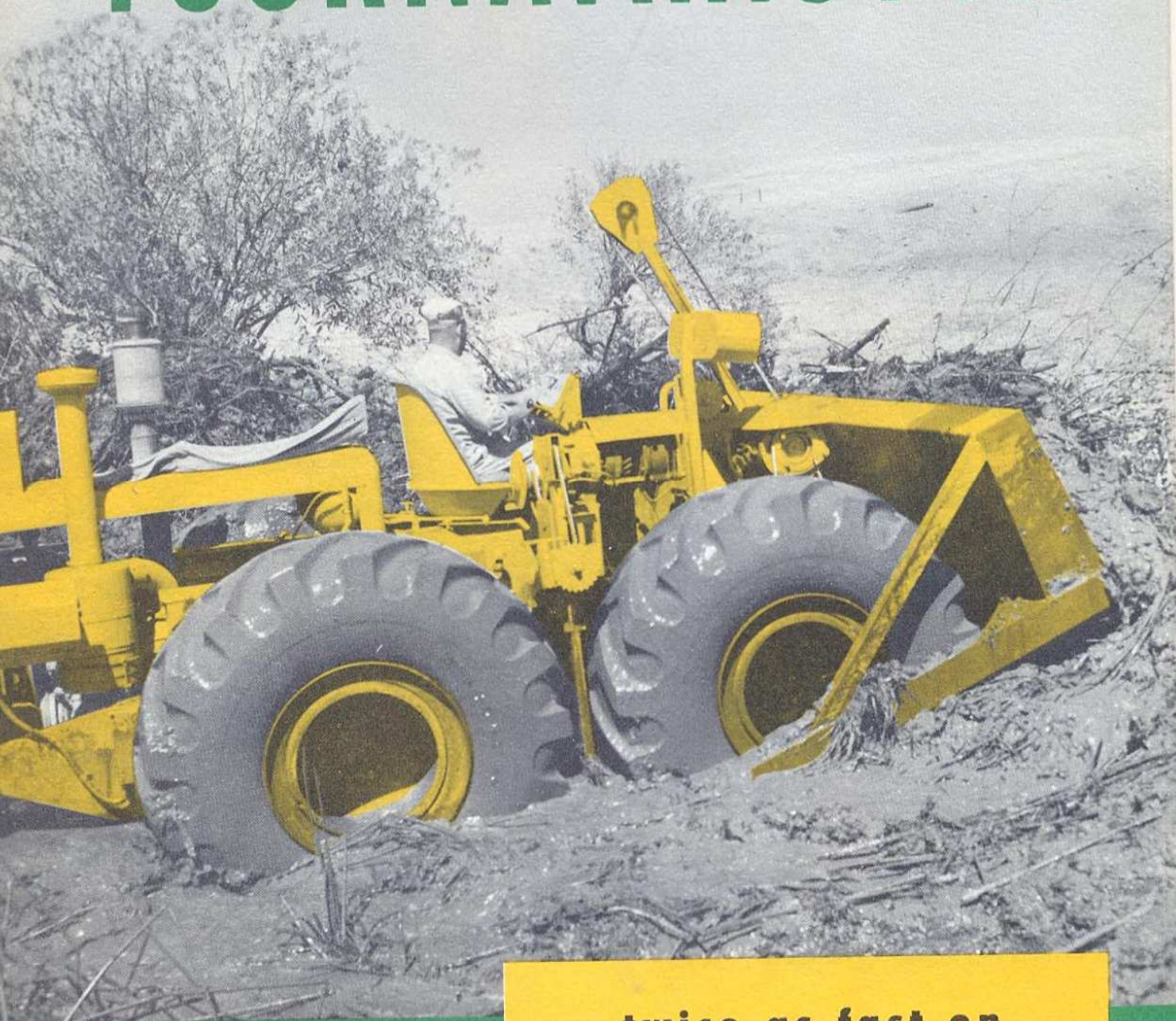


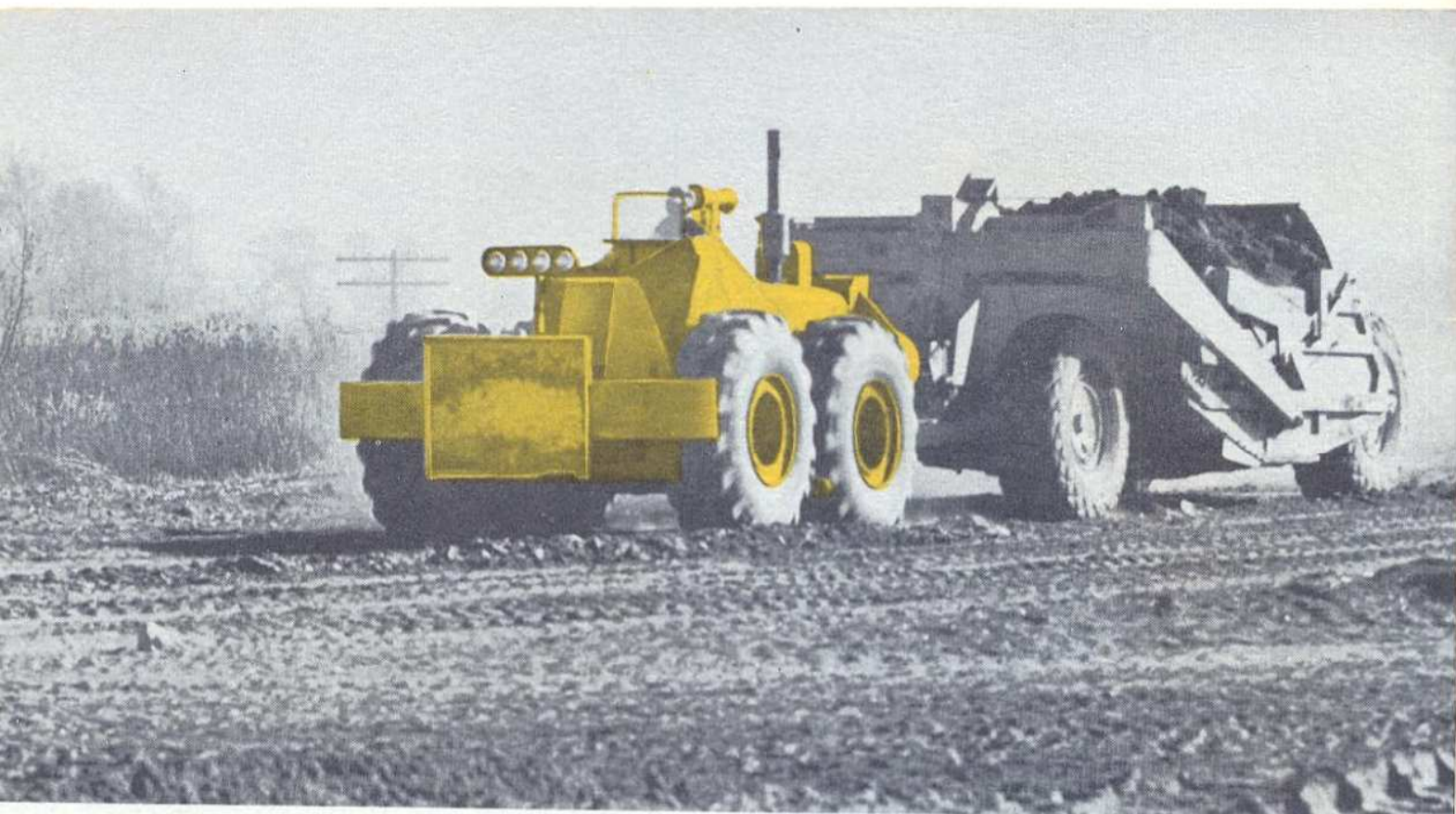
**208 hp**

# TOURNATRATOR



**twice as fast on  
85% of tractor work...**





# Check these advantages ...

**Speed on the job...** Tournatractor pulls, dozes, pushes at speeds 2 to 3 times faster than any crawler. You change gears instantly . . . waste no time shifting . . . can travel up to 8 mph in reverse gear. (See page 4)

**Mobility between jobs...** Tournatractor travels job-to-job at speeds to 19 mph. Big, low-pressure tires drive anywhere — you need no planking or trailers. (See page 6)

**Lower maintenance...** Lubrication takes only a few minutes a shift on Tournatractor as compared to 15 minutes or more on a crawler. No cleaning of tracks and fittings. (See page 8)

**Fewer repairs...** A set of tires or a set of tracks costs about the same. But tires last 2 to 3 times longer than tracks under most conditions . . . without the usual and continuous track maintenance expense. (See page 9)

**Ample flotation and traction...** Each tire grips an area approximately 2 ft. wide. Lugs bite deep to give plenty of traction. These big, man-high, go-anywhere, pneumatics make possible 19 mph speed, increase job mobility, absorb shocks, aid compaction. (See page 10)

**Less loss of power...** 208 hp diesel drives through dirt-sealed anti-friction bearings to free-rolling wheels. (See page 12)

**Sturdy foundation...** Rugged main case of all-welded steel maintains permanent alignment, greatly reduces gear and bearing stress. All gears and bearings fully enclosed, sealed from dirt, automatically lubricated. All parts easily accessible. (See page 14)

**Power applied for profits...** Under certain conditions, a crawler can start a heavier load than Tournatractor. But as soon as load gets rolling, Tournatractor gives greater speed than any crawler now on the market. Speed gets work done at lower cost. (See page 16)





# Tournatractor

is a 208 hp tractor that

*runs* on rubber instead of *crawling* on tracks.

Since its *introduction in 1946*, this electric-controlled tractor has been used successfully in every kind of climate, terrain, material and tractor application, all around the world, by *thousands of owners*.

Their *job records show* that Tournatractors can handle practically any tractor assignment, can outwork crawlers as much as *2 to 1* where job conditions allow the use of its higher speeds.

Remember, too, that, for their extra speed and greater production capacity, plus all the other "bonus" Tournatractor advantages described in this book, *you invest no more, and pay less for operation and maintenance*, than for any crawler tractor of similar power.

*Check the facts behind these claims!*

**Shifts instantly...** Constant-mesh transmission eliminates delays in changing gears . . . saves vital momentum . . . gives you any gear ratio instantly. (See page 18)

**Torque converter available...** This low-pressure system, simple, dependable, provides the equivalent of an infinite number of gear ratios, automatically selected to best balance load and torque. (See page 18)

**Push-button control...** Electricity gives faster control action than any other system known. Transmission of power by wire to point of action is simple, trouble-free . . . cuts cable, sheave wear, eliminates maintenance problems common to other systems. (See page 20)

**Emergency electric power...** Tournatractor is a powerhouse on wheels. Not only does flywheel-mounted generator produce electricity to operate blades and PCU, but you can tap in for floodlights, welding, radio-phone, and other emergency uses. (See page 21)

**Easier to operate...** Less jolt and jar reduces stress and strain on both operator and machine. Fingertip electric controls let operator work faster, with less fatigue. (See page 22)

**Improves safety...** Low center of gravity, all-around visibility, accessibility and quick response of controls make Tournatractor exceptionally safe to operate. Multi-disc air brakes have *four times* braking surface of most big tractors and trucks. (See page 23)

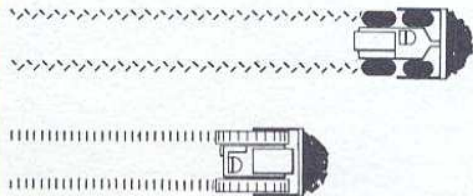
**Interchangeable equipment...** Bulldozer, Angledozer, Root Rake, Snow Plow — all interchangeable — may be mounted on Tournatractor. Tilt mechanism and down-pressure attachment also available. (See page 24)

**Easy to keep busy...** All kinds of drawbar equipment can be pulled by Tournatractor. It can also be equipped with push-block, logging winch, or tree-pusher. It travels by highway anywhere there is work to do. (See page 26)



# Cuts minutes off

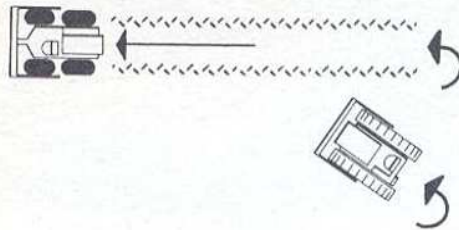
## FORWARD DOZING SPEED



**TOURNATRACTOR** — 3 mph average  
Part of dozing in 1st gear  
(1.6 mph); part in 2nd (3.7 mph)

**CRAWLER-TRACTOR** — 2 mph average  
Part of dozing in 1st gear  
(1.6 mph average for 8 big crawlers);  
part in 2nd (2.2 mph average).

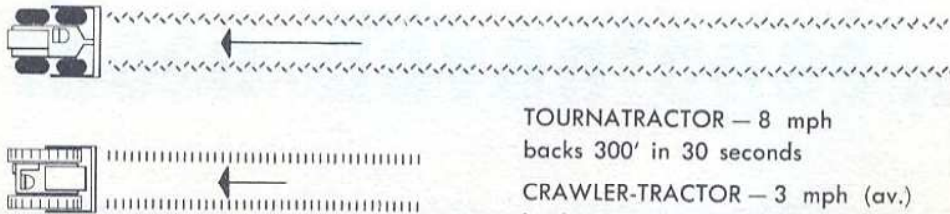
## TURNING TIME



**TOURNATRACTOR** turns in 6 seconds  
and starts return leg  
while

**CRAWLER-TRACTOR** spends  
10 sec. turning

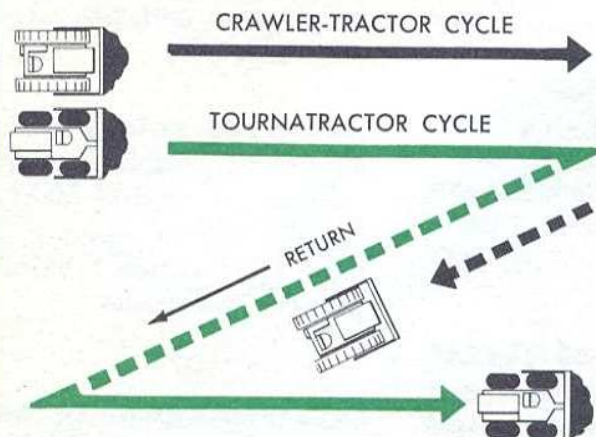
## RETURN SPEED



**TOURNATRACTOR** — 8 mph  
backs 300' in 30 seconds

**CRAWLER-TRACTOR** — 3 mph (av.)  
backs 120' in 30 seconds

## COMPLETE DOZING CYCLE



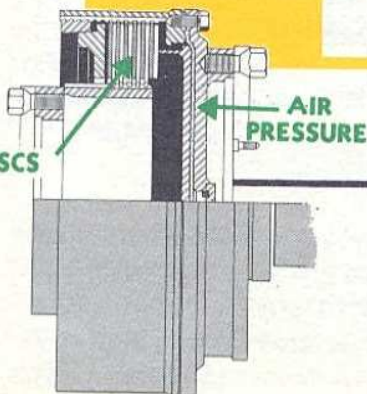
Tournatractor's instantaneous speed selection permits faster travel after blade is full and immediate reversal of direction for faster dozing cycles. Result, each job is done quicker, more job assignments can be handled per shift than with crawlers.

Green travel path indicates complete cycle with high-speed Tournatractor. Black travel path indicates fraction of cycle done in same time by slow-moving crawler.

## Independent steering clutch

### gives extreme maneuverability

Tournatractor makes a complete reverse turn in 6 seconds, can make a non-stop U-turn in clearance width of 20'. With instant selection of gear ratio and 2822 sq. in. of brake surface on the 4 wheels, you have maneuverability for operating in short, tight quarters with much greater speed than with crawlers.





# each work cycle

One of the biggest advantages of using a tractor on rubber is increased speed. This can help you boost output materially on all combinations of heavy duty tractor work.

Tournatractor's top forward speed is 2 to 3 times greater than the top of most crawlers. In second gear (3.7 mph), when push-loading or dozing, Tournatractor travels 100 feet forward, while leading competitive crawlers, in their second gear, move only 54, 60, or 70 feet. In fourth gear (19 mph), Tournatractor travels 1,672 ft. in one minute, while the crawlers, in top gear, move only 422, 510, or 686 ft.

High reverse speeds give a very important time-saving advantage, too, since nearly 50% of your working cycle on dozing or pushing jobs is usually spent backing up.

As shown in diagram on opposite page, Tournatractor's 8 mph reverse cuts your reverse time

by almost 2 to 1...converts 54% of this deadhead time to profitable production.

On all your tractor pushing, pulling and dozing, you also eliminate shifting delays, make full use of initial momentum because you have instantaneous speed selection. With Tournatractor constant-mesh transmission there is no stopping to shift! No slow down! Just a quick, effortless move of a small speed selector. Often this means you can go to a higher gear ratio where, with crawlers, the slow-down in going through neutral to engage gears keeps operator in the lower gear ratio.

You maneuver much faster, too. Turns are made at the touch of a lever. Without the drag of the crawling tracks, turns are made faster.

On dozing, as chart at left indicates, Tournatractor usually averages 2 to 3 cycles to a crawler's one. On pushing, it will usually *handle 1 extra unit* for every 3 or 4 scrapers used.



See also job-to-job moving—  
speed advantages... next page

## TOP SPEED FORWARD

### DISTANCE TRAVELED

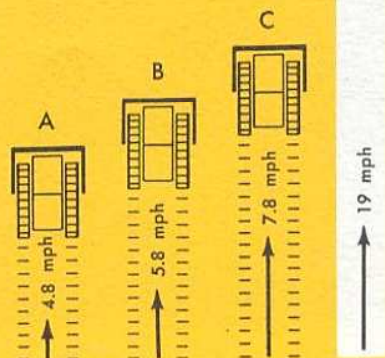
(feet per minute)

TOURNATRATOR 1672 ft.

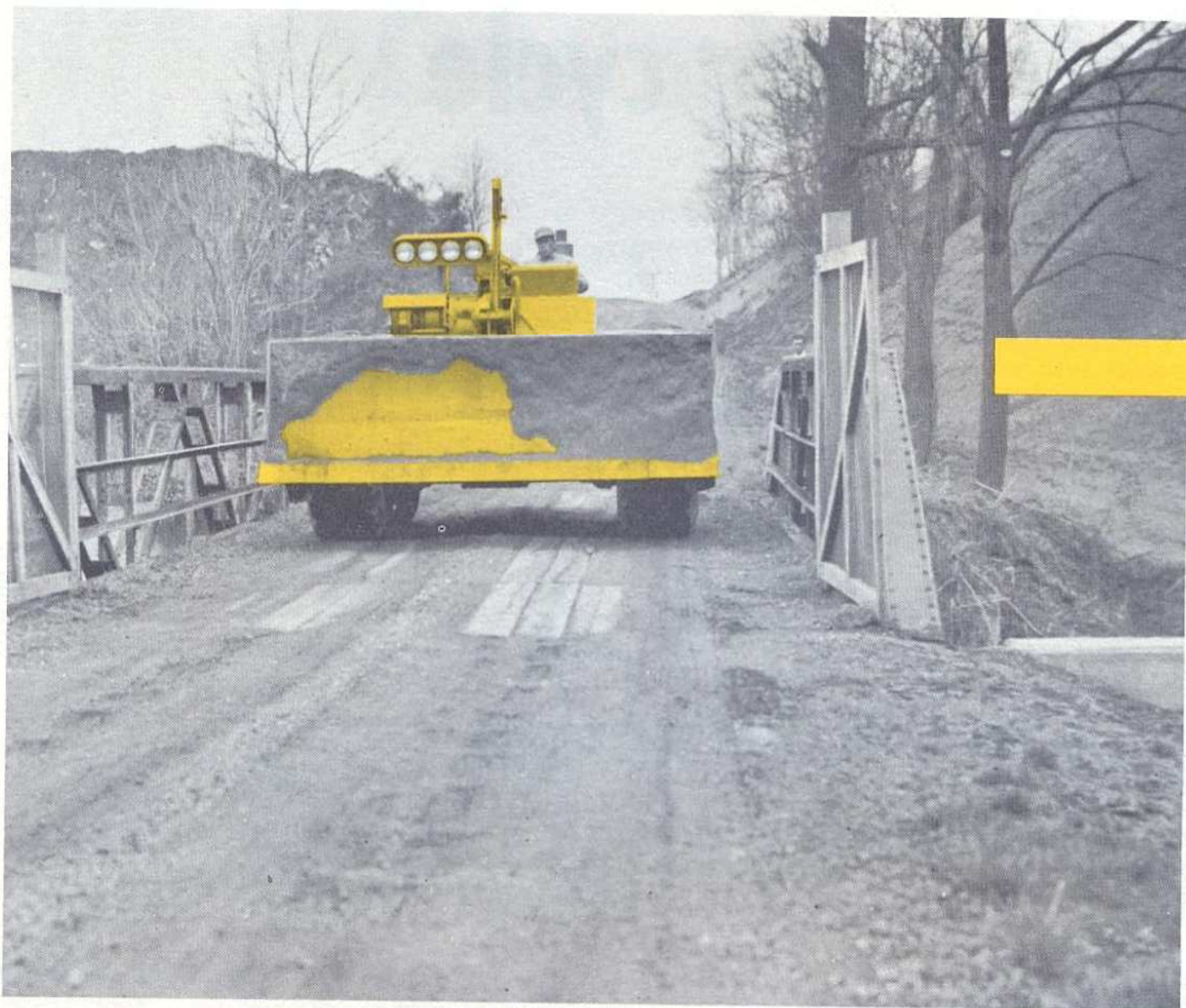
TRACTOR A — 422 ft.

TRACTOR B — 510 ft.

TRACTOR C — 686 ft.





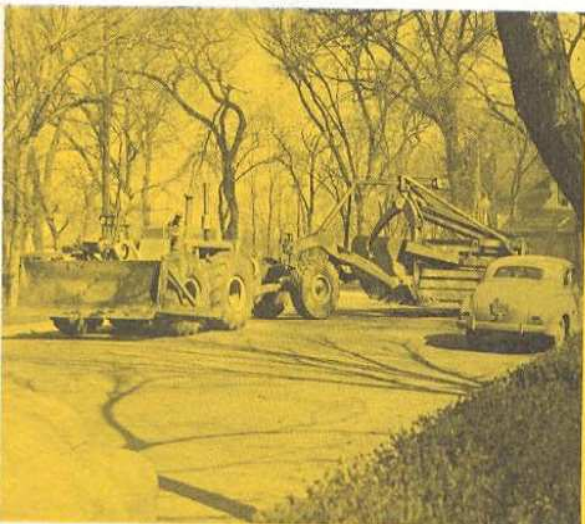


Takes shortest route to job . . . via highway or cross country . . . cuts hours from job-to-job moves.

Drives through city without interference to traffic, turns sharp corners, maneuvers easily in tight quarters.

Crosses tracks without damaging ties, tripping signals, tearing rails loose, or injuring tires.

Safe in traffic with big brakes, fingertip control. Doesn't damage paving.





# Saves hundreds of dollars ...

## *by driving job-to-job under own power*

### Another major advantage of tractor-on-rubber

is the 19 mph on-the-job and between-job mobility it gives you. With Tournatractor, you drive anywhere under your own power. Big low-pressure tires do no damage to pavement, curbs, sidewalks or railroad tracks. You don't need planking to cross blacktop. You save the time, bother, and expense of locating a trailer, moving in extra men and extra transport equipment, loading and unloading, etc., etc.

When it's time to move from one job to the next, your operator starts as soon as the last yard is in place, drives down the highway, right through regular traffic, at speeds up to 19 mph. 50 miles is only 3 hours away . . . and you go right to work when you get there.

Then, if there's a call for tractor services at the other end of your job, Tournatractor hurries

there, traveling fast under its own power. Often it can go, complete the work, and be back at its starting point, before a crawler gets to the site.

### Figure out for yourself what this means in dollars:

- 1** Greater speed on the job that completes each assignment faster.
- 2** Roadability that cuts moving costs and reduces the non-pay hours of moving time.
- 3** Fast one-man moves that make it easy to keep Tournatractor profitably busy at all times, that let you fill in with small jobs between big ones with no stand-by losses.
- 4** Long range drive-yourself mobility and versatility that lets you move with the seasons, find year-round earnings when you need them.

Can haul own fuel wagon, other supplies. Self-sustaining on job, eliminates need for service trucks.

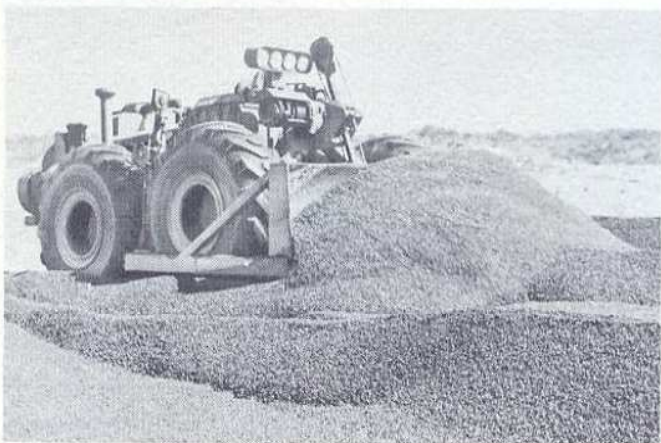
Rushes anywhere at a moment's notice to handle emergencies.

Ideal for military jobs, crosses bridges. Compact, it can be loaded easily in cargo planes, etc.





# Lubrication time cut 33 1/3 %



There are several other important advantages of tires over tracks. In Tournatractor, 4 wheels and tires do the work of 450 to 550 track parts. Four moving parts naturally need less maintenance and less lubrication than 500.

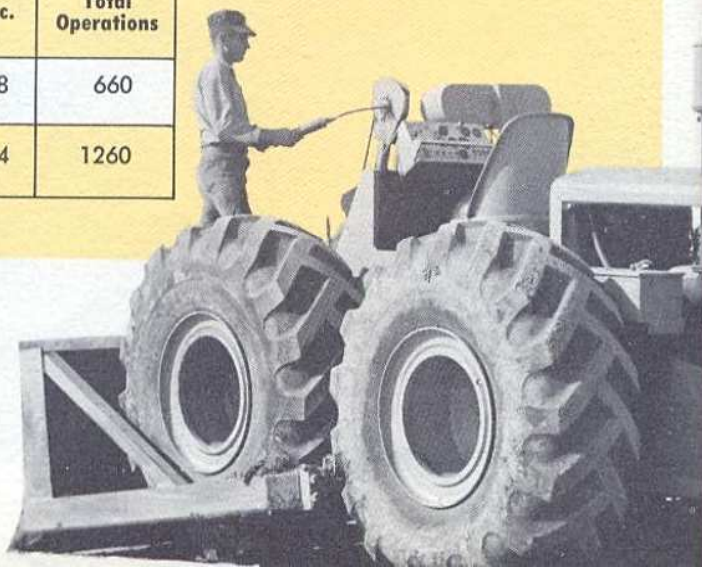
Note the table below which compares Tournatractor lubrication with the average of 3 leading big crawlers. It shows you will normally spend at least one-third more time servicing a crawler as you will a Tournatractor. If you're working in muddy going with tracks, that ratio climbs even further because you must spend extra time cleaning fittings, grousers, etc. And, in wet going, in sand, or in other gritty material, your crawlers need even more frequent lubrication with greater loss of working time.

This time loss and extra cost may look small on a daily basis. But multiply it out over a month's operation and it becomes a sizable item of profit-eating expense.

## COMPARATIVE LUBRICATION REQUIREMENTS

	Per shift of 8 or 10 hours			Per 1000 hours or 6 months		
	Grease Fittings	Misc. Operations	Time Needed	Grease Fittings	Misc.	Total Operations
<b>TOURNATRATOR</b> (without attachments)		5	5 min.	62	598	660
<b>Comparable Crawler</b> (without attachments)	6	2	8 min.	876	384	1260

Crawler tracks have around 500 moving parts operating in dust and dirt. These parts are difficult to lubricate fully, impossible to seal tightly against water, grit, and mud. Tournatractor power-train from engine to the 4 rubber-tired wheels is completely enclosed. Power rides all the way on anti-friction bearings. Lubricants are sealed in . . . kept clean while water and abrasives are safely sealed out! Which is the best bet for you for low friction losses, low lubrication costs, less downtime, and lower maintenance expense? Think it over!







Tournatractor tires have thick, tough treads which protect the fabric carcass from cuts and bruises . . . this gives them long-life service before retreading. Materials used in modern retreading have the same qualities of wear and durability as those used in new tires.

## Fewer repairs...

A set of Tournatractor tires and tubes costs about the same as a set of tracks. But there's a big difference between tire life and track life in varied soil conditions.

In many materials, job records show these big tires out-wear tracks, 2 to 1. In extremely abrasive materials, such as sand, records show you often get 2 to 3 times as much service from tires as from tracks.

And here's another advantage. When tracks become worn, many moving parts of the track assembly may require replacement or re-

building. When a tire becomes worn, you simply put on a spare and recap.

In 1000 *hours* your Tournatractor will have covered more than twice as many *miles* as your crawler. That's because it works at higher speeds. When you consider cost-per-mile, instead of traditional cost-per-hour, you get a true picture of the profit advantage of tires over tracks.

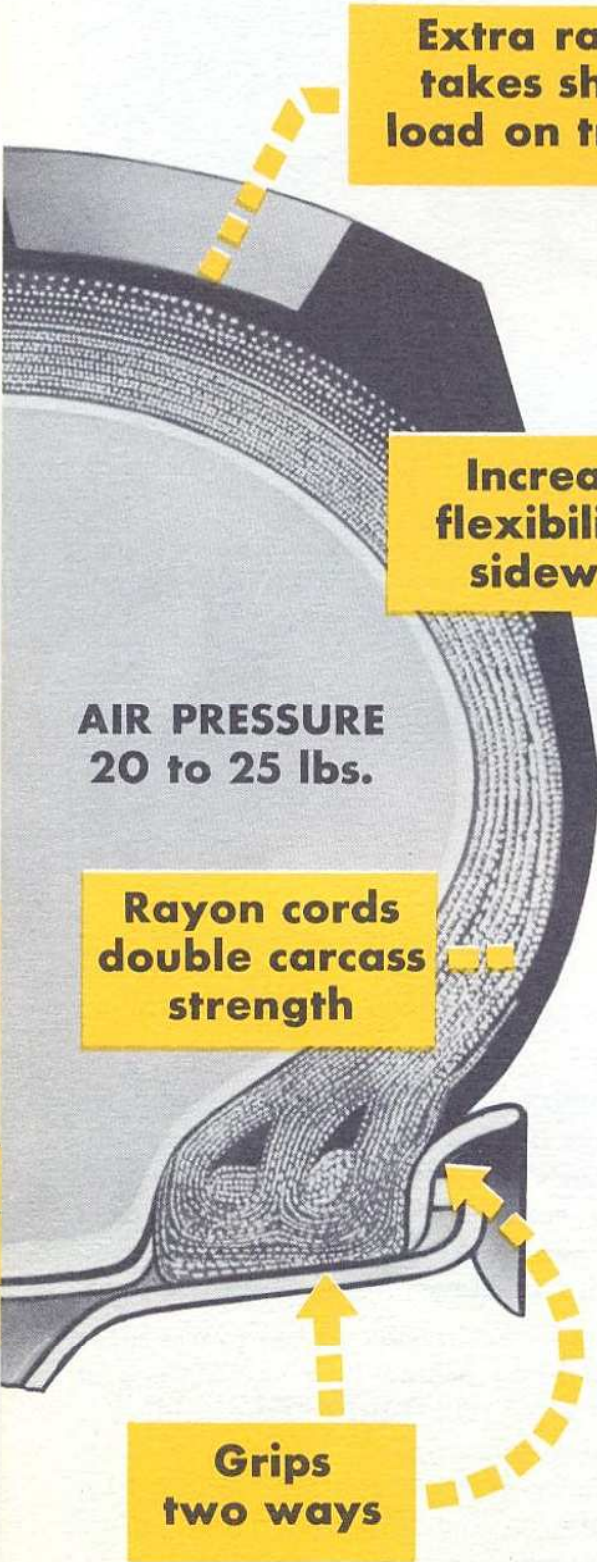
Remember that Tournatractor has over 8 years of field operation behind it, plus 16 years of experience with rubber-tired Tournapulls . . . this extensive field application means that today's machines are thoroughly job-proved and ready to give you top performance with *minimum maintenance*.





# BIG safe tires ...

*cushion the ride, clean themselves,*



**Extra rayon  
takes shock  
load on treads**

**Increased  
flexibility in  
sidewalls**

**AIR PRESSURE  
20 to 25 lbs.**

**Rayon cords  
double carcass  
strength**

**Grips  
two ways**

**T**ournatractor tires are big pneumatics that measure approximately 2' wide by 5½' high and operate at pressures as low as 20 lbs. They are made of the toughest rubber available. Durable carcass and rayon-cord construction add to tire strength and life . . . increase flexibility.

You have none of the problems of ordinary tires or crawler-tracks. There is no wedging in of rocks as with duals. Low-pressure inflation allows tire to deflect without damage around obstructions that would cause high-pressure tires to blow out or track pads to break. When properly loaded and inflated, this tire will flex over ordinary obstructions. Tough, deep-tread lugs protect the carcass against the impact of sharp rocks.

## **"Floats" on top**

You get *maximum flotation* because each broad tire spreads over an area approximately 2' wide. This permits tire to "float" . . . to stay on top of the ground instead of digging in.

Operation at low pressures permits more of the tread to grip the ground for successful operation in soft going like sand, mud, snow or ice. Thick, heavy bars, scientifically spaced, give you *maximum traction*. Bar height is great enough and the distance between tread bars enough to permit a big bite, yet not so deep as to interfere with full contact of the entire tread surface. Combination of low pressure inflation and heavy, well-spaced tread bars makes a working tire that gets a good firm grip.

Tires are self-cleaning. Tread design allows the natural action of the running surface to push mud and dirt toward the edges. Flexing helps shake this muck free. Tires stay clean . . . give



# *roll easily, float high, grip firmly, reduce maintenance, improve compaction.*

excellent traction. Clean grip of the lugs also protects against side slippage on rocks.

## **Taper doubles contact area**

Both the tire bead and wheel rim are built with a 5 degree taper. Tapered tire bead is made slightly smaller in diameter than the tapered rim. When inflated, the tapered-bead tire locks securely to the tapered seat of the rim with *double* the contact area of flat-bead tires. This makes possible low-pressure operation without tire creeping in braking and driving.

Wide rim gives greater operating stability . . . tire has less chance to roll sideways or "heel under". Tube, flap, and bead chafing common in flat-bead tires are practically eliminated. Rim rust is negligible because of tight seal provided with the tapered bead fit. Because of the heavy carcass, the large volume of air, and the longer

arc of flexing, Tournatractor tires run cooler than ordinary truck tires.

Thick tread, rayon cords, and soft air cushion absorb road shock. Equipment maintenance is lowered. Operator has safer control . . . rides comfortably with less fatigue, free from the bone-shaking jolts and jars of crawler or hard tire operation on uneven ground.

With tires, you get new job-to-job and on-the-job mobility, maneuverability. These big tires do not damage paving, curbs, tracks or haul roads. They eliminate loading and transportation expense . . . save extra man hours.

Wide rolling action of these pneumatics also aids in compaction. Voids are rolled out, material firmly packed. Pulverizing action you get with crawlers is minimized. This is especially important and advantageous in stockpiling of brittle material like coal or cinders.



Special wide-base tires are available for operation in sand. They spread out over a larger area and can be operated at air pressures as low as 15 lbs. Their increased flotation plus special tread pattern reduces tendency to dig in on loose footing. In heavy sand areas, like Florida, many owners say they can no longer even consider the high expense of track replacement on crawler-tractors.



# Anti-friction bearings

## *put more horsepower to work*

Power from Tournatractor's 208 hp diesel moves all the way on high-speed, anti-friction bearings. Drive is simple, short-coupled, efficient. With this all-gear drive you have no chain drives or tracks that stretch, snag or wear. Power comes direct from the transmission to the four final drive wheels.

All parts of the power-train are accurately machined from top-grade alloy steels. They are carefully heat-treated and stress-relieved for long wear, then ground and polished to fit with close tolerances. All moving parts are enclosed, operate in a bath of oil, and are sealed against abrasive dust and grit.

Obviously, with crawler-tractors, you get considerable frictional losses and wear due to hundreds of parts grinding in dirt.

In Tournatractor, the 450 to 550 moving parts of a crawler track assembly are replaced by 4 rubber-tired wheels. Big, low-pressure tires roll over grit — do not grind *in* it.

To power your Tournatractor, you have a powerful 6 cylinder 2-cycle diesel engine with brake-horsepower rating of 208 hp at 2000 rpm. This big, easy-starting power plant really hangs on and pulls in tough going . . . you will especially appreciate its high lugging ability when the going gets rough. You get quick pick-up in starting and gear changes . . . instant response at high speeds. You also get minimum fuel and maintenance expense. Behind this engine you get a warranty backed by the engine manufacturer and LeTourneau-Westinghouse; an engine with a reputation for dependability and long life. Excellent service is available through every LeTourneau-Westinghouse Distributor and engine distributors all over the world.

Remember, throughout, you will find the complete Tournatractor machine is modern, pre-

cision engineered, and precision built. It is the first heavy-duty tractor built with the idea of combining speed and economy of maintenance with lugging ability. In 8 years, thousands of owners around the world have proved for themselves that Tournatractor's high speed, dependable performance, and low upkeep pay profits by GETTING MORE WORK DONE.

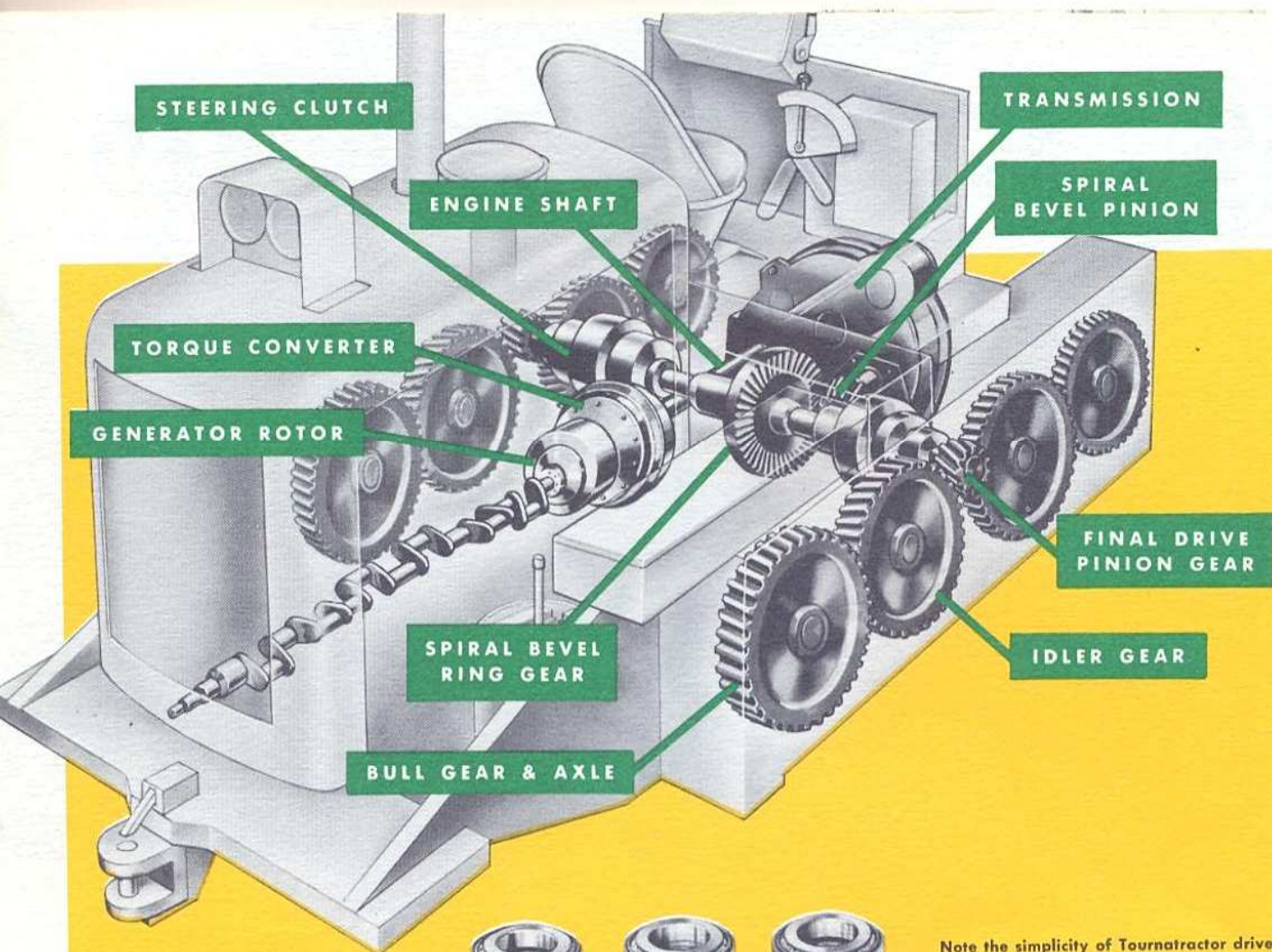
### **Push-button starting**

Tournatractor is as simple and easy to start as your automobile. You turn the ignition key and press the instrument panel starter switch. That's all. Plenty of battery current for powerful cranking motor comes from Tournatractor's own electrical system. There's no small gasoline starting engine to bother with. You have only one engine to service and carry parts for instead of two as with many other diesels.



Final drive, spiral bevel pinion, and ring gears are high nickel steel and heat treated for greater strength and durability. LeTourneau-Westinghouse process gives hardness penetration to  $\frac{1}{8}$ " below root diameter. Special stubbed teeth are crowned on a wide base with  $25^\circ$  pressure angle to resist shear. Teeth increase contact area between pinion and ring gear under load . . . give you longer wear.

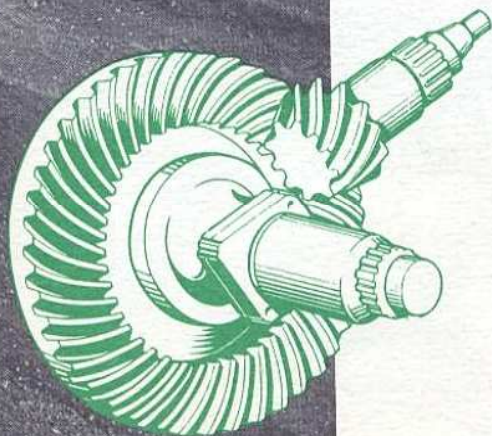




Note the simplicity of Tournatractor drive. Tracks, rollers, etc., that operate in abrasive dirt are eliminated. Instead, you roll on top of the dirt on tires that give you maximum ground contact.

Rugged steel pan completely encloses and protects machinery. Tournatractor's 16½" ground clearance lets it roll through safely where other rigs frequently hang up.

44 anti-friction bearings like these are used in the Tournatractor final drive and transmission. Power flows smoothly from engine to wheels with minimum friction.



### CRAWLER

Here's a parts inventory for a set of tracks on a standard crawler tractor:

chain parts .....	302
roller and carrier parts .....	188
idler parts .....	54
roller-frame and guard parts .....	18
Total wearing track-parts .....	562



### TOURNATRACTOR

Here's a parts inventory for the simple running gear of Tournatractor:

wheels with tires..... 4

That's all . . . these four tires and wheels take the place of approximately 562 track parts above!



### TRACKS

VS.

### TIRES

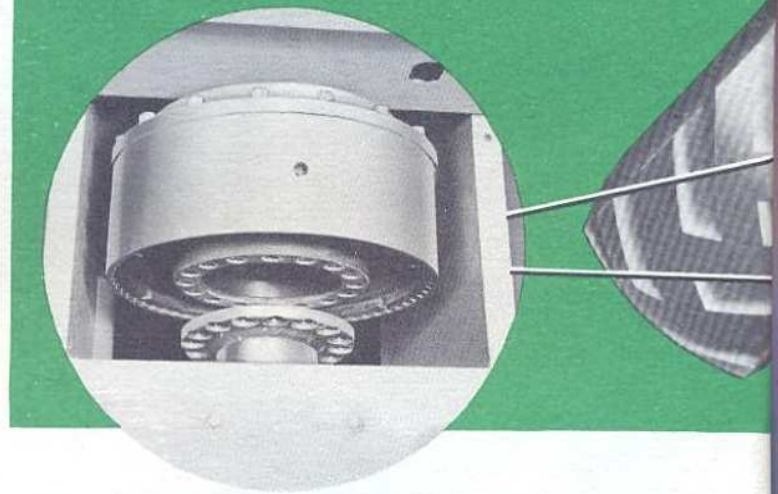


# BIG ... ACCESSIBLE ... RUGGED

**T**ournatractor's heavy, all-welded steel case provides a big, rugged mounting for every operating assembly. Alignment is maintained permanently, unnecessary gear and bearing strain is eliminated. Final drive housing has 1" thick inner wall with 1 $\frac{1}{4}$ " outside wall ... carrier-shaft compartment wall is 3" thick ... axle housings are strong, rigid, welded on as part of case. Yet, with all its massive, heavy-duty construction, notice how all machinery inside case is readily accessible for quick adjustment. In transmission ... air-actuated clutches ... final drive assemblies, etc. ... unit-type construction has been maintained throughout for easy, quick servicing. Repair of all components can be made without major dismantling. Engine drain-plug is easily reached. Gear cases are provided with adequate, conveniently located drain and fill plugs. Bolt sizes have been standardized for convenience and to limit parts supply.

Because of this big, rugged construction and precision engineering, you can safely take full advantage of Tournatractor's powerful 4-wheel drive, extra lugging ability, and fast operating speeds. Every shaft, every gear and pinion, every bearing, every mounting is built with a big margin of reserve safety over strength needed, to take the full power-transmitting load of Tournatractor's 208 hp. Operator can overload to stall the engine, but you'll find drive troubles are licked in Tournatractor. There is plenty of field experience behind every single part. Compare construction with crawler-tractors, trucks or excavators and you'll see why Tournatractor gives trouble-free performance.

**ACCESSIBLE STEERING CLUTCHES . . .** Tournatractor's two air-actuated steering clutches are readily accessible from the top through big cover plates on the deck. Simple unit-construction of each clutch assembly provides quick removal, easy handling. These clutches have multiple 15" diameter discs. Each carries 900 square inches of clutch surface.



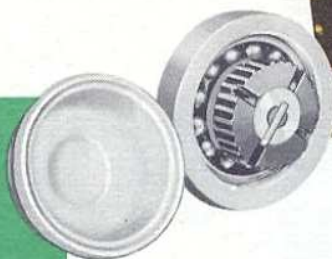
*look over this construction*

Wall of carrier-shaft compartment 3" thick

Final-drive housing has 1" inner wall 1 $\frac{1}{4}$ " outer wall

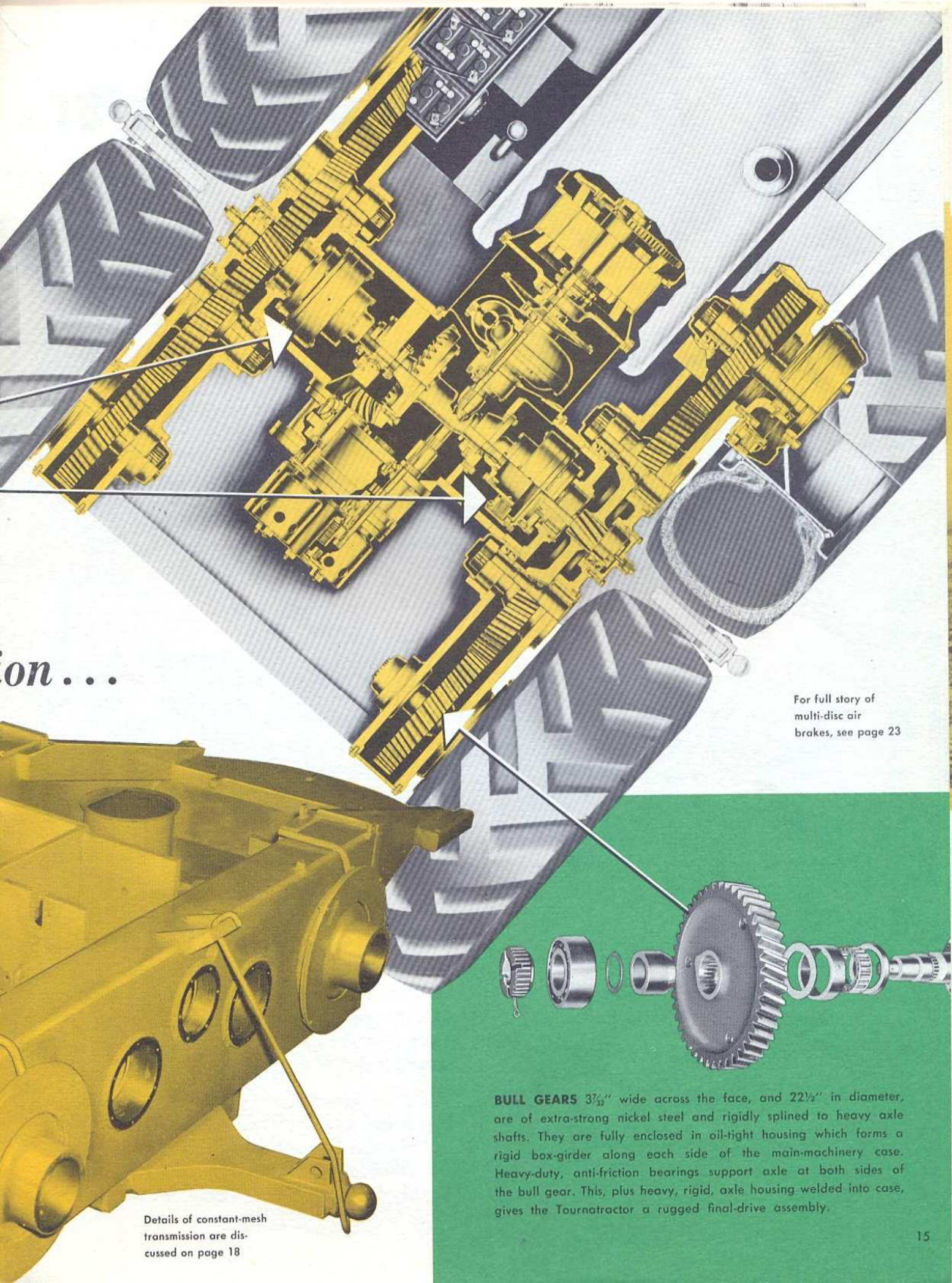
Axle housing welded to case ... stronger, more rigid

**AXLE NUTS** are easy to reach ... aid in quick removal of gears through end-plates on final-drive housing. This makes drive assemblies readily accessible. Nuts are big, rugged, lock securely. Note that axles have 2-point suspension, 16' apart, in the heavy walls of the housing. All parts in final-drive operate in oil bath.





on....



For full story of  
multi-disc air  
brakes, see page 23

Details of constant-mesh  
transmission are dis-  
cussed on page 18

**BULL GEARS**  $3\frac{7}{32}$ " wide across the face, and  $22\frac{1}{2}$ " in diameter, are of extra-strong nickel steel and rigidly splined to heavy axle shafts. They are fully enclosed in oil-tight housing which forms a rigid box-girder along each side of the main-machinery case. Heavy-duty, anti-friction bearings support axle at both sides of the bull gear. This, plus heavy, rigid, axle housing welded into case, gives the Tournatractor a rugged final-drive assembly.

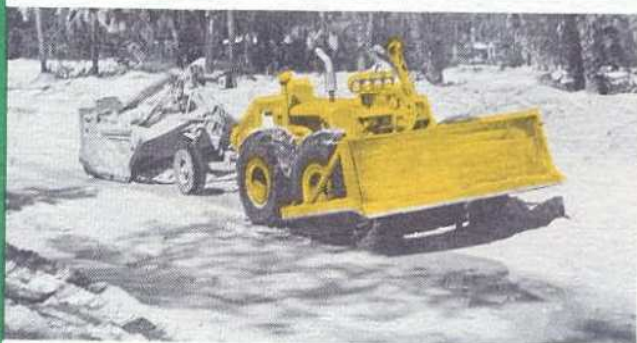


ROCK



Breaking up pavement, rock seams, etc., Tournatractor can tackle as tough jobs as any crawler. Loading may be slower, and cuts thinner on some of the heavy materials, but faster haul and return reduce cycle time.

SAND



In sand, rubber gives far better performance plus big savings in maintenance. In heavy sand states, many contractors say they can't afford track upkeep and are switching 100% to LeTourneau-Westinghouse. Wear is evidence of power lost.

WATER



Rubber-tired Tournatractor has a sealed power train. It works through water, mud, dust without damage or wear to bearings and moving parts. Lubricants are not washed away or impregnated with abrasives.

MUD



Drawbar horsepower ratings are made on hard, firm footing with clean tracks. How do crawlers look after a few passes through mud like this? How much rated DBH is left when mud packs into the 500-odd moving parts of a track assembly?

# More power.

Crawler tractors are rated by *drawbar* horsepower; competitive rubber-tired prime-movers are rated by *engine* horsepower. That makes things a bit confusing for you as a buyer. But, if you think about it a little bit, the different ratings become easy to understand.

The function of the crawler tractor was primarily to move a dead load from a standing start and then drag the load at a slow, crawling pace. That is exactly what "drawbar horsepower" ratings show. On that kind of assignment, the crawler tractor excels and can outperform anything of comparable engine horsepower on rubber.

To obtain a fair method of comparing crawler tractor efficiency, "drawbar horsepower" ratings are used as standardized measurement. This was, and still is, a reasonable standard for comparing *crawlers*. It is especially applicable because a vital factor in crawler engineering is to get as much horsepower as possible through the transmission and the 500-odd high-friction parts of the track-assembly . . . and to apply what is left in drawbar pull.

Oldtimers will remember that the track-tractor was originally developed to replace the horse and mule teams trained for steady slow-pulling on slip scraper and fresno work (range 100 to 200 feet). It was also applied to soft, muddy and rocky haul roads where wagons, wheeled scrapers and, later, small-tired trucks could not pull through. For this type of earthmoving work, drawbar horsepower was a reasonable measurement of production ability.

Then, as contractors sought ways for more speed and lower cost per yard in moving dirt, LeTourneau-Westinghouse co-operated with the tire companies in developing bigger and better earthmoving tires. These gave off-road hauling



## to move dirt fast

Published ratings on crawlers for drawbar-horsepower show maximum starting load with clean tracks on firm haul roads. While the crawler has an advantage on this kind of "standstill" basis, Tournatractors give workable drawbar ratings at hauling speeds far above crawlers. Tournatractors also maneuver faster, turn faster, shift more easily into higher gears without loss of momentum. These advantages, plus GREATER HAUL SPEEDS, have been job-proved over and over again . . . it's power on rubber for "lowest-net-cost-per-yard".



similar speed advantages to those obtained by trucks, busses, and automobiles on the highways. With the big tires came the development of 2-wheel and 4-wheel prime-movers. Thus, dirt-moving changed to a competition for speed and large carrying capacity, rather than competition for a greater "standstill" push or pull.

Today efficient dirtmoving engineering measures the maximum load that can be kept moving at profit-making speed, rather than the maximum rating for starting a standing load. You will remember that the ox could start a heavier load than the horse, but the horse was a faster, more profitable work animal and became the most popular prime-mover of its day.

The same changeover is happening today in mechanized dirtmoving. The crawler on good track footing can still start a heavier load than a rubber-tired prime-mover. High-speed tractors on rubber, however, work so much faster that they move more dirt at the lowest-net-cost-per yard and continually take over a larger percentage of jobs from the slow-going crawler-type tractor. Thousands of owners of LeTourneau-Westinghouse equipment have proved this for themselves on jobs all over the world.

You can't afford to keep an "ox" to start dead loads, when your real problem is in keeping your loads hurrying along at a profitable speed.



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# No stops for shifting.

*any gear ratio instantly with Constant*

Constant-mesh transmission makes a major contribution to Tournatractor's high-speed performance. It gives faster pickup for pushing or pulling scrapers, or other loads . . . permits easy synchronization of Tournatractor speed and power with that of the scraper prime-mover so both engines work as a team for fast loading. You can take full advantage of Tournatractor's new high speeds to get more work done.

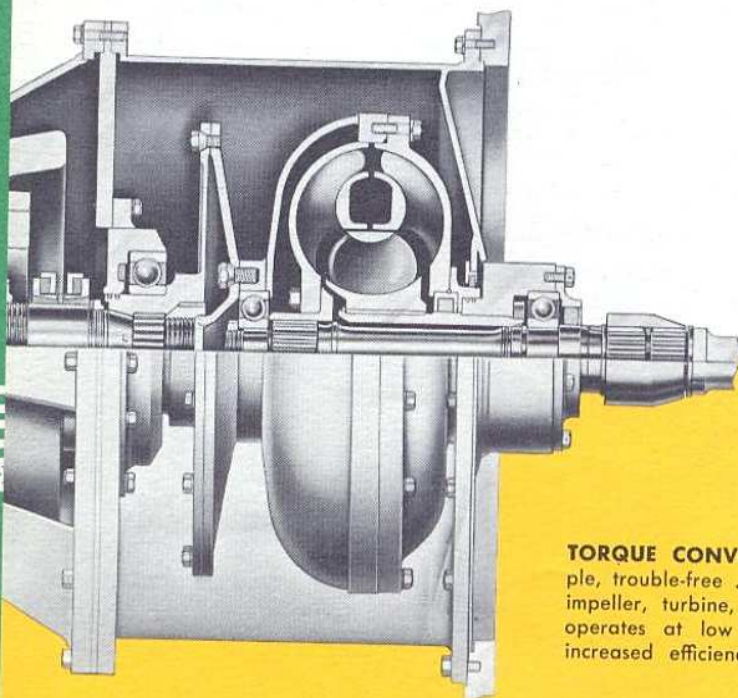
To make possible non-stop instantaneous speed selection and high reverse speeds, transmission

has a constant-mesh gear train. No depressing of a clutch foot-pedal . . . no double clutching . . . no synchronizing for meshing of one gear against another. With quick movement of a small speed selector, operator transfers power instantly from one gear ratio to another.

Tournatractor transmission is fully enclosed and operates in a bath of oil. All adjustment and lubrication points are conveniently located for quick, easy accessibility.

## Infinite gear ratios

*elimination of shock loads with low-pres*



**TORQUE CONVERTER** is simple, trouble-free . . . has single impeller, turbine, reactor . . . operates at low pressures for increased efficiency.

Where working conditions require frequent speed changes or where operators are unskilled, the optional torque converter is an excellent investment. This unit provides the equivalent of an infinite number of gear ratios, plus the use of maximum horsepower at all times over the complete speed range.



PUMP



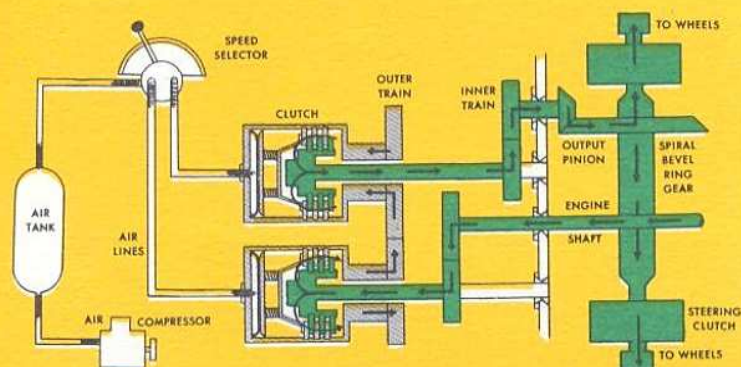
REACTION MEMBER



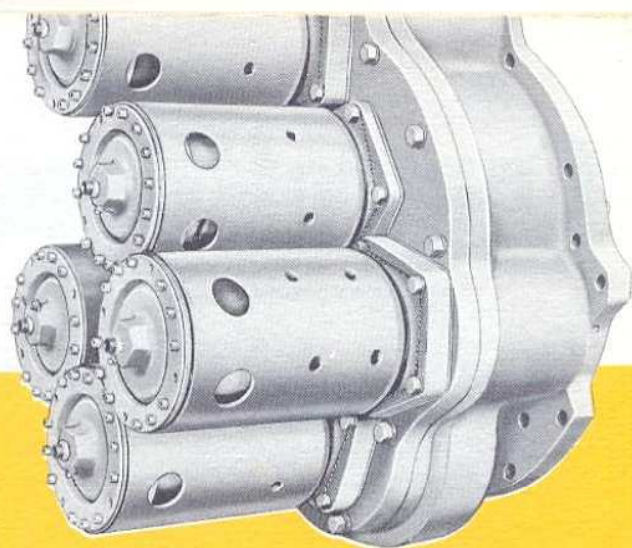
TURBINE



# no lost momentum . . . mesh Transmission



Arrows trace power-flow through  
CONSTANT-MESH TRANSMISSION



## Transmission Clutches Air-Actuated for Instant Control

Constant-mesh transmission and air clutch assembly are installed as a single unit. Clutches are mounted individually on ends of the gear shafts. Each 7" multiple disc clutch has 290 square inches of gripping surface. These heavy-duty clutches engage and release in proper combinations at a touch of the control lever. To make clutch adjustments all you do is loosen a few Allen-head screws and turn adjusting ring "in" or "out". Tournatractor also has 2 air-actuated steering clutches which are similar in principle.

# automatically selected . . . plus ure Torque Converter

The LeTourneau-Westinghouse torque converter is a low-pressure unit, simple and trouble-free. It has a single impeller, single turbine and single reactor. Because it operates at low pressure, it's easy to keep the system sealed.

Torque converter smooths out the shock of changing gears. It automatically balances load and torque so that gear selection is much less critical and maximum efficiency is secured at *all* times by *all* your operators. It automatically balances the speed ratio to provide more power to handle a load which has become heavy . . . then as the load lightens, automatically raises the ratio to pick up speed. It improves performance in any type of difficult operation . . . increases accuracy in holding cuts to grade and in close finishing . . . helps synchronize tractor speed to scraper speed when push-loading.

## TORQUE CONVERTER gives you these advantages:

- 1 **No shock or vibration** . . . shock loads of speed changes are absorbed in oil of torque converter and eliminated from transmission and power train.
- 2 **Better traction** . . . steady power pull gives tires a firm grip in tough footing . . . helps unit pull through slippery going easier and with smoother control.
- 3 **Longer tire life** . . . smooth acceleration instead of sudden speed changes reduces tendency to spin tires, so you get less tire wear, longer, more economical service.
- 4 **Higher engine efficiency** . . . constant, even power reduces engine wear . . . cuts repairs and maintenance . . . adds to engine life.
- 5 **Steady engine speed** . . . improves service and lengthens life of all engine attachments. Assures maximum voltage at all times for electrical equipment.
- 6 **Accurate grading** . . . balance of torque to load assures less variation in "suction" on blade, easier control, and steadier dozing or pushing speed regardless of footing.
- 7 **Easier operation** . . . with automatic balance of speed range to grade and rolling resistance, new operators do their job better . . . veteran operators do it easier.
- 8 **More yards per hour** . . . use of maximum engine horsepower at maximum efficiency gives higher average speed, more accurate grades, better production performance.

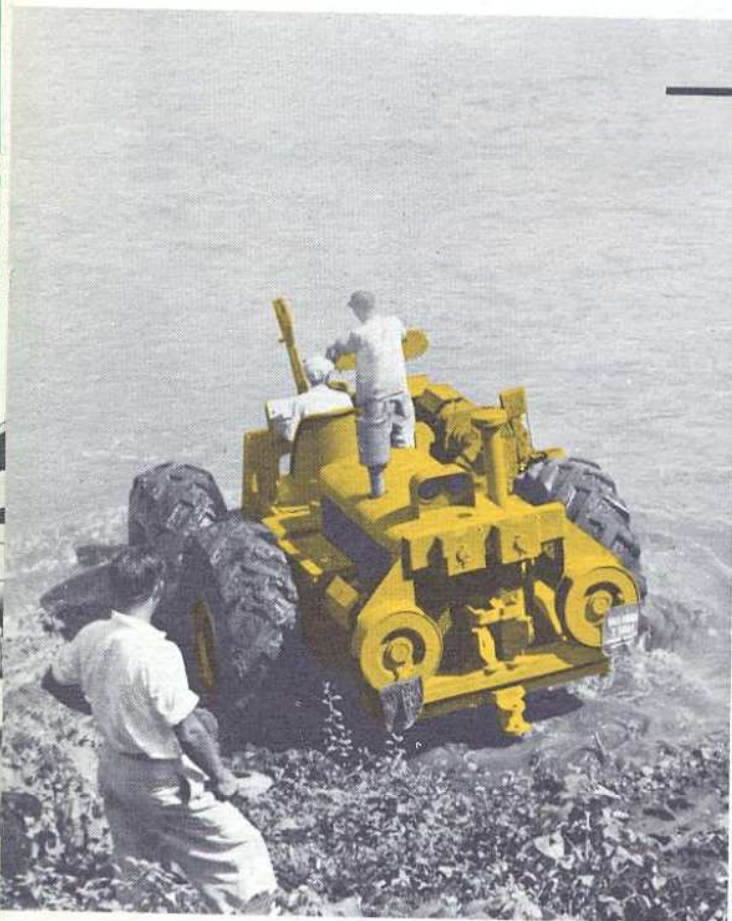


# Control...Fast, Positive, Accu

Here's another important reason why Tournatractor is faster than other tractors. You have instantaneous, finger-tip control for fast, positive action. No more "feeling" in of a clutch or waiting for hydraulic pressure to build up to activate attachments. A "flick" of a finger-tip switch and you get INSTANT action through electricity. One switch lifts or lowers blade . . . another controls towed units.

All control motors are mounted at point of action where they work most effectively. Cable needs are minimized. Simple, brushless, compact motors consist of only two parts, a rotor and a

stator. They operate with DC lugging power from AC current. All are three-phase . . . can reach 1800 rpm from a standing start in  $\frac{1}{6}$  of a second . . . reverse to give full power in opposite direction in  $\frac{1}{4}$  of a second. Rotor fan cools motor, blows out dust and moisture. They are so effectively insulated that they continue to operate when completely under water. Simple, spring-loaded, disc-type brake locks automatically when operator lets up on switch . . . releases the instant power is applied. There are none of the stresses and strains of mechanical stops . . . no slipping . . . no pauses to build up power. Action is instantaneous, always!



## Electric power *want it from*

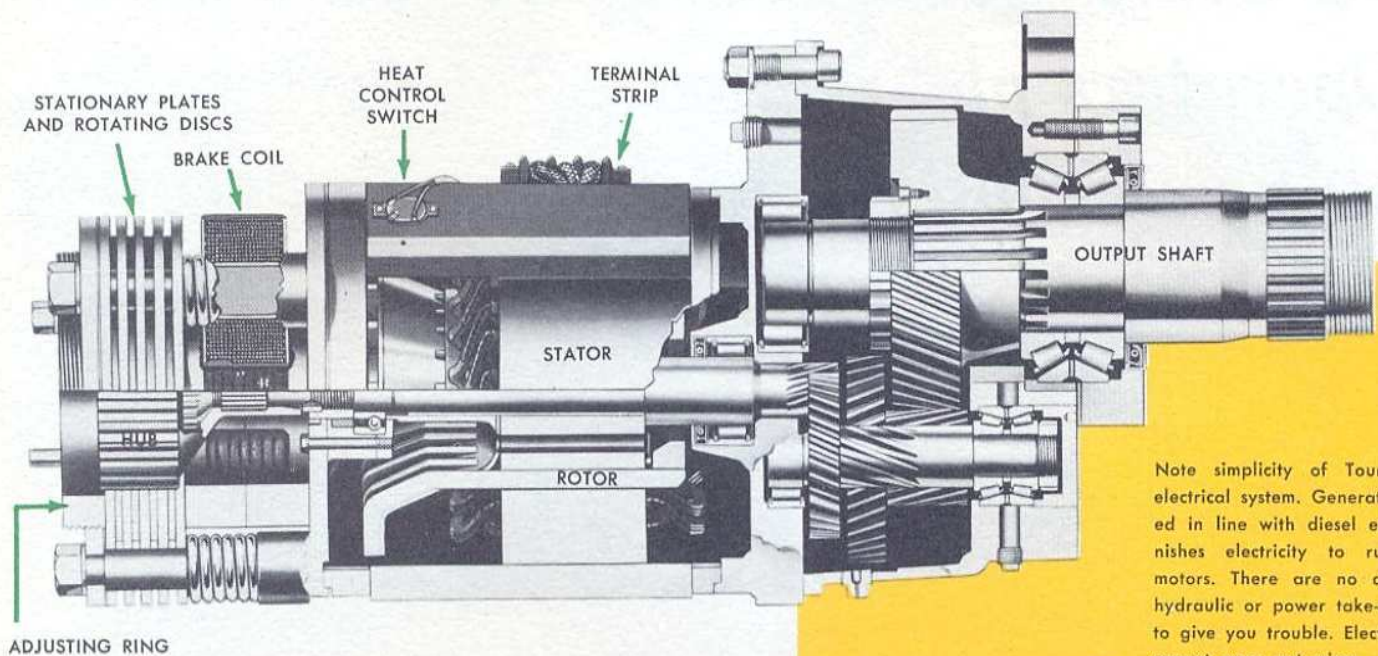
An alternating current generator is mounted directly in line with engine as part of engine flywheel. It produces current without the fluctuation and power loss of ordinary generators. 24-volt exciting current is fed through low-voltage brushes into coils of the rotor, instead of stator. This produces a magnetic field that revolves with the rotor . . . induces 240 volts within coils of the stationary stator. Operating current is drawn off through brazed connections, not subject to arcing. System operates at very low amperage, so there is no danger to personnel.

In addition to supplying power for dozer blade,

Motors are not affected by heat, cold, dust, or water. One motor kept under water for 6 years as a test at the LeTourneau-Westinghouse factory at Peoria still runs as well as ever. Over 25,000 of these motors have been used on machines in the field since 1946 . . . no failures due to climatic conditions have been reported.



# ate with electric motors at point of action



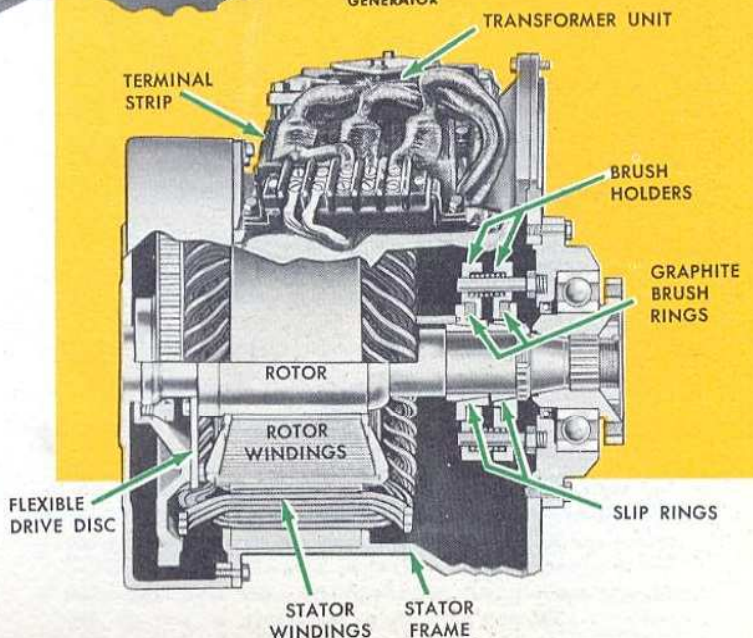
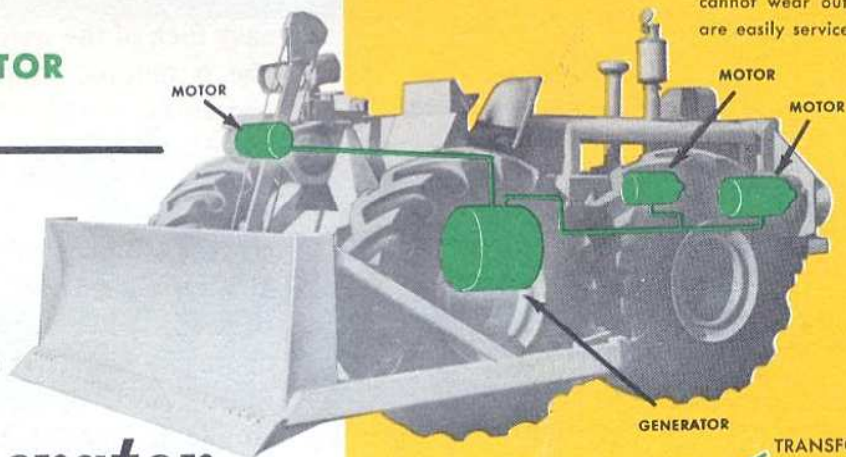
## WEATHERPROOF MOTOR

Note simplicity of Tournatractor's electrical system. Generator, mounted in line with diesel engine, furnishes electricity to run control motors. There are no complicated hydraulic or power take-off systems to give you trouble. Electric current cannot wear out wires . . . motors are easily serviced.

## wherever you Flywheel Generator

snow plow, or winch, this electric-control system can also drive a double-drum PCU for operating scraper and other auxiliary equipment with your Tournatractor. It also makes possible simple, electric-cable power connections to motor-driven cable-drums at point of action on scrapers, cranes, or other types of hauled equipment.

Tournatractor's electrical system also serves as an emergency source of electricity wherever and whenever needed. For such applications, it generates 120 volt alternating current. Use this portable powerhouse as an emergency light plant or for service in many other ways.



## FLYWHEEL GENERATOR



# "Don't get half as tired!"

*Operators pleased with Tournatractor simplicity, comfort, and ease of operation*

## Read what operators say:

**J. E. Chandly, Hattiesburg, Mississippi:** "It's the easiest machine I've ever operated. Compared to a crawler, it's like driving a new car alongside an old truck."

**Frank Braconier, Rockford, Ill.:** "Tournatractor is tops as a pusher. It has more speed than a crawler . . . moves back and positions faster than a crawler. It has plenty of power. At 500', I can push 3 scrapers where I could push only 2 with my crawler."

**Clifford Larsen, Kilgore, Texas:** "I like the visibility of the Tournatractor. It has plenty of speed and power . . . the controls are simple and easy to operate."

**E. C. Lang, Long Beach, California:** "I operated crawler-tractors before we got the Tournatractor, and can truthfully say that for ease of operation and efficiency and production, there's nothing like Tournatractor."

**Phil Ruh, Tucson, Arizona:** "It's very easy to operate in traffic. It has plenty of speed and rides easy."

**G. G. Mullins, Nashville, Tennessee:** "I'm not nearly as tired after riding the Tournatractor as I am after riding over the steel plates of a crawler."

**H. W. Plass, Crystal City, Missouri:** "I've stripped better than 7,000 yds. of dirt in 100 hours (200' push), and I could still find time to clean up around the shovel and do extra jobs. The torque converter and down-pressure dozer blade make Tournatractor a fine tool for this type of work. It is a fine machine for the operator."

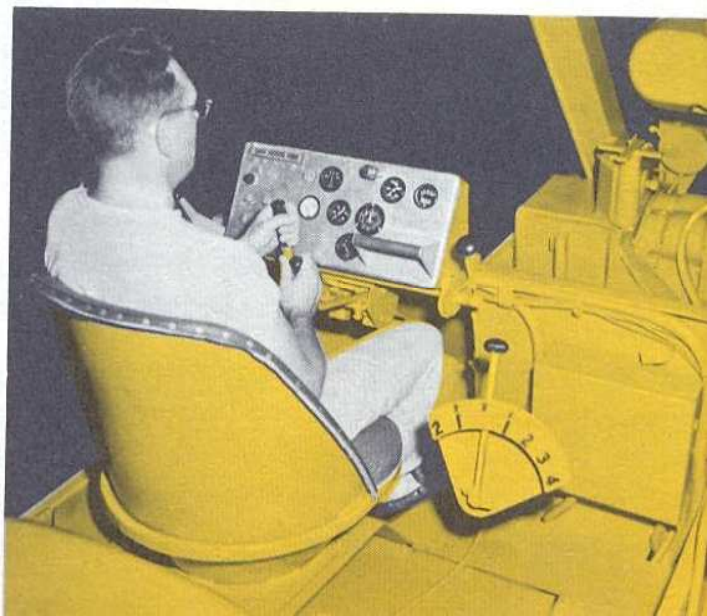
**Luther Woodward, Miami, Florida:** "Tournatractor is tops for doing lots of odd-jobs fast. Pushing 150 ft. in sand, you make two passes to crawler's one. It has a good seat, and you're not jerking levers all the time."

Big, comfortable air-foam, bucket-type seat provides operator comfort. Carefully engineered, it gives comfortable back support. Deep springs and rubber padding take shock out of rough riding, eliminate rebounds. Mounted on level-ride suspension, it helps operator do more accurate work. All controls are within easy, comfortable reach . . . all move as easily as the controls on your car. No twisting or stretching is necessary for operator to see his work.

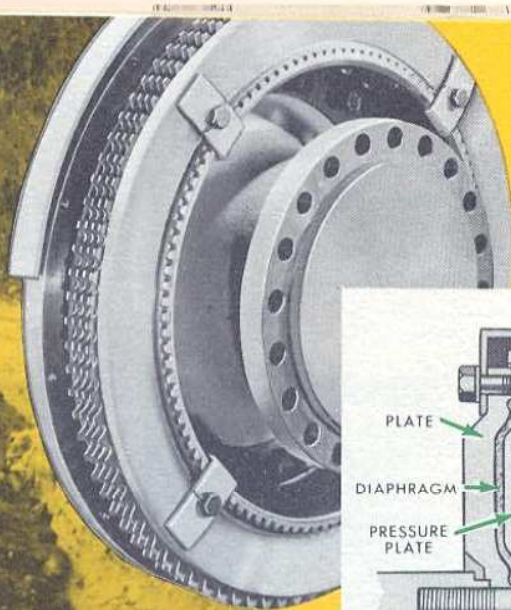
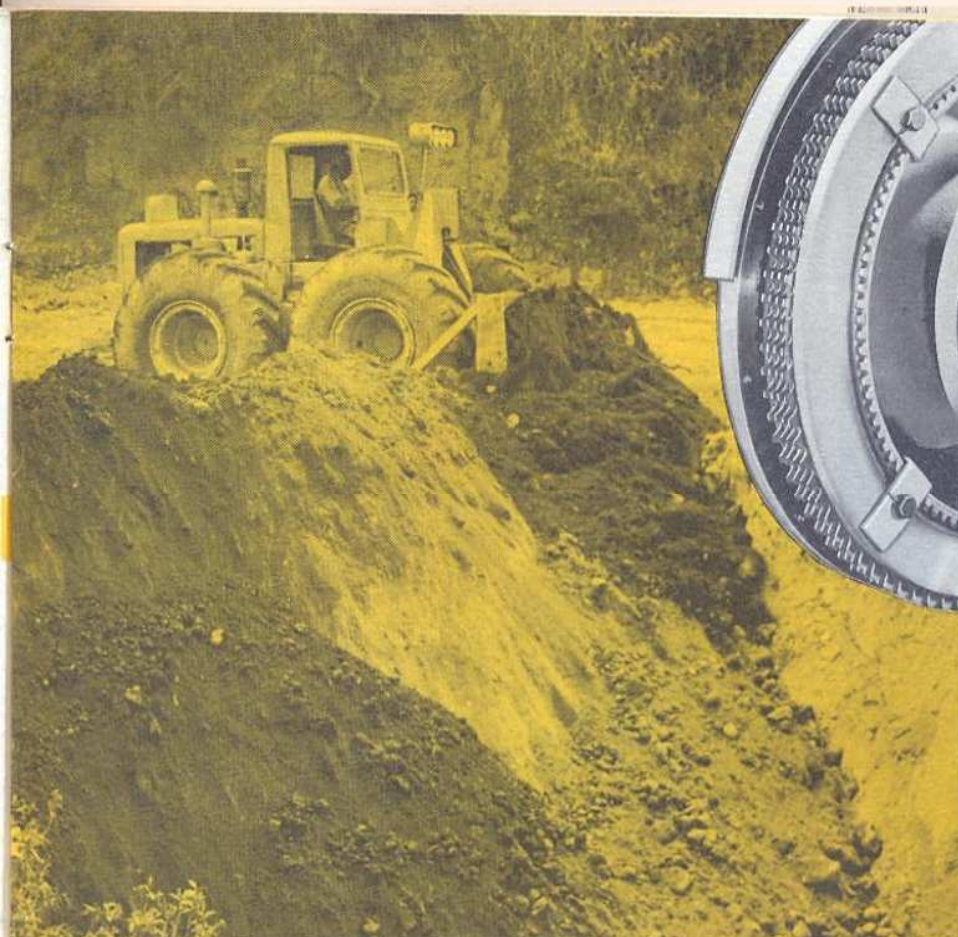
Tournatractor operator rides on big, low-pressure tires that absorb vibration. He sits relaxed in shock-absorbing, air-foam cushioned seat. All controls and instruments are directly before him, within easy reach. There is no stretching or twisting. He doesn't need to stand up on the seat to see ahead or behind. Nor does he have to reach around to find his power-control lever.

He shifts to higher speeds instantly with one easy flick of the wrist, doesn't need to go through the 6 manual stop-shift-start control motions necessary on old-style crawlers.

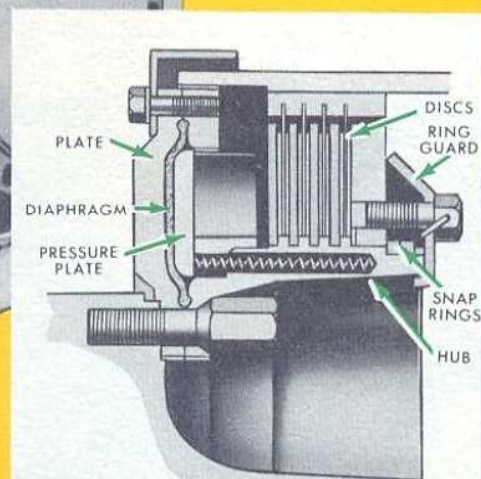
To you as an owner, this ease of operation means faster maneuvering. It means more of Tournatractor's higher operating speeds will be used. It means good men are easier to hire and easier to keep. It helps green operators become GOOD operators faster. It eliminates end-of-shift slow-down. And, because ease of control makes it simple to operate this high-speed tractor, you get the enthusiastic cooperation of operators that *gets more work done.*







Tournatractor brakes are compact . . . can be removed as an assembly from machine. Their large braking surface means fewer adjustments, less down-time, more work time.



Operator has sure, safe control at all times. Brakes respond to a touch on the foot pedal. If bank starts to crumble, he can shift instantly into reverse, accelerate rapidly out of danger.

## More safety to use extra speed

Your Tournatractor operator can use all his new speed with confidence and safety. He sits ahead of engine, does not inhale engine fumes, has excellent all-around visibility.

With all controls in front of him, there's no need for him to take his eyes off the road. Ease of operation also lessens fatigue. He's fresh and alert up to the end of the shift, can react fast to avert dangerous situations.

There are no moving parts to catch arms, legs, or clothing. Nor can Tournatractor "run away" when operator dismounts or climbs aboard. Ease of shifting eliminates danger of being caught out of gear or locked in gear.

Low center of gravity and broad 8'2" gauge insure stability. Heavy, ground-gripping tires make Tournatractor safe and sure-footed.

Heavy-duty air brakes on all four wheels provide

705½ square inches of braking surface on each wheel. That's more braking surface on each wheel than most comparable units have on the whole machine.

Brakes consist of alternately-placed lined and plain steel discs. The lined discs, functioning as a brake lining, spline to hub of wheel and turn with it. The unlined discs, functioning as a brake drum, spline to axle and remain stationary. Discs are forced together by air.

Meter valve equalizes air pressure to the four wheels. Brakes respond instantly, evenly, to amount of air pressure released by foot pedal. Smooth and powerful, they provide safe control in any weather, improve maneuverability. Operator has confidence for faster operation near steep banks, on narrow winding roads, near other equipment, or in traffic.



# Full line of auxiliary tools

*now available*



If more than 5" tilt is desired on bulldozer, Tournatractor may be equipped with optional electric tilt mechanism. This consists of a cable-operated pushbeam attached to the side-arm. Controlled by an electric motor, attachment enables you to raise or lower either corner of blade up to 10" from operator's seat at the touch of an electric switch. Desired tilt can be made any time, in a fraction of a second. Cable holds blade at same pitch regardless of digging conditions . . . return to level again takes only the touch of a finger. Full tilt position of side-arm is shown above.

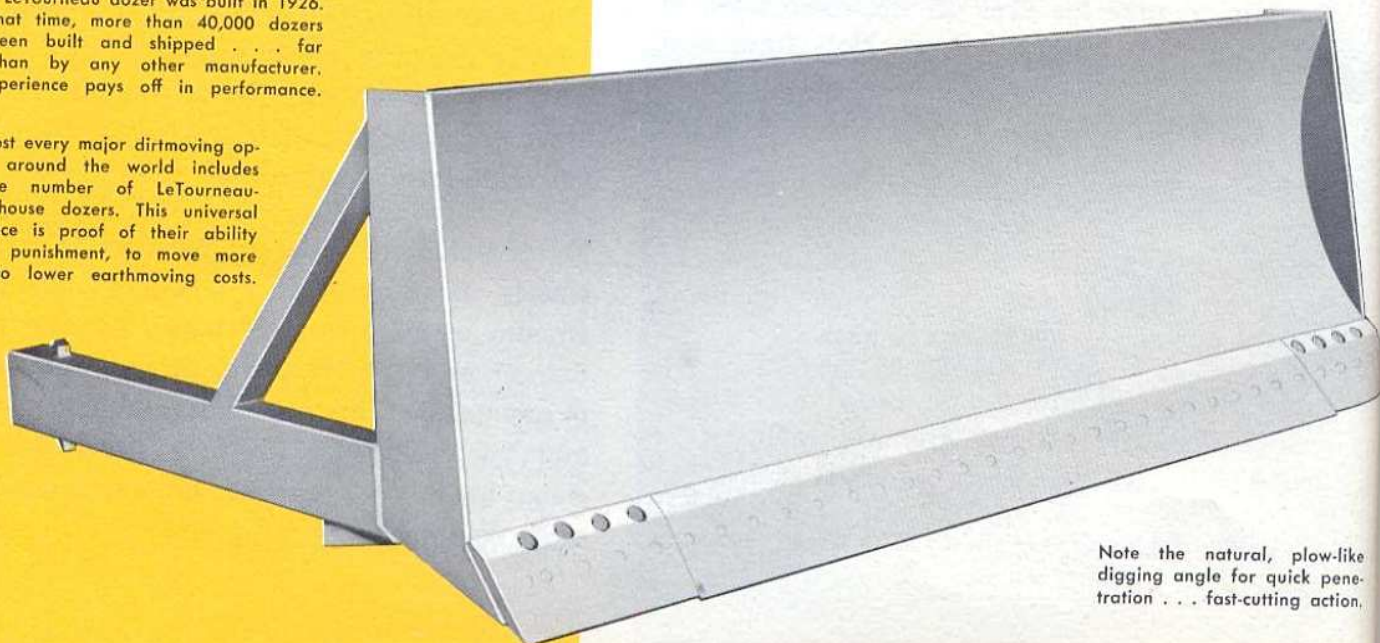
Standard Tournatractor includes drawbar and front guard. Optional push-block, A-frame, control unit, bulldozer or angledozer blades, root rake or snow plow, double-drum PCU may be added. All blades are electric-controlled and interchangeable. This page describes standard front-end equipment. For description of other attachments, please turn page.

Dozing blades are made of tough, high-grade steel, expertly welded. Face plates are heavy, abrasion-resistant steel. Side-arms are steel box-beams, almost impossible to bend or deflect in normal service. Pusher plates may easily be welded on, and there is plenty of strength throughout the back-bowl frame to carry pusher-plate stresses at either central or side location.

Blades lift to 54" in a few seconds. Drop without down-pressure is unlimited. This wide range of blade action increases versatility of Tournatractor and is an important safety feature when dozing down steep banks.

1 First LeTourneau dozer was built in 1926. Since that time, more than 40,000 dozers have been built and shipped . . . far more than by any other manufacturer. This experience pays off in performance.

2 Almost every major dirtmoving operation around the world includes a large number of LeTourneau-Westinghouse dozers. This universal preference is proof of their ability to take punishment, to move more earth, to lower earthmoving costs.



Note the natural, plow-like digging angle for quick penetration . . . fast-cutting action.



# *Interchangeable front-end units all mount on same A-frame, use same electric controls and mounting arrangement*

## **BULLDOZER**

11'4" wide, 3'7" high . . . carries 2½ cubic yards per pass. Correct blade curvature — result of over a quarter century of experience in dozer building — provides faster digging. Dirt rolls easily, holds well at ends.



## **ANGLED OZER**

13' wide, 3'6" high . . . carries 3 cubic yards per pass. Blade can be angled 20° to lead on either side. Electric motor tilts either corner of blade 10" up or down. Recommended for extensive side-hill work.



## **ROOT RAKE**

11'4" wide, 4'6" high. Has 10 removable curved teeth placed 10½" apart for easier flow of dirt. Rake penetrates deeply, tears out roots, brush, vines, rock, etc. Lifts 46" above ground, drop unlimited. Can be used with stumper attachment.

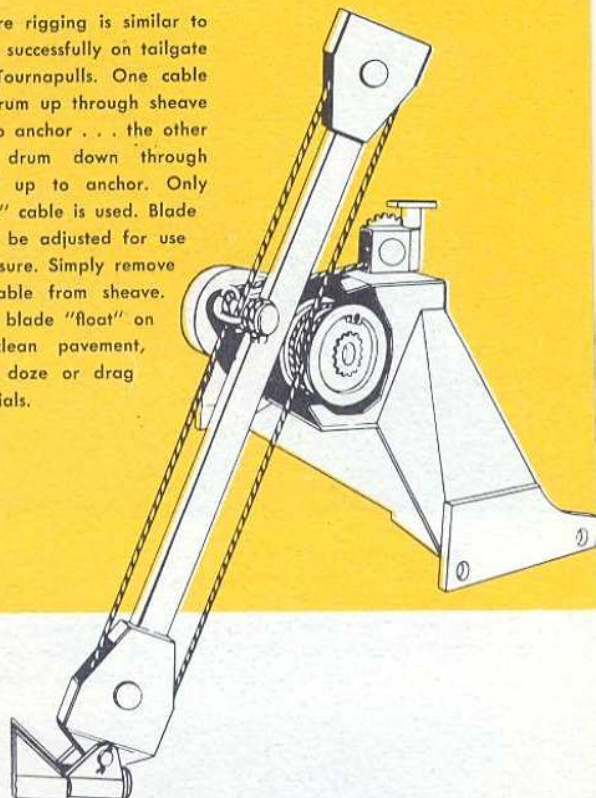


## **SNOW PLOW & WING**

12'4" wide, 6'6" high. Plow lifts 5'6" — enough to clear most banks. Divider plate in center of "V" cuts frozen drifts, eliminates plow-back. Rubber tires protect road surface. Speed "blasts" heavy drifts. 9' electric-controlled wing optional. One-man operated . . . push buttons control plow and wing from cab.



Down-pressure rigging is similar to that used so successfully on tailgate of electric Tournapulls. One cable runs from drum up through sheave and down to anchor . . . the other runs from drum down through sheave and up to anchor. Only 35' 4" of ¾" cable is used. Blade may readily be adjusted for use without pressure. Simply remove 9' upper cable from sheave. This will let blade "float" on shoes to clean pavement, plow snow, doze or drag loose materials.



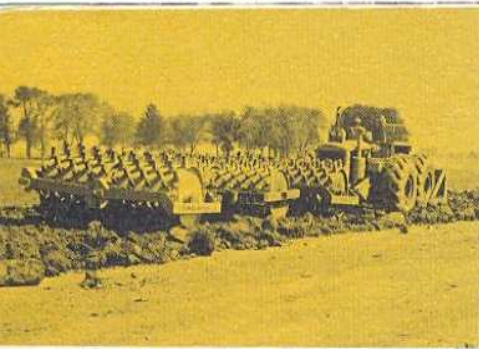
## *Electric-controlled Down-pressure*

Down-pressure attachment is recommended for easier digging of frozen ground . . . handier clean-up over rock and ore . . . faster leveling of hard-to-spread materials. It puts extra pressure on the blade, prevents "blade bouncing" and "washboard cuts". With down-pressure, you can do a better, faster job back-blading haul roads. You can do all grading more accurately.

Down-pressure blade is electric-controlled. There are no complicated mechanical linkages or hydraulics . . . just a simple electric motor, winch and two short-line cables. Reeving is simple, direct. Because cables are always under tension, there is never any slack to take up . . . no kinking or piling up on drum flanges.

Action is instantaneous. Operator simply flicks a dashboard switch to raise blade as high as 54", or to lower it as much as 18" below ground level.



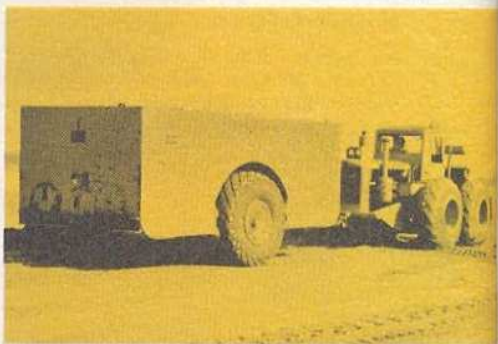
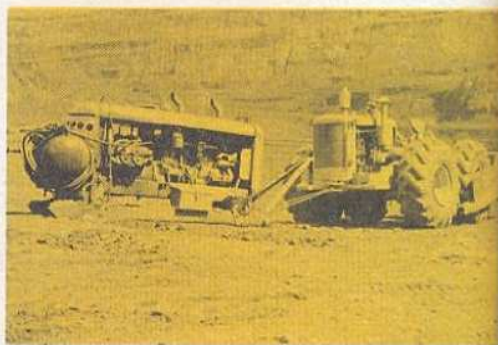


## LeTourneau - Westinghouse . . . *your guarantee* of satisfactory performance with **TOURNATRACTOR**

**Y**ou can have confidence in Tournatractor. It has been in production since 1947. Thousands of these high-speed tractors are being used by contractors, mines, quarries, loggers and industries all over the world. This rubber-tired tractor is built by LeTourneau-Westinghouse, a wholly-owned subsidiary of Westinghouse Air Brake Company. This name, on any type of equipment, has been synonymous with high-quality standards and dependability for nearly one hundred years. Similarly, for more than three decades, the name LeTourneau has been associated with the pioneering and development of faster, cheaper ways of moving earth.

Thus, you are doubly assured that the improved equipment line offered by this strong new company is the finest available.

By switching to this modern tractor-on-rubber, you will do more work at lower cost. If you need further proof, ask us for a list of owners. Talk to them . . . visit their jobs . . . see for yourself . . . talk to the operators. This is the tractor of the future . . . owner records prove it . . . competitors prove it by attempting to make similar types. Tournatractor is an investment in speed that can pay off faster than anything else on your equipment list.



### **LeTourneau - Westinghouse Company**

PEORIA, ILLINOIS

TOCCOA, GEORGIA

RYDALMERE, AUSTRALIA

CAMPINAS, BRAZIL

A Subsidiary of Westinghouse Air Brake Company, Pittsburgh, Pa.

Manufacturers of Tournatractors\*\*, Tournapulls\*, Angledozer\*, Rear-Dump and Bottom Dump Haulers, Flatbeds, Log Skidding Tools, Snow Plows, Scrapers, Power Control Units, Rooters\*, Rollers, Wire Rope



All specifications in this bulletin subject to change without notice \*Trademark Reg. U.S.Pat.Off. \*\*Trademark