

# UNIVERSAL CARRIERS

## WORKSHOP INSTRUCTION BOOK

**RESTRICTED**

The information given in this document is not to be communicated, either directly or indirectly, to the Press or to any person not authorized to receive it

**Chilwell Catalogue No. 63/63**

**I.F.V.**  
FIRST EDITION

**JANUARY, 1943**



RESTRICTED

Universal Carriers

Workshop Instruction Book

Chilwell Catalogue No.63/63

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Amendment No. 4

April 1945

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Page 160 Battery Repairs  
Cancel Heading and related paragraphs

Page 161 Storing Batteries  
Cancel Heading and related paragraphs

IFV.PD/Ptg/706/413/6100

IFV/PD/Ptg. 671/353/5M

# SERVICE INSTRUCTION BOOK

## Chilwell Catalogue No. **63/63**

*This publication has been produced to the instructions of the Chief Inspector of Fighting Vehicles, to whom all communications should be addressed.*

FIRST EDITION—JANUARY, 1943  
REPRINTED, EMBODYING  
AMENDMENTS Nos. 1 and 2,  
APRIL, 1944

Restricted

Workshop Manual

for

UNIVERSAL CARRIERS

Chilwell Catalogue No. 63/63.

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AMENDMENT NO. 3

-

March 1945.

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Lubrication Chart

Item 7

Reposition from "Weekly Table"  
to "Daily Table"

Item 5

NORMAL column  
Revise "Hypoid 90"  
to read "50 H.D."

IFV/ED/Ptg. 671/353/5M

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# **CARRIERS :—**

**UNIVERSAL, Mark I**  
**UNIVERSAL, No. 1, Mark II**  
**UNIVERSAL, No. 2, Marks I and II**  
**UNIVERSAL, No. 3, Mark II**  
**3 inch MORTAR, No. 1, Marks I and II**  
**3 inch MORTAR, No. 2, Mark II**  
**3 inch MORTAR, No. 3, Mark II**  
**BREN, No. 2, Marks I and II**  
**and**  
**ARMoured O.P., No. 1, Marks I, II and III**

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# CARRIERS :—

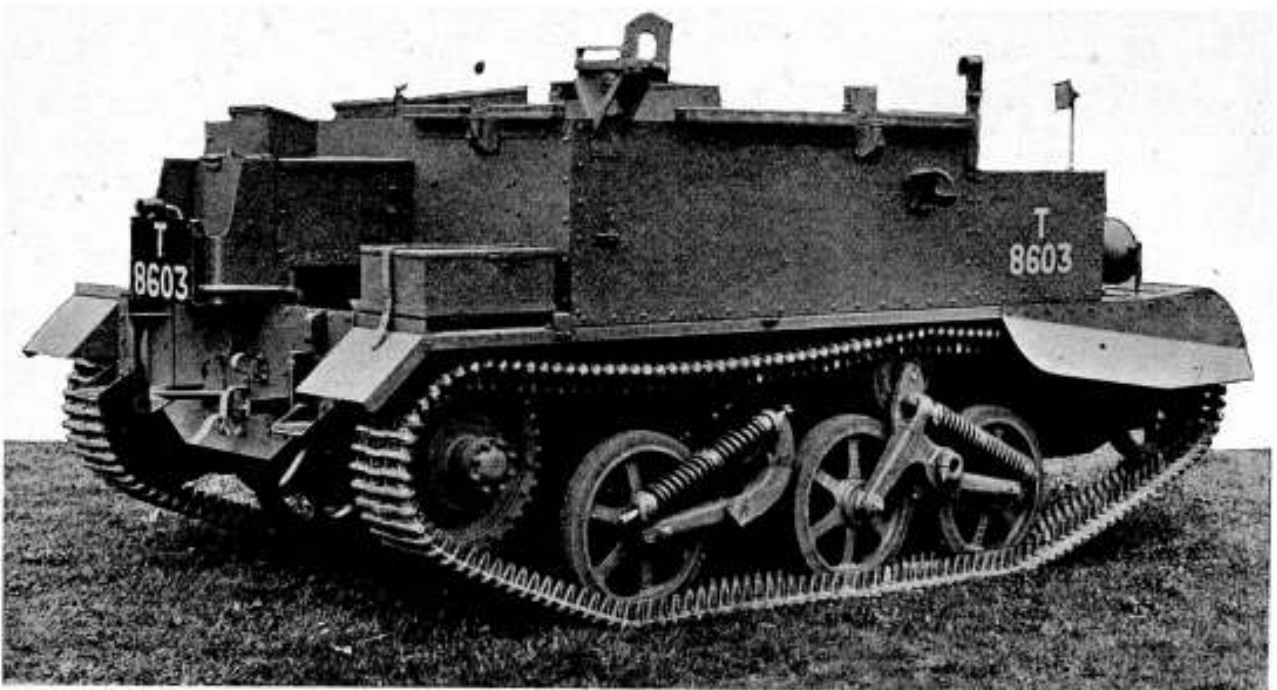
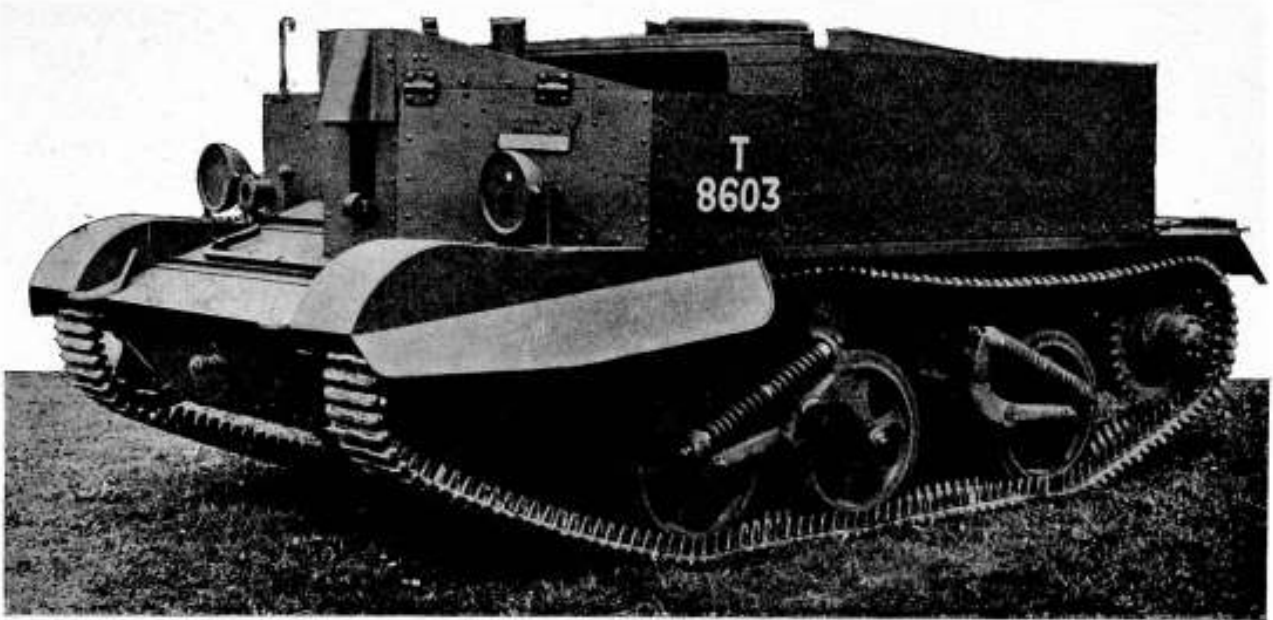
UNIVERSAL, Mark I  
UNIVERSAL, No. 1, Mark II  
UNIVERSAL, No. 2, Marks I and II  
UNIVERSAL, No. 3, Mark II  
3 inch MORTAR, No. 1, Marks I and II  
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THE CARRIER—Front and Rear Views.

# Foreword

This instruction book has been compiled to assist personnel in the correct operation and maintenance of the following types of vehicles :—

- Carrier, Universal, Mark I.**
- Carrier, Universal, No. 1, Mark II.**
- Carrier, Universal, No. 2, Marks I and II.**
- Carrier, Universal, No. 3, Mark II.**
- Carrier, 3 inch Mortar, No. 1, Marks I and II.**
- Carrier, 3 inch Mortar, No. 2, Mark II.**
- Carrier, 3 inch Mortar, No. 3, Mark II.**
- Carrier, Bren, No. 2, Marks I and II.**
- Armoured O.P., No. 1, Marks I, II and III.**

Recognition of the different Nos. and marks of vehicles is described in the following paragraphs, but it must be appreciated that only the main features are mentioned.

The prefix numbers (No. 1, 2 or 3) represent the alternative types of engine fitted as follows :—

- No. 1 is the 65 h.p. engine.**
- No. 2 is the 85 h.p. engine.**
- No. 3 is the 95 h.p. engine.**

The spare parts of the 85 h.p. and 95 h.p. engines cannot be fitted to the other type, but the complete engine units are fully interchangeable.

The explanation of the Marks is described below.

All Universal Carriers have a square and vertical hull back plate.

**CARRIER, UNIVERSAL, MARK I.** This vehicle has a crew of three, two in the front compartment and one seat in the rear right-hand side of the hull.

An angular mud deflector is fitted on the front track guards.

Two foot steps are provided, one on each side of the vehicle.

**NOTE :—**This “mark” of Carrier covers a number of vehicles which have been modified and brought up-to-date.

**CARRIER, UNIVERSAL, No. 1, MARK II,** has a crew of four, two in the front compartment, and two seats in the rear of the hull, one either side.

The front quarter of the top track run is totally enclosed by a valance.

Four foot steps are provided, two each side of the vehicle.

A spare wheel and tow rope are fitted on the front of the vehicle.

A large kit box fits transversely across the rear of the hull.

**CARRIER, UNIVERSAL, No. 2, MARKS I AND II.** These vehicles are the same as Carriers, Universal, No. 1, Marks I and II, except that the engine is 85 h.p. instead of 65 h.p.

**CARRIER, UNIVERSAL, No. 3, MARK II.** This Carrier is the replica of No. 1, Mark II, except that the engine is 95 h.p. instead of 65 h.p.

**CARRIER, 3 inch MORTAR, No. 1, MARK I.** This vehicle carries a crew of five, two in the front compartment, two in the rear right-hand side of the hull, and one in the rear left-hand side.

The mortar equipment is stowed on the rear of the hull over the axle.

Mortar bombs are stowed in special compartments each side of the vehicle over the track guards.

The spare wheel is fitted on the front and the tow rope at the rear.

Two foot steps are fitted on each side of the vehicle.

**CARRIER, 3 inch MORTAR, No. 1, MARK II,** carries the same crew as the Mark I.

No spare wheel is fitted and the tow rope is at the front.

Water drain plugs are fitted in the front and engine compartments, with operating controls inside the hull.

Four foot steps are provided, two each side of the vehicle.

Front quarter valances are fitted on the top track run.



**CARRIER, 3 inch MORTAR, Nos. 2 and 3, MARK II**, are similar to No. 1, Mark II, except that 85 h.p. and 95 h.p. engines are fitted respectively.

Armoured O.P. Carriers are recognisable from other vehicles of this type by the sliding observation shutter fitted in the gunner's compartment. The vision slot is large enough to permit the use of binoculars.

**ARMOURED O.P., No. 1, MARKS I and II.** These vehicles can be grouped together.

They carry a crew of three, two in the front compartment and one in the right rear of the hull.

The cable drum is fitted to the rear of the vehicle.

Two foot steps are provided in the same manner as other Mark II Carriers.

**ARMOURED O.P., No. 1, MARK III**, carries a crew of four, two in front and one each side of the hull.

Two cable drums are fitted, one in front and one in the rear of the hull.

The hull is welded on the Mark IIIW instead of riveted.

**CARRIER, BREN, No. 2, MARKS I and II.** All these vehicles are recognised by the sloping hull back-plate, otherwise the marks correspond to those of the Universal Carriers.

It will be appreciated that all these vehicles are basically the same, but have been adapted for a number of different purposes, but the maintenance is the same for all types.

They are of open type construction and the rectangular hull is built of armoured plates.

The power unit is a petrol engine, transmitting power through a dry plate clutch to a selector type gearbox.

The gearbox output shaft drives a final drive axle which is fitted with driving sprockets to engage the tracks.

Suspension is slow motion type, the bogie wheels rotating in forked assemblies, with coil springs mounted to absorb the wheel shocks.

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Service instructions have been divided up, for clarity, into three main sections :—

**SECTION "A" Operation and crew maintenance of the vehicle, including unit adjustment.**

**SECTION "B" Detailed description of the moving parts of the vehicle.**

**SECTION "C" Detailed specifications suitable for workshops. Instructions for the removal and replacement and the repair of all assemblies.**

From the above you will see that the crew are particularly interested in "A" and "B," whilst workshops will make a closer study of "C" than "A" or "B," schools working mainly from "B." Sections "A" and "B" are issued to all personnel.

The complete volume, sections "A," "B" and "C," is issued only to workshop personnel and those on the distribution list of W.S.5(b).

Mechanical maintenance must be carried out as laid down in the R.E.M.E. Permissive Repair Schedule.

For FROST PRECAUTIONS see page 12.

Before DRIVING the vehicle away, see pages 11 and 12.

**ALL TOOLS REQUIRED FOR ROUTINE OPERATIONS DESCRIBED IN SECTION "A" ARE CARRIED ON THE VEHICLE.**

**SECTION**  
**A**

**OPERATION AND MAINTENANCE**