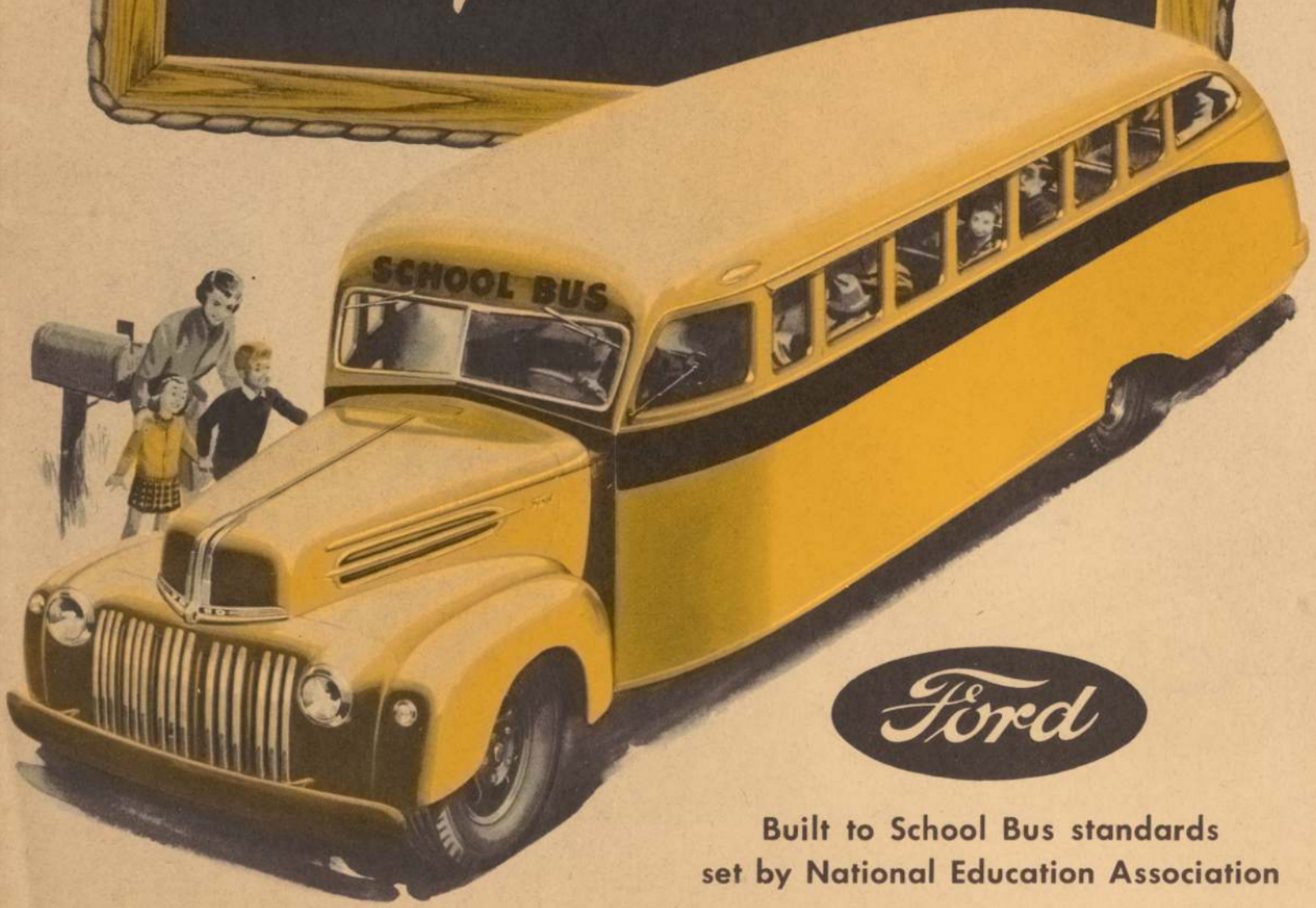
FORD SCHOOL BUS *Safety* CHASSIS



Ford

Built to School Bus standards
set by National Education Association

RELIABLE, ECONOMICAL TRANSPORTATION ON THE "ROAD TO LEARNING"

TOMORROW'S LEADERS

No group of community leaders shoulders a more important responsibility, with more intelligence and more genuine modesty, than the school board members who are preparing today's children to be tomorrow's leaders. Nothing could be more reassuring than the interest this group is showing in problems of transportation, as well as education. In such hands as these, it is certain that the needs of school children for safe and comfortable transportation will receive the consideration they deserve.

HANDLE WITH CARE

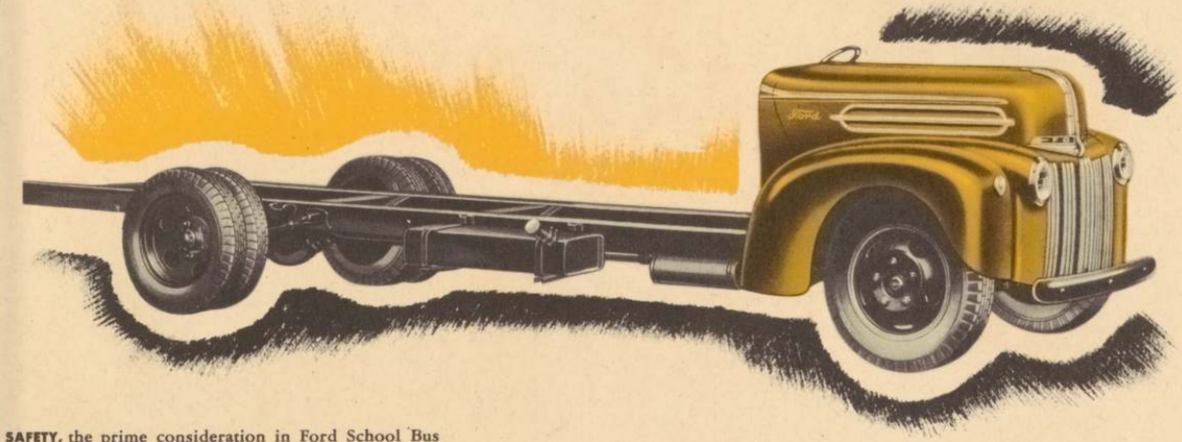
TO TRANSPORT 4,500,000 YOUNG AMERICANS . . .

The Best in Buses Is None Too Good

FOR AMERICA'S MOST PRECIOUS CARGO

FORD

Ford School Bus Safety Chassis are available in 158-in. and 194-in. wheelbase lengths for bodies ranging from 14 ft. to 22 ft.



SAFETY, the prime consideration in Ford School Bus design, is evidenced in engines with power adequate for immediate response; big brakes for dependable, straight-line stopping; quickly accessible, easily actuated driving controls, plus many other features.

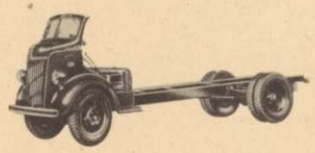
EASY RIDING that helps keep young minds fresh and alert is a product of balanced Ford chassis design, and many built-for-the-purpose, ride-cushioning features.

RELIABILITY is an outstanding Ford School Bus characteristic. It means that children get to their desks and back home, *on time,* day in and day out, saving needless parental worry, reducing lost school time.

DURABILITY of Ford Chassis is proved by the record. License registration statistics show more Ford trucks in use than any other make . . . successively bigger percentages of Fords in older age groups. New Ford School Buses offer the same tradition of endurance.

ECONOMY is a well-recognized Ford quality. Low first cost is only an introduction to savings on gas, oil, tires and maintenance.

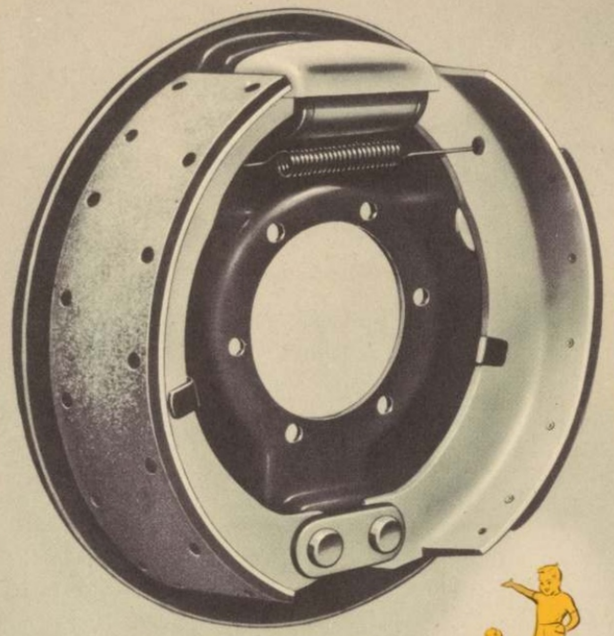
FORD CAB-OVER-ENGINE CHASSIS



The 134-in. and 158-in. wheelbase C.O.E. models offer cowl to rear axle dimensions of 137 in. and 161 in. respectively, and bring to school bus work such recognized C.O.E. advantages as shorter over-all length, better weight distribution, easier handling, etc.

EVERY SCHOOL BUS MAKER BUILDS BODIES FOR FORD CHASSIS

FORD BUS BRAKE FEATURES



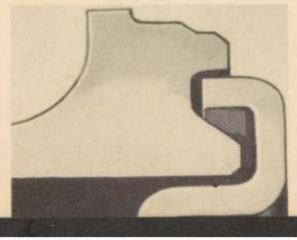
"MOM WON'T HAVE TO WORRY ABOUT US"

"GUESS THESE WILL NEVER WEAR OUT"

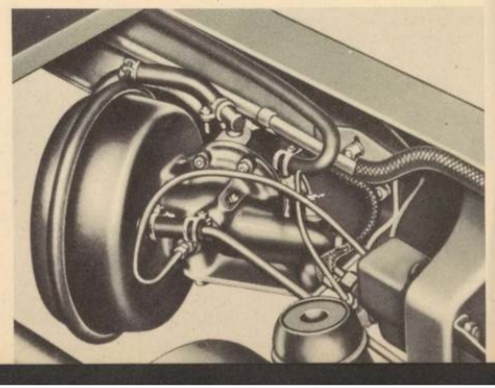
HYDRAULIC BRAKES feature large, 14-in. diameter drums at the front, 15-in. drums at the rear. Each brake shoe is anchored independently and is actuated by its own hydraulic piston to give more uniform, more reliable braking. An easy-to-get-at adjustment is provided for each brake shoe. Because more braking is done in a forward direction, forward shoe lining is longer than reverse lining, thus equalizing wear. For greater safety, brake lines are double-wrapped steel tubing. These lines are mounted in the chassis in a manner to provide maximum protection against road hazards. (Right) Non-warping, non-scoring cast iron brake drum ring is fused to the steel disc type drum back, a type of construction which provides great strength with minimum weight.

School Bus HAND BRAKE is propeller shaft type which, in effect, multiplies hand "pressure" through the rear axle gears. This constitutes a safe braking system, operating independently of the regular braking system. Design and construction meet with standard School Bus requirements.

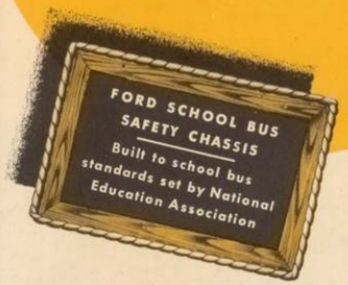
Brake drums feature an effective GROOVE-SEAL designed to keep out dust and water, thereby maintaining brake reliability under varied driving conditions.

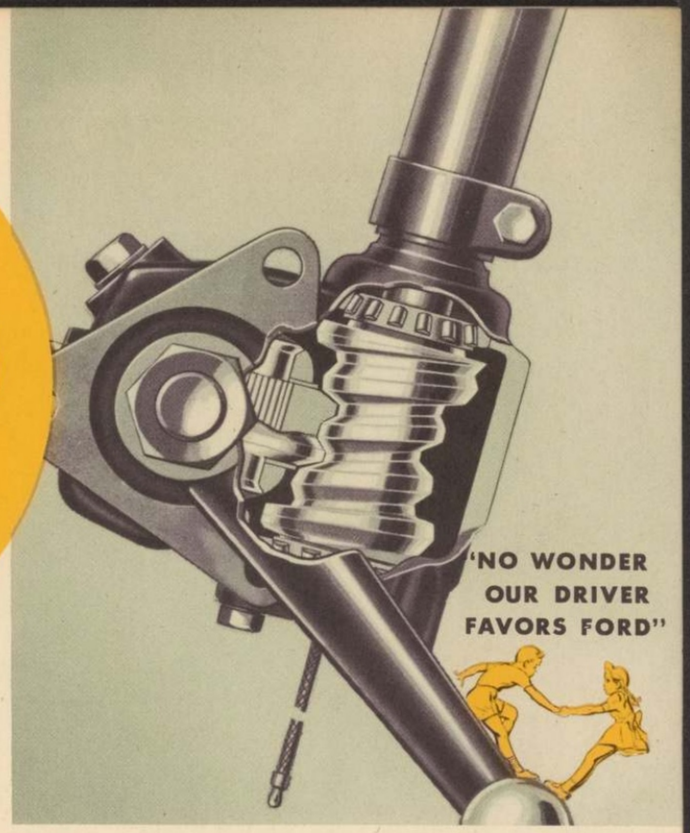


VACUUM POWER BRAKE equipment included on 15,000 lb. G.V.W. chassis; may be obtained on other school bus chassis. Vacuum cylinder supplies controlled braking power, requires less "muscle-power."

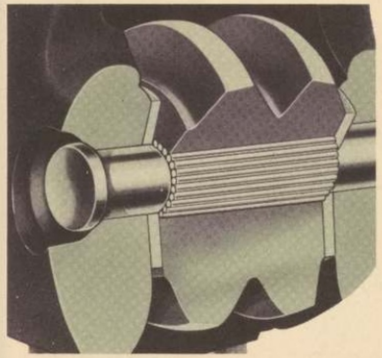


FORD BUS STEERING FEATURES





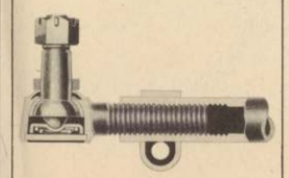
"NO WONDER OUR DRIVER FAVORS FORD"



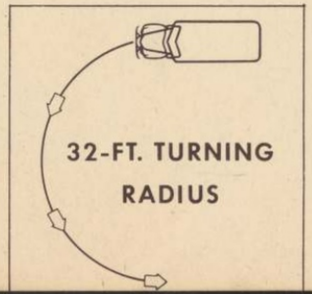
An important Ford contribution to School Bus safety is the NEEDLE BEARING mounting of the steering roller. The needle bearings reduce friction, make steering easier, permit effortless and, therefore, safer driving control.

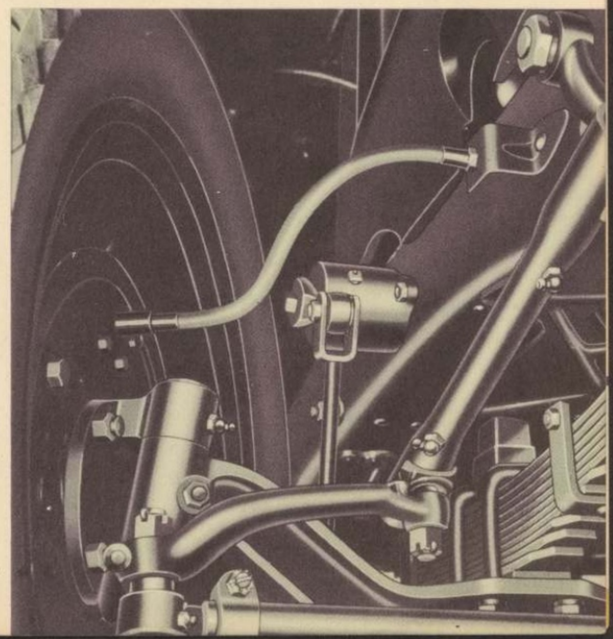
Ford STEERING GEAR works on principle of rolling-action rather than sliding-action, thus reducing friction. Steering worm is supported in two opposed tapered roller bearings which take thrust in either direction. Sector shaft turns in bronze bushings. Both worm and sector shaft are adjustable. (Below) Front axle is rugged, heat-treated alloy steel. Spindles and spindle bolts are extra large for greater safety.

AUTOMATIC-TYPE TIE ROD ENDS offer safe, reliable steering control. Spring-loaded plate, in tie rod end, keeps ball joint firmly seated. No manual adjustment of tie rod is needed to compensate for wear on ball joint.



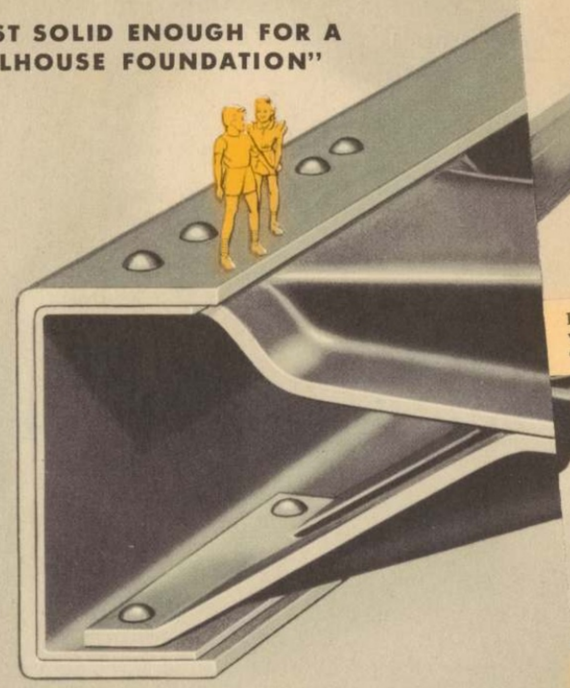
MANEUVERABILITY of the Ford School Bus Safety Chassis contributes to safer handling in traffic, easier parking. Turning radius is 32 ft. for 158-in. wheelbase; 36¾-38¼ ft. for 194-in. wheelbase.



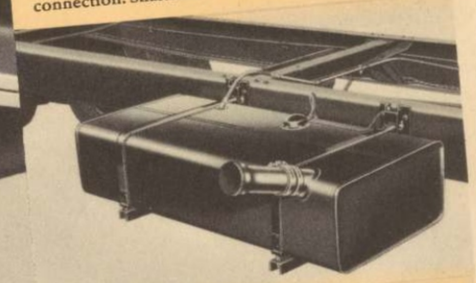


OTHER FORD BUS SAFETY FEATURES

"ALMOST SOLID ENOUGH FOR A SCHOOLHOUSE FOUNDATION"



DRIVE SHAFT GUARDS prevent shafts from whipping through floor in event of accidental disconnection. Shafts are large diameter, tubular-type.



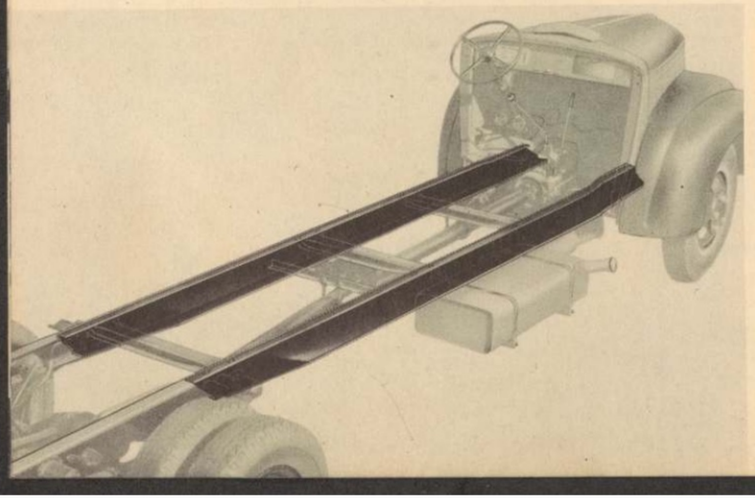
25-gallon capacity FUEL TANK is especially designed to meet standard school bus specifications. Mounted on right-hand frame rail.

↑ Heavy-duty FRAMES with a depth of 7 in., provide minimum deflection under load, for longer body life. Frame width follows S.A.E. standard of 34 in. Seven strong cross members are rigidly attached to side rails. Cross members in center have massive, flanged, alligator-jaw attachment.

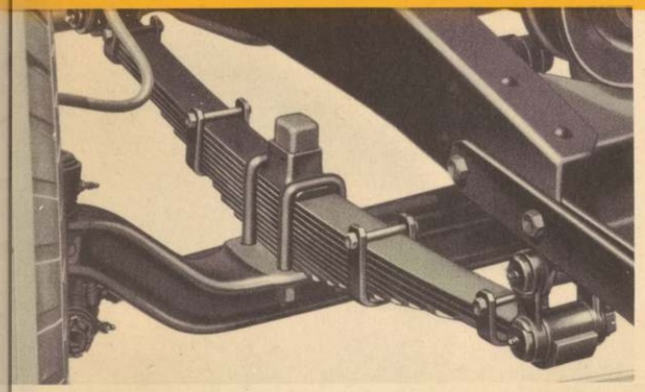
↓ Heavy-gage (6.58 x .125 x 2.21 in.) channel section FRAME REINFORCEMENTS in 194-in. School Bus chassis, stiffen the frame through its unsupported span, counteract weaving, distortion and undue stresses.

GOVERNOR is optional at extra cost to control road speed, guard against excessive engine speed. Can be set within a range of 1200 to 3000 r.p.m.

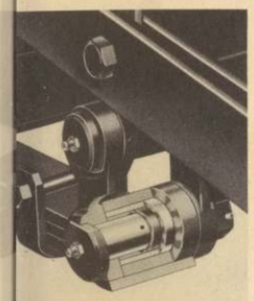
EXTRA LONG EXHAUST PIPE which extends beyond the end of the Ford School Bus frame helps keep injurious exhaust fumes out of the interior of the body.



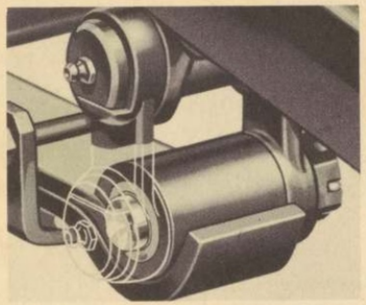
FORD BUS COMFORT FEATURES



36-in., 11-leaf FRONT SPRINGS have leaves graduated in length and thickness for comfortable riding with varying loads. Springs have wear-resisting, steel-backed, bronze-bushed eyes and hardened steel shackle pins.

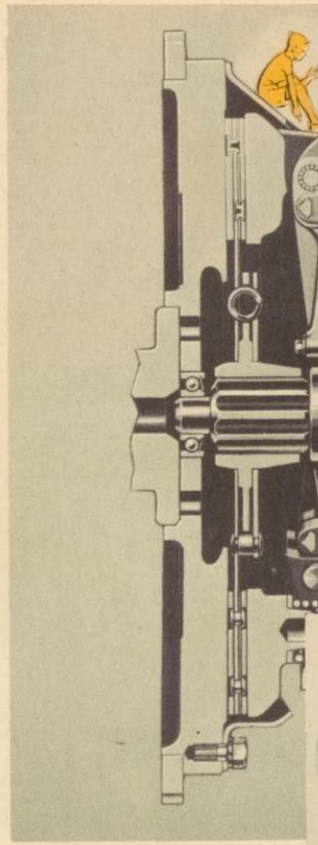


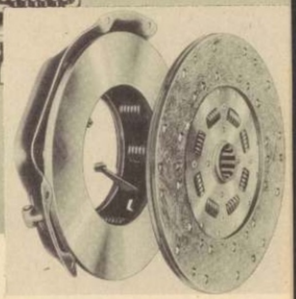
FORESHACKLING of front springs improves steering geometry, makes for easier, steadier, more reliable steering.



SAFETY-WRAP design of front springs is a notable bus feature. End of No. 2 spring leaf is formed partially around spring eye to assist main leaf, and give double protection.

"SO THAT'S WHY FORD PICKUP IS AS SMOOTH AS VELVET"

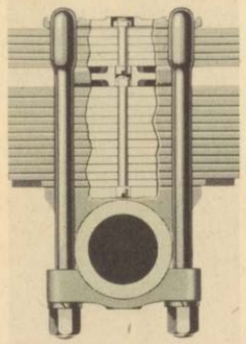




11-inch SEMI-CENTRIFUGAL CLUTCH delivers full power smoothly, requires minimum pedal pressure. Cushion disc construction prevents grabbing. Dampener springs between hub and disc counteract chatter.

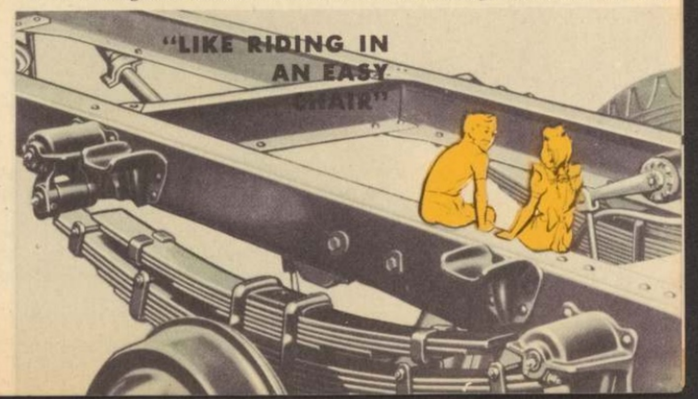
Ford bus-type clutch design features special CLUTCH FACINGS, greater clutch spring pressure.

Hydraulic, double-acting SHOCK ABSORBERS, front and rear, provide comfortable riding, aid steering control. Self-sealing type. Adjustable to suit loading.

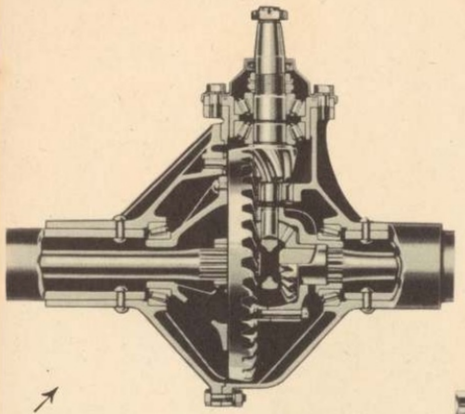


Main and auxiliary springs have INDEPENDENT CENTER BOLTS. Springs can be serviced separately; bolts last longer.

REAR MAIN SPRINGS and auxiliary springs offer easy riding with light or heavy loads. Spring eyes and shackles are steel-backed, bronze-bushed; pins are interchangeable. Brackets double riveted to lower flange and side of frame rail.

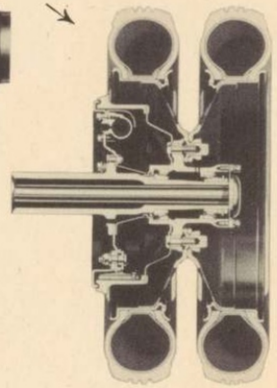


FORD QUALITY FEATURES THAT ADD . . .

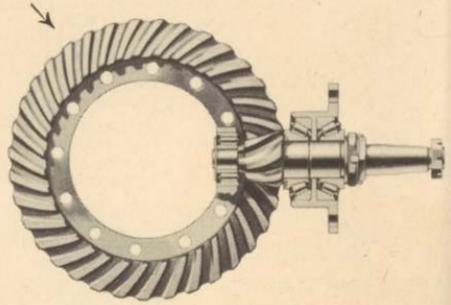


SINGLE REDUCTION REAR AXLE on chassis rated at 13,500 lbs. and 14,500 lbs. is heavy-duty, full-floating type, with quiet, low-friction spiral bevel gears. All weight carried by the rear springs is transferred to the wheels through the axle housing. The axle shafts are not required to support weight. They serve only to drive the wheels, and are, therefore, not subject to bending stresses. The ring gear is backed up by a thrust plate to prevent "give." Four differential pinions spread the power load evenly, with lower tooth stresses. This axle is available in three ratios: 6.67, 5.83 and 5.14 to 1.

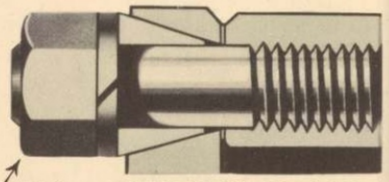
Wide, 7-inch RIMS help make tires run cooler, permit interchangeability of several tire sizes on same rim. Wheel HUBS are mounted on large, wide-spaced bearings which are retained by a large adjusting nut with lock washer and lock nut.



Large, roller bearings STRADDLE the rear axle pinion, two tapered roller bearings front and one straight roller rear, to counteract any tendency the pinion might have under heavy load to "climb" out of alignment with the ring gear. The front pinion bearing is positively lubricated with oil carried up by the ring gear and distributed through a housing passage.

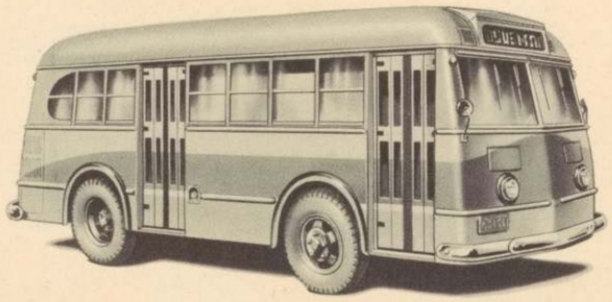


"FORD WILL GET US THERE ON TIME EVERY DAY"



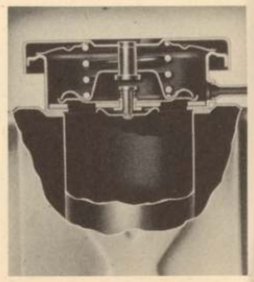
Wedge-type STUD ADAPTERS minimize shearing of rear axle hub studs, by eliminating "play" between stud and flange hole; distribute load evenly to all driving studs.

IN TRANSIT-TYPE BUS SERVICE, TOO... Total Ford Operating Mileage Runs Into the Billions . .



Transit-Type Rear Engine Ford Buses are serving countless American cities and foreign countries, frequently as part-time or full-time school buses, with traditional Ford reliability and economy. The design of the Transit-Type Bus incorporates experience gained in many years of bus design and manufacture. This same experience is reflected in the design and construction of Ford School Bus Safety Chassis.

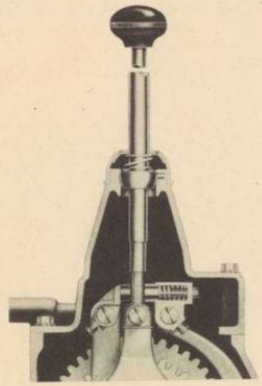
Pressure-valve RADIATOR CAP set for 3 to 4 lbs. release pressure, reduces coolant loss, improves engine operating efficiency. Higher pressure raises boiling point of coolant 6 to 8 degrees.

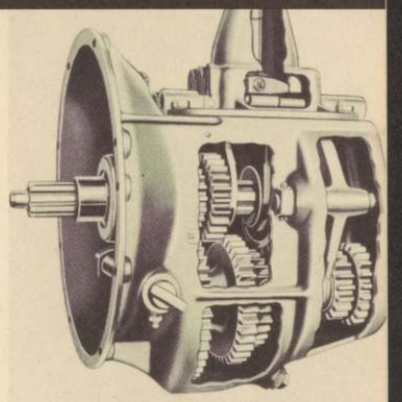


TO SCHOOL BUS CHASSIS DURABILITY

SPINDLES and spindle bolts are extra large to provide the safety needed in severe service. Long, large-area bronze bushings minimize wear. Front wheels are mounted on two, large, wide-spaced, tapered roller wheel bearings.

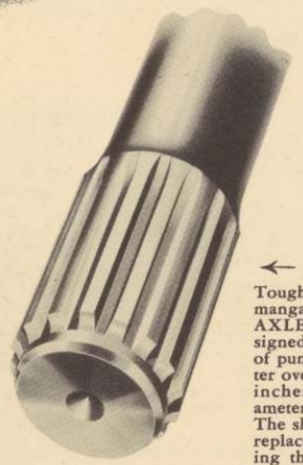
New internal spring-type REVERSE LOCK eliminates thumb latch on transmission lever.



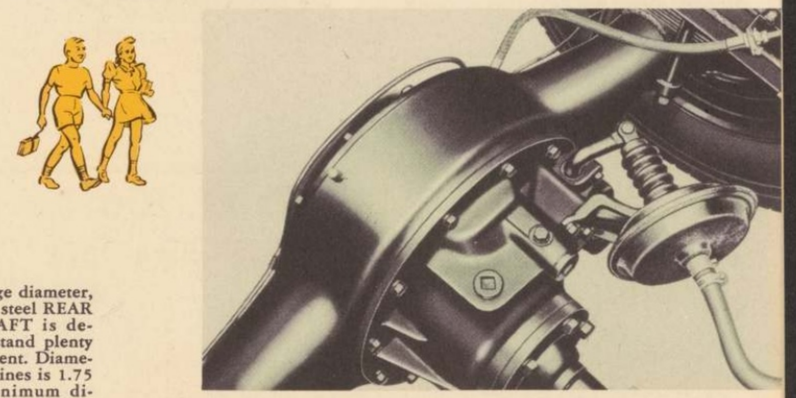


Heavy duty 4-SPEED TRANSMISSION is engineered for endurance. All gears in forward speeds are mounted on anti-friction ball or roller bearings to reduce wear. Gears are wide, with strong tooth contours. Sliding shaft and gears are forged from heat-treated alloy steel.

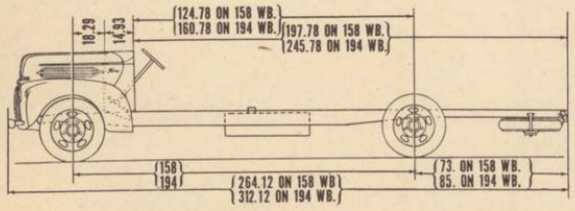
"WE WOULD BE THROUGH COLLEGE BEFORE A FORD WOULD WEAR OUT"



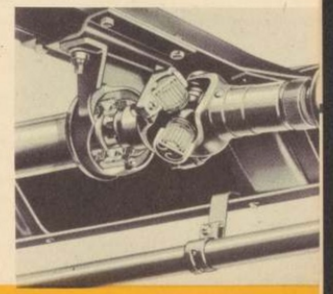
Tough, large diameter, manganese steel REAR AXLE SHAFT is designed to stand plenty of punishment. Diameter over splines is 1.75 inches; minimum diameter is 1.56 inches. The shaft can be easily replaced without jacking the bus or taking the axle apart. Driving flange at outer end is forged integral with shaft for greater strength.



High range of Ford 2-SPEED REAR AXLE on chassis rated at 15,000 lbs. reduces engine revolutions, saves on gas, oil and engine wear. The low range steps up power when extra pulling effort is needed for better acceleration, faster hill climbing ability. A dash button controls the vacuum-actuated shift to either range. Forced flow oiling system gives positive lubrication.

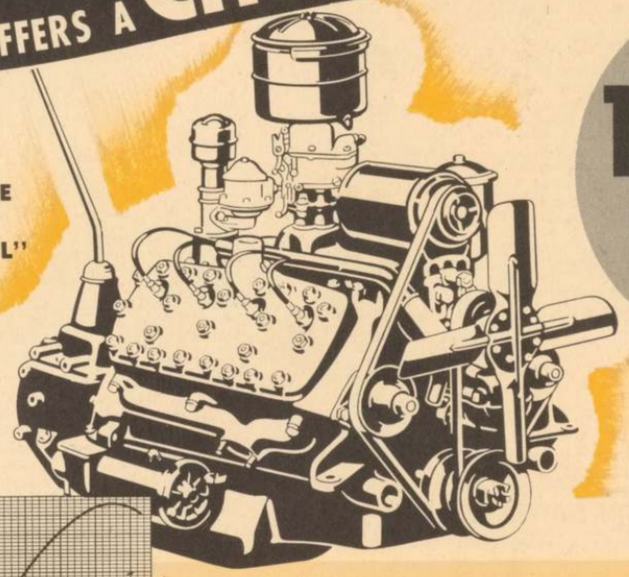


Service-free UNIVERSAL JOINTS are needle-bearing type. Lubrication and relief fittings are designed to prevent damage to sealing washers while greasing. Rubber-encased CENTER BEARING is self-aligning, leak-proof, dust and water tight.



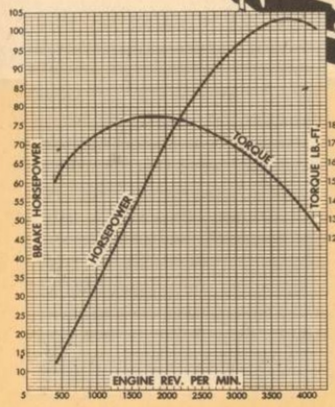
FORD OFFERS A CHOICE OF TWO GREAT ENGINES . . .

"FORDS SURE SAVE ON GAS AND OIL"



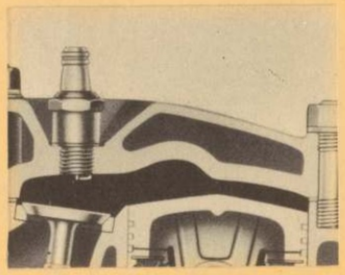
100 H.P. FORD V-8

The Ford V-8 and Six engines have many quality features in common. Micro-finish cylinder walls, for example, which hold proper oil film for long piston, ring, and cylinder life. Easily replaceable main bearings. Fully counterbalanced crankshafts for smoother operation. Downdraft carburetion. Crankcase ventilation. Synthetic rubber engine mounts. Self-sealing type water pumps.



As this torque and horsepower chart indicates, the V-8 has ample power for the toughest bus runs.

Cam-ground, aluminum PISTONS for V-8 or Six have 4 rings.



Combustion CHAMBERS are turbo-contoured to create high turbulence, promote efficient combustion.

Valve seat INSERTS (V-8 shown) wear longer, contribute to greater efficiency.

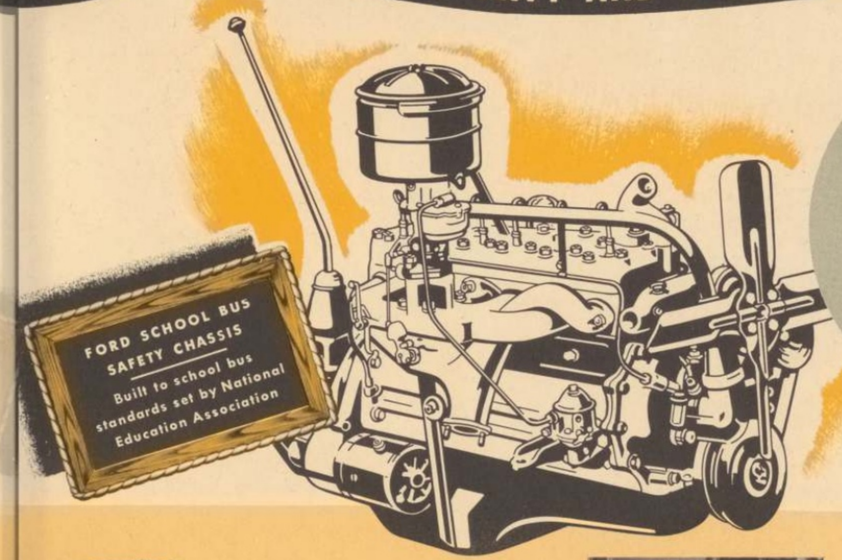
DOUBLE-DUTY, REMOVABLE-TYPE CONNECTING ROD BEARINGS

Ford steel-cored SILVALOY connecting rod bearings in V-8, withstand higher temperatures, higher bearing loads; last 2½ to 3 times longer.

Connecting rod bearings for either Ford V-8 or Six are of easily REMOVABLE type. Oil pan is dropped, bearing cap is removed, bearings slip in.

In the Ford V-8, connecting rod bearings are of "floating" type. With this type of design, both sides of the shell act as a bearing.

RENOWNED FOR RELIABILITY AND ECONOMY



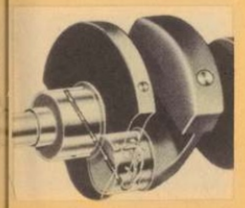
90 H.P. FORD SIX

Oil-bath AIR CLEANER, on V-8 and Six, removes dirt for more reliable carburetion, prevents undue wear on engine parts.

Chrome alloy steel VALVES, with shot-blasted valve springs, are precision set for clearance, require no adiustment.

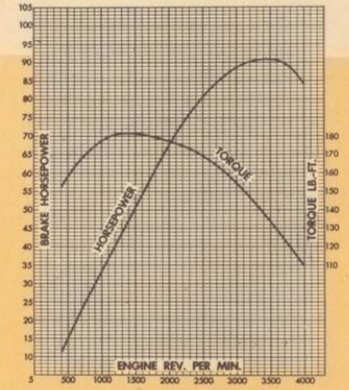
Renewable, cartridge-type OIL FILTER on the Ford V-8 and Six, reduces engine wear by filtering abrasives and other solid particles out of engine oil.

THERMOSTATIC VALVE on intake manifold speeds vaporization, improves fuel economy.



Connecting rod bearings as well as main bearings are PRESSURE LUBRICATED through passages drilled in crankshaft.

"YOU CAN PICK UP FORD PARTS IN *MORE* PLACES"



The Ford Six has adequate power for most work, excels in economical, stop-go work; idling operation.

SEALED-DRY DISTRIBUTOR (V-8 shown) is short-proof, air-cooled, water-sealed and trouble-free.

DEALER PARTS EXCHANGE PLAN

Thousands of bus operators use the Dealer Engine and Parts Exchange Plan to replace worn units with reconditioned units. Cost is less, out-of-service time is saved. These typical exchange items can be quickly installed:

SHOCK ABSORBER • GENERATOR • GENERATOR ARMATURE • BRAKE SHOE • CLUTCH PRESSURE PLATE ASSEMBLY • CLUTCH DISC ASSEMBLY • CARBURETOR • DISTRIBUTOR • FUEL PUMP • ENGINE • CYLINDER ASSEMBLY INCLUDING HEADS

SAVES YOU TIME • SAVES YOU MONEY

FORD SCHOOL BUS *Safety* CHASSIS

SPECIFICATIONS

ENGINE	100 H.P. V-8	90 H.P. Six
Bore and Stroke	3.187 in. x 3.75 in.	3.300 in. x 4.400 in.
Displacement	239 cu. in.	226 cu. in.
Brake Horsepower	100 @ 3800 rpm.	90 @ 3300 rpm.
Max. Torque	180 lbs.-ft. @ 2000 rpm.	180 lbs.-ft. @ 1200 rpm.
Comp. Ratio	6.75 to 1	6.70 to 1
Block	One-piece casting of Ford alloy iron.	
Cylinders	Precision micro-finish.	
Heads	Detachable, turbo-type high compression.	
Crankshaft	Counterbalanced, Ford cast alloy steel.	
Main Bearings	3	4
—type	Steel-backed, alloy-lined, removable, precision-type.	
—area	38.955 sq. in.	38.349 sq. in.
Con. Rods	Steel forgings with replaceable bearings.	
—bearings	Floating, steel-cored Silvaloy	Locked-in steel-backed alloy
Pistons	Cam-ground aluminum alloy, 4 rings.	
—rings	Two compression, two oil control.	
—pins	Floating in rod and piston.	
Camshaft	Special Ford cast alloy iron.	
Timing Gear	Precision-machined aluminum.	
Valves	Unit assembly, precision-set clearance.	
—springs	Shot-blasted and rust-proofed.	
—seat inserts	Intake and Exhaust	Exhaust
Carburetor	Dual downdraft	Downdraft
Air Cleaner	One quart capacity oil bath.*	
Ignition	Fully automatic spark advance.	
—distributor	Direct-driven, sealed-dry design; Neoprene-coated leads.	
Lubrication	Full pressure to main, camshaft and connecting rod bearings. Replaceable cartridge oil filter.*	
—crankcase capacity	5 quarts.	5 quarts.
Cooling	Full-length water jackets, thermostatic temperature control, tubular radiator, pressure-valve cap, self-sealing pump(s).	
—water pumps	Two	One
Mounting	3-point, cushion-type synthetic rubber suspension.	

CLUTCH—Semi-centrifugal bus-type, 11-in. diameter. Total frictional area 123.7 sq. in.

TRANSMISSION—Four speeds. Roller and ball bearings. New internal spring-type reverse lock.

DRIVE LINE—Two tubular propeller shafts with safety guards.* Three needle bearing universal joints. Rubber-encased center bearing.

FRONT AXLE—Drop-forged, heat-treated alloy steel. Large, wide-spaced, tapered roller wheel bearings. Anti-friction ball thrust bearings.

REAR AXLE—Single Reduction Type—Full-floating, spiral bevel, with straddle-mounted pinion. Gear ratio: std. 6.67 to 1—opt. 5.14 to 1; 5.83 to 1. Two-speed Type (optional at extra cost)—Full-floating. Primary (high range) reduction by spiral bevel gear with straddle-mounted pinion; supplementary (low range) reduction by planetary spur gears. Vacuum operated shift. Gear ratios 5.83 to 1 and 8.11 to 1.

FRAME—Heavy one-piece channel side rails, maximum section 7 in. x 2.75 in. x 0.21 in. Frame width 34 inches. Special reinforcing channels fitted inside regular side members on 194-inch wheelbase.*

SPRINGS—Special alloy steel. Front: 36 in. x 2 in., forward shackled with safety eyes. Rear: 45 in. x 2.5 in. Five-leaf auxiliary springs.*

SHOCK ABSORBERS—Four.* Double-acting adjustable hydraulic.

STEERING—Worm and needle bearing roller. Ratio 18.4 to 1. Diameter of steering wheel 18 in.

BRAKES—Service: Hydraulic, independently anchored, two-shoe type. Front: 14 in. x 2 in. Rear: 15 in. x 3.5 in. Lining area 303 sq. in. Cast iron brake drums fused to steel drum discs. Hand brake: 7.81 in. x 2.5 in. independent spring-loaded type with guard on drive shaft.* Vacuum power braking optional at extra cost.

WHEELS—Seven. Tapered-disc steel. 20-inch diameter. 5.00S (7-inch) rims.* Dual rear.

TIRES—Six, 7.50-20, 8-ply front and dual rear.* (8.25-20, 10-ply dual rear furnished with two-speed rear axle option.)

TREAD—Front 56.66 in. Rear 65 in.

TURNING RADIUS—32 ft. for 158-in. wb.; 38.25 ft. (left)—36.75 ft. (right) for 194-in. wb.

WHEELBASES—158 and 194 inches.

TYPICAL EQUIPMENT—Includes front fenders; flat back cowl; front bumper; cowl ventilator; 25-gallon frame-mounted fuel tank on right side rail; tail pipe extended beyond end of frame; 17-plate, 120-amp. hr. battery; spare wheel carrier; jack and tool kit.

IMPORTANT DATA	158" wb.	194" wb.
Length of one-piece side rails	250.56 in.	298.56 in.
Back of cowl to end of frame	197.78 in.	245.78 in.
Back of cowl to C/L of rear axle	124.78 in.	160.78 in.
Recommended body length range	14 to 17 ft.	19 to 22 ft.
Max. Gross Weight—Single Red. Axle	13,500 lbs.	14,500 lbs.
—2-Speed Axle	—	15,000 lbs.

Equipment starred (*) are items at extra cost. These items are currently contained on Heavy Duty School Bus Chassis in production and included in the 1946 retail list price, although allowances for omission of any of this equipment will be quoted on request. (The Ford Motor Company, whose policy is one of continuous improvement, reserves the right to change specifications, design or prices without incurring obligation.)

FORD MOTOR COMPANY
DEARBORN, MICHIGAN

Ford

FORM NO. 7013

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