



Air Foil Collaboration Research Project

Purpose

The intent of this project is to show the variations of air foil designs that MnDOT currently uses on our plow trucks. It will also help you better understand which design may work well in your own district. Reviews by design and functionality are based upon operator opinion.

Date: 11-18-13

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Findings

Many districts have more than one design of air foils. Most of which are designed, built, and installed In-House. It has been stated that Henderson Manufacturing sells a full-width air foil around the price of \$500 (2012). Though most people throughout the state feel that it is far too expensive compared to what the DOT can produce them for. No dollar amount has been mentioned about our production/material cost to give a good base of comparison. The light-only air foil designs throughout the state are wide-spread. Everything from manufactured by out-sourced vendors to the possibility of using a \$3 plastic bolt bin as an air foil. Because of the many different types of truck “accessories” such as roll tarps, tailgate prop wings, lighting configuration, box types, etc. It seems as though each district may be inclined to design their own type of air foil that works best for them.

Conclusion

According to the information received based on operator opinion, the majority of the drivers give the full-width tailgate airfoil a 50/50 review. The cost of either purchasing or producing the equivalent will be much greater than the light-only air foil design. As for the light-only air foil, they are said to be a wildly beneficial tool for any operator. The most common design struggle seems to be roll tarps. Perhaps the next design will be mounted onto the side of the truck. The possibilities are only limited by your imagination. The use of air foils have been proven to help reduce the number of rear-end accidents to plow trucks. In closing; each district is urged to design their own air foil that will best suit their needs.

Note: Depending on demand or changes in implementation, there may be a need or desire to further this project. If that is the case, we may revisit this project with updated material within 1 calendar year to provide you with the most up to date and beneficial aspects of this project.

Thank you to all who participated in this project!

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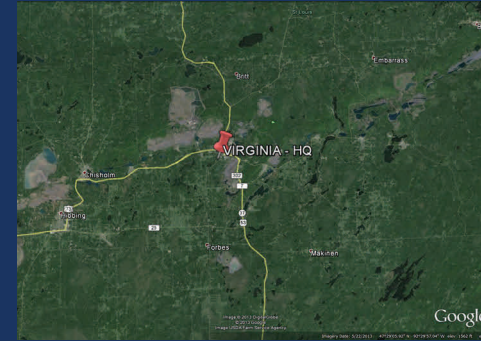


Air Foil Collaboration Research Project

District 1

Details

The original design of these air foils come from District 2. The design is highly sought after by District 1 to help reduce accidents. D1 has decided to outfit all 92 trucks they currently operate. Their reasoning is, if these air foils can prevent even one accident, they will essentially pay for themselves. The design they decided to emphasize is used strictly to keep the tail lights clear. They have not entertained the idea of using a full truck width tailgate foil. The air foil cost per set is \$35 at American Steel Supply in Brainerd. Total cost to outfit all 92 trucks is just over \$3200 (not including labor for installation). They are currently waiting on delivery of their order.



Location: Virginia

Truck info: Sterling Class 35

Build Type: Out-Sourced

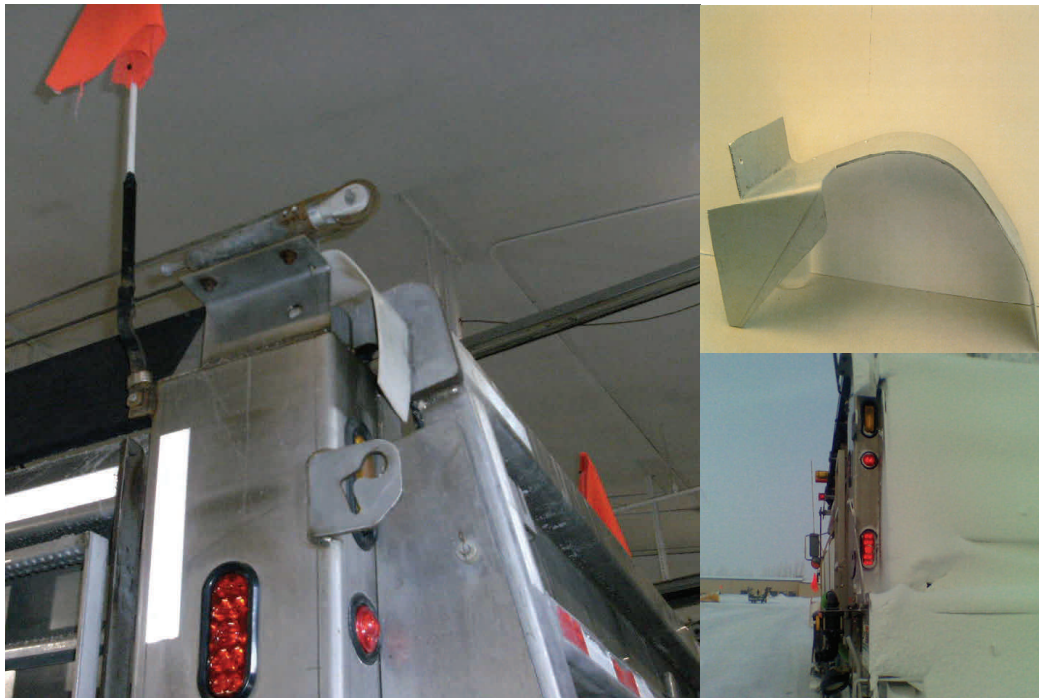
District Contact:

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Virginia Shop Supervisor

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District 2

Details

District 2 currently has several designs that they use on a handful of their trucks. Not only have they designed their own light-only air foils but they were discouraged at buying Henderson Manufacturing's version of the full-width tailgate air foil because of cost, that they developed their own. Henderson's Full-width air foil is claimed to be priced at \$500 (priced in 2012). D2 has stated that it does remove snow from the lights but see's no benefit to the tailgate. Featured below are a few of the air foils that are in use.



Location: Crookston/Bemidji

Truck info: Sterling Class 33 & 35

Build Type: In-House

District Contacts:

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D2 Superintendent
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Crookston Shop Supervisor
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Bemidji Shop Supervisor
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District 3

Details

This design was developed and installed at the Baxter truck station 2 years ago by a mechanic that has since retired. They have stated that this design of air foil has worked very well for them and are looking at increasing the number of trucks outfitted with them.



Location: Motley
Truck info: Sterling Class 35

Build Type: In-House

District Contact:
Gary Dirlam
D3 AME Baxter
218-828-5705
Gary.Dirlam@state.mn.us



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District 4

Details

District 4 uses the style shown below. They have 8 trucks outfitted with them. The operators have mixed feelings on them. Some like them, some do not. This full-width air foil design originated from a MOR project that was later put onto a state-wide implementation list. D4 took advantage of the funding options to outfit several of their trucks during this period.



Location: Morris
Truck info: Sterling Class 33 & 35
Build Type: Out-Sourced

District Contact:
Joe Stegmaier
D4 Superintendent
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District 6

Details

District 6 uses 2 primary designs for lights-only air foils. As shown in the pictures below; the International truck air foil design bolts onto the tailgate hinge. The Sterling truck air foil is mounted onto the tailgate prop wings so when you finish the snow and ice season, they are removed with the wings.



Location: Redwing

Truck info: Sterling Class 33
&
International 35

Build Type: In-House

District Contact:

Tim Zierden (Sterling)

TOS 2 Redwing

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Cameron Ihrke (International)

TOS 1 Owatonna

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Ben Boldt (Sterling)

TGS Redwing

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District 7

Details

District 7 currently does not have any trucks outfitted with air foils as they are waiting to find out what works for other areas.

Note: They have stated that when they find a design that is suitable for their needs, they will be outfitting trucks with them.



Location: Mankato

Truck info:

Build Type:

District Contact:

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D7 AME
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Tom Zimmerman
D7 Superintendent
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District 8

Details

District 8 currently does not have any air foils deployed onto their trucks.



Location: Marshall

Truck info:

Build Type:

District Contact:

Craig Gertsema

D8 Superintendent

507-537-2059

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Metro

Details

The Metro currently has 2 air foils of this design and were just recently installed. There is no operator info at this time due to it's short span of use.



Location: Waters Edge

Truck info: Sterling Class 35

Build Type: Out-Sourced

District Contact:

Mark Fischbach

Metro Superintendent

651-234-7907

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