



ROUSE
APPRAISALS

Crane Commentary

Q4 2018

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Crane Market Conditions

Crane values last peaked in 2008, and since that time, the crane industry has undergone various periods of contraction and expansion. In tandem with the rest of the economy, there was a precipitous decline in crane values from late 2008 through 2009, followed by a period of stagnation through 2012. Starting in late 2012, tower cranes began a rapid ascent in valuation in connection with the commercial and residential housing construction boom. For most other crane categories, Rouse observed a moderate price increase, which began in 2014 and lasted through 2015. This was in response to increased demand for energy and power projects. In 2016, these crane categories began another decline related to oil prices and this trend persisted throughout most of 2017 in the climate of decreased rental rate, utilization, and equipment values.

While 2017 primarily demonstrated an accelerated trend of declining crane values, late 2017 started to show signs of stability as equipment values began to firm up. Throughout the first three quarters of 2018, values primarily demonstrated a stable value trend, indicating that used equipment values have bottomed for most mobile crane categories. The market read in Q4 of 2018 is displaying continued stability for most crane categories, while there has been some softness in used values for crawler cranes.

Over the last 4-5 years, large mobile crane values have been closely tied to activity in both the traditional and alternative energy sectors, and there has been some correlation between oil price changes and mobile crane values. Because many crane types are used in energy-related industries, as the price of crude oil adjusts either upward or downward, crane values may follow suit. Coming out of the economic bottom in 2008-2009, crude oil recovered and remained stable until 2014, and this period witnessed a recovery of the crane industry and equipment values.

The first leg of oil price declines in late 2014 (from ~\$110 down to ~\$35) had a meaningful impact on overall utilization trends and rental rate achievement for several players in the crane rental space, particularly those with material exposure to upstream oil and gas projects. However, the persistence in oil price declines did not impact the used equipment markets in a material way until 2016, at which point Rouse began to see downward pressure in equipment values, which persisted throughout 2017.

At the tail end of 2017, oil prices broke the \$60/barrel mark and continued an upward price trend through the first three quarters of 2018. In Q4 2018, oil prices have exhibited significant volatility, dropping down to the \$45/barrel range, as concerns of widespread economic slowdown dampened the outlook on future demand for fuel. The recent sentiment in the oil markets is one of uncertainty as several factors have been impacting the markets including increasing US crude production, decreasing global supply, and continuing friction in US-China trade relations. ([Click here for Oil Rig Counts and Crude Oil Prices for more detail.](#))

Amid this backdrop, many industry players focused on reallocating fleets into markets with more robust demand while maintaining good discipline over their fleet management. Although there have been consistent levels of activity across a variety of end markets (plant maintenance, repair, and retrofitting work, wind energy, and infrastructure), the combination of decreased oil prices and slower non-residential construction spending growth placed downward pressure on utilization, rental rates, and equipment values in 2017. Toward the tail end of 2017 and now through 2018, it appears that utilization has slightly improved, but rental rate has mostly remained competitive.

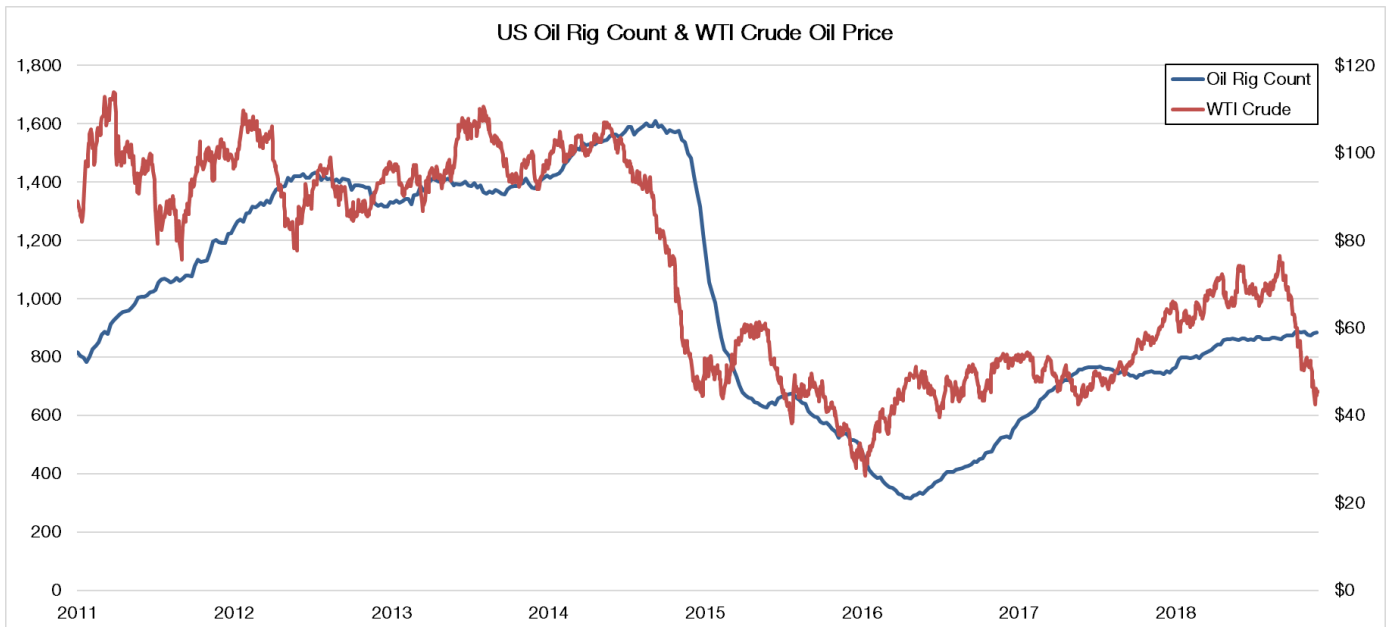
In terms of secondary market sales, crane values began stabilizing in late 2017. Used crane values have mostly held through Q4 2018, with the exception of the crawler crane category, which has experienced a weaker value environment in the most recent period.

Oil Rig Counts and Crude Oil Prices

Because the crane rental industry has material exposure to the oil and gas markets, Rouse also tracks oil rig counts and crude oil pricing as an indicator of market conditions. The population of oil rigs correlates to crane demand, as cranes are needed at oil sites for lifting work, and oil-related projects are among the primary use cases of cranes. As oil rig count and pricing increase, the demand for oil-related project work also increases, which favorably impacts utilization and rental rate for mobile cranes.

As oil prices witnessed substantial declines in 2014-15, oil rig counts correspondingly followed suit, and oil-related crane work substantially declined. These market forces flowed through to used equipment values starting in 2016 and persisted throughout 2017.

As oil prices have recovered off the bottoms near \$30/barrel, the current market environment for oil is still well off the highs of early 2014. US rig count is in the upper-800's and oil prices at the end of Q4 were in the mid \$40's/barrel. Recent shifts and volatility in oil prices have contributed to an uncertain oil environment.



Key Trends: Utilization, Rental Rates, and Equipment Values

Based on conversations with over 10 major North American crane rental firms, Rouse has identified the key utilization trends, by crane type, experienced broadly across the industry. Throughout most of 2017, utilization remained weak due to the lack of availability of substantial project work. Toward the end of 2017 and throughout 2018, Rouse observed utilization increasing for crawler cranes, all-terrains, and truck-mounted cranes, while rough-terrain utilization has remained flat. Tower cranes, which are seeing consistent demand and full order books for as much as 18 months ahead, continue to show a strong utilization environment. The key trends are summarized in the table below.

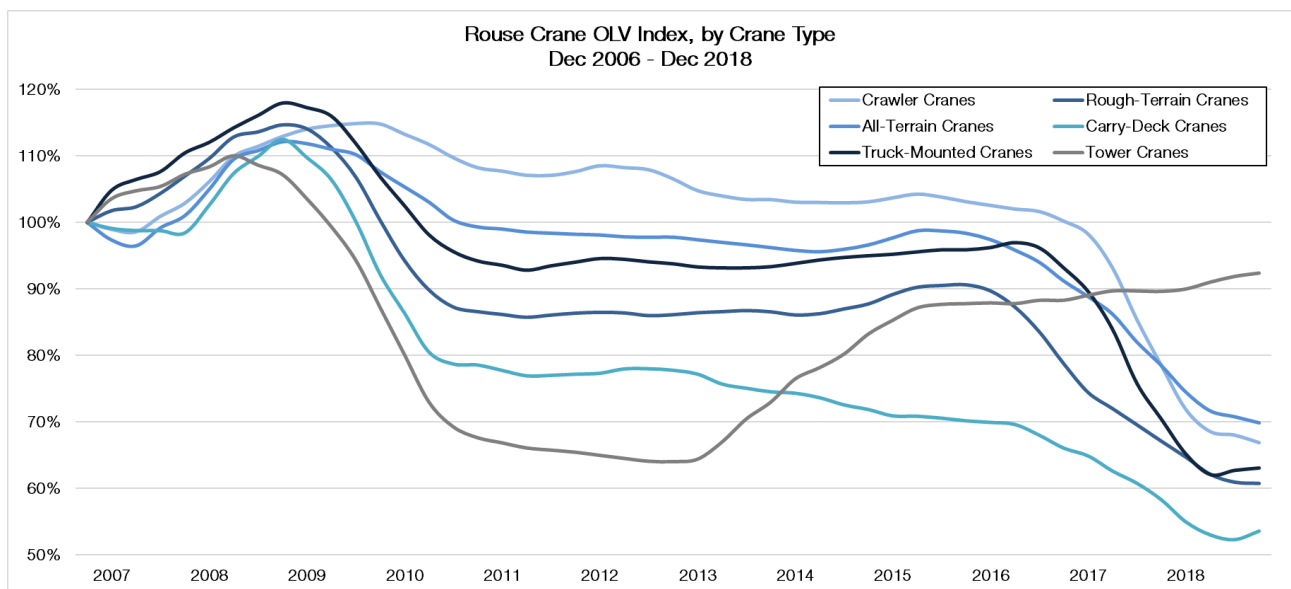
Crane Category	Utilization Trend	Notes
Tower Cranes	Continuing high demand	Non-res construction strong; full order books
Crawler Cranes	Continuing high demand	Crude oil up in H1 2018, but drop in oil price in Q4. Overall utilization trend remains healthy
All Terrain Cranes	Continuing high demand	Crude oil up in H1 2018, but drop in oil price in Q4. Overall utilization trend remains healthy
Truck-Mounted Cranes	Continuing high demand	Crude oil up in H1 2018, but drop in oil price in Q4. Overall utilization trend remains healthy
Rough Terrain Cranes	Flat to slightly decreasing	Crude oil up in H1 2018, but drop in oil price in Q4. Overall utilization trend remains healthy, but trend is flat for RTs

Subsequent to the oil price declines of 2014-15, cranes began to come off of long-term project work 12+ months later. After this, for a sustained period, utilization remained weak for all mobile crane categories. Toward the end of 2017 and throughout 2018, there has been an increasing utilization trend for several mobile crane categories. Most recent data suggest that time utilization is continuing at a healthy level for most mobile crane categories. Rough-terrain cranes have shown a flattening trend in the most recent period.

As utilization declined in the period mentioned above, Rouse observed a simultaneous downward pressure on rental rates. Due to high competition, crane rental companies reduced rental rate or provided other margin-reducing incentives such as free freight in order to win project work.

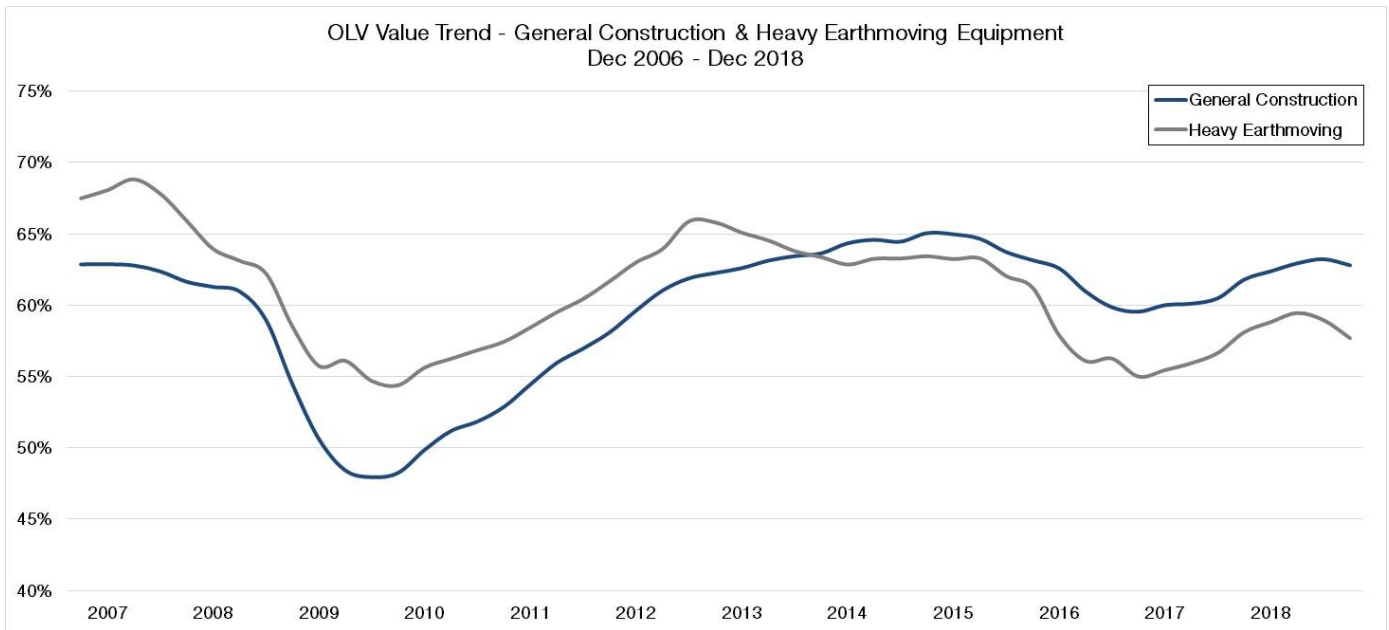
Most recently in 2018 there have been some small increases in rental rate in select pockets of work, but the overarching theme has been one of continued competition in terms of rental rate. While the uptick in utilization for some categories and the select rental rate increases are positive signs for the industry, there still is not a broad-based recovery in rate or used equipment values.

In connection with the more challenging utilization and rate environment, Rouse observed consistent and material weakening in used equipment valuations throughout 2016; this was most evident in the auction markets. Through the majority of 2017, Rouse observed an accelerated downward trend in equipment values. Overall, mobile cranes displayed approximately a 15%-20% decline on an OLV basis since the peak in 2015 through 2017. Starting in late 2017 and continuing through 2018, most mobile crane categories showed signs of bottoming. The most recent data suggests that there is some softness for crawlers, but most other categories appear to show stability. Rouse tracks an OLV index by crane type as shown below, and this chart demonstrates the value trends that have been observed in the marketplace.



Relationship Between General Rental Equipment Values and Crane Values

Lastly, Rouse tracks OLV trends across the broader, general construction equipment environment. One useful comparison point is the downturn in 2009. Although all asset classes experienced a decline in 2009, there is an important relationship observed between the general equipment market and the crane rental market: Rouse notes that the downturn in crane values occurred with a lag of approximately 12-18 months as compared to general rental equipment categories. This is notable considering what Rouse has observed in the general equipment market since May 2015 (see Rouse General Construction OLV Value Trend below). During 2016-17, values declined on average by approximately 8-15% (varying by category), and the more recent pains seen across the crane segment appear to correlate to a similar time lag that was experienced in the prior downturn. Throughout 2017, the general construction curve flattened and started to increase with that trend continuing through mid-2018. Through Q4 2018, most crane categories have displayed stability.

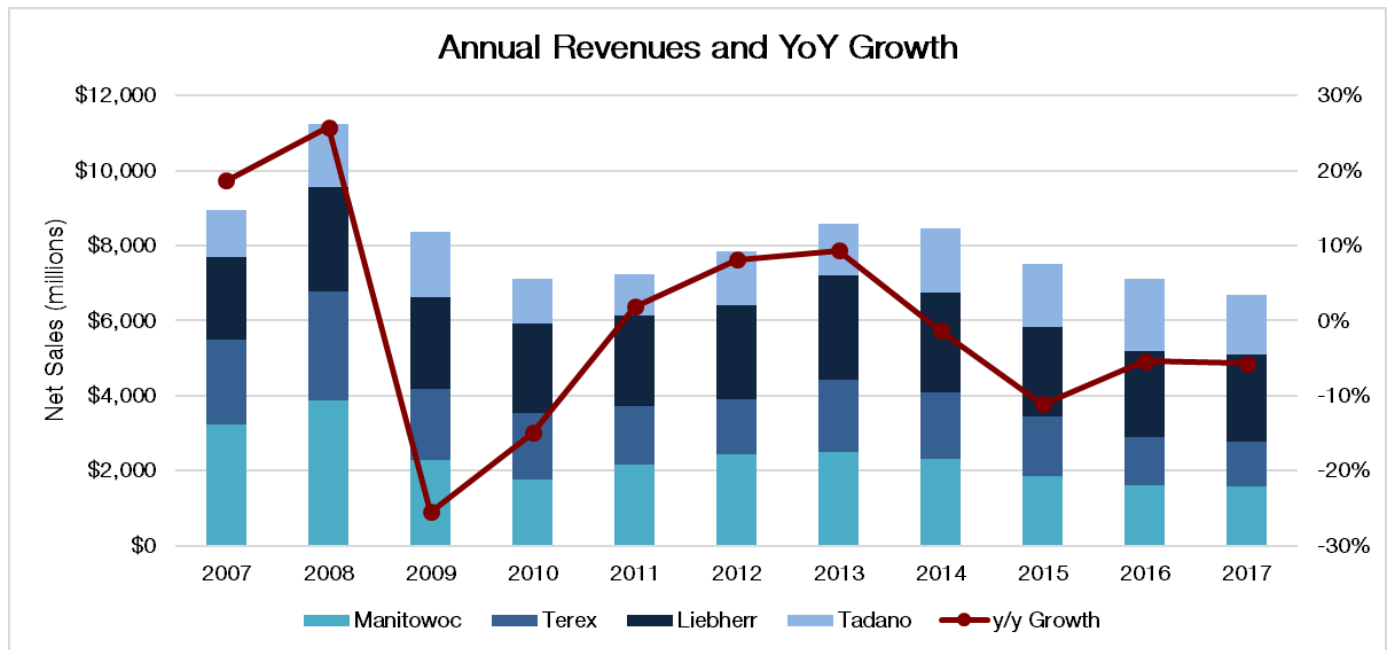


OEM & Dealer Trends

Annual Revenues

Annual revenues for major manufacturers through 2017 display a pattern similar to the Rouse OLV Index for most crane categories. Although revenue declines have tapered off after the most recent oil downturn, the revenues have not ever achieved back to the 2008 peak.

Reports thus far in 2018 indicate the year will finish with an increase in revenue after a period of continually declining revenues from 2014 through 2017.



Mobile Cranes

Throughout the most recent downturn, crane manufacturers across the globe have reported a predominantly challenging environment for mobile cranes across their production lines. While the first half of 2018 has been positive, the latest Q3 sales figures from a number of manufacturers have been mixed. Terex has reported on supply chain issues while Manitowoc is reporting increased sales. Tadano has been reporting lower sales for several consecutive years.

Below is a summary of publicly reported sales figures from several manufacturers in the most recent period.

Manufacturer Revenues – Period Over Period

OEM	2016	% Δ Y/Y	2017	% Δ Y/Y	2018	% Δ Y/Y
Terex	282.8	-25.4%	301.9	6.8%	301.2	-0.2%
Manitowoc	349.8	-20.2%	399.4	14.2%	450.1	12.7%
Liebherr	2,072	-4.0%	2,057	-0.7%	N/A	N/A
Tadano	48,927	-17.1%	47,649	-2.6%	47,378	-0.6%

*Above figures are for the most recent period of financial results at time of writing.

-Terex: Quarterly results for Q3 of each year (September 30). Figures represented in millions of dollars.

-Manitowoc: Quarterly results for Q3 of each year (September 30). Figures represented in millions of dollars.

-Liebherr: Annual results ending Dec 31 each year. Figures represented in millions of euros.

-Tadano: Quarterly results for Q2 FY, ending September 30 of each year. Figures represented in millions of yen.

*Terex results for Cranes division only.

*Liebherr results for Mobile Cranes division only.

OEM results for Q3 of 2018 have not been as robust as they were for the first half of the year. Some of the positive results are still below what was observed in a stronger market in 2016.

In North America, Terex Corporation announced for Q3 2018 a total company sales increase of 10.6%, but their Cranes division reported flat y/y net sales. The company noted that supply chain issues have mostly been resolved, but the shortages impacted production and deliveries, leading to lower revenue and margin than expected. Terex continues to see stable demand with pockets of growth. Oil prices have stimulated modest demand increases in North America and the Middle East. The global demand for large crawlers remains soft, while the Demag all-terrain product continues to sell well.

Manitowoc reported Q3 2018 net sales of \$450m, up 12.7% year-over-year. The company cites momentum in North America driving the growth, with project work in energy and commercial construction as contributing factors. The North American oil and gas market continues to improve, with investment in upstream well completions driving utilization and demand. Market feedback on rental rates is favorable, showing y/y improvement. Manitowoc has taken actions against the cost headwinds that manufacturers are facing by sourcing materials at the lowest possible cost and taking pricing actions to offset cost increases.

US crane manufacturers and other construction equipment manufacturers have broadly reported on a constrained supply chain. Parts and materials shortages have been crimping manufacturers' ability to produce at a throughput to meet demand.

The challenging but stabilizing environment is not limited only to the North American markets, as seen by recent reporting results of The Liebherr Group and Tadano Global.

Liebherr posted the strongest turnover in the company's history in 2017, but upon closer examination, the mobile crane segment posted flat sales results relative to 2016. For mobile cranes, in terms of geography, Asia and Australia showed significantly increased sales, the Middle East had significantly decreased sales, and Europe and North America sales were relatively flat.

Tadano has stated in its most recent annual report through FY Q2 (Jul 18 – Sep 18) that net sales were ¥47.4b, down 0.6% compared to the same period of 2017. Mobile crane net sales however are showing slight improvement. The latest Nov 2018 briefing indicates a large drop in sales in the Middle East region, while North American demand is showing a clear recovery pattern.

Tower Cranes

In light of the continued, stable commercial construction market activity, demand for tower cranes continues to exhibit strength in both North America and Europe. Non-residential construction spending continues on an upward trajectory, and there is a corresponding need for tower cranes to support those development projects.

Manitowoc reported taking Q3 stocking orders of \$29 million, which are usually placed in Q4. One of Manitowoc's largest customers in Europe decided to place orders early in anticipation of increased demand in the March timeframe of 2019. Manitowoc has reported on healthy demand in the Asia Pacific region, and European demand has remained stable.

Liebherr reported a 31.0% increase in revenue in their tower crane business division in 2017 compared to 2016, but the company cites a challenging business climate. There is considerable pricing pressure with a decline in investment outside Europe. Furthermore, there is an industry-wide trend towards more rental and used equipment.

Inventory

Equipment dealers such as H&E Equipment Services have been experiencing robust crane sales in 2018, noting in its latest Q3 earnings call that sales were attributed mostly to small crawlers, all-terrain and truck-mounted cranes. The company has reported on solid results for all-terrain and crawler cranes, while the rough-terrain market remains depressed.

Upcoming Crane Auction – Orlando, FL – Feb 20, 2019

In the first quarter of 2019 is the largest equipment auction that occurs annually in North America. On day 3 of this 6 day event, cranes will be auctioned in a no-reserve environment. Below is a summary showing how many of each type of crane will be for sale.

Category	2018	2019
Crawler Cranes	28	19
All-Terrain Cranes	4	9
Rough-Terrain Cranes	88	21
Truck-Mounted Cranes	11	25
Carry-Deck Cranes	15	11
Total	146	85

*Listing counts for 2019 are as of the time of release of this report (1/31/19). The number of listings are subject to change by the time the auction occurs.

Conclusions

The market read through 2017 was one of continued softness across several available metrics including utilization and rental rate achievement. Toward the tail end of 2017, equipment values and OEM/dealer performance began to show early signs of stability. Through 2018, used crane values have shown signs of bottoming for for most of the mobile categories. However, the latest data points indicate there is still some softness in the crawler market.

Rouse continues to monitor secondary-market crane sales, rate and utilization achievement among crane rental companies, end market activity, and OEM trends. While most rental companies have reported continued high utilization rates in the most recent quarter, and rental rate appears to be improving, OEM results have been mixed. Furthermore, the uncertainty around the oil and gas market in the most recent months may impact used crane values moving into 2019.

About Rouse

Rouse Services is the leader in construction equipment appraisals, used equipment sales support and fleet management analytics, specializing in the rental sector. Rouse appraises over \$58 billion of fleet and collects over \$14 billion of equipment transactions, annually, across North America and the United Kingdom.

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