REC Newsnote #8

Crawler Dozer Availability -- 1994

September 1994

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The crawler dozer market has changed greatly in the past decade. Several manufacturers have dropped smaller dozers because of sluggish sales. John Deere, which has dominated the eastern U.S. forest fire dozer market, serves ad a prominent example. In the last ten years, Deere enlarged its' smallest dozer, the 350D renaming it the 400G. At that time it also enlarged its' 450 and 550, sizing each unit up a notch. After a short life, Deere dropped the 400G in 1993. Likewise, Case had dropped its' smaller 350 and 450 dozers.

The lack of this smaller equipment has concerned several eastern fire agencies. In places where they are suitable, small dozers exhibit better maneuverability and cause less damage than larger dozers. They cost less. The transport unit costs less. The additional cost for an agency to purchase the smaller units (transport plus dozer) versus the larger units available today would be as much as $15,000 - $20,000.

While forest fire agencies own some of the biggest crawler dozer fleets, they own only a small percentage of the total number of tractors. REC researched today's available models to help agencies assess their options. We limited our survey to crawler dozers with a maximum of 90 hp and less than 20,000 pound operating weight and included only widely distributed dozers.

Occasionally specialty or low volume import tractors become available, filling a void in the small tractor market. We did not research these tractors for several reasons. Usually the dealerships are scattered or regionalized and the product does not get established. Parts and maintenance are expensive and manufacturer support is often poor. Since forest fire agencies normally keep tractors for a long period, manufacturer supported equipment is important.

The table on the last page of this report lists the survey results. We listed only basic information. The prospective buyer should consult the dealer or manufacturer for updated and detailed data. The charts list the following data interpreted from the manufacturers' literature sent to us in June 1994. The following is an explanation of the table column headings.

Model: For most tractor models, several track options are available. Long track models provide a longer track length than standard, improving traction and lowering ground pressure. Wide tracks have a wider track shoe. This improves floatation but reduces maneuverability. The abbreviation LGP means Low Ground Pressure. This designates a model with a very wide track shoe for maximum floatation.

Engine: This column lists the engine model number. A "T" in the model number normally designates a turbo charged engine. All engines in these charts are diesel.

Horsepower: The table lists net SAE horsepower.

Transmission: The listed tractors have either direct drive or torque converter transmissions. Direct drive systems provide superior performance for pulling fireline plows or other drawbar work such as skidding. Operators normally prefer torque converter transmissions for blade work such as common excavating tasks.

Maximum Drawbar Pull: This is the maximum pulling force (lbs.) of the tractor at nil speed.

Drawbar Pull at 2.5 mph: This is more representative measure of the pulling power of a tractor for fireline plowing. This is a typical speed at which fireline is built.

Operating Weight: This is listed to help match dozer with transport units.

Ground Pressure: Listed in pounds per square inch, this guides the selection if good floatation is required.

Maximum Speed: This provides a measure of the escape or travel speed of a crawler.

Other Considerations: The table does not list the following information that a purchaser should consider. If a plow will be mounted, determine the hydraulic requirements. Make sure the tractor has an adequate hydraulic pump in terms of pressure and flow. Make sure that an auxiliary hydraulic control valve system can be added that meets the requirement of the plow. Check that a mount is available for the specified tractor and plow.

In many cases labor laws or standard operating procedures require limb risers and cab screening for operator protection. Tractor models sold aggressively for forestry use feature this protection as options. Some models are targeted for construction markets and this option may not be available from the manufacturer. Dealers or custom builders might add this equipment. Determine your needs when you write the purchase specifications.

Company Addresses:

Caterpillar, Inc., Service Technology Group, 100-T N.E. Adams Street, Peoria, IL 61629-0002, telephone (309) 675-4311

John Deere Dubuque Works, P.O. Box 538, Dubuque, IA 52004-0538, telephone (319) 589-5151

J I Case, Construction Equipment Group, 700 State Street, Racine, WI 53404, telephone (414) 636-6492

Komatsu Dresser Company, 200 Tri-State International, P.O. Box 1422, Lincolnshire, IL 60069-1422, telephone (708) 831-6700

1994 Crawler Tractor Availability

	Model No.	Engine	Net hp	Transmission	Maximum Drawbar (lbs)	Approximate Drawbar Pull @ 2.5 mph (lbs)	Operating Weight (lbs)	Ground Pressure (psi)	Top Speed (mph)
Caterpillar	D3C Series III	Cat 3046	71	Planetary Power Shift	28,000	6,000	15,518	6.45	6.7
	D3C LGP Series III	Cat 3046	71	Planetary Power Shift	28,000	6,000	16,842	4.15	6.7
	D3C XL Series III	Cat 3046	71	Planetary Power Shift	28,000	6,000	15,941	6.16	6.7
	D3C Series II	Cat 3204	70	Planetary Power Shift	33,000	6,000	15,435	7.20	6.7
	D3C LGP Series II	Cat 3204	70	Planetary Power Shift	33,000	6,000	17,170	4.10	6.7
	D4C Series III	Cat 3046	80	Planetary Power Shift	33,000	9,000	16,019	6.15	6.9
	D4C LGP Series III	Cat 3046	80	Planetary Power Shift	33,000	9,000	17,032	4.20	6.9
	D4C XL Series III	Cat 3046	80	Planetary Power Shift	33,000	9,000	16,442	5.25	6.9
	D4C Series II	Cat 3204	80	Planetary Power Shift	38,000	7,000	16,661	6.44	6.9
	D4C LGP Series II	Cat 3204	80	Planetary Power Shift	38,000	7,000	17,427	4.31	6.9
John Deere	JD 450G std track	JD 4045D	70	Direct Drive	18,000	7,000	15,732	6.47	8.8
	JD 450G std track	JD 4045T	70	Power Shift Torque Converter	24,000	7,000	15,932	6.55	9.5
	JD 450G wide track	JD 4045D	70	Direct Drive	18,000	7,000	16,688	4.57	8.8
	JD 450G wide track	JD 4045T	70	Power Shift Torque Converter	24,000	7,000	16,888	4.63	9.5
	JD 450G long track	JD 4045D	70	Direct Drive	18,000	7,000	16,310	5.97	8.8
	JD 450G long track	JD 4045T	70	Power Shift Torque Converter	24,000	7,000	16,510	6.04	9.5
	JD 450G LGP	JD 4045D	70	Direct Drive	18,000	7,000	17,232	4.2	8.8
	JD 450G LGP	JD 4045T	70	Power Shift Torque Converter	24,000	7,000	17,432	4.25	9.5
	JD 550G std track	JD 4045D	80	Direct Drive	19,000	7,000	17,483	5.69	8.8
	JD 550G std track	JD 4045T	80	Power Shift Torque Converter	24,000	8,500	17,683	5.75	9.5
	JD 550G wide track	JD 4045D	80	Direct Drive	19,000	7,000	18,330	4.47	8.8
	JD 550G wide track	JD 4045T	80	Power Shift Torque Converter	24,000	8,500	18,530	4.52	9.5
	JD 650G std track	JD 4045D	90	Direct Drive	22,000	8,500	18,310	5.94	9
	JD 650G std track	JD 4045T	90	Power Shift Torque Converter	34,000	10,000	18,510	6.01	9.5
	JD 650G wide track	JD 4045D	90	Direct Drive	22,000	8,500	19,122	4.65	9
	JD 650G wide track	JD 4045T	90	Power Shift Torque Converter	34,000	10,000	19,322	4.7	9.5
J I Case	Case 550 Long Track	Case 4-390/4T-390	67	Power Shift Torque Converter	22,000	7,000	13,300	5.3	5.8
	Case 550 LGP	Case 4-390/4T-390	67	Power Shift Torque Converter	22,000	7,000	13,300	3	5.8
	Case 650G Long Track	Case 4T-390	80	Power Shift Torque Converter	29,500	N/A	15,800	5.37	5.5
	Case 850G	Case 6T-590	89	Power Shift Torque Converter	33,500	N/A	17,100	5.4	5.6
	Case 850G LGP (24" shoe)	Case 6T-590	89	Power Shift Torque Converter	33,500	N/A	18,370	4.3	5.6
	Case 850G LGP (29" shoe)	Case 6T-590	89	Power Shift Torque Converter	33,500	N/A	18,370	3.6	5.6
Komatsu Dresser	Dresser TD-7H Std track	KDC 410/240N	70	Power Shift Torque Converter	26,000	6,000	15,900	7.32	5.8
	Dresser TD-7H LGP	KDC 410/240N	70	Power Shift Torque Converter	26,000	6,000	16,574	4.77	5.8
	Dresser TD-8H Std track	KDC 410T/240T	80	Power Shift Torque Converter*	31,000	6,500	16,764	6.8	5.8
	Dresser TD-8H LGP	KDC 410T/240T	80	Power Shift Torque Converter*	31,000	6,500	17,467	4.43	5.8
	Dresser TD-9H Std track	KDC 410T/240T	90	Power Shift Torque Converter	32,500	8,500	18,970	6.14	5.9
	Dresser TD-9H LGP	KDC 410T/240T	90	Power Shift Torque Converter	32,500	8,500	19,370	4.7	5.9
	Komatsu D31E-20	6D95L	70	Direct Drive	19,910	8,600	14,355	7.46	N/A
	Komatsu D31P-20	6D95L	70	Direct Drive	19,760	8,700	15,835	3.89	N/A
	Komatsu D37E-5	6D95L	80	Direct Drive	20,940	9,500	14,855	5.62	N/A
	Komatsu D37P-5	6D95L	80	Direct Drive	20,830	9,400	16,185	3.98	N/A

* A direct drive option is planned for the TD-8H models in 1995.