WCSS
Western Canadian Spill Services Ltd.

Field Improvement Record

Program Year: **2024**

Name of Initiative: **Testing 0.3 m BoomVane™**

Budget or Actual Spend (if applicable): $16,000 - USD BoomVane, $252.00 - CAD Crane Scale

Issue (Background):

Briefly describe the initial situation (context) and the problem/issue addressed by the project, initiative, or work activity. Summarize Previous studies conducted if information is available.

Testing of the 0.3M BoomVane™ has resulted because of the low flows in Alberta rivers and lakes that are within WCSS area. The 0.3M BoomVane will allow us to deploy boom and to train staff and members in waterways that are much shallower than boats can access safely. We're testing this piece of equipment to evaluate the usage, how much boom it can hold, and how effective it is at deploying boom in varying water speeds.

Equipment required and/or used:

List both WCSS and other supplied/rented equipment needed for the program and state where it came from (include costs if known).

- Training Trailer 03
- 3 - workboats
- 0.3m BoomVane
- 0.5m BoomVane

Location and Site Conditions at time of assessment:

Describe the location, setting, weather, and environmental conditions during the program.

Location:	Devon boat launch
Weather:	Foggy and +6 C at 8:20 am, blue sky and clear +24 C rest of day
Setting:	On river downstream of Devon Boat Launch on South bank.
Other:	Current Speed - 3 km/h

Strategy and Implementation:

Describe the strategy used and how it was implemented. This should link to the issue outlined above and highlight the main steps taken in implementing the strategy.

The team transported 550’ of fast water boom and the BoomVanes to the chosen location via the WCSS workboats. While some of the team set up on shoreline drive pin anchors, scale, boom, and the staging areas, the remainder of the team was transported to site.

The strategy was to compare both BoomVanes (0.3m and 0.5m) in both collection and deflection situations while using the same boom and anchor systems as the boom angles were recorded and the tension on the lines measured by the inline crane scale.

The testing was implemented with the majority of the work being conducted on shore and 1 boat with 2 team members were in the water to assist with launch/recovery, line management, photo collection, and assist where needed.

0.5m BoomVane was tested first and once the data was recorded, it was brought back into shore and switched with the 0.3m BoomVane. The second BoomVane was then sent out and all the same data was collected. Additionally, the team was watching for any signs that the smaller BoomVane could not/would not handle the additional boom or if any signs of failure were observable. The smaller BoomVane handled the same length of boom as the larger BoomVane with the same performance and no safety issues noted.

Progress and/or Result:

In summary (2-3 paragraphs), describe the progress and any verified results (using qualitative and/or quantitative evidence) in implementation. Please describe factors that enabled or hindered the progress, and any shortfalls.

Boom Set			0.3m BoomVane				0.5m BoomVane			
Boom Length	Tow line	Total Length	Main Line	Boom Angle	Load (Lbs)	Distance To Vane	Main Line	Boom Angle	Load (Lbs)	Distance to Vane
250’	25’	275’	300’	20	270	27 yds	300’	25	480	31 yds
525’	25’	550’	450’	16 – 22.5	450	41 yds	537	15.5	800	34 yds
525’	50’	575’	--	--	--	--	550’	20	780	44 yds

Lessons Learned:

Describe in summary, the lesson(s) learned. Please limit this to 1-2 major findings that will leave the reader with an overall picture of the learning(s), why it’s important and the value it adds. Include information both on what work and what didn’t.

One problem with the 0.3m BoomVane did surface during the recovery of the BoomVane. The pully installed from factory allowed the recovery line to get pinched under the pully. This did not allow automatic recovery of the BoomVane. It had to be manually pulled back to shore by shoreline crews.

Potential Applications:

Briefly describe the potential application of the lesson learned to current WCSS and/or Member Operations or work activities. What are the issues that should be considered before implementation?

Everyone at the event saw the benefit of using the 0.3m BoomVane in training and exercise scenarios. It is much easier to lift into/out of a boat, it is much easier to deploy due to its shallow draft, and it pulls as much as the 0.5m BoomVane.

It is an excellent way to teach students and show coop members the benefits of this type of shallow water deployment. In some of the areas we cover, this type of system would be much more useful than boats.

Next Steps:

Describe any planned next steps in implementation and highlight any changes in strategy due to progress or results to date.

Continue to train students on the value of using BoomVanes.

Continue to investigate areas where this type of equipment may be useful or used in place of a boat to expand recovery abilities.

Photo Log or Video Link Location:

Photo 1) 0.3m boom vane in storage box

Photo 2) 0.3m boom vane being deployed

Photo 3) 0.5m boom vane preparing for boat deployment

Photo 4) 0.3m boom vane shore deployment

Photo 5) Measuring line tension on both boom vane sizes

Photo 6) 0.3m boom vane recovery

Photo 7) 0.3m boom vane ready for shore deployment

Photo 8) 0.3m boom vane pulling 500’ boom off shore in collection mode

Photo 9) 0.3m boom vane holding boom fully deployed into North Saskatchewan River

Photo 10) 0.3m boom vane river recovery