

NM01MNT-06 Final Report

Post Driver for Steel Guardrail Posts

Objective:

The objective of this research project was to locate an existing product, or if necessary, design and develop a product for use as a driver for steel guardrail posts. The post driver would also be able to minimize the bending and twisting of the steel guardrails. The post driver would be used on the NMDOT salt trucks or similar highway department machinery. Additionally, the research gathered would be information on existing post drivers that would help facilitate the installation of guardrail posts toward less manpower and equipment elements.

Data Collection

- A literature search of the various types of post drivers was conducted.
- Munro Digger Driver representatives were contacted for technical information.
- Upon verification of the product solution(s), the customer was contacted.

Literature Search

The Post Driver for Steel Guardrail Posts research project was identified as part of the 2000 RQI Action Plan initiative from David Wingo (District 4) and Frank Madrid (Santa Rosa Patrol). The intent and scope of the project was reviewed and clarified between the customer and the project reassignments delegated to various staff members. The literature search continued in order to find post drivers on the market at the current time.

Early literature searches identified Hydraulic Post Drivers and Skid-Steer Mounted Post Drivers that provide work-saving space and versatility for various tractor types. These heavy-duty drivers are built for a one-man operation that is durable enough to drive railroad ties quickly and easily. A Final Report on “Guardrail Installation Noise Level Evaluation,” State Planning and Research Program Project 315, Oregon Department of Transportation and the Federal Highway Administration has also been provided. This report evaluates the impacts of noise and mitigation of noise issues. Various types of guardrail post drivers were measured such as the weight drop post drivers, the vibratory post drivers and the auger style post drivers.

Conclusions and Recommendations

In 1963, the world’s first tractor mounted, hydraulic post digger driver was invented in Australia, the Munro Digger Driver where fencing would undergo a revolutionary change. Final research was conducted during the first half of 2003 resulted in the identification of the “Munro Digger Driver.” A few weeks prior, Mr. Leo Van Sambeek, North American Distributor for Munro Industries, Inc., notified the project investigator that Washington Department of Transportation (WDOT) has ordered their third Munro Digger Driver (MultiSett with the sideshift) to be mounted for use on their snowplows. Mr. Van Sambeek stated that Mr. Kerry Siler of WDOT can be contacted at (509) 754-2056 for product reference. The Munro Digger Driver combines a pilot-hole and post driver in one machine: posts are driven more easily into rocky areas, dry soils or hard clays; driving posts with a wide range of shapes and sizes (wood posts and railroad ties, steel t-posts, beams, and oil-field pipes, plastic, fiberglass and concrete); total elimination of labor intensive tamping; and faster, straighter and tighter post setting among other features.

The distributor of the Australian-built Munro Digger Driver provided staff with a VCR tape, a power-point slide presentation(s) and product information. Copies of the tape and presentations were then forwarded to Mr. Wingo for his review and comments. After review the slide presentations and product information, Mr. Wingo indicated he thinks it's a product that will be very useful solution and adaptable to their snowplows. He concluded that the research project should be closed out.

REFERENCES

BETTER ROADS, Highways, Streets, Bridges and Traffic Safety, "Deicing, Anti-Icing Survey Results, Counties Use GIS and Making It Easy to Get Online," April 2000.

CIA MACHINERY, INC., Reedrill, Inc., Drilling Rigs (Texoma 270, 330, 500, 600 and 700 series machinery), and Internet: <http://www.ciamachinery.com/reedrill.htm>.

CRYOTECH Deicing Technology, "Cryotech CMA40 Calcium Magnesium Acetate Blend with Sodium Chloride," <http://www.cryotech.com/cma40.htm>, January 8, 2002.

MUNRO INDUSTRIES, INC., North America's Distributor, HCR 89, Box 327-B, Hermosa, South Dakota 57744, Phone: (605) 255-4356, Fax: (605) 255-4939, Email: info@diggerdriver.com, Leo L. Van Sambeek, Sales Representative, and Internet: <http://www.diggerdriver.com/index.html>.

NMDOT, District 4, David Wingo, Maintenance Superintendent, P.O. Box 30, Las Vegas, New Mexico 87701-0030.

OREGON DEPARTMENT OF TRANSPORTATION (ODOT), "Guardrail Installation Noise Level Evaluation Final Report" by Rick Poecker and Brett Sposito, State Planning and Research Program Project 315, Research Group, 200 Hawthorne SE, Suite B-240, Salem, OR 97301-5192 and Federal Highway Administration, Washington D.C. 20590, June 1999.