

RT's on the up

Despite its involvement in the birth of the Rough Terrain crane, Europe - and the UK in particular - has never been a major market for this type of crane. The popularity of the RT is however growing in the region, albeit from a very low level and at a slow pace. We chart its progress and look at the recent developments.

Europe has never been a major RT crane market, although a reasonable number were sold here in the late 1970's and 1980's. Preliminary sales figures for this year suggest that total worldwide production will exceed 6,000 units. However less than 10 percent of them will end up in Europe. Most will be built and purchased in North America and Japan. It is surprising therefore, that the majority of RT's sold in Europe are actually built here, mostly in Italy by Terex (Bendini), Grove and Locatelli, with Italy Eastern Europe and France being the major markets.



A typical application for a Rough Terrain crane.

European production of Rough Terrain cranes came relatively quickly after the concept's birth in the USA in the early 1950's (See the birth of the RT page) and later developed in France, mainly through PPM (Potain Poclairin Materiel) which became a major player with

a range of proper, although sophisticated, RT's with long full-powered booms and high pressure hydraulics. Southern Europe and Italy in particular has a long affinity with Rough Terrain cranes. It is by far and away the largest user of RT's in Europe and numerous manufacturers are based there: Terex Bendini in Bologna, Locatelli in Mapelli, Lombardy, EuroRigo in Domegliara near Verona and more recently Grove at the Manitowoc/Potain manufacturing plant in Niella Tanaro near Turin.

The most recent manufacturer producing a RT crane is TCM. Based in Termoli, it is the only manufacturer in Southern Italy.

There has been a modest increase in RT sales into Europe over the past few years and up to the present economic 'crisis', this looked set to continue. Traditional uses for the machines include power station, refinery and offshore construction, all of which appreciate the products compact dimensions and pick and carry capability, not to mention simplicity and cost compared to the more sophisticated and expensive All Terrain cranes.

New kid on the block

A substantial increase in demand for RT cranes in the Russian and Middle Eastern markets since Bauma last year was the major factor in Italian manufacturer TCM developing its product range, including a number of Rough Terrain cranes.



Italian manufacturer Bendini now exports the majority of its products to Europe, Africa, and the Middle East



The company says that it is initially manufacturing a 35 tonne and 55 tonne models but will add 25 tonne and 70 tonne models to the range next year.

The smaller 35 tonne model has very similar specifications and dimensions but has a total weight of 27.2 tonnes with counterweight, a 34 metre lift height with the standard boom, 45.5 metres with hydraulic jib.

40 years of Bendini

During the summer, Terex Italia celebrated its 40th anniversary which included product demonstrations of its latest Terex Bendini RC30 which is scheduled to go into production next year together with the RC60.

Production at the plant has increased enormously since its acquisition by Terex. Bendini SpA was founded in 1968 and the product range now includes lifting capacities from 30 to 60 tonnes including seven RT's and three crawler crane models.

"In the past, Bendini was an Italian crane manufacturer that concentrated

TCM's first Rough Terrain crane, the RT55, will be unveiled at this month's SAIE show in Bologna.



TCM's first RT, a two axle, 4x4x4, 55 tonne unit will be unveiled at the SAIE exhibition in Bologna later this month. Little information is available at the time of going to press, however we are told that it will have a maximum lift height on the five section main boom of 36 metres with up to 46 metres using a hydraulic jib. The crane is a shade over 10 metres long, is 3.35 metres high and 2.5 metres wide. It uses a Dana 24000 transmission giving a maximum road speed of 40 km per hour. Total weight with standard 5.5 tonne counterweight will be just under 30 tonnes. TCM says that its RT range will follow its basic design standard with a very short boom overhang to avoid 'pitching', triple pumps to allow multi function operation, and the ability to tow a trailer with 15 tonne load.

mainly on the domestic market. Today, we export the majority of our products with Europe, Africa, and the Middle East being our main markets," says Fabio Fenzi, Terex Italia sales director.

The new Bendini RC 30 will replace the A300 which was introduced in

rough terrain cranes C&a

1985 (with a lifting capacity of 25 tonnes) as the 25 Beta developing into the A300 with an increased lifting capacity in 1997. The new 30 tonne RC30 features a three section 27.4 metre boom which can be telescoped with partial load. The basic version weighs 24 tonnes, is 2.55 metres wide and is powered by a Tier 2 turbocharged engine, all-wheel steer and drive and six speed transmission. Maximum speed is between 34 and 36 km per hour depending on the wheel size.

Production of the 60 tonne Bendini RC 60 has been running since the end of 2007 and features a 40 metre main boom. Total weight is 41.4 tonnes, the outriggers extension can be carried out from either from the cab or from the ground. The machine features a Tier 3, six cylinder engine giving a maximum road speed of 29 or 31 km per hour depending on the tyre size.

Management and strategy changes

Terex cranes has recently undergone some senior management changes which impacts the Bendini business. Doug Friesen, previously responsible for Terex cranes Waverly, the group's major RT production plant, has taken over the top job at Terex Demag in Zweibrücken. At the same

towards building a single product line for worldwide consumption. "Terex has grown through mergers and acquisitions - Bendini and Waverly included," said Friesen. "Both RT manufacturers have their own engineering, manufacturing and distribution. There has been little conflict between the marques with Waverly in the US and Bendini in Europe. However both compete in the Middle East and Africa so we need to rationalise production for the global market."

A final strategy has not yet been decided but Friesen said that a possible solution might be to manufacture different capacity cranes in different plants. He also stated that the two engineering groups are currently working together on new crane development.

Grove grows in Italy

Manitowoc's plant in Neilla Tanaro, Italy now builds all of the company's two and three axle Grove All Terrain cranes as well as producing the RT530-2 and the latest rough terrain crane, the RT540E for the European, Africa and Middle East regions. The RT540E is also manufactured at the main Grove plant in Shady Grove, Pennsylvania.

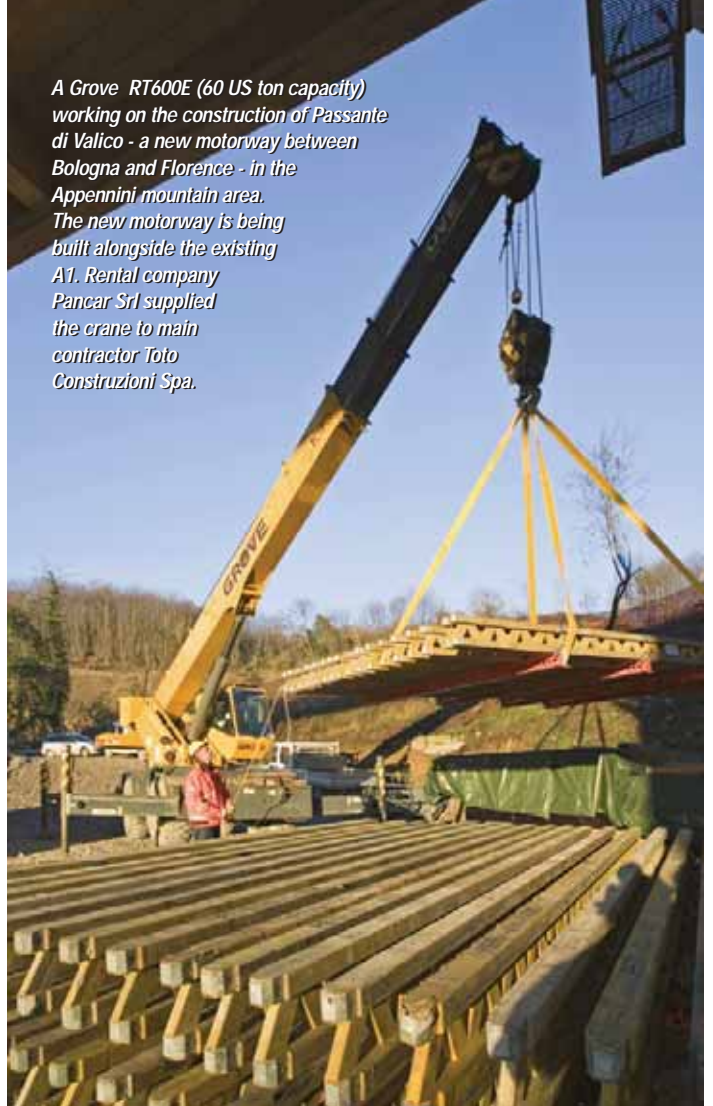
Earlier this month, Manitowoc officially opened two additions to the Shady Grove facility - a 4,600 sq metre final assembly building and a 920 sq metre boom assembly area intended to provide increased capacity and quality improvements specifically for the Rough Terrain crane production lines.

The RT540E features dual-axis, electronic joysticks and a more modern cab. "Operators can easily view gauges for all engine functions on the clean, automotive-style control panel," said Neil Hollingshead, global product manager for Manitowoc's

rough-terrain crane product line. "The joysticks provide smoother control and improved comfort. Because there are electronic controls in the cab instead of hydraulics, no excess heat is brought into the cab through hydraulic lines."

The 40 ton crane has a 30 metre, four-section full-power main boom. An off-settable telescopic swing away extension is also available that extends the maximum tip

A Grove RT600E (60 US ton capacity) working on the construction of Passante di Valico - a new motorway between Bologna and Florence - in the Appennini mountain area. The new motorway is being built alongside the existing A1. Rental company Pancar Srl supplied the crane to main contractor Toto Costruzioni Spa.



Grove's latest Rough Terrain crane is the RT540E is built in Manitowoc's plant in Neilla Tanaro, Italy for the European, African and Middle East region.

height to almost 47 metres. Power comes from a 160 hp tier 3 Cummins engine and a new load sensing high pressure hydraulic system. There is standard full length steel decking on the crane with anti-skid treatment. Overall width is 2.59 metres.

Link Belt on the way

Another North American manufacturer Link Belt - which entered the European market with its Truck Terrain cranes last year, appointing crawler crane sales and

rental company NRC as its UK dealer - is currently planning a European launch of its RT cranes in the first quarter next year.

The company says it will initially import the RTC-8065 Series II to Europe. The 60 tonne crane is one of its best sellers in the United States and Link Belt says that it is well underway with work to make it fully CE compliant. Link Belt also introduced its biggest Rough Terrain crane ever - the three axle RTC 80130 - at Conexpo earlier this year. The new model combines the benefits of the 91 tonne RTC-80100 Series II, with Link Belt's latching (pinned) boom technology.



The Link Belt RTC-8065 Series II is scheduled for a European launch in the first quarter next year.



The new Bendini RC30 features a three section 27.4 metre boom which can be telescoped with partial load.

time Terex Bendini general manager Marco Gentilini has been promoted to Friesen's old position - vice president and general manager of Terex Cranes North America and has relocated to Waverly, Iowa. Gentilini also retains responsibility for Bendini.

His move is part of a long-term plan to rationalise the group's RT product lines produced at the Bendini and Waverly plants, in order to move

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The RTC 80130 - seen here at its launch at Conexpo earlier this year - is the largest Rough Terrain crane Link Belt has ever produced.

The five-section, 49.3 metre boom has a one double-acting, single stage hydraulic cylinder similar to many All Terrain cranes. Link Belt says that one of this crane's major features is the three metre heavy-lift swingaway type boom extension, for heavy bulky loads. An optional 9.4 to 16.7 metre bi-fold lattice fly, plus three 5.5 metre lattice inserts take the maximum tip height to 84.7 metres and is off-settable to 2, 15, 30, and 45 degrees.

The crane is normally transported in two loads with the base machine with boom, both winches, three-piece extension and tyres weighing less than 43 tonnes. On the right trailer, the load height can be kept under 4.3 metres and, without the counterweights and outrigger boxes, is less than three metres wide. Link Belt says that the counterweight and outriggers can be removed and the machine made ready for transport in an hour with no assist crane.

Rick Curnutte, Link Belt's product manager for telescopic cranes says: "Six years ago at the 2002 Conexpo Link-Belt introduced the RTC-80100 Series II which was the first six wheel, hydrostatically driven rough terrain crane, [Long defunct Finnish manufacturer Lokomo, offered a high speed three axle RT during its hey day.Ed] It quickly redefined the large rough terrain market by being the only large RT designed with transport in mind. We feel that the

RTC-80130 Series II will be just as successful!"

With most RT's in Europe in the 30 to 60 tonne range the RTC 8065 will be an interesting addition. Demand for the larger models on the other hand will probably be limited.



The Italian Italian

Locatelli has been producing Rough Terrain cranes for many years and is one of the few companies with Italian ownership. The company was acquired in early 2007 by the major rental company Venpa which shares cross ownership with the CTE group, the aerial lift manufacturer and distributor. The new ownership has brought in new investment and distribution skills which is helping the company to grow.

The company launched the 30 tonne capacity GRIL 8300T in July with a 25.5 metre, four section boom, new cab and more sophisticated control layout. It is also thought to be introducing an upgraded 35 or 40 tonne Rough Terrain crane - the Gril



The 55 tonne capacity GR550EX from Tadano.

8400T at the SAIE show in Bologna later this month. The new model will, we understand, feature a new 29.5 metre hexagonal section main boom.

Locatelli has also signed a new agreement with two new companies Russia and the Ukraine.

Italtechimport based in St Petersburg becomes its official dealer in Russia, while Interbudtechnica becomes its official agent for the Ukraine, dbased in Kiev.

The leader from the east

Tadano, the Japanese based manufacturer is celebrated its 60th anniversary in late August. The company built its first RT in 1970 and is today, arguably the largest producer of Rough Terrain cranes, most of which are sold in its home market. It has though also made a

tonne GR 300EX, the 55 tonne capacity GR 550EX, with a 42 metre boom and 17 metre bi-fold swing away extension, the most recent addition to the company's European line and the 70 tonne GR 700EXL.

At Conexpo it launched the compact 13.6 tonne, 31.4 metre tip height GR150XL, although more a city crane than a true RT with its low level stowed boom. Powered by a 135hp Cummins engine it measures just 7.43 metres long, two metres wide and 2.8 metres high and offers a road speed of 49 km per hour. The unit is not available in Europe yet although it would be a popular machine here. So although a relatively small market in Europe compared to other mobile cranes, the Rough Terrain is slowly increasing in popularity. The current

Launched this summer, the Locatelli GRIL 8300T has a 25.5 metre, four section boom, new cab and sophisticated control layout.



solid and steadily growing impact in North America, the home of the RT. In Europe it is best known for its Tadano Faun All Terrain cranes but is quietly selling an increasing number of Rough Terrain in the region. The company produces five different models in total, but only markets three of them in Europe, the 30



Not available in Europe, the compact Tadano GR150XL is more of a city crane than true RT.

economic crisis must impact on sales in its traditional markets, but manufacturers are already looking to areas such as Russia and the Middle East where demand is growing.

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The first power telescopic boomed cranes came on the scene in the late 1940's and early 1950's and were essentially pick and carry yard cranes, often designed by equipment manufacturers to handle components in their own plants. It did not take too long however for these yard cranes to evolve into the first Rough Terrain cranes in order to cope with poor ground conditions found in most yards. Pick and carry was still the key application and yard work was clearly the principle objective.

Austin Western is widely credited with building the first commercially viable Rough Terrain cranes with the launch of its 4x4 five ton model SP in 1953, followed by the more sophisticated 210 in 1955. A key development in the SP was the location of the operators cab or rather post, at the front of the chassis, rather than behind the boom as on most of the earlier industrial cranes.



The Austin Western SP launched its 4x4, five tonner in 1953.

This concept of cab up front and engine to the rear became the mainstream 'cab down' rough terrain cranes that were built in massive volumes during the 1960's initially as five and 10 tonners. Lift capacity grew, eventually settling into the high volume 15 tonne models built by Pettibone, Galion and Austin Western all manufacturers of graders which used the components in the first RT cranes. Grove in the USA soon joined in while in Europe, Manchester-based Taylor introduced its Jumbo crane which was to evolve into the Coles Hydra Speedcranes and Hydra Husky's. Meanwhile in Italy Locatelli built

cab down Rough Terrains similar to those made in America.

The first RT cranes were used in a wide variety of jobs, from road building to refinery construction

Taylor's Jumbo crane evolved into the Coles Hydra Speedcranes and Hydra Husky's.

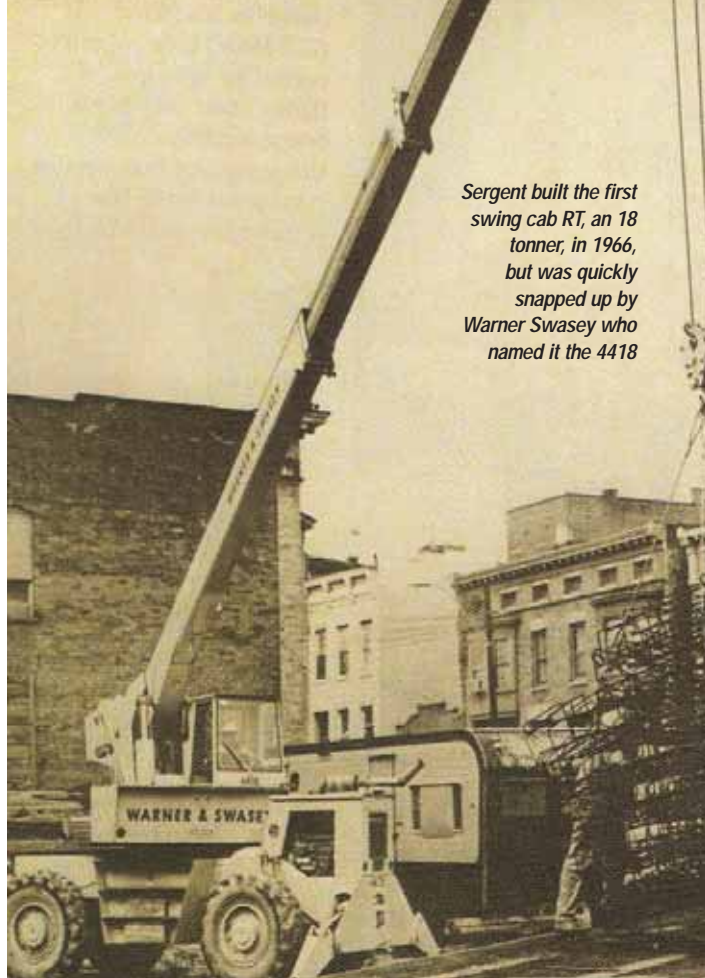


largely replacing industrial type cranes and small mechanical crawler cranes. However most of the explosive growth in sales of such cranes was spurred by the massive post-war construction boom.

It is important to note at this point that while the Rough Terrain crane became the chosen lift crane in North America, Europe was already leaning towards cranes that were less costly and easier to move around. Companies offering cranes complete with operators for



Locatelli built cab-down RTs similar to those made in the USA.



Sergent built the first swing cab RT, an 18 tonner, in 1966, but was quickly snapped up by Warner Swasey who named it the 4418

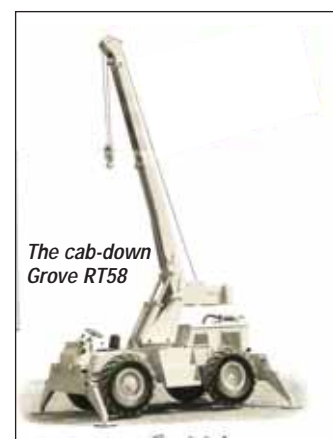
of work, so it was only a matter of time before someone considered mounting a truck crane type superstructure on an RT chassis. The breakthrough was eventually made in 1966 by a little know company Sergent Engineering from Fort Dodge, Iowa, which introduced the 18 ton, 4418 model. The company was quickly snapped up by Warner Swasey, however the company failed to take full advantage of its lead and it was Grove which launched the 25 ton RT625S quickly followed by the 18 ton RT60S that fully exploited the rapid growth in the Rough Terrain "Swinger" market.

The RT60S quickly became 'The' crane and along with the cab-down RT58 and later the RT65S and RT75S Grove gained an almost dominant share of the RT market.

rent were springing up all over to provide the specialised equipment to contractors and they naturally preferred road going cranes which offered more versatility.

In the USA, contractors tended to buy equipment or rent it in without operators on a monthly basis. In Europe the preference was, and still is, to rent cranes for each lift and only when needed and so renting cranes by the day complete with operator. This post war differential is still very visible today, in that Europe prefers All Terrains while America generally prefers Rough Terrains.

As the Rough Terrain cranes became larger, they were more frequently used for cycle work, such as placing steel work or pouring concrete. The restricted visibility of the cab down crane was not ideally suited to this kind



The cab-down Grove RT58



The P&H Omega 20 launched in 1977, upset Grove's dominant position.

This position was rocked to the core in 1976 when P&H - whose WS series Rough Terrains had not made much of an impact - unveiled its Omega series to go head to head with the by now dated RT60S. The top of the range Omega 20 had a higher nominal capacity than the Grove and in comparison with the 60S looked like a Volkswagen Beetle compared to a Model T Ford.

successful RT980 and updating the entire line including the venerable RT58. The success of the RT980 encouraged attempts to introduce a larger RT but led to the ill-fated RT1650 on four axles and with hydrostatic drive.

Since then Rough Terrain development has not really progressed a great deal. Certainly cabs and controls have improved beyond recognition, some longer booms are available and lift capacities have improved but in terms of all round performance the current crop of American-built Rough Terrain cranes are closely related to the cranes introduced in the 1980's.

However something changed in the 1980's as Japan began to perfect its take on the Rough Terrain crane and the market began to replace its truck cranes with RT's. The Japanese models built by Tadano,



A Tadano TR200M from 1980

Grove's response was classic textbook stuff...It began by picking apart the Omega, from its front mounted engine to its random sequenced boom and plastic sheaves. At the same time the company pulled out all the stops to introduce a replacement for the 60S. The result - designed, engineered and in production within 12 months - was the RT500 series which eventually ended P&H's run at RT market leadership. Grove - shaken up by the whole affair stepped-up its product development launching the highly

Kato, Kobelco and Komatsu offered decent road travel characteristics thanks to sprung suspension and multi-section booms which retracted into a more compact package with less boom overhang. The smaller models quickly morphed into the modern City crane. During the late 80's and early 90's Tadano became the largest producer of Rough Terrain cranes worldwide and began, thanks to a strong local market, to sell a respectable number of units in North America, although the high specification and thus high price was not to everyone's taste.



The RT500 series, topped by the RT522 and launched in 1978 was Grove's response to the P&H Omega.

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