

here's the inside scoop on



NEW REAR LOADER -- THE HRL

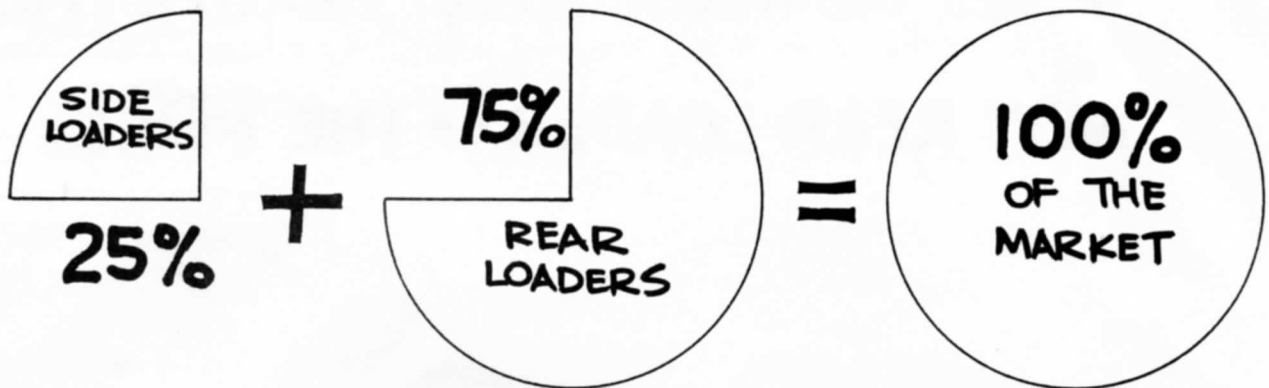


IT ACHIEVES OUR OBJECTIVES

This is the unit the Hobbs HYD-PAK Department has really been waiting for. It has taken a lot of engineering time and research, but the performance of the test models indicates that our original objectives have been achieved and then some. It might be well to summarize these objectives:

1. To design and offer a rear-loading refuse packer competitive in price and quality to anything else in the industry.
2. To keep it as simple as possible, insuring safe and easy operation and maintenance costs, which in turn is the best way to insure repeat orders.
3. To make it distinctive in appearance, because eye-appeal is an increasingly important factor in public-service equipment.

-- MAINLY, THE OPENING-UP OF THE BIG END OF THE MARKET!



Achievement of the first objective, that of having a competitive rear-loader in the Hobbs HYD-PAK line, opens up a giant section of the refuse packer market that up to now has been closed to us. Our side-loading units have always done a good, economical job for cities and private contractors who use them, but fully 75 per cent of the packer bodies now being bought are rear-loaders. If you offer only side-loaders, you are "specced out" of bidding for any of this business.

GENERAL REAR LOADER ADVANTAGES

The main advantages of a rear-loader, of course, are that it

- enables pick-up men to load the unit out of the line of passing traffic on city streets or more easily in narrow alleyways, which makes the operation safer;
- makes possible a lower loading height, which means less lifting injuries;
- makes for a cleaner operation, with less litter during loading, because once refuse is cleaned out of loading hopper and packed into main storage compartment it is enclosed completely until it is ejected at the disposal area or transfer station.

Even though side loading units cost less and are simple to operate and maintain -- and we still expect to sell a good number of our side-loaders because of it -- the



PICK-UP MAN IS SAFER

LOADING HEIGHT IS LOWER

THERE'S LESS LITTER TO LOADING

above advantages have caused many municipal governments to go strictly to rear-loaders. We now have what we think is the best rear-loader on the market, because it embodies the same simplicity of design that has characterized other Hobbs HYD-PAK products through the years, and it looks good. So now let's take a good look at it, feature by feature.

GIRDLE CONSTRUCTION

The first thing you notice about the HRL (short for Hobbs Rear-Loader) is its clean, strong lines. It doesn't copy anybody. It's not square, but it's not round, either. It has stout, rectangular-tube girders encircling the main body of the unit with 9"-radius corners. The body goes together in two big halves which are joined down the middle of the roof and floor.



This is not inexpensive construction. The wrap-around girdles themselves are of 11 gauge steel, especially-rolled shapes, 3" x 4" in cross-section, and they are continuously welded to the 12-gauge steel body walls. The girdles act as stiffeners, causing the entire body shell to function as a load-carrying tube.

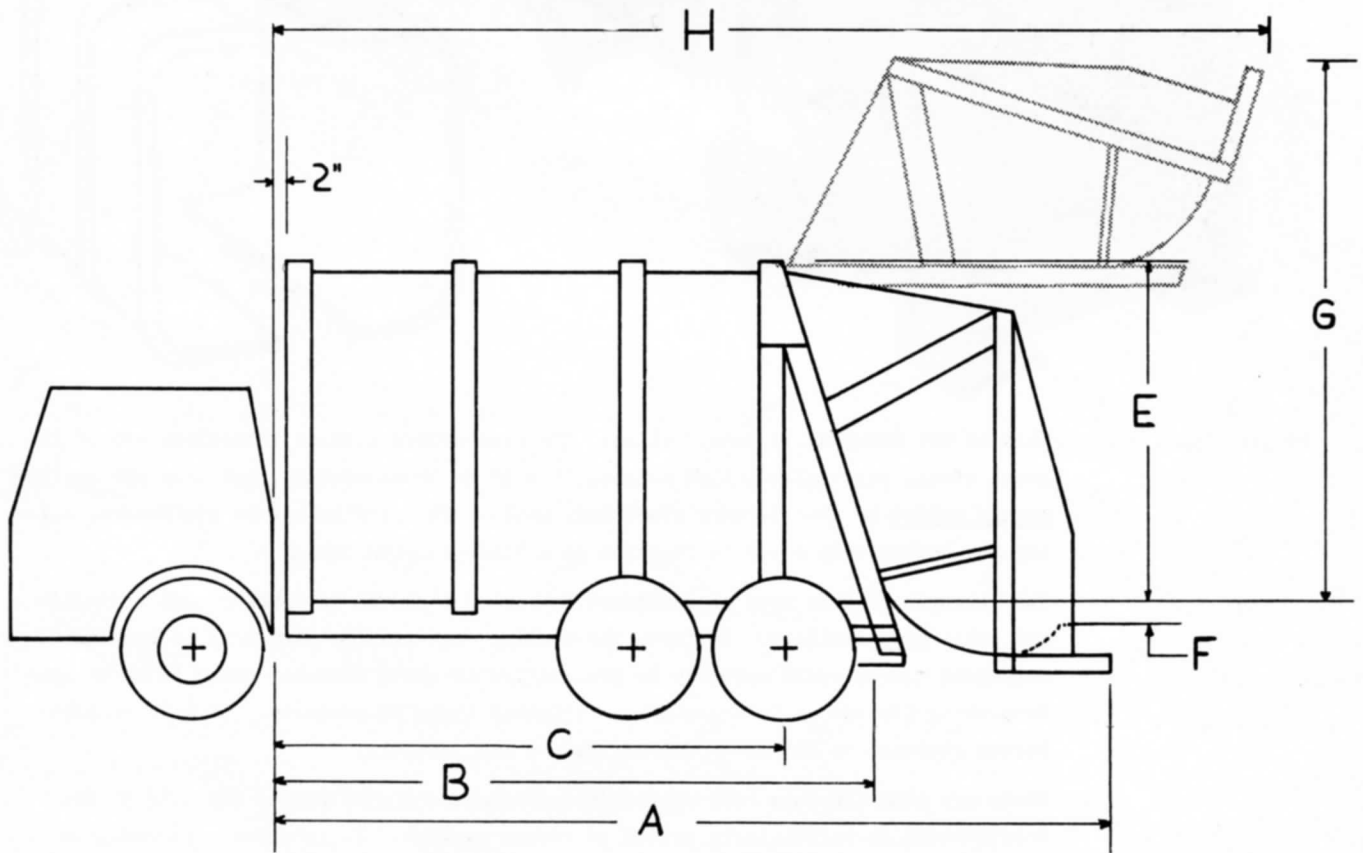
The strength of this type of construction has been proven in Hobbs rugged hydraulic and cable dump trailers. In fact, the tooling required for this kind of look-good, work-good design would probably be prohibitive if Hobbs were not using it -- or contemplating its use -- in a number of different lines of products. It will probably become standard on all Hobbs HYD-PAK bodies and trailers.

There are other obvious reasons (besides strength and good looks) why this girdle construction is particularly suited to refuse packers. It provides a streamlined exterior which shrugs off overhanging tree limbs in residential areas, with little sacrifice in the interior capacity you get with a square box body. And speaking of. . .

CAPACITIES AND DIMENSIONS

The HRL is available with storage capacities of 18, 20 and 25 cubic yards, but all units are just under eight feet wide and 90 inches tall over the truck frame. The dimension that changes to give extra capacity is the length (see Dimensions A & B in chart below).

DIM	DESCRIPTION	CAPACITY		
		18 Cu.Yds	20 Cu.Yds	25 Cu.Yds
A	Length, cab to end of loader (min.)	210-3/4"	223-3/4"	256-3/4"
B	Length, cab to end of frame (max.)	147"	160"	193"
C	Cab to axle, single axle truck (min.)	102"	120"	
C	Cab to C/L rear axle, tandem axle truck (min.)		120"	145"
E	Max. height above truck frame	89-3/4"	89-3/4"	89-3/4"
F	Loading height below truck frame	6"	6"	6"
G	Height of raised loader above truck frame	145"	145"	145"
H	Cab to rear, loader raised	263"	276"	309"



Dimensions C show that cab-to-axle dimensions have been designed to be compatible with unofficial industry standards for like capacity units.

LOW, LOW LOADING HEIGHT

Dimension F in the preceding chart represents a real competitive edge for the HRL. Other rear-loader manufacturers talk about loading heights that are 4", 4½" or 5" below the truck frame, but we know of no one whose loading sill is a full 6" below it. An inch or two one way or another may not seem too important, but it makes a big difference when some statistician starts calculating human work in foot pounds, strained muscles, hernias, etc., and we've seen bids lost because of it. Since one of the main objectives of rear-loaders is to get that loading height as low as possible, that's just what we have done. On the average truck, our hopper is only 2½ feet from the ground!



LOADING HOPPER

The HRL loading hopper is nearly 80" wide, six feet tall and capable of holding two full cubic yards of refuse. This is as big a hopper as there is in the industry -- bigger than most in either capacity or dimensions.

What happens to the refuse that's loaded in here? This is the really interesting part of the HRL story.

BACKGROUND ON HRL DESIGN

Because this is a newly-designed unit, we frankly have had the advantage of assessing all the competitive makes and models of rear-loaders -- how they load, how they clear the hopper, how they pack the refuse and how they eject it at the disposal area.

After this study, the HRL was designed with an eye to economy in original cost and maintenance, positive action wherever possible to produce greatest or most efficient packing pressures, and simple, safe and speedy operation.

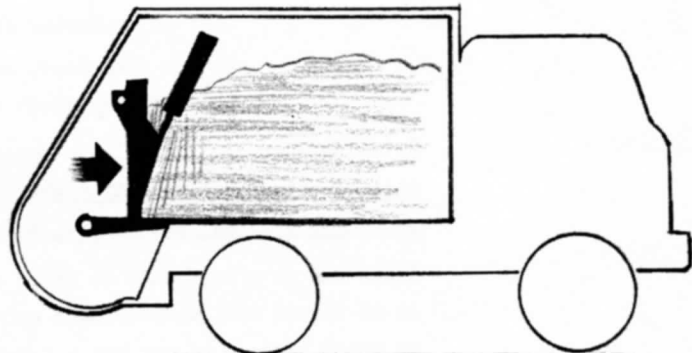
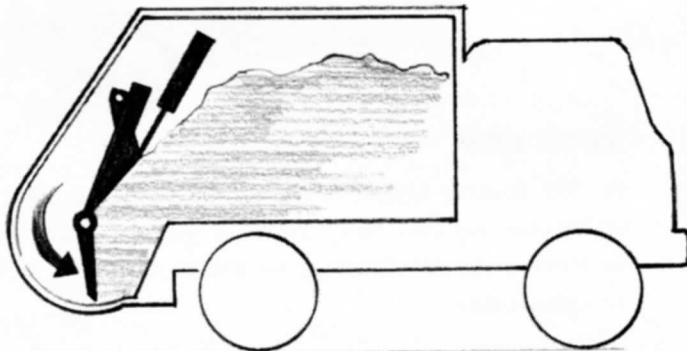
There was no effort made to skirt existing patents on competitive makes of equipment. As it turned out, we infringed on no one, and we have come up with several features on which patents of our own are now pending.

THEORIES OF REAR-LOADER DESIGN

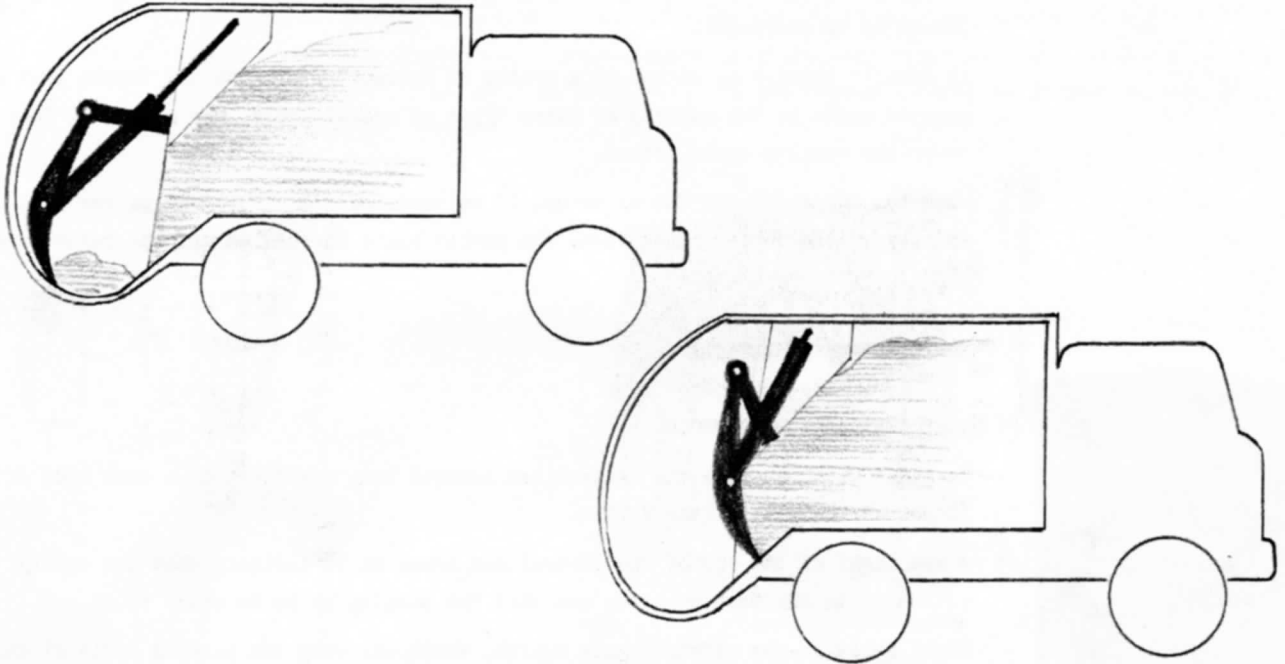
Every rear-loader's hopper is in about the same position relative to the truck and the ground when it is receiving refuse. This refuse comes either from the cans of pick-up men, or from containers which are mechanically picked up, pivoted and their contents dumped into the hopper (and the HRL will soon be offered with such a container system).

How the refuse moves from the hopper into the main storage compartment is another story, however. Each manufacturer has a slightly different way of accomplishing this, but they fall roughly into three categories:

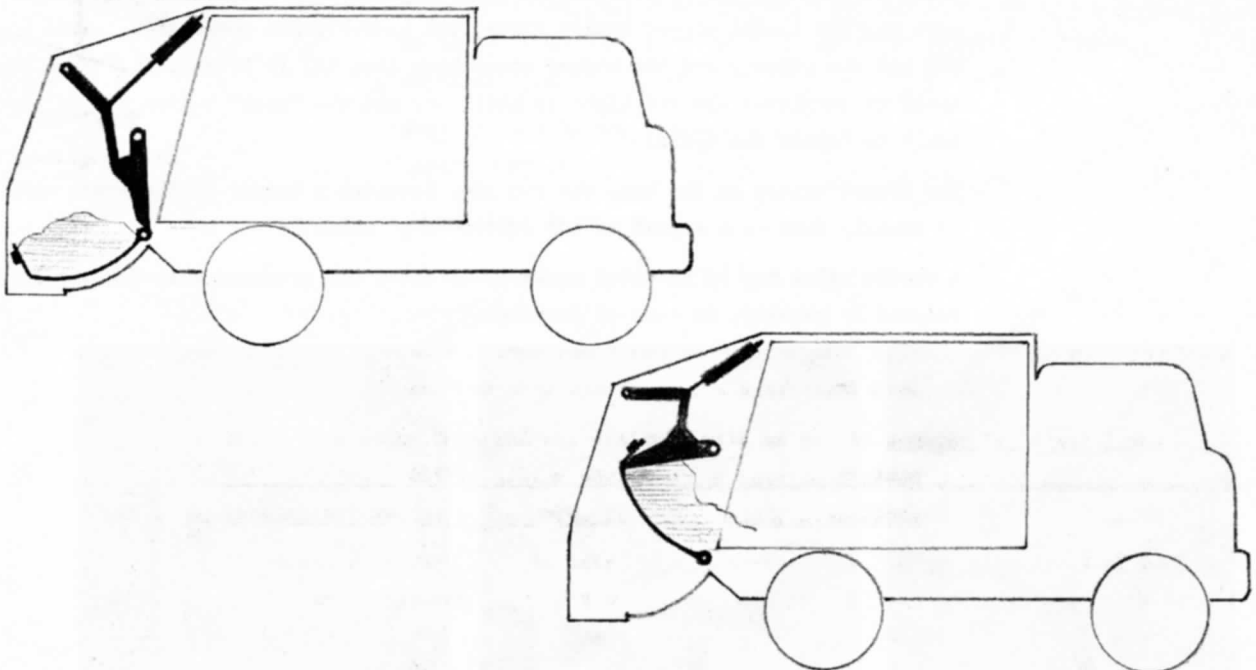
1. The continuous cycle hopper sweep system, in which a rotary panel moves through the stationary hopper like a steamboat paddle wheel, and another plate pushes the refuse on into the main storage compartment;



2. The back-hoe system, in which the stationary hopper is cleared by an elaborate back-hoe type packer plate which reaches back, down and then retracts, pulling refuse up from the hopper and into the main storage compartment;



3. The movable hopper system, in which the loaded hopper bucket comes up to meet a down-swinging hinged packer plate which clears the hopper and compacts refuse straight-ahead into the main storage compartment.



FOR A NUMBER OF REASONS, THE HRL OPERATES ON THIS LAST PRINCIPLE.

WHY MOVABLE HOPPER FOR HRL

For a number of reasons, the HRL was designed to operate on the movable hopper principle.

Briefly stated, it's safer than the continuous cycle hopper sweep systems, in which moving parts are exposed to pick-up men, and it's less likely than these to get jammed up by overloads.

It doesn't require as elaborate a system of hydraulics (or cams and tracks that must operate right in the refuse) as other types of rear-loaders, nor a sliding door to cover the packing cycle action.

When the hopper of the HRL moves up, it automatically encloses the packer plate. And before the hopper comes down, the packer plate has sealed off the refuse inside the storage compartment.

HOW IT WORKS IN DETAIL:

CENTRALIZED CONTROLS

To start with, there's the centralized control box, one located on each side of the hopper at the rear of the unit.

A red light at the top of the control box comes on to indicate that the safety switch is in the "on" position and that the packing cycle is ready to go.

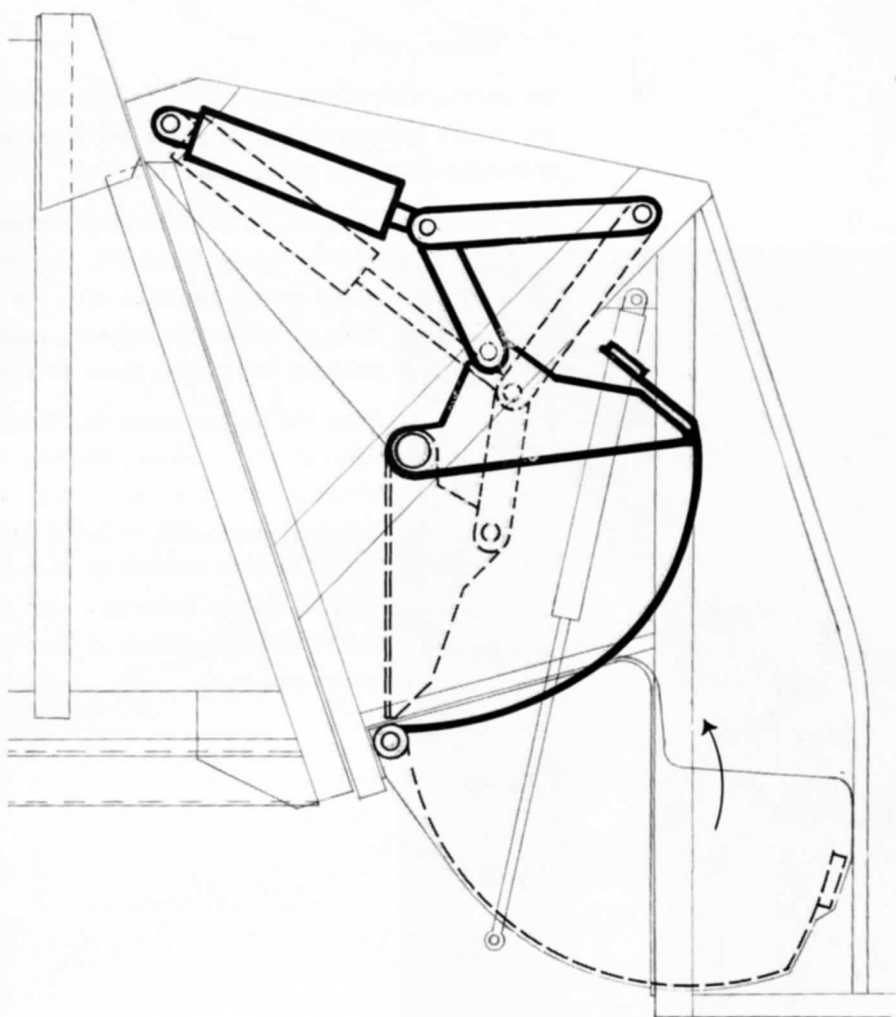
Right below is the safety toggle switch, which can stop the packing cycle at any point in case of emergency. It's also used to keep the cycle inoperative during traveling when pick-up men are riding on the back and might inadvertently hit the "pack" button.

The "pack" button is the black one so labeled, just below the safety switch. You press it once and the entire packing cycle happens automatically -- the packer plate goes up, the loaded hopper bucket rises, the packer plate comes down inside it, moving out the refuse, and the hopper comes back down all in '17 seconds. When the cycle is completed the red light is still on, and the "pack" button may be pushed again to repeat the cycle.

The lowest button on the box, the red one, actuates a buzzer in the truck cab. This is usually used as a signal to the driver to go ahead.

A needle valve may be actuated manually to bleed off pressure allowing the hopper to descend by gravity, in case of jamming.





SWING-UP HOPPER

Actually, this is the way the hopper descends during a normal packing cycle -- by gravity. It's part of the engineered simplicity you'll find throughout the HRL. Single-acting hydraulic cylinders, one on each side of the hopper and completely outside the refuse collection area, start retracting when the packing cycle is started. They cause the hopper to swing up around its pivot point -- a hinge-tube across the bottom of the opening into the storage compartment.

Positioning of these lift cylinders is superior to putting two larger telescopic cylinders (which would be more expensive) under the hopper bucket where they would be fouled either by refuse or road dust and mud.

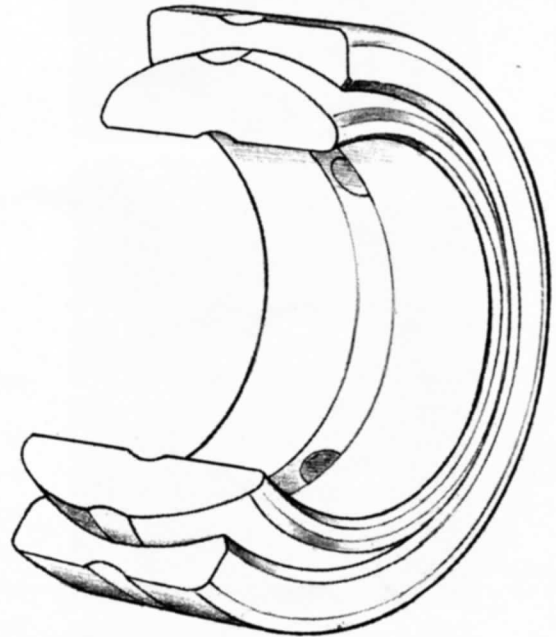
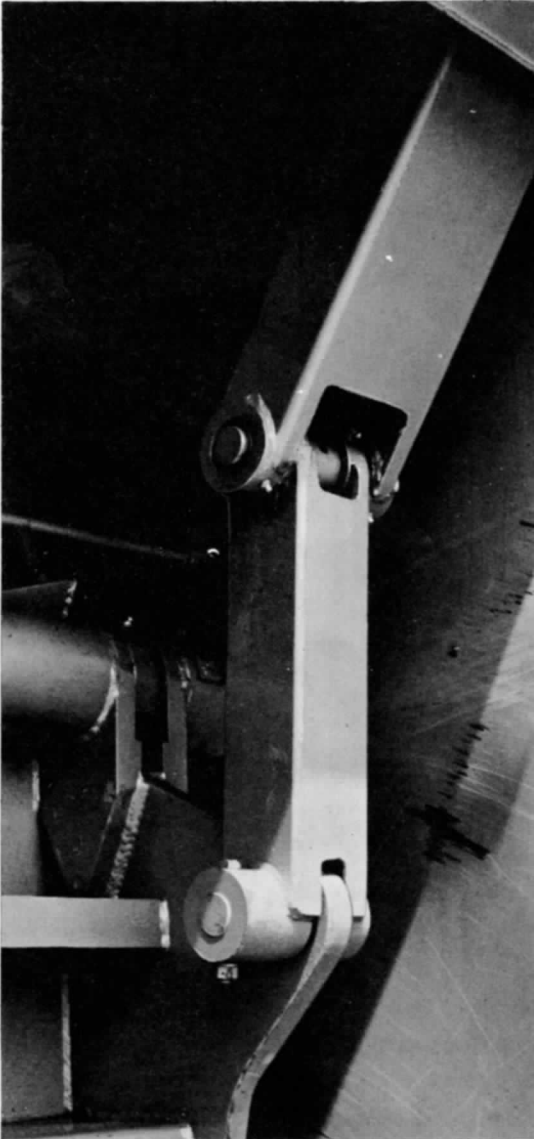
When the hopper bucket is raised all the way to the top, riding behind T-shaped flanges to prevent pinched fingers, it becomes in effect a cover for the packer plate, which only then begins its descent, clearing the hopper of refuse. When it is back down covering the storage compartment opening, the hopper lift cylinders slack off and the hopper comes back down.

PACKER PLATE

The outstanding efficiency of the hopper-clearing packer plate in the HRL stems from the toggle linkage that multiplies the force of the two piston-type double-acting hydraulic cylinders which power it.

When the plate is down, in a vertical position across the storage compartment opening, before the cycle starts, the toggle linkage is extended, its two lower pivot points parallel with the plate. As the cycle starts, the cylinders on each side retract, pulling the linkage into a tighter angle and raising the packer plate to its elevated position.

When the hopper comes up, the packer plate cylinders extend and push against the linkage, forcing the plate back down with the refuse ahead of it. You can accomplish with 2,000 psi here what other packer designs need 3,000 to 5,000 psi to do. There's a total force of 83,382 pounds exerted by this packer plate, which we believe is unparalleled in the industry. And it is accomplished simply by the force-multiplication effect of the toggle linkage and strategically placed pivot-points.



SPHERICAL
SELF-ALIGNING BEARINGS

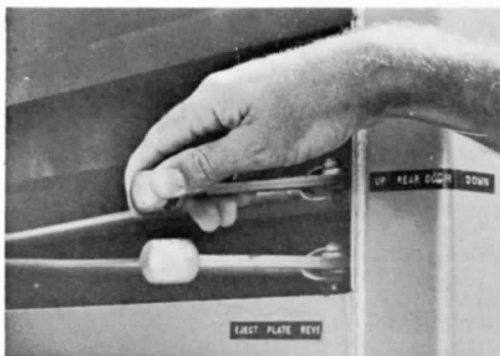
At all pivot points in the rear-loading mechanism heavy-duty self-aligning spherical bearings are used. This means that any deflection of a tube or shaft at any one point is immediately compensated for because the bearings align with the stress. They save their own life, which means trouble free service for the user. The small bearings used have a bearing capacity of 100,000 pounds; the large ones, 230,000 pounds. Considering the load, this means unlimited bearing life.

Bearings like this are expensive, but they save much more than they cost in headaches and downtime.

EJECTION PLATE AND CONTROLS

Inside the main storage compartment, riding at the end of a push-out cylinder, is the ejection plate. When the rear packer plate has crammed the HRL full of refuse, this plate is all the way to the front of the body, forming its front wall. This ejection plate is the full width and height of the storage compartment's interior, with rounded corners to match the unit's corner configuration. It rides on guides on the interior walls of the body shell.

The truck driver has two control levers right behind the cab -- one for actuating the single acting cylinders which raise the rear-load mechanism up out of the way after hold-down locks have been released, and one to cause the ejection plate to push the load out. Ejection cycle time is between 20 and 30 seconds, depending on the cubic capacity of the body. Each lever pulls the opposite way to reverse -- and to retract the ejection plate back into the body to bring the rear-load mechanism back down -- again by gravity.



WHAT ABOUT SO-CALLED DOUBLE COMPACTION?

Some manufacturers make a lot of noise about using their unit's ejection plate to push in a direction opposite to that of the rear loading packer plate to achieve "double" compaction.

Some even go so far as to add together the packing force of both plates and imply that this amount of force is effective in the compaction of refuse.

This is untrue, because it violates the law of equal and opposite reaction. If your



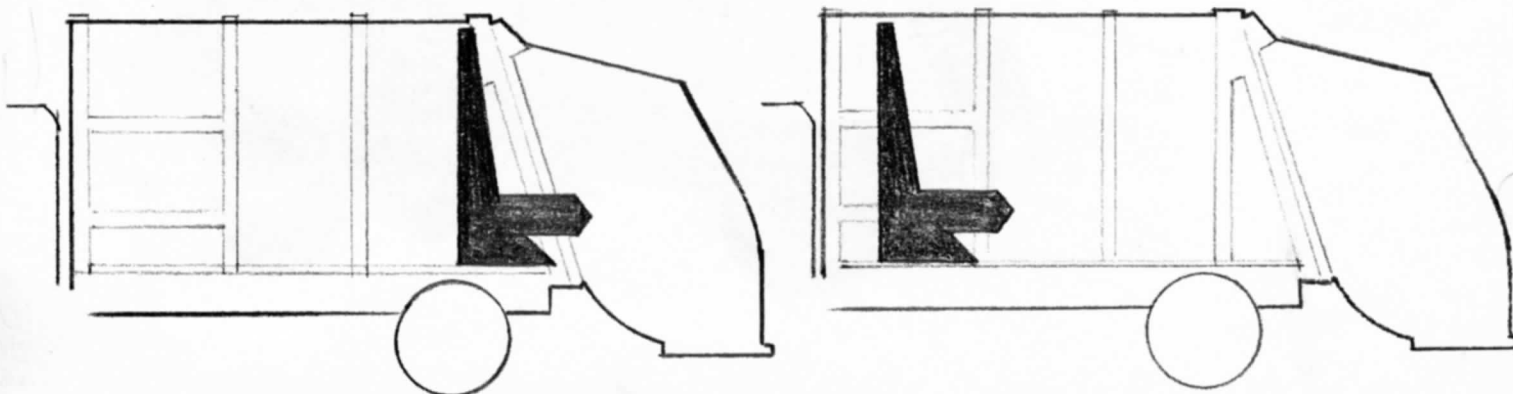


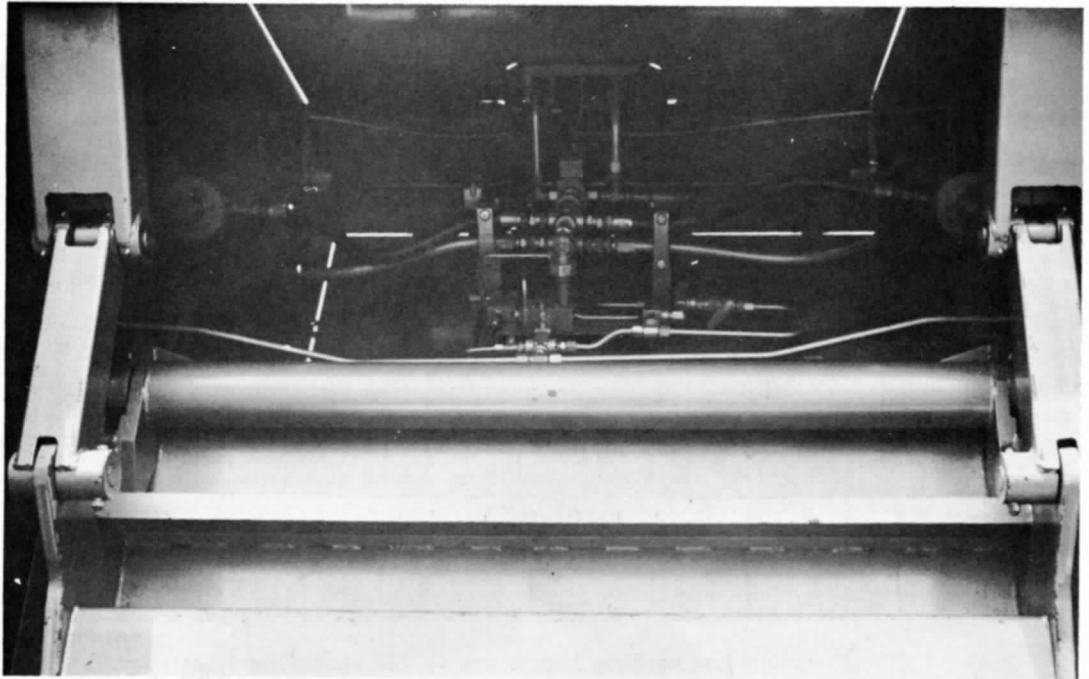
hand pushes against a wall with a pressure of 25 pounds, that wall pushes back with the same 25 pounds; otherwise your hand would go right on through it. Likewise, any packer plate exerts only the amount of available force necessary to compact refuse, whether it's against another powered plate or a stationary wall.

The HRL can pack refuse in its storage compartment in a number of ways, depending on user preference:

1. The packer plate can do it alone, with the ejector plate retracted to the front of the body.
2. The ejector plate can be left in an extended position at the rear of the body, and the packer plate can compact refuse against its dead weight, slowly moving the ejector plate toward the front.
3. The ejector plate can be actuated at intervals to compact refuse toward the rear of the body, against the rear packer plate, then allowed to be pushed forward again.

Actual weight tests on the HRL show, however, a negligible difference in the manner of loading and compaction. The 83,382 pounds of total packing force transmitted through the packer plate are all you'll ever need to pack maximum refuse payloads.





HYDRAULIC SYSTEM

The unitized hydraulic system on the HRL, a very simple one compared to those of some other rear-loaders, is located in one console above the rear opening. It is accessible through a roof cover or the rear opening of the loader, and can be removed entirely by removing four bolts and unhooking six lines. All solenoids, valves, relays (of which there are only two in the HRL, where some units require 7 or 8) are located here.

The hydraulic lines run on top of the unit, where they're easily accessible for maintenance, from the console up to the front, then down to the pump, which operates at 2,000 psi.



EASE OF INSTALLATION

The HRL sits right down on virtually any suitable truck chassis, attaching via 12 heavy duty bolts. The longitudinal attachment members are notched to accommodate the wrap-around girdles.

-- LUBRICATION AND MAINTENANCE

All 22 grease fittings are easily accessible.

A side door is located at the front of the unit's right side, so that back or front of the ejection plate, or its hydraulic cylinder, can be easily reached.

ACCESSORIES

The HRL has handhold brackets on each side at the rear, a bar across the top rear, plus safety steps which double as riding platforms for a pick-up man on each side. Fenders over rear wheels serve as splash guards and also help distribute load from latch point of rear-load mechanism to the entire body shell.

All control wiring harness is enclosed in weatherproof conduit.

Clearance and marking lights are to ICC specifications. Mudflaps are standard equipment.

