



Crane Commentary

Q1 2019

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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 dropped down to the \$45/barrel range, as concerns of widespread economic slowdown dampened the outlook on future demand for fuel. In early 2019, oil has recovered back to the mid \$60/barrel range. 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, utilization began increasing, but rental rate increases remained challenged through most of 2018. In Q1 2019, the trend of increased utilization and rental rate have continued.

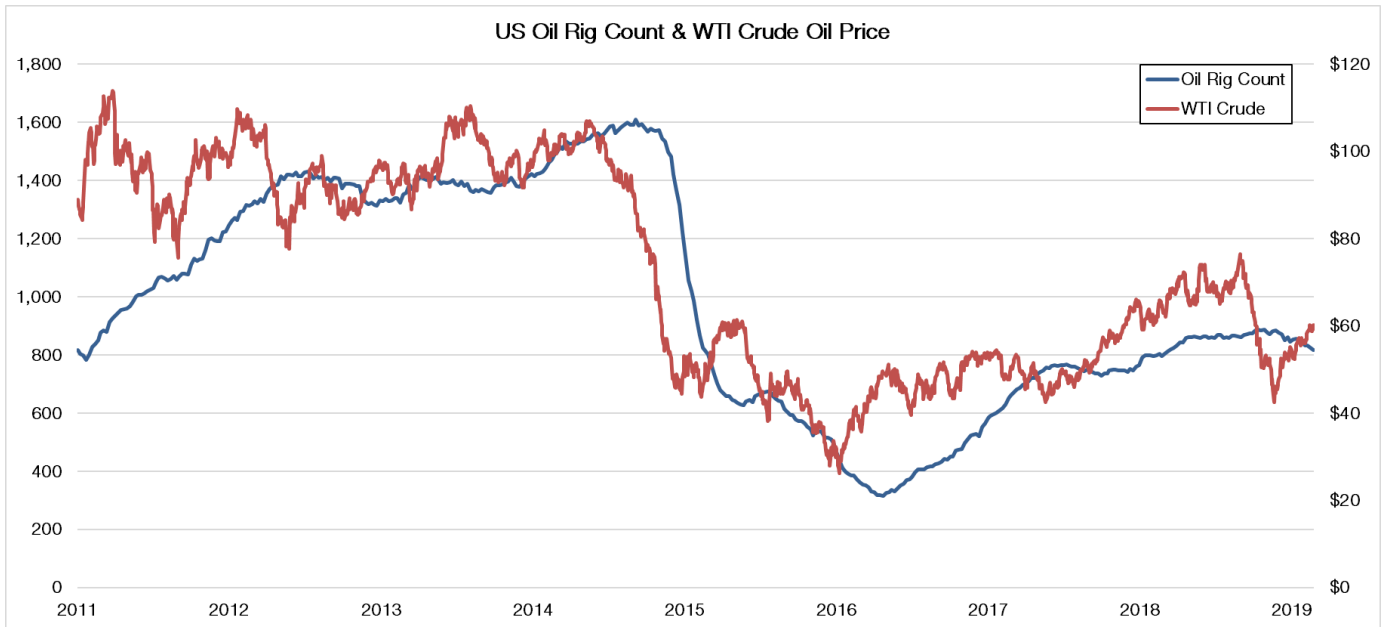
In terms of secondary market sales, crane values began stabilizing in late 2017. Used crane values have mostly held through Q1 2019, with the exception of the crawler crane category, which has experienced a weaker value environment in the most recent period.

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 has remained in the 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. At the end of Q1 2019, oil has ranged in the upper \$50's/barrel to low \$60's/barrel, representing a slight recovery from the more recent Q4 bottom.



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 through Q1 2019, Rouse observed utilization increasing for crawler cranes, all-terrains, and truck-mounted cranes. Rough-terrain utilization has slightly declined. 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.

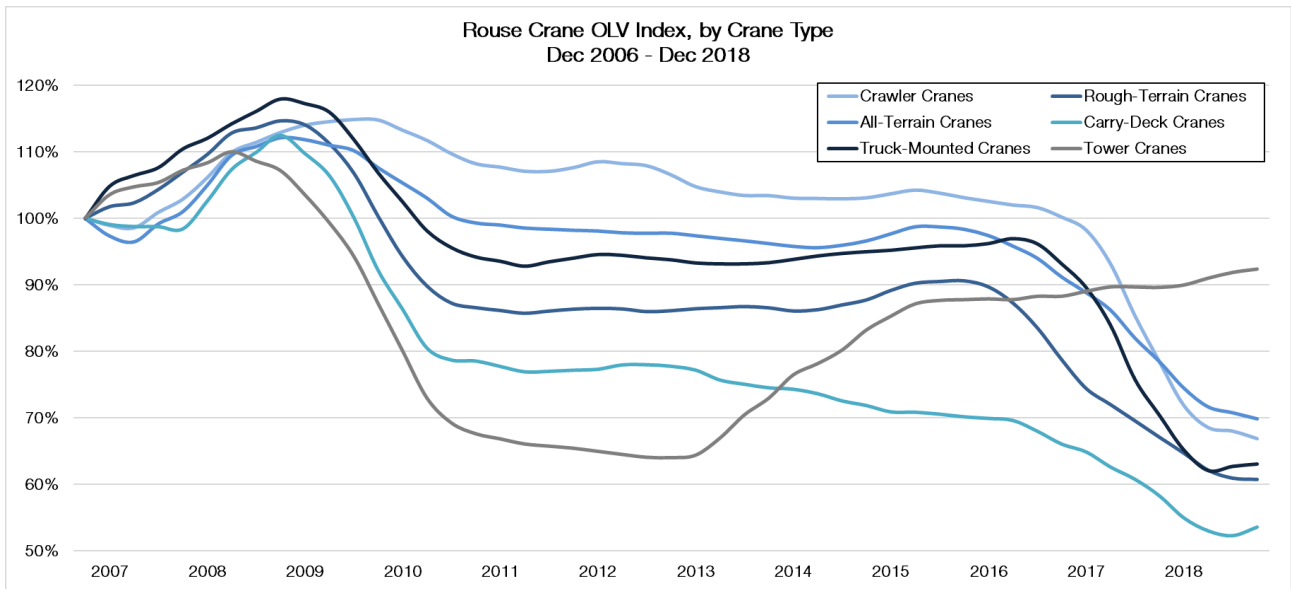
Crane Category	Utilization Trend	Notes
Tower Cranes	Continuing high demand	Non-res construction strong; full order books
Crawler Cranes	Continuing high demand	Crude oil slightly recovering in Q1 2019 from Q4 2018 drop. Overall utilization trend remains healthy
All Terrain Cranes	Continuing high demand	Crude oil slightly recovering in Q1 2019 from Q4 2018 drop. Overall utilization trend remains healthy
Truck-Mounted Cranes	Continuing high demand	Crude oil slightly recovering in Q1 2019 from Q4 2018 drop. Overall utilization trend remains healthy
Rough Terrain Cranes	Flat to slightly decreasing	Crude oil slightly recovering in Q1 2019 from Q4 2018 drop. Overall utilization trend remains healthy, but trend is slightly declining 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. Starting toward the end of 2017 and persisting through Q1 2019, 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 declining 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.

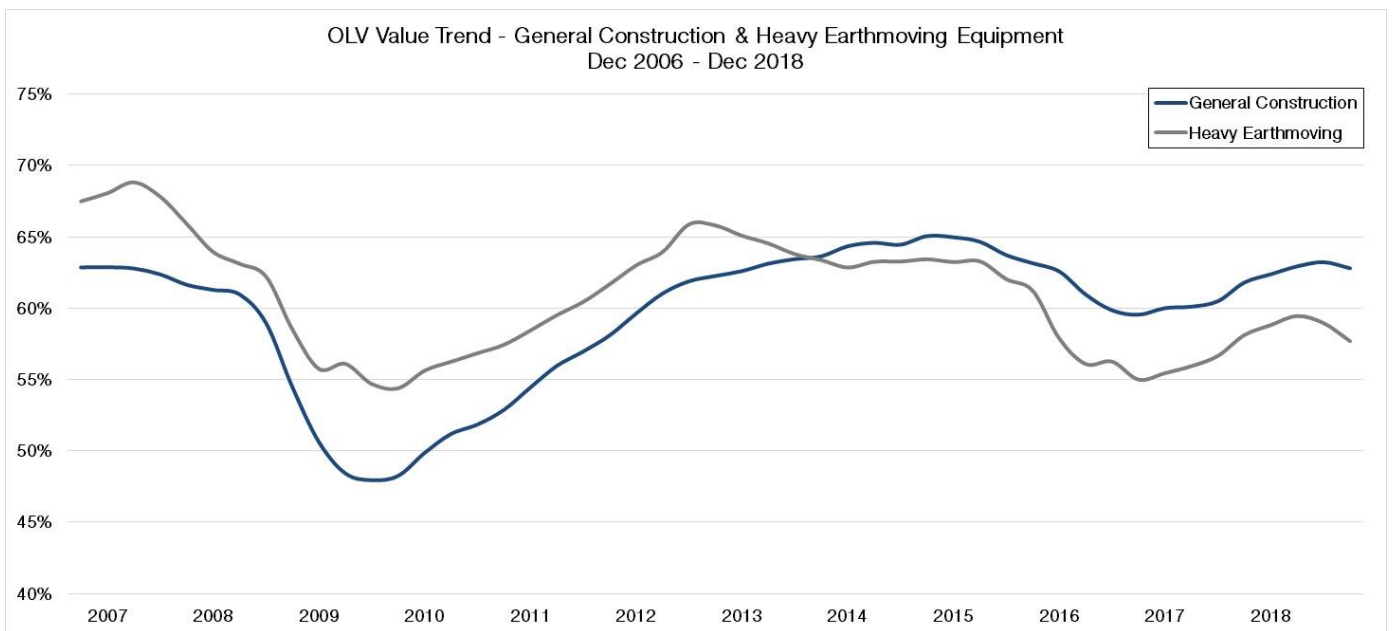
2018 witnessed some small increases in rental rate in select pockets of work, but the overarching theme had been one of continued competition in terms of rental rate. In the early stages of 2019, there appears to be a continued stabilizing trend for rental rate, though rates are not back at the peak levels when oil was over \$100/barrel. While the uptick in utilization and rental rate for some categories are positive signs for the industry, it does not appear that rate and used equipment values will reach back to pre-downturn levels during the near term.

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 from Q4'18 to Q1'19 suggest 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 on the following page, 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 Q1 2019, most crane categories have displayed stability.



Q1 2018 vs. Q1 2019 Auction Sales

The Ritchie Bros Orlando auction this year in 2019 saw substantially reduced volumes of crane sales, driving quarterly sales volume to decline year-over-year. Below are two charts compiling the first quarter sales in 2018 and 2019 in North America. As volume in 2019 has declined, the age profile of cranes moving to auction has shifted to older cranes. Rough-terrain crane volumes are notably down in terms of total sale price.

Q1 2018

Category	Units	Sale Price (USD)	Age (Months)
Rough-Terrain Cranes	150	\$17,058,725	171.9
Crawler Cranes	34	\$12,689,000	161.8
Truck-Mounted Cranes	28	\$4,420,931	159.4
All-Terrain Cranes	17	\$3,225,674	185.4
Carry-Deck Cranes	31	\$802,676	165.1
Tower Cranes	1	\$22,000	188.8
Total	261	\$38,219,006	168.5

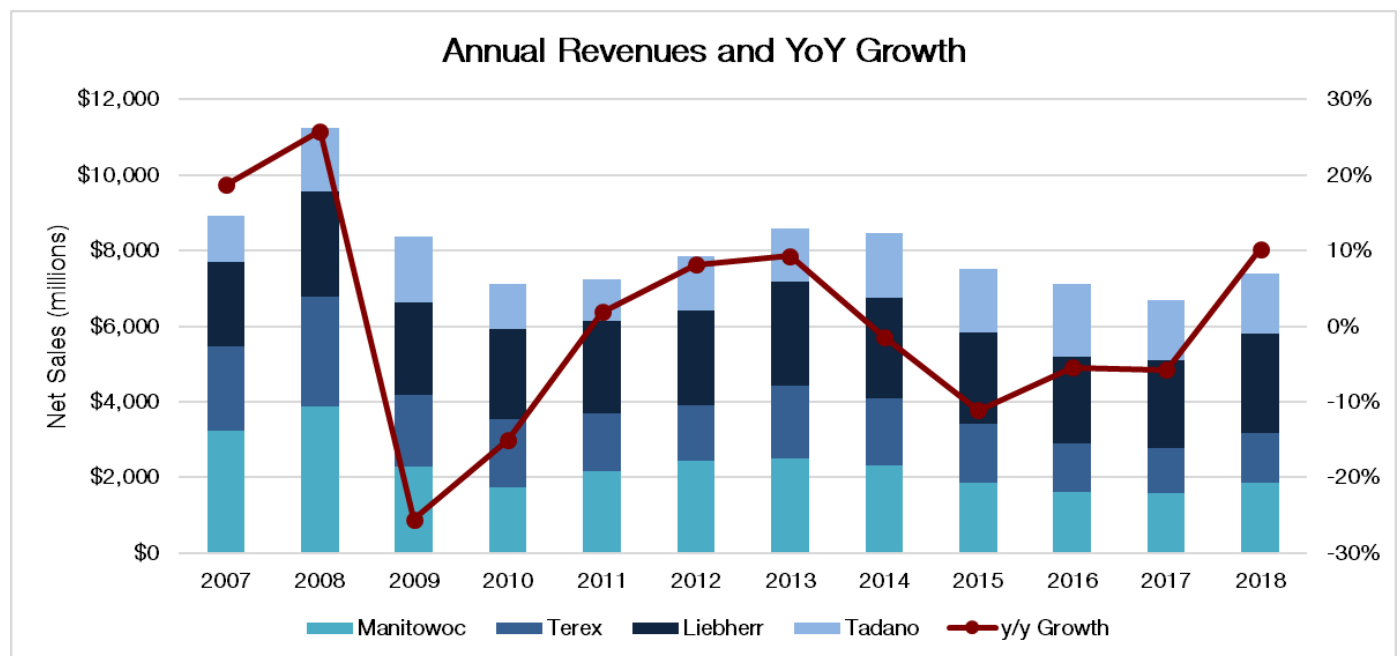
Q1 2019

Category	Units	Sale Price (USD)	Age (Months)
Rough-Terrain Cranes	91	\$5,140,626	231.6
All-Terrain Cranes	21	\$4,776,100	212.4
Truck-Mounted Cranes	35	\$3,589,056	208.0
Crawler Cranes	28	\$3,176,500	309.5
Carry-Deck Cranes	26	\$543,607	175.4
Total	201	\$17,225,889	234.9

OEM & Dealer Trends

Annual Revenues

Annual revenues for major manufacturers through 2018 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.



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. Throughout 2018, Terex and Manitowoc had reported on supply chain issues and material cost increases in an environment of increased sales. OEM's have been working through these supply chain and pricing challenges and have largely reported improving revenue results.

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	\$1,275	-18.6%	\$1,194	-6.3%	\$1,315	10.1%
Manitowoc	\$1,613	-13.5%	\$1,581	-2.0%	\$1,847	16.8%
Liebherr	€2,072	-4.0%	€2,057	-0.7%	€2,243	9.3%
Tadano	¥128,020	-14.5%	¥119,960	-6.3%	¥125,276	4.4%

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

-Terex: Annual results ending Dec 31 each year. Figures represented in millions of dollars.

-Manitowoc: Annual results ending Dec 31 each year. Figures represented in millions of dollars.

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

-Tadano: Annual results for 3Q of FY (Apr – Dec) of each year. Figures represented in millions of yen.

*Terex results for Cranes division only.

*Liebherr results for Mobile Cranes division only.

In North America, Terex Corporation announced for the year ending 2018 net sales of \$1,315m for the Cranes division, representing a 10.1% increase year-over-year. The biggest development in early 2019 was the sale of the Demag mobile crane business to Tadano, as the company cited an unlikelihood that the division would out-earn its cost of capital within an acceptable time period. The company will retain its Terex branded rough-terrain, tower, and pick and carry crane manufacture. By restructuring its cranes portfolio, the company states that operating margins and profits will increase for the company.

Manitowoc reported year ending 2018 net sales of \$1,847m, up 16.8% year-over-year. The company attributes the improvement to a recovery in the commercial construction and energy end markets. However, the company stated that forward-looking market conditions appear to be mixed. In North America, the rough-terrain and crawler markets are not expected to substantially recover in 2019. In Europe, various political factors are causing uncertainty in the crane market outlook.

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. Tariffs have also resulted in material cost increases, and manufacturers have had to adapt their operations to better handle these challenging developments.

The Liebherr Group and Tadano Global have echoed similar themes in their reports, indicating that the business environment outside of North America has partially recovered.

Liebherr posted year-end revenues of €2,243 million in 2018, a 9.3% increase compared year-over-year. The company cited a decline in the crawler crane market, especially for large machines, with the underlying cause being a downturn in the wind energy industry. Four to six-axle all-terrain cranes are the most popular products in the mobile cranes division.

Tadano's latest 3Q FY results indicate a similar trend as with the other manufacturers. The mobile cranes division sales through 3 quarters were ¥74,433 million, a 14.4% increase compared year-over-year.

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 has launched its first tower product in the Chinese market, with the intent of capturing the portion of the market that would be best served by tower cranes with very high development standards. The company has plans to refresh its overall line, and to introduce some new technologies on the higher capacity tower cranes.

Liebherr reported sales of €571 million, a 6.9% increase year-over-year. Expansion in the construction industry worldwide contributed to this increase, with particular strength in Europe, and North America also exhibiting this increasing trend. The primary growth drivers are top-slewing and fast-erecting tower cranes.

Inventory

Equipment dealers such as H&E Equipment Services cited a 5.7% increase in new crane sales year-over-year, and an improving utilization environment. The company stated that the future outlook is a bit uncertain as the crane market is difficult to pinpoint. The crane market has been in a trough for an extended period, and the recovery has been modest.

Conclusions

The market read through 2017 was one of continued softness across several 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 started showing signs of bottoming for most of the mobile categories. In early 2019, the data suggest that rough-terrains and crawlers have some additional downward risk on used equipment values.

Rouse continues to monitor secondary-market crane sales, rate and utilization achievement among crane rental companies, end market activity, and OEM trends. In Q4 2018, oil prices declined sharply, but prices have recovered modestly in Q1 2019. While most rental companies have reported continued high utilization rates in the most recent quarter, and rental rate appears to be improving, there has not been a corresponding increase in used equipment values.

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 \$40 billion of fleet and collects over \$14 billion of equipment transactions, annually, across North America and the United Kingdom.

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