

Leyland

Royal TIGER



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Leyland

ROYAL TIGER CHASSIS

Maximum seating capacity

Affords complete freedom in body design . . . large luggage space . . . alternative door positions

Exceptional accessibility of units

"Aphonic" injectors give petrol-engine silence with diesel economy

Stability and passenger comfort ensured by phased springing and correct weight distribution

Outstanding ease of control and vision for driver

THE Royal Tiger chassis exemplifies the most modern practice in British passenger vehicle design. It is a highly efficient unit, having its horizontal diesel engine and all running gear mounted below frame level. The full length of the vehicle is therefore available for passenger accommodation on an uninterrupted level floor.

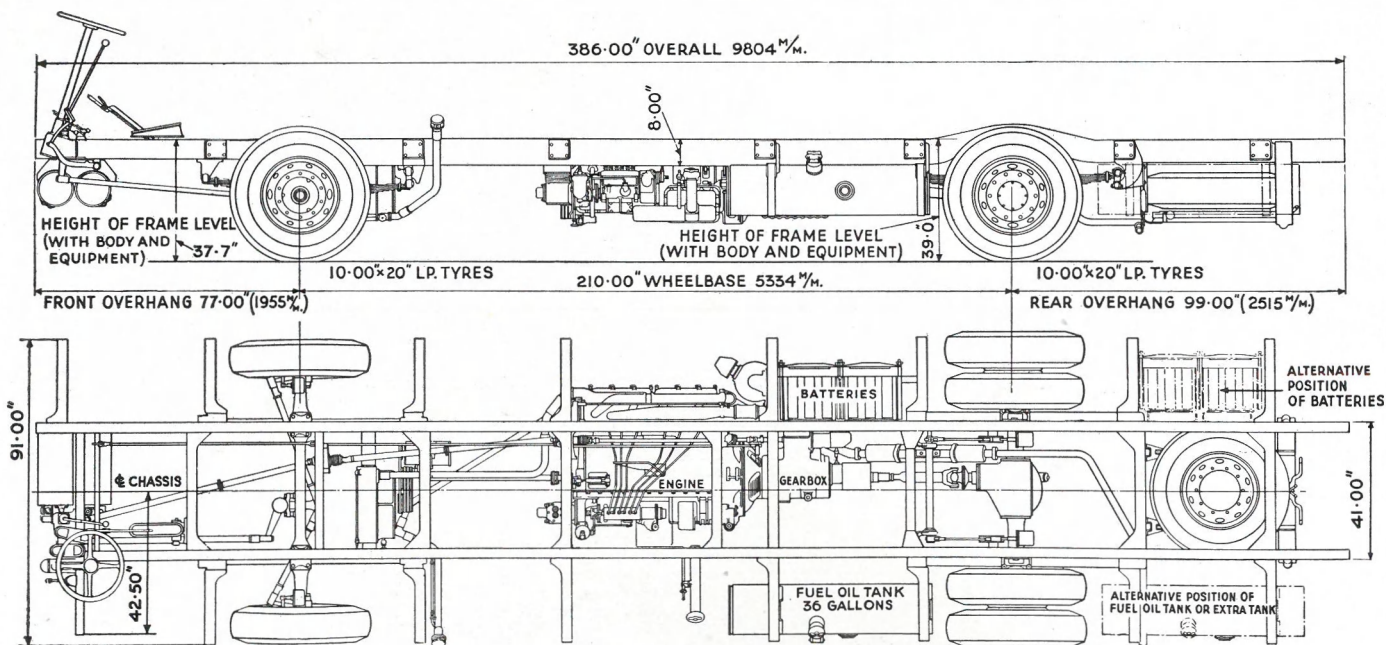
Chassis in the overseas series are expressly designed to receive custom-built bodies. They are produced for city bus operation and for inter-city and long-distance luxury travel.

They are available on wheelbases of 187, 210 and 244 inches with right- or left-hand driving controls. All are 96 in. wide, the 187 in. wheelbase models being also offered as 90 in. wide chassis.

One feature of the design is the excellent weight distribution. Not only does this contribute much to the ease of control—which is outstanding—but to the general stability and comfortable riding, and it also enables tyres of the same size to be fitted all round with correct loading.

All units are unusually accessible and can be serviced from the sides of the vehicle without the need for a pit.

Acceleration and fuel consumption figures are of a very high order and emphasise the great power and economy of the underfloor 600 cu. in. diesel, in combination with the 'inertia-lock' gearbox. Characteristics of quick response, freedom from vibration and low mechanical noise level are among the many which stamp the Royal Tiger as a chassis of very advanced design.

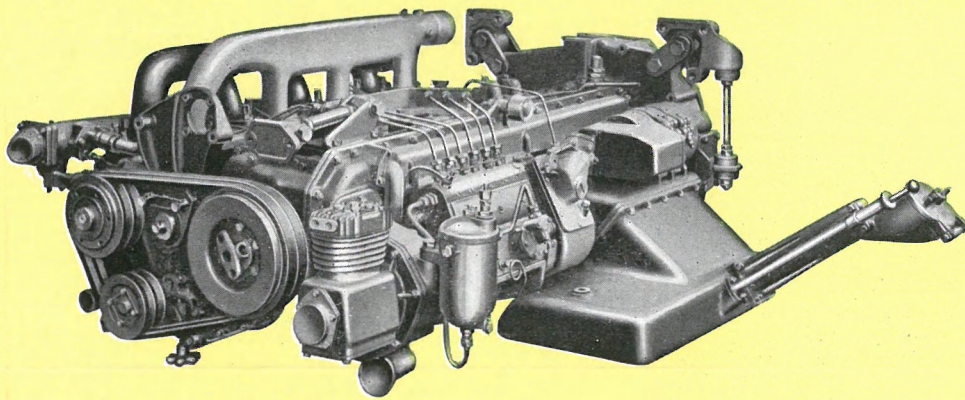


8 ft. wide bus chassis on 210 in. wheelbase — Model LOPSU. 1/1

Leyland Motors
- Ltd -

Foremost Builders of British Buses

— FOR INTER-CITY AND TRANSIT-TYPE BUSES

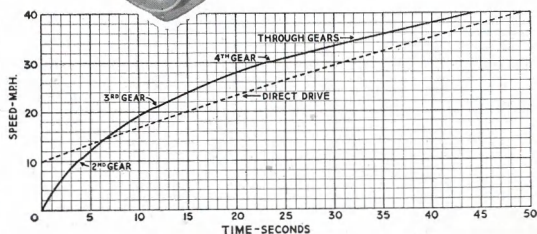
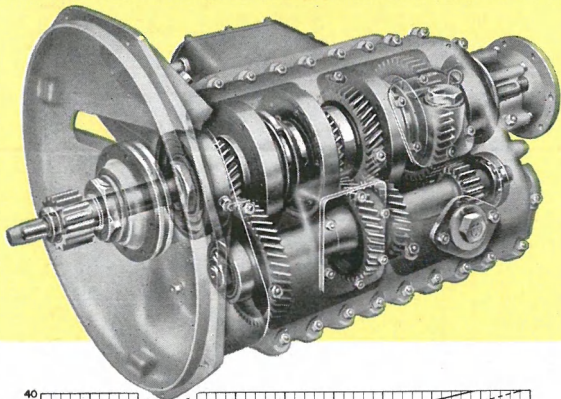


HIGH EFFICIENCY DIESEL POWER UNIT

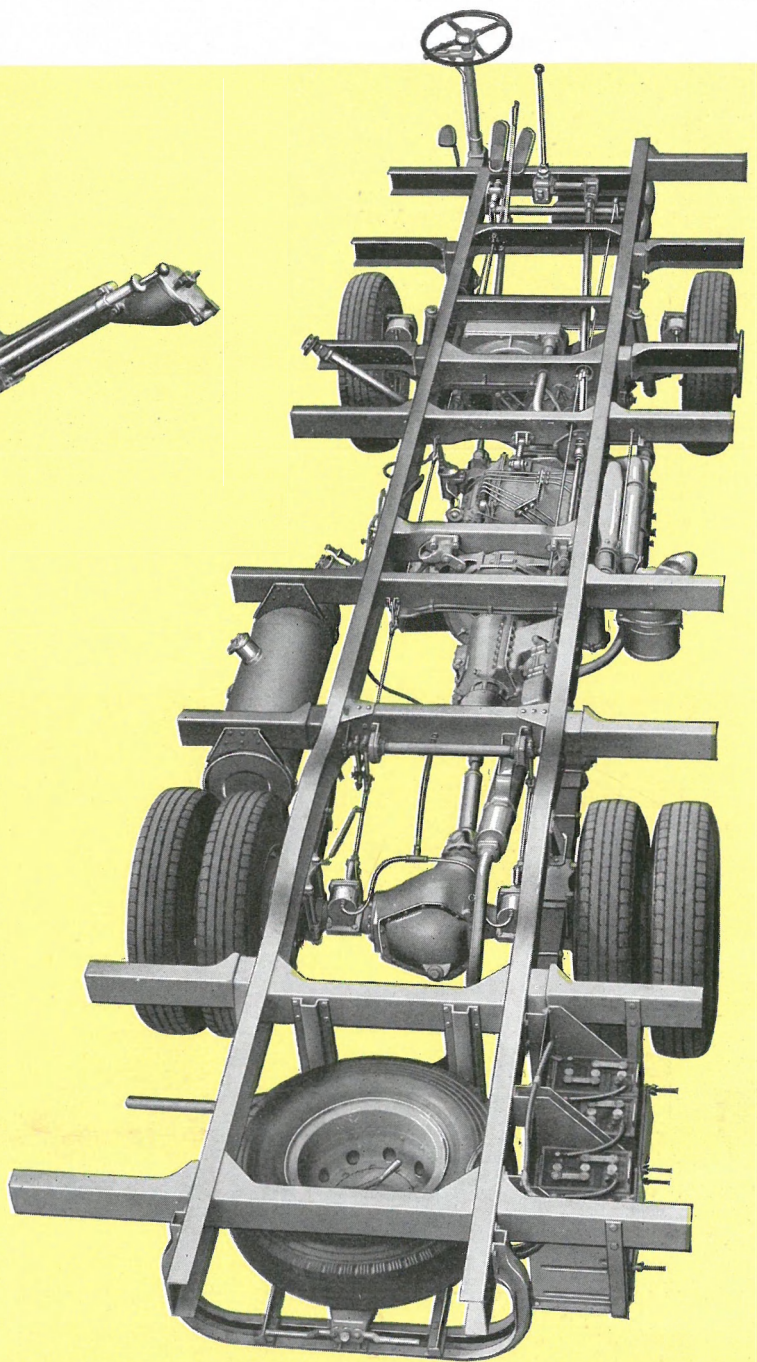
Auxiliaries have been positioned so that they are accessible from the sides of the vehicle without recourse to a pit. Flexibly-mounted amidships, with clutch and gearbox, by the Leyland link mounting, the 600 cu. in. engine develops 125 b.h.p. with the smoothness and silence associated with a petrol engine, but with a fuel economy as low as 0.34 pts./b.h.p./hr.

QUICK-CHANGE "SYNCHRO" GEARBOX

A combination of power assistance for the change-speed mechanism and the inertia-lock synchromesh design of the Leyland 4-speed gearbox ensures a rapid easy gear shift. Its straightforward mechanical design ensures complete reliability, a high transmission efficiency, and simplified maintenance. The synchronising cones operate on the fourth, third and second speeds. All gears are ground. Lubricant to the gear teeth faces and synchronising cones is provided by an exterior gear-type pump, driven from the layshaft.



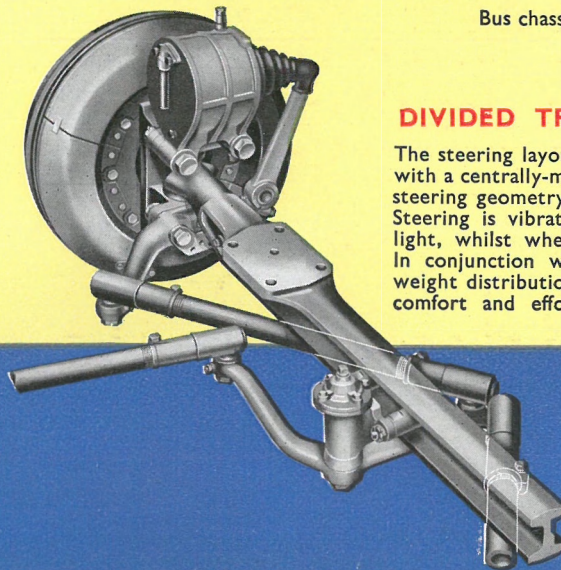
Acceleration curve for fully-laden Royal Tiger—gearchange with synchromesh box is approximately twice as quick as with a normal gearbox.



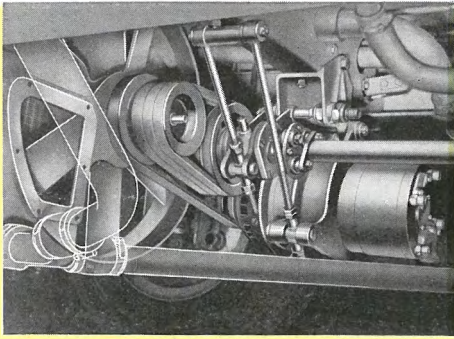
Bus chassis — Model LOPSU. 1/1

DIVIDED TRACK ROD STEERING

The steering layout embodies a divided track rod with a centrally-mounted fulcrum. It gives perfect steering geometry and promotes even tyre wear. Steering is vibrationless, positive and extremely light, whilst wheel alignment is also simplified. In conjunction with soft springing and correct weight distribution, it results in a high degree of comfort and effortless control for the driver.

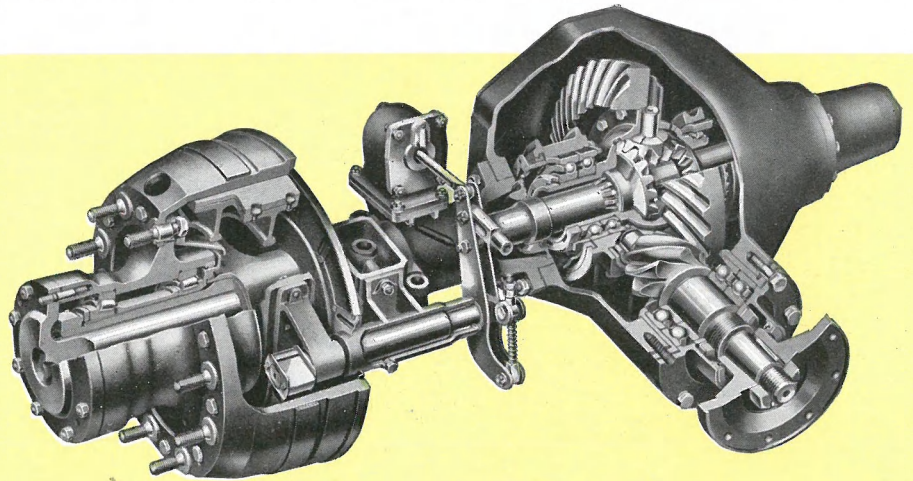


WITH UNDER-FLOOR DIESEL ENGINE



COMBINED FAN AND DYNAMO DRIVE

Adequate engine cooling under all conditions is assured by the arrangement of the flat-tube type radiator with a closely shrouded 6-bladed fan driven through "V" belts from an open tubular shaft coupled to the front of the crankshaft. A separate belt from the fan pulley drives the 7 in. dia. dynamo which is mounted on the frame on a readily-adjustable support bracket.



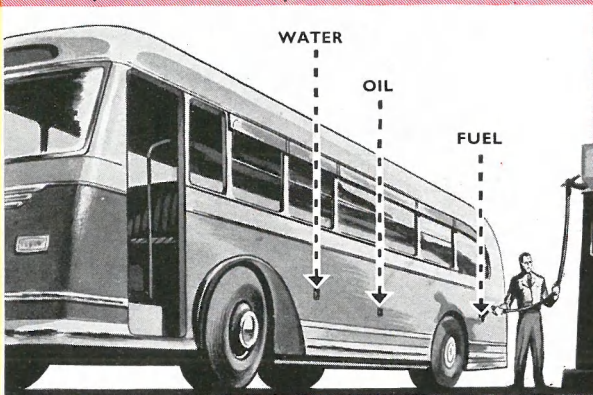
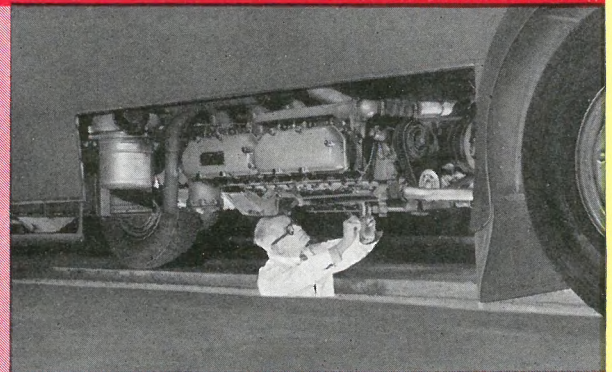
ROBUST SPIRAL BEVEL DRIVE

The fully-floating rear axle is of unusually robust construction and employs a long-life spiral bevel reduction gear carried on pre-loaded angular-contact races. Noteworthy design features include: involute splining, securely-anchored renewable strip bearings with ball-indented surfaces, oil-seal and oil-flinger protection for brakes.

PLANNED FOR EASY MAINTENANCE

ENGINE REMOVED IN UNDER 30 MINUTES

The underfloor units are easy to maintain. Every part requiring periodical inspection is immediately accessible from outside the bus after removing side valances. This accessibility together with such Leyland features as pre-finished cylinder liners, strip bearings etc., enable engine overhauls to be effected with the engine *in situ*. If necessary, the complete engine unit can be removed, replaced and started up in under 50 minutes.

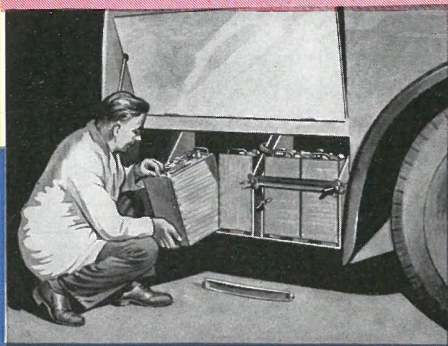


GROUPED FILLERS FOR WATER, OIL AND FUEL

Replenishment of water, oil and fuel, is carried out from the left-hand side of the vehicle with the fillers all positioned at waist height. Quick release caps are hinged to the necks of the fillers. Baffles prevent surging in the welded fuel tank.

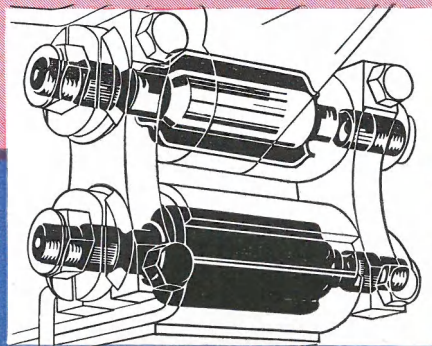
ACCESSIBLE BATTERIES

Batteries are carried on the side of the chassis in two metal cradles. They can be mounted on the chassis rear overhang or just forward of the rear wheels to suit the position of the doors. They are readily accessible through inspection doors or hinged valances in the body skirt, being securely held in position by a locking bar which can be quickly released for battery removal.



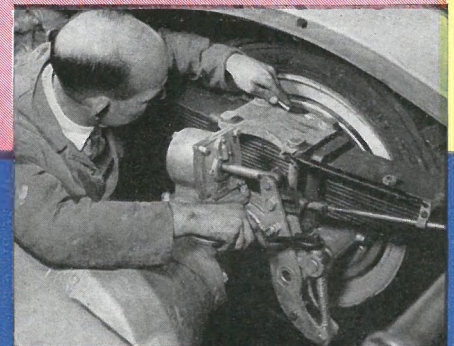
RUBBER BONDED SHACKLES

With the patented Leyland-Metalastic road spring shackles, the angular oscillation between spring eye and pin is wholly absorbed by the bonded rubber bush. Maintenance is greatly reduced as lubrication of the shackle pins is no longer necessary and wear is completely eliminated. Damping out high-frequency vibrations of small amplitude, they promote more silent operation and pleasanter riding.



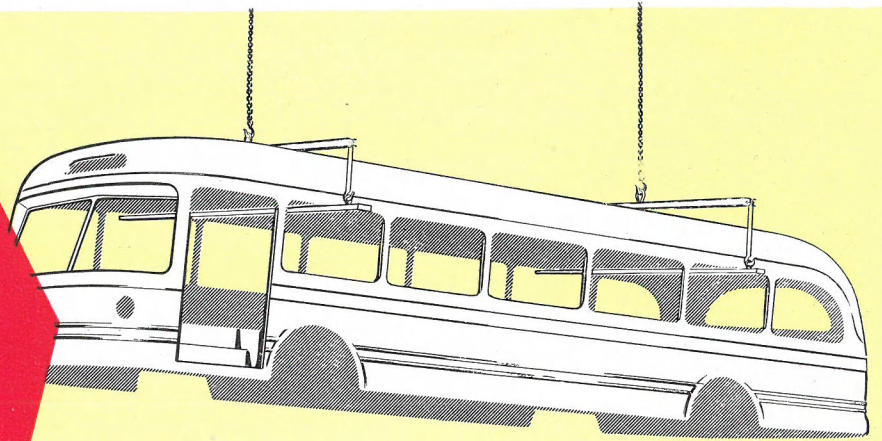
BRAKE ADJUSTMENT

Adjustment for the powerful air-operated brakes is a simple operation. A single screw adjuster is provided in the short linkage between each air operating cylinder and brake camshaft, so enabling an extremely fine setting of the clearance between shoe and drum to be made at each wheel. The powerful footbrake system has an effective brake lining area of 577 sq. in.



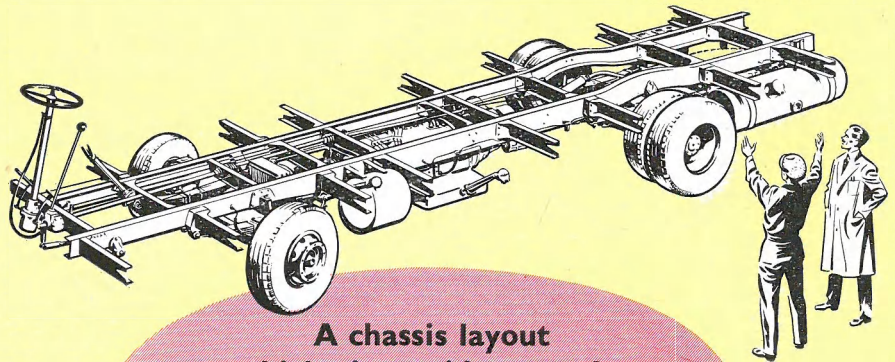
Introduced to give freedom of body design

YOUR OWN CHOICE OF CUSTOM-BUILT BODY



The chassis frame, with the exception of a slight upsweeping over the rear axle, is level and parallel, and is fitted with outrigger brackets. The floor can therefore be built directly on top of the frame without bearers and the body structure attached to the outrigger brackets.

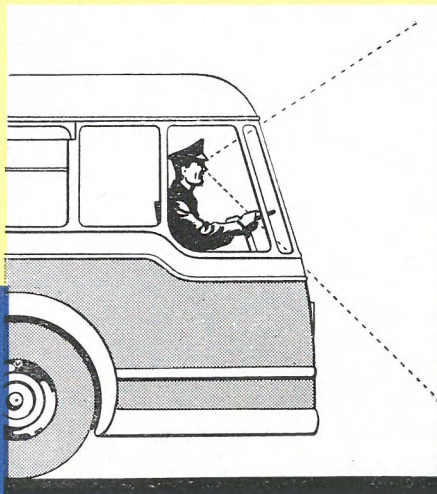
Alternative positions are available for the fuel tank, batteries, spare wheel, and air reservoir, thereby permitting the disposition of doors to suit any specific requirement and enabling large luggage accommodation to be provided if required.



A chassis layout which gives wide scope for custom-built bodies with front, rear or central doors.

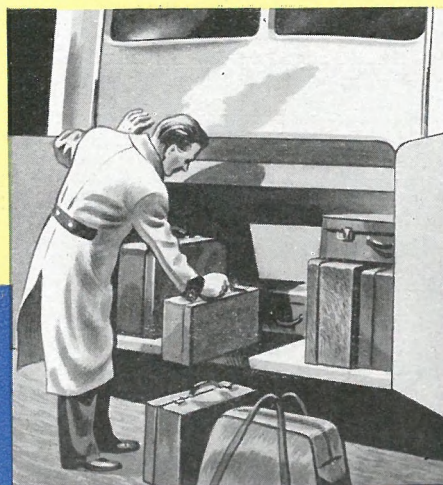
ALL-ROUND VISIBILITY

Without the obstruction of the conventionally placed radiator, and seated close to the windscreen, the driver has excellent vision. He can see the road within a few feet of the front of vehicle, to each side, and on front entrance models, has passengers boarding or leaving the bus under close observation.



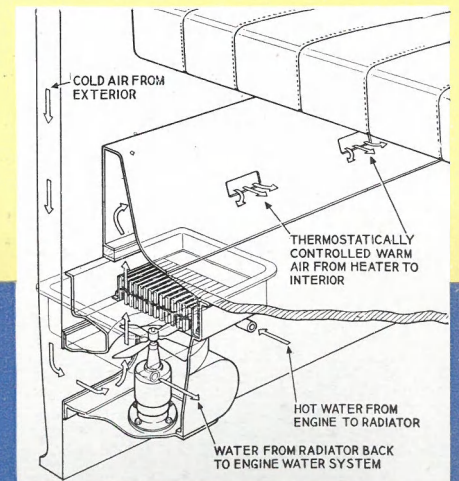
90 CUBIC FEET LUGGAGE BOOT

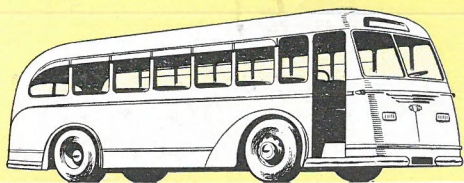
On coaches where large luggage space is required, the spare wheel can be mounted on a winch-type carrier under the front end of the chassis. With the spare wheel in this position and the fuel tank slung forward of the rear axle, a luggage boot of 90 cubic feet can be accommodated at the rear of the body.



BUILT-IN HEATING SYSTEM

Twin radiators coupled to the engine cooling system, located on each side of the chassis frame, are used if interior heating is fitted. Air from the exterior of the bus is forced by thermostatically-controlled fans through the radiators and gently distributed through ducts along the length of the bus below seat level.





Specification OF THE ROYAL TIGER

- ★ High-Efficiency Horizontal Diesel
- ★ Easy-Change Sychromesh Gearbox
- ★ Long-Life Spiral Bevel Axle
- ★ Powerful Air Brakes
- ★ Finger-Light Steering

HIGH EFFICIENCY DIESEL. Horizontal 6-cylinder direct-injection engine; bore and stroke, 4.8 in. x 5.5 in.; brake horse power, 125 at 1,800 r.p.m.; torque, 410 lb. ft. at 900 r.p.m.; fuel consumption, 0.34 pts./b.h.p./hr.; rigid monobloc iron casting for cylinder and crankcase; renewable pre-finished dry liners; chrome-molybdenum steel 7-bearing crankshaft, nitride hardened; indium-coated strip bearings; shrunk-in stellite-faced valve seats and nickel-steel stellite-faced valves with chromium plated stems; 5-ringed toroidal cavity pistons; positive helical-toothed timing gear; 10 gallons per min. gear-type lubricating pump with full pressure supply to main, big-end, and camshaft bearings; intermittent feed to rocker gear; positive cylinder wall lubrication; full-flow external filter; engine depth, 22 in.; mounted with clutch and gearbox on flexible links giving freedom of oscillation but obstructing high-frequency vibrations of low amplitude.

APHONIC INJECTORS. Leyland Aphonic injectors ensuring quiet combustion and reduced shock loading; low injection pressures; C.A.V. injection pump, fed by diaphragm lift pump from 36-gallon welded tubular fuel tank; edgewise filters in injectors and additional external fuel filter; oil-bath air cleaner; mechanical and vacuum-operated governor with progressive governing throughout speed range; solenoid stop device which automatically re-sets pump rack for easy starting.

THERMOSTATIC COOLING. Directional flow through block and head by self-adjusting water pump; thermostatically-controlled circulation; large capacity flat-tubed radiator; 19½ in. dia. 6-bladed fan in close-fitting cowl; fan driven by flexibly-jointed shaft extending from front of crankshaft.

TWIN THERMOSTATIC HEATERS. Large capacity heaters for passengers' saloon, fitted if required; frame-mounted twin heating radiators coupled to engine water system; air forced through radiators by thermostatically-controlled electric fans to interior.

FLEXIBLE-CENTRE CLUTCH. Single dry plate; 16¼ in. dia. with 273 sq. in. frictional area; 4-stage adjustment to take up liner wear; heavy-duty withdrawal mechanism; air cooled through vents in liners and flywheel.

EASY-CHANGE SYNCHROMESH GEARBOX. Silent, quick gear change with power assistance; inertia-lock synchronising cones for 4th, 3rd and 2nd speeds; all gears precision ground; 2nd, 3rd and 4th gears in constant mesh; silent helical teeth for 2nd and 3rd speed gears; filtered pressure lubrication by gear-type pump.

FINGER-LIGHT STEERING. Divided track rod steering with centrally-mounted fulcrum; quick alignment; perfect steering geometry with vibrationless, positive but extremely light steering; Marles cam-and-double-roller mechanism; axle thrust taken on hardened steel buttons; 21 in. dia. wheel.

SPIRAL BEVEL REAR AXLE. Power transmitted through single tubular propeller shaft on needle-roller bearings to fully-floating cast steel axle with centralised pot; spiral bevel reduction offers close alternative ratios of 4.625, 4.111, and 5.143 to 1; final drive carried on pre-loaded angular contact races with pinion shaft outrigger bearing; involute splined axle shafts, 2.375 in. dia. at splined ends; securely-anchored renewable strip bearings with ball-indented surfaces for differential pinions and axle shaft bevel wheels; oil seals for hubs and shafts with flinger protection for brakes.

CAM OPERATED BRAKES. Large 16¾ in. dia. drums; ½ in. thick liners, 4 in. wide for front brakes, 6 in. wide for rear; total footbraking area 577 sq. in. Air pressure system has separate operating cylinders for each drum with independent screw adjustment; two 1,800 cu. in. reservoirs, one with compartments for change-speed and door gear assistance; engine-mounted 11 cu. ft. capacity 2-cylinder compressor; air drawn through engine air cleaner.

PHASED SUSPENSION—L.P. TYRES. Shot-peened, long high deflection springs; rubber-bonded shackles; hydraulic shock absorbers for front wheels; low-pressure tyres, same size on all wheels, singles at front, twin at rear; wheeled-tray carrier for the spare wheel.

OUTRIGGERED FRAME. Deep 9½ in. channel-section alloy-steel frame; parallel sidemembers tapering in depth at front and rear and reinforced amidships; bolted crossmembers with outriggers for body mounting.

COMPLETE 24-VOLT ELECTRICAL SYSTEM. C.A.V. or Simms equipment; frame-mounted dynamo, output over 1,300 watts; 148 or 160 amp. hr. batteries; axial starter; switchboard, terminal, and control boards; flush-fitting head, side and fog lamps; twin windtone horns; instruments, gauges and complete wiring.

Model	Controls	Wheel-base in.	Width in.	Overhang		Tyres
				Front in.	Rear in.	
*OPSU.3/3	Right	187	96	77	91	10.00 x 20
*LOPSU.3/3	Left	187	96	77	91	
OPSU.1/1	Right	210	96	77	99	10.00 x 20
LOPSU.1/1	Left	210	96	77	99	11.00 x 22
OPSU.2/1	Right	244	96	77	99	11.00 x 20
LOPSU.2/1	Left	244	96	77	99	11.00 x 22

*These models can be supplied 90 in. wide.