

**State of Wisconsin/Department of Transportation**  
RESEARCH PROGRESS REPORT FOR THE QUARTER ENDING: March 31, 2009

<b>Program: TPF-5(092)</b>	<b>FHWA Pooled Fund Research Program</b>
<b>Project Title:</b> Development of Standardized Test Procedures for Carbide Insert Snowplow Blade Wear <b>Project ID:</b> 0092-08-31	
<b>Administrative Contact:</b> Mike Sproul	<b>Sponsor:</b> Clear Roads Pooled Fund
<b>WisDOT Technical Contact:</b> Kim Linsenmayer	<b>Approved Starting Date:</b> October 15, 2007
<b>Project Investigator (agency &amp; contact):</b> Braun Intertec Corporation, Cameron Kruse	<b>Approved Ending Date:</b> July 1, 2009

**Percent complete (budget and hours):**

- **Hours and budget expended to date:**                      Hours = 47%      Budget = 50%
- **Hours and budget expended for current quarter:**      Hours = 1%      Budget = 1%
- **Hours and budget balance:**                                      Hours = 53%      Budget = 50%

**Brief project description:**

Carbide inserts of snowplow blades fail through wear (abrasion) and through durability (fracture). This research project will (Task 1) identify test procedures that have potential to predict the wear and durability performance of the carbide inserts. The most promising test procedures will be developed in the laboratory (Tasks 2 and 3) and compared to the performance of identical sample carbide inserts measured in field tests of actual snowplowing (Task 4). The results of the laboratory and field tests will be analyzed to determine the effectiveness of the tests at predicting performance of the carbide inserts (Task 5). The final deliverable is a report that documents the testing and provides recommendations for use of the test procedures and for additional studies, if needed.

**Progress this quarter (include specific tasks completed):**

No progress was possible this quarter due to the lack of the samples of blades for testing. We are waiting for delivery of the samples from a third supplier (we have samples from two suppliers). In early December Mr. Lynn Bernhard ordered a set of samples from another supplier. We have not heard about the anticipated delivery of those blades.

**Tasks planned for next quarter:**

Assuming the third set of blades is received early in the next quarter we will complete the Task 2 development of laboratory test procedures and complete the laboratory testing of Task 3. We will also direct the field testing of Task 4, to be conducted by the Utah DOT. If the blades are received early in the quarter we feel we will be able to complete the testing and begin preparation of the draft report (Task 5).

At the completion of the evaluation of Task 2 we will provide our evaluation and recommendations for the tests to be compared to field testing. We will ask the TAC panel to provide feedback on our analysis and recommendations.

**Identify any outstanding issues and barriers**

The single barrier is the lack of test samples. We are waiting for the blade inserts from the third supplier. We understand they were ordered by the Utah DOT in December but have not yet been delivered.

The research now cannot be completed by the original completion date. Final completion will be dependent on the arrival of the third set of blades. We will have to arrange for a different venue/process for TAC review of the draft report.

Depending on the arrival of the blades it may be necessary to extend the contract beyond the current ending date of July 1, 2009.

**Please attach Gantt chart.**

See next page.

## Timetable for Development of Standardized Test Procedures for Carbide Insert Snowplow Blade Wear

	'07					'08							'09											
Tasks	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Task 1. Comprehensive Literature Search	■	■	■																					
	■	■	■																					
Task 2. Development of Standardized Tests				■	■	■	■																	
				■	■	■	■	■	■	■	■	■	■	■	■				■	■				
Task 3. Laboratory Testing								■	■	■	■	■	■	■	■	■								
																			■	■	■			
Task 4. Field Testing				■	■	■	■																	
				■	■	■	■												■	■	■			
Task 5. Analysis and Reporting									■	■					■	■	■	■	■	■	■			
																				■	■	■	■	■
<b>Deliverables</b>																								
Quarterly Progress Reports		■			■			■			■			■			■			■				■
Teleconference with TAC			■																					
Draft Final Report																	■					■		
Meeting with TAC to discuss report																	■	■				■		
Final Report																		■	■	■			■	■
Implementation Plan																	■	■	■				■	■

Black shading indicates original schedule. Yellow shading indicates current estimated schedule.