



MN/DOT's role with FHWA's Integrating Mobile Observations (IMO)

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Your Destination...Our Priority





Things I'm not going to talk about today

- MDSS – #1 on Curt's priority list
- Money – MN/DOT can save \$5-\$10m per year by implementing the products MDSS and mobile technology make possible
- Victories– the fact that MN/DOT has been able to reverse employee attitudes towards these products in less than 1 year





Items I will focus on



- MN/DOT's binge/purge cycle with AVL
 - 0-125-0-215
- Positive effect of IMO on MN/DOT's deployment
- Struggles and lessons learned
- How to use our past to build a better future





Effects of FHWA IMO Project

- MN/DOT was able enhance its MDSS/AVL effort with this project
 - Added support personnel to handle extra workload
 - Accelerated AVL deployment
- Forced us to think and work “out of the box”
 - Performed development and testing in many areas that would have waited several years without the project
 - Developed interim products to test value and employee acceptance





Present Status

- Approximately 300 plow routes with MDSS throughout the state
- AVL is currently installed in 210 plows and 6 Light Duty trucks
 - All trucks with AVL have interfaces allowing them to collect data from the Controller Area Network (CAN)
 - 2010 & 2011 Navistar's have a much more robust data set than the older Sterling's
 - Additional sensors were installed to allow us to collect data on Sterling's so data set was similar to the CAN info on the newer trucks
 - Navistar is interested in helping us get additional data from their trucks
- End of shift report allows our operators to report chemical use faster and more accurately





END-OF-SHIFT SCREEN

Select the 'End-of-Shift' button, then select the time period you were in the truck, and finally select 'Show End of Shift' button.

The screenshot displays the 'End-of-Shift' interface. On the left, a dark grey panel shows vehicle status: a green dot and '10:46 AM' at the top, followed by 'Connection GPS Time'. The main display shows 'Road 16 F' and 'Air 15 F' in large white text. Below this, it lists 'SALT: 99', 'SAND: N/A', and 'PREWET: N/A'. At the bottom of this panel are three buttons: 'Main', 'End-of-Shift Report', and 'Bright'. On the right, a white panel shows the report generation process. At the top, it says 'Page loaded 2011-12-08 10:47:14 am CST' and 'End of Shift Reports'. A dropdown menu is open, showing time intervals from '1 hour' to '13 hours', with '12 hours' selected. To the right of the dropdown is a 'Show End of Shift' button. Below the dropdown, the text 'Recommended Actions' is visible, followed by a list of activities with checkboxes and rates, such as 'County Hwy132 to N. Jct. US169, Driving: Patrol & Plow: -' and '50/50 Prewet Salt/Sand: 800lbs'.





The End-of-Shift Report below shows type and amount of material applied and number of miles/hours spent on each route maintained during shift.

 10:47 AM
Connection **GPS Time**

Road

18 F

Air 15 F

SALT: 99
SAND: N/A
PREWET: N/A

[Main](#) [End-of-Shift Report](#)

Page loaded 2011-12-08 10:47:42 am CST
End of Shift Reports
[Return to Previous](#)

Report Index:

<u>Route(s)</u>	<u>Truck(s)</u>	<u>Miles</u>	<u>Hours</u>	<u>Materials</u>	
All	206564	43.2	2.5	1541 lbs Sand (0.77 tons)	More Details...
TP1VR301	206564	33.5	1.3	1326 lbs Sand (0.66 tons)	More Details...
TP1VR302	206564	7.1	0.5	182 lbs Sand (0.09 tons)	More Details...
TP1VR306	206564	0.2	0.2	None	More Details...

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All Routes / Truck 206564:





Current staffing

- **3 MDSS/AVL Implementation Coordinators**
 - Divided State into geographic regions
 - Focus on Operator Training – Both AVL & MDSS
 - Spread expertise throughout the State
- **3 Mobile Equipment Coordinators**
 - Performed AVL installations to speed process
 - Develop resources and train mechanics on installation and maintenance
- **Additional positions at Central Shop (new equipment installations)**





Accomplishments

- Developed and documented a “Standard Install Package”
- Change to “Regional” support structure has resulted in much better interaction with districts
- Greater attention to detail has improved AVL performance
- Developed hardware and software to interface with vehicle CAN





Plans for upcoming season

- Continue installation of AVL in Snowplows
- Work with Navistar to expand & refine CAN data set
- Gain understanding of data needs for M-5 and other ways to improve current processes using CAN data
 - Develop interface between AVL and M-5
- Build knowledge base within Districts
 - Goal is to “assist” and provide expert resource so all areas have similar installations
- Expand use of AVL in light duty vehicles
 - More robust data set and closer to goals of CV effort





Thank you

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