-1512, TM10-1513, '43 versions

Hood: Std. type

Note row of screw heads between hood blocks for std. type air deflector used with std. guard

Hood blocks: Std. type - wood with fabric insert after MB218345

Exhaust: Oval muffler

Body: ACM type I - it is possible that caged nuts and tapping blocks were being used at this date The four bolts and special washers A-7715 on right side panel above muffler are for the radio terminal box.

Windshield: Std. type with stamped steel dash clamps

Wipers: Individual hand type

Springs: Std. type with wrap-around rebound clips

Radio terminal box after MB217543

Air deflector: Type III - without seal strip

Spring shackle bushings: Std. type after Apr. '43

Suppression: Type I.

Tools and equipment: See page 80 for the packing list for this contract.

Author's comment:

The JEEP in its most common form, easiest to restore because of the large production quantity and the absence of changes.

**A-6701 Washer - Have you seen one?**

It is possible that a Willys service technician observed the difficulty an Army mechanic was having in replacing the pulley guard at the front of the oil pan. While lying on his back, he was trying to hold together the guard plus six screws and washers and six spacers. Not an easy job! Willys came up with a part that is seldom seen. A-6701 washer was made of thin, stiff fabric with an inside diameter slightly smaller than 5/16". The screw and lockwasher are put through the guard and spacer with the washer on top holding this all together. It can be made of heavy paper.



**CONTRACT W-4  
JUNE '43 MB**

Typical of MB rear panel after mid '42

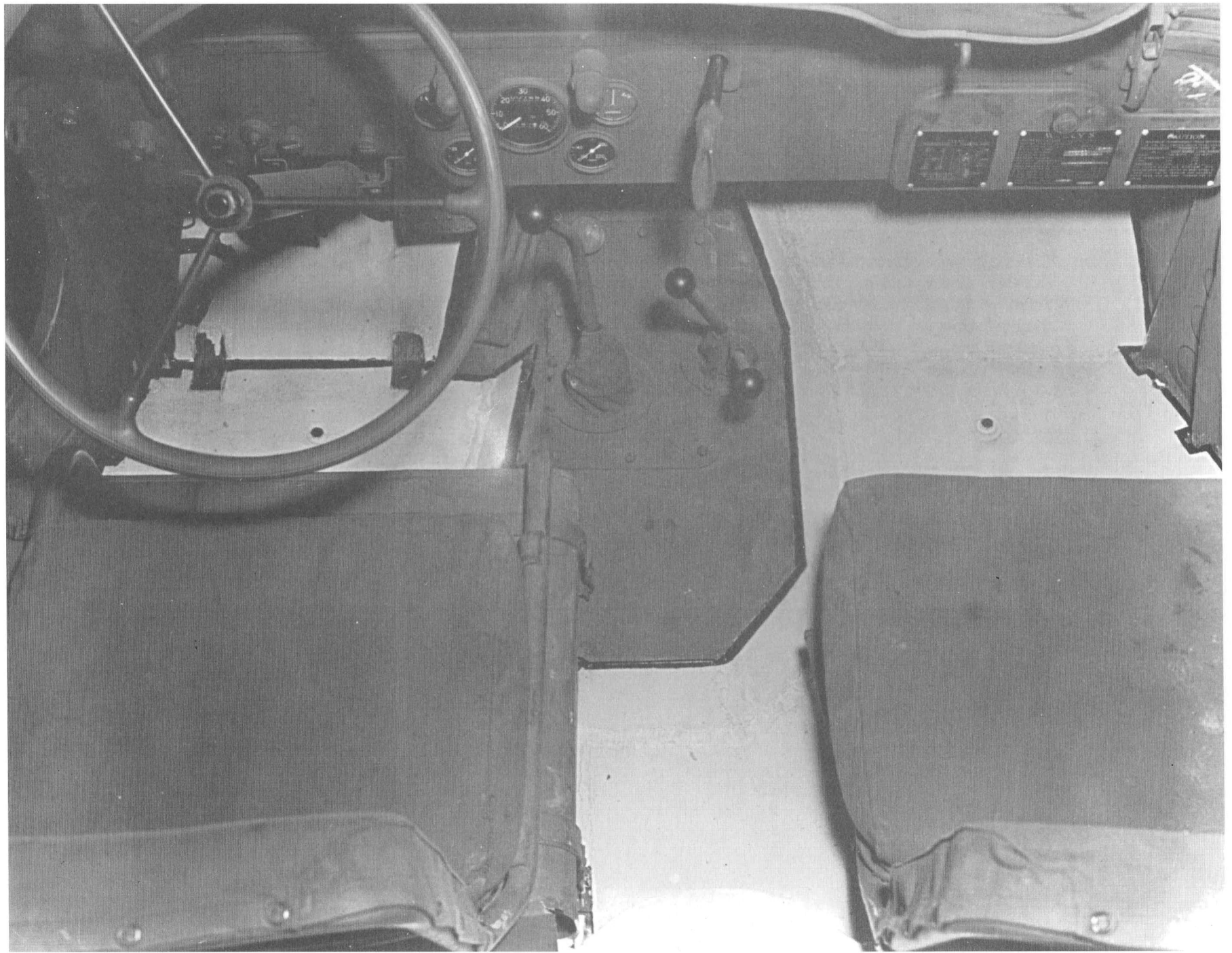
Compare with page 46

'43 GPW is similar but with GPW frame rear cross member.

Body: MB top with glossy binding tape on edges. Compare with page 34 (GPW tape)  
Std. type spare wheel support - three studs  
Gas can bracket and upper support after MB165582  
Body-tail light grommet eliminated in mid '42  
Std. top bow pivot and thumbscrew  
Doorway curtain sockets in black oxide pressed in body after painting  
ACM type I body used through end of '43  
Rear reflectors were repositioned when trailer socket was added. Compare with page 10.  
Round axle shaft end  
Cast differential cover  
Not shown is trailer socket, top bow straps or std. type cast pintle hook

**WILLYS PART NUMBERS**

Part numbers began with A-101 and A-102 for the tail lights of MA and increased to around A-18000. The size of the number gives you a good clue as to when that part was introduced. Large numbers indicate later production, but small numbers do not necessarily indicate early production. Some groups of numbers seem to have been held out for later use. MA parts ended at about A-2800. Many MB body parts were in the 3000-4000 range. Some 5000 group parts were used for early changes in the MB. Numbers were up to 7000 by August '42, 8000 by early '43, 12000 by late '43, 15000 by mid '44. Many of these numbers were used for parts of other Willys military vehicles. And some numbers were used for parts painted Forest Green for USMC vehicles. Four and five digit numbers are common hardware items. Six digit number parts are parts also used on Willys civilian vehicles.



**CONTRACT W-5**  
**Dec. 14 '43 MB292437**

Typical of early '43 to mid '44

Photo taken in England, armor plating in floor.  
Compare with page 52 for GPW of same year.

Pedal-pads: Std. type (cast)

Windshield: Late type with brackets for rifle holder after Sept. '43

Stamped steel dash clamps after early '42

Gages: Autolite - speedometer with short indicator and counterbalance

Plastic choke, throttle and light switch knobs after mid '42

Engraved knobs filled in white

Ignition switch with contoured lever

Fire extinguisher bracket: Std. type with two band clamps

Seat cushions: Springs in cushion and backrest after mid '43

Leather floor boots

Steering wheel: Std type with exposed metal spokes

Pull type light switch

Glove box seal: Std. type cemented to backside of door

Note the unpainted cadmium screws for glove box plates

Round head screw below choke knob is for ignition switch capacitor used with type II suppression which began with this contract

Firewall insulator with type II suppression extends to The glove box. Type III insulator.

### **Firewall Insulators**

- |        |  |
|--------|--|
| Type I | Used only on MB's without glove boxes. Left portion A-3132, Right A-3157, and center cover A-2580.   |
| II     | Used on MB's with glove boxes and all GPW's with type I suppression. The right portion was not used. |
| III    | Used on both makes with type II suppression. Extends to glove box.                                   |



## CONTRACT W-5

Feb. '44 MB

Best technical reference:  
TM9-803, ORD9 G503

Photo taken in Germany

Body: ACM type II

Hood: GPW type

The blackout driving light on right fender is not standard

Compare with page 12 for similar use of windshield cover

Note the binding tape on this MB type windshield cover

Spare tire bracket: Late type with two studs, clamping disc and lower support. See page 32

Parking brake: Small drum.

Front fender: Std. MB type.

Author's comment:

Many features the same as previous MB's but with the change in bodies from ACM type I to ACM type II and change in radio interference suppression from type I to type II. In restoring, some difficulty in finding all of the internal external tooth washers and capacitors used with type II.

### Some very unusual MB's

The approximately 2,100 Vehicles produced at the start of contract W-2 are possibly the most unusual MB's. And would be the hardest to find since most probably went to other nations under this Defense Assistance contract. They had the type I body but with rounded corners in the fuel tank stone guard. And without glove boxes. The tool locker covers had one long hinge. By changing the entire instrument panel, it would be possible to create this body.

Other features are:

- Early (drop center) wheels
- Early frame with welded assembly battery support.
- Early (narrow) under frame skid plate.
- Early air cleaner.
- Early radiator guard.
- Early wiring harness clips.
- Early speedometer, but all other gages were std. type.
- Early top bow pivot with 5/16" NF thread.
- Early BO marker light base.
- Firewall filter group with hinged access panel.
- Early type rear engine support.

The largest problem in attempting to reproduce one of these would be in obtaining the molded rubber parts including shift lever boots, pedal seals, tail light grommets, steering column bushing, and other rubber parts.



## CONTRACT W-5

May '44 MB

Typical of MB  
Mid '44 through early '45

Photo taken in France

Windshield wipers: Hand tandem type A-11433

Hood: Late GPW type with grease gun bracket

Note grease gun in Lincoln civilian packaging; repositioned body-hood bond straps A-11766;  
overspray on air cleaner from final assembly painting of hood hinge

Dash and instrument panel: For a similar panel, see page 18

Top bow pivots: Late type A-3719 using windshield pivot thumbscrew A-2214

Springs: 10 leaf front, 11 leaf rear after Oct. '44

Parking brake: Late type, large drum after Sept. '44

Body: ACM type II after Jan. '44

Light switch: Rotary after Jun '44

The two unpainted areas at front of hood are for grounding on the guard. See similar Ford method page 50.

Spring shackle bushings: Std. type A-8255, A-8256 with threaded grease fitting

### Other Uses for the Willys Engine

MB engines were used in a number of other applications: in air compressors, generators, arc welders, and as the power unit for an eight-man multi-gauge railway maintenance car by Kalamazoo Mfg. Co. These used the MB radiator, electrical units, gauges and fuel tank. They remained in service at military depots until the 1970's.

Among the more unusual uses was the American Marsh Civil Defense fire pump. Designated WILLYS self-contained water pumping unit. Model MB OCD, 500GPM at 250 psi. Serial numbers began MB OCD 10001. These units did not have a radiator. They used a heat exchanger with the water that was being pumped. But they had a fan. This provided draft for the crankcase ventilation. They were unique also in that they were built with .010 undersize crankshafts. This was a way to use cranks that had flaws or errors when ground to standard.



## CONTRACT W-5

Aug. '44 MB

Typical of MB  
Mid '44 through mid '45

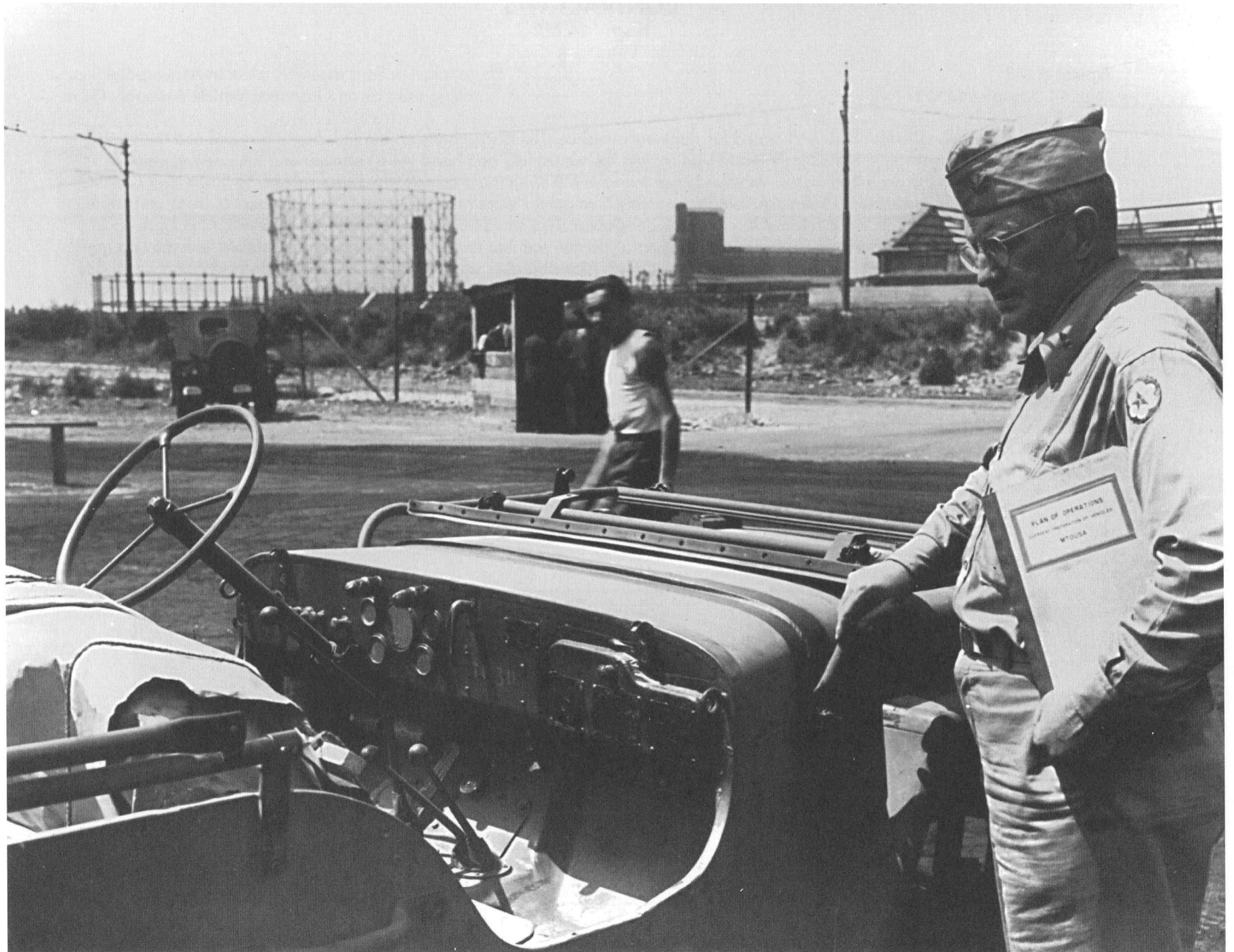
Photo taken in Ford assembly plant in Antwerp Belgium  
being used as an Ordnance Vehicle Assembly Plant

Vehicles were partially disassembled and crated for shipment overseas. The disassembly conserved shipping space and the crating protected the vehicle in handling. In early type crating the windshield and hood were removed and the steering column unbolted from the dash and frame. Vehicles larger than the MB were more completely disassembled. To insure that vehicles were properly assembled, Ordnance Vehicle Assembly Companies were formed. Many of the members of these units were recruited in Detroit. In '44 a returnable crate was developed. This could be reused for another shipment or the crate could be returned knocked down to the factory. In this photo you can see that the vehicle is essentially complete with only the rear panel parts, the wheels and the steering wheel removed. Note the steel straps holding the shock absorbers compressed and the block of wood holding the clutch pedal depressed. This vehicle will be on wheels and operating very shortly! This type crate was open on the sides and end panels. At the same time, depending on the destination, some vehicles were shipped complete as this one in the early style "fully sheathed" crate.

Note the rifle holder on windshield in this position when not enclosed in canvas case. When used with case, the holder was turned end-for-end with the open portion and the zipper on top. See page 58

### **Steering column oil hole cover WO 390510 GPW 3522**

This part was used on all MB's, and on GPW F-1 contract only. Its purpose was to partially cover the slot in the steering column and keep out water and dust. The original lubrication instructions recommended using a grease gun to fill the steering gear until grease appeared after the cover had been removed. Chassis grease is not the best lubricant for a steering gear. The lubricant was changed later to more fluid gear oil. Ford deleted the cover after contract F-1 but it remained on MB's through the end of production.



## CONTRACT W-5

Nov. '44 MB

Typical of MB Mid '44 through '45

Photo taken in Italy

Windshield: Late type with brackets for rifle holder

Pedal pads: Late type stamped steel. Clutch A-8440, brake A-8477

Light switch: Rotary

Note four screw heads surrounding the TP 30 stencil are for the bracket for the Gas Casualties Kit. Similar to the first aid kit.

Small plate above these is the shipping data plate.

Choke, throttle and light switch knobs: Plastic

Late '44 through '45 GPW panel is similar with these differences:

GPW glove box plates are riveted. Rotary light switch escutcheon plate is metal on MB; made of plastic on GPW.

GPW choke and throttle knobs are metal. See page 52.

### Radio Interference Suppression

#### Type I

This type is described in TM10 manuals using bond straps, shielded wiring, a filter group mounted on firewall, and a filter on the regulator. The early filter group A-1517 had a door that could be opened for access to the connections. When the glove box was added, the group was moved slightly to the left and replaced at MB 137916 by A-5980 which had a removable cover.

#### Type II

This type as described in TM9-803, page 221, replaced the filter group with capacitors in several locations. Internal-external tooth washers were used on body bolts and fenders. Shielding was removed from headlight wiring on left fender. It was added to generator-regulator harness. Bond strap A-5037 from starter to generator was replaced by A-7826 which extended to the front engine support. Shielding removed from BO driving light wire. Filter removed from regulator.

MB changed to type II in late '43. GPW changed in late '44



## **CONTRACT W-6**

**Mar. '45 MB**

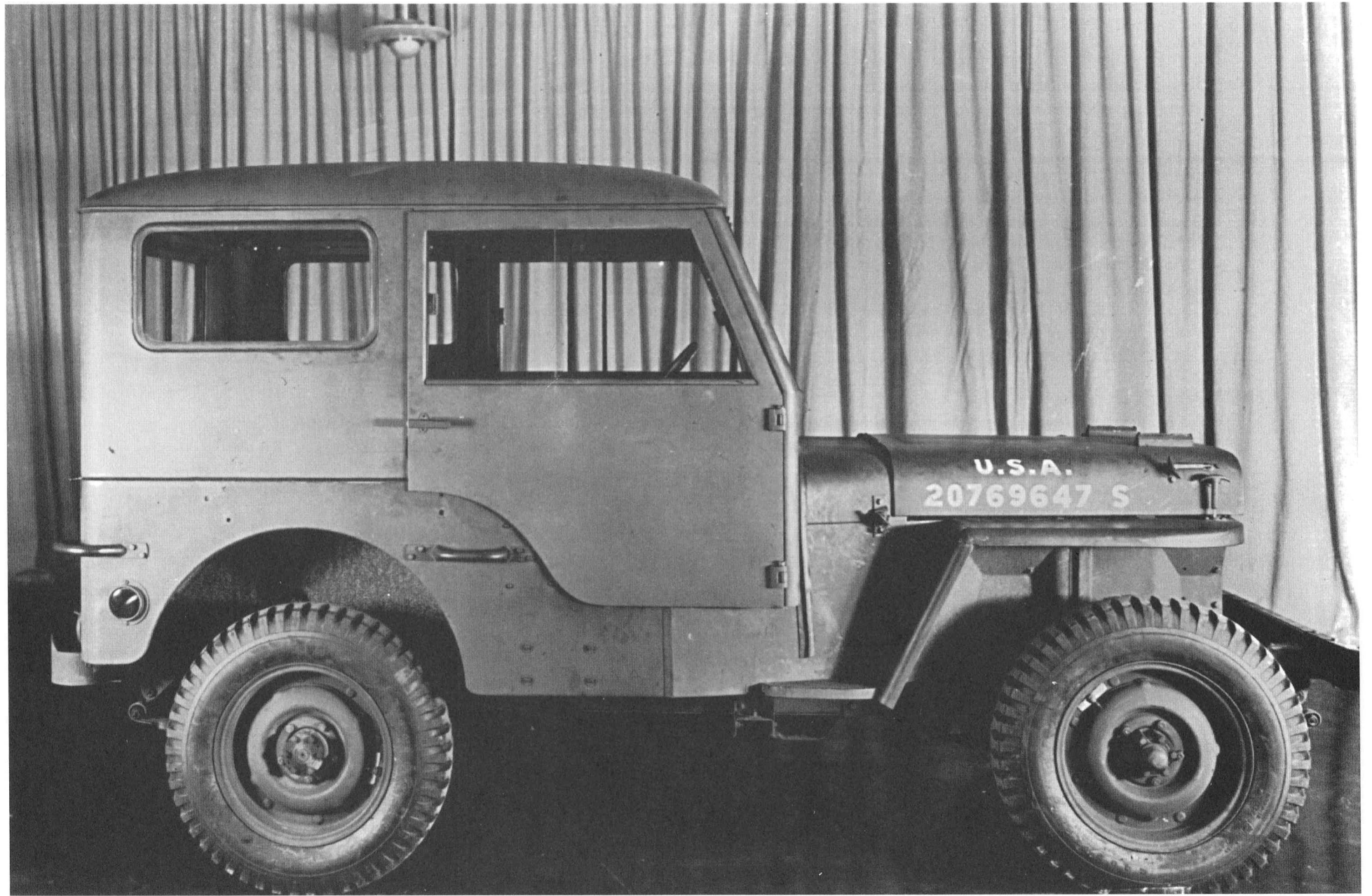
Photo taken in The Philippines after WWII

This vehicle is equipped with the "Cross-country kit" conversion. After the problems with vehicles in the desert in North Africa, the Army began to investigate ways to increase the mobility of wheeled vehicles. Larger and broader tires seemed to be the solution. Some cargo trucks did not have sufficient clearance in the wheel wells to allow a change over. But the JEEP did, and with the replacement of the 1/2 ton Dodge by the 3/4 ton, there was a supply of 7:50 x 16 tires. Initially Ordnance developed "Desert kits" consisting of the tires, tubes, chains, an engine powered air compressor (by Westinghouse Air Brake), hose and storage box behind right front fender, spacers for spare wheel support bracket, a larger spare tire support for vehicles with the late type wheel support bracket (2 stud), and an adapter to correct the speedometer reading. There seems to have been little demand for this kit; it was simplified by eliminating the compressor and hose. The remaining parts became the "Cross-country" kit. Vehicles with this kit were extremely fast! The JEEP was already "high geared"; converted vehicles often could run as fast in second gear as they could in high.

Some vehicles built on this contract had two vacuum windshield wipers. All had a holder for the lubrication guide under the hood left side. A spare wheel, but not the tire, was furnished for vehicles on this contract due to the rubber shortage.

Author's comment:

Restored vehicles are seldom seen today with this conversion. But it does solve the problem of finding the correct original equipment tire. There were many different makes of the 7:50 tire.



## CONTRACT W-7

Aug. '45 MB

With proposed winter enclosure

Photo taken in Willys factory showroom  
of one of the last MB's produced

Fenders: GPW type. Some late MB's used GPW fenders

Hood: GPW type

Exhaust: Deep mud

Registration number: White, with S moved to hood  
Typical MB stencil form with small closed "0"

Reflectors and BO lamp units: "Yankee"

Parking brake: Late type, large drum.

Fuel filter removed from firewall. Ceramic filter unit in tank

Body: ACM type II with hole in left cowl for vacuum wiper line

Note the white painted wheel warning plates and screwdriver type valve caps

A-5986 with valve stem sleeve A-5987

Many of the fasteners on '44 and '45 MB's are marked "EC"

Tools and equipment: See page 81 for the packing list for this contract.

Firewall: These vehicles had the final form of the firewall with no tapping blocks for the fuel filter. And the underside of the floor had no tapping blocks for the std. muffler system.

### Exhaust System

Muffler	Early type	A-1146	Round
	Std.	A-6118	Oval after MB143507
	Late	A-9090	Deep mud after MB401550
Pipe	Early	A-1296	With bond strap A-5027 and separate flange 630526
		A-8101	Without bond strap
		A-10199	With welded flange after MB363871
	Late	A-9142	Deep mud system
		A-9150	



## CONTRACT W-7 '45 MB

Rear panel typical of MB after mid '44. '44-'45 GPW is similar but with cast pintle hook, oval rim reflectors and GPW rear cross member.

Frame: Late MB type with future CJ2A rear cross member but without the PTO openings

Spare wheel support: Late type with 2 studs A-10525 and clamping disc A-11799; and lower tire support.

Clamping disc not shown. The disc is properly installed with its broad outer surface against the wheel.

Hood: Left hand hood block moved two inches to the left to clear vacuum wiper arm

Pintle hook: Late type, a welded assembly

Rear ax clamp: Std. type with four mounting holes

Note the undercoating in rear wheel wells

Author's comment:

These MB's are desirable for rebuilding. Many were sold new in 1946 in Columbus Ohio. "On Wheels" for buyers to drive home, in the crate for buyers who lived at a distance and had them shipped.

### Chemical Warfare

It was expected that chemical warfare would be used against our forces as a last resort towards the end of WWII. This would probably be in the form of airborne vesicant agents. Vehicles sprayed with a vesicant could not be operated until they had been decontaminated with a neutralizing solution.

The Chemical Warfare Service developed a decontaminating apparatus using the case of a 1½ quart carbon-tet fire extinguisher. The Medical Department developed a Gas Casualties kit containing supplies to treat personnel. The kit was packaged in the standard WWII first aid kit box.

Both of these had to be instantly available when needed. And to be protected from contact with airborne agents. The decontaminator was located under the passenger seat. The kit was secured in a bracket behind and sheltered by the instrument panel. After mid-'44 provision for both items was made in MB and GPW. See page 26.



## Pre-production GPW

Typical of vehicles built on Contract F-1

Frame: MB type - Several thousand GPW's were built on frames purchased from the Willys supplier.

Top and doorway curtains: Ford type - Compare with page 4

Rubber parts: Tail light grommet and shift lever seals. Purchased from Willys source.

Tires: Goodyear type shown was not used in regular GPW production.

Frame rear crossmember: See page 46 for Ford crossmember

Rear ax clamp: Two mounting holes

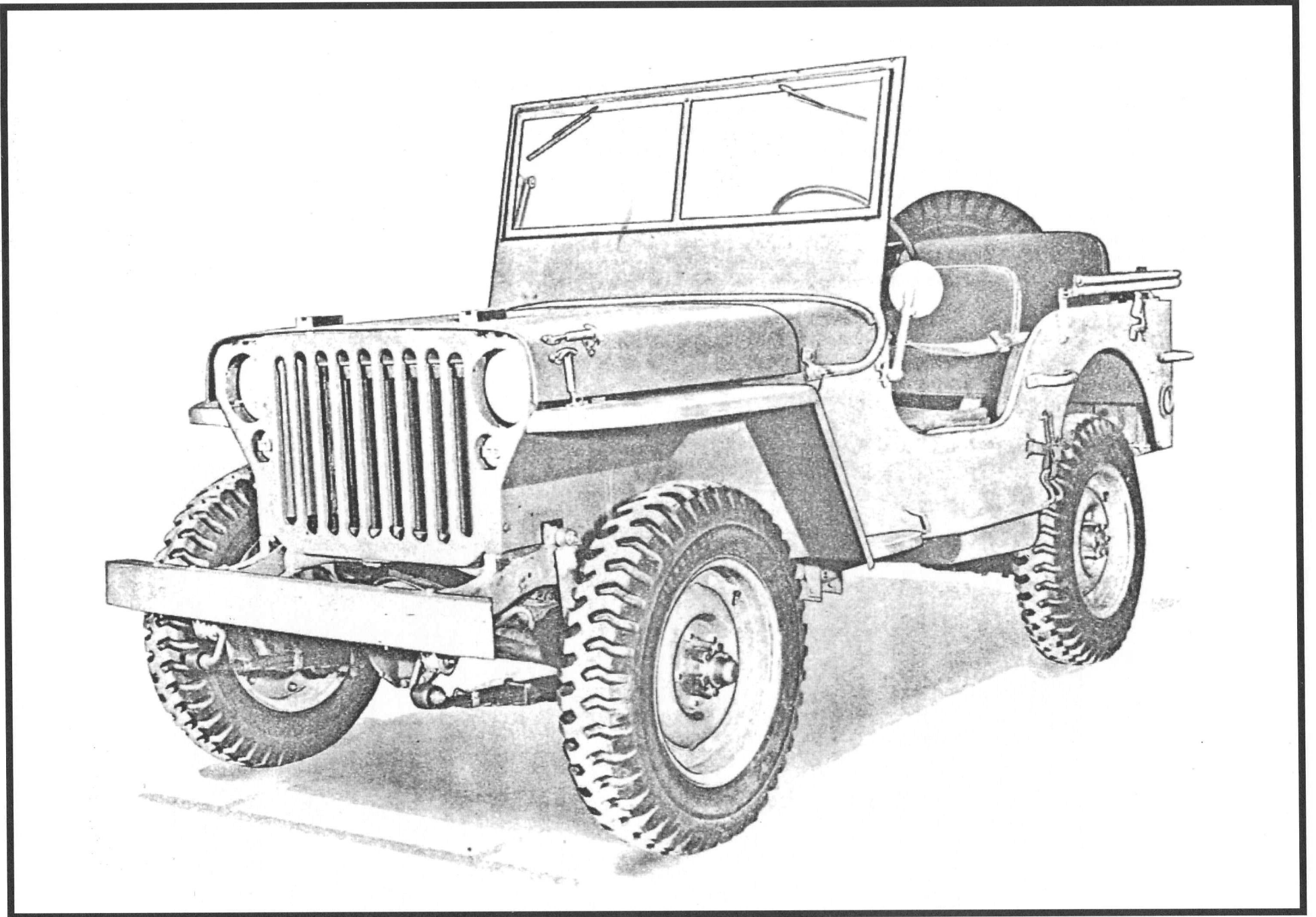
Spare wheel support: Std. type with lock

Torque reaction spring: Not used on contract F-1

Rear axle shaft: Early type with end flange cut away to match hub

Wheels: Std. wheel was used on all GPW's, the spare shown is early MB

GPW			
Contract Index			
Serial Numbers	Date of Delivery	Contract	
1 - 15000	Feb. '42 - Apr. '42	F 1	
15001 - 78146	Apr. '42 - Nov. '42	F 2	
78147 - 101304	Nov. '42 - Mar. '43	F 3	
101305 - 179758	Mar. '43 - Jan. '44	F 4	
179759 - 226205	Jan. '44 - Oct. '44	F 4	1st Extension
226206 - 252741	Oct. '44 - Feb. '45		2nd Extension
252742 - 277878	Feb. '45 - July '45	F 5	



## CONTRACT F-1

Feb '42 GPW

Identifying features continue as the previous photo

Guard: Early GPW type. Without top center depression

Tires: Firestone "Ground Grip" with angled tread bars were used until start of production of Ford tires

Springs: GPW type with bolted rebound clips

Bumper: MB type was used with MB frame

Author's comment: The most difficult-to-restore WWII JEEP. Vehicles built on this contract shared a number of small parts obtained from the same source as Willys. At the time Ford received this contract, WWII had not begun (for the United States) - Ford had no assurance that there would be follow-on contracts. It procured sufficient quantities to complete this contract. The early Firestone tires which were used on the model GP, may have been acquired in anticipation of receiving a contract for 8000 additional GP's. This was the 50% option on the first Willys contract. Some of these GPW's may have had engine blocks obtained from Willys.

### GPW SERIAL NUMBERS

	Contract	1942	Contract	1943	Contract	1944	Contract	1945
Jan	F1	1-77	F-3	89381-94707	F-4	170022-177481		243419-249459
Feb		78-2195		94708-99721	cont.	177482-185021	F-4	249460-252741
Mar		2196-11115	F-3	99722-101304		185022-191015	F-5	252742-254875
Apr	F-1	11116-15000	F-4	101305-105232		191016-196565		254876-260811
May	F-2	15001-22274		105233-111169		196566-202559		260812-266013
Jun		22275-31198		111170-119418		202560-208331		266014-270308
Jul		31399-41960		119419-125443		208332-214103		270309-274377
Aug		41961-52355		125444-132186		214104-220097		274378-277891
Sep		52356-61156		132187-139608		220098-225869		
Oct		61157-68844		139609-147460		225870-231824		
Nov	F-2	68845-76052		147461-155260		231825-237703		
Dec	F-3	76053-78146		155261-162485				
		78147-82120		162486-170021		237704-243418		
		82121-89380						

These are frame numbers, engine numbers are matching as originally produced. Production numbers are shown, delivery dates may vary considerably.



## **CONTRACT F-1**

**Apr. '42 GPW**

Typical of GPW through mid '42

Guard: Early GPW type without top center depression

Hood: Std. GPW type. No underhood air deflector but with six dimples so that hood could be drilled for use on MB

Frame: Early MB type

Body: Early GPW without raised bead at rear of tool lockers

Steering wheel: Early type-black

Windshield: Std. type

Wheels: Std. type

Tires: Early Firestone at start of production, later with Ford tires. The right front tire is an early Firestone and may have been original equipment.

Rubber parts: Many were used on this contract including hood blocks, firewall grommets, floor seals and boots, tail light grommets and glove box seal

Starter and generator: Ford

Clutch housing: Early MB type. Parking brake cable used the early MB fasteners

Clutch-brake pedal shaft: Brass plated on the wearing surface. Early GPW's only.

Transfer shift levers: Small diameter. Willys MA type

Transmission: Right side fill and drain plugs

Regulator and distributor: Autolite

Windshield to dash clamps: Cast bronze.

Locking glove box.

F-1 production quantities: Dearborn 4,875, Chester 2,500, Dallas 2,500, Louisville 2,625, Richmond 2,500

### **What Does GPW Mean?**

Ford gave their WWII products a model code that began with the letter G to indicate a vehicle produced for the Government. The next letter indicated the type of vehicle. The letter P meant 80" wheelbase reconnaissance car. P was used since the original pilot model from Ford was known as "PYGMY" within the Company. The W meant standardized War Department design

Source: Literature from the Ford Military Products Training School



## **CONTRACT F-1 Apr. '42 GPW**

Guard: Early GPW type

Hood: Std. GPW

Wheels: Std. type. Goodyear tread on Ford tires

Muffler: Early type- round

Fenders: GPW type. Note the three holes in vertical row ahead of bulge around battery. Holes allow usage on early MB with radiator side air deflectors

Springs: GPW type with bolted rebound clips

Top: Ford type binding tape on all edges and on each side of rear window

Reflectors: Round rim GUIDE overstamped with script F

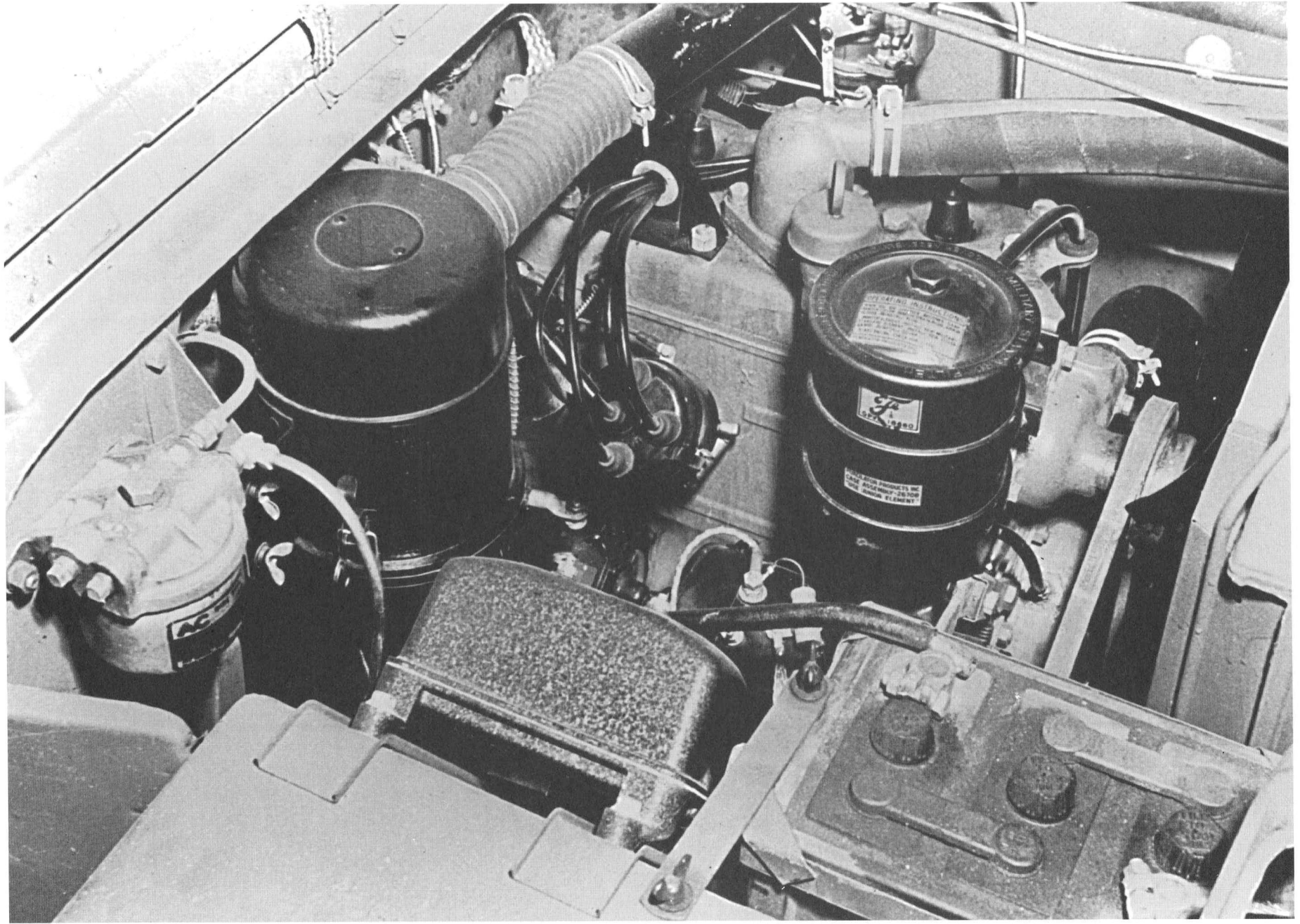
Note that the 42 of registration number does not appear to line up with the previous numbers. On hood and crate stenciling, and on serial number plates and factory forms, some of the data appears to have been partially entered with the balance entered at a later date. In the case of this hood, 100 hoods could be completed and the final numbers 00-99 added later. The reason for this is not known.

### **The Ford Part Numbering System**

The system began in the 1930's with each major part of a vehicle having a basic number. Front axle parts were in a range of 3000-3999. Rear axle parts 4000-4999. To this was added a prefix which was the model code for that vehicle. A was used for model A. 29T was used for a '42 truck. The 9 indicated engine type. A letter suffix indicated a change in the part or an over/under sized part.

There are a number of parts on the GPW that came from other Ford products. Early starter switch 9N 11450 from the tractor. Knob B 45482, cup and rubber washer B 45465, B 45480 are windshield adjusting arm parts from the model B. The tie rod end dust seal 78 3332 was from the 1937 car. When that part was changed to felt it became 78 3332-A2. The 2 indicated a change in material. The early fire extinguisher bracket was GPW 17103. The late type was G8T 17103, first used on the G8T cargo truck. Negative battery post terminal A 14451 from Model A.

GPW part numbers found their place in the Ford parts system with the radiator cap. For some years after WWII, the cap was listed in Ford parts books.



## CONTRACT F-2

Engine of '42 GPW prior to Positive Crankcase Ventilation

Hood: GPW construction, note joint in rear reinforcing channel  
Early type (short) hood to body bond strap  
Special screw and internal tooth lockwasher at hood hinge 355275 S7 (cad plate) This area was painted after assembly.  
Note overspray on air cleaner and tube.

Underhood colors:

Engine, including clutch housing and transmission: Ford model 9N tractor gray

Air cleaner, oil filter, and electric units: black

Air cleaner tube and bracket: Generally black, sometimes OD

Fan: black

Fuel filter bowl Cad plate

Radiator: Olive drab

Note spark plug insulators 11A 12425. Not used after late '42 on GPW.

Cad plated hex nuts for body-engine bond strap and oil filter bracket, head bolt positions #10 and #12.

Rectangular plate on starter head band indicates Ford made unit

Not visible in this photo but same type plate on generator. Both plates are lithographed blue.

Note careful (round) masking for headlight harness wiring. Later GPW masking was done with torn-off pieces of masking tape.

This is type I suppression. The clip, screw and washer are cad plated.

Early Purolator oil filters drained inboard

Early type fan belt (Dayton Rubber) had embossed identification

Cad plated bolts and washers for regulator mounting

Inline suppressor in coil wire. Changed to right angle type in mid '42

Autolite distributor, std. type not dustproof

Felt grommet in oil filter bracket. GPW's built on F-1 had rubber grommets in this location and firewall

Rubber radiator hoses

Regulator: Std type, Autolite. Note cork cover gasket. Later changed to rubber.



77116 10-20-12

## CONTRACT F-2

Typical of mid '42 GPW

Vehicle is Ford property, note the custom-made floor mats!

Compare this photo with page 18

Gages: Typical Ford-made, with wide indicator hands. The temperature gage is an Autolite

Glove box: Early type rubber gasket cemented on body. Std. push button latch. Note the round head screw (a special Ford fastener FM355165 screw and external tooth lock washer) for the striker plate.

Steering wheel: Olive drab plastic

Ignition Switch: Key type

Speedometer: Early type with long indicator hand

Choke and throttle controls: Typical GPW, metal with raised letters painted white

Windshield to dash clamps: Std. type

Windshield adjusting arm : Early type clamping with cup and rubber washer

Driving light switch position: This was the field modification position, in production it was higher on the panel.

Safety strap eyebolts: Horizontal, GPW positioning

Light switch knobs: Engraved, filled in white

Shift lever boots: Leather

Body: Ford

FORD on serial number plate dates this GPW after August '42 but prior to Nov '42

Windshield glass: In glossy prints the Ford glass logos are visible in the lower outboard corners of each pane.

Suppression: Ford type filter group can be seen below dash to left of glove box.

F-2 Production quantities: Chester 16,256, Dallas 11,551, Dearborn 14,021, Louisville 11,315, Richmond 10,003



## CONTRACT F-2 Oct. '42 GPW

Body: Ford type.

Frame: GPW type. Note tooling hole outboard of bumperette

Steering wheel: Early type in OD plastic

Reflectors: Round rim GUIDE over stamped with script F

Note tail light grommets used through end of this contract

Springs: GPW type with bolted rebound clips

Rear reflectors repositioned but trailer socket not installed on GPW on this contract. Socket was available in modification kit.

Gas can support has been removed on this vehicle

Registration number not factory applied in this location after mid-'42

Tires: Ford thru mid '43 for Dearborn production.

### GPW Hardware

Ford used an interesting mix of the standard and the special in the fasteners for GPW parts. In the common hex head bolts there were the regular type (part numbers beginning 20xxx) and an unusual pointed type (part numbers beginning 24xxx). The pointed type were used for fenders to cowl, fender brace to frame, steering column to dash, oil filter to bracket, front engine supports to frame, clutch and brake pads to pedal arm, air cleaner brackets, fuel filter, fuel tank straps, thermostat housing, regulator to fender, starter, transmission to clutch housing, and firewall mounted filter group, among other locations. The pointed type were generally used with a caged nut or tapping block or where installation was difficult as the column to dash clamp.

GPW Special Hardware – part numbers beginning 35xxxx

354112 #10 32x<sup>5</sup>/<sub>16</sub> round head screw and external tooth lockwasher assembly.

Wiring lugs to junction blocks.

355165 #10 24x<sup>3</sup>/<sub>8</sub> round head screw.

Tool locker hinge, glove box, extinguisher bracket, glove box striker.

355275 ¼ 20x.75 recessed head hex bolt and internal lockwasher assembly.

Hood hinge.

355344 ¼ 20x<sup>5</sup>/<sub>8</sub> recessed head hex bolt and external tooth lockwasher

Master cylinder and transmission cover.

355403 <sup>5</sup>/<sub>16</sub> 18x<sup>1</sup>/<sub>16</sub> recessed head hex bolt and external tooth lockwasher.

Driver and passenger seat to floor. Also oil pan.

355552 <sup>3</sup>/<sub>8</sub> 24x<sup>3</sup>/<sub>4</sub> hex head bolt. Special heat treat as indicated by the sharp script F.

Front brake backing plate to knuckle.

GPW hardware had a black oxide coating as indicated by the suffix "S2".



## CONTRACT F-3 Dec. '42 GPW

Photo taken in England

Best Technical reference: TM10-1348, TM9-1803A&B  
The GPW is its most common form - pure Ford!

Body: Ford

Trailer socket added on this contract.

Top: Ford type construction.

Autolite generator, regulator and distributor.

Starter: Ford.

Steering wheel: Std. type with exposed metal spokes.

Tires: Goodrich. This GPW may have been built at the Louisville assembly plant which is known to have used Goodrich tires.

Author's comment: Easiest to rebuild because of the large production quantity and the standardized features. But difficult to find with matching frame and engine numbers.

F-3 Production quantities: Chester 1,817, Edgewater 740, Dallas 6,720, Louisville 8,471, Richmond 5,410

Some GPW parts that were also used on pre-war Ford products may still be available. Try an antique Ford parts source.

11A	12425	Spark plug insulator cap.
78	2814	Brake hose clip.
79	9284	Fuel tank gage unit protector. Late type.
A	14451	Negative battery cable terminal.
78	3332	Tie rod end dust seal.
19B	14451	Positive battery cable terminal.
11A	14452	Battery cable terminal. 3 or 5 per vehicle.
B	45480	Rubber washer, windshield adjusting arm clamping.
B	45465	Cup
B	45482	Knob

Genuine Ford parts only, be aware of substitute, replacement parts!



## CONTRACT F-4 May '43 GPW

Typical of GPW after mid '42

Photo taken in Australia

Guard: Std. GPW with depressed area at top center.

Hood: Std. GPW showing the three piece construction at rear channel.

Note the unpainted areas at front over smeared solder for grounding on the bond straps on guard.

Tires: Firestone.

Front bumper: GPW type with two tooling holes on front surface.

Similar holes in rear crossmember.

Vehicle tool bag can be seen at left end of bumper.

Just visible is the front bumper wood filler block.

Fram oil filter identified by cone shape cover - outboard drain

Metal tube in top radiator hose generally black, sometimes OD

Insulators not installed on spark plugs on GPW after late '42

Braided wire shielding for headlight and BO drive light wiring on left fender. Part of type I suppression

Round braided battery ground cable showing at right headlight with Ford type battery terminal.

After late '42, reflectors were oval rim GUIDE not stamped "F".

This is the early type crating in which many vehicle parts were removed to reduce crate size. These parts were removed: Air cleaner and tube and radiator brace rod. The rod was inverted. To allow clearance for crate cross bracing, the hood was unbolted and moved forward. Note the impression of the guard antisqueak on the hood and that the hood center seam has worn thru the antisqueak on the guard. The steering wheel was removed, and the column unbolted from frame. See page 52 for other body parts that were removed. In this picture, the man working on the hood is probably having a bad day as he tries to place shakeproof washers between the hood hinge and body!



## **CONTRACT F-4 May '43 GPW**

Typical of GPW from mid '42 thru mid '44

Photo taken in Australia

Body: Std. type GPW. Some GPW's built in late '43 and early '44 had ACM type I bodies.

Seat cushions: Std. GPW with padded cushion and backrest. Zippers in all cushions. No spring units.

Extinguisher bracket: Std. type with two band clamps. Some are marked G8T.

Windshield: Std. type with stamped steel dash clamps

Gages: Generally Stewart-Warner. This GPW appears to have Autolite temperature and oil pressure gages.

Ignition Switch: Std. GPW keyless type. Lever is marked IGN. The retaining nut has a ridged edge.

Choke and throttle: Std. GPW type (metal knobs) with raised letters painted white.

Note. These are the same type controls that were used on '41 MB's.

Light switch knobs: Plastic after mid '42 Letters are engraved; filled in white.

Special Ford hardware: Screw with assembled washer for master cylinder cover and front seats. One of these can be seen on the floor in front of driver's seat.

Some items from vehicle tool kit are visible: Adjustable wrench on fuel tank, one open end wrench, GPW type lug wrench (on next vehicle) and tire pump (marked U S ORD).

The panel of a GPW built after mid '44 would appear similar but with a change to rotary light switch, provision for kit bracket on rear of panel, and other types of speedometer.

F-4 Production quantities: Dearborn 22,462, Edgewater 598, Dallas 15,703, Louisville 27,526, Richmond 12,165

### **GPW Wheels and Tires**

All GPW's were built with the standard wheel.

At the start of production Firestone GROUND-GRIP tires with angled tread bars were used. This was the tire used on GP. In early '42 Ford began to produce a non-directional tire with the Goodyear tread. On Dec. 1 '42 Ford ceased producing, switching to Firestone GROUND GRIP with straight tread bars for most plants. The Louisville plant is known to have used Goodrich SILVERTOWN's. See page 54. Some of the last Louisville GPW's had Goodyear tires. Dearborn produced GPW's used Ford tires into mid '43.



## CONTRACT F-4 1st. Extension June '44 GPW

Typical of GPW from early '44 thru July '44

Photo taken in Louisville plant showroom.

Body: ACM type II. The rear panel of this GPW would appear similar to page 32, but with a cast pintle hook and oval rim reflectors. The clamping disc of some GPW (two stud) spare wheel supports has two additional holes for attaching the spare wheel lock chain if furnished. The lock was not generally used with this late type support.

Hood: GPW type.

Windshield: Brackets for rifle holder added in late '43.

Registration number: No number indicates all vehicles in photo are Ford property. Numbers were applied following acceptance by the Government.

Fuel tank: Note dent in right side provides clearance for drive belt of 12 volt generator (Willys type conversion) Fuel filter remained on firewall.

Light switches: Pull type changed to rotary in July '44.

Wipers: Hand operated, tandem.

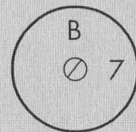
Suppression: Type I was used thru this contract.

### Reading Ford engine casting code dates

Generally this area is eroded making the code hard to read. It is located on the lower right side at the rear on early engines. In '44 it was located below the distributor in large raised figures .

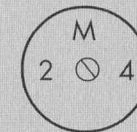
#### EXAMPLES

February 7



Early

December 24



The year is not shown, and the letter I is not used.

Late

K 10 - 4 = Oct. 10 '44

L 29 - 4 = Nov. 29 '44

Engine number GPW232051

Engine number GPW243405



**CONTRACT F-5**  
**July '45 GPW**

Photo taken in Japan after WWII.

Body: ACM type II with hole in left cowl for vacuum line to windshield.

Instrument panel: Similar to page 26 but with GPW type choke and throttle.

Suppression: Type II.

Seat Cushions: Backrests same as earlier GPW's. Spring units in cushions of a different design than MB spring units. No zippers in cushions.

Springs: 10 leaf front, 11 leaf rear.

Frame: Late GPW type with added brackets for deep mud muffler system.

Firewall : Final type with no provision for fuel filter. A filtering element was in the fuel tank.

Parking brake: Large drum.

Windshield: Late vehicles were factory equipped with vacuum wipers.

Hood: Late GPW type with bracket for grease gun and holder for lubrication guide.

Note the additional catch at rear of hood. GPW hoods had a tendency to break up at the spot-welded joints in rear channel, causing a rattle.

Shop made doors and curtains, not factory type.

Fenders: GPW type, continuing with holes for use on MB 's with early guards.

Author's comment.

The angle of the GPW distorts the perspective some but this shows the difference in size of Goodyear and Firestone tires as used on the JEEP during WWII. Goodyear tires were built on passenger car tire bodies; Firestones were built on truck tire bodies. This is another good vehicle to consider acquiring for rebuild. It represents the final version of the GPW, with all of the latest improvements. And many of these late Fords were sold new in 1946 in northern California where they were held in storage awaiting Operation Olympic.



## CONTRACT F-5 July '45 GPW

Photo taken at Louisville Assembly Plant

Body: This is the final form of the ACM body. Previously ACM had to furnish body components that would accommodate the different features of MB and GPW. These late bodies had no provision for the firewall fuel filter. Or for the side mounted muffler.

Tires: Firestone. Usually Goodrich were used by this plant.

Windshield: Vacuum windshield wipers.

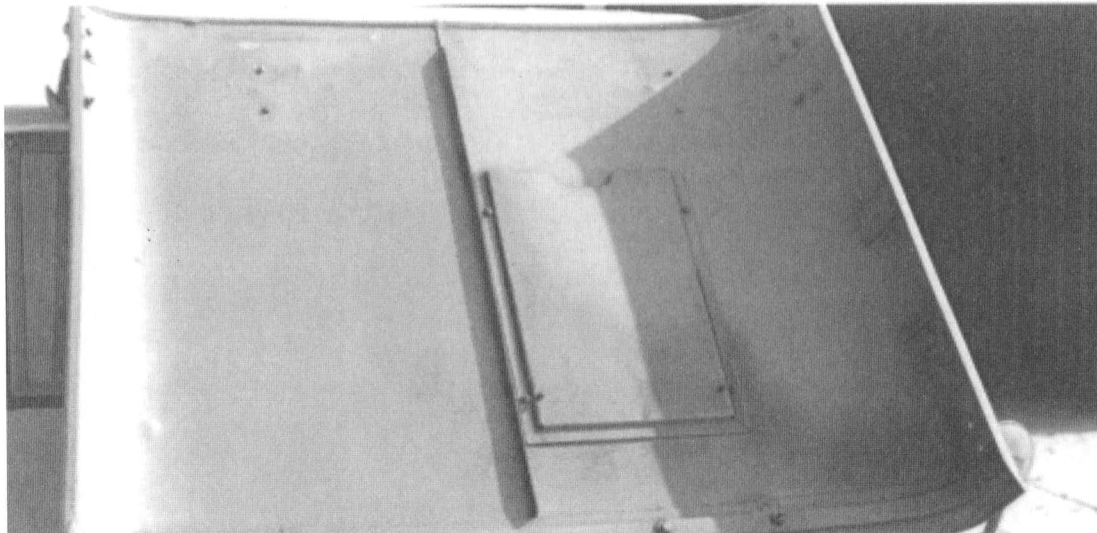
Spare tire: The rubber shortage must have eased; previous vehicles had a spare wheel without tire.

Rifle holder: When enclosed in canvas case the holder was installed with butt end to the right. The zipper is on top. Note the leather tab at left end of windshield.

Shock absorber: Original type, not rebuildable.

Author's comment.

This is obviously a posed photo since vehicles did not have registration numbers as they came off the line. Another photo taken that day shows higher registration numbers.



View of the lubrication guide holder. Installed on all MB's and GPW's after mid '44. Also shown are the two reinforcing plates for the grease gun bracket. See page 22.

## Vehicle Tools and Equipment

- A-371 Basic tool kit consists of:
- A-372 Tool bag
  - A-373 Hammer, Ball pein
  - \*A-374 Pliers, 6"
  - A-375 Screwdriver, 6"
  - \*A-376 Crescent wrench, 8". Not included after '43.
  - \*A-377 Adjustable wrench, 11". Handle for A-692
  - \*A-596 3/8-7/16" open end wrench. #723
  - \*A-597 1/2-19/32 open end wrench. #725
  - \*A-598 9/16-11/16 open end wrench. #727C
  - \*A-599 5/8-25/32 open end wrench. #728
  - \*A-600 3/4-7/8 open end wrench. #731A
- \*Indicates black oxide finish.

- A-1162 Tool package consists of:
- A-371 Basic tool kit
  - A-213 Grease gun, push type. Alemite #5585. Replaced by A-12346
  - A-348 Lug wrench. Handle for A-1240
  - A-379 Oil can, 1/2 pint
  - A-692 Wheel bearing wrench
  - A-1100 Axle drain plug wrench. GPW type fits transfer drain also.
  - A-1240 Jack, ratchet type. Replaced by A-12268
  - A-1339 Puller drive flange
  - \*A-1492 Wrench, shift fork set screw, "Bristol" head screw
  - A-6151 Adapter, grease gun. For universal joints. Alemite #6517. Added mid'42. Replaced by A-11765
  - A-6855 Tire pressure gage. Added mid'42
  - A-5130 Wrench, brake bleeder screw
  - 637636 Spark plug wrench
  - 306715 Handle for above

### Equipment mounted in the vehicle

- A-289 Hand crank
- A-616 Fire extinguisher and bracket. One band clamp. Replaced by A-8429
- A-1133 Tire chains, two pair. Replaced by A-7687
- A-6351 Tire pump, QMC. Added mid'42
- A-6899 Tire pump, ORD. Added mid'42
- A-7511 Tire pump with attached air gun. Added late '42
- A-7687 Tire chains, two pair. Late '42
- A-8429 Fire extinguisher and bracket. Two band clamp. Mid '43
- A-11765 Adapter, grease gun. This type locks on grease gun. Late '43 #6344
- A-12268 Jack, screw type. Late '43
- A-12269 Handle for jack, three section, folding
- A-12346 Grease gun, lever type, "Lincoln" Late '43

## Canvas

Top	Early	A2909	Through MB103545	See Page 4
	Std.	A-3216	After MB103534	See Page 16 - Added opening for gas can bracket strap after MB165582
Windshield cover				
	Early	A-3073	Through 103545	
	Std.	A-3211	After MB103545	See Page 12, 20
Doorway curtains				
		A-2998, A-2999		See Page 4
Headlight covers				
		A-3070		

MB and GPW canvas items can be identified by the different binding tape used on the edges. See pages 4, 12, 16, 20 for MB. See pages 34, 40, 48 for GPW. Tops and curtains not furnished after mid '44 due to shortage of canvas. See page 81.

## Spare Parts Kit A-7680

A-7686	Spare parts bag*
A-1495 or A-9490	Fan belt – folded in three coils to fit in bag
A-7681	Package of five screwdriver type valve caps
A-7682	Package of five valve cores
A-8385	Package of BO marker lamp bulbs
A-1074	Upper service sealed unit
A-1075	BO tail light lower unit
A-1078	BO upper unit
A-7683	Cotter pin assortment
A-538	Spark plug
A-7684	¾" friction tape
A-7685	¼ lb. 22 ga. soft iron wire

\*Spare parts bag was made of thin muslin cloth with an attached ribbon closure. Approximate dimensions were 10" x 8".

## Critical Materials

Many of the changes that took place in the MB and GPW in mid '42 were the result of shortages of critical materials. Among the first were brass and bronze parts. The windshield to dash clamps were changed to stamped steel. The glove box plates changed from brass to steel on GPW (later changed to aluminum) and to zinc coated steel on MB. MB cast brass buckles on body straps changed to stamped steel. The part brass-part steel knobs on choke and throttle controls changed to steel stampings on GPW and to plastic on MB.

These rubber parts were changed or eliminated:

Replaced by:

Sealing nipple for blackout marker lights	A-1082	Eliminated
Sealing sleeve for tail light connectors	A-729	Eliminated
Tail light-body grommet	A-627	Eliminated
Transfer shift levers boot	A-2914	A-3784 leather
Accelerator rod boot	A-2921	A-3782 leather
Transmission shift lever boot	A-2915	A-3783 leather
Steering jacket bushing changed from rubber to 1 1/2" webbing	A-2931	Same number
Tool locker seals changed to jute	A-2503	A-3933, 3934
Glove box seal changed to jute cemented on door	A-3528	A-3943
Accelerator pedal socket changed to metal	A-1083	A-6851
Hood block changed to wood	A-2922	A-3780
Later changed to wood with fabric insert		A-4683
Clutch and brake pedal seal	A-641 *	A-6359 jute pad, A-6360 washer,
*This part on GPW changed to thick felt pad at F-2 contract		650684 spring
Tie rod end seal	A-843 *	A-6305 spring
*This part on GPW changed to felt washer		
Windshield adjusting arm clamping washer and cup	A-2492, 3	A-4260 washer
Upper hose replaced by tube and hoses	A-1218	A-6374
Lower hose replaced by tube and hoses	A-5164	636109
BO marker light door gasket replaced with metal and cardboard	A-1071	A-15304
Throttle wire stop changed from brass to steel	372438	A-8834
Firewall grommets on GPW changed to felt at contract F-2		
GPW fuel tank gage protector changed from rubber to metal		G8T 9284

Shortages of ball bearings made these changes in generators:

A-5992 with two sealed bearings was changed to A-10048 with one sealed bearing and one bushing.

## Critical Materials Continued

In mid-'44 there was a shortage of casting and forging capacity. The following parts were changed. Ford had its own facilities so that this shortage did not affect Ford produced parts.

		Replaced by:
Generator pulley changed to stamping	A-1639	A-9492
Water pump pulley changed to stamping	636299	Same number
Brake pedal pad changed to stamping	A-1359	A-8477
Clutch pedal pad changed to stamping	A-1360	A-8440
Brake pedal arm changed from forging to casting	A-1386	A-8253
Clutch pedal arm changed from forging to casting	A-405	A-10269
Differential cover changed to stamping	A-781	A-10231
Doorway safety strap fastener changed to stamping	A-2538	Same number
Pintle hook changed to welded assembly	A-593	A-10529

After late '44 spare tires and tops and doorway curtains were not furnished because of shortages. It had been determined that these items could be obtained from salvage vehicles.

### Reconditioned Vehicles

By mid-'43 vehicles that had been used for training purposes in the United States were beginning to show their hard use. With most of the new production being sent overseas it was decided to start a program of rebuilding. Initially done by the military depots, the program was later expanded to include some civilian firms. Vehicles were disassembled, worn parts replaced and generally updated. In this activity originality was of no concern so that major units were interchanged resulting in GPW bodies on MB frames, MB engines in GPW's. Vehicles that have been through this program usually have a plate on the dash indicating what firm or depot rebuilt that vehicle.

This program was restarted in '51 and resulted in an unusual engine. Willys developed a replacement engine by modifying the CJ3A engine to fit the MB. These had MB fuel pumps with hand primer, MB generators, a Carter 596S or 636S carburetors and a front mounting plate to fit MB frame. This engine is described in post-WWII parts books. Engine numbers started at 1MB10001 stamped on top surface of block at water pump. These are the only MB engines with "ribbed" cylinder heads.

## Modifications Developed by Willys

		Instructions
A-6544	Addition of trailer socket	A-6358
A-6940	Desert cooling system	MWO G503-W1
A-7153	Hood blankets and radiator cover (early)	A-4603
* A-7154	Hand primer – cold weather starting	A-6957
* A-7155	Addition of positive crankcase ventilation	A-6969
* A-7156	Engine heater	A-8213
A-7726	Waterfording exhaust pipe	
A-8293	Power take off and 12-volt generator	A-8313
A-8500	Tandem hitch	A-9283
A-9232	Capstan winch	A-10394
* A-11792	External power receptacle	A-11851
* A-11793	Winter enclosure	A-12200
* A-11815	Hood blankets and radiator cover (late)	A-11833
* A-11846	Driver heater	A-11865
A-11847	Complete winter conversion – includes items marked *	
A-17856	Deep water fording conversion	A-17645

## Modifications developed by Ford

Conversion of entire vehicle electrical system to 12 volts      MWO G503-W7

## Engines

### MB

Casting number of block 638632, head 639660. These are the only correct numbers for original engines.

Serial numbers start at MB100001 , stamped on raised pad behind oil filter. Final numbers exceed 600000.

The letters A, B, C stamped near cylinder bores on head gasket surface were used on engine assembly for selective fit of pistons.

Casting date is at lower right rear side showing month and day in raised numbers. Year is not shown.

Examples:     2-11   =   Feb 11 (1942)   MB123371  
              4-9     =   April 9 (1945)   MB582649

Assembly date is steel stamped on the pan gasket surface at rear main bearing cap showing month, day and year.

WILLYS in raised letters was added to head in mid '43. JEEP added in mid '44.

At engine number MB288835 cylinder head cap screw were changed to studs and nuts.

Oil filler tube: A straight pipe WO 639555 up to engine MB114550. Funnel top A-5165 up to engine MB208437. Provision for crankcase ventilation A-6915 after this number.

Intake manifold: Early type without pipe plugs. After mid '42. with pipe plugs at each end. After early '43 with provision for PCV valve.

Oil pan: Early type with riveted drain plug boss and thin skid plate. After early '43 with thick skid plate and swaged drain plug boss.

Air cleaner tube and bracket

Type I Tall, used with early air cleaner

Type II Short, used with std. air cleaner

Type III With vent tube for PCV system.

Clutch housing: In early '42 a raised boss with a tapped hole was added to the right side to secure the parking brake cable with a clip.

### GPW

Serial numbers start at GPW1 stamped on pad behind oil filter. Replacement engines have no number; they were to be stamped with the number of the replaced engine. Casting date thru '43 is a small round impression at lower right rear. Later engines have the date in raised numbers near the distributor. See page 55.

Engine, clutch housing and transmission were painted '42 (9N) tractor gray.

## **Bodies**

### **MB**

Bodies produced by American Central Manufacturing Company can be identified by the round depression for tool locker latch.

#### Type I '41-'43

This body used a three piece construction where the cowl top joined the firewall. The toe board gusset is triangular with the body serial number steel stamped on the side of the left gusset. The fuel tank stone guard has square corners. At MB118600 the stone guard was changed to rounded corners. The tool locker covers, were changed from two short hinges to one long hinge. These covers do not have a pattern stamped in them. At MB120697 a locking glove box was added. A spring held the door shut when not locked. At MB137909 the standard latching door was introduced adding a striker plate and removing the spring. Slots for this spring remained on the hinge and body for several years. At MB156083 the rubber door seal cemented on the body was changed to jute cemented on the backside of door. This body was used on some GPW's at the end of '43 and early '44.

#### Type II

Early in '44 ACM began producing this body for both MB and GPW. This body had the front construction of the Ford produced body with two piece cowl - firewall. The toe board gussets were rounded with the serial number stamped on front flange. Front floor construction was the same as the Ford body. This change was necessary so that the body components from ACM would fit Ford assembly plant body jigs. This body was used by MB and GPW thru the end of production. There are a number of variations in the firewalls since Ford and Willys were not making the same changes at the same time. Early in '45 a hole was provided in left cowl for a vacuum line.

#### Type III

During '44 ACM produced a special body for USN and USMC radio vehicles. Nearly every body panel was different from regular bodies. The front floor had an opening for the belt drive from a transfer mounted power take off. The belt drove a 12 volt generator mounted between driver and passenger seat. There were no rear seat brackets. On the rear floor was a waterproof equipment chest. There were no rear seat foot rests. In this area two battery boxes were mounted. Willys developed a kit to prepare these and standard production vehicles for deep water fording.

### **GPW**

Bodies produced by Ford can be identified by the rectangular depression for the tool locker latch. Ford produced bodies do not have serial numbers. Tool locker covers have a pattern stamped in them. Bodies built thru early '42 do not have a raised bead in top surface of rear wheel house to rear of tool locker. Ford bodies were used to late '43.

## Hood

Willys produced hoods can be identified by the two piece rear channel with short center reinforcing channel and a small square plate at front center. Early hood A-2836 was used with early windshield thru MB103545 and type I underhood air deflector. The std. hood A-3225 was used after MB103545 with std. windshield and type II deflector. GPW hoods were used after late '43.

Ford produced hoods can be identified by three piece rear channel with long center section. These hoods have six drill centers (dimples) at the front so they could be drilled for use on MB's with underhood air deflectors. In '44 plates were added on the left side for grease gun bracket installation, and the hood to body bond strap was lengthened to use hood hinge holes #2 & 4 to prevent cracking body ends of hinge. In late '44 a holder for the lubrication guide was installed on the left side and the left hood block was moved 2" left to clear the vacuum wiper arm. The air deflector was not factory installed on GPW hoods.

## Air Deflectors

- Type I Used with early hood, and with std hood with early hood blocks. With sealing strip
- II Used with std. hood with std. hood blocks. Mounting flange was changed to clear hood block screws. With sealing strip.
- III Used with std. guard. Sealing strip was not used.

## Hood Blocks

Early	A-2922 (rubber)	Used thru mid '42.
	*A-3780 (wood)	Used thru MB218345
Std.	A-4683 (wood with fabric insert)	After MB218345

\*This block had the same mounting dimensions as A-2922. It looked somewhat like the M38 hood block.

The std. hood block was developed by Ford using a material for the filler strip that had been used on '41 Ford trucks as a cushion for the fuel tank.

## Fender

MB fenders can be identified by a single hole for body side step and multi piece splash shield around battery. Early fenders have three holes in vertical row at front for the side air deflectors. These holes were removed at MB125809

GPW fenders have two holes for side step and a one piece splash shield. All GPW fenders have the three holes of early MB fenders. Some late MB's may have used GPW fenders.

## Windshield

Early type A-2796 was used thru MB103545. This is the short MA type.

Std. type A-3210 used cast bronze dash clamps A-2227 thru early '42, later with stamped steel clamps. Brackets for rifle holder were added in late '43. In early '45 the outer frame was drilled for attaching the clips for the metal vacuum lines.

## Wipers

Thru mid '44. with individual hand wipers A-2586. Later with hand tandem wipers A-11433.

In '45 some MB's and GPW's had two vacuum wipers.

In '43 the Anderson Co. developed a hand wiper with a latch to hold wiper arm in the up position. These also had a spring on the arm to provide constant pressure on the blade. There was a connector link for tandem operation

In '44 TRICO developed a kit consisting of two vacuum wipers and all parts to complete the installation. This kit used hoses instead of metal lines.

## Top to Windshield Fasteners

At MB164554 the early type A-2924 with a push button was changed to std type A-4120.

## Glass

GPW with Ford glass showing Ford glass marking including date code. MB used glass with LOF marking and date. Markings were in the lower outboard corners of each pane of glass. They could be read from outside the vehicle.

## Radiator Guard

### MB

Early type A-2858 was used thru MB125809. Welded assembly.

Std. type A-3615 was used after MB125809. Stamped assembly.

### GPW

Early type stamped assembly without depression at top center was used thru April '42.

Std type with the depression was used after April '42.

The standard guard was developed by the American Forge and Socket Co., a Ford supplier.

In designing this guard, the company used the outline of the early MB guard. But the GPW hood had a center seam with a sharp edge that could cut thru the antisqueak on the guard. The depression provided clearance so that either type hood could be used.

## Instrument Panel

Speedometer	A-1266	Dial with markings at 10 MPH intervals.
	A-5734	After MB137760, luminous dial with 1 MPH intervals.
	A-8180	Added water sealing.
Fuel	A-1268	Reads GAS Early '42 changed to read FUEL.
	A-8184	Added water sealing
Ammeter	A-1280	Reads +/- 30 amps.
	A-5231	Reads +/- 50 amps.
	A-8186	Added water sealing.
Oil	A-1269	
Temp.	A-8190	Added water sealing.
	A-1270	
	A-8188	Added water sealing.

MB instruments made by Autolite. Some speedometers by King-Seeley.

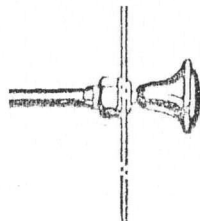
GPW instruments made by Stewart-Warner generally but some temp. and oil pressure gages by Autolite. Some late GPW's with Waltham speedometers.

Ignition switch	A-2517	Key type, turns 90 degree OFF-ON. Uses key marked H-700.
	A-6811	Keyless type, turns 45degree OFF-ON. After MB202023. This switch has a deeply contoured handle.
The GPW keyless switch turns 90 degree OFF-ON. The handle is flat and marked IGN.		
Light switch	A-1332	Pull type through mid '44
	A-11866	Rotary type. Metal escutcheon plate on MB. Plastic on GPW.

## Choke and throttle controls

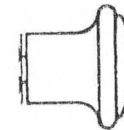
### Type I

This was a two piece stamped metal assembly of a base and cover. The cover had large (3/16") raised letters painted white. Some early covers were made of brass. type I was used on all GPW's and on MB's through mid '42. Ford supplied a replacement type GPW 9778 that was not lettered and could be used for either choke or throttle.



### Type II

This was made of plastic with large (3/16") engraved letters filled in white. Used on all MB's after mid '42. The contour was similar to the light switch knobs. A replacement was available that was not engraved and could be used for either choke or throttle. Part number A-7518.



After installation, the end of the throttle wire was bent 90 degrees to prevent loss of the wire stop. Approximately 1/4". Controls with plastic knobs and small (1/8") letters are not original for WWII models, they are post-war.

## Unusual and Overlooked Parts

Quantity Per Vehicle	Part Number	
2	W0 6196	An oversized 3/8" NC nut used on MB safety strap anchor bolt
4	A-1096	Sparkplug insulator cap used on all MB's.
4	11A 12425	Sparkplug insulator cap used on GPW F-1 contract only.
10	A-1089	#10 flat washer, 1/4" OD used on all MB junction block screws. Thin brass.
2	FM 34954	#14 external tooth countersunk lockwasher used on rear ax clamp screws. GPW only.
6	78 2814	Brake hose clip. GPW only. See 1803B page 48.
6	637427	Brake hose clip. MB only. See 803 page 187.
2	356373	Antirattle spring washer for safety strap anchor. GPW only.
2	W0 52891	5/16" PAL nut used on fuel tank strap bolts. MB only.
1	W0 52909	3/8" PAL nut used on engine stay cable.
4	W0 352760	1/4" shakeproof washer used between tail lights and body for grounding. MB only.
2	W0 631105	Coil bracket washer. Shaped like rounded end of coil bracket.
	GPW 12064	
2	W0 51391	Unusually short 5/16" NC bolt used for front hand rail bracket MB only.
1	W0 390510	Steering column oil hole cover. Used on all MB's. See page 25
	GPW 3522	Steering column oil hole cover. Only on F-1 contract.
34	W0 52350	5/16" NC thin nut used on various body parts.
8	W0 637704	Valve clearance spring used through early '42
	GPW 6550	
2	A-2639	Top bow pivot antirattle spring washer. These parts are not identical.
	FM 356522	
2	A-2483	Windshield adjusting arm pivot antirattle spring washer.

The change to the large drum parking brake probably was the result of the small drum brake being incapable of holding a vehicle equipped with the capstan winch when the winch was being used to move an object other than the vehicle itself. The small drum brake could hold the JEEP when parked but possibly could not hold against the pulling power of the winch.

## Unusual and Overlooked Parts Continued

Quantity Per Vehicle	Part Number	
2	A-1752	Front axle shaft identification tag. Attached to knuckle oil seals. See 1803B page 85.
2	A-783	Axle ratio tag attached to axle cover. See 1803A page 9.
1	A-1763	Rubber cover for fuel tank gage unit. All MB. Early GPW.
	G8T 9284	Metal cover for fuel tank gage unit. Late GPW.
6	GP 4533	Universal joint U-bolt nut lockstrap. See 1803B page 44. GPW only
1	A-281	Clamp air horn to carb.
1		Carter carb. inspection tag. Triangular shaped, stamped 539S and punched by the final inspector.
6	A-6701	Pulley shield retaining bolt washer. See page 15
1	FM A 14451	Connector negative battery post. Part of GPW battery ground cable. This may be the only Ford Model A part used on the GPW

### Pedal Pads

MB	'41 through early '42	Clutch	A-434	Casting	Rectangular pad same as MA
		Brake	A-1359	Casting	With rounded end.
	'42 through mid-'44	Clutch	A-1360	Casting	With rounded end.
		Brake	A-1359	Casting	With rounded end.
	After mid-'44	Clutch	A-8440	Stamped steel.	Rectangular pad.*
		Brake	A-8477	Stamped steel.	Rectangular pad.*

\*These were sprayed with A-10456 GRIP-TITE, a coarse textured material used on safety walkways.

GPW all used cast pads. Same as A-1359, A-1360.

During '43 the Army attempted to settle the question of which was the better built vehicle by a vigorous testing program of two vehicles from each company. While the results were inconclusive, some test drivers preferred the GPW. The vehicles were:

Serial Number	Engine Number	Delivery
MB235937	MB258246	May 20 '43
MB236421	MB258675	May 20 '43
GPW119422	same as serial	May 20 '43
GPW119510	same as serial	May 20 '43

## Transmission

Early versions of both makes had fill and level plugs on the right side. Plugs were moved to the left side in late '42. And the rear bearing was reversed with the shield to the rear. A second slinger A-410 was installed behind the bearing. In late '44 the oil level was raised (case marked "H") and an oil seal A-15428 installed at the rear of case. This late version attempted to improve oil flow by using a countershaft and reverse idler shaft with a portion cut away on the non-thrust side. Warner Gear became the producer for both makes during '44. Ford built units have part number on left side. Warner units on the right side. All Warner built units have a date code on top gasket surface.

### Transmission Support

Early	A-109	Rubber between flat steel plates
Std.	A-6156	Rubber between interlocking plates to prevent engine displacement in rough service.

### Transfer

The earliest recorded change in the MB was the addition of a grease fitting for the shift levers pivot pin A-972 at MB101000. In early '42 the shift levers were changed from the small diameter MA type A-968 & 969 to the large diameter A-1505 & 1506. Some early GPW were built with the small diameter levers. GPW transfers are date coded on the top surface of the rear bearing cap. The rear covers of GPW transfers have a raised bead around the gasket surface for better sealing. See 1803B page 11.

### Parking Brake

Std.	Small drum	External contracting band.
Late	Large drum	Internal expanding shoes. After MB373337. Also used on GPW F-5 contract. See page 70.

### Wheels

Early	A-1799	A drop center wheel (solid center) MB only.
Std.	A-5467	A divided wheel with bead lock ring. All GPW, and MB after MB120700.

The warning plates on these wheels were painted white. After drying, they were painted OD, then rubbed with a cloth to expose the raised white letters. Some vehicles were delivered with the plates painted white. See page 30.

### Tires

#### MB

Goodyear tires were used on all MB's

#### GPW

Contract		
F-1		Firestone GROUND GRIP with angled tread bars were used at start of contract. See page 36. Later with Ford tires with Goodyear tread. See page 40.
F-2,3,4		Ford tires were used through mid '43 by some plants. Others used Firestone GROUND GRIP with straight tread bars. See page 50. Goodrich SILVERTOWN tires were used by the Louisville plant. See page 54.
F-5		Firestone and Goodrich used on this contract. See page 58. At end of contract some Louisville vehicles used Goodyear

## Electrical

Generator	A-1246	Autolite	GEG5001	'41-'42	Oil cups each end
	A-5992		GEG5002	'42-'43	Sealed bearings
	A-10048		GEG5101	'43-45	One sealed bearing, one bushing
Regulator	A-1409		VRY4203A	'41-'44	
			VRY4203G	'44-'45	Cover gasket changed to rubber for water sealing. Drain plug added to base.

### Spark plug suppressors

	A-1284	Straight connector for plug
	A-1285	Inline type for coil wire
after mid-'42	A-6320	Expanded connector for both plug and distributor cap
	A-6321	Rubber right angle insulator for coil wire at distributor
Distributor	A-1240	Up to engine MB380269
	A-9075	Dustproof type

Wiring clips were redesigned in early '42 from die formed to a flat strip bent in a "U" shape.

MB	A-5598	1/4" replacing W0 78316
	A-5449	5/16" replacing W0 78317
	A-5450	1/2" replacing W010956
GPW	All clips were die formed	
Headlight	Both makes used C-B "SEELITE" with a bulb within the sealed unit.	
	The light could continue to operate if the lens was broken.	
Coil	A-1424	Bottom ground connection, used with type I suppression
	A-7792	Without bottom ground, used with type II suppression

### Sparkplug insulator caps

MB	A-1096	Used on all MB's. See 803 page 139
GPW	11A 12425	Used on contracts F-1 & F-2. See page 42
Starter switch	A-6181	Up to MB217543
	A-7225	Long studs, used with radio terminal box
	A-17143	With added water sealing.

Dimmer switch	W0 638979	Plug-in terminals
	A-12056	With added water sealing, screw type terminals

Battery cables MB and GPW with early air cleaner.

Cable was fastened to firewall with clip 78932 using same screw as speedometer cable. With std. air cleaner,

Cable was fastened to starter-starter switch cable with a second clip. See 803 page 151

Ground cable A-1320 Up to MB120700, cable was bolted to frame under battery support.

MB	W0 635883	Cable bolted to front of battery support
GPW		Cable bolted to top surface of front crossmember at tooling hole

### MB, GPW Main Wiring Harnesses

- GPW: One harness to left tail light with a separate harness to right tail light. The top connector for right tail light was painted olive drab for identification on assembly. "Open" lugs at switch end.
- MB: One long harness to left and right tail light. "Closed" lugs at switch end.

## Fuel System

Fuel tank	'41 to Sept. '42	A-1221	Tank with small cap.
	Sept. '42 to late '43	A-6618	Tank with large cap and pull-up extension.
	Late '43 to early '45		Tank with dent in right front side
	Early '45	A-15507	Tank with ceramic filter unit in tank. The AC filter unit was removed from firewall
Fuel Pump	'41 to Aug. '43	A-1220	With vent hole in base
	After Aug. '43	A-8323	Without vent hole
Air cleaner	'41 through early '42	A-1281	MB through MB124309. GPW F-1 only
	Std. type	A-5621	
Air horn seals and clamps			
	'41 to late '44	A-281	Clamp, air horn to carb
	late '44	A-17318	Seal, air horn to carb. Clamp W0 53384
	'41 to late '44	A-1451	Seal, air horn to tube. Clamp A-1515
	late '44	A-17317	Seal, air horn to tube. Clamp A-1515
	Prior to MB104310, seal A-1451 was secured with clamp A-281.		
Flexible fuel line			
	Both makes used aircraft type braided metal flex line through early '42		

Clamp A-1515 used on air horn and also on axles to secure brake lines, can be made from radiator hose clamp 2 1/4" (stamped A 15 1/2) by removing coarse thread round head screw and nut and using #10 NF x 1" round head screw and nut.

## Frame

MB can be identified by the tubular front crossmember. See cover.

GPW can be identified by the square front crossmember. From the rear by the two large tooling holes outboard of the bumperettes. See page 46.

Early MB through Feb. '42 had a welded assembly battery support with a long battery ground cable bolted under the support.

Std. MB frame had a stamped battery support with a short ground cable bolted to front of support.

MB frames through Dec. '41 had an additional bracket W0 638809 for rear brake hose.

In late '44, the MB frame began to use the rear crossmember of the future CJ series. The crossmember did not have the holes for the rear power take off. Approximately 4" left to center, a portion of the lower flange was pressed down in a circular form to provide clearance for the PTO drive shaft. Reinforcing plates were installed between the frame and the rear spring shackle brackets. A portion of this late crossmember was used as a reinforcing channel inside the M38 rear crossmember. MB frames were used for several thousand early GPW's. See page 36. Late '45 GPW frames have brackets added for deep mud muffler system.

## Springs

'41 to late '44	8 leaf front	9 leaf rear
Late '44-'45	10 leaf front	11 leaf rear

Torque reaction spring added at left front at MB146774 A-6066

Lock strap for top pivot bolt added at MB170307 A-6326

Rebound clips on MB springs are a wrap-around strap. See page 24.

GPW rebound clips are bolted. See page 36.

In Dec. '41, the large rebound clip on rear spring was changed from enclosing 6 leaves (MA type) to enclosing 7 leaves.

Spring shackle bushings:

Up to Apr. '43	Right hand thread	W0 634432	Pressed in grease fitting
	Left hand	W0 635532	Pressed in grease fitting
After Apr. '43	Right hand	W0 A-8256	Threaded grease fitting
	Left hand	W0 A-8255	Threaded grease fitting

Early spring shackle bushings were made by drilling completely through the bushing before threading. A plug (W0 634254) with pressed in grease fitting was used to close the end.

The plug was stamped PMCA. If broken, the fitting could not be replaced. The std. type was not drilled through, leaving a thicker end that was threaded for a replaceable grease fitting.

Both types have a recessed outer end. Bushings without a recessed end are non-original replacements.

Pages 77, 78, 79 are copies of the earliest service bulletins issued on the MB.

Page 80 is the packing list from a '43 MB.

Page 81 is the list from MB434099 (4 10 45). Bought new by the author in June 1946. Present owner is not known.

Compare the two lists and notice the changes! In '45, no top or doorway curtains (comfort canvas) but windshield and head lamp covers (tactical canvas). A spare wheel but no tire.

There is an error (not in spelling) in the '43 list. Did you notice it?

WAR DEPARTMENT  
OFFICE OF THE QUARTERMASTER GENERAL  
WASHINGTON

February 1, 1942.

MOTOR TRANSPORT  
TECHNICAL SERVICE BULLETIN  
NUMBER E-11.

SUBJECT: Willys MB 1/4 Ton 4 x 4 Truck Front  
Axle Steering Arms.

1. Effective with vehicle serial number 103317, the front outside and the rear inside steering arm attaching studs will be dowel-studs part number S-964. The remaining two will continue as studs, part number S-962. These parts are shown in Figure 1. The locations are shown in Figure 2.

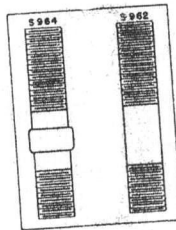


Figure 1.

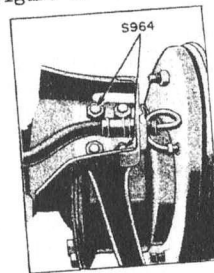


Figure 2.

2. Vehicles carrying lower serial numbers have been found to develop end play in the steering arms. To correct this condition and hold the steering arms tight on studs, the new construction is to be incorporated as follows:

- a. Remove arm.
- b. Try dowel-studs for push fit and ream holes in arm to .406/.408 if necessary.
- c. Install all studs and arm. Tap arm to seat on knuckle housing.
- d. Tighten all nuts.

3. Steering arms that are fitted to dowel-studs are stamped with the figure "2". Dowel-studs, part number S-964 for use with arms not so stamped may be obtained on requisition to Fort Wayne, specifying vehicle registration number and serial number. Regular parts stock will be obtained on regular requisition.

E. B. GREGORY,  
Major General,  
The Quartermaster General.

WAR DEPARTMENT  
OFFICE OF THE QUARTERMASTER GENERAL  
WASHINGTON

March 1, 1942

MOTOR TRANSPORT  
TECHNICAL SERVICE  
BULLETIN NO. I-7

SUBJECT: Willys, Model MB Truck, 1/4 Ton, 4 x 4  
Shift Lever Pivot Pin

1. On the subject vehicles bearing U.S.A. Registration Number W-2032575 and higher, the shift lever pivot pin is drilled and provided with a lubricant fitting located in the end. There is no change in part number.
2. All subject vehicles with U.S.A. Registration Numbers W-2031575 to W-2032574, inclusive, are to be examined, and if the pins are not so drilled, they are to be replaced. Lack of lubricant will allow rusting with possible breakage of the shift levers due to the excessive force required to make the shift. It is not desirable to attempt to keep these shafts lubricated with oil.
3. Pins, part number A972, and fittings, part number 638224, are available on requisition from the Motor Transport Supply Depot, Fort Wayne, Detroit, Michigan, specifying vehicle registration and serial numbers.

E. B. GREGORY,  
Major General,  
The Quartermaster General.

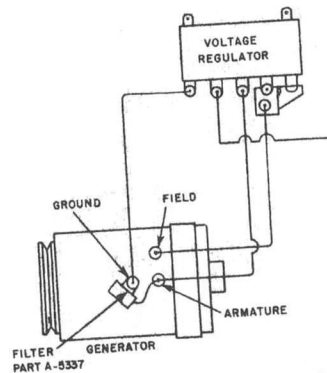
WAR DEPARTMENT  
OFFICE OF THE QUARTERMASTER GENERAL  
WASHINGTON

April 1, 1942

MOTOR TRANSPORT  
TECHNICAL SERVICE BULLETIN  
NUMBER D-3

SUBJECT: WILLYS MB 1/4 TON 4x4 TRUCK CONTRACT  
NO. W-398-QM 10757, GENERATOR FILTER  
CONDENSER.

1. Vehicles bearing chassis Serial Numbers from 103001 to 113045 inclusive, were supplied without the subject equipment because of a shortage of supply. Installation is to be made in all such vehicles in accordance with the following diagram.



2. Generator condenser filter, part number A-5337, is available on requisition from the Motor Transport Supply Depot, Fort Wayne, Michigan, specifying vehicle serial number.

3. The part number and location are to be added to the parts book TM 10-1206, group 0611 Radio Suppression and the maintenance manual TM 10-1207, Section 0600 Electrical System.

E. B. GREGORY,  
Major General,  
The Quartermaster General.

WILLYS OVERLAND MOTORS, INC  
 TOOL AND EQUIPMENT LIST  
 MODEL M.B. TRUCK 1/4 TON 4x4  
 PACKED IN CARTON

PART NO.	PART NAME	QUANTITY	SHORTAGES
A-5130	Wrench-Hydraulic Brake Bleeder Screw	1	
A-1339	Wheel Hub Puller	1	
A-1240	Jack - Screw Type #200-W-G	1	
A-6151	Grease Gun Push Type Adapter	1	
A-213	Grease Gun #41-G	1	
A-373	Hammer - Ball Pein 16 oz. #41-H-523	1	
A-348	Socket Wrench #24832	1	
A-692	Wheel Hub Wrench Painted	1	
A-379	Oil Can 1/2 Pt. #13-C-1530	1	
A-377	Adjustable Wrench 11" #41-W	1	
A-376	Crescent Wrench 8" #41-W-486	1	
A-375	Screw Driver 6" #41-S-1076	1	
A-374	Pliers 6" #41-P-1650	1	
A-1492	Fluted Socket Head Screw Wrench	1	
A-1100	Drain Plug Wrench	1	
306715	Spark Plug Socket Handle	1	
637635	Spark Plug Socket Wrench	1	
A-6855	Tire Pressure Gauge	1	
A-372	Tool Bag #23-B	1	
Following	15 degree-Double head open end chrome alloy wrenches:	1	
A-596	Wrench #723-3/8-7/16 double end	1	
A-597	Wrench #25-1/2-19/32 double end	1	
A-598	Wrench #27-C-9/16-11/16 double end	1	
A-599	Wrench #28-S-5/8-25/32 double end	1	
A-600	Wrench #731-A-3/4-7/8 double end	1	
A-1133	LOOSE OR MOUNTED ACCESSORIES & EQUIPMENT		
A-616	Tire chain 6.00 x 16 Heavy Duty (Type D)		
A-2883	Fire extinguisher (Loss Holder) #58-E-202	2	Fr.
A-289	Safety Strap @	1	
	Starting Crank	2	
A-1319	Spare Wheel with Tire & Tube Mounted	1	
A-2897	Spare Wheel Lock Accessory	1	
A-3216	Top Bows @ Complete - 2 Hold Down Straps	1	
A-2998	Top @ Complete-Canvas-7 Straps Attached	1	
A-2999	Splash Curtain- Canvas - Left	1	
A-3070	Splash Curtain- Canvas - Right	1	
A-3211	Head Lamp Cover @	1	
A-3141	W.S. Cover @	2	
	Top - Roll Straps	1	
	Operator Instruction Manual	2	
	Parts Book	1	
	List - Tool Equipment	1	
A-2586	Wiper - Windshield "Manually Operated	1	
A-2934	Mirror - Rear View - Outside	2	
A-2518	Keys - Tool Boxes	1	
A-3055	Gas Tank Well Drain Cap	2	
A-6899	Tire Pump @	2	
	SHIPPED COMPLETE, EXCEPT where shortages noted	1	
	by check mark in shortage column,		
	these will be shipped as soon as available		

CHECKER  
 Form G-2-A

U.S.GOV'T INSPECTOR D.A.Pyle

WILLYS OVERLAND MOTORS, INC.  
TOLEDO, OHIO  
PACKING LIST

S.N.L. NO. G-503

MODEL M.B. TRUCK, 1/4 TON 4x4

FOR "CRATED" VEHICLES			FOR "CRATED" VEHICLES		
AMT	PART NO	NAME	AMT.	PART NO	NAME
1	A-10688	Tool Equipment Carton	1	A-8429	Fire Extinguisher
		CONSISTS OF:	4	A-5597	Wheel & Tires @
		Tool Bag	1	A-6858	Steering Wheel
1	A-372	Hammer	1	A-10688	Top Bow Assembly
1	A-373	Pliers	1	A-11760	Electrolyte & Container
1	A-374	Screw Driver	1		Reassembly Manual
1	A-375	Adj. Wrench	1	A-3211	Windshield Cover @
1	A-377	Wrench Bleeder	2	A-3070	Head Lamp Cover
1	A-5130	Wrench #723	1	A-289	Starting Crank
1	A-596	Wrench #25	1	A-289	Tire Chains 16 x 6.00
1	A-597	Wrench #27	2PR.A-7687		Spare Wheel Less Tire
1	A-598	Wrench #28	1	A-10675	IN GLOVE COMPARTMENT
1	A-599	Wrench #731	2	A-5120	Body Drain Plug
1	A-600	Jack Assembly	2	A-2518	Keys For Tool Boxes
1	A-12268	Jack Handle	PARTS IN BOX, FRONT OF RIGHT SEAT		
1	A-12269	Wheel Hub Wrench	1	A-10561	Gas Can Brkt. @
1	A-692	Wheel Hub Puller	2	A-10518	Handles, Outside Body
1	A-1339	Socket Wrench	1	A-10529	Pintle Hook
1	A-348	Socket Hd. Wrench	2	A-10528	Bumperettes
1	A-1492	Oil Can	1	A-10573	Tire Support Bracket
1	A-379	Grease Gun Extension	1	A-11699	Clamp, Spare Tire
1	A-11765	Tire Pressure Gauge	1	A-10525	Wheel Support Bracket
1	A-6855	Spark Plug Wrench	ALL BOLTS, NUTS & WASHERS IN		
1	637635	Wrench Handle	LOCATION		
1	306715	Drain Plug Wrench	=====		
1	A-1100	Grease Gun	FOR "ON WHEELS" VEHICLES		
1	A-12346	Tire Pump	2	A-2518	Keys For Tool Boxes
1*	A-7511	Tank Well Drain Cap	ABOVE IN GLOVE COMPARTMENT		
1	A-3055	Envelope	1	A-8429	Fire Extinguisher
1	A-6959	Maintenance Manual	1	A-10675	Spare Wheel Less Tire
1	A-6960	Parts Book	1	A-10668	Top Bow Assembly
1	A-6961	Lubrication Guide	1	A-10689	Tool Equipment Box
1X		Bag Spare Parts Kit	CONSISTS OF:		
1	A-7680	Spare Parts Bag	1	A-10688	Tool Equipment Carton
1	A-7686	Fan & Gen. Drive Belt	1	A-289	Starting Crank
1	A-9490	Tire Valve Cap Kit	1	A-3211	Windshield Cover @
1	A-7681	Tire Valve Inside Kit	2	A-3070	Head Lamp Cover
1	A-7682	Lamp Package	2PR.A-7687		Tire Chains 16 x 6.00
1	A-8385	Upper Service Unit			
1	A-1074	Lower Tail Lamp Unit			
1	A-1075	Upper Stop Unit			
1	A-1078	Cotter Pins			
1	A-7683	Spark Plug			
1	A-538	Spark Plug Gasket			
1	637863	Tape-Friction			
1	A-7684	Wire-Iron-Annealed			
1	A-7685				

\*IF NOT IN CARTON, PACKED IN  
LOCATION.

XIF AVAILABLE

CHECKER:  
FORM-51

U.S. GOV'T INSPECTOR: E.P. Martz

**NEW TYPE RETURNABLE CRATE  
INSTRUCTIONS FOR UNCRATING & ASSEMBLY OF VEHICLE  
¼ TON 4 x 4**

Before the vehicle is placed in the Wooden Returnable Crate, it has received preservative treatment to prevent corrosion. Certain parts and assemblies have been removed in order to reduce the crate cubic content. These parts or assemblies are securely strapped in the body.

**TO DISMANTLE THE CRATE**

Remove the 16 -  $\frac{3}{8}$ " x 4" machine bolts around the sides and ends of top panel, Ordnance Part No. 7068965.

Remove top panel from crate.

Remove the 24 -  $\frac{3}{8}$ " x 2" carriage bolts from upper and lower metal corner brackets.

Remove 16 -  $\frac{3}{8}$ " x 4" machine bolts around the sides and ends of the bottom panel, Ordnance Part No. 7068962.

Remove side panels, Part No. 7068963 and end panels, Part No. 7068964 from bottom panel.

Replace bolts, nuts, washers and corner brackets removed back in their respective places in top, bottom, side or end panel.

**REMOVAL OF VEHICLE FROM CRATE BOTTOM**

Cut metal strap holding wheel and tire to radiator guard. (Remove wheel and tire.)

Remove rear lower Chassis hold-down strap bolts and nuts from the cross joist on crate bottom panel, Ordnance Part No. 7068962, and the bolts and nuts from frame rear cross member.

Remove front chassis hold-down strap bolts and nuts from the cross joist on bottom panel and slide metal straps off the bumper.

Remove Electrolyte Carboy from under left front fender.

Cut and remove metal straps holding front and rear shock absorber in compressed position.

Cut and remove metal straps holding wheels and box of parts in body.

**ASSEMBLY**

Raise rear end of vehicle and install rear wheels. (Hub bolt nuts in place on hub bolts.) Left hand threaded nuts have groove around hexagon head and are used on wheel hub bolts on left side of vehicle.

Raise front end of vehicle and install front wheels. Roll vehicle off of crate bottom panel.

Remove sealing tape from end of steering column. (Steering wheel nuts, horn button, keys and body drain plugs are in a bag in the glove compartment.)

Set front wheels in straight ahead position by placing straight edge from rear wheel to front wheel so that it touches the tires front and rear.

Install steering wheel on steering post tube so that one spoke points toward driver's seat and is in line with steering post.

**ASSEMBLY—(Cont'd.)**

Install front and rear body outside handles. (Bolts and nuts in handle.)

Install spare wheel carrier and support to back of body. (Bolts and Nuts in place.)

Install Pintle hook on rear cross member. The reinforcing backing plate goes inside of frame. (Safety chain eye bolts go in lower holes with offset down.)

Install spare gasoline can bracket assembly to left of spare wheel carrier. (Attaching bolts and nuts in bracket.)

Install rear Bumperettes. (Attaching bolts and nuts in bumperettes.)

Install Top Bow assembly by placing ends through top bow pivots on rear brackets and then insert bow ends in front brackets.

Install the two  $\frac{1}{4}$ " drain plugs in body floor front compartment.

Install gun scabbard. (Attaching bolts in scabbard.)

**IMPORTANT**

Remove sealing tape and plugs from following units: generator, distributor, glove compartment and tool box locks and muffler tail pipe. Remove paint from reflectors, blackout and tail lamp lenses with gasoline or cleaning solvent. Remove paper from front of radiator and wood block between clutch pedal and dash.

**CONDITIONING OF VEHICLE**

Check lubricant in transmission, transfer case, engine, front and rear axles. Remove air cleaner oil base by releasing the two spring snap fasteners. See that there is one pint of oil in base in accordance with Technical or Maintenance Manual. Reinstall base to cleaner.

Check Coolant in Radiator.

Inflate tires to 35 lbs. pressure.

Fill fuel tank through filler opening under driver's seat cushion. Replace cap, turning to lock position. Prime carburetor by operating the priming lever up and down located on rear side of fuel pump body. (Leave lever in down position when system is full.) This operates the fuel pump diaphragm assembly and pumps the fuel from the fuel tank; filling the filter and carburetor bowls.

To prepare the battery, remove sealing discs, located on top or under vent plugs, make certain vent holes in all plugs are open. Connect Battery Cables to Battery Terminals.

Fill each cell to  $\frac{3}{8}$ " above the plates with electrolyte (acid and water) in carboy removed from under left front fender.

Let battery stand one hour, if liquid level has fallen, add Electrolyte to restore level. Screw vent plugs in place. See instructions on tag attached to battery.

**NOTE:** This vehicle should be serviced in accordance with instructions given in Technical or Maintenance Manual.

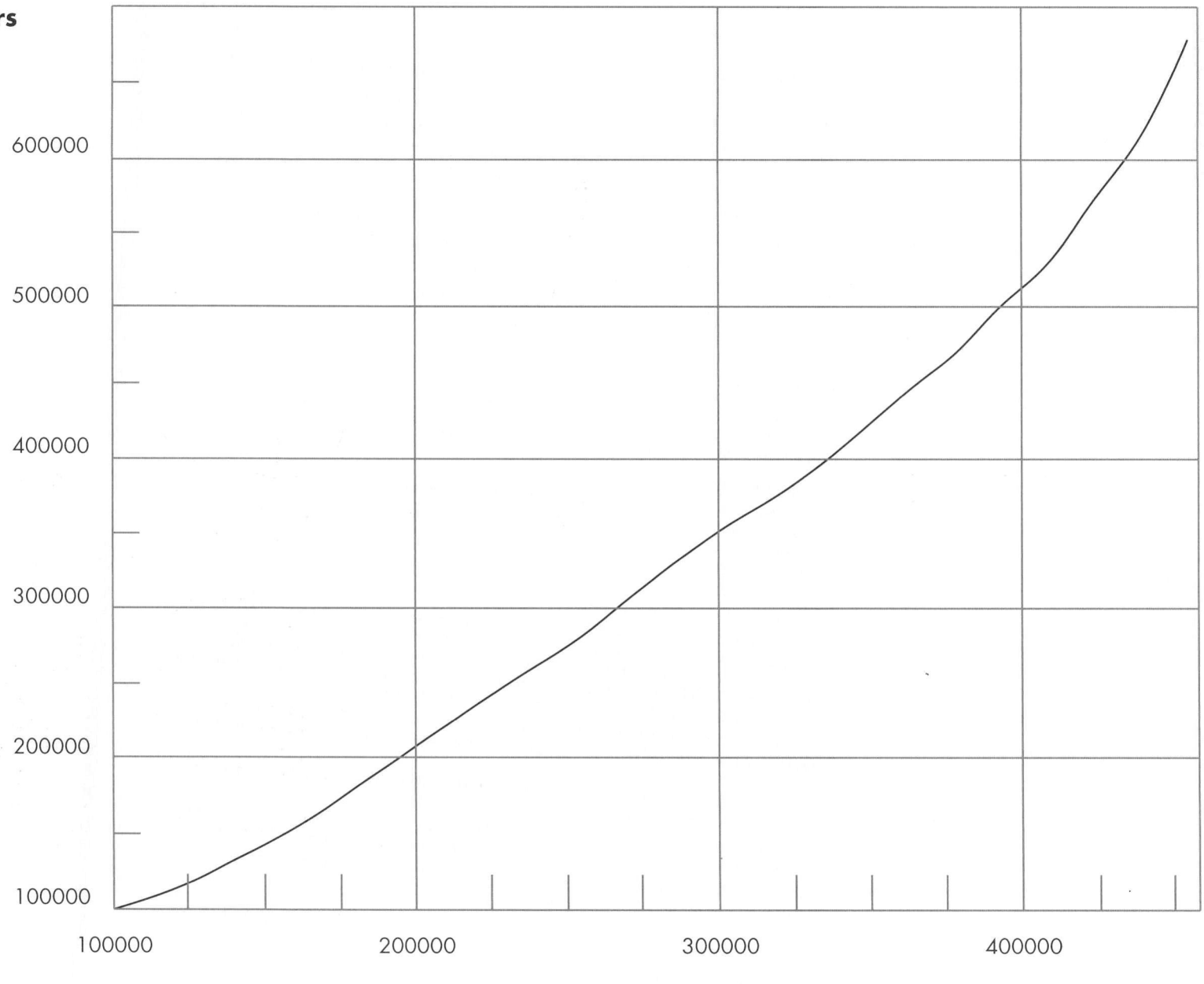
Date: February, 1945.

Willys-Overland Motors, Inc.

Toledo, Ohio. U.S.A.

PART NO. A-17462

## MB Engine Numbers



Graph of the approximate relationship between MB engine numbers and chassis numbers.  
See draft.

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## MB PRODUCTION CHANGES

Changes are shown at the end of each month when the serial number of change is not known.

Year and Month of change	Serial Number	Contract Number	Year and Month of change	Serial Number	Contract Number
<b>W-1</b>			<b>W-2</b>		
1941 Nov.	MB101000	Added grease fitting to transfer levers pivot pin. See page 78.	Feb.	118430	Changed clutch housing to std. type. Parking brake cable fastened to housing.
	102731	Changed parking brake cable retracting spring for increased tension.		118600	Changed fuel tank stone guard to rounded corners. Changed tool locker hinges to one long hinge.
Dec.	103317	Changed steering arm studs from straight to dowel. See page 77.		118600-120700	Most unusual MB's. See page 21.
	103409	Changed air horn-air cleaner tube clamp from A-281 to A-1515.		120700	Changed to std. wheel. Changed to std. frame with one piece battery support. Changed battery ground cable to W0 635883 (short). Added locking glove box. Added exhaust pipe guard.
	103468	Changed carb. throttle shaft and hand throttle to std. type.			Changed wiring harness clips from die formed to "U" shaped strip. Changed steering arm studs from dowel to tapered. Added PAL locknut to engine stay cable.
	103545	Changed windshield to std. type. Added spacer between fuel tank shield and rear floor.			Changed to std. air cleaner.
	104433	Changed from lockwasher to PAL locknut on fuel tank straps.	Mar.	124309	Changed to std. guard.
	104726	Changed rear spring large rebound clip from MA type to MB type.		125809	Changed to top bow pivot with 3/8" NF thread. Changed marker light base to add locating pin. Changed shift lever boots from rubber to leather.
	106763	Changed rear brake hose from frame bracket to crossmember. Changed rear axle brake lines.			Changed to std. speedometer.
	108430	Changed marker light lockwasher to external tooth type for better grounding.	Apr.	137760	Changed to std. latching glove box. Added lock striker plate.
	108452	Revised radiator side air deflectors. Added brace to left air cleaner support. Added support to oil filler tube. Changed to ammeter reading +/- 50 amps. Changed to fuel gage from gas gage. Changed transfer shift levers from small dia. (MA) to large dia.		137909	Changed to filter group with removable cover. Changed rear wheel brake cylinders from 7/8" to 3/4".
	113045	Added capacitor to generator armature terminal		137916	
1942 Jan.	114550	(engine number) Changed oil filler pipe to funnel type. Changed clutch pedal pad from rectangular to rounded end.			



## MB PRODUCTION CHANGES CONTINUED

Changes are shown at the end of each month when the serial number of change is not known.

Year and Month of change	Serial Number	Contract Number	Year and Month of change	Serial Number	Contract Number
<b>W-4 Continued</b>			<b>W-5</b>		
1943 Apr.		Changed to shackle bushings with threaded grease fitting. Changed to water resistant gages. Removed vent hole from fuel pump base. Redesigned steering bellcrank and draglink to strengthen.	1944 Jan.	298838 380269	Changed to type II body. (engine number) Changed to dust proof distributor.
	288835	(engine number) Changed cylinder head gasket. Changed cylinder head from cap screws to studs and nuts.	Mar.		Added to winterization kit: External power connector, full enclosure and driver heater.
May		Changed to bushing type generator.	Apr.	321513	Added fasteners under passenger seat for decontaminator.
June		Changed to welded exhaust pipe flange.	June	326909 345204	Added 1" material to left air deflector. Added bracket for kit box on rear of instrument panel.
Sept.		Added brackets for rifle holder to windshield. Changed to spring type seat cushions.	Sept.	345510 373337	Changed to rotary light switch
Dec.	289001	Changed to type II suppression.	Oct.	441451	Changed to large drum parking brake. (engine number) Changed air horn seals to rubber.
			Nov.		Changed to "H" type transmission.
			Dec.		Changed to deep mud exhaust system.

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