STEERING & SHIFT GROUP VI

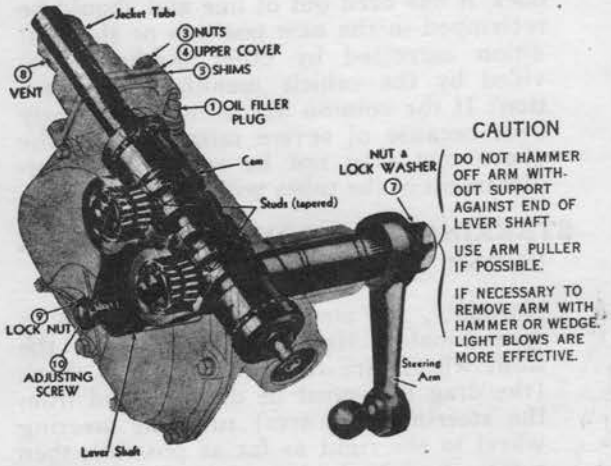
GENERAL

The steering gear used in the Checker is a Ross Twin Lever Type, Model TA-54.

ADJUSTMENTS

When making adjustments free the steering gear of all load, preferably by disconnecting the drag ling from the steering arm, and loosen the instrument board bracket clamp on steering gear jacket tube.

If the ball thrust bearings on the cam must be adjusted, make this adjustment (I) before making the side adjustment (II).



I. ADJUSTMENT OF BALL THRUST BEARINGS ON CAM.

Adjust to a barely perceptible drag but allow the steering wheel to turn freely (with the thumb and forefinger lightly gripping the rim).

Before making this adjustment loosen the housing side cover adjusting screw (9, 10) to free the studs in the cam groove.

TO ADJUST

Unscrew the four nuts (3) and move up the housing upper cover (4) to permit removal of shims (5). Shims are of .002", .003" and .010" thickness).

Clip and remove a thin shim or more as required. Tighten all four nuts. Draw down tight. Test adjustment and if necessary remove or replace shims until adjustment is correct.

II. ADJUSTMENT FOR MINIMUM BACKLASH OF TAPERED STUDS IN CAM GROOVE.

Adjust so that a very slight drag is felt through the mid-position when turning the steering wheel slowly. from one extreme position to the other.

Backlash of studs in the groove shows up as backlash at steering wheel and at ball on steering arm.

The groove is purposely cut shallower, therefore narrower, in the mid-position range of travel of each stud (see illustration on next page) to provide close adjustment where usually the straight-ahead driving action takes place. It also makes this close adjustment possible after normal wear occurs without causing a bind elsewhere.

Therefore, adjust through the mid-position. Do not adjust in positions off mid-position as backlash at these points is normal and not objectionable.

TO ADJUST

Tighten side cover adjusting screw (10) until adjustment is correct and tighten the lock nut (9) to hold it. Then give the gear a final test.

Secure the gear at all points loosened prior to making the adjustment. Also check tightness of mounting bracket bolts and nuts, and of steering arm on lever shaft and the nut and lockwasher (7). With all supporting brackets clamped tight, turn steering wheel to see if any stiffness exists. If so, the column is probably out of alignment and needs correcting. (Refer paragraph on "Column Alignment.")

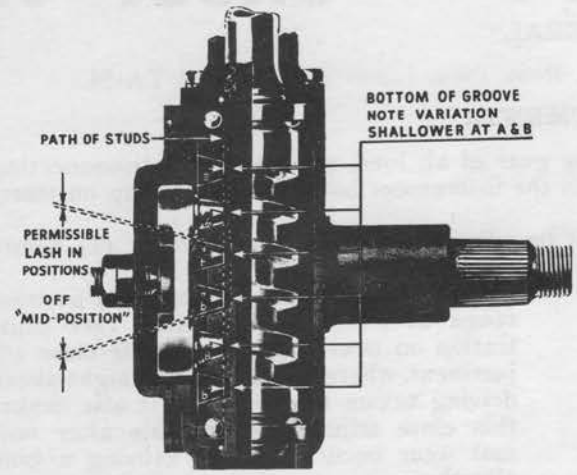
ADJUST STUD-ROLLER BEARING UNITS

This bearing must be preloaded when assembled in the levershaft. The dished spring washer maintains this preload through the normal life of the unit. The studs are factory matched for height to assure proper pin contact in the cam lead, therefore, when making replacement, **REPLACE BOTH** studs.

Unit		Torque in Inch Pounds to Revolve Stud
TA54	1-1/8" dia. shaft	3
TA61	1-1/4" dia. shaft	3

TO ASSEMBLE AND ADJUST

(a)—After the stud and rolls have been assembled in the shaft, complete the assembly in the following order: (b)—Small washer with conical side against tapered rolls. (c)—Large flat washer. (d)—Dished spring washer with flat side against large



GEAR (Studs A+B) SHOWN AT MID-POSITION OF TRAVEL
a shows VARIOUS POSITIONS OF STUD A ON TURNS
b shows VARIOUS POSITIONS OF STUD B ON TURNS
IMPORTANT - ADJUST THRU THE MID-POSITION

flat washer. (e)—Star washer. (f)—Lock nut. (g)—Adjustment: Adjust each new unit to a noticeable drag. Factory setting: 3 inch pounds torque. (h)—After adjustment lock each unit by bending a prong of the washer against a side of the nut. **Do not use a washer twice** unless prongs used before have been removed: lubricate with lubricant used in gear.

LUBRICATION

Lubricate through the pipe plug hole or fitting in the top of the housing. Fill housing slowly until lubricant begins to run out of vent hole (8) in the jacket tube. Keep housing full by adding lubricant periodically according to usage—every few thousand miles or at least spring and fall. Use only a recommended or approved lubricant. (For list of approved lubricants see lubrication chart).

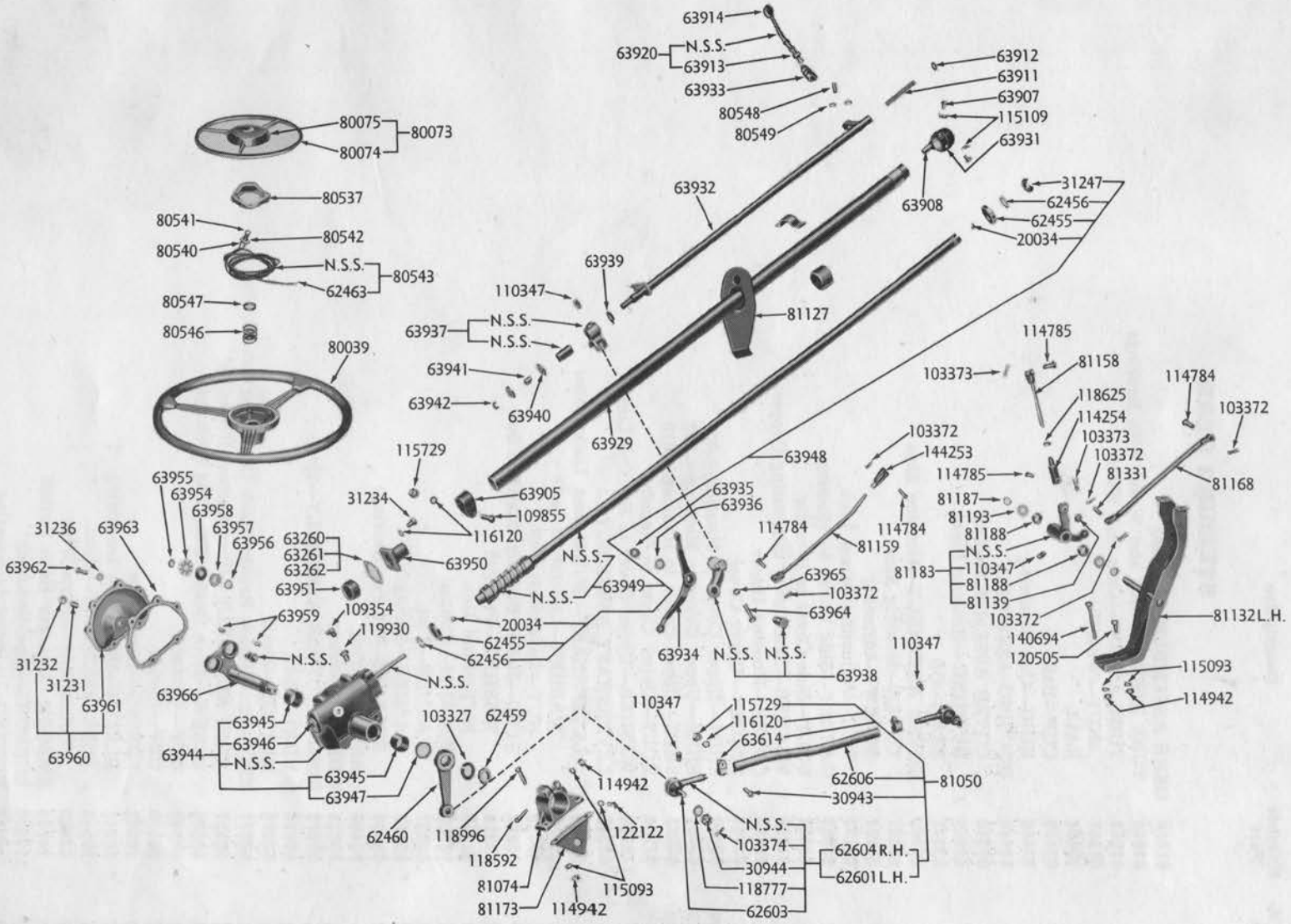
GENERAL INFORMATION

COLUMN ALIGNMENT

Alignment of the column is of paramount importance. THE STEERING COLUMN MUST NOT BE SPRUNG IN ANY DIRECTION FROM ITS FREE POSITION. To determine whether misalignment exists, release upper column bracket and note whether the column moves to a different position, its free position. If it does, it has been out of line and should be reclamped in the new position or the condition corrected by other methods provided by the vehicle manufacturer. **Caution:** If the column has been permanently bent because of severe misalignment, the above test may not be reliable, and replacement of the tubes will be necessary.

STEERING GEAR CONNECTION WITH FRONT WHEELS

Normally, the steerng gear should be in approximately its mid-position when the front wheels are straight-ahead. To check (the drag link must be disconnected from the steering gear arm) turn the steering wheel to the right as far as possible, then rotate the wheel in the opposite direction as far as possible and note the total number of turns. Turn wheel back just one-half of this total movement thus placing the gear in mid-position. Place front wheels straight ahead. The ball on the steering gear arm should now line up, or nearly so, with the ball socket of the drag link. If necessary, the steering arm can be shifted on the splines of the lever shaft to change the ball position. Shifting it one spline will shift the ball 10°. Some drag links can be adjusted in length to take up minor variations.



STEERING GEAR & CONTROLS

PARTS LIST

Req'd. No.	Number Part	Description
		STEERING GEAR
1	81049	GEAR ASSEMBLY—Steering
1	63948	TUBE ASSEM.—Cam and Wheel with Bearings
1	63949	TUBE ASSEM.—Cam and Wheel
1	31247	NUT—Wheel
24	20034	BALL
2	62455	CUP—Ball
2	62456	RING—Cup Retaining
1	63944	HOUSING ASSEMBLY
1	63946	COVER ASSEMBLY—End
2	63945	BUSHING—Housing Inner
1	63947	SEAL—Oil
1	63960	COVER ASSEMBLY—Housing Side
1	63961	COVER—Housing Side
1	31231	SCREW—Adjusting
1	31232	NUT—Adjusting Screw Lock
1	63963	GASKET—Side Cover to Housing
6	63962	BOLT—Side Cover to Housing
6	31236	WASHER—Side Cover to Housing Copper
1	63950	COVER—Housing Upper
1	63951	SPACER—Upper Cover
As Req.	63260	SHIM—Upper Cover to Housing—.002
As Req.	63261	SHIM—Upper Cover to Housing—.003
As Req.	63262	SHIM—Upper Cover to Housing—.010
4	31234	BOLT—Upper Cover to Housing
4	116120	WASHER—Upper Cover to Housing Lock
1	63592	LEVERSHAFT ASSEMBLY
1	63966	LEVERSHAFT—W/Nut and Lockwasher
1	103327	WASHER—Levershaft Lock
1	62459	NUT—Levershaft Hex.
2	63953	STUD—Roller Bearing (Matched Set)
2	63954	WASHER—Pronged
2	63955	NUT—Stud Hex.
2	63956	WASHER—Conical
2	63957	WASHER—Flat
2	63958	WASHER—Spring
52	63959	ROLLERS—(26 Per Bearing)
1	62460	ARM—Steering
1	80039	WHEEL—Steering
1	80073	RING & BUTTON ASSEMBLY—Horn
1	80074	RING—Horn
1	80075	BUTTON—Horn
1	80077	KIT—Horn Button Repair (Each Consisting Of)
1	80537	RING ASSEMBLY—Horn Button Retaining
3	80538	SCREW—Horn Button Ret. Ring Assembly
1	80539	CUP—Contact
1	80540	CUP—Spring
1	80542	SPRING—Horn Wire
1	80541	SLEEVE—Horn Wire Insulating
1	80543	WIRE ASSEMBLY—Horn
1	62463	TERMINAL—Horn Wire
1	24565	EMBLEM—Checker Horn Button
1	119930	BUSHING—Pipe Reducing
1	109354	FITTING—Housing Lubricating
1	538	PLUG—Housing Pipe (Optional)
1	81074	BRACKET—Trunion
1	81173	BRACKET—Steering Gear Support Reinforcement
4	118996	BOLT—Bracket to Frame Hex Hd.
4	115093	WASHER—Bracket to Frame Bolt Lock

PARTS LIST

No. Req'd.	Part Number	Description
		STEERING GEAR (CONT.)
4	114942	NUT—Bracket to Frame Bolt
1	122122	BOLT—Bracket to Steering Gear Hex Hd.
1	115093	WASHER—Bracket to Steering Gear Bolt Lock
1	118592	BOLT—Trunion Bracket Clamping
1	115093	WASHER—Trunion Bracket Clamping Bolt Lock
1	114942	NUT—Trunion Bracket Clamping Bolt
1	81220	CLAMP—Steering Column to Instrument Board
1	81221	INSULATOR—Steering Column to Instrument Board
		DRAG LINK
1	81050	LINK ASSEMBLY—Drag
1	62604	SOCKET ASSEMBLY—R. H.
1	62601	SOCKET ASSEMBLY—L. H.
2	62603	STUD—Dust Cover Socket
2	30944	NUT—Stud
2	118777	WASHER—Drag Link Stud to Steering Gear Arm Plain
2	103374	PIN—Drag Ling Studs Cotter
1	62606	LINK—Drag
2	63614	CLAMP
2	30943	BOLT—Clamp Hex Hd.
2	116120	WASHER—Clamp Bolt Lock
2	115729	NUT—Clamp Bolt Hex
2	110347	FITTING—Lubricating Straight
		GEAR SHIFT AND JACKET
1	81122	SHIFT AND JACKET TUBE ASSEMBLY—Gear
1	63929	JACKET TUBE ASSEMBLY
1	63930	BEARING—Jacket Tube
1	80546	SPRING—Bearing
1	80547	SEAT—Spring Bearing
1	80544	CLAMP ASSEMBLY—Jacket Tube
1	63905	CLAMP
1	109855	BOLT—Clamp
1	115729	NUT—Clamp Bolt
1	116120	WASHER—Clamp Bolt Lock
1	63908	UPPER BRACKET SHAFT ASSEMBLY
1	63931	UPPER BRACKET ASSEMBLY
2	63907	SCREW—Upper Bracket
2	115109	WASHER—Upper Bracket Screw Lock
1	63909	SPRING—Upper Bracket
1	63932	SHIFTER TUBE ASSEMBLY
1	63911	SPRING—Shifter Tube
1	63912	WASHER—Shifter Tube
1	63920	HAND LEVER ASSEMBLY—Gear Shifter
1	63913	RUBBER BUMPER—Hand Lever
1	63914	BALL—Hand Lever
1	80548	PIN—Hand Lever
2	80549	RETAINING RING—Hand Lever Pin
1	63933	SLEEVE—Hand Lever
1	63934	SELECTOR—Lever
1	63935	NUT—Elastic Stop
1	63936	WASHER—Plain
1	63937	LOWER BRACKET ASSEMBLY
1	110347	FITTING—Lubrication
1	63938	LOWER BRACKET CLAMP

GEAR SHIFT AND JACKET (CONT.)

2	63964	SCREW—Lower Bracket Clamp Hex Hd.
2	63965	WASHER—Lower Bracket Clamp Hex Hd. Screw Lock
1	63939	BUMPER
2	63940	WASHER—Plain
1	63941	SPACER
1	63942	NUT—Elastic Stop
1	81127	SEAL—Steering Column Dash
1	81133	SUPPORT BRACE—Dash to Frame R. H.
1	81132	SUPPORT BRACE ASSEMBLY—Dash to Frame L. H.
2	120505	BOLT—Dash Supports to Frame Hex Hd.
2	140694	BOLT—Dash Supports to Frame Hex. Hd.
	114942	NUT—Dash Supports to Frame Bolt Hex
4	115093	WASHER—Dash Supports to Frame Bolt Lock
1	81183	BELLCRANK ASSEMBLY—Gear Shift
2	81188	BUSHING—Gear Shift Bellcrank
1	81139	BUSHING—Gear Shifter Lever
1	110347	FITTING—Gear Shift Bellcrank Lubrication
2	81193	WASHER—Gear Shift Bellcrank Thrust
2	81187	RING—Gear Shift Bellcrank Retaining
1	81158	ROD—Gear Shift Upper
1	144254	CLEVIS—Adjustable Rod End
1	118625	NUT—Gear Shift Upper Rod Hex Jam
2	114785	PIN—Gear Shift Upper Rod End Clevis
2	103373	PIN—Gear Shift Upper Rod End Clevis Pin Cotter
1	81159	ROD ASSEMBLY—Gear Shift Selector
1	144253	CLEVIS—Gear Shift Selector Rod Adjustable Rod End
1	81168	TUBE ASSEMBLY—Gear Shifter
3	114784	PIN—Gear Shifter & Selector Rods Clevis
1	81331	PIN—Transmission Gear Shifter Tube Assembly
5	103372	PIN—Gear Shifter & Selector Rods Clevis Pin Cotter