

SUMMARY

CONSTRUCTION

LIFT/ACCESS

AGRICULTURE

COMMERCIAL TRUCK

MARKET DATA: DECEMBER 2016

EquipmentWatch remains the largest sales database on the planet with 20x the sales data of any other source.

\$31,408,584,553

RESALE

\$31,109,290,202

390,284 Assets

AUCTION

\$299,294,351

12,049 Assets

The EquipmentWatch Market Report™ is a monthly resource for the construction, lift/access, agriculture and commercial truck industries to make better-informed decisions by leveraging key equipment values, market activity, age and usage metrics.

How is the Price Stability INDEX calculated?

For more detailed articles, visit EquipmentWatch Intelligence online. **MARKET SUMMARY** MONTH OVER MONTH YEAR OVER YEAR MARKET ACTIVITY **MARKET METRICS** PRICE STABILITY INDEX TO **MARKET METRICS** ▼ 5.3% **7.7% T** 1.4% **7** 2.0% CONSTRUCTION **VALUES VALUES** 98.38 **FMV** FLV FMV FLV 95 105 \$15,960,678,034 181,693 16.7% **23.1%** VOLUME **V** 16.0% **VOLUME 164.6%** MARKET VALUE **ASSETS** DEFLATED STABLE INFLATED RESALE RESALE **AUCTION AUCTION V** 1.3% 97.55 LIFT/ACCESS **▼** 5.3% **▼** 5.7% **T** 1.3% VALUES. **VALUES** 95 FMV FIV FMV FIV 105 \$1,221,602,152 39,601 3.0% **1.4% 23.5% 140.7%** MARKET VALUE ASSETS **VOLUME VOLUME** DEFLATED STABLE INFLATED RESALE RESALE **AUCTION AUCTION** 101.72 **T** 12.5% **T** 11.2% **2.1% 1.8% AGRICULTURE** VALUES. VALUES. 95 105 FMV FLV FMV FLV \$12.021.968.364 134.553 **48.0% 7** 24.9% **17.2% 199.0%** MARKET VALUE ASSETS VOLUME VOLUME STABLE DEFLATED INFLATED RESALE **AUCTION RESALE AUCTION V** 12.4% **7.8% V** 0.2% **1.1% VALUES** 99.58 COMMERCIAL TRUCK **VALUES** FMV FLV FMV FLV 95 105 \$2,204,336,003 46,486 **8.85% ▼** 56.2% VOLUME **7** 23.8% **▲** 157.4% MARKET VALUE ASSETS VOLUME DEFLATED STABLE INFLATED **RESALE AUCTION** RESALE **AUCTION**



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REGIONAL TRENDS

How is the Price Stability INDEX calculated?



MARKET PERFORMANCE

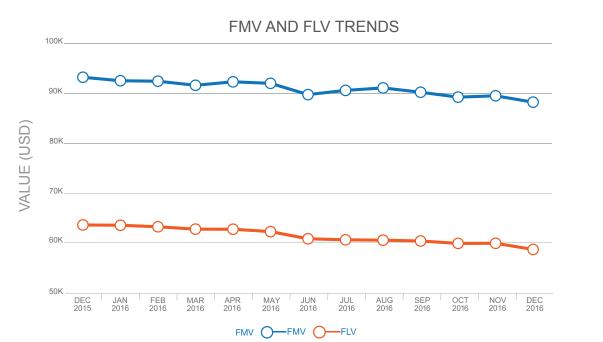
In the last month of 2016, the Resale channel for used construction equipment jumped sharply in market activity as equipment owners rushed to dispose of older and more heavily used assets before the end of the year. This influx of assets, coupled with a minor drop of 1.4% in average values, pushed the construction market to a Deflated rating on the Price Stability Index.™

MARKET HIGHLIGHTS

- Average auction activity climbed dramatically in December, rising 164% above November's low number of auction records.
- Average usage outgained average age on the Resale channel, indicating some aging of assets available for purchase in December.
- Both FMV and FLV are on average significantly lower than they were at the same point last year.

MARKET FORECAST

January is likely to continue the slight downward trend in average FMV and FLV that's been in effect since November. Market activity, especially on the auction channel, is expected to hit a 12-month low as equipment sellers hold off for the mega auctions of February and March.





EquipmentWatch.

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APRIL 19, 2016 VERSION: PREMIUM | UPDATED MONTHLY

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MARKET PERFORMANCE

Lift values declined slightly in December, dropping by a little over 1% in the resale and auction channels. Volume had huge increases in both resale and auction channels in December.

MARKET HIGHLIGHTS

- Resale volume increased by over 23% in December, the largest increase we have seen since releasing the market report last year.
- Average age and usage increased across both resale and auction channels.
- The overall lift Price Stability Index™ is the lowest that we have ever seen since the release of the market report, with a score of 97.55. This is largely due to the decrease in prices across both resale and auction channels.

MARKET FORECAST

We should expect to see values remain pretty much even in January with maybe even a slight increase. Resale volume should continue to increase with the new year.







	VOLUME CHANGE		AVERAGE AGE		USAGE	
MONTH OVER MONTH	▲ 23.5% RESALE	▲ 140.7% AUCTION	▲ 0.2% RESALE	▲ 8.5% AUCTION	▲ 1.6% RESALE	▲ 0.7% AUCTION
YEAR OVER YEAR	▲ 3.0% RESALE	▲ 1.4% AUCTION	▲ 11.7% RESALE	▼ 0.8% AUCTION	▲ 1.6% RESALE	▲ 7.2% AUCTION

LIFT/ACCESS

NEXT TYPE TRENDS

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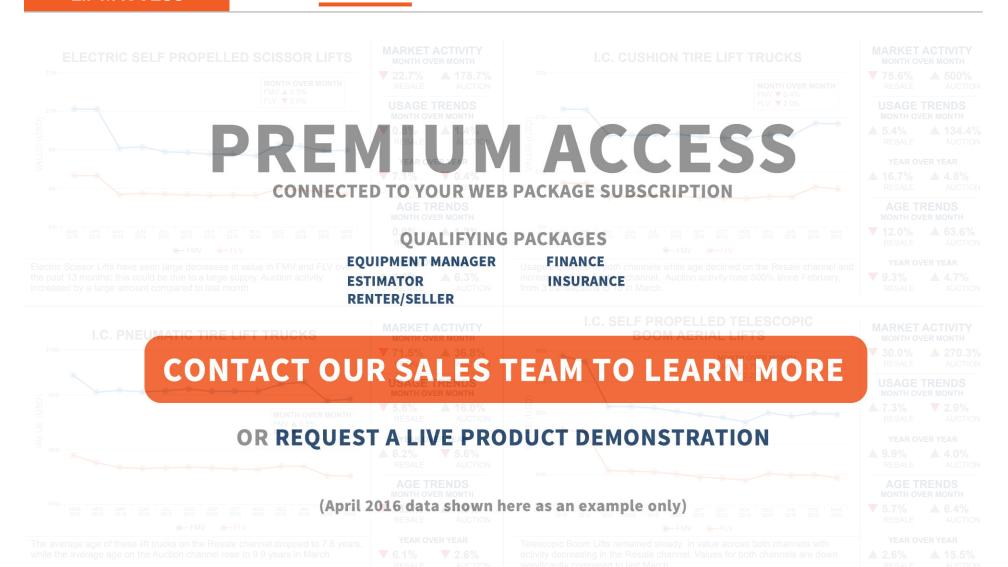
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How is the Price Stability INDEX calculated?



MARKET PERFORMANCE

As FMV and FLV surged from November declines into December increases of 2.1% and 1.8%, respectively, the market for used agricultural equipment registered an inflated Price Stability Index[™] of 101.72. This was the first significant increase in FMV and FLV for this equipment since July 2016.

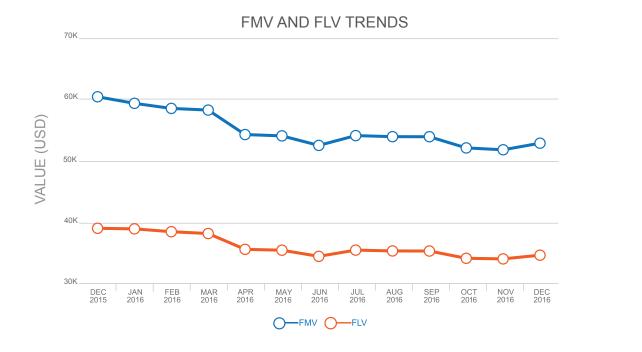
MARKET HIGHLIGHTS

- Resale market activity increased over 17% in December, likely the result of growers rushing to dispose of equipment before the end of the calendar year.
- The average age of equipment on the resale channel increased by 2.7%, even as average usage dropped by 4.8% in the same time period.
- FMV and FLV were an average of almost 12% lower in December 2016 than in December 2015, a stark reminder of the ongoing downcycle in used agricultural equipment pricing.

MARKET FORECAST

Values in December 2015 spiked before beginning a long and steady decline over the last 12 months. It's likely a short respite for sellers hoping to secure higher market prices for used assets, as historical trends lead us to predict that values will continue to drop through the first half of the year.

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VOLUME CHANGE		CHANGE	AVERAGE AGE		USAGE	
MONTH OVER MONTH	▲ 17.1%	▲ 199.0%	▲ 2.7%	▲ 1.7%	4.8%	▼ 29.0%
MONTH OVER MONTH	RESALE	AUCTION	RESALE	AUCTION	RESALE	AUCTION
YEAR OVER YEAR	▲ 48.0%	▼ 24.9%	▲ 18.7%	▲ 14.8%	▼ 4.8%	▼ 17.5%
	RESALE	AUCTION	RESALE	AUCTION	RESALE	AUCTION

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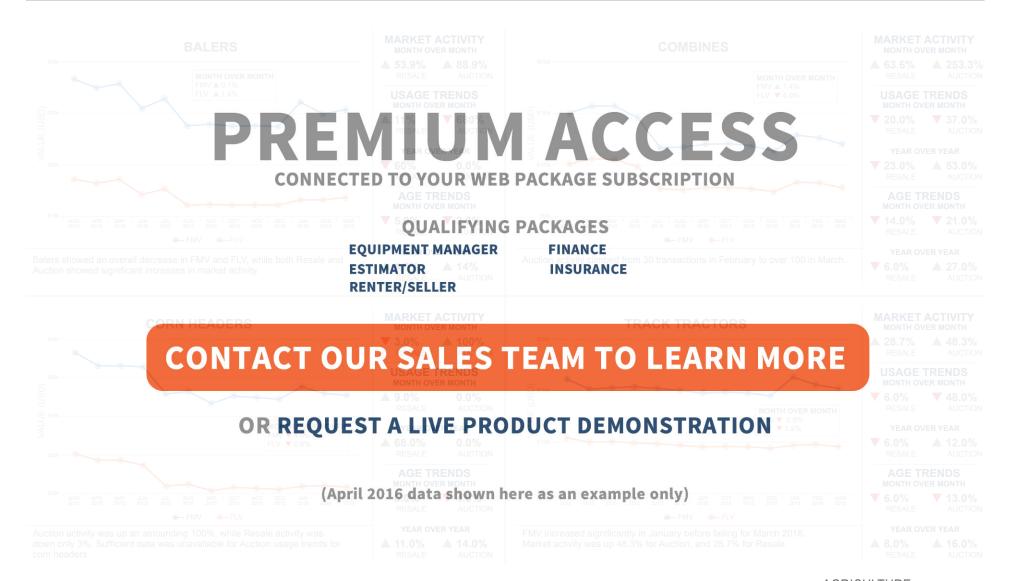
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How is the Price Stability INDEX calculated?



MARKET PERFORMANCE

As 2016 came to a close, FMV dropped only slightly and FLV increased above November. Both FMV and FLV were below where they were in December of 2015, but average age on both channels was up well above last year.

MARKET HIGHLIGHTS

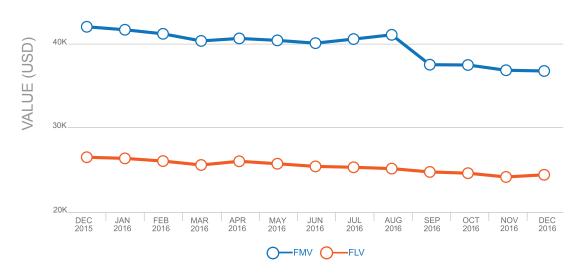
- Volume was down in December, well below November for the resale channel however auction volume was up more than double that of November.
- Even though average age increased 13.0% in December over last year on the resale channel, average usage was down 0.2% indicating the older vehicles entering the market are not going to have the higher mileage that we may have seen previously.
- The large increase in auction channel volume between November and December seems drastic, but the auctions tend to see a lot of activity around commercial trucks at the end of the year and the year ove year drop shows this December did not even add up to last year's activity.

MARKET FORECAST

Auction market activity has historically been very low for January, so expect much lower volume in comparison to December sales but February will pick up again.

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	VOLUME CHANGE		AVERAGE AGE		USAGE	
MONTH OVER MONTH	▼ 23.8%	▲ 157.4%	▼ 1.7%	▼ 3.8%	▼ 1.5%	▲ 16.3%
	RESALE	AUCTION	RESALE	AUCTION	RESALE	AUCTION
YEAR OVER YEAR	▲ 8.9%	▼ 56.2%	▲ 13.0%	▲ 24.7%	▼ 0.2%	▲ 18.6%
	RESALE	AUCTION	RESALE	AUCTION	RESALE	AUCTION

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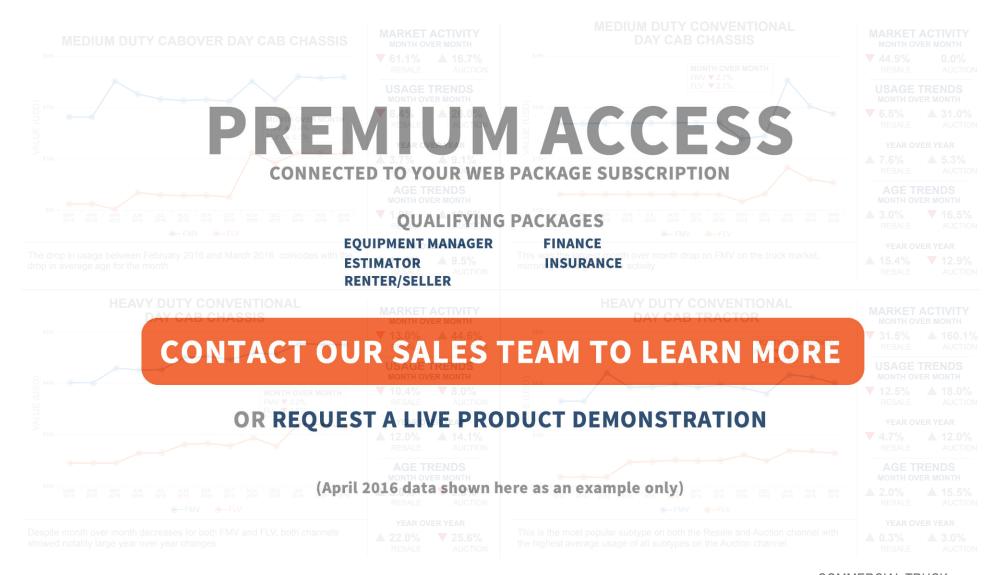
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APPENDIX

INTRODUCTION

The EquipmentWatch Market Report is a compilation of a wide array of EquipmentWatch's data, designed to bring you an in-depth look at used equipment markets over the last month.

This Appendix is designed to answer your questions regarding this report. Here we define and illustrate how we think about values, market activity, age, Usage, and regional influence for the most common types of equipment seen on used markets across North America.

OUR DATA

Selection Criteria for OEMs and Subtypes

EquipmentWatch tracks Resale and Auction prices and activity for over 15,000 models across 389 manufacturers throughout North America. With over \$800 billion in collected equipment transactions, EquipmentWatch is your primary source for intelligence regarding used equipment markets.

The data in this report is divided into four distinct equipment markets: Construction, Lift/Access, Agriculture, and Commercial Trucks. For each market, we selected the top equipment types based on their market share from January 2015 to December 2015. They're listed in the table to the right.

Construction	Lift/Access	Agriculture	Commercial Trucks	
4-Wd Articulated Wheel Loaders	Electric Self Propelled Scissor Lifts	Track Tractors	Heavy Duty: Conventional - Sleeper (Heavy Tractor)	
Articulated Frame Graders	I.C. Pneumatic Tire Lift Trucks	Balers	Heavy Duty: Conventional - Day Cab (Heavy Tractor)	
Articulated Rear Dumps	I.C. Self Propelled Telescopic Boom Aerial Lifts	Combines	Heavy Duty: Conventional - Day Cab (Heavy Cab Chassis)	
Compact Track Loaders	I.C. Self-Propelled Articulating Boom Aerial Lifts	Corn Headers	Medium Duty: Conventional - Day Cab (Cab Chassis)	
Crawler Mounted Compact Excavators	Telescoping Boom Rough Terrain Lift Trucks	Wheel Tractors	Medium Duty: Cabover - Day Cab (Cab Chassis)	
Crawler Mounted Hydraulic Excavators	I.C. Cushion Tire Lift Trucks	Planters	Medium Duty: Crew (Cab Chassis)	
Large Generator Sets				
Single Drum Vibratory Compactors				
Skid Steer Loaders				
Standard Crawler Dozers				
Tandem Vibratory Compactors				
Tractor-Loader- Backhoes				



APPENDIX

We have also limited the scope of the EquipmentWatch Market Report to the following brands in each market:

Construction	Lift/Access	Agriculture	Commercial Truck	
Bobcat	Caterpillar	Deere	International	
Case	Genie	Case IH	Freightliner	
Caterpillar	JLG	New Holland	Volvo	
Deere	Sky Trak	Massey Ferguson	Kenworth	
Komatsu	Skyjack	Challenger	Peterbilt	
Volvo	Hyster	Kubota	Hino	

THE EQUIPMENTWATCH PRICE STABILITY INDEX™

Academic justification

The EquipmentWatch Price Stability Index™ is a new metric for understanding used equipment markets for used heavy equipment. It measures resale price capacity based on the movement of market prices and market activity among the equipment types and manufacturers presented above.

Methodology and Calculation

The EquipmentWatch Price Stability Index™ is based on the Laspeyres Index, one of the many economic indices used to monitor changes in prices over time. To calculate it, we use the framework provided by the Laspeyres Index:

$$P_{L} = \frac{\sum (p_{c,t_{n}}) * (q_{c,t_{0}})}{\sum (p_{c,t_{0}}) * (q_{c,t_{0}})}$$

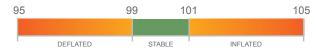
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This equation sums the product of prices in the current month and quantity of the previous month and divides that by the product of prices in the previous month and quantity in the previous month.

We have modified this method to track the change in prices for each equipment type from month-to-month against the change in market activity for each equipment type month to month.

Interpretation

The EquipmentWatch Price Stability Index[™] can be thought of as an index of price capacity. In more formal terms, it measures how efficiently used markets adjust to equilibrium given previous adjustments in prices and market activity. There are three primary ranges in the EquipmentWatch Price Stability Index[™], as noted below:



When the EquipmentWatch Price Stability Index™ is higher than 101, that indicates that equipment is valued at a higher level than expected, given last month's prices and amount of market activity. We categorize this range as "Inflated".

When the EquipmentWatch Price Stability Index[™] is lower than 99, it indicates that equipment is valued at a lower level than expected, given last month's prices and market activity. We categorize this range as "Deflated".

When the EquipmentWatch Price Stability Index™ is between 99 and 101, it is typically demonstrating that equipment prices and market activity are moving appropriately towards market equilibrium. We categorize this range as "Stable".

It is important to note that a higher rating on EquipmentWatch Price Stability Index™ does not necessarily imply that used markets are better than a lower rating. For some, price inflation is desirable; for others, it is undesirable. However, all parties involved in buying or selling equipment on used markets can use the EquipmentWatch Price Stability Index™ to easily understand how prices in a particular region or equipment channel are moving relative to the previous month.



APPENDIX

SECTION GUIDES

The Introduction

In the top left, we exhibit a tally of the estimated market value of market activity last month in the Resale channel and Auction channel.

In the main table, we display market activity and assets for each market, along with month over month and year over year changes in Fair Market Value and Forced Liquidation Value.

Overall Trends

This page is an overview of each channel. The graph highlights an overall FMV and FLV trend line for all of the equipment types and manufacturers in the report for the last 13 months. It also displays very general month over month and year over year trends across the entire channel.

Type Trends

This page subsets the analysis of the previous page across each of the key equipment types in this report.

Brand Trends

This page shows some of the key month over month trends for the manufacturers represented in this report, including equipment values, Usage, market activity, and age trends.

Regional Trends

This page shows the EquipmentWatch Price Stability Index™ for each of the 14 regions, using the same calculation method as the EquipmentWatch Price Stability Index[™] shown on the first page of the report. The states and provinces which make up each region are listed in the table to the right.

Note that due to regional disparity in market activity, some regions with very little or no market activity in the last month are excluded from the analysis. These are marked with "NA" on the map.

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Country	Region	State/Province
USA	Α	CT, DE, MA, ME, NH, NJ, MY, RI, VT
USA	В	MD, P, VA, WV
USA	С	AL, FL, GA, KY, MS, NC, SC, TN
USA	D	IL, IN, MI, OH, WI
USA	Е	IA, KS, MO, NE
USA	F	AR, LA, OK, TX
USA	G	AZ, CO, NM, UT
USA	Н	ID, MN, MT, ND, SD, WY
USA	I	CA, NV, OR, WA
USA	J	HI
USA	K	AK
CAN	L	NT, NU, YT
CAN	M	AB, BC, MB, SK
CAN	N	NB, NL, NS, ON, PE, QC

FAQS

Why did you limit the equipment types in this report?

EquipmentWatch tracks market activity for over a hundred unique equipment types each month. For each channel, we selected the most popular equipment types, based on the frequency of appearance on the resale and auction channels.

Why are there only 24 manufacturers in this report?

EquipmentWatch tracks market activity for almost 400 unique manufacturers each month. For each market, we selected the top 6 manufacturers. As the markets shift and prominence on used markets changes, we will adjust our selections accordingly.



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Why don't you use OLV?

Orderly Liquidation Value, or OLV, is a third major category of values. These are the values of an asset given a single seller and multiple potential buyers given a long or indefinite timeframe in which to dispose. Given the lack of clarity around the time dimension, we have chosen not to make assumptions about the orderly liquidation process. However, OLV is typically between FLV and FMV in gross value.

IMPORTANT DEFINITIONS

Fair Market Value (FMV): the value of an asset sold to a single buyer under no compulsion.

Forced Liquidation Value (FLV): the value of an asset sold at a properly advertised and conducted auction in which the seller is under compulsion to sell on an as-is, where-is basis as of a specific date.

Market Activity: A measure of the total number of observations collected by EquipmentWatch, including publicly-available dealer listings, auction results, and final sales data.

Meter Reads: A measure of Usage that varies by equipment market. For most equipment types, this represents engine hours at the time of observation.

Age: the age of an asset, based on model year and the year of observation.

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ABOUT EQUIPMENTWATCH

EquipmentWatch is the trusted source for heavy equipment data and intelligence. EquipmentWatch produces the leading database information products for the construction equipment industry and is the world leader in heavy construction research and serves more than 15,000 professional, high-volume users of construction and lift-truck data. Our online and print products are valuable tools in decisions surrounding the purchase, valuation, operation, and disposal of equipment.

For nearly 50 years, EquipmentWatch has served contractors, equipment manufacturers, dealers, rental companies, lenders and insurers, and government agencies involved in heavy civil construction.

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