# INDIAN MOTORCYCLE

MODEL 741 ARMY SCOUT
MODEL 640 SPORT SCOUT
All Scout Models 1934 and later

$5.00

# OPERATION AND MAINTENANCE

REPRINTED BY

**AMERICAN INDIAN M/C CO.**

Remanufacturers of the Famous

**INDIAN MOTORCYCLE**

A SUBSIDIARY OF

PIERCE MOTOR CENTER

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# OPERATION AND MAINTENANCE MANUAL

*Compiled and Edited by*

**THE INDIAN MOTOCYCLE COMPANY**



**CAUTION**

NO ADDITIONAL EQUIPMENT
WILL BE ADDED ON THIS MOTORCYCLE

**MODEL:**
741-30.07 CU. IN.

**SPEED:**
NOT TO EXCEED 60 M.P.H.

**OIL:**
ABOVE 32° F. — — — S.A.E. 50
Between 32° and 10° F. — S.A.E. 30
BELOW + 10° F. — — — S.A.E. 10 W

**SPARK PLUGS:**
USE ONLY MFG'S. NO. C-14
(MM) TM-1485 (PL) TM-10-1484

INDIAN MOTOCYCLE CO.
SPRINGFIELD, MASS., U.S.A.

**INDIAN MOTOCYCLE COMPANY**
**Springfield, Mass.; U.S.A.**

Lithographed in U. S. A. Makers Form M-649A

# Introduction

This manual contains all of the information necessary to the proper operation, care, maintenance and repair of the Indian Military model motorcycles known as models 640 and 741.

Complete detailed operations are given and fully illustrated for the repair of all major and sub-assemblies with factory clearances and specifications.

Note: The importance of properly servicing new machines prior to placing them in service cannot be overestimated. We respectfully direct your attention to the "New Motorcycle Inspection" charts on pages 0-7 and 0-8 and to the periodic inspection forms on page 0-11.

Throughout, — the entire manual follows the standard "Federal Group System" as used in all parts books, instruction and repair manuals to facilitate your finding the information readily.

Service diagnosis tables are given covering the major units and while no attempt has been made to make them all inclusive — the most probable service information is listed.

Through the proper care, operation and maintenance as pointed out in this manual, you can maintain the performance of the motorcycle or motorcycles entrusted to you at their highest peaks of efficiency.

INDIAN MOTOCYCLE COMPANY
Springfield, Mass.

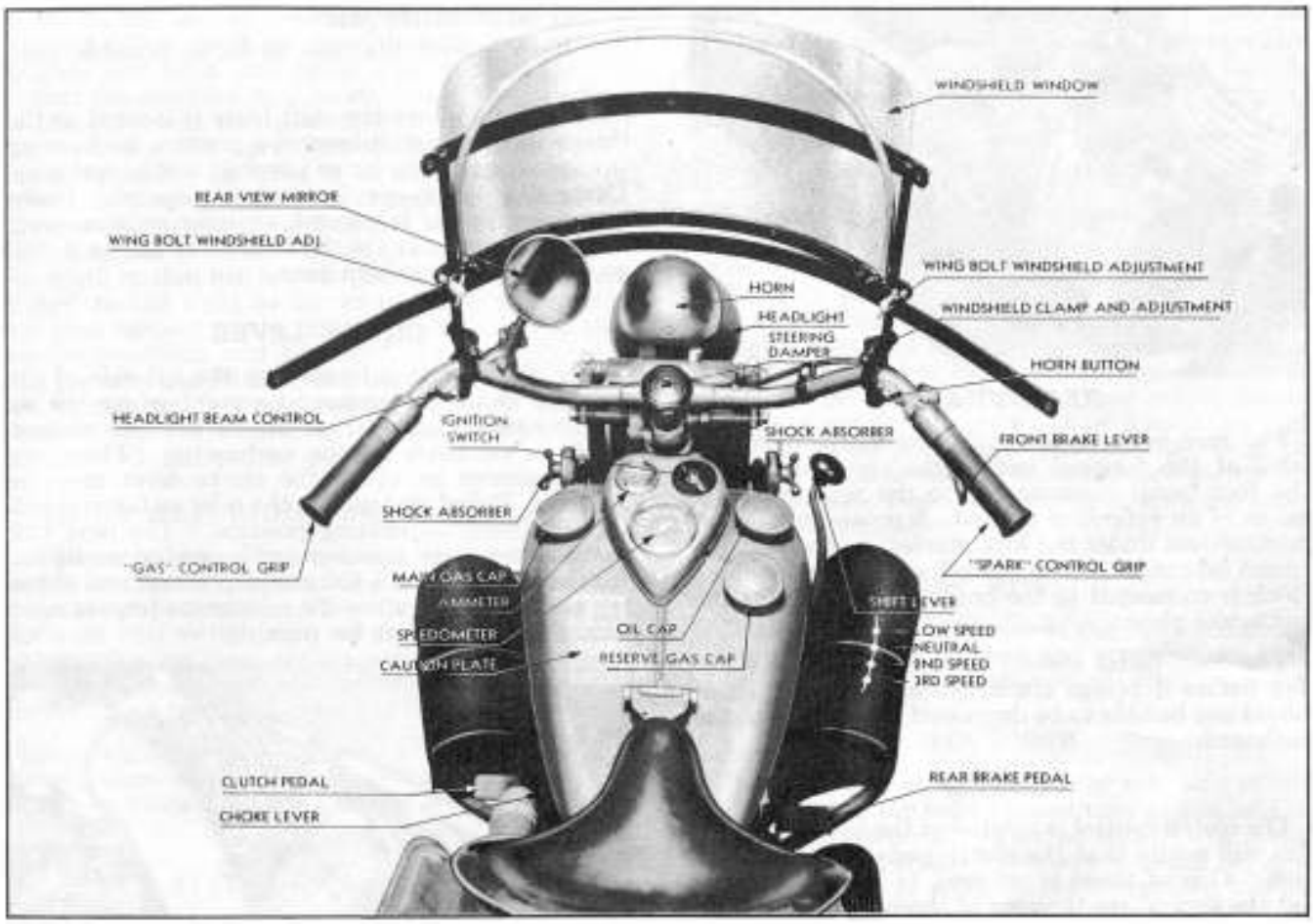
Lithographed in U. S. A.

# ALPHABETICAL INDEX

## ALPHABETICAL INDEX — Continued

# CONTROLS

## THEIR LOCATION — OPERATION — USE




While the above illustration is taken of a Model 640-B, all controls are identical to the Model 741-B with the exception that the Model 741 the shift is located at the rear of the tank.

### THROTTLE

The throttle or gas control is controlled by means of twisting the left handlebar rubber grip. By turning the grip inward (to the right) the throttle is opened and the speed increased; turning it outward (to the left) closes the throttle or cuts down the speed.

### SPARK CONTROL

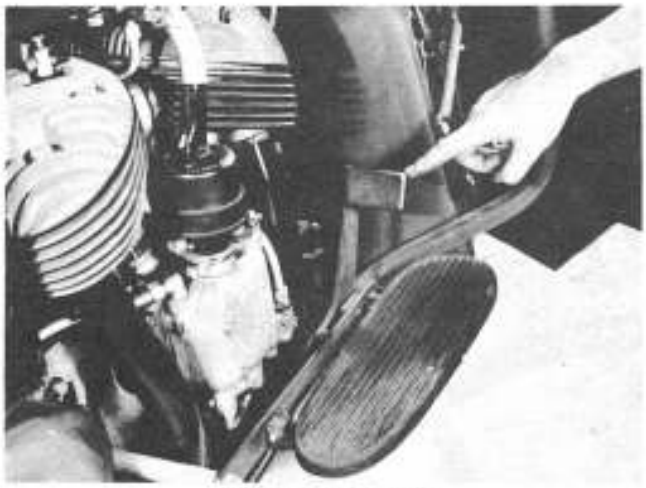
Similar to the gas or throttle control, the spark advance is also controlled by a rubber grip but at the right handlebar. Turning the spark control grip inward (to the left) advances the spark; turning it outward (to the right) retards the spark. A simple rule to remember is turning both the throttle and spark grips inward (toward the rider) increases the speed; turning both grips outward decreases the speed.

Both the spark and throttle control grips operate a spiral inside the grip itself, which pulls and pushes a control wire through its outside cables to the carburetor throttle control and distributor control arm. These cables should periodically be saturated with a very light oil that will seep inside of the cable to provide the inside wire control a frictionless surface to prevent binding and sticky operation.

### FRONT BRAKE

The front brake is controlled by means of a hand lever at the right handlebar, just forward of the spark control grip. The brake is released when the hand brake lever is in its natural position; and by squeezing or putting pressure on the hand brake lever (drawing it up towards the handlebar) the front wheel brake is brought into operation.

The hand lever should have approximately ½" motion when properly adjusted. Pressure on the hand brake lever pulls a wire control cable which, in turn, operates the brake arm on the brake plate at the front wheel.



**REAR BRAKE**

The rear brake is controlled by means of a foot pedal at the forward end of the right footboard. The foot pedal is connected to the rear wheel by means of an extension rod, which crosses under the machine just under the kick starter, and actuates a second extension rod on the left side of the machine which is connected to the brake control arm at the rear brake plate.

The foot pedal should have approximately ½" play before it brings the brake into operation and should not be able to be depressed all the way to the footboard.

**CLUTCH**

The clutch control is located at the left footboard. You will notice that the clutch pedal itself has two pads. One of these is referred to as a "toe pad" and the second (to the rear of the pedal) as a "heel pad." In an engaged position, the heel pad of the clutch pedal should be resting almost on the footboard itself. In a disengaged position, the toe pad should be pressed forward as far as possible.

Unlike a spring type of clutch, the clutch pedal is equipped with a friction disc and tension spring to hold the clutch in any position. The reason for this is so that the rider, in operation of the motorcycle, may disengage the clutch and use both feet to maintain a standing still balance without the danger of having the clutch snap back into an engaged position and cause the motorcycle to jump forward.

**SHIFT LEVER**

The shift lever controls the transmission gears and allows the machine to be shifted from one speed to another. The lever is located at the right front section of the tanks on the Model 640 and on Model 741 is located at the rider's thigh, from a riding position.

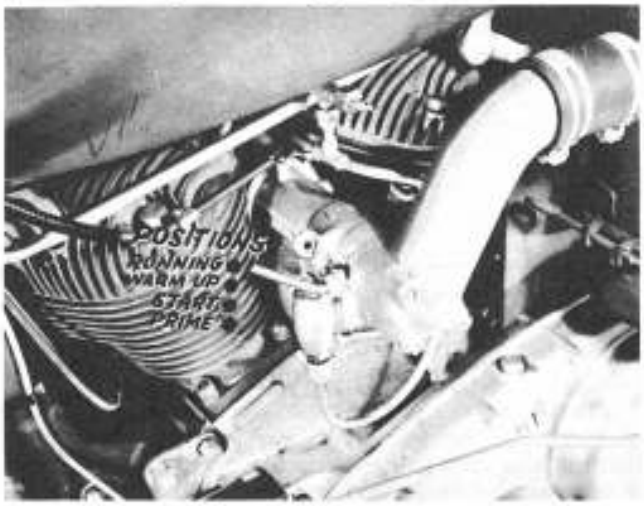
For shift levers located at the front tank position, the gear change positions are as follows:

Forward as far as possible, low gear.
Back toward the rider one notch, neutral.
Back one more notch toward the rider, second or intermediate gear.
Back toward the rider as far as possible, high gear.

On models where the shift lever is located at the rider's thigh, the shift lever in a position back, or up towards the rider as far as possible, will be low gear. Down one notch, or forward, is neutral. Down one more notch is second or intermediate gear; and down towards the footboard as far as it will go, will be third or high gear.

**CHOKE LEVER**

The choke lever is located on the left side of the machine at the carburetor at a point where the air intake elbow leading from the oil bath air cleaner meets or connects to the carburetor. There are four positions in which the choke lever may be shifted. Pulled up towards the rider as far as it will go, is a normal operating position. The next two notches down are starting and warm up positions. All the way down is a full choke position and closes the choke valve to allow the carburetor to pass more gas into the cylinders for priming.




**IGNITION SWITCH**

The ignition switch is located at the right in the instrument panel. Several types of switches have been used on Models 640, so that their operation may best be tested by actual operation of the switch with an eye kept on the ammeter to measure the current drain as the switch is flicked from one position to another.

On the latest model 640-B's and model 741-B's a key locking switch using the standard Military No. H-700 key is used. With this switch it is not necessary to leave the key in its position during operation of the machine; it is only necessary to unlock the switch, after which the key may be re-

moved, leaving it in an unlocked position. Caution should be taken, however, to lock the switch on leaving the machine. The switch, when turned as far to the left as possible, will be in an "off" position. One notch to the right will operate the ignition and send current to the ignition system so that the machine may be started. Two notches to the right will still pass current to the ignition system and at the same time to the blackout lighting equipment. In order to turn the switch to the service lighting equipment, it is necessary to depress the small button on the switch face before the switch can be turned to its next notch to the right. When the small button has been depressed and the switch flicked to the right as far as possible, the switch will pass current to the ignition system and to the service headlight and tail light circuits only. In this position the Hi-Lo beam control switch on the left handlebar is also brought into the circuit. Stop Lights are connected so they operate only on the B. O. and service circuits.

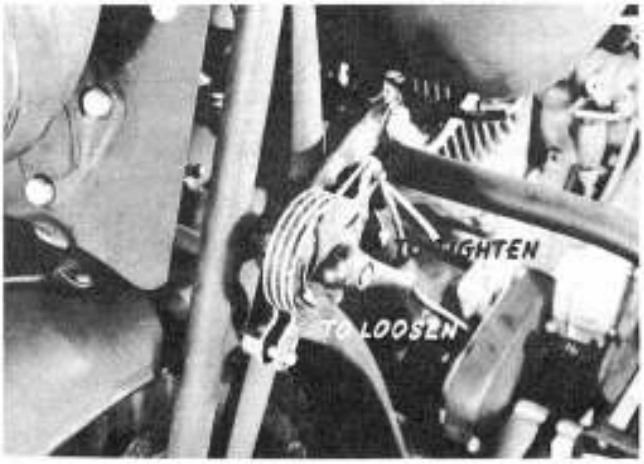
### HI-LO HEADLIGHT BEAM CONTROL

This control switch is located at the left handlebar and is operated by flicking the "toggle type" switch forward or backward. There are only two positions on this switch. In its first position it will operate the low beam on the service headlight and in its next position it will switch the current from the low beam to the high beam of the service light.

The switch itself is automatically cut out of the circuit when the main light switch at the panel is in any other position than its service headlight position.

### STEERING DAMPER

The steering damper is located at the handlebar top just ahead of the instrument panel. The purpose of the steering damper is to increase the stability of the machine under hard, fast riding. Its adjustment brings into play a set of friction discs underneath the fork head which, by being tightened or loosened, control the ease with which the handlebars may be turned either to the left or right. Under normal conditions this control should be left fairly loose and can best be adjusted by the rider under actual riding conditions. It should never be tightened (turned to the right) to a point where the handlebars will turn too hard but should be adjusted to a point where it is easiest for an individual rider to handle the particular machine.




### RIDE CONTROLS

Ride control adjustments are provided on the left and right sides of the front fork. Through loosening or tightening the wing handles, the spring action of the front fork can be "snubbed" or "freed" to meet the individual requirements of the rider and the particular road surface being travelled. On a fairly smooth road or concrete highway, it will perhaps best be found to leave these rather loose; whereas on rough country roads or washboard dirt roads, it will no doubt be found that they must be tightened up somewhat to snub the fork spring action in order to increase the control that the rider has over the machine.

### HORN BUTTON

The horn button is located at the right handlebar in a natural thumb position and operates the horn by pressing the button at its center.

### AIR PUMP

The air pump is located on the left side of the machine at the top safety guard tube and is held to the tube by means of two spring clips. The pump may be removed from its position by being released from the clips. A short rubber connecting tube is screwed into the handle of the pump and must be unscrewed, removed from the pump handle, and attached at the base of the pump before being used to pump up a tire. The pump is provided only as an emergency means of pumping a tire.

### KICK STARTER

The kick starter, or starting arm by which the motor is started, is located at the right side of the machine just below the saddle. A rubber pedal shaped to fit the rider's foot is used in order to give the rider extra purchase for pressing down the pedal to start the engine. Starting the engine is accomplished through throwing the rider's weight, through his right foot, onto the pedal and pressing the kick starter pedal down to the bottom of its natural swing. A spring automatically returns the kick starter pedal to an "up" position as soon as pressure is taken off the pedal. A ratchet adjustment allows the pedal to come back up when foot pressure is released.

The pedal is also geared to the transmission so that a full swing will turn over the engine several revolutions.

### AMMETER

The ammeter is located at the left side of the instrument panel and indicates the amount of current being used. It also indicates the flow of current being supplied to the battery by the generator or rate of discharge from the battery. When the engine exceeds its idling speed, the generator charges the battery and the needle should show on the positive side. At a slower speed, the needle will show on the negative or minus side.

It is very important that under operating condition the ammeter be watched closely to ascertain the flow of current from or to the battery, since this military motorcycle depends entirely on the condition of the batttery for its ignition and lighting operation.

### SPEEDOMETER

The speedometer on the Model 640-B machines is located in the instrument panel at the forward section of the tanks and indicates the road speed in miles per hour, in addition to registering the complete mileage that the machine has travelled since its first operation. The speedometer on the Model 640-B is driven from the rear wheel.

On the Model 741-B the speedometer is located on the front fork directly forward of the handlebar and is driven from the front wheel. It also registers, as well as miles per hour, the complete distance that the machine has travelled since its first operation.

### GASOLINE TANK SHUT-OFFS

Gasoline tank shut-offs are provided on both the left and right sides of the machine for each individual tank. The main tank is on the left side and holds approximately 2 3/10 U. S. gallons of gas. The reserve or right tank with its filler cap at the rear, holds approximately 1 3/10 U. S. gallons of gas. Directly underneath the tanks on either side the shut-offs are located. It is advisable to operate the machine on one tank at a time, always keeping a supply of gas in reserve so that when one tank runs dry the operator will keep in mind the fact that his gas supply is running low.

### GAS TANK FILLER CAPS

A gas tank filler cap is located at the left forward section of the tank and another at the right rear section of the tank.

### OIL FILLER CAP

The oil filler cap and oil storage tank is located at the right front section of the tank. The oil tank has a capacity of approximately 2¾ U. S. quarts.

# USE OF CONTROLS IN MOTION

### SPARK CONTROL

The spark control should always be turned to a fully advanced position under normal riding conditions. For negotiating steep hills it may be found advisable to slightly retard the spark (turning it outward) in order to prevent detonation and keep from firing the spark plugs too quickly while the machine is under load. It may also be found advisable, on some machines, to slightly retard the spark to avoid a kickback at the kick starter pedal when starting. Machines will vary somewhat and by a careful manipulation of the spark control there will be found one spot on each machine that will allow easier and quicker starting than any other spot.

### THROTTLE CONTROL

By turning the throttle control inward towards the tanks (to the right) the speed of the machine on the highway will be increased. When slowing for traffic or slowing to come to a standstill, the throttle should be turned as far to the outside as possible or in a "closed" position. In a "closed" position the motor will still continue to run providing that the carburetor is properly adjusted. The throttle must also be closed at each time when a change in gears is made.

### CHOKE

The machine should not be run with the choke lever in a full choke position. The full choke position is to be used only when priming or starting the engine and should be pulled up towards the rider one notch for starting, two notches for warming up, and under normal conditions — for continuous riding — should be in an "up" position as far as it will go. If the machine will not operate with the choke lever in a normal position, the carburetor apparently is out of adjustment and should be adjusted by a unit mechanic.

With a warm engine, or an engine that has been stopped for only a short time, it will undoubtedly not be necessary to use the choke lever at all. It is best, with a warm engine, to try starting the engine without using the choke lever and then using it only if the engine fails to start after several kicks.

### FRONT BRAKE

The front brake control is adjusted to a point where it will not lock the front wheel except on loose dirt or gravel. Under normal conditions on the highway, the use of the front brake provides only a dragging action of the front wheel rather than a locking action. However, caution should