

Industrial Engine

© 2006 Caterpillar

POWER REPORT

Vol. **8** No. **4**

PAGE 2: COVER STORY

HURRICANE PROTECTION SYSTEM

MOVING WATER INDUSTRIES
AND **CAT**® ENGINES AID
ARMY CORPS OF ENGINEERS
IN KEEPING NEW ORLEANS DRY

IN THIS ISSUE

- 4** **OEM Spotlight:**
Cat® C2.2 compact diesel power enhances customer appeal of new TYM tractor line.
- 6** **Product Support:**
The Industrial Engine attachments guide is your complete resource for ACERT diesel engine attachments.
- 7** **OEM Solutions:**
Cat OEM Solutions provides integrated systems and comprehensive solutions.

Published on behalf of Caterpillar Inc. and your Caterpillar Dealer by Cygnus Business Media Inc., P.O. Box 803, Fort Atkinson, WI 53538-0803, Winter 2006, Vol. 8, No. 4. Caterpillar and Cat are registered trademarks of Caterpillar Inc. 2006. All rights reserved. CAT, CATERPILLAR, ACERT, their respective logos and "Caterpillar Yellow," as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

Form Number: LEDH 6477-00

HURRICANE PROTECTION SYSTEM

MOVING WATER INDUSTRIES AND **CAT® ENGINES** AID ARMY CORPS OF ENGINEERS IN KEEPING NEW ORLEANS DRY.



Cat® 3412E engines each provide 720 bhp at 1,800 rpm. The engines are grouped in sets of 18, 12 and 10 at three temporary pump stations in New Orleans. Two additional engines are used as backup.

Hurricane Katrina — flooding — New Orleans — these words conjure up images and emotions for us all. The hurricane that devastated the Gulf Coast will remain an important event in history. It's a part of history that many, including Moving Water Industries (MWI) of Deerfield Beach, Fla., are doing whatever they can to prevent it from repeating itself.

Called on by the Army Corps of Engineers, MWI's pumps are aiding New Orleans in its emergency and preventive dewatering efforts.

One such preventive dewatering proj-

ect incorporates 42 Cat® 3412E engines and 40 MWI Hydraflo pumps at three different temporary New Orleans pump stations. The pump stations are located near levees at the end of the canals that feed Lake Pontchartrain.

The sole purpose of these pump stations, explains MWI vice president of sales and administration Marc Boudet, is to remove water from the canals during a hurricane event.

THE BIGGER PICTURE

The temporary pump station design incorporates an interim gate structure. The gate structure will prevent storm surge from entering the canals and breaching the levees as happened during Hurricane Katrina. The gates will remain open unless a storm surge in Lake Pontchartrain threatens the canals.

If such an event occurs, each interim structure can rise 16.5 ft. above sea level, which matches the height of the hurricane protection levees at the lakefront. (See illustration at right). The pumps can be remotely started in sequence depending on the amount of water and how fast that water needs to be removed from the canals.

A unique feature of this project is the



The temporary pump stations include a gate structure (right) to block Lake Pontchartrain from the canals. Cat 3412E engines (shown in background) provide power for the pumps (foreground).

location of the engines to the pumps. While each pump is located in the water, each drive unit/engine is located about 200 ft. away in a roofed structure and safely out of the flood plane. The photo above shows the engines which are located behind the temporary pumps.

A PREVENTIVE MEASURE

“The normal level of Lake Pontchartrain is zero,” explains Boudet. “The pumps will be utilized only when the level of the lake reaches at least 3.5 — and this would only happen during a hurricane event.”

MWI project manager Daren Eller elaborates: “If a hurricane storm approaches, the gate structures will close, which shuts the lake off from the canals. If the canal level reaches 3.5, several pumps will be remotely started. The pumps will pump the water level down to the desired level (a process that should take less than an hour) and shut off until needed again.”

Each 60-in. pump is powered by a Cat 3412E engine with a continuous rating of 720 bhp at 1,800 rpm. Each pump is capable of pumping

200 cfs, or more than 90,000 gal. of water an hour. To put this in perspective, the average home swimming pool is about 12,000 gal. One 60-in. MWI hydraflo pump would fill the pool in about 10 seconds.

A GROUP EFFORT

The detailed project was completed in about six months, with the pumps operational just in time for the start of this hurricane season. Thankfully there was no hurricane this year and ongoing testing is still being performed. Interfacing between the temporary pump stations and the city’s existing pump stations is also continually underway.

Engines were delivered from local Cat dealer Pantropic Power Inc. in Miami, Fla. in a tight 14-week time frame. MWI packaged the 3412E engines with its own skid, hydraflo pump and hydraulic system.

The Pantropic team assisted MWI during the design and planning stage and is continuing to provide support during the extensive ongoing testing phase.

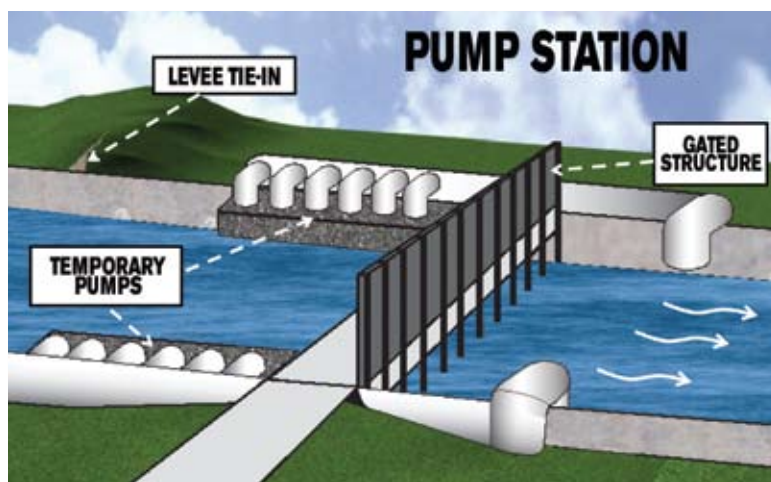
Many hands in on one project can create a logistical nightmare, but MWI credits thorough planning and constant communication as the keys to a successful job.

“This was a huge undertaking from the contractors to the Army Corp of Engineers to

the local engineers to our project management team to our suppliers,” explains Boudet. “If any of these parties had failed, the project wouldn’t have happened. But everyone stepped up to the plate and it was a good team effort.”

And what was at stake was a huge driving factor.

“We all had critical dates for putting pumping capacity online,” explains Eller. “If we didn’t meet those deadlines, we put the people of Louisiana at risk.” ○



COMPACT POWER



Cat® C2.2 compact diesel power enhances customer appeal of TYM's new K6 tractor line

The advantages of diesel power continue to win converts in the market for small- and mid-size turf and agricultural tractors. The all-new K6 Series, built by TYM in Korea and distributed by American Jawa Limited of Harrisburg, Pa., is an excellent case in point.

"The K6 Model TYM 603 is a ground-breaking design," explains American Jawa's president, Craig Pickles.

"We believe it's the first tractor of this size to offer the proven reliability and operating economy of a Cat® diesel engine, along with premium features like 4-wheel-drive, a 24/24 dual-range gearbox, hydrostatic power steering, as well as a heated and air-conditioned cab. It really is a state-of-the-art tractor and an outstanding value in the 60-hp class."

Weighing almost 5,300 lbs., the K6 is no lightweight. It's built by Tong Yang Moolsan (TYM) in South Korea, a company with more than 40 years of agricultural machinery experience that produces more than 10,000 tractors annually. TYM products are distributed throughout Asia, as well as in Australia, Europe and North America.

"The 603 is tough," Pickles adds, "but

it's also a very good looking piece of equipment with modern styling and outstanding ergonomics. That's important to all of our end users, but especially to the serious hobby farmers who are one of our most important markets."

POWER AS A SELLING FEATURE

"The Cat diesel engine is a major selling feature," he continues. "People familiar with diesels recognize the technical advantages of Cat compact diesels, and those without a technical background appreciate the Caterpillar reputation for quality and reliability. The fact that Cat engines, parts and service are available worldwide is also a plus because customers know they won't have any hassles over access to spare parts or service."

The TYM 603 is equipped with a Cat C2.2 diesel, a 4-cylinder, turbocharged engine with air-charge cooling rated at 66 bhp (49.2kW) at 2,800 rpm with a peak torque of 153.4 lbs./ft. (208.4 Nm) at 1,800 rpm.

The C2.2 occupies only 8.8 cu. ft. (0.25 cu. m) and weighs only 428 lbs. (194kg). Part of the new line of Cat compact diesels aimed at small- and mid-

size equipment in the construction, agricultural, turf maintenance and outdoor power equipment markets, the C2.2 meets existing EPA Tier II and European Stage II emission requirements for nonhighway diesels.

"The C2.2 gives our customers the ability to deliver 'big machine' performance in a smaller, more efficient package," says Cat marketing manager Mike Reinhart. "By filling a niche at the high end of the compact diesel power spectrum, it supports the continuing trend toward fuel-efficient, reliable diesel power

"The Cat diesel engine is a major selling feature. People familiar with diesels recognize the technical advantages of Cat compact diesels, and those without a technical background appreciate the Caterpillar reputation for quality and reliability."

Craig Pickles, American Jawa

in these rapidly growing markets.

"This engine features a new, side-mounted turbocharger and a redesigned cooling system," Reinhart continues. "We've reduced the envelope size by tucking the turbocharger closer to the engine, and the

more efficient cooling system permits use of a smaller radiator. Customers can also choose from high or low fan mounting positions, can specify an optional low-noise fan, and even equip the engine with an advanced electronic governor."

"TYM tractors are designed and manufactured to uncompromising quality standards," Pickles adds, "and the Cat engines reflect that philosophy. They're certainly part of the reason we can offer an industry-leading five-year warranty on the K6 TYM 603." ●



A Cat C2.2 engine powers this tractor. The engine is rated at 66 bhp at 2,800 rpm.

ATTACH IT!

Use the Industrial Engine attachments guide as your complete resource for Cat® ACERT diesel engine attachments.

If there ever was a comprehensive resource to guide you through each and every attachment for your Caterpillar® ACERT diesel industrial engine, the Industrial Engine attachments guide is it.

Whether it's cooling systems, air compressors or electronics, this 24-page pocket-size guide provides detailed information on the various attachments offered for industrial ACERT diesel engines.

The Caterpillar industrial ACERT™ Technology lineup now includes 10 engines (see sidebar) and spans the power range from 99 to 1,350 bhp.

Shown here are a few highlights of the attachments detailed in the Industrial Engine attachments guide. For more information, download a copy of the attachments guide at www.cat-industrial.com or give your Cat dealer a call. ○



Gauge Clusters

Electronics

Air Filtration

Cooling Systems

Starters

INDUSTRIAL ENGINE attachments guide

Attachments Guide

INDUSTRIAL ENGINE

A SOLUTIONS PROVIDER

Cat® OEM Solutions provides integrated systems and comprehensive solutions.

As an Original Equipment Manufacturer (OEM), you can count on Caterpillar for products and services of unsurpassed depth, breadth and quality — and you can count on Caterpillar® OEM Solutions for integrated systems that are matched to your specific applications.

When you integrate Cat® systems into your products, your company benefits from the expertise and capabilities that have made Caterpillar one of the most recognized and respected brands in the world, all while providing you with an edge in the competitive marketplace. Integrated OEM Solutions can also:

- Heighten the cost-effectiveness and value of your products.
- Reduce the number of suppliers involved in your product development.
- Deliver greater component and system compatibility.
- Gain competitive, cost-effective product solutions.
- Simplify purchasing, accounting and warranty administration functions.

MAXIMIZING PERFORMANCE

As a supplier to many different OEM customers, OEM Solutions Group provides excellent support capabilities worldwide, competitive price levels, extensive technical and engineering services, direct factory contact and support, flexible developmental schedules and warranty coverage equal with others who market to OEMs.

Business segments covered by OEM Solutions Group include:

- Agriculture
- Mining & Aggregates
- Forestry
- Waste & Refuse
- Oil & Gas
- Material Handling
- On- & Off-Highway

Within these key business segments, solutions range from complete systems to high-quality components. For example:

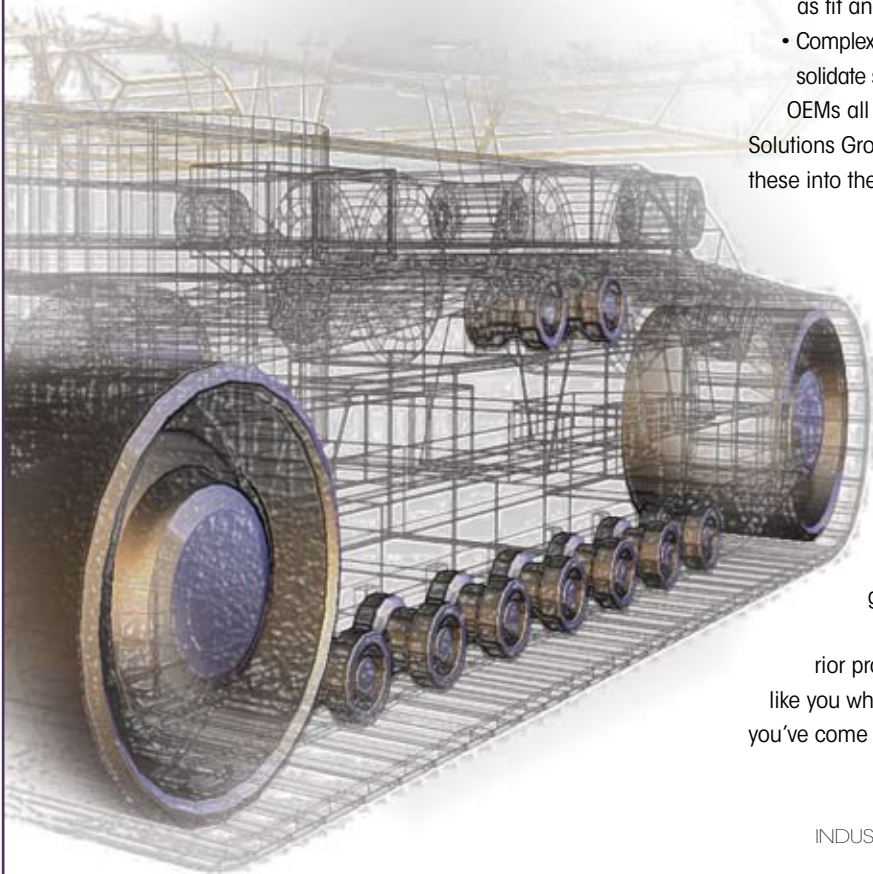
- Simple systems provide fit and compatibility by integrating Cat components that match your application.
- Multiple integrated subsystems deliver appropriate connectivity between mechanical, electronic and hydraulic systems as well as fit and compatibility.
- Complex drivetrains or machines requiring total connectivity consolidate suppliers and maximize the product's life cycle value.

OEMs all over the globe are discovering that the Caterpillar OEM Solutions Group can easily integrate systems and components like these into their products:

- Axles
- Gears
- Duo-Cone seals
- Hydraulic Systems including hydraulic hose, pumps, cylinders and controls
- Electronics & electrical systems
- Transmissions
- Partial wheel and track vehicles
- Oil coolers
- Excavator lowers

Additionally, design and engineering services available through the renowned Caterpillar research and development center are marketed through OEM Solutions Group. From a blank sheet to a complete product, Caterpillar OEM Solutions Group is your integrator and problem solver.

OEM Solutions Group is dedicated to providing superior products that meet the needs of OEM manufacturers like you while maintaining the Caterpillar high-quality standards you've come to expect. **○**





**One solution—
right now and
right for the future.**

Cat® Engines with ACERT® Technology

ACERT Technology is the single solution you need to meet tough emissions regulations while maintaining the **performance, reliability** and **durability** you expect from Cat engines.

Only ACERT brings together proven Cat systems and new technologies for:

- Proven performance with **millions of successful hours** logged and counting in a variety of applications
- **Unchanged maintenance and service** intervals that keep you on the job and on schedule
- Reliability backed by a **two-year, 3000-hour warranty** for industrial engines with ACERT Technology
- A platform for Tier 4/Stage IIIB **emissions compliance**

Count on Cat for the power to lead.

CAT, CATERPILLAR, ACERT, their respective logos and "Caterpillar Yellow," as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.



C4.4



C6.6



C7



C9



C11/C13



C15/C18



C27/C32

© 2006 Caterpillar
All Rights Reserved

CATERPILLAR®

www.cat-industrial.com

PRSR STD
U.S. Postage
PAID
Ft. Atkinson, WI
Permit No. 70