# **Dolly mixture proves sweet for Versa-Dol**

US-based Versa-Dol Industries Inc recently introduced a patent-pending (US and PCT) self-loading transport system for empty containers that does not require use of a chassis or tilt-back/roll-back trailer.

Versa-Dol's one man-operated M1000 system, which initially is targeted at the ground level storage container market, comprises a road tractor fitted with a hydraulic lifting boom and a self-propelled, hydraulically-driven 2-axle dolly that is operated by remote control. When not in use, the dolly is stowed by the boom on either the fifth wheel plate or on a secure storage rack above the tractor cab.

The system is self-reliant as it is always with the road tractor. It is also highly manoeuvrable and requires less space for grounding or picking up containers. It can haul any 20ft-53ft empty ISO or US domestic container.

To illustrate how the M1000 works, a loading sequence is as follows. Where space allows, the tractor is positioned in front of the



When not required for containers, the dolly can be stowed on top of the tractor cab, freeing the tractor for normal road trailer duties

container, leaving enough clear space for the dolly to be lowered behind it by the boom.

The boom releases the dolly and is then extended behind it and, via its lifting bar equipped with chains and hooks that are attached to the bottom corner castings, lifts the near-end of the container. As the container is lifted, the dolly is powered undermeath it towards the far end. Lifted height obviously depends on the length of the container (ie shorter containers are lifted higher than longer ones).

Once the dolly is in position, the near-end of the container is lowered to the horizontal position and secured to the tractor with ISO twistlocks. The container is secured to the dolly with twistlocks and approved strapping.

Where space is at a premium, the dolly can be lowered and released at a position other than directly in front of the container and manoeuvred underneath from an angle.

For grounding a container, the process is reversed. The container is lifted off the tractor by the boom and the dolly is powered forward towards the rear of the tractor as the far end of the container is lowered to the ground. Once the dolly has cleared the underside of the container, the boom lowers the near end of the container to the ground.

## **Dolly position**

In transport mode, wheelbase requirements are determined by US-DOT bridge laws, but since the M1000 is aimed at empty containers, weight is not an issue - the heaviest 53ft known to Versa-Dol has a tare of around 13,000 lbs.

Versa-Dol's president and CEO, Keith E Pugh, adds, however, that the dolly can be positioned manually to meet standard requirements for the respective container lengths. For 20fts and 40fts, he says, most operators position the dolly at the rear of the container, with the wheels being pretty much in the same position as with a typical chassis.

For longer containers, the dolly is positioned, again manually, where the adjustable tandem units would normally be positioned. The dolly's extendable bumper/light bar provides for this capability. Under US-DOT rules, an empty container can overhang the rear of the "trailer" by 5ft and be road-legal. Versa-Dol has designed the dolly to meet this requirement as a minimum.

Pugh adds that the dolly is fitted with a brake and a retractable platform with side rails that grip the container. The brake and gripping action act to prevent the dolly being "pushed forward" as the container is lowered onto or lifted off it. The gripping also



Top: The dolly is lowered into position by the tractor-mounted boom. Middle: As the near end of the container is lifted by the boom, the dolly is powered underneath by remote control. Bottom: The near end of the container has been lowered onto the tractor, everything has been secured and the M1000 is ready to roll





helps ensure accurate alignment. By securing the container to

both the tractor and the dolly with twistlocks, the system meets port and rail terminal safety requirements as well as highway rules.

#### Intermodal move

The M1000 is being introduced to the intermodal market. Having met the twistlock safety requirement, the system has been approved to enter and exit terminal locations with empty containers on board, and it can be used to move empty containers in in-terminal operations.

In land transport modes, buff and draw forces are taken by chassis or rail cars, but the M1000 imposes some of these forces on the containers themselves.

Versa-Dol has discussed this with customers. "We believe that since the typical container's design and construction has taken into account the weight and stresses of a load, its construction is more than adequate to stand up to the minimal buff and draw you refer to," Pugh told WorldCargo Neus.

"The corners do not support the entire weight of the contains as the dolly assists in spreading the load by being positioned under at least the rear (off (up to 11ft) of the container and the fifth wheel plate is under the front 3ft.

"The top and bottom rails and floor construction are more than sufficient to withstand the push/pull forces generated during a haul since there is no load factor to consider. Throughout the development process and many actual hauls, no damage to a pulled constitute has been sufficiently because of the process."

tainer has been seen."

Pugh adds that Versa-Dol has seen more container damage caused by utilising a flat bed/chain drive trailer and or a rollback/tiltback truck, due to "dragging."

#### Good feedback

Customers so far include Container Mobility Canada Corp, based in Carstairs, Alberta, which is an established Steelbro "sidelifter" operator for loaded container handling and transport, and Flextran LLC, a transport company based in Atlanta (GA), where Versa-Dol itself is based.

"So far we have bought a couple of units and we have found that they are very fast and flexible, and we can get containers in and out of places that were not accessible before," says Larry L Enterline, a director of Flextran.

# Not space hungry

The M1000 needs only about half the space needed by a roll-back/tilt-back trailer and, as noted, Versa-Dol says that it does less damage to surfaces and the containers as it eliminates dragging. When not in use, the only space needed is the space to park the road tractor.

It also offers the opportunity to minimise deadhead runs by mixing and matching trailer and container loads on the same route, without having to return to home base to collect or drop off a chassis or semi-trailer.

The M-1000 system was invented by Herb Phillip and is being developed and marketed by Versa-Dol, which will install it on a customer's road tractor or, alteratively, supply the road tractor as well. Full operator training is also provided.

The dolly is controlled using

The dolly is controlled using a 10-function remote keypad, while the lifting boom is operated from a lever bank located just behind the tractor cab.

hind the tractor cab.

"We believe the system will revolutionise the transportation of empty containers in the ground level storage market and, over time, also the intermodal market," said Pugh. "It stands alone with regard to originality, functionality and competitiveness. "We offer a product that promotes increased MPG averages, fewer fuel-burning deadhead runs, reduced environmental impact, virtual elimination of ground surface damage and reduction in raw material usage during the manufacturing process." 

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