

Reed Business
Information®

30 Deere's 872D
impresses the pros



42 We look
at 19 compacts
with power



69 Volvo's
625-hp daycab
hits the road



CONSTRUCTION EQUIPMENT

Since 1949

Ideas and Insight for the Equipment Pro

October 2005
ConstructionEquipment.com



Torque Wars

Pickups pack more
horses as manufacturers
work to outmuscle
each other

p. 22

**ENTIRE CITIES HAVE BEEN KNOWN
TO EMERGE FROM ITS PAYLOAD.**

Step back and watch the Ford F-650/F-750 Super Duty change the landscape. Hey, we know how tough a job that can be. Which is why we use Huckbolt® fasteners to fuse the crossmembers to the truck's frame. Huckbolts can stay tight ten times longer than ordinary nuts and bolts. That way, they can prevent alignment shifts or squeaks and rattles. But that's just part of the story. The Ford F-650/F-750 has a complete range of frame options. All with C-channel beams. And with yield strength of up to 120,000 psi. So when it's time to roll up your sleeves and get down to serious business, these are your trucks.



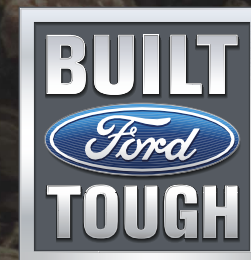
It's easy to see why the Ford F-Series is the best-selling truck
28 years running.



Aftermarket wheels shown.



2006 FORD F-650/F-750
www.commtruck.ford.com



For information circle 1

WE ARE AS
DEDICATED TO PAVING AS YOU ARE.



THE **POWER** OF INGERSOLL-RAND.

IF YOU WANT TO SEE WHERE PAVING IS HEADED,
KEEP YOUR EYES ON US.

IR Ingersoll-Rand®

www.irco.com • (877) IR BRAND

For information circle 2

© 2005 Ingersoll-Rand Co. IRROADAD 05-01

COLUMNS & DEPARTMENTS

Editorial 7

Costs on the horizon

Managers Digest 15

Katrina's economic impact

Great Managers 64

More work makes
Jacksonville more efficient

Equipment Executive 66

Let's sideline straight-
line depreciation

Iron Works 88

Bloodline of a wheel loader

PRODUCTS

Market Watch 9

This month's primary
machine introductions

Spotlight 59

Dump trailers

Truck Report 69

VT 800 daycab comes with
big power and bold look

Light Equipment 71

Allied/Rammer makes
uncommon promise

Market Watch Lite 75

Small solutions to
jobsite challenges

Reader Service Card 73

Innovations & Ideas 81

Classifieds 85

Advertisers Index 86

Cover photo by Bill Delaney®

FEATURES

COVER STORY: Truck Report

22 Light Trucks Offer Bigger Doses of Power And Technology

Makers of engines and light trucks have been steadily out-doing each other in horsepower and torque ratings. Tom Berg reports that General Motors will make the next jump, and GM



also has improved its Allison automatic transmission. Berg also compares the Dodge Ram 3500 and Sprinter 3500, which differ in design and driving features, but could do similar jobs. And with rising fuel costs, you may want to look twice at the Sprinter.

HANDS-ON EARTHMOVING

30 Deere's New 872D Pleases Operators



The new six-wheel-drive 872D and its tandem-drive counterpart, the 870D, are the largest models Deere now offers. Local 150 instructor/operators Jeff Skinner and Gene Held took the 872D through some tough going, including ironing out ruts on a scraper haul road. Walt Moore reports on operator impressions as they put the machine through its paces.

BUYING FILE

42 Concentrated Power and Versatility

There's no denying that the North American market has rediscovered the compact wheel loader in recent years, as evidenced by the expanding number of suppliers and the corresponding rise in sales numbers. And with this rediscovery has come a new generation of machines, which skillfully concentrate the power and versatility of larger loaders into much smaller packages.

FINISH FASTER WITH FEWER MACHINES. THAT'S TRIMBLE PRODUCTIVITY.

**TRIMBLE GCS900 3D
GRADE CONTROL:
GET UP TO 50%
PRODUCTIVITY INCREASE**

It's the *only* system that can be installed on any machine and lets you run at higher speeds without losing accuracy. The *only* 3D grade control system with a patented dual antenna design to give you exact course and blade position. Compare it with the others, and you'll see why it's the *only* system designed from the dirt up to give you years of greater productivity. See your Trimble dealer for comparison data, or get the full story at trimble.com/gcs900.



**Trimble
Dimensions
2005**

MIRAGE HOTEL, LAS VEGAS
www.trimbleevents.com



WWW.TRIMBLE.COM

(937) 245-5154 FAX: (937) 233-9441 (800) 538-7800
For information circle 4

Editorial Staff

Rod Sutton, Editor in Chief
630/288-8130; rsutton@reedbusiness.com

Larry Stewart, Executive Editor
314/962-0639; lstewart@reedbusiness.com

Walt Moore, Senior Editor
630/288-8132; wmoore@reedbusiness.com

Katie Weiler, Managing Editor
630/288-8142; kweiler@reedbusiness.com

Heather Burlingame, Senior Production Editor
630/288-8136; hburlingame@reedbusiness.com

Tom Berg, Truck Editor

Mike Vorster, Contributing Editor

Publishing Offices

Reed Business Information, 2000 Clearwater Dr.,
Oak Brook, IL 60523; Fax: 630/288-8185

Rick Blesi, Publisher

Dawn Batchelder, Marketing Coordinator

Catherine Clark, eMedia Manager

Bruce Ksiazek, Director of Finance

Karen A. Ruesch, Production Director

Victoria Jones, Production Manager

Allison Ternes, Circulation Manager

Bill Patton, Creative Director

Mary Sondergaard, Art Director

Sales Representatives

Mary Adee, Regional Manager
630/288-8134; Fax: 630/288-8185
madee@reedbusiness.com

Michelle Lorusso, CBC, Regional Manager
813/926-2394; Fax: 813/926-2583
mlorusso@reedbusiness.com

Patricia Maroder, Regional Manager
630/288-8139; Fax: 630/288-8185
pmaroder@reedbusiness.com

Terry McGinnis, Regional Manager
801/273-8790; Fax: 801/273-8799
tmcginnis@reedbusiness.com

Jan Varnes, Account Representative
630/288-8143; Fax: 630/288-8185
jvarnes@reedbusiness.com

Mike Hancock, International
Quadrant House, The Quadrant,
Sutton, Surrey SM2 5AS, UK
Tel: 011 44 208/652 8248;
Fax: 011 44 208/652 8249

Reprints

Reprint Management Services, Reprints
800/290-5460, ext. 100
constructionequipment@reprintbuyer.com

Costs on the Horizon

When would a \$2 wrench be worth \$5? When it's a Craftsman, which carries a lifetime replacement guarantee. If it breaks, Sears replaces it. Unfortunately, Sears doesn't manufacture Craftsman construction equipment.

The general concept applies, though, as equipment managers must evaluate a machine by more than its sticker price. The cheapest machine won't always provide the best performance over time. Government agencies wrestle with this more than private firms due to low-bid laws, but even these managers can successfully employ lifecycle costing as they write their bid specifications.

We've used this space before to encourage lifecycle cost management. It's the right way to ensure maximum return on equipment-asset investment. Of course, the key to lifecycle management is good data, not only industry data such as *Construction Equipment* has published over the past few years, but also historical data on an organization's specific machines.

Over the next 18 months, new cost data will be integrated into an equipment manager's calculations, and it will require reevaluation of lifecycle costs. Those costs are connected to the next major step in the diesel-emissions reduction saga, effective Jan. 1, 2007.

In order to reach the next level of reduction, engine makers have added aftertreatment devices. These devices will add cost to the engine, the machine it powers, and the maintenance of both. Nobody is sure exactly how much cost will be passed along to end-users, but prices will increase. Plus, fuel formulations are changing. In addition to ultra-low-sulfur diesel fuel, bio-diesel is becoming a viable option for some managers. In both cases, managers will need to look at the costs associated with fuel handling and storage.

Equipment managers need to be aware and ready for these changes. To that end, we're putting together a special report, "Recipes for Reduction," which will be included with our November issue. We'll look at 2007 engine designs, including the various aftertreatment solutions, and we're talking with both truck and heavy-equipment manufacturers to provide equipment managers a preview at what engineers are doing to house the new engines.

Unless Sears enters the engine business, managers must still keep an eye on costs, so be prepared for the next generation of diesels.



Rod Sutton, Editor in Chief

Rod

630-288-8130
rsutton@reedbusiness.com

DO MORE WORK. BURN LESS FUEL.



GET A VOLVO.

Wherever you work, whatever you do...the most fuel efficient – you can cut your fuel bill by up to 30% – and the most productive construction equipment you can put on a job is from Volvo.

Call your dealer for more reasons to get a Volvo.

MORE CARE. BUILT IN.

www.volvoce.com

For information circle 5

VOLVO

MARKET WATCH

By KATIE WEILER, Managing Editor



◀ Morbark

With production rates up to 14 tons per hour, the 2600 Wood Hog is suited for green waste and light-demolition debris. Weighing in at 24,200 pounds, the unit comes equipped with the Iqan System, which automatically adjusts feed rates, pressures, and feed wheel positions to optimize production and engine efficiency.

For information circle **207**



▶ Elliott Equipment

Model L60 aerial-work platform and crane has significant design improvements, including a self-leveling work platform with 62 feet of working height and a 5,900-pound

crane capacity, says the company. Turret-mounted lower controls provide better line of sight in crane operations, and continuous rotation makes it easier to operate. The unit features one lift cylinder for lower maintenance.

For information circle **209**



▲ Terex | Advance Bridgemax

A lightweight, steerable pusher axle extends the Terex | Advance Bridgemax 5-Axle Rear-Discharge Mixer to an outer bridge length of 34 feet.

The $\frac{3}{16}$ -inch AR 400 Brinell steel drum resists abrasion, and the Bridgemax comes with a 150-gallon water tank SAE-certified to 120 psi for faster cleanup than with 55-psi tanks. The Bridgemax Rear-Discharge is available with 10-, 10½-, 11-, 12- or 13-cubic-yard drums.

For information circle **208**

▼ Caterpillar

Four wheel loaders — 950H, 962H, 966H and 972H — reflect significant enhancements, compared to their G-Series II predecessors. All models use a new Tier-3-compliant, C-Series Cat diesel engine with ACERT technology; gross-horsepower ratings are 216, 230, 283 and 307, respectively. The loaders also now use a load-sensing hydraulic system with a variable-displacement pump, versus the G-Series' open-center, gear-pump system. Cat's Engine Idle Management System is standard, and all are fitted with refined cabs and controls, including programmable in-cab kick-outs.

For information circle **210**



Market Watch

▶ Volvo Trucks

VT 800 is aimed at heavy hauling and other applications requiring Big Power but no sleeping accommodations. Engine offerings are the Volvo D16 with up to 625 horsepower and 2,250 lbs.-ft. of torque, and the Cummins ISX with up to 565 horsepower and 1,850 lbs.-ft., both with high-capacity cooling. Styling includes smooth streamlining; high, long hood; forward-set steer axle; bare battery box and fuel tanks; and bright-metal trim. For more details, see the Truck Report on page 69.

For information circle **211**



◀ Tamrock

Tamrock's Ranger Rock Pilot series of drilling rigs has a new drilling control system that guarantees straight hole quality, the company says. The control adjusts drilling power automatically, reacting to changing rock formations and adjusting the power sent to the

rock. The series also has a large fuel tank, 30-percent larger than its predecessor, which allows the Ranger to drill more than 12 hours without a stop.

For information circle **212**

▶ Caterpillar

The 325C LCR hydraulic excavator is somewhat of a hybrid, in that this compact-swing-radius machine uses the undercarriage of the larger 330C L and, at 78,044 pounds, weighs about 24



percent more than its standard 325C L counterpart. The new model has a tail swing that is nearly 4 feet shorter than that of the standard model. The machine uses a 188-hp (net) Cat 3126B ATTAC diesel engine and the company's open-center, two-pump, negative-flow hydraulic system.

For information circle **214**



▲ Bandit

The drum-style 2090 Track Bandit features a 20-x24-inch chipper opening and a powerful hydraulic feed system that can pull whole trees into the chipper while crushing limbs and tops. It comes equipped with a Model 75 knuckle boom style loader and continuous rotation grapple. A Caterpillar 325 undercarriage moves this machine over rough terrain. Engine options are available from 250 to 330 horsepower. All machine functions are controlled from the operator's cab.

For information circle **213**

▼ Tadano

Model TR-600XXL-4 has the only five-section boom among 60-ton rough-terrain cranes. Only five-section booms on some 80-ton and larger cranes surpass the TR-600XXL-4's 146-foot boom-tip height. A two-stage lattice jib stretches tip height to 204 feet. Outriggers can be extended to different lengths and Tadano's Automatic Moment Limiter (AML) calculates maximum allowable lift over each quadrant of the machine.

For information circle **215**



MODEL

HEAVIER PAYLOADS. HIGHER PROFITS.



CLASS PAYS



FOR MORE INFORMATION, CALL 1-800-552-0024. PACLEASE AND PACCAR FINANCIAL PLANS TAILORED TO YOUR NEEDS.
PETERBILT MOTORS COMPANY, A DIVISION OF PACCAR WWW.PETERBILT.COM BUCKLE-UP FOR SAFETY.



For information circle 3

Market Watch



Caterpillar

Model AP-800D rubber-tire asphalt paver features a new engine — a Cat 3054C turbo diesel that generates 130 horsepower at 2,200 rpm. The paver offers a tractor-mounted generator that provides power to the electric screed and the optional auxiliary power panel. Cat says the AP-800D is driven by a hydrostatic propel system with four speed ranges to give an operator precise propel control to meet travel and pave conditions.

For information circle **216**

Fecon

Fecon's FTX 90-L Multi-Terrain Loader is capable of operating a number of skid-steer attachments including buckets, grapples, rotary mowers, tree shear, stump grinders and more. It features standard steel tracks and optional rubber tracks. The loader has 41 gpm high flow, standard rear low-flow hydraulics. It offers an enclosed, pressurized cab with air-conditioning and a protective mower door.

For information circle **217**



Grove

The 75-ton RT875E is Grove's smallest unit with a hydraulic counterweight-handling system, which comes as standard equipment. The four-section Megaform boom can put its tip 138 feet in the air, and with an optional 35- to 56-foot jib and 40-foot insert, the RT875E reaches a jib tip height of 232 feet. That's 30 feet higher than the nearest 75-ton rough-terrain crane.

For information circle **219**

Bay Shore Systems

LoDril DH-84 provides 84,000 foot-pounds of torque and can dig a hole 60 feet deep with only 26 feet 2 inches of overhead clearance, says the company. It can dig a 100-foot hole with 31 feet 7 inches clearance. It has 360 degrees of operating area and reach up to 15 feet beyond the tracks. Accessories include a level depth indicator and a quick-disconnect package.

For information circle **218**



Your Problem, Our Solution

TRAIL-EZE® TRAILERS Custom Built for Your Needs.



TE70HT - 70,000 to 100,000 lbs. Hydraulic Tail



TE100 Detachable Gooseneck



TE701 - 70,000 to 100,000 lbs. Sliding Axle

**5 Year Limited Prorated
Major Structural Warranty**

“Tell Us What You Want”

Corporate Office: P.O. Box 1188

Mitchell, SD 57301-7811

SD: 605-996-5571

Fax: 605-996-5572

1-800-232-5682

TRAIL-EZE® TRAILERS

Web Site: www.traileze.com

E-Mail: sales@traileze.com

For information circle **6**



Genie

The Z-135/70 articulated boom platform reaches a platform height of 135 feet and provides horizontal outreach of 69 feet 9 inches and up-and-over clearance of 75 feet 6 inches. The X-Chassis eliminates telescoping axles, spreading wheels out for a wider stance with axles that pivot from a vertical mounting pin on each corner of the machine. The new Jib-eXtend stretches from 12 to 20 feet. For information circle **220**

Transcraft

Transcraft has increased the strength of its D-Eagle Aluminum/Steel Combo Drop Deck Trailer with a reinforced floor section and continuous side rail. The new design eliminates bolted connections in the lower deck for a smoother side-rail shape when the trailer flexes. A side-rail drop section strengthens the lower deck's front support and provides flexibility. The trailer comes standard in 48- and 53-foot lengths and 96- or 102-inch widths.

For information circle **221**



Miskin

A pull-type WaterWagon from Miskin has a capacity

of 5,100 gallons of water. It features a heavy-duty suspension that can handle rugged conditions. The water pump is driven with the tractor's hydraulics. The wagon can self-fill from a ditch or canal or can be top-filled by traditional methods. It can be pulled as a single unit or in trains of two or three.

For information circle **222**

Komatsu

Models WA65-5 and WA70-5 compact wheel loaders are new to Komatsu's Dash-5 line. The 54-hp WA65-5 and 60-hp WA70-5 are teed up as alternatives to skid-steers, says the company. Operating weights are 10,780 and 11,816 pounds, respectively, with breakout forces of 8,162 and 8,025 pounds.

For information circle **223**



Power and the Passion

Terry Cook and his number 10 Ford battle all year for NASCAR supremacy. Multiquip's portable generators supply the power to help get them there.

Multiquip. A proud sponsor of the ppc Racing Team.

800-421-1244

www.multiquip.com

Need a New Engine Driven Welder?

Lincoln Has The Answer. SM

Ranger® 250

for the Best Arc!



- 250 Amp DC
- 9,000 Watts peak 1-phase power
- Stick, TIG and Wire Welding
- Enclosed case for quiet operation

Ranger® GXT

for Extra Power!



- 250 Amp AC/DC
- 11,000 Watts peak 1-phase power
- Stick, TIG and Wire Welding
- Enclosed case for quiet operation

Ranger® 305D

for a Compact Diesel!



- 300 Amp DC
- 10,000 Watts peak 1-phase power
- Stick, TIG and Wire Welding
- Enclosed case for quiet operation

Ranger® 3-Phase

for 3-Phase Power!



- 225 Amp AC/200 Amp DC
- 11,500 Watts peak 3-phase power
- 10,500 Watts peak 1-phase power
- Stick, TIG and Wire Welding

AR05-5R

Why buy anything else? SM

LINCOLN®
ELECTRIC
THE WELDING EXPERTS™

www.lincolnelectric.com
For information circle 7

ECONOMIC NEWS

Katrina's Economic Impact

Our initial estimate of the impact of Hurricane Katrina is marginally negative for construction spending and equipment demand for several weeks, then more substantially positive. The impact on materials prices is clearly negative. The impact on the overall economy will be 0.5 percent lower growth in GDP for the rest of this year offset by 0.5 percent higher growth early next year.

The feedback from the economy will have a larger impact on the construction market than the initial plunge and later surge in construction spending in the affected region.

This is a small market with recently sluggish construction activity.

New Orleans, Biloxi and Gulfport accounted for only 0.4 percent of total residential building permits this year through July. Virtually all ongoing and scheduled projects have been cancelled in these cities. Other metropolitan areas within 100 miles accounted for 0.6 percent of permits with the largest share in Baton Rouge. Projects in this area will be delayed for many months by the diversion of labor, equipment and materials.

We do not yet know the scale and timing of repair and replacement

construction. Already, construction for clean up as well as port, energy facility, and public infrastructure repair is

Gross Domestic Product (% change from a year ago)

2004	2005 (F)	2006(F)
4.2	3.6	3.7

underway and will be most significant in September and October. It will proceed without budget constraints or bureaucratic delays. Construction work for building repair will not be significant until the end of September, later in the flooded areas. This work will take much longer, probably peaking late this year but continuing through next year. Not all build-

ings will be repaired, but demolition will partially substitute for repair.

Construction spending for building and infrastructure replacement will not be significant until at least the end of the year. Not all destroyed buildings will be replaced and some of

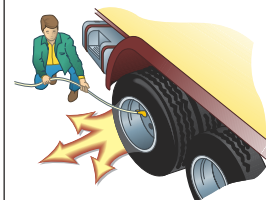
them will be replaced in Baton Rouge or other refugee centers instead of in New Orleans. What share will be replaced is the key unknown for the construction outlook. The answer depends on federal appropriations and refugee attitudes about returning to live below sea level.

The key unknown for the economy, and the feedback on con-

struction, is how much spending confidence consumers lose because of sharply higher energy prices. The sharp drop in auto travel over the Labor Day weekend is an ominous sign that many households are now much more cautious about spending. But this can dissipate quickly if the spike in gasoline prices is reversed quickly.

— Jim Haughey,
Director of Economics

SAFETY TIPS Air up Safely



Never stand in front of a split ring while inflating the tire mounted to it. A damaged split ring can come apart with deadly force. Even when you're just topping off the tire, use an air hose with a clip-on chuck and a remote, in-line valve and air gauge. This allows you to stand aside, out of the trajectory of an explosion while inflating the tire. If you found the tire inflated to 75 percent of its rated inflation pressure or less, remove the wheel from the vehicle, inspect the tire, and re-inflate the tire in a safety cage.

JOB SOLUTIONS

Moving Materials Without the Skid Marks

One of the challenges Miller Bros. Construction, an Ohio-based bridge-construction firm, faced was how to keep a white bridge deck clean while still using equipment on the job.

Mel Williams, project manager, said there is nothing worse than coming up on a new, white bridge deck and seeing black marks all over it where equipment had been twisting and turning. Miller Bros. recently purchased a Bobcat A300 all-wheel-steer loader, and thanks to using that machine, skid marks are a thing of the past.

"By operating the loader in the all-wheel-steer mode, there is no surface damage," says Williams. "That saves us money because we have far less repair work. Plus, the tire wear is so much better than with other equipment."

Miller Bros. purchased three of the loaders, which allow operators to switch between an AWS and skid-steer mode — giving them the advantage of having two machines in one.

In addition to its dual steering modes, the unit also comes standard with the Bob-Tach mounting system that allows the operator to use more than 45 Bobcat attachments. Williams regularly uses a pallet-fork, sweeper and breaker attachment, and plans to purchase a planer attachment to remove lines, painted stripes and thermoplastics on the bridge.



The Bobcat A300 features a 3,000-pound rated operating capacity and 126.4-inch lift height. It comes with a 20.7-gpm standard flow auxiliary hydraulic system.

Managers Digest

INDUSTRY NEWS

New Complex for Local 150

Local 150 of the International Union of Operating Engineers has graciously worked with *Construction Equipment* for the past 18 months or so on numerous installments of *CE's Hands-On Earthmoving* series. We've worked primarily at the Local's Apprenticeship and Skill Improvement facility in Plainfield, Ill., near Chicago.

The success of Local 150's machine-operator and service-technician training programs, however, has prompted the organization to start

developing a larger facility, which will be located a bit farther south (near Joliet) on an expansive 300-acre site.

When completed, the new Apprenticeship and Skill Improvement

complex will provide expanded administrative and service-shop areas, as well as an immense indoor worksite, where IUOE members can continue to hone their skills even in inclement weather.



Local 150 serves IUOE members in northern Illinois, northern Indiana and eastern Iowa. The large indoor worksite, in the right foreground of the rendering, will allow serious earthmoving under optimum conditions.

MANUFACTURER NEWS

Army Contracts For Case Machines



Case Construction Equipment has received multiple contracts from the United States military, totaling more than \$86 million.

The first is a five-year contract, valued at about \$50 million, to supply more than 500 High Mobility Engineer Excavator (HME) Type III backhoe-loaders to the U.S. Army. The 14-foot machines will be customized to meet Army requirements, and delivery will start in 2006.

The company has also been awarded several other military contracts valued at more than \$36 million. These contracts include the remanufacture of 400 Case MW24C wheel loaders, the refurbishing of 100 MW24C wheel loaders, and the repowering of 500 M4K forklifts.

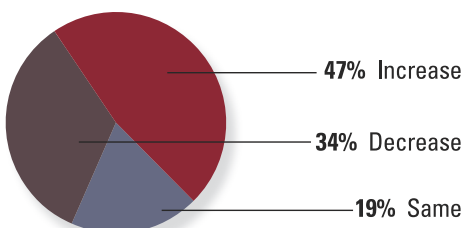
GIANTS 2005

Workload Climbs to a High Plateau

A smaller percentage of materials-producing firms forecast increasing work volume in 2005 than in 2004. After two years of remarkable growth in the percentages that actually worked more, it's likely that those who forecast sustained volume will be riding high. Giant miners are looking at 2005 the same way. It won't be a bad year — nearly 50 percent of Giants in both vocations are expecting volume to increase — but the growth trend is moderating.

Growth Leveling Off

% of materials producers who forecast stated change in work volume



Source: Construction Equipment Giants Study, 2005

MANUFACTURER NEWS

Asset Management Via Phone

By combining Trimble's expertise in Global Positioning System (GPS) technology and Nextel Communications' iDen network, the two companies have created the Trimble Construction Manager system. The new system, say its developers, allows users "to locate and manage assets at construction sites via Nextel handheld phones, and [to utilize] in-vehicle devices to optimize asset utilization and productivity of mobile assets."

The new system can, for example, deliver information to work-

ers on jobsites — such as the location of assets, and can be used also for establishing "geo-fence" boundaries at the site and monitoring traffic.

In addition, users can download maps and site designs to a Nextel wireless phone in order to "view their current location superimposed on the design." This capability "enables workers to perform reconnaissance activities, such as inspecting terrain and visualizing how the site will be prepared."

The system is available on the ruggedized

i605, i710, i730, i733, i736, i830, i833 and i860 digital camera phones.



The Trimble Construction Manager system uses one interface for both the handheld and in-vehicle components, which allows construction managers to manage all their assets from one software interface, regardless of how many construction sites, assets or employees are enabled with the solution.

A few words about Power Pavers

Smooth Maneuvers



- SF-2700 Easy to operate slipform paver to 32' (9.75m) wide
- SF-3000 Self loads and paves to 24" deep (60.96cm)

Easy Operation



- PS-2700 Single loading (no crane needed) placer/spreader to 14" (35.56cm) deep
- PS-3000 to 28" (71.12cm) deep

One Pass



- FP-2700 Form-riding paver paves to 27' (8.23m) wide
- FP-3000 to 29' (8.84m) wide

Smooth Groove



- TC-2700 Texture/Cure machine
- Smooth & consistent groove at variable speeds

When contractors talk about Power Pavers a few words keep jumping to the front...Smooth and Easy. First, let us introduce you to the full powerful line that outperforms equipment in its class. You may recognize these durable slipform pavers, form-riding pavers and placer spreaders that have been shaping residential streets, highways and airports for more than 25 years. Originally introduced by CurbMaster, Inc.®, and acquired by CMI, these high performance paving tools have been acquired as part of the Power Pavers' family of products.

"The overall product (SF-3000) is great. It's tolerant of slump changes. Some sections are zero profilograph. It doesn't get any better than that."—Randy Satter, Paving Superintendent, New Design Construction, Denver, CO

Before you buy your next concrete paver, take a good look at Power Pavers and our experienced technicians that keep you running strong. We're well equipped and ready to save you serious time and money in more than words.

**Power
Pavers** INC.
Our Commitment Shows

1911 Lincoln St., Cedar Falls, IA 50613

Tele: 319-266-6460 Fax: 319-266-6470 E-mail: info@powerpavers.com

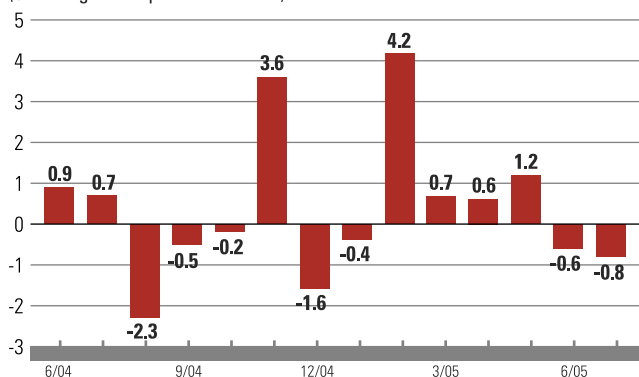
www.powerpavers.com

For information circle 8

↑ PUBLIC CONSTRUCTION SPENDING

Public construction spending increased 6 percent in the first half of the year, and then dropped 1 percent in July. The growth trend through next year was expected to be about 7 percent, but after Hurricane Katrina, it will be measurably higher. Congress has already authorized \$60 billion for disaster relief including infrastructure repair and replacement. Caution: Much of the cleanup work will be counted as construction spending but will require few materials.

(% change from previous month)

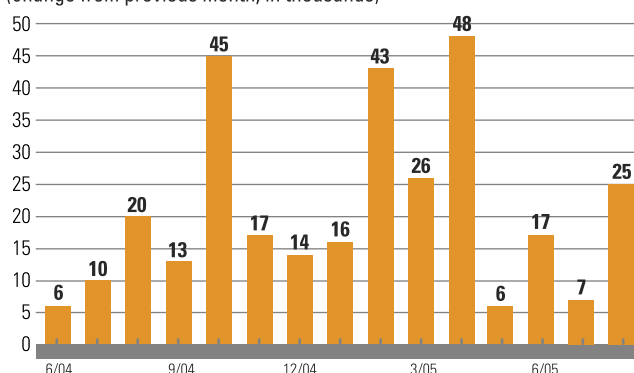


Source: U.S. Department of Commerce

↑ CONSTRUCTION EMPLOYMENT

Contractor hiring picked up in August with 25,000 (seasonally adjusted) workers hired, up from a 10,000-per-month average in the previous three months. August hiring was weaker than early in 2005 because new residential general contractors hired only 2,400 people. Nonresidential building subcontractors hired 16,100 people. The Katrina cleanup and rebuilding will boost the 15,000 new jobs a month previously expected in the next few months.

(change from previous month, in thousands)

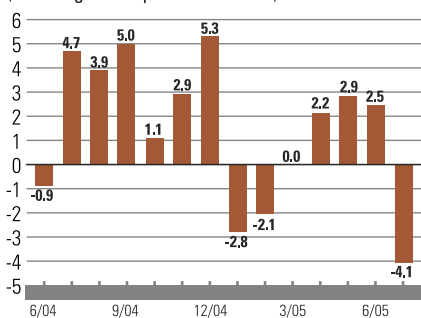


Source: U.S. Department of Labor

↔ CONSTRUCTION EQUIPMENT SHIPMENTS

Pre-Katrina data suggest that equipment shipments may have peaked, but post-hurricane demand will push sales higher for several more months. Shipments fell 4 percent in July to slightly above the average for the past year. Equipment orders fell 23 percent in July to the current level of shipments. Manufacturers' order backlogs slipped but are still at an unusually high 10 weeks. Equipment prices rose at a 9-percent annual pace over the last three months.

(% change from previous month)

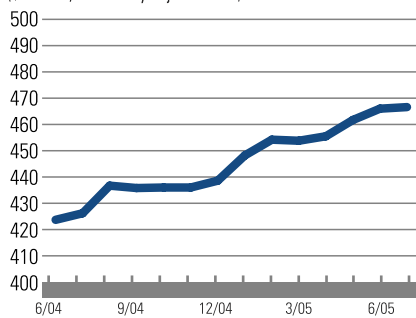


Source: U.S. Department of Commerce

↔ RESIDENTIAL CONSTRUCTION SPENDING

Spending was steady in July but is likely to edge higher in the next few months because of the backlog of orders and the post-Katrina spike in building materials costs. Spending growth has slowed from a 20-percent-plus annual pace in 2003 through summer 2004 to 10 percent over the last year. It is expected to slow to 0.0 percent through the end of next year. This assumes the replacement of about 25 percent of the homes destroyed by Katrina.

(\$ billions, seasonally adjusted rate)

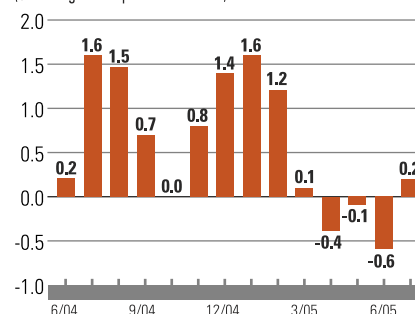


Source: U.S. Department of Commerce

↔ PRIVATE CONSTRUCTION SPENDING

Private construction spending has increased only 3.5 percent so far this year after a 13-percent jump last year. This slowdown results both from the peaking of new home construction and the slow restart of expansion in nonresidential construction. Ahead, the recent increase in the starts of nonresidential buildings will boost private construction spending growth to about a 7-percent pace through next year.

(% change from previous month)



Source: U.S. Department of Commerce

"Equipment rental companies are all the same."
And projects always go as planned.



All equipment rental companies are not created equal.

Hertz has been on the job for forty years.

Focusing on our customers every day.

With the tools and equipment you need.

You focus on your job. We focus on you.

1.888.777.2700 or hertzequip.com.



Special Report: Light Trucks

By TOM BERG, Truck Editor

Light Trucks

Offer Bigger Doses Of Power and Technology



Both diesel-powered Dodges were assembled as cab-chassis trucks with bodies added later, but the van-type Sprinter and conventional-cab Ram differ markedly in design and driving characteristics. The Sprinter can carry more, but the Ram can pull a trailer three times as heavy.

If power corrupts, then buyers of diesel-powered pickup trucks in recent years are up to their window sills in graft and malfeasance. Manufacturers have been steadily outdoing each other in announcing higher horsepower and torque ratings, and another such jump has just been made, this time by General Motors. It is boosting the output of its Duramax diesel to 360 horsepower and 650 pounds-feet, which will make it the strongest engine in the segment.

This news might make you cringe if you now own a Dodge Ram Heavy Duty pickup

with a Cummins or a Ford SuperDuty with the Power Stroke. But it's entirely possible that one or both of those builders might leap frog ahead of GM as they've done in the past. That's competition, but it does more than push performance numbers. It drives technology to ever higher levels, because high-tech advances are what make the big numbers possible.

In fact, recent GM releases said much more about the upgrades being made to the Duramax 6600 than the ongoing power and torque war. For 2006, the turbocharged and aftercooled diesel V-8 has gotten a host of improvements,

including enhanced electronics in the control module for more precise operation; a variable-geometry turbocharger with recurved and more efficient blades; higher-pressure fuel injection, with injectors reoriented to spray directly onto fast-heating glow plugs, for better cold starts; better cooling of exhaust gas in the EGR system; a stronger water pump; and a revised air-intake system with a resonator to cut noise. Two-piece rocker covers allow mechanics to easily get at injectors and other parts in the cylinder heads.

In the last couple of years, DaimlerChrysler and Ford have also touted the technical advancements made to the diesels supplied by their long-time partners, Cummins and International. Their diesels have likewise become increasingly quiet, clean-burning, and fuel-efficient to where they resemble their 1980s ancestors only in block layout. Anyone turned off by the noisy, smelly light-truck diesels of the past should look again, and maybe has. Because a big majority of Dodge Ram HD and Ford SuperDuty pickups are bought with diesels, and GM reports that its Duramax is quickly gaining popularity as its good reputation spreads.

The builders have meanwhile beefed up the automatic transmissions mated to these torquey engines, and all now offer strong and smooth four- or five-speed units. GM's leap frogging into the '06 model year includes its Allison automatic, which will soon have six speeds, as we'll see in one of these articles.

Meanwhile, the Hurricane Katrina disaster sparked new price spikes for gasoline and to a lesser extent for diesel fuel. This gets us all into thinking again about fuel economy — historically not a high priority for operators of construction trucks, but which must be considered by everyone trying to turn a profit in their businesses. So we have a report on Dodge's Sprinter Eurovan — an entirely new type of commercial truck for American buyers which has become an increasingly popular alternative to North American products with their relatively thirsty high-displacement engines.

It's likely that more buyers will now look at the economical Sprinter, and that Ford and GM, which sell similar small-power-train/big-capacity trucks in Europe, are also likely to look

closer at their contingency plans to bring these vehicles to North America. So it could be that your truck equipment future is described on the following pages.

Dodge Ram vs. Sprinter

Let's say you need a 1-ton truck to carry supplies to a jobsite or do service work. That means you buy a 1-ton pickup chassis and mount the appropriate body. But wait — now there's a more economical alternative and, maybe, with fuel prices where they are, you ought to look at it.

That alternative is the Euro-style Sprinter, manufactured in Dusseldorf, Germany, by Mercedes-Benz and assembled in Gaffney, S.C., for use in North America. It's designed to sip fuel on a continent where prices have been at the \$4- to \$5-per-gallon mark for many years, and should save dollars and make sense here. It's sold in the states by certain Freightliner and Dodge dealers; DaimlerChrysler has decided that it should carry only the Dodge name, so Freightliner outlets will soon lose their franchises.

DaimlerChrysler showed off the Sprinter and many other vehicles to the automotive press last summer at its Chelsea, Mich., proving grounds. I quickly paired a Sprinter 3500 with a Dodge Ram 3500 — both actually 2- to 2.5-ton trucks — to see how they'd compare. It's obvious from their appearance that they are rather different in design, and they certainly drive and act differently. Yet with similar hauling capacities, each might do similar jobs.

"Conventional-cab" is a term applied to heavy trucks, but the Ram is also a conventional, with a traditional hood covering a big American power train. The Sprinter is van-like, with a short hood and interior cover that houses a small European-style power train.

TEST SETS

Truck: Dodge Ram 3500 Quad Cab, "box-off" conventional-cab-chassis, GVW 11,500 lbs.

Engine: Cummins Turbodiesel I-6, 325 hp @ 2,900 rpm, 610 lbs.-ft. @ 1,600 rpm

Transmission: 4-speed automatic w/overdrive 4th

Wheelbase: 160.5 inches

Body & payload capacity: 4,560 pounds

Towing capacity: 15,900 pounds

Truck: Dodge Sprinter 3500 van-type cab-chassis, GVW 10,200 lbs.

Engine: Mercedes-Benz I-5 turbodiesel, 154 hp @ 3,800 rpm, 243 lbs.-ft. @ 1,600 to 2,400 rpm

Transmission: 5-speed automatic w/overdrive 5th

Wheelbase: 140 inches

Body & payload capacity: 5,774 pounds

Towing capacity: 5,000 pounds

Special Report: Light Trucks

The Ram has the highly respected Cummins Turbodiesel. This is Dodge's version of the inline six-cylinder 5.9-liter (359-cubic-inch) Cummins ISB. When Daimler-Benz merged with Chrysler back in the mid-1990s, observers speculated that Cummins would be pushed out by a Mercedes diesel, but the German and American executives running the Dodge Group were not fools. They realized that the Cummins had a following, and they stayed with it.

The current version of the Turbo-diesel, brought out two years ago, has advanced electronics and a highly efficient combustion design, including aftercooling and exhaust-gas recirculation. So it's clean burning, which it has to be by law. It's also quiet, which it should be to measure up to consumers' ever higher expectations and compete with other diesels. If you've been around older versions of this engine, which clatter like crazy, then you'll be impressed with how this one only mutters.

The Cummins is also gutsy, making 325 horsepower and 610 pounds-feet of torque. Late last summer, Dodge boasted of its Cummins "600," which was the strongest light-truck diesel on the market — for about a month, until General Motors trumped it with 605 pounds-feet in its Duramax diesel. The Dodge boys came back with 610, though without the hype. Ford chose to set its International-built Power Stroke diesel at a useful 570 lbs.-ft. That's where the "torque war," as I call it, now stands. But soon GM's Duramax will go to 650 lbs.-ft. and we'll see what happens then.

The point of torque shouldn't be bragging rights but getting the hauling job done, and the Dodge-Cummins diesel has been known for that since its introduction in 1988. Then it had only 160 horsepower but 400 lbs.-ft. of torque — far stronger than competitors of the time — and it became a favorite among work and recreational users. The engine has become a well-mannered monster, and one has to wonder how far it can go in the power and torque department, the competition notwithstanding.

Sprinter power

So how can the Sprinter's comparatively puny 2.7-liter (164-cubic-inch) Mercedes-Benz Turbo Diesel possibly do a similar hauling job? It's got only 154 horsepower and 243 lbs.-ft., both odd numbers derived from converting the European measures of kiloWatts and Newton-meters. But thanks to a five-speed automatic with a lively first gear, it moves out surprisingly fast from a standstill and pulls strongly up to highway speeds.

While working hard, the Sprinter's engine spins faster than the Cummins, with the power-and torque-production rpm in the specifications boxes being good indicators of where the engines rev. At cruising speed, the revving difference is less. FedEx, which uses Sprinter delivery vans in Europe and the United States, finds that its drivers can smoke rear tires on take off, at least while empty or with light loads. No, I didn't try that while driving this Sprinter.

(continued on page 28)



Left: Among loyal customers, Ram's Cummins I-6 Turbodiesel is a legend in its own time, and the latest version is both clean and quiet. **Sprinter's** small I-5 Mercedes Turbo Diesel is fast off the line and claims great fuel economy.

Experience the Progress.

Experience the Progress with Liebherr: With their extremely low fuel consumption, the wheel loaders deliver an impressive performance in all operating conditions, resulting in greater economy and a lower environmental impact. Advanced Technologies are our Business.



Liebherr Construction Equipment Co.
4100 Chestnut Avenue,
Newport News, VA 23607
Phone: (757) 245-5251
Fax: (757) 928-8701
www.liebherr.com

LIEBHERR

For information circle 10

The Group

Driving GM's Allison 1000 Six-Speed

Owners of big pickup trucks are not shy about demanding power and torque to handle real or imagined hauling jobs. And General Motors' fans among them will be happy to learn of stronger but more efficient power trains for the 2006 model year.

GM's Fleet & Commercial arm recently highlighted improvements for the popular Chevrolet Silverado/GMC Sierra 2500 and 3500 series pickups. Included are a new six-speed Allison 1000 transmission and an upgraded Duramax V-8 diesel. The transmission and engine themselves will begin appearing in '06 pickups this fall and early next year.

The new "Generation 4" Allison 1000 adds a 6th gear at the very top of the ratio ladder, making it a double-overdrive like bigger Allisons. Sixth is a 0.61 overdrive, which cuts engine rpm by 350 at 60 mph and aids fuel economy at highway speeds. All other ratios remain the same as in a five-speed Allison, including a 0.75 overdrive 5th and a 1:1 direct 4th.

At lower speeds, the six-speed Allison is so smooth in operation that you can hardly tell how many ratios it packs or when it's shifting, unless you listen intently to the engine's revving. That's true, anyway, when a truck's empty, as was the case with those provided at this event in Salt Lake City. With a hefty load, it would feel different.

You'll know which gear you're in if you use a new Range Selection feature that lets you lock in groups of gears for hard pulls or braking on downgrades. There's also a new Tap Shift feature, which allows easy manual controlling of shifting — something many cars do with a "slap-shift" selector lever or a special switch.

The Allison's Tap Shift uses a sprung rocker switch on the selector lever; you press its upper end to call for an upshift and its lower end to get a downshift. If a gear change can be made without lugging or over-revving the engine, the transmission will comply.

To test this, I left Salt Lake City's flat down-

town area where the event was staged and headed uphill and around Utah's capitol building. Returning toward downtown, I tapped repeatedly for downshifts, going as far as 2nd gear to control downhill speeds without using the brakes. Sometimes a shift happened quickly, but more often it took two or three seconds.

As with the current 1000, if you're in cruise control and Tow/Haul mode — the latter engaged with a push button at the end of the selector lever — the transmission automatically downshifts on downgrades to try to hold the speed you've set, which some other car and truck automatics also do while in CC. For most driving, the tranny does fine on its own, but Tap-shifting and the other features give you more control and can simply be fun to use.

Using those features lights up a digital display on the dash, which tells which gear you've selected. If you choose 2nd gear to avoid spinning the wheels on slick pavement, the transmission's controls work with a Duramax diesel's to limit torque. If the engine is cold, the transmission loads it a bit to hurry warm up. To handle all this, the new Allison 1000 has more capable electronic controls, as well as a stronger torque converter and rotating clutch, and more positive lockup of the torque converter.

As with the previous model, the six-speed Allison 1000 mates to GM's 6.6-liter (403-cubic-inch) Duramax 6600 diesel or the 8.1-liter (495-cubic-inch) Vortec 8100 gas V-8, both of which produce hefty amounts of power and torque. The 2500HD pickup I drove had the Duramax with the current rating, 310 hp and 605 lbs.-ft., which is code LLY on an order sheet. Early '06 models continue with this.

Diesel pickups with manual transmissions and medium-duty C4500 and C5500 models get an LLY Duramax with 300 hp and 570 lbs.-ft. G series cargo vans, formerly gasoline-only, are now available with the Duramax set at 250 horsepower and 460 lbs.-ft., a lesser rating that allows use of a 4L85-E Hydra-matic four-speed.

For power hungry pickup buyers, an upgraded Duramax LBZ with the Allison will have 360 horsepower and 650 lbs.-ft. It'll be the strongest pickup engine available, at least until competitors react. How high can they go?



A Tap Shift switch on the selector lever allows easy up- and downshifts, while digital readout on dash tells which gear the Allison's in.



The Duramax 6600 now has 310 horsepower with torque of 605 lbs.-ft., but a new version due out about now will have 360 horsepower and 650 lbs.-ft. — the strongest pickup engine available, unless competitors up the ante.



Want a multipurpose machine that doesn't know when to quit? Choose a Powerllec™ loader. Its unique linkage delivers an unmatched combination of breakout, parallel lift, and visibility that lets it do things that typical tool carriers can't. Standard-equipped with Worksite Pro quick-coupler, you can easily switch from bucket, to forks, to whatever and tackle an ever-changing variety of tasks. For more info about these all-new 125-180 hp loaders, see your John Deere dealer today. And discover parallel lift with no parallel.

“Taskmaster”



Special Report: Light Trucks



Left: A Ram four-door Quad Cab has lots of room for people and valuables; its gauges and controls feel typically American. The Sprinter has a wide and roomy two-person cab with a decidedly European flavor.

I didn't baby it, either. I mashed the gas pedal on the proving grounds' straightaways and plowed it through tight corners. Its engine began running out of breath at 55 to 60 mph, but I moved it past 75 mph without a problem. I was impressed with the Sprinter's abilities in simulated urban settings, at lower speeds and over broken pavement, where it was nimble, quick and rather smooth riding.

Ram impressions

The Ram cornered flatter and in general had a stouter feel, though it took the same stretches of broken pavement with more bouncing. Its much stronger Cummins pulled better and would push the truck as fast as any sane driver would want to go. I should note that the '06 Ram 3500 and 2500 are standard with the now-famous Hemi gasoline V-8. For '06, the Hemi gets a cylinder deactivation feature that cuts it back to four cylinders under light loads for up to 20 percent fuel savings. But serious buyers will pick the diesel.

If you send crews out with your trucks, a Ram two-door Regular Cab can carry three people in comfort, while the Sprinter is set up for two. This Ram was a four-door Quad Cab, so it could carry six people in addition to any cargo, and its rear seats folded down wagon-style to carry tools and other valuables instead of extra people.

Each truck's body was representative of how it might be put to work. The Sprinter had


a steel utility body with lots of cabinets and drawers, while the Ram had a 10-foot steel-and-wood flatbed with stake sides. Both trucks came from their respective factories as cab-chassis vehicles. The Ram 3500 had the "box-off" option, meaning an owner needn't dispose of a pickup box while upfitting to a different body style.

Aside from the body differences, the

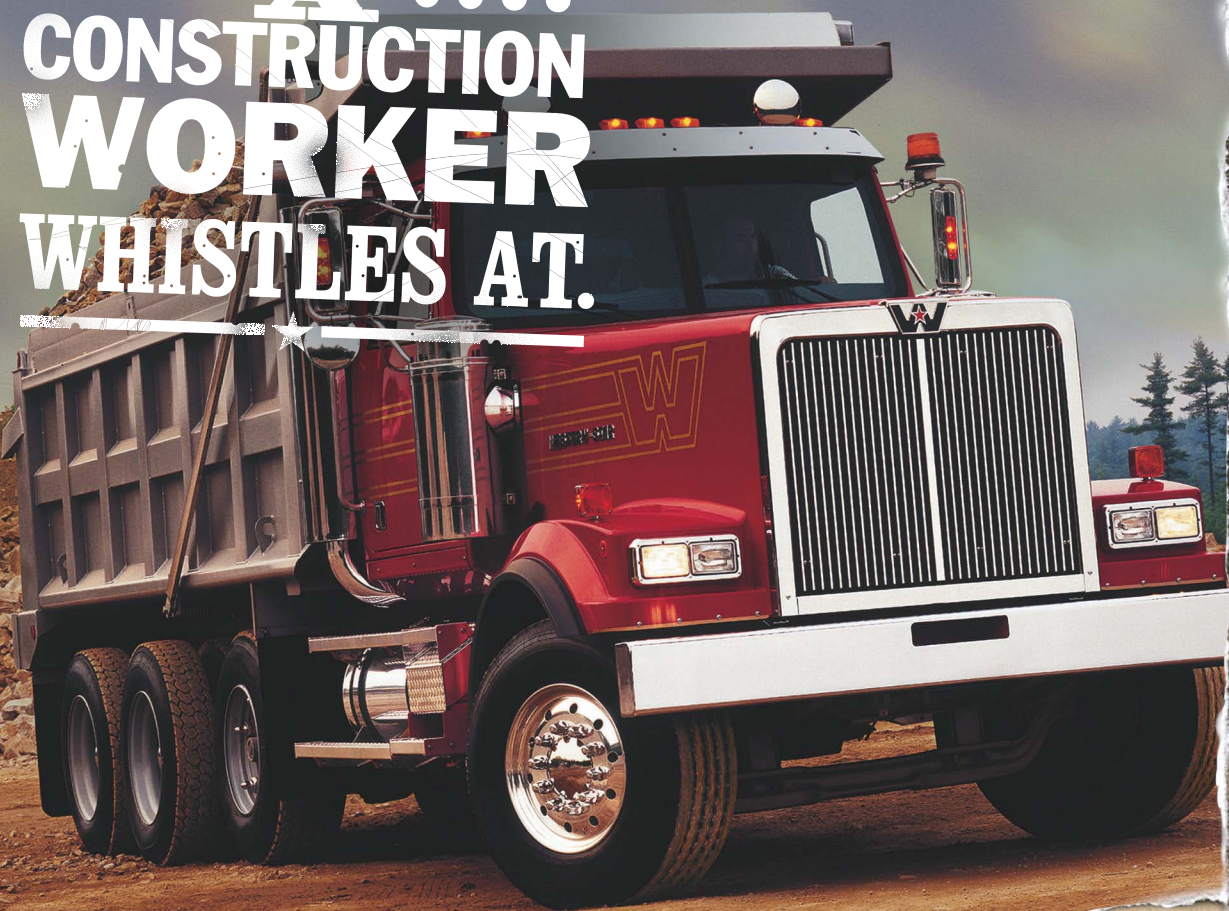
gross vehicle weight ratings of the two vehicles are in the same ballpark and suggest that they could do similar jobs, up to a point. Partly because of its more compact cab, the Sprinter can carry 1,200 pounds more in body and payload weight than the Ram, but can pull less than a third of the Ram's tow rating (see boxes). So if you're going to load the truck only, the Sprinter has an advantage; if you're going to lug a loaded equipment trailer, then the Ram, or another big pickup, is the clear choice.

In fuel economy, Dodge cites customer experience in saying that the Sprinter can deliver 25 mpg. A while ago, I saw a comment on the Internet from an expedited freight hauler who claimed he could carry a 1-ton pallet of cargo in his Sprinter van at 80 mph all day or night and get 26 miles per gallon. Of course, "your results may vary," as they would with a Cummins-powered Ram, which might get in the mid- to high teens in mpg.

Against fuel mileage, you'd have to consider price (the two are comparable, though the Sprinter might cost less) and durability (still largely unknown for the Sprinter under American operating conditions; early engines had a sticky EGR valve which caused stalling, and still might unless the valve is serviced).

There's also driver preference and resale, and it's likely that most guys will prefer the Ram. But those who have to buy their own fuel, now at \$2.30 to \$3+ per gallon, owe it to their wallets to look seriously at the Sprinter. 

THE
ONLY OTHER
THING
A
CONSTRUCTION
WORKER
WHISTLES AT.



Western Star Trucks® for heavy construction. Exceptionally tough.
Surprisingly sharp. Available with a wide variety of options. Featuring the
widely acclaimed TufTrac® rear suspension that
makes the roughest job site seem freshly paved.
They're built for whatever has to be built.



WESTERN STAR TRUCKS®

YOU CAN'T **LOVE** A WESTERN STAR TOO MUCH.™

Visit our Web site: www.westernstartrucks.com. Or call 1-866-850-STAR for the nearest Western Star Dealer.

WS/MC-A-071. Specifications are subject to change without notice. Western Star Trucks is registered to ISO 9001. ©2004, Freightliner LLC. All rights reserved. Western Star Trucks is a member of the Freightliner Group. Freightliner LLC is a DaimlerChrysler Company.
For information circle 12

Deere's New 872D Pleases Operators

This big motor grader gets good reviews from a couple of pros

We were impressed by the size of the new John Deere 872D motor grader when it arrived at the site for this installment of Hands-On Earthmoving. The six-wheel-drive 872D and its tandem-drive counterpart, the 870D, are new to the Deere line (introduced as part of the D-Series range earlier this year) and are

the largest models Deere has yet offered. The site, by the way, was a 300-acre expanse just south of Joliet, Ill., where Local 150 (International Union of Operating Engineers) is developing a new Apprenticeship and Skill Improvement complex, which you can see in rendering form in this issue's Managers Digest.

On the unseasonably warm day in early June when

Local 150 instructor/operator Jeff Skinner takes the Deere 872D through some tough going as he irons out ruts on a scraper haul road. The new motor grader weighs in at about 42,000 pounds and features a John Deere Power Tech 6081H variable-horsepower engine, which ramps up from 205 net in first gear to 245 in seventh with six-wheel-drive engaged.





Photos: George Pfoertner®

we caught up with Local 150 instructor/operators Jeff Skinner and Gene Held, they were, in fact, along with their fellow instructors, hard at work at the new site moving dirt with the Local's sizeable fleet of big machines. Skinner and Held took time to run the 872D in a few typical grader applications, then slotted the new machine into the Local's on-site fleet for a couple of days of real

work. Since the Local has a Deere 772C motor grader in its fleet, Skinner and Held had a basis for comparison as they offered opinions about the new 872D.

Says Tom Parker, Deere's marketing manager for motor graders, the C-Series graders were great machines, but the new D-series models feature enhancements over their predecessors in four key areas — not counting the Tier-2, emissions-compliant engines in the new machines. Changes include significant redesign of moldboard and draft-frame geometry, new hydraulics, new type of transmission-control system (Event-Based Shifting), and spacious new cab.

New cab, new moldboard

Since Held had to road the 872D some three miles to the test site on a hot morning, his



Above: The 872D's heavy 14-foot moldboard, which is 27 inches tall and 1 inch thick, settles into the cut solidly, says Deere, and holds the cut easily. Moldboard geometry helps roll material off the blade with minimal resistance.

According to the Local 150 operators, the 872D demonstrated an ability to maintain big loads of material with ample power, while providing precise hydraulic control.

first comment was an appreciation for the machine's standard air-conditioning system, which, he said, pushed out plenty of cold air — even with the doors open. He commented favorably, too, on the roominess of the cab and the good forward visibility it affords — “much better than the 772C.” But he chose not to use the 872D's cruise-control system, preferring instead “to keep my foot on the pedal and control things that way.”

The standard D-Series cab is a “low-profile” configuration, but an optional full-height or “tall” cab is still available. Compared to the C-Series cab, the new standard cab, says Deere, is 26 percent larger, has 40 percent more glass, 64 percent more airflow, and 27 percent more cooling capacity. (Air conditioning was optional on the C-Series.) Although the increased width of the new cab comes at the expense of

Hands-On Earthmoving

three degrees of frame articulation (from 25 to 22 degrees), D-Series models, says Parker, still lead the competitive pack with the tightest turning radii.

Our test machine was fitted with a 14-foot moldboard, which is 27 inches tall and 1 inch thick. Changes in moldboard geometry included pushing out the blade's cutting-edge radius and opening up its top radius. According to Parker, these changes cause material entering the blade to begin rolling sooner and to encounter less resistance as it moves up and across the blade. Complementing these changes is a lowered blade-pitch pivot, designed to minimize vertical movement of the moldboard when the operator makes pitch adjustments.

The big change for the draft frame was to raise its front ball-and-socket mounting almost 6 inches to yield a larger throat opening (between the top of the moldboard and the bottom of the circle), thus reducing the potential for material plugging in this area. The higher draft frame also helps keep the circle level when the operator rotates, says Parker, and makes the circle much simpler to control when making fine-grading adjustments.

Lots of power, good manners

To get a feel for the 872D's power and controllability, we asked Held to make a number of V-ditching passes. He chose a large, flat area in which to do this, but cautioned us that the material under foot was a heavy, sticky gumbo that "will push a machine around if you try to take too big a bite."

"When I do a V-ditch," said Held, "I first make a marking pass. I get the toe of the blade out in front of me — right out by the tire. So, if I'm running a stake line, I can look at the tire

and know that the blade is cutting right on the mark."

The only criticism Held voiced about the design of the new Deere grader was, in fact, when setting up for the marking pass. In his opinion, the 872D's large saddle (the structure on the front frame, just forward of the cab, that anchors the draft-frame-control cylinders) partially obstructed his view to the toe of the blade when positioning for the marking pass.

"There's a blind spot there," said Held, "but it's really not a big deal for me. You can articulate the machine just slightly and eliminate the problem. Otherwise, visibility all around is great."

After Held did a number of ditching passes, we asked his opinion about the 872D's performance:

"Overall, I was impressed with its power. You could see that I pretty well had the moldboard loaded up with that sticky material, but it moved right through. The six-wheel-drive makes a big difference, because the front wheels are grabbing, and you're not trying to push them through the cut."

(The drive system for the 872D's front wheels is a dual-path hydrostatic design, and an in-cab control allows the operator to dial in how aggressively the front wheels pull. Also, by adjusting the 872D's inching-pedal mode, the operator can engage the front wheels simultaneously with the tandem, or can delay engagement until the tandem has taken hold.)

How would you rate the comfort and convenience of the cab and controls?

"The cab is very comfortable and lever placement is good — everything is right there close to you. The levers have a good feel to them and the steering is precise.

"A feature I really like is being able to shift

Deere's 872D motor grader features circle wear inserts (either alloy or nylon) that the company says can be replaced in two hours with only a $\frac{3}{16}$ -inch wrench (left); centralized lube banks, this one for the front axle (center); and a sealed switch panel (right). The new model also incorporates an advanced electronic diagnostic system, 100-amp alternator and hydraulic differential-locking system that can be engaged on-the-go.





Deere's Tom Parker, right, motor-grader marketing manager, explains the refinements in the 872D's design to Local 150 instructor/operator Gene Held.

forward and reverse without using the clutch — and without coming to a stop. My initial tendency was to get on the clutch, as you would on other graders, but you get used to the system pretty quickly. Usually when you make directional shifts the transmission is banging, but this is smooth — very smooth.”

(The direct-drive, powershift transmission in the 872D is designed specifically for this machine and uses Deere's new Event-Based Shifting (EBS) control system. The EBS system electronically senses load and speed parameters, then determines an optimum engagement/disengagement rate for the transmission's hydraulic clutches. The results, says Deere, are extremely smooth shifts and the ability to make directional changes without using the inching pedal (clutch). The new transmission also provides auto-shift for gears four through eight.)

Pushing stone and muck

Our photographer, George Pfoertner, is a craftsman who works hard at getting the right shot. Just before operator Jeff Skinner was about to use the 872D to spread stone along an old railroad bed that now serves as a temporary access road, George leaned across Jeff's shoulder to take a couple of shots out the front window of the stopped machine. Upon exiting the cab, George, balancing all of his equipment, unknowingly deployed the machine's three-shank ripper.

Skinner, unaware that the ripper was down, steadily maintained a large blade load of

stone for an eighth of a mile or so, and then the 872D came to an abrupt stop. The sudden realization was that the ripper was down and had apparently snagged an immovable underground object.

“It's hard telling what might be buried under there,” said Skinner, “but the machine pulled strongly all the way until we hit something really hard. The blade carries a nice load.”


Skinner then took the 872D onto a wet and rutted haul road that was being used by the Local's scraper fleet. He made numerous passes along a 400-foot section of the haul road, with the machine slogging through some really tough going.

“The power to the ground seems to be more efficient than with the 772C,” said Skinner. “It didn't spin the wheels — the engine just lugged down and the machine kept going. You can downshift with the throttle wide-open, and the transmission still shifts really smoothly.”

Was there anything else that you particularly noted about the machine?

“The controls are easy to use, and the operator's compartment is well laid out. In the old John Deere graders, you had the instrument cluster right in your face. And the hydraulics are smooth — much better than the 772Cs.”

(According to Parker, the hydraulic system for the 872D is all new, featuring a pressure-compensated/load-sensing design that gives the feel of having individual control circuits for blade functions. Compared to the C-Series, he says, the new system responds more quickly and allows finer and more consistent adjustment even when multiple functions are engaged. Levers have a light touch, he says, which is consistent between the levers and between the valve banks, whether using a single function or multiple functions.)

When we asked Held to sum up his overall impression of the 872D, he did so succinctly: “It's a good blade.” 



GPS: 24

GLONASS: 14

TOPCON

TAKING 3D TO THE MAX...

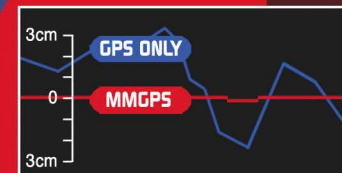
MAXIMUM UPTIME

Only Topcon gives you dual-constellation ability for access to both the GPS and GLONASS satellite systems. That's over 50 percent more satellites than any other brand and that means maximum uptime anywhere, anytime. To get maximum 3-D productivity, get Topcon 3D-GPS+.

- Up to 38 satellites for maximum uptime and accuracy
- Easy-to-use and graphically informative display
- Fully automatic stakeless grading
- Compatible with all existing Topcon machine control systems
- Glove-fit installation on all brands of equipment

MAXIMUM PRECISION

With Topcon 3D-GPS+, maximum productivity doesn't stop when the job demands the tightest finish. Just move into the zone of precision 3D grading simply by adding our exclusive Millimeter GPS package. You get all the 3D productivity only dual-constellation GPS+ can provide, plus razor-edge finishing precision. And for a limited time get special bundle pricing that lets you add Millimeter GPS components at a greatly reduced price!

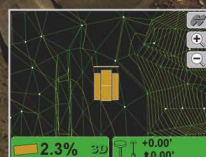


**MILLIMETER
GPS**

This revolutionary technology merges with the existing GPS data to replace the erratic multi-centimeter GPS verticals with smooth millimeter accurate measurements. That's the power of LazerZone™. Where precision and productivity merge!

The PZL-1 LazerZone transmitter blankets an area 30 feet tall and up to 2000 feet in diameter with vertical precision. Up to four transmitters can be linked for wide / tall area coverage. An unlimited number of Topcon 3D and RTK GPS rovers can be equipped to receive the LazerZone signal.

...WITH SPECIAL BUNDLE PRICING



3D PRODUCTIVITY EVERY STEP OF THE WAY

There's a Topcon 3D system right for every job. Choose the economical 3Di indicate control for bulk and rough grading, then add full automatic at any time. Or start with our 2D laser or sonic system, then upgrade to 3D. You're never left behind with Topcon.

TOPCON

(800) 443-4567

www.topcon.com

For information circle 13

Includes standard Millimeter GPS package containing one PZL-1 LazerZone transmitter and one PZS-1 LazerZone receiver. Contact your Topcon machine control dealer or visit our web site for more details. Offer ends 12.31.05.



Buying File: Small Wheel Loaders

By WALT MOORE, Senior Editor

Concentrated Power

Compact wheel loaders with 65 net horsepower and less account for an expanding share of the small-machine market



The "compact concept" illustrated: This Volvo L25B has the hydraulic power to handle heavy loads, the trim dimensions to fit through small spaces, and the tight-steering ability to maneuver with minimal ground disturbance.

and Versatility

Perhaps you've noticed in the last five years or so that an increasing number of prominent brand names have been showing up on small wheel loaders. Some might say that these "compact" loaders are relatively new to the North American market, the result of marketers noting the success of these machines on congested European jobsites and bringing the concept here.

But, just to set the record straight, small wheel loaders aren't a new phenomenon on this side of the Atlantic. The once-mighty International Harvester, for example, was building small wheel loaders for worldwide consumption in the mid-1960s, and brand names such as Waldon, Swinger, Power Trac and TCM have endured successfully in the U.S. market.

That said, however, there's no denying that the North American market has rediscovered the compact wheel loader in recent years, as evidenced by the expanding number of suppliers and the corresponding rise in sales numbers. And with this rediscovery has come a new generation of machines, which skillfully concentrate the power and versatility of larger loaders into much smaller packages.

Our introduction to the design specifics of today's small wheel loaders came a year or so ago when Volvo loaned *Construction Equipment* an L20B for an installment of Hands-On Earthmoving. The 56-horsepower L20B features dual-range hydrostatic drive, parallel-lift loader linkage, standard auxiliary hydraulics, choice of proprietary or universal coupler (both hydraulic) and operator amenities that include a multi-function joystick with built-in switches for transmission control and for ground-speed control independent of throttle position.

According to David Morice — heavy-line sales manager for JCB, whose 67-net-horsepower models 407ZX and 409ZX just missed our cutoff — the small wheel loader's market success is establishing a trend toward even



Although hydraulic flow in the compact wheel loader's auxiliary circuits is generally lower than that for a comparably sized skid-steer loader, says Doug Laufenberg, product manager for Deere's compact loaders and attachments, the wheel loader still has the hydraulic muscle to handle a selection of powered tools.

Average Costs for Small Wheel Loaders

Category (Net HP)	Average List Price	Hourly Rate ¹
Up to 39	\$42,120	\$16.15
40-59	\$60,306	\$21.33
60-69	\$63,200	\$23.01

¹Hourly rate = monthly ownership costs (based on price, economic life, and 4.5 percent cost of money), plus monthly operating costs (fuel at \$2.33 per gallon and mechanic's wage at \$39.33 per hour) divided by 176 hours.

Source: EquipmentWatch
800-669-3282 or www.equipmentwatch.com

Buying File: Small Wheel Loaders

more design enhancement, including such features as high-flow auxiliary hydraulics, more precise return-to-dig systems and ride-control.

At the heart of their design, compacts neatly insert conventional wheel-loader features — efficient truck loading, load-and-carry capabil-

ity, smooth ride, stability, friendly steering, roomy cab and attachment-handling ability — into packages of more application-accommodating size. Wheel-loader buyers simply have more choice now for matching machine size to the needs of a given operation.

Small Wheel Loaders (65 net horsepower and less)

Supplier/ Model	HP (net)	Operating Weight (lb.)
Atlas		
AR 35	33	5,500
AR 35 Super	33	6,040
AR 50	50	9,149
AR 55	53	8,756
AR 60	60	10,802
AR 65	60	10,360
Buhler		
1030DP	22	3,200
1070M	38	4,360
1090DP	48	6,600
1904DP	48	6,800
B56	56	n/a
Case		
221D-II	57.5	12,189
21D-II	51	10,370
Caterpillar		
904B	52	9,810
Coyote		
C5	27	5,500
C8C	38	9,590
C9	49	9,660
C10B	50	9,660
C14C	59	10,946
C15	58	10,780
C16	63	10,582
Deere		
244J	59	11,552
Gehl		
AL20DX	20	2,050
AWS 280	39	7,055
AWS 480	59	9,921
AWS 480T	59	11,684
Ingersoll-Rand		
WL-350	60	11,240
Komatsu		
WA30-5	29	6,040
WA50-3	37	8,200

Supplier/ Model	HP (net)	Operating Weight (lb.)
WA65-5	54	10,780
WA70-5	60	11,816
WA80-5	60	12,434
Kubota		
R420S	43	7,450
R520S	49	8,980
Mustang		
ML28	39	7,055
ML48	59	9,921
ML48T	59	11,684
New Holland		
LW50.B	55	10,038
Power-Trac¹		
PT-425	25	1,387
PT1430	30	2,560
PT-1445	45	3,920
PT-1460	60	5,620
Swinger		
1200	32	1,200
200IND	65	2,000
TCM¹		
E804-2	28.6	6,380
E806-2	41.4	8,260
E820-2	59.2	11,600
Terex		
SKL814	50	8,598
SKL824	50	9,050
SKL834	60	11,240
Volvo		
L20B	56	9,945
L25B	60	10,650
Waldon		
4100	52	6,529
5100	52	7,225
Yanmar		
V3-5A	28.6	6,472
V4-5A	36.5	7,376

¹Gross horsepower ratings

Basic designs and features

The size of compact wheel loaders within the horsepower class (65 net and less) that this report addresses varies considerably. Operating weights range from less than 1,500 pounds to more than 12,000 pounds, net horsepower ratings from the low twenties to 65, and hinge-pin heights from around 105 to nearly 130 inches. Despite the wide variations, these machines do, however, exhibit general similarities.

Most, for example, are hydrostatically driven, usually with the combination of a single high-pressure, variable-displacement hydraulic pump and single hydraulic motor. The motor in most units drives through a mechanical gearbox to conventional planetary axles, which often use sealed, wet-disc brakes. Maximum travel speeds may range from the low teens to 25 mph.

Most also employ articulated-frame steering, but with notable exceptions. Gehl and Mustang units (except for the articulated Gehl AL20DX) feature all-wheel steering in conjunction with their one-piece frame. The Deere 244J is a hybrid of sorts, incorporating both articulated-frame steering and rear-wheel steering — a system Deere calls Stereo Steering.



***To a crawler, it's the equivalent of
an expensive champagne***

When it comes to heavy-duty engine oils, Conoco Hydroclear Power-D™ and Conoco HD Fleet Supreme™ meet or exceed original manufacturers' standards for superior protection against soot, wear, rust, corrosion, oxidation and deposits. That's why you can trust Conoco lubricants for cleaner engines and longer engine life. When it comes to protecting your most important asset, Conoco premium heavy-duty engine oils are money well spent.

For information circle 14

lubes.conoco.com | 1-800-255-9556



conoco

Gets it Done

ConocoPhillips

Copyright © 2004 ConocoPhillips Company. Conoco and the Conoco Logo are trademarks of ConocoPhillips Company or its subsidiaries.

Buying File: Small Wheel Loaders

Implement-hydraulic systems are typically gear-pump systems, and an auxiliary hydraulic system (providing flow to powered attachments) often is available. These auxiliary systems, however, usually don't produce oil flows that compare with the output of high-flow systems in large skid-steers. Although this limitation might preclude the use of certain attachments, many hydraulically powered tools can still be used. According to Caterpillar, for instance, its model 904B, with a 22-gpm auxiliary system, can handle trenchers, snow blowers, stump grinders and cold planers.

The question buyers should ask in this regard, though, is whether the auxiliary flow in the specific wheel loader model being considered is sufficient to power attachments intended for use with it.

Attachment use

It's probably safe to say that when the new

generation of compacts began appearing, available attachments, in many instances, were limited to pallet forks and specialty buckets — such as multi-purpose, side-dump and stone-sieve types.

Even though many of these machines were equipped (or could be equipped) with a universal (skid-steer) type coupler, manufacturers generally were cautious about recommending the use of skid-steer attachments with compact wheel loaders. Since many compacts use Z-bar loader linkage (or a variation thereof), which typically generates considerably higher breakout force than does skid-steer-loader linkage, the concern was that these stronger machines would structurally overpower attachments designed for

skid-steers loaders.

"Placing a skid-steer bucket on a compact wheel loader is not a good idea," says Georg Seyrlehner, Ingersoll-Rand's product manager for earthmoving equipment. "Given the wheel loader's greater breakout force, there's potential for damaging both the bucket and the coupler."

As the market has matured, however, more attachments have been developed specifically for the compact wheel loader, further expanding its versatility.


"Specialty buckets and forks still remain the most popular attachments," says product manager David Wolf at Case, "but brooms, augers and ground-conditioning attachments, for example, are now generally available."

The best advice about using skid-steer tools on a small wheel loader is to ask your dealer if a specific attachment's structural strength and (if powered) its hydraulic flow and pressure requirements are a match for the wheel loader in question.

In addition, buyers should be aware of two other considerations related to attachment use with small wheel loaders: coupler type and loader-linkage type. Regarding couplers, some manufacturers equip their compacts with only conventional wheel-loader-type couplers, others use the universal-style coupler, and still others use the conventional coupler, but offer a universal-style adapter.

Loader linkage is typically either standard Z-bar or parallel-lift. The latter automatically keeps pallet forks level from ground level to full lift, which is handy if the machine frequently works with forks. Depending on the specific linkage, however, the parallel-lift configuration may sacrifice a bit of digging force. But not always; some manufacturers claim linkages that competently blend the best qualities of both linkage types.

A final consideration you might have, of course, is whether a compact wheel loader or comparably sized skid-steer loader is the right choice for your operation.

"That's not an easy decision in some instances," says Gehl's Brian Rabe, "because both machines have distinct advantages. I try to help customers think through all aspects of their operation before making that choice." 

Web Resources

Specifications	ConstructionEquipment.com
Atlas	www.atlasloaders.com
Buhler	www.buhler.com
Case	www.casece.com
Caterpillar	www.caterpillar.com
Coyote	www.coyoteloaders.com
Deere	www.deere.com
Dressta	www.dresstanorthamerica.com
Gehl	www.gehl.com
Ingersoll-Rand	www.irco.com
JCB	www.jcb.com
Komatsu	www.komatsuamerica.com
Kawasaki	www.kawasakiloaders.com
Kubota	www.kubota.com
Link-Belt	www.lbxco.com
Mustang	www.mustangmfg.com
New Holland	www.newhollandconstruction.com
Power-Trac	www.power-trac.com
Swinger	www.nmc-wollard.com
TCM	www.mmdequipment.com
Terex	www.terex.com
Volvo	www.volvoce.com
Waldon	www.waldonequipment.com
Yanmar	www.yanmar.com

* This list includes suppliers encompassed in the broader definition of "compact" wheel loaders, those with up to 110 gross horsepower.

Productivity runs in the family.



The right equipment for any job. Count on the Mustang line of construction equipment to dig deeper, lift more and power through any task. From skid-steer loaders and track loaders to compact excavators and telehandlers, it's all in the family. No wonder Mustang is the compact construction equipment of choice. Put the performance and versatility of Mustang to work for you. And keep the tough jobs in the family.

To locate your nearest dealer, visit www.mustangmfg.com or call 800-562-5870.



© 2005 Mustang Manufacturing Company, Inc.
A Gehl® Company

For information circle 24

Gallery of Small Wheel Loaders



CATERPILLAR

Works Well in Confined Spaces

Caterpillar's 904B, with a standard-bucket capacity of 0.78 cubic yard, stands just 94 inches tall and 67 inches wide, allowing it, says Cat, to pass through 8-foot doors, as well as into trailers and containers. The machine features a universal (skid-steer-type) coupler and an auxiliary hydraulic system that provides flows to 22 gpm, which, says Cat, allows the 904B to operate many standard-flow skid-steer-loader work tools.

Number of models: 1

New models: 904B

Product-line features: Caterpillar's compact-wheel-loader line presently includes four models, ranging from the 52-net-hp 904B to the 95-net-hp IT14G, which is a compact tool carrier. For information circle **154**

ATLAS

Heavy-Duty Main Frames

The Atlas AR 50 is powered with a 50-net-hp Perkins 404C-22 diesel engine and uses a variable-speed travel motor in conjunction with rigid planetary axles that incorporate differential locks. Loader linkage is the parallel-lift type, and the machine's standard bucket is rated at 0.9 cubic yard. Payload at the pallet forks, says Atlas, is 3,740 pounds.

Number of models: 6

Product-line features: Atlas loaders feature heavy-duty main frames built on a platform design, says the company, a design that allows for customer-specific features and options, including hand throttles and air-suspension seats. A wide selection of models, says Atlas, assures a machine size that best suits the user's needs.

For information circle **155**



KUBOTA

Twin Auxiliaries and Optional Backhoe

Kubota's R20 Super Series wheel loaders, the R420S and R520S, are powered by the company's own E-TVCS diesel engines and feature a load-sensing drive system, electric shuttle shift, limited-slip front differential and rear-frame oscillation.

Number of models: 2

Product-line features: Kubota's R20 Super Series models use a universal-style quick coupler, provide auxiliary hydraulics front and rear, and can be equipped with a rear-mounted backhoe in lieu of the counterweight.

For information circle **157**

YANMAR

Choice of Transmission Control

Yanmar's two compact wheel loaders, the V3-5 and V4-5, feature a "Two-Mode" controller for their load-sensing hydrostatic drive systems. The operator can select "fully automatic shifting" or a fixed-speed mode for controlled travel speed in restricted areas.

Number of models: 2

Product-line features: An "Auto-Leveler" feature in Yanmar loaders places the bucket flat on the ground, and oscillating rear axles allow the machine to traverse rough terrain and reduce operator fatigue.

For information circle **158**





HOLD ON.

Gallery

TEREX

Parallel-Lift with Quick-Attach

The Terex models SKL814, SKL824 and SKL834 are equipped with “four-bar” parallel-lift linkage and an integrated “quick-attach” system. The SKL824 also is available with an optional universal coupler. These machines range in net horsepower from 50 to 60, and in operating weight from 8,600 to 11,200 pounds.

Number of models: 3

New models: SKL814

Product-line features: Terex wheel loaders use a closed-circuit, two-speed hydrostatic drive system that provides automatic adjustment of drawbar pull and speed. Except for the SKL814, these machines can be equipped with an available four-speed drive system that provides a top speed of 22 mph.

For information circle **159**



MUSTANG

Four Hard-Working Wheels

A load-sensing hydrostatic drive system automatically adjusts the speed and pushing power of its compact wheel loaders' four driving wheels, says Mustang, but these four hard-working wheels also steer. The all-wheel-steering concept, says the company, provides exceptional maneuverability and a solid stance in any steering attitude.

Number of models: 3

New models: ML28, ML48, ML48T

Product-line features: With a one-piece-chassis and all-wheel steering, says Mustang, its wheel loaders can handle tight corners without the need for three-point turns.

For information circle **160**

WALDON

Rugged Design

Manufactured in Fairview, Okla., since 1968, Waldon wheel loaders feature heavy-duty construction including a “rugged” articulated frame and boom assembly, plus 1-inch-thick front and rear fenders.

Number of models: 2

Product-line features: Waldon loaders feature a low-pressure hydraulic/mechanical drive system that provides two speeds. The 4100 is available with Continental gas or diesel engines, and the 5100, says the company, has four engine options.

For information circle **162**



INGERSOLL-RAND

New Competitor in Expanding Market

Ingersoll-Rand entered the compact-wheel-loader market just a year ago with two models, the 60-hp WL-350 and 73-hp WL-440. The WL-350, says I-R, combines parallel-lift loader linkage with high breakout force to allow the machine to move easily from tool-carrier to earthmover.

Number of models: 1

New models: WL-350

Product-line features: I-R notes that its wheel loaders provide good all-around visibility, thanks to the cab's large glass area and the short, rounded rear cowl. All functions of the attachment are integrated into a single joystick controller.

For information circle **161**



IT'S COMING.

For information circle 16

Gallery of Small Wheel Loaders

GEHL

All-Wheel Steering

Gehl's compact wheel loaders with horsepower ratings less than 65 net include the Advantage AL20DX, AWS 280, AWS 480 and AWS 480T. The AL20DX is an articulated, 20-hp model, and the AWS models feature a rigid, one-piece chassis with all-wheel steering.

Number of models: 4

New models: 280, 480, 480T

Product-line features: All-wheel steering, says Gehl, contributes to extremely tight turning circles and enhanced maneuverability, exacts no loss of lift capacity when turning the machine, and works with the non-articulating frame "to improve safety, stability and performance."

For information circle **163**



TCM

Low-Speed Hold

The TCM E820-2 is powered by the Kubota V3300DI diesel engine, rated at 59.2 net horsepower and features heavy-duty planetary final drives with limited-slip differentials and a side-by-side transmission/hydraulic-system cooler.

Number of models: 3

New models: E804-2, E806-2, E820-2 (in 2004)

Product-line features: These three TCM models are powered by Kubota diesel engines and use an auto-shift, two-speed motor in their electrically controlled, load-sensing hydrostatic drive systems. A low-speed-hold feature in the hydrostatic system limits machine speed for digging and loading functions.

For information circle **164**



POWER TRAC

Attachment Versatility

According to Power Trac, more than 30 attachments are available for each of its small wheel loaders, including specialty buckets, mowers, trenchers and augers, which can be swapped quickly, says the company, with its Quick-Attach coupler.

Number of models: 4

Product-line features: Power Trac calls attention to the sturdy construction of its loaders, saying that the machines and their attachments are made from 1/4- to 3/4-inch steel plate for durability.

For information circle **166**

NEW HOLLAND

Z-Bar Linkage Power

New Holland says its LW50.B, with an operating weight of 10,038 pounds, brings large-loader features into a compact package, including a powerful Z-bar loader linkage that can handle a multi-purpose bucket, augers, brooms, scrap buckets and snow blades.

Number of models: 1

New models: LW50.B

Product-line features: New Holland's cab design is aimed at visibility, with a one-piece, curved front windshield, one-piece, flat glass at the rear and slender posts. The sloping rear deck also enhances rearward visibility in this machine, which has a new Tier-2-compliant engine with a 1,000-hour oil-change interval.

For information circle **165**





S

N

A NEW PRODUCT LINE FROM MACK®

S P R I N G 2 0 0 6

Gallery of Small Wheel Loaders

JOHN DEERE

Stereo Steering and Fast Travel

The smallest of John Deere's four-model compact-loader line, the 59-net-hp 244J, features a two-range hydrostatic-drive system and speeds up to 19 mph, with the added control of an inching pedal that permits high hydraulic flows at low ground speeds. An optional Worksite Pro Coupler allows interchange with skid-steer attachments.

Number of models: 1

New models: 244J

Product-line features: The hallmark feature of Deere's compact-wheel-loader lineup is Stereo Steering, which combines the coordinated action of frame articulation with rear-axle steering. The concept results in exceptionally tight turns, says Deere, and can reduce the angle of articulation required when maneuvering with heavy payloads. For information circle **151**



CASE

Standard Hydraulic Coupler

New this year are the Case 221D and 21D Series II compact wheel loaders. Case says both machines come equipped with a standard hydraulic coupler that fits a full line of attachments, including general-purpose buckets, multi-purpose buckets, pallet forks, snow blades, angle brooms, augers, scrap-grapple buckets and jib booms. Options include ride control and a high-speed transmission that provides speeds to 20 mph.

Number of models: 2

New models: 221D-Series II, 21D-Series II

Product-line features: These new Case models feature Tier-2 engines, limited-slip front axles, hydraulically driven cooling fans and 41-degree articulation for tight turns. Operator amenities, says Case, include spacious cabs and easy control.

For information circle **152**

VOLVO

Patented Center Joint

According to Volvo, more than 60 attachments are available for use with its compact wheel loaders. These machines feature an articulating/oscillating joint between the frames, a patented design that contributes to maneuvering ability, says Volvo.

Number of models: 2

Product-line features: Volvo's compact-wheel-loader range includes six models, ranging from 55 to 110 gross horsepower. These machines feature differential locks, integrated electronics with diagnostic functions and, on select models, the company's Torque-Parallel loader linkage.

For information circle **153**



Gallery of Small Wheel Loaders



KOMATSU

Strong and Silent

Among the newest models in Komatsu's compact-wheel-loader range is the WA65-5, which features a redesigned bucket for more aggressive digging and easier filling, parallel movement and high payloads in pallet-fork applications, and a standard hydraulic coupler.

Number of models: 5

New models: WA30-5, WA70-5, WA80-5

Product-line features: Komatsu's small loaders borrow technology from their larger counterparts in the company's range, including a load-sensing hydrostatic drive system, limited slip differentials front and rear, plus optional ride control and air conditioning.

For information circle **167**

BUHLER

High-Pressure Drive System

The North-American-built Buhler B56 wheel loader features a 56-net-horsepower Kubota four-cylinder, turbocharged engine, and a hydrostatic drive system that operates at 6,000 psi and provides speeds to 15 miles per hour. Height under the hinge pin is 134.5 inches, and break-out force is rated at nearly 9,200 pounds.

Number of models: 5

Product-line features: Smaller models in the Buhler line feature Perkins power and four-wheel hydrostatic drive. Hinge-pin heights range from 106 to 135 inches. Maximum travel speeds range from 9 to 15 mph in the larger two-speed-travel models.

For information circle **168**



SWINGER

Kubota or Cummins Power

The Swinger 1200 features a 32-hp, four-cylinder Kubota diesel engine, and the larger 2000IND uses a 65-net-hp Cummins 3.3-liter, four-cylinder. Both machines are fitted with a universal coupler and can operate most skid-steer-type attachments.

Number of models: 2

New models: Swinger 1200

Product-line features: According to manufacturer NMC-Wolard, notable features for its small wheel loaders include a surface-sensitive design that minimizes ground disturbance, good outward visibility and ease of operation.

For information circle **169**

COYOTE

Hydraulic Coupler and Wet-Disc Brakes

A 59-net-hp Deutz diesel engine powers the Coyote C14C, which has a standard bucket capacity of 1.0 cubic yard, a straight tipping load of 8,200 pounds and a rated fork lifting capacity of 4,500 pounds. The C14C's two-speed hydrostatic drive system can be shifted on-the-go and provides a top speed of 13 mph.

Number of models: 7

Product-line features: All models in Coyote's compact loader line feature two-speed drive, sealed wet-disc brakes and hydraulic attachment couplers.

For information circle **170**



Accurate and reliable weight is not just important
to our business, that IS our business.



"Offering an Unconditional Guarantee of Accuracy to drivers could be risky business.

But CAT Scale rests easy with Fairbanks building its custom designed truck scales. The reason is simple. Fairbanks produces the most accurate and reliable truck scales in the industry. And if anybody is a stickler for accuracy and reliability, it's CAT Scale."

If the largest truck scale network in the world chooses Fairbanks, shouldn't you?

WWW.FAIRBANKS.COM/CATSCALE

1 - 8 0 0 - 4 3 2 - 2 4 4 8



For information circle 19

Dump Trailers

BEALL

Beall's aluminum "bullet bottom" dump trailer has been in the company's product line since 1975. It is capable, says the manufacturer, of carrying 8-inch-minus material, including gravel, sand, asphalt and coal. Bottom-dump configurations also include a three-axle semi-trailer version with a six-axle pull unit, and a two-axle "Light Weight Aggregates" version with a three-axle pull. End-dump trailers in Beall's line include a two-axle, aluminum model and the Hardbody, which is a steel, half-round model featuring single-point suspension and a 44,000-pound capacity.

For information circle **171**



J-CRAFT

The J-Craft tri-axle pup dump trailer features a "hinged air-ride" tongue, tri-axle suspension, an aluminum body, and an air-trip tailgate release. The body is lined with a durable, 1/2-inch-thick, wear-resistant plastic that combines a low coefficient of friction with high impact resistance. The body also can be fitted with a heat-resistant liner for hauling hot-mix asphalt. When pulled with a properly configured dump truck, says the company, the combination can scale at 80,000 pounds gross in most states.

For information circle **172**



WARREN

The Warren SFS steel-frame end-dump trailer (shown) has a steel body and incorporates specially designed cross members that help prevent torsional stress when dumping or turning. The QFS/QFA end-dump models, available in aluminum or steel, work well in lime-spreading and asphalt-hauling applications, says Warren, and can unload into pavers with no interference. The SFA model, with an aluminum body and steel frame, is designed for hauling all types material, and a pup dump trailer is designed for use behind a tandem-axle dump truck.

For information circle **173**



TRAIL KING

Trail King Industries' trailer line includes live-bottom and bottom-dump models, and among the newest of the company's products is the Ultra Lite Series bottom dump. Designed for on-highway service, the Ultra Lite weighs 9,900 pounds and is available in lengths of 36 to 43 feet. Payloads range from 22 to 26 cubic yards. According to Trail King, the trailer's 5-foot by 8-foot 10-inch hopper opening and near-vertical hopper walls ensure complete dumping. Features include an oscillating fifth-wheel plate and lightweight cross braces designed to minimize the flexing in critical areas of stress.

For information circle **174**

SIDUMP'R

An accommodating feature of the Sidump'r side-dump trailer, says the manufacturer, is the elimination of the center divider in the tub. The trailer is equipped with a single, three-stage dump cylinder that will unload the trailer in 9 seconds, says the company. Standard features include air-ride suspension and the use of "pressure vessels" (in lieu of air tanks), which are integrated into the frame (over the suspension) and serve both as structural members and as air reservoirs that reduce hose length. Huck bolts are used extensively in the frame to allow for flexibility without cracking.

For information circle **175**



SMITHCO

Smithco manufactures a wide range of side-dump trailers, including the four-axle model 4000, which has a tub 36 feet long and provides a volume of 24 cubic yards in its round-bottom configuration and 25 cubic yards in the flat-bottom style. The design of Smithco trailers, says the company, accommodates bulk materials, as well as boulders, rip-rap, demolition materials and tree stumps. Bulk materials, such as dirt, sand and gravel, says Smithco, can be stockpiled or spread in windrows at up to 20 miles per hour. Typical dump cycles are estimated at 15-20 seconds.

For information circle **177**

FLOW BOY

The suspension system under the Flow Boy Dumpasaurus is designed to keep all the tires on the trailer's last two axles firmly planted on the ground when the unit is unloading. According to Flow Boy, the half-round shape of the Dumpasaurus provides an exceptional structural rigidity that allows the trailer to handle abusive material, such as demolition debris. The trailer uses an inverted hoist that prevents material buildup, and the rear tailgate is air-powered, both opening and closing.

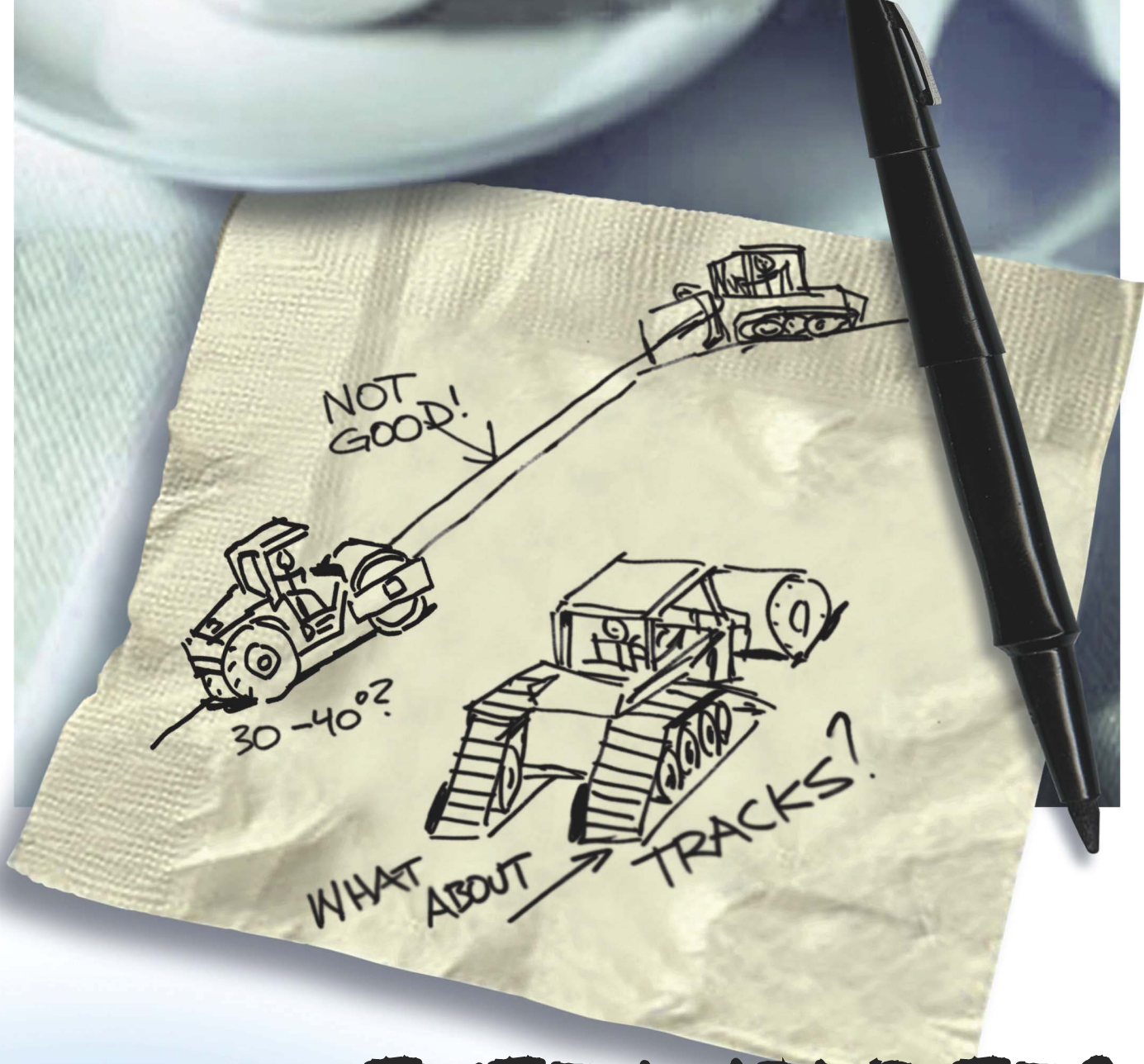
For information circle **176**



TIGER LINE

The Tiger Line pull-behind dump trailer has a load capacity of 3 cubic yards. The trailer is 11 feet 8 inches long and 7 feet wide, overall, with a body length and top width of 8 feet 2 inches and 5 feet 4 inches, respectively. The body is 2 feet deep and measures 51 inches to the top rail. Standard equipment includes electric/hydraulic pump with dual controls, heavy-duty scissors-type hydraulic jack, high-flotation tires, and torsion-flex axle. An optional highway package adds fenders, electric brakes, highway-type tires and light package.

For information circle **178**



EVER WONDER?

Ever wonder how they compact steep slopes? The old way was to use a winch, a dozer, another operator and a whole bunch of money. The new way? The high force, reliable Sakai CV550 climbs and compacts 45° – all by itself. Smooth and padfoot drum. Check it out!

PROBLEM-SOLVING INNOVATION

SAKAI

Masters of Compaction



For information circle 20

www.sakaiamerica.com • 1-800-323-0535

When We Say "Forever" ... We Mean Forever!

Protected By Lifetime Warranty*

Profits get hammered two ways. First, when your breaker falls apart, you're not working. Second, some parts are so expensive that it's better to cut into your bottom line and buy a new hammer to get a fresh warranty. That's the way it is with most hammers and their warranties.

But, Huskie is really different. If you own a Huskie Hydraulic Hammer, you are covered front cap to back cap by Huskie's industry-leading LIFETIME Limited Warranty*.

- **LIFETIME Coverage for Front Cap, Back Cap and Main Body**
- **THREE YEAR Protection for All Components except**
- **TWO YEAR Warranty for All Seals**
- **UNLIMITED HOURS of Use**

Forever is a long time. But, if you own a Huskie Hammer, that's how long you can expect to run it 24/7 and still be covered by the revolutionary Huskie Lifetime Warranty.

Want a 30 day free demo? Call**

1-800-HUSKIE1

(1-800-487-5431)

Fax 630-790-3751



*Limited warranty. Normal wear items are not covered. See warranty statement for details and exceptions. Effective on all Huskie Hydraulic Hammers purchased after July 1, 2005.

**Call IPC/Huskie Hydraulic Hammer for details.

The Huskie logo and Huskie Hydraulic Hammer are registered trademarks of IPC Industries, Inc.

© 2005 IPC-Huskie Hydraulic Hammer

For information circle **21**

Spotlight

EAST

East says its XLS frameless aluminum end-dump trailer (shown), combines the benefits of a square-bottom trailer with payloads that rival round-bottom trailers. The trailer is available in conventional sheet-and-post construction for the sides, or in East's new patent-pending Genesis construction, which provides benefits that include

fuel-savings, aerodynamic sides that are stronger than conventionally constructed sides, and prevents dings from showing through the outer skin. The East product range also includes frame-type end-dump trailers with steel bodies.

For information circle **179**



CIRCLE-R

Earlier this year, Circle-R introduced its new Generation III side-dump trailers, which incorporate high-tensile-strength frame materials that allow the unit to be used, says Circle-R, in applications such as road construction, off-road mining and specialty hauling. The new "High Volume" tub provides a struck volume of 24.2 cubic yards and a heaped volume of approximately 30 cubic yards. The tub is equipped with the company's "Flex-Corner" design, which is aimed at allowing the tub to flex and bend with no ill effects. Loading height

is 8 feet 2 inches, and the new trailers are available in two-, three- and four-axle configurations with a choice of suspension systems.

For information circle **180**



RANCO

Among the newest products available in the extensive Ranco line of bottom-dump and end-dump trailers is a set of double bottom-dump units. These new trailers, says Ranco, are nearly a ton lighter in weight than their predecessor models, and although the trailers are constructed of steel, they approach the weight of aluminum construction, while increasing abrasion resistance. Total weight for the pair is 12,840 pounds.

For information circle **181**

SIMPLY THE BEST...



Ranco Lightweight Doubles

- **FREE ...1-YEAR SCHEDULED MAINTENANCE**
- **3 YEAR... STRUCTURAL WARRANTY**
- **TRAILERS...FOR EVERY APPLICATION**



Ranco Lightweight 21-40

For more information and a Dealer Near You Call:

(800) 631-5708

For information circle 22

P.O. Box 856 • Lamar, CO 81052 • FAX (719) 336-5952 • www.rancotrailers.com

RANCO

Great Managers

By LARRY STEWART, Executive Editor

More Work Makes Jacksonville More Efficient

City fleet-management division cuts cost and payroll by bringing outsourced work back in-house

PROFILE



Sam Houston

City of Jacksonville Fleet Management

Headquarters:
Jacksonville, Fla.

Specialties:
Municipal fleet-management division

Fleet Value:
\$120 million

Fleet Makeup:
5,400 units including 154 pieces of fire and rescue apparatus, 100 off-road construction machines; 410 Class 7 and 8 trucks, and 2,250 light trucks and cars

Facilities:
1 shop, 8 mechanics trucks, 3 lube service trucks, 3 fuel trucks

Equipment-Support Staff:
158 total including 121 mechanics, fabricators, and supervisors/lead workers

Market Range:
Duval County — 840 square miles with 750,000 population

O utsourcing may be a good alternative to a work-resistant workforce, but Jacksonville's own technicians called the city to do its own warranty repairs and the resulting efficiency gains ultimately led the city to hire itself out as a service vendor to the Florida DOT.

"We had excess capacity that wasn't being tapped," says Sam Houston, chief of the City of Jacksonville's fleet maintenance division. "There's a fire-apparatus vendor's shop right next door to us, and it had become easy to send pretty much all of the repairs on that equipment over to them. My people saw it and knew it shouldn't be happening. They didn't have enough work to do.

"The fire department liked the situation they had, but it was costly, and we can do the job just as well. Of course, there's an incentive for the technicians to keep that work here, if they get some overtime. We took that work back in-house and they started getting a little overtime."

He also brought the fleet's brake and tire service work, which was being sent out to

local vendors, back into the city's shop.

To keep from overdosing on overtime, Houston leans heavily on the city's production bonus system for technicians and shop supervisors. Division management sits down annually with each shop production person and they agree on a goal for that individual's production. If the person reaches the goal, he or she receives a bonus equal to one percent of base salary.

"Our people rose to the challenge — we saw productivity come up," says Houston. "We took on all this extra work and still reduced payroll."

In the last fiscal year, only two employees failed to reach their production targets. The fleet-management-division's administrators maximized shop capacity by meticulously scheduling work. The division processed 74,000 work orders last year, and billed 137,000 labor hours — 74 percent of the work orders were completed within 24 hours with an average turnaround time for all equipment of three days. Auto and light-truck safety inspections are scheduled up to two months

in advance, and most are completed on the same day.

Payroll costs are down \$902,000 and outside-vendor costs have dropped \$777,000. Houston has chosen not to fill 21 staff positions that opened due to attrition. The additional people weren't necessary.

As the city has judiciously applied overtime, they've also carefully chosen some work



Photos: Kelly LaDuke

James Conte, one of the city's nine welders, builds an animal-control grate. Simple fabrications like this one have raised productivity in the Jacksonville's shop and saved taxpayer money.

to outsource. For example, all auto and light-truck services — oil and filter changes — are done by vendors at a contracted bid price. Last year, 18,936 PMs were performed — 96 percent of them on schedule.

Improved shop productivity has translated directly into cost savings. The fleet management division has become an authorized warranty center for Ford, General Motors, International, American LaFrance and Pierce fire apparatus. They've pursued the warranty work aggressively.

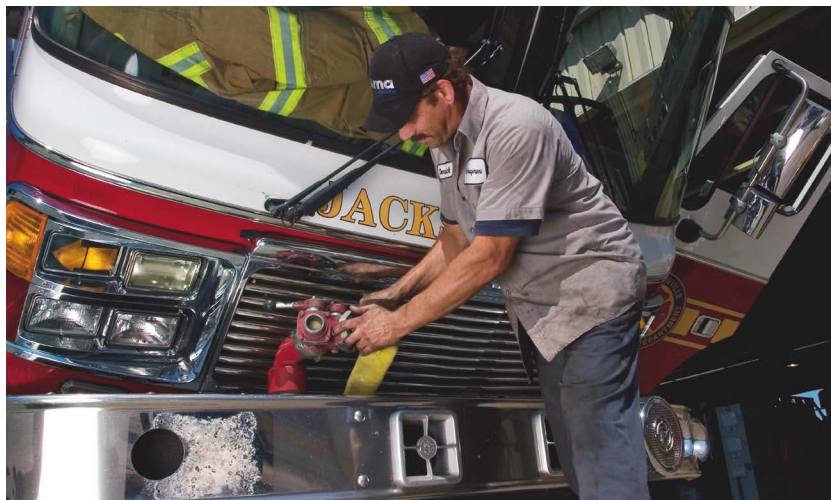
"If I have a vehicle I'm working on — doing a PM, for instance — and I see something wrong with it that's under warranty, it's much easier to just do the warranty work myself rather than stop doing what I'm doing, put the vehicle back together, and send it over to the dealer so they can make the warranty repair," says Houston. "So we approached GM and the other Big 3 automakers and said, 'We would like to be certified to do warranty work in-house.' They have a set procedure — a flat rate for each job. We tell them what we did, show them the part number, and they reimburse us."

Houston says documentation is key to recovering warranty dollars. He instituted a simple system in Jacksonville. When a service writer suspects that there may be a warranty to be claimed on a repair order, the order is printed and stamped with a red "WARRANTY" stamp. The city's accounting department routes all WARRANTY-stamped repair orders to Houston's warranty clerk, who compares the vehicle and part numbers to a database of fleet warranties.

"In 2000, we had \$18,000 worth of warranty claims, then \$30,000 the next year," says Houston. "Since we implemented this program in the last two years, our warranty claims have gone up to around \$80,000."

Other government fleet operations started to see what was happening in Jacksonville, and it wasn't long before the Florida Department of Transportation asked Houston to supply fleet services for their local operations.


"We worked on the details and legal ramifications of the agreement for several months, then agreed on the hourly labor rates and



planned to charge them flat rate by the book," says Houston. "They were able then to figure out maintenance cost and say, 'Wow, we can get this done for \$250,000 and cut our budget by \$200,000 by eliminating all these little shops that we operate around Jacksonville and Duval County.'"

Jacksonville integrated 250 to 300 pieces of Florida DOT equipment into its fleet operations. They've been maintaining the yellow equipment side-by-side with Jacksonville's white vehicles and machines for about three years. The work pours about \$250,000 of revenue per year into the city's fleet-management division. And it adds about 3,000 work orders to the city's normal flow.

Being accountable to a "customer" outside of city operations actually contributed to the scheduling discipline that has been instrumental to Jacksonville's improving shop productivity. Houston considers it one of the most important lessons learned from working for the DOT.

"You have to monitor the turnaround times to make sure they get equipment back in a timely fashion," he says. "We schedule their stuff in for PM, so it's in and out in the same day." 

Derrick Anders, a Jacksonville technician, repairs a cab solenoid that will contribute to a four-fold increase in the city's warranty recovery. Becoming certified to do much of its own warranty work is saving the city tens of thousands of dollars each year.

Successful Results

- Average Equipment Downtime, 2000: 6 days
- Average Equipment Downtime, 2004: 3 days
- Parts-Inventory Change Since 2002: -2,200 items
- Payroll Savings, 2004: \$902,987
- Vendor-Repairs Savings, 2004: \$777,519

Equipment Executive

By MIKE VORSTER, Contributing Editor

Let's Sideline Straight-Line Depreciation

Bad decisions can be traced to the use of this simple, yet unsuitable, accounting procedure



Mike Vorster

David H. Burrows
Professor of Construction Engineering and Management at Virginia Tech.

The simplest way of calculating the annual amount to be charged against a machine for operating depreciation is to assume a straight-line reduction in book value and charge a constant amount for depreciation each year. It is easy to do: If you assume that the machine will lose 75 percent of its value over six years, you simply divide 75 by 6 and charge the machine 12.5 percent of its capitalized value each year. The simplicity of the idea is appealing, and many companies do this.

The downside of this approach is that it causes owning-and-operating costs to vary tremendously from year to year. The profitability of individual units and the equipment account overall is thus extremely sensitive to fleet average age, and many bad decisions can be made simply because policy requires the use of a simplistic and unsuitable method to calculate and charge operating depreciation.

A simple example illustrates the problem and shows the impact of straight-line depreciation when measuring the profitability of equipment on a year-to-year basis. Let's assume that we have purchased a loader for \$400,000; company policy requires that we charge operating depreciation on a straight-line basis down to 25 percent over six years; and we charge interest at 4 percent on the book value.

The accompanying table shows the cash flow for this machine, assuming that we own it for eight years and use it 1,800 hours per year (rows 1 and 2). Expected annual rental income of \$167,400 per year (row 3) is based on an assumed rate of \$93 (1,800 times 93).

Annual operating costs are broken into two parts. First, we calculate annual cost of repair parts and labor (row 5). This will increase with age, and we use our own data with the concave-curve-based method-

Straight-Line Depreciation

1	Year of ownership	1	2	3	4	5	6	7	8
2	Hours worked per year	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
3	Annual rental income	\$167,400	\$167,400	\$167,400	\$167,400	\$167,400	\$167,400	\$167,400	\$167,400
4	Operating costs per year								
5	Repair parts and labor	\$12,636	\$26,892	\$41,148	\$55,404	\$69,660	\$83,916	\$98,172	\$112,428
6	Non-age-dependant items	\$54,000	\$54,000	\$54,000	\$54,000	\$54,000	\$54,000	\$54,000	\$54,000
7	Total per year	\$66,636	\$80,892	\$95,148	\$109,404	\$123,660	\$137,916	\$152,172	\$166,428
8	Annual depreciation	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%		
9	Book value	87.5%	75.0%	62.5%	50.0%	37.5%	25.0%	25.0%	25.0%
10	Annual owning costs								
11	Licenses, insurance	\$7,000	\$7,000	\$7,000	\$7,000	\$7,000	\$7,000	\$7,000	\$7,000
12	Interest	\$14,000	\$12,000	\$10,000	\$8,000	\$6,000	\$4,000	\$4,000	\$4,000
13	Depreciation	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$0	\$0
14	Total per year	\$71,000	\$69,000	\$67,000	\$65,000	\$63,000	\$61,000	\$11,000	\$11,000
15	Total owning & operating	\$137,636	\$149,892	\$162,148	\$174,404	\$186,660	\$198,916	\$163,172	\$177,428
16	P/L for the year	\$29,764	\$17,508	\$5,252	-\$7,004	-\$19,260	-\$31,516	\$4,228	-\$10,028
17	Cumulative P/L to date	\$29,764	\$47,272	\$52,524	\$45,520	\$26,260	-\$5,256	-\$1,028	-\$11,056

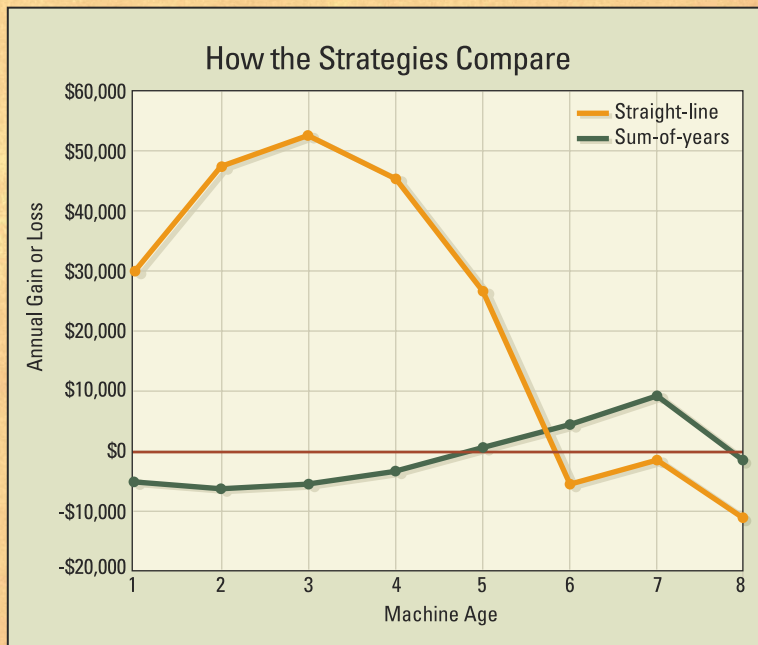
As we analyze straight-line depreciation, it becomes evident that profit and loss are too closely tied to machine age, which makes managing the machine more difficult.

ology (see How to Benchmark Repair Costs, April 2004, p. 77). Second, we calculate and add an amount to cover non-age-dependant items such as fuel, wear parts, tires and preventive maintenance. Let's assume \$30 per hour for an estimated \$54,000 per year (row 6). The total operating cost per year is in row 7.

Straight-line depreciation of 12.5 percent per year (rows 8 and 9) reduces the book value to 25 percent in year 6. The annual owning-cost calculation includes licenses and insurances, \$7,000 per year (row 11); interest at 4 percent on the book value (row 12); and depreciation at the stipulated 12.5 percent straight-line rate. The total owning cost per year is given in row 13, and the total owning and operating cost per year (row 7 + row 14) is given in row 15.

The profitability of the loader in each year is given in row 16 (row 3 minus row 15). Notice how the number varies over time. There are high "profits" in the first two years because repair parts and labor costs have not yet kicked in; big "losses" in the fourth, fifth and sixth years because depreciation charges of \$50,000 per year occur at a time when repair parts and labor have grown substantially; and a "profit" in the seventh year because the loader is now "out of depreciation." The euphoria of a \$52,524 cumulative "profit" after the first three years could lead to the justifiable belief that the loader's rate is \$9.72 per hour too high. The next three years show a loss of \$57,780 (\$7,004 + \$19,260 + \$31,516), and this agony could lead to the belief that the \$93 rate is \$10.70 too low. The cumulative picture for the loader (row 17) reveals that the assumed rate of \$93 per hour produces a cumulative loss of a little more than \$1,000 at the end of year 7.

We can change the picture significantly by altering our policy regarding operating depreciation charges. If operating depreciation is charged on the basis of the sum of years digits to 25 percent over six years (Year 1 is 6/21 of 75%, or 21.4%; Year 2 is 5/21 of 75%, or 17.9%, and so on), we eliminate the



Straight-line depreciation causes a machine's profitability to fluctuate more widely than it should.

annual swings in profit and loss. There are small losses in the first two years due to the fact that we are writing down the book value at a high rate. But the cumulative picture shows a gain of \$9,000 in year 7, compared to the \$1,000 loss in our straight-line example.

The line graph plots the cumulative results for the two depreciation policies, showing that straight-line depreciation produces results that are sensitive to the age of the machine. This is clearly a situation we want to avoid and much can be done by adopting a depreciation policy that mirrors the way operating costs vary with time.

The way we charge operating depreciation is entirely a matter of company policy. It should be reasonable, consistent and conservative. History or the simplicity in calculating the amount due should not be the overriding factors, and we must adopt a policy that helps rather than hinders fleet management.

Straight-line depreciation produces results that are sensitive to machine age. This is a situation we want to avoid, and much can be done by adopting a depreciation policy that mirrors the way operating costs vary with time.

INTRODUCING *The Best Warranty in the Industry!*

Our New Warranty Includes:

- Two years of bumper-to-bumper protection*
- Three year powertrain coverage*
- Unsurpassed parts availability*

For years, the name Hyundai has meant performance and durability in heavy equipment. Sure, other brands claim to be tough, but at Hyundai, we put it in writing! Starting now, Hyundai is offering the best overall warranty in the business.

This warranty is available on our complete line of 2005 Wheel Loaders and Excavators. Visit your local Hyundai dealer or call **800-423-8721** for more details.

**ask your dealer for limitations and restrictions*



HYUNDAI
CONSTRUCTION EQUIPMENT

955 Estes Avenue
Elk Grove Village, IL 60007
800.423.8721 • www.hceusa.com

Built for the Long Haul.
For information circle 23

VT 800 Daycab Comes with Big Power And Bold Look

The new truck sports Volvo D16 diesel with up to 625 horsepower and 2,250 pounds-feet of torque and Cummins' ISX with up to 565 horsepower and 1,850 lbs-ft.

When Volvo Trucks showed off its big VT 880 early this year, we noted that the highway tractor with its long sleeper had little use in construction fleets. But now there's a variant that does: VT 800, a daycab model that features the 880's Volvo D16 diesel with up to 625 horsepower and 2,250 pounds-feet of torque — now North America's strongest available truck engine — and Cummins' ISX with up to 565 horsepower and 1,850 lbs.-ft.

Also like 880, the VT 800 has a big nose to house a high-capacity radiator needed to cool the high-horsepower engines. The resulting high hood is also several inches longer than that on the VNL model, giving the VT 800 a bumper-to-back-of-cab measurement of 134 inches. Projector-beam headlamps are standard.

Styling features include a forward-set steer axle, exposed fuel tanks and battery box, outboard-mount exhaust stacks, and extensive chrome trim and polished-metal surfaces. These and the overall bold look, along with smooth fuel-saving air-flow, comprise what Volvo calls a modern interpretation of traditional styling favored by owner-operators and many fleet owners. The non-sleeper cab sits 8 inches farther back on the VN-based frame, enhancing the long-hood look.

Interiors are attractive and comfortable, with fabric or leather seats. Instruments and controls are within easy reach and along easy sight lines. Air-ride cab suspension, tilt-telescoping steering wheel, noise insulation and double-sealed doors provide a comfortable, quiet working place for the driver.

Safety has high priority at Volvo, so the VT 800 has features that protect drivers and passengers in the event of a crash. Its



VT 800 features bold styling and a big hood to house Volvo's D16 or Cummins' ISX diesels, with cooling to handle their high horsepower. The new model is built to pull heavily loaded lowboys and equipment trailers, as well as other duties requiring Big Power.

cab is made of high-strength steel, and the structure meets a tough Swedish Impact Test, which requires cab doors to remain closed during collisions but open afterward. The engine and transmission slide under the cab in a frontal collision. The Bendix Enhanced Stability Technology system, which helps prevent rollovers by cutting power and applying brakes in tight turns and emergency maneuvers, is standard, as are a driver air bag and energy absorbing steering column.

Available components include Eaton multi-speed manual and Autoshift transmissions, Meritor 12,000- and 13,200-pound front axles and 40,000- to 46,000-pound tandems, and Volvo air or steel rear suspensions rated from 38,000 to 46,000 pounds. Three frame rail thicknesses of 0.28, 0.31 or 0.38 inch provide resisting bend-moment ratings of 1,884,000, 2,112,000 and 2,460,000 inch-pounds, respectively.

The VT 800 will go into production early next year. Not affected is Volvo's VHD vocational model, which continues in production with Volvo's D12 diesel as its only engine offering. For information circle **183**



Introducing the **NEW M850**

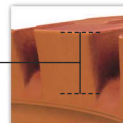
New from Bridgestone: Make your tire dollar go farther with **M850**, the deep-tread all-position on/off-highway radial that's built for long tire life.

The M850's ultra-wide tread features tie bars and an innovative block/rib tread design to fight irregular wear and block squirm for long, even wear.

Plus its ultra-wide tread provides superior flotation, even on heavily loaded steer axles.

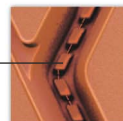
Extra-deep 24/32" tread

Deeper, tougher tread means longer tire life, even in rugged, off-highway job sites.



Casing-saving groove-bottom platforms

Improve retreadability by preventing trapped stones from piercing tread grooves and damaging the casing.



Notched shoulder design

Open shoulder design bites into soft surfaces, like mud and winter snow.



The M850 is a real answer for even wear and outstanding traction both on and off the highway. Ask your dealer how M850 can deliver long tread life. Or ask for this FREE brochure.

800-543-7522 trucktires.com

Good stuff.



M850 | ultra-stable footprint



For information circle 15

Allied/Rammer Makes Uncommon Promise

Two new hydraulic-hammer lines reflect the best of Rammer technology

You don't often hear a manufacturer tell a potential buyer that a product is "unbreakable." Yet that's exactly what Allied Construction Products promises about the breaking tool in the new Rammer in-Series range of hydraulic impact hammers. Tools break because operators get them stuck, then attempt to pry material apart to free them, says Allied's Al Springer, national sales manager. But the tools in the new Rammer series resist sticking, he says, by virtue of their trapezoidal shape and side-relief contours — and with 5-inch diameters, the tools are massive for these relatively small hammers.

But an unbreakable tool is not all the in-Series models offer, says Allied. The four models that make up the new series (in8, in11, in15 and in22, with energy class ratings of 200, 250, 350 and 500 foot pounds, respectively) also never need to be greased. That feature results from a sealed design that incorporates a single tool bushing made of composite material. In addition, says Allied, these new hammers reflect an efficient design that uses no vertical tie rods or side bolts to hold components together, and uses nitrogen only within a small accumulator to serve as a shock absorber between the hammer and the carrier.

So, are these the perfect hammers for mini-excavators, skid-steer loaders (both mini and full-size) and backhoe-loaders? Allied, of course, answers in the affirmative, but does caution buyers that in-Series models can't be used underwater and are not as quiet as Rammer models designed for sound-sensitive environments.

Also new in Allied's hydraulic-hammer range is the Rammer m-Series, which offers two models, the m14 and m18, having



The m14 requires a hydraulic flow of 48 gpm at 2,320 psi and breaks at the rate of 1,000 bpm. The m18 needs 58 gpm at 2,320 psi and delivers 800 bpm. The hammers have working weights of 3,042 and 4,145 pounds, respectively. Recommended carrier weights for the m14 range from 40,000 to 53,000 pounds, and from 46,000 to 71,000 for the m18.



Rammer in-Series models, which range in weight between 152 and 453 pounds, and deliver between 1,800 and 2,100 bpm, require hydraulic flows ranging from 8 to 18 gpm and operating pressures from 2,030 to 2,175 psi. List prices range from \$4,950 to \$8,750.

energy class ratings of 4,000 and 7,000 foot pounds, respectively. The m-Series models, says Allied's Springer, reflect an innovative modular design (housing module, impact module and tool module) that allows these three major components to be overhauled separately.

These new hammers also have a high power-to-weight ratio, says Springer, the result of using heavier pistons than typically would be employed. This design, he says, allows the tools to deliver an impact force that normally would be available only from a hammer of the next-larger size.

In addition, an "application selector" allows the hammers, in their "auto-shut-off" mode, to cease operation when the preload between the material and tool diminishes. In their "easy start" mode, the hammers will operate with no preload, such as when working in a difficult horizontal position. This feature is coupled with the capability to adjust impact energy to match working conditions — a feature, says Allied, that assists in achieving optimal performance.

Like the in-Series models, the new m-Series models do not use tie rods or side bolts. And like their smaller counterparts, says Allied, these larger hammers feature simpler maintenance, using a "RamLube" system that automatically greases the bushings. If the grease cartridge is empty, the hammer will not operate. Also featured on the m-Series is the RamData device, which is a blow counter that

signals via color-coded lights when specific maintenance is required. The m-Series is ideal for the demolition of concrete structures, foundations, pavement and trench rock.

For information circle **182**

position yourself to **Succeed**

THE
MIRAGE

LAS
VEGAS

OCT
23-26
2005

Space
is Limited!

Register
Today!

OVER 150 UNIQUE TRACK SESSIONS!

● Don't miss out!

- Learn about the complete suite of Trimble survey, construction, 3D laser scanning and GPS infrastructure solutions
- Find out where the industry is going when positioning experts discuss hot topics, including IP and telecommunications, wireless, and more
- Discover new applications and projects as users share their experiences, strategies and best practices

● Who should attend:

- Land Surveyors
- Construction Managers
- Civil Engineers
- Government/Transportation Agencies
- Dealers/Distributors
- Architects

Surveying, engineering and construction professionals:

Register now for Trimble Dimensions 2005 and learn the latest tips and techniques to **maximize your return on investment** with positioning technology. It's the only conference where you'll hear influential industry leaders, Trimble executives, technical experts and key business partners discuss proven strategies and practices that can **improve your profitability and productivity**. Move your business forward! Go to www.trimbleevents.com and reserve your spot now.



Photo Credit: "NASA/Neil Hagalla"
Dr. Scott Pace, Associate Administrator for Program Analysis and Evaluation, NASA HQ, Washington, DC. May 11, 2005

KEYNOTE—Breaking Barriers: Making the Impossible Possible

Find out how GPS will help navigate the world—and beyond. Join us as Dr. Scott Pace discusses how NASA is using GPS today, tomorrow, and its vision for the future. In addition, Scott will cover what is happening with GPS Modernization, US/EU agreement and GPS/Galileo working group meetings.



Erik Lindbergh, Vice Chairman, Lindbergh Foundation

KEYNOTE—History Repeats Itself: The Lindbergh Family Tradition

Be inspired as Erik Lindbergh discusses how he overcame crippling rheumatoid arthritis to retrace his grandfather's historic, NY-to-Paris solo flight in a small, single-engine aircraft—and the role GPS played in his epic journey.

With 8 dedicated surveying and construction tracks, plus Professional Development Training, you can move your career forward at Trimble Dimensions 2005.

Register Today!

www.trimbleevents.com

1.800.353.9374 • 1.415.446.7712

Trimble Dimensions

User Conference

2005

Move Your Business Forward

Market Watch Lite

By HEATHER BURLINGAME, Senior Production Editor

Indeco

HP (High Performance) Series breakers include the HP 1800 Side Plate Breaker, designed to increase productivity on large backhoe-loaders. It has an operating weight of 1,430 pounds and an MBMB ft./lb. class of 1,800. Hydraulic flow is 22 to 34 gpm to 1,800 psi to provide high-impact blow. An offset design allows the breaker to curl completely under the dipper of most large backhoes during transport. A new casing design helps protect the componentry from damage and debris, and a slim-line design provides improved maneuverability and increased operator visibility. The company has enhanced the intelligent variable speed and power system that automatically senses the hardness of the material being broken.

For information circle **184**



Robin Subaru

V-Twin cylinder series engines have an improved overhead valve configuration that boosts power and efficiency, the company says. A new rocker-assembly design reduces maintenance requirements over the life of the engine. A teflon oil seal was added on the intake valve to reduce long-term oil consumption and increase lift. An improved fin design increases the cooling capacity at the heads. The four-cycle gasoline engine series ranges from 18 to 25 hp.

For information circle **187**



Moribark

Models G52SP and D52SP travel quickly and grind quickly, says the company. The boom design creates a 52-inch cutting arc, and a hexagon-shaped cutter wheel offers low resistance and friction through the stump. Six multi-tipped cutting tools are fastened with one bolt and deliver the grinding performance of 24 teeth, the company says. Powered by either a 27-hp Kohler gas or 34-hp Caterpillar diesel, the grinders have a top speed of 3.2 mph. Standard warranty is one year on the machine with an OEM warranty on the engine.

For information circle **185**

Michelin

The X-Haul radial tire is now available in 24.00R35. The larger tire has square shoulders and reinforced sidewalls for protection in severe operating conditions. An unbroken central lug on each tread helps the machine perform when traction and speed requirements change. An open-tread design and advanced rubber compound provide cool running.

For information circle **186**



Multiquip

Rammax's new RAV Series boom-mounted compactors are ideal for slope and hillside compaction, structure backfill, pipeline construction, and work in confined spaces. The RAV-700P generates 18,450 pounds of centrifugal force and fits 7- to 20-ton excavators. The RAV-1000P is ideal for larger jobs, with 24,750 pounds of impact force. It fits excavators from 18 to 40 tons in weight. Available in late 2005, the RAV-400P is designed for 2- to 15-ton mini-excavators. It produces 11,700 pounds of impact force. Steel-wrapped hydraulic hoses provide protection, and diagonally mounted rubber mounts extend the attachment life.

For information circle **188**




QUALCOMM®

"It came down to monitoring the oil pressure or my blood pressure."

Stan remembers the day he got the nickname "Big Red." He and the bookkeeper were going over his rental company's quarterly numbers. When he saw that the loss of two machines because of blown engines had killed profits for the period, he had a blow-up of his own.

"I think my face turned the color of a tomato," Stan says. "I was especially steamed because we'd had this problem before — warning lights flashing all over the dashboard, which we knew nothing about. Our operators weren't paying attention, and we had no way of tracking equipment performance in the field."

Stan realized he needed a new approach to keeping his equipment healthy and profitable. Luckily, a friend in the business had heard about the new sensor capabilities now available in QUALCOMM's GlobalTRACS® equipment management solution.

GlobalTRACS constantly monitors location and engine usage on every machine, and then sends the information directly to your computer.

GlobalTRACS' new sensor technology provides customized alert monitoring of critical engine functions like oil pressure and temperature, transmission pressure, hydraulic systems, and more. When a function goes into the red, GlobalTRACS sends a text message alert, giving Stan time to react.

GlobalTRACS gave Stan the information he needed to make changes in his operations that dramatically cut failure-related losses, improved efficiency and utilization, and lowered usage and maintenance costs.



Get the whole GlobalTRACS story by visiting www.qualcomm.com/ce or call (800) 348-7227.

WIRELESS SOLUTIONS BY QUALCOMM
For information circle **27**

© 2005 QUALCOMM Incorporated. All Rights Reserved. QUALCOMM and GlobalTRACS are registered trademarks of QUALCOMM Incorporated. These characters are fictional but stories are based on actual events.

Lite



Coneqtec

For small milling projects, the Coneqtec/Universal MP Mini planer features a patented open-drum design with a direct-drive, high-torque motor that attaches to mini-skid-steer loaders. The open-drum design eliminates remilling and maximizes productivity, says the company. Optional widths range from 3 to 12 inches. Two position mounts are available.

For information circle **189**

Carlisle Tire & Wheel

Guard Dog was specifically designed for skid-steers. It not only offers traction, but also puncture, impact and abrasion resistance. Tires are available in 10-16.5 and 12-16.5 sizes.

For information circle **190**



Hard Dollar

The company has added two modules to its Bid*Build software suite. The Change Management and Pay Requests & Approvals modules add profit-capturing functionality to contractors. Change Management automatically monitors the job for any changes that affect the job's cost or price. With Pay Requests & Approvals, users can automate invoicing customers and paying suppliers accurately and timely. It also automates the task of tracking revenue earned from time and materials items.

For information circle **191**

► Allied Construction Products

The four models in the new in-Series hammers use a massive, trapezoidal tool, which is non-breakable, even when operators pry with it, says Allied. The hammers use only a single tool bushing made of a composite, wear-resistant material that eliminates the need for greasing. The hammer design also eliminates tie rods and tie bolts normally required to retain hammer components. A nitrogen accumulator is used, but only as a shock-absorbing device to cushion the carrier's hydraulics from pressure spikes. Designed for use on skid-steer loaders (mini and standard), compact excavators and backhoe-loaders, the new hammer models range in weight from 152 to 453 pounds.

For information circle **192**



► Bobcat

Over-the-tire steel tracks for skid-steer loaders deliver improved traction, flotation and riding comfort. The tracks feature pads and traction bars made of ductile casting, heat-treated durable bushings and links, easily replaceable parts, and tire-protection and guidance. The company says the tracks' dual induction hardened pads and traction bars have 3.5 times more wear volume when compared to other brands, and provide excellent traction and long life. Parts can be replaced in the field with a wrench.

For information circle **193**

Perkins

No fuel-system electronics are required in the 1104 Series engine. Instead, a mechanical fuel-management system achieves Tier 3 emissions compliance. The engine features elements of Caterpillar's ACERT Technology in a package that can be substituted directly for existing 1104C Series engines with no re-engineering. The engines are also available with electronic fuel-management systems and Cat's ACERT Technology.

For information circle **194**



**Out Here
There's No Room
For Excuses.**



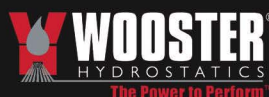
Rebuilding The Best Pumps With OEM Parts.

You've got a six figure rig working on a seven figure project and a little thing like a hydraulic pump shuts you down. It's times like these when rebuilding with OEM replacement parts becomes mission critical. And nobody does it faster or better than Wooster.

your pump was re-manufactured with the finest OEM parts. And you're assured that Wooster Hydrostatics and Fluid Power Solutions rebuilds and test every pump and motor to meet or exceed factory specifications.

While most repair shops need 7-10 days, Wooster Hydrostatics delivers in 3-4 on standard lead times. Or you can get the 24 hour V.I.P. service and you're back in business knowing that

Whether you're in the Construction, Forestry, Mining, Marine, Railroad or Industrial Markets. . . Wooster Hydrostatics and Fluid Power Solutions delivers the power to help you perform. Call today for more information.



4570 WEST OLD LINCOLN WAY • WOOSTER, OHIO 44691
PHONE 330.263.6555 • FAX 330.263.4463
TOLL FREE 1.800.800.6971 (USA)
SALES@WOOSTERHYDROSTATICS.COM
WWW.WOOSTERHYDROSTATICS.COM

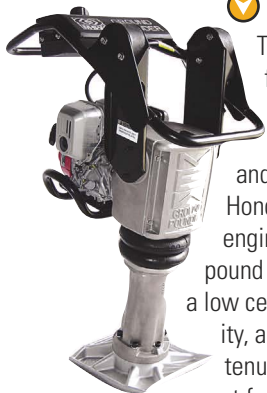


3700 PARKWAY LANE, SUITE M • HILLIARD, OHIO 43026
PHONE 614.777.8954 • FAX 614.777.8640
SALES@FLUID-POWER-SOLUTIONS.COM
WWW.FLUID-POWER-SOLUTIONS.COM

For information circle **28**

Market Watch Lite

MBW



The R440HC features an 11-x13-inch shoe and a 3-hp Honda 4-cycle engine. The 142-pound rammer has a low center of gravity, a noise-attenuating 4.6-

quart fuel tank, 4-ply steel and fiber reinforced bellows, and a cool-running delivery system. The unit delivers up to 700 bpm at 4,500 pounds/blow. An optional digital tachometer tells operators if the rammer is within optimal performance range.

For information circle **195**

Kaeser Compressors

With a Sigma Profile airend and an 18-horsepower industrial Briggs and Stratton gas engine, the M14 portable rotary-screw compressor produces 50 scfm at 100 psi. Variable pressures from 70 to 190 psi are also available. A lightweight, wheel-mounted package with hinged handlebar offers easy handling. For quiet operation, vibration-isolator pads absorb shock from the engine and airend.

For information circle **196**



Boss



Boss snowplows now include the SmartTouch 2 handheld control. Used with the company's Power V-plow, the five-button control moves one wing at a time or two wings simultaneously. The three-button version works with Straight-Blade plows. An express up-and-down capability allows the blade to automatically rise and drop.

For information circle **197**

ECCO

7500 Series LED beacon offers a high-intensity light output with the option of low-light intensity. It also features two smart-intensity (self-adjusting) functions and battery monitoring, which flashes an error pattern when power becomes critical. The unit draws as little current as 0.9 amps, depending on the flash pattern, and is available in three configurations: permanent mount, vacuum-magnet mount and battery pack versions.

For information circle **198**



Maximize your equipment investment.



Count on Cat for Your Equipment Training Solutions

Increased production—just the start of the bottom line benefit of Caterpillar Equipment Training Solutions (ETS). Trained operators let you take full advantage of the productivity and value built into your Cat® machines. The benefits of ETS are so substantial, the training can quickly pay for itself.

For more information on Caterpillar Equipment Training Solutions or to enroll in a class, call toll-free 800-962-6628.

- Increased production
- Lower repair costs
- Increased safety
- Reduced downtime
- Longer machine life
- Higher resale value

Teydo BV

FleetOnline features the MobiSPOT Location platform that retrieves equipment-location information from many sources. Clients can register for the tracking system, choose a subscription level to the wireless network service, and purchase Trimble's Trim-Trac locator GPS units (\$249) at www.fleetonline.net. Trim-Trac receives signals from satellites, then reports status, position, speed and direction over any of the four mobile networks. For one year, service is \$99 per unit. Based on usage and reporting frequency, the user can subscribe to monthly transaction bundles starting at \$7.

For information circle **199**



Caterpillar

Non-Marking Extreme Duty Solid Flexport tires for skid-steer loaders are designed with elliptical-shaped holes to reduce the cracking and chunking that occurs on conventional solid tires with a round-hole design. A sturdy sidewall improves the ride, says the company, and shock absorbing qualities reduce operator fatigue and stress on the machine. The tires are available in two sizes: 31x6x10 and 33x6x11.

For information circle **200**

Daniel Mfg.

The Beak attachment for skid-steer loaders is ideal for concrete removal and material handling. The unit's bottom shoe increases the skid-steer loader's breakout force, and a powerful top jaw maintains a solid grip. Overall width is 46 inches, overall height is 28 inches, and the jaw-opening distance is 38 inches. The attachment weighs 520 pounds.

For information circle **201**



ABS Pumps

The company's dewatering pumps require no priming and can be left unattended while working underwater. A sealed-motor design features automatic protection, and the double outer casting allows running the pump dry or in snore condition without damage. A wide base is available for use on soft-bottom applications, and a slim centerline pump is ideal for applications where space is limited. The pumps can handle drainage volumes of 5,500 gpm.

For information circle **202**



ONE FOR ALL!

Make Trail King Your ONE Stop For ALL Your Trailer Needs, Including...

Live Bottom Trailers

Steel Side Dumps

Hydraulic Detachables

Pneumatic Dry Bulk Trailers

Bottom Dumps

Aluminum End Dumps

Hydraulic Sliding Tail Trailers

Sliding Axle Trailers

Ask Us About... **TRX EXPRESS** Financing Low Rates and Fast Approval

Trail King industries

A CARLISLE Company

Trail King — Your Complete Trailer Team

Trail King Industries ■ 800-843-3324 ■ www.trailking.com

For information circle **30**

Market Watch Lite



Allied Construction Products

m-Series Rammer hydraulic impact hammers (the m-14 and m-18) have extra-heavy pistons for an efficient power-to-weight ratio. A modular design allows major assemblies to be serviced separately, and they use no tie rods or tie bolts to secure the modules. Impact energy is adjustable to match working conditions, and the user can select either of two operating modes. "Easy-start" mode allows operators to use the hammer when little pre-load can be applied (such as in horizontal breaking), and the auto-shut-off mode ceases hammer operation when sufficient pre-load is lost.

For information circle **203**

Multiquip

MT-65HA, MT-74FA and MT-84FA rammers feature contoured handles for reduced vibration and duck-billed fuel caps and diaphragm carburetors that allow operators to lay down the units without fuel spills. The MT-65HA delivers 2,900 pounds of impact force on 645 to 695 bpm. It weighs 152 pounds. At 179 pounds, the



MT-74FA generates 3,100 pounds of centrifugal force. The MT-84FA delivers 3,500 pounds of impact force on 660 to 700 bpm and travels to 36 fpm.

For information circle **204**

Leading Edge Attachments

SHARC Slab and Skeleton Multi-Ripper Buckets work like trenchers, but use the excavator's rolling action to rip. No two ripper teeth align; maximum breakout force is applied sequentially to each tooth. Because the bucket is wider than the excavator stick, it can rip the sides of the trench,



not limiting the depth. For information circle **205**

Kano Laboratories

Kroil loosens frozen metal parts and breaks the bonds of rust without harming the metal, says the company. It penetrates to 1-mil-



lionth-inch spaces, lubricates, cleans and prevents rust. The oil also displaces moisture.

For information circle **206**

Non-Genuine Parts May Seem Affordable – But Can You Afford the Loss of Productivity When They Fail?

The answer, of course, is no. That's why Spicer, the manufacturer of off-highway axles, drivshafts, transmissions, and transaxles, has worldwide availability of genuine replacement parts and service for Spicer,® Spicer® GWB, Spicer® Italcardano, Sige,™ Comaxle, Kirkstall,® and Clark-Hurth™ brands. Ask your OEM dealer or contact one of our authorized off-highway service centers about genuine Spicer replacement parts.

Visit us at **BICES China**.



Visit our Web site at
<http://offhighway.dana.com/a25>

SPICER®

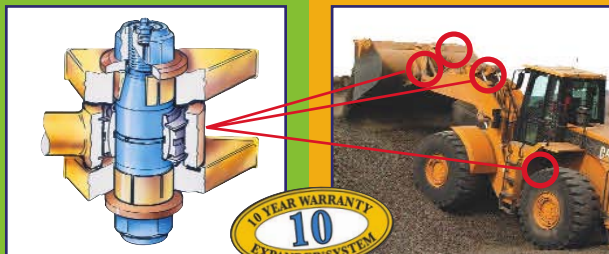
SPICER® GWB
SPICER® ITALCARDANO
SIGE™
COMAXLE®
KIRKSTALL®
CLARK-HURTH™

People Finding A Better Way®

For information circle **31**

Construction Equipment (ISSN 0192-3978, GST #123397457, C.P.C. Intl. Pub. Mail #0360139) is published monthly by Reed Business Information, 8878 S Barrons Blvd., Highlands Ranch, CO 80129-2345. Reed Business Information is a division of Reed Elsevier and is located at 360 Park Avenue South, New York, NY 10010. Jim Casella, Chief Executive Officer; Jeff Greisch, President, Chicago Division. **Construction Equipment** copyright 2005 by Reed Elsevier Inc. All rights reserved. **Construction Equipment®** is a registered trademark of Reed Elsevier Properties Inc. and Reed Business is a registered trademark of Reed Elsevier Inc. Periodicals postage paid at Littleton, CO 80126 and additional mailing offices. Circulation records are maintained at Reed Business Information, 8878 S Barrons Blvd., Highlands Ranch, CO 80129-2345. Tel: 303/470-4445. **Postmaster: send address changes to Construction Equipment, P.O. Box 7500, Highlands Ranch, CO 80163-7500.** Rates for non-qualified subscriptions, including all issues: USA, \$99.90 1-year, \$177.90 2-year; Canada, \$151.90 1-year, \$257.90 2-year; (includes 7% GST, GST #123397457); Mexico, \$141.90 1-year, \$240.90 2-year; foreign surface, \$194.90 1-year, \$332.90 2-year; foreign air expedited surcharge add \$4.00 per issue. Except for special issues where price changes are indicated, single copies are available for \$10.00 USA and \$15.00 foreign. Please address all subscription mail to **Construction Equipment**, 8878 S Barrons Blvd., Highlands Ranch, CO 80129-2345. Printed in the USA. **Publications Mail Agreement No. 40685520. Return undeliverable Canadian addresses to: Deutsche Post, 4960-2 Walker Road, Windsor ON N9A 6J3 Email: subsmail@reed-business.com** Reed Business Information does not assume and hereby disclaims any liability to any person for any loss or damage caused by errors or omissions in the material contained herein, regardless of whether such errors result from negligence, accident or any other cause whatsoever.

NO MORE LINE BORING



Line boring is expensive and time consuming, yet only temporary – wear will appear again. The Expander System is the only permanent solution, available in all sizes for all types of machinery. The repair is so simple and easy, it can often be done on-site. The Expander System sleeves expand to lock into the worn pivot and permanently eliminate the lug wear. No more line boring. No down time. No transport to the workshop. Problem solved, once and for all.

Expander® 888-935-3884

Fax: 888-935-3643 info@ExpanderAmericas.com

www.ExpanderAmericas.com

For information circle 135

Breaking Concrete? TAKE YOUR JOB BY STORM

CYCLONE®

Concrete Breakers



- Shock Free to the Carrier
- High Production
- Low Cost

**Call for Local Dealer and
Free Demonstration Video**

(800) 525-6828 or (706) 253-7404

UNIVERSAL IMPACT TECHNOLOGIES

www.powersledge.com

For information circle 136

Talk It Up

Even before a new project begins, establishing a voice communication system is vitally important. Running telephone lines takes too long, is a hassle and costs a fortune. Is this acceptable? No, it is not!

Ritron offers 3 simple steps to solve the problem:

1. Install the Outpost Callbox (in minutes, not days) at key site locations.
2. Workers can then speak into the Callbox to talk with supervisors at a distance (in miles, not feet).
3. Supervisors can then reply instantly using most any handheld radio or base station.

Put Ritron's two-way radio gear to work for you without costly trenching, hard wiring or monthly fees. And then ... **USE IT AGAIN AND AGAIN AND AGAIN.**

For more information, call 800-872-1872 today!



Call 800-USA-1-USA (800-872-1872)

P. O. Box 1998 • Carmel, IN 46082 • Email: sales_info@ritron.com • **www.ritron.com**



Go Beyond Normal Limits...SM

RITRON®
WIRELESS SOLUTIONS

Tele-Boom & Tele-Fork

We'll Give You a Lift!!!



Tele-Fork



**Pallet
Carrier**



**Sheet
Carrier**

The perfect add on tools for your skidsteer.

- Tele-Boom safely reaches from 8'6" to 30'
- Tele-Fork adds 70" of lifting height
- Highly maneuverable
- Proven in the field to save time and money
- Fits most popular skid steers



(800) 797-1883

(701) 797-2700 • www.sheyennemfg.com

For information circle 138

FLAT PROOF SKID STEER TIRES

10 DAY FREE TRIAL

IF YOU'RE UNSATISFIED
WITH YOUR PURCHASE
FOR ANY REASON, JUST
RETURN IT AND WE WILL
REFUND YOUR PURCHASE
PRICE AND ROUND TRIP SHIPPING

NU-AIR TYRESM
series

Semi-Pneumatic Tire TechnologySM

- 3 to 5 times the life expectancy of pneumatic tires
- Smooth air-cushioned ride
- Zero downtime from unexpected punctures
- Exceptional performance on-and-off road
- Incredible shock absorption to prevent skid loader damage
- Rim included for easy installation
- Works well with over-the-tire tracks
- Maintenance-free tire



1-800-836-0040 Ext. 6171 Contractors
Ext. 6172 Dealer/Rental

www.mclarenindustries.com

For information circle 139

Available for immediate delivery!



4 x 6 x 14-inch wall main rails, 3/16-inch hopper sheets — actual weight: 12,600 lbs.—Built to be sold at a competitive price!

**For the fastest delivery
see your local Clement distributor
and get on the list!**

CLEMENT
America's Leader
IN DUMP TRAILERS

P. O. Box 914, Minden, LA 71058-0914, 1-800-562-5848, www.clementind.com

For information circle 140

STELLAR INDUSTRIES *Quality You Ask For By Name*

Hooklifts

- Interchange bodies with one chassis
- Lower overhead costs
- Reduction of required maintenance
- Over 50 models available

Mechanic Trucks

- 2,000-14,000 pound lifting capacities
- Hexagonal boom construction
- Faster winch speed
- Radio Remote is standard feature



CALL TODAY
800-321-3741



Visit our website

www.stellarindustries.com

For information circle 141

Visit us at ICUEE:
Booth #1007
Louisville, KY

LOADED WITH **power**

Enhance the efficiency of your work vehicle with the versatile *PowerBox* 3-in-1 vehicle mounted welder/generator/compressor unit. Powerful enough for any job, *PowerBox* units are designed for most pickup trucks, service body and utility vehicles and offer up to:

- 350 amps of **welding**
- 12,800 watts of **power**
- 65 CFM of **air**
- Optional 800 amp **battery jumper**
- Optional 6-8 GPM of **hydraulics**

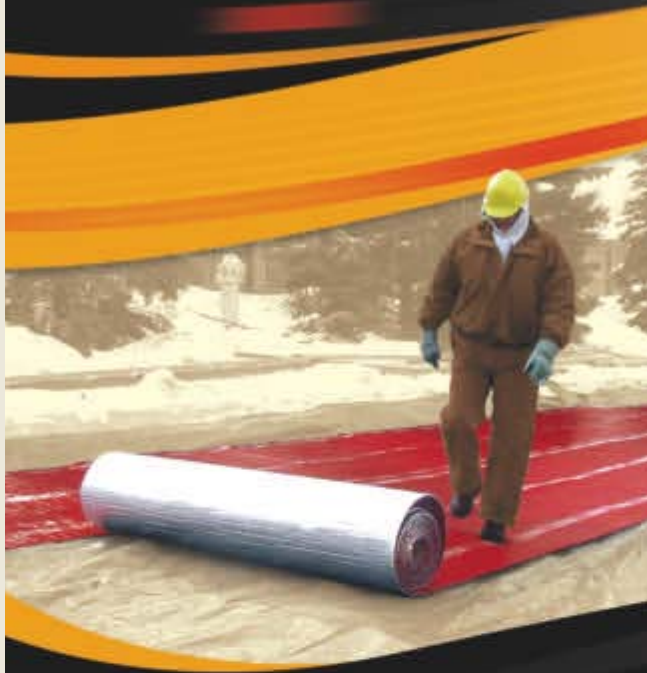


877-693-7269

www.187POWERBOX.COM

For information circle 142

We're Rolling out
the **Red** Carpet!



With Red Wave™ Insulation Blankets.

Been using the same old shabby insulation blankets from one job to the next? It's time to treat yourself to easier set-ups, more productivity and increased profits. Roll out the red carpet with Red Wave™.

- Treat Yourself.** Lightweight design makes setups a simple, one-person job.
- Treat Your Jobsite.** Innovative material reflects more heat downward, while also conducting heat laterally. Thaw faster. Cure concrete more evenly.
- Treat Your Wallet.** Easier setups mean lower labor costs. Less weight and compact size means less freight and storage costs. Increased productivity means a job done right – and on time.
- Treat Your Fleet.** Ideal for use with hydronic ground thawing and concrete curing equipment, such as the units available from Ground Heaters, Inc. – the pioneers in portable hydronic heating systems.

For information
circle 143

Ground Heaters Inc.

Pioneering Heat Technologies

(231)799-9600 • www.groundheaters.com

PALFINGER SERVICE CRANES:
Proven Reliability You Can Count On

PALFINGER

- More Power
- More Reach
- 4 Models
- 3,200 lb. capacity to
- 6,600 lb. capacity
- Radio Remote Control
- 3 Year Warranty
- Service You Can Trust

**Work Ready Packages
Available**

Dealer Inquiries Welcome

www.palfinger-northamerica.com

In U.S.A.: Palfinger USA, Inc.
4151 West State Route 18
Tiffin, OH 44883
Tel: 419-443-8431
Fax: 905-374-1203

In Canada: Palfinger Inc.
P.O. Box 846
Niagara Falls, ON L2E 6V6
Tel: 905 374-3363
Fax: 905 374-1203

Palfinger North America: 1-800-567-1554

For information circle 144

Announcing the 2006 HISTORICAL CONSTRUCTION EQUIPMENT ASSOCIATION



Calendars

Only Calendar of this type Offered!



Featuring 12 Full Page Black & White Photographs
Depicting Construction Equipment from all Eras!

2006 HCEA Calendar Order Form

Please send _____ copy(s) of the 2006 HCEA Calendar @
\$9.00 each. \$ _____ Total Enclosed. (Shipping and
Handling is included. Ohio residents add your county sales
tax.)

Ship to: _____

Contact: _____

Street: _____

City, State, Zip: _____

Daytime Phone: _____

Send check or money order (US funds only) to:

HCEA

16623 Liberty Hi Rd.
Bowling Green, OH 43402

**Dealers!
Contractors!
Distributors!**

Get exposure to your com-
pany name 365 days a year!
Order your calendars with
CUSTOMIZED IMPRINTS for
your business!

Go to www.hcea.net to
download an order form.

Call us at 419/252-5616 to order by
phone with your VISA, MC or DISCOVER
or fax order to 419/252-6086

SOFTWARE

Earthwork & Utility Take-Off & Layout Software



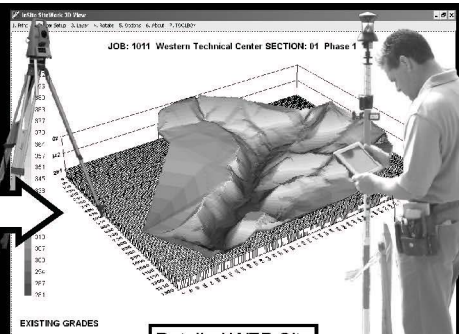
1(877)746-7483

InSite SiteWork™ combines ease-of-use with the most powerful estimating features available; Cut & Fill calculations from paper plans, CAD files, or a combination of both, detailed sanitary & storm take-offs. Verify and revise with the Dynamic Site Balancer. Negotiate your jobs with the most complete reports and highest quality graphics.

from CAD file to finished take-off in 10 Minutes!

Use Field General® to generate construction staking data, or control your GPS/ robotic total station, and export surface data to machine control.

InSite SiteWork™
A Start to Finish Earthwork Solution.™

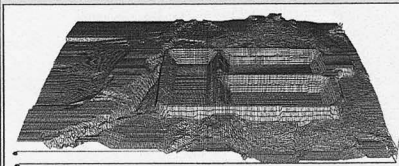


Detailed WEB Site

WWW.INSITESOFTWARE.COM

EarthWorks™ Excavation Software

Fast • Accurate • Intuitive



EarthWorks for Site Excavation - estimate your • Cut & Fill Volumes • Topsoil Stripping & Respread Volumes • Subgrade & Demolition Volumes • Material Quantities • Site Balancing • Borings • Pipe-Trench Length & Backfill Volumes. Also includes: Length, Area, & Count Measuring • Rough Staking • Color 3-D, Elevation, Cut and Fill & Cross-section Reports • "Voice Verification" reduces errors. Work in English or Metric.

EarthWorks for Pipe Trenching - estimate excavation & materials from your piping profile drawings.

EarthWorks for Cross Sections - estimate from your road, transitway or canal cross-section drawings.

QuickMeasure - add quantity survey capabilities to your spreadsheet or estimating software.

For more information, contact Trakware at (888) 790-6298, fax us (505) 275-6191 or visit our website at www.trakware1.com

PRODUCTS FOR SALE



Vinyl Cab Enclosures Will Prevent You From Freezing This Winter.

We offer over 575 different cabs and heat tubes for **Cat, Komatsu, John Deere, Case, Dresser** and dozens of other models. Our cabs are designed to fit crawler tractors, crawler loaders, backhoes, compactors, skid steers, telescopic handlers, and mini excavators. For technical questions only call 609-859-4384. To order a cab, contact your local equipment dealer.
www.fremar.com

AGTEK

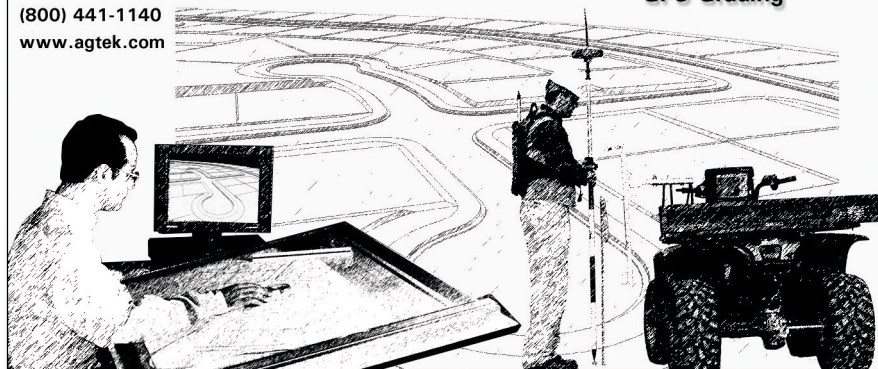
dirt.simple.solutions.

(800) 441-1140
www.agtek.com

Dirt Takeoff

3D Modeling

GPS Grading



SAFETY

YOUR HEARING IS IMPORTANT. PROTECT IT.

Comfortable, custom fit to your ear. Blocks loud sounds but allows you to hear speech at close to normal levels.

Call 952-882-9190

Custom Hearing Protection, Inc.

USED REPAIR PARTS

USED REPAIR PARTS

Wheel Loaders, Crawlers, Track Excavators, Loader Backhoes, Skidders, Skid-Steer Loaders, Engines & Transmissions



Schaefer Enterprises

"Meeting The Challenge For 38 Years"

800-626-6046 • 618-833-5498

www.sewlparts.com • parts@sewlparts.com



P.O. Box 136
Wolf Lake, IL 62998



Don't miss your opportunity to advertise in the next issue of
CONSTRUCTION EQUIPMENT Magazine

Contact:

Jan Varnes • 630-288-8143

Mary Adeo • 630-288-8134

RECRUITMENT

WORK IN ANTARCTICA

Exciting deployment, contract positions available:

- Heavy Equipment/Crane Operators
- Power Plant • Mechanics • Fleet Operations
- Various Construction/Trade Disciplines

Raytheon Polar Services

www.polar.org

EOE

Equipment/Fleet Mgrs. Dealer/Manufacturer Mgrs.

Send Resumes

Recruiters • Consultants • Trainers
Kelly Walker Associates 214-320-3006
Equip. Mgmt. Training Pubs. Avail.

Company	Page No.	Circle No.	Company	Page No.	Circle No.
Bell Equipment North America	89	34	Mack Trucks	49, 51, 53	16
Bridgestone/Firestone Off-Road Tire	70	15	McLaren Rubber Industries	82	139
Caterpillar Equipment Training Solutions	78	29	Multiquip	13	—
Caterpillar Mid-Size Wheel Loaders	33-38	—	Mustang Mfg.	47	24
Caterpillar Motor Graders	55-56	—	*NES Rentals	72C-72D	—
*Caterpillar Delta Group	72	25	Palfinger North America	84	144
Clement Industries	82	140	Peterbilt Motors	11	3
ConocoPhillips	45	14	Power Pavers	17	8
Dana Off-Highway Systems	80	31	Qualcomm	76	27
Dodge Trucks	90-C3	—	Ranco Trailers	63	22
Dynamic Power Source	83	142	Ritron	81	137
Expander Americas	81	135	Sakai America	61	20
Fairbanks Scales	58	19	Sheyenne Tooling & Mfg.	82	138
Ford Trucks	C2-3	1	Stellar Industries	83	141
*General Engines/Eager Beaver Trailers	87	32	Topcon Positioning Systems	40-41	13
GMC - Chevrolet Medium Duty Trucks	C4	—	Trail King Industries	79	30
Ground Heaters	84	143	Trail-Eze	12	6
Hertz Equipment Rental	19-20, 21	9, 150, 156	Trimble Construction Div.	6	4
Huskie Hydraulic Hammer	62	21	*Trimble User Conference	72	26
Hyundai Construction Equipment USA	68	23	Universal Impact Technology	81	136
Ingersoll-Rand	4	2	Volvo Construction Equipment	8	5
John Deere Construction Equipment	27	11	Western Star Trucks	29	12
Liebherr	25	10	Wooster Hydrostatics	77	28
Lincoln Electric	14	7			

* Regional/Demographics Publisher assumes no liability for errors or omissions.

Sales Representatives

Reed Business Information, 2000 Clearwater Dr.,
Oak Brook, IL 60523; Fax: 630/288-8185

IL, MI, WI, OH

Patricia E. Maroder, Regional Manager
630/288-8139; pmaroder@reedbusiness.com

IA, IL, MN, ND, SD

Mary Adey, Regional Manager
630/288-8134; madee@reedbusiness.com

East, Southeast, Eastern Canada

Michelle Lorusso, CBC, Regional Manager
630/288-8138; mlorusso@reedbusiness.com

Southwest, West, Western Canada

Terry McGinnis, Regional Manager
801/273-8790; Fax: 801/273-8799
tmcginnis@reedbusiness.com

UK/Europe/Middle East

Mike Hancock
Quadrant House, The Quadrant
Sutton, Surrey SM2 5AS, UK
Tel: 011 44 208/652 8248
Fax: 011 44 208/652 8249

Special Advertising Products

Jan Varnes, Account Representative
630/288-8143; jvarnes@reedbusiness.com

Subscribe to *Construction Equipment* magazine online at www.getfreemag.com/ce



We found it.

**Looking for a needle in the haystack
when you're online?**

www.ConstructionEquipment.com cuts through
the online clutter and gives you the information
you really need to get your job done.

Get informed on equipment and make your purchasing decisions
easy with our award-winning Buyers Guide. Search more than
2,000 manufacturers, and 5,000 distributors.

NEW PRODUCTS Keep up on the latest in new
equipment with our searchable Market Watch section.

USED EQUIPMENT Check out MachineMart, a billion-dollar
inventory of used construction equipment available from
the leading dealers in North America.

**Forget the haystack.
Get what you need.**

www.ConstructionEquipment.com
The Internet home of Construction Equipment magazine

**CONSTRUCTION
EQUIPMENT**

Iron Works

By KEITH HADDOCK, Contributing Editor



Volvo's 1-ton H10 was a farm tractor with its hydraulic loader attachment placed over the larger rear wheels, thus making it possible to carry heavier loads with a higher breakout force.

loader from the ground up. In 1965, Volvo introduced loaders with four-wheel drive and power-shift transmissions. Articulated models appeared in 1970, and 1980 saw the launch of a new generation of loaders that Volvo claimed were the world's first with automatic power-shift.

Volvo's history began in 1832 when Johan Teofron Munktell founded the engineering firm of Eskilstuna Mekaniska Verkstad at Eskilstuna, Sweden. In 1844, brothers Jean and Carl Gerard Bolinder founded a parallel engineering company that by 1920 was the market leader in marine compression engine manufacture. The Bolinder and Munktell companies merged in 1932 under the

Bloodline of a Wheel Loader

Volvo's first wheel loader, launched in 1954, was an important milestone in this Swedish company's history

Last year, Volvo celebrated a half century of wheel-loader manufacture. Today's sophisticated machines bear little resemblance to the company's pioneering H10 wheel loader of 1954, but its simplicity and reliability gained it instant success and earned it a reputation that would associate the Volvo name with wheel loaders the world over.

The 1-ton-capacity H10 was essentially a back-to-front farm tractor with its hydraulic loader attachment placed over the larger rear wheels, thus making it possible to carry heavier loads with a higher breakout force. It was also the first wheel loader to be equipped with an attachment bracket to enable rapid changing of bucket and attachment. This innovation became a Volvo trait and evolved into the "quick-hitch" or tool carrier offered by most of today's loader manufacturers.

The H10 was produced for five years before being superseded by the LM 218, a machine purpose-built as a wheel

loader from the ground up. In 1965, Volvo introduced loaders with four-wheel drive and power-shift transmissions. Articulated models appeared in 1970, and 1980 saw the launch of a new generation of loaders that Volvo claimed were the world's first with automatic power-shift.

Volvo's history began in 1832 when Johan Teofron Munktell founded the engineering firm of Eskilstuna Mekaniska Verkstad at Eskilstuna, Sweden. In 1844, brothers Jean and Carl Gerard Bolinder founded a parallel engineering company that by 1920 was the market leader in marine compression engine manufacture. The Bolinder and Munktell companies merged in 1932 under the name of Bolinder-Munktell and became the biggest manufacturer of tractors and agricultural machinery in Sweden. It was these tractors that formed the basis for the H10 wheel loader.

During World War II, collaboration between Bolinder-Munktell and Volvo resulted in Volvo acquiring the company in 1950, changing the name to Volvo BM. It then became part of the VME Group (Volvo, Michigan, Euclid) in 1985. Volvo gained access to the Michigan line of wheel loaders, whose designs enhanced Volvo's own, resulting in a single line of loaders, the L-series, marketed under the Volvo name.

You can read more about the evolution of construction equipment in Keith Haddock's illustrated book "The Earthmover Encyclopedia," available in most bookstores. Also, consider a membership in the Historical Construction Equipment Association, www.hcea.net. Be sure to visit ConstructionEquipment.com for past Iron Works features.

EARTHMOVING WITHOUT ALL THE BULL

54 YARDS. 1 PASS. 1 OPERATOR. 1 TOUGH TRACTOR.

Top 100
new products **2004**



THE WORLD'S FIRST PULL SCRAPER TRACTOR DESIGNED AND BUILT FOR CONSTRUCTION

With a 4206D Bell Tractor and pull scrapers of your choice, you can move up to 54 yards of dirt in one pass. Without any additional push or pull equipment. Without any bull.

This big, strong, reliable 422 hp tractor with 62,000 lbf of drawbar pull can pull up to three, heaped 18-yard scrapers and other attachments to help you make money fast.

So if you're planning to invest in an earthmoving operation, don't get stuck with a motorized scraper. Contact your local Bell dealer today.



Bell Equipment North America, Inc.
2843 Highway 80 West
Garden City, GA 31408
877-966-2615 • www.bellequipment.com
For information circle 34

GRAB LIFE BY THE HORNS



FASTEN YOUR TOOLBELTS.

DODGE COMMERCIAL VEHICLES. LET'S GET TO WORK.

RAM 3500 › Available Cummins® Turbo Diesel › Over 16,000 lb towing capacity*

RAM 1500 › Available 5.7L HEMI® V8 › Unsurpassed horsepower in a half-ton pickup › Tows over 9,000 lb*

SPRINTER › Premium 2.7-liter Turbo Diesel engine › 25 mpg† fuel economy › Up to 73" interior standing room

For more info, visit dodge.com/commercial or call 877-ONTHEJOB.

*When properly equipped. †Average fuel economy for 2500 140"-wheelbase Cargo Van at 50 percent load capacity. Results based on SAE test J1082 as conducted by FEV Engine Technology, Inc., in 2002. Cummins is a registered trademark of Cummins, Inc.

Dodge and HEMI are registered trademarks of DaimlerChrysler Corporation.

BUSINESS VEHICLE FINANCE
Financing that fits your business





SEEING OBSTACLES. MUCH BETTER THAN FEELING THEM. WHEN MORE OF THE WORKSITE IS VISIBLE TO THE DRIVER, OBSTACLES LIKE PALLETS OF BRICKS BECOME LESS MENACING. THAT'S WHY THE GMC TOPKICK HAS BEEN DESIGNED WITH A LARGER WINDSHIELD AND SLOPED HOOD, FOR A BROAD FIELD OF FORWARD VISION. THE DRIVER'S VIEW OF THE GROUND BEGINS AS CLOSE AS 13' FROM THE FRONT BUMPER—HALF THE DISTANCE REQUIRED BY THE FORD F-450/F-550 2WD.* AND FOR EXCELLENT SIDE AND REARWARD VISIBILITY, TOPKICK'S LARGE COWL-MOUNTED MIRRORS ARE A FULL 126 SQUARE INCHES. PLUS, DRIVERS CAN MANEUVER CONFIDENTLY AROUND OBSTACLES. TURNING DIAMETERS ARE AS SHORT AS 38.4',† THANKS TO TOPKICK'S SET BACK FRONT AXLE, COMPACT BBC‡ AND EXCEPTIONALLY TIGHT WHEELCUT ANGLES OF UP TO 53°. 800-GMC-8782 GMC.COM/MEDIUMDUTY

* Based on comparison of 2006 GMC Topkick C4500/C5500 2WD to 2005 Ford F-450/F-550 2WD.

† Based on C4500/C5500 2WD. ‡ Bumper to back of cab dimension. © 2005 GM Corp.

Vehicle shown with equipment from an independent supplier. See owner's manual for information on alterations and warranties.



WE ARE PROFESSIONAL GRADE.®