REPORT OVERVIEW:
Market Analysis and Forecast
Loading & Haulage Equipment

Revised

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SUMMARY:
The mining markets worldwide experienced a sustained and remarkably strong five-year growth cycle beginning in late-2003 and ending abruptly in late-2008 when a severe global financial crisis propelled the economies of most countries into severe recession. The reversal of this down cycle was almost as dramatic and fast on the upside. By late-2011, mining activity has retraced the backward steps taken in 2009 to limit the impact of weak demand: mines have been reopened, output returned to former levels, development projects reactivated, Capex plans reinstated, and equipment orders are well above the previous peak attained in 2008.

In the context of a rapidly expanding market for the largest excavators and haulers, Parker Bay projects record shipments levels in 2011-12, followed by a modest correction in 2013, and a resumption of long-term growth during 2014-2016. Continued weakness in some developed economies might bring this correction forward.

This report summarizes the results of research conducted by the Parker Bay Company into the global market for two primary sets of mining tools essential to surface mining materials handling: the large mining trucks that transport ore and waste rock/overburden from the mine workface to the next stage in processing, and the three distinct types of excavating/loading equipment use to load these trucks – electric shovels, hydraulic excavators, and wheel loaders.

PARAMETERS:

<table>
<thead>
<tr>
<th>Product</th>
<th>Payload</th>
<th>Manufacturers Covered</th>
<th>Excluded from analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining Trucks</td>
<td>90 mt+</td>
<td>Caterpillar (and Bucyrus), Hitachi, Joy Global/P&amp;H (and Letourneau), Komatsu, Liebherr, Terex</td>
<td>Suppliers from Russia/CIS, India, China: Belaz, BEML, Hunan / XEMC, OMZ/IZ-Kartez, Taiyuan</td>
</tr>
<tr>
<td>Electric Shovels</td>
<td>20 mt+</td>
<td>Hitachi, Joy Global/P&amp;H (and Letourneau), Komatsu, Liebherr, Terex</td>
<td></td>
</tr>
<tr>
<td>Hydraulic Excavators</td>
<td>20 mt+</td>
<td>Letourneau, Komatsu, Liebherr, Terex</td>
<td></td>
</tr>
<tr>
<td>Wheel Loaders</td>
<td>20 mt+</td>
<td>Liebherr, Terex</td>
<td></td>
</tr>
</tbody>
</table>

SCOPE:
For each product line (and excavating/loading equipment combined), data and analysis of:
- 10 year history of annual shipments (2001-2010)
- 2011 first half actual data with full-year forecast
- 5 year forecast through 2016
- Year-end population/installed base (2001-2016)
- Annual decommissionings/removals (2001-2016)
- # Units and payload
- Size class
- Region and mineral
- Manufacturer (historical only)

PRICING:

<table>
<thead>
<tr>
<th>Description</th>
<th>Price</th>
<th>Database Subscribers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full report, Loading &amp; Haulage Equipment + data file</td>
<td>$4,000</td>
<td>$2,000</td>
</tr>
<tr>
<td>Report for Trucks only + data file</td>
<td>$2,500</td>
<td>$1,250</td>
</tr>
<tr>
<td>Report for Loading Equipment only + data file</td>
<td>$2,500</td>
<td>$1,250</td>
</tr>
</tbody>
</table>

Non-database subscribers required to sign a non-disclosure agreement.

INCLUDES:
- 80 page report and analysis (sections removed for Trucks or Loading equipment only)
- Interactive data file allowing further examination of all items mentioned in "scope" above
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At 20-25 mt, wheel loaders once dominated (60% plus prior to 2006) but as demand increased in Australia and Africa, smaller hydraulic excavators (95/120-180 mt) have made significant inroads and will continue to do so during 2012-2016. But wheel loaders like the new Caterpillar 935K and 955K will hold a majority of the market at least through 2016. Electric shovels have an inconsequential share and this will not change (Note: electric shovels built by O&K for the Russian/CIS market and by Tayuan for the Chinese market remain popular options in those two sectors, but these suppliers are not included in this analysis).

Longer term (beyond 2015), a number of factors, including an aging of the overall mining population with rising higher replacement requirements, will raise the growth rate for this type of excavator/loader above those projected for 2013-215. But likely nowhere near the dramatic rates of the recent past.

Shipments by Size-Class: 2011-2015

Within the average 7.5% apr, there are likely to be substantial differences by size-class. As indicated in the table below, this analysis assumes no development of a yet larger class of hydraulic machines to compete directly with the 50-mt-plus electric shovels that are most popular with the largest of large mines covered in this report. Excavators in the 63- and 77-mt classes are capable of loading the largest mining trucks (in four to six passes vs. three for the largest electric shovels) and are doing so in a number of applications. Given the only limited success of the 77-mt class, it might be argued that larger models would not meet with any greater success and thus hardly justify the development costs.

That said, the projection for shipments of the 77-mt class is for greater success than the past—only ten such machines were shipped over the past ten years. This projection for 11 units over five years, derives from several influencing factors: this size-class has shown some greater signs of market acceptance in the past four years than in the first ten years after O&K delivered its first RH400 (a machine already scrapped). Liebherr has introduced a competitive model, the R9500, with some early success. And Caterpillar now owns the O&K brand and its marketing and product support is expected to convince a growing number of miners to opt for this large hydraulic machine. Komatsu and Hitachi may opt to introduce models in this size-class and promote them aggressively. But even with a sharp percentage increase in deliveries, from just 11 units in 2010, excavators in the 77-mt class will account for less than 5% of payload delivered in 2015.

Given the relatively small size of the 77-mt class, it’s fair to characterize the 83-mt excavators as the units of choice when mines opt for large hydraulic machines to go with trucks in the 215-255 mt and larger classes. And for those mines that have already tapped the 3 geom-size-class already outnumber electric shovels 3 to 2 and manufacturers will ship nearly five times as many as their electric counterparts during the next five years. Given by demand at intermediate to large mines in almost all regions and all major mineral categories, shipments of 83-mt excavators will grow at above average annual rates through 2015 at which time they will account for one-fifth of all capacity delivered.

Despite the high-profile of the larger machines, it is in the intermediate size range – 50- to 50-mt — that manufacturers will find their greatest opportunities over the next five years. At 20-25 mt, hydraulic machines are expected to maintain a significant though slightly smaller share vs wheel loaders. But in the middle range they will dominate: two-thirds of all 30-35 mt shipments and over 80% of all 40-50 mt deliveries. But to a degree this success is also a limiting factor in projected shipments: growth can no longer leverage upward by increasing market share because there is...
### Market Analysis and Forecast, Loading & Haulage Equipment

**Report Overview:**
- **Title:** SAMPLES - DATA FILE
- **Content:**
  - Excel spreadsheet with data on truck production, loading, and hauling equipment, including size class, manufacturer (CATERPILLAR), and unit counts.
  - Data for years 2003 to 2010.

**Table:**
- **Columns:**
  - Size Class
  - Mfr
  - Units
  - # Units
  - % chg

**Chart:**
- Bar chart showing % share by size class for different years.

**Analysis:**
- Detailed analysis of market trends in loading and haulage equipment for the specified period.

**Footnote:**
- Report generated in October 2011.