

Panel Production Line Ergonomics Improvement  
Assigned SHIP grant #2008 WC 00034  
Funding Period

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## PART I

### *Final Report Narrative*

<b>Organization Profile</b>	For awarded organizations, to include partners and collaborators, provide a brief description of each organization. Mission, vision, and purpose of the organizations may be valuable to include.
The only organization involved was our company Pregis Corporation. One outside vendor was used to do some fabrication work, Ray's Scales and Consulting.	
<b>Abstract</b>	Present a short overview of the nature and scope of the project and major findings (less than half a page)
The project was intended to reduce an ergonomic risk existing on a production line at the Pregis facility in Auburn, WA. The ergonomic risk existed due to the need for very heavy lifting of Work in Process (WIP) during start ups and changeovers on this production line. The project reduced the ergonomic risk significantly (from a BORG index of 10 to 3).	
<b>Purpose of Project</b>	Describe what the project was intended to accomplish.
On this production line, part of the operator's duties are to feed a WIP material into a machine. Normally, the WIP is stored in racks, full to the top. The WIP can then be pulled horizontally out of the rack, onto a table. However, sometimes the racks are part empty. When the racks are partly empty, then the operator must pick up the end of the WIP and lift it onto the table. The project incorporated a scissors lift with a weigh scale and a trolley system into one efficient system that also allowed the operator to raise the rack until the WIP was level or slightly above the table, making it much easier to get the end of the WIP onto the table.	
<b>Statement of the Results</b>	Provide a clear statement of the results of the project include major findings and outcomes
Outcome was as expected. The scissors lift was able to be incorporated with the existing trolley system and weigh scale. It allows the operators to raise a partially empty rack as needed to the desired height, eliminating the need	

to lift the end of the WIP onto the table.

**Evidence of the results**

Demonstrate evidence of how well the results met or fulfilled the intended objectives of the project.

An ergonomist performed a before and after assessment of the ergonomic risk associated with the task. An assessment using the Borg scale showed the ergonomic risk was reduced from 10 to 3 (10 is the maximum number on the Borg scale).

**Project's promotion of prevention**

Explain how the results or outcomes of this project promote the prevention of workplace injuries, illnesses, and fatalities?

As explained, the ergonomic risk has been greatly reduced. There is much less chance of a shoulder or back injury when this task is being performed.

**Relevant processes**

Specify all relevant processes, impact or other evaluation information which would be useful to others seeking to replicate, implement, or build on previous work.

See case study for more information

**Lessons Learned**

Provide information on lessons learned through the implementation of your project. Include both positive and negative lessons. This may be helpful to other organizations interested in implementing a similar project.

*Lessons outlined should not relate to SHIP grant processes.*

During the design phase of the project we missed an important modification necessary for the new "system" to operate well. The design of this one component turned out to be more difficult than expected, and took longer to find a successful design.

In retrospect, we should have gotten more people involved in the initial design, and had discussions out at the production line, not in a conference room. This might have caught the modification that would be needed earlier in the process.

<b>Measures to judge success</b>	<p>If relevant, state what measures or procedures were taken to judge whether/how well the objectives were met and whether the project or some other qualified outside specialist conducted an evaluation.</p> <p>An ergonomist from Washington State Department of Labor and Industries did an evaluation after the project was completed. The results of the evaluation indicated the project produced the desired results.</p>
<b>Uses</b>	<p>How might the products of your project be used within the target industry at the end of your project?</p> <p>Is there potential for the products of the project to be used in other industries or with different target audiences?</p> <p>The concept of raising heavy product so it's not necessary to lift it is not earth shattering or an innovative concept. However, other industries might be able to learn from the success we had of incorporating the lifting mechanism, with a weigh scale, and a trolley into one functioning unit that provided a safer working environment without adding cost to the process.</p>
<b>Product Dissemination</b>	<p>Outline of how the products of the project have been shared or made transferrable.</p> <p>It has already been shared within our company. Two other facilities incorporated a similar design, and 5-6 other facilities are adding a different device to solve the issue, but the discussion and the other solution was triggered from this project.</p>
<b>Feedback</b>	<p>Provide feedback from relevant professionals, stakeholder groups, participants, and/or independent evaluator on the project.</p> <p>Other than the ergonomist's feedback, we also received feedback from other Pregis' facilities. As noted above, some of them learned from our project and took a different approach. They took a different approach because our design did not address one ergonomic issue, the issue of having to pull the WIP horizontally onto the table. Although this is much easier to do than lifting it onto the table, there is still a "significant" effort required to pull it onto the table. These other facilities created a clamp and winch system.</p>

The system lets the operator attach a special clamp to the end of the WIP. The clamp is connected to a motorized winch. By turning on the winch, the end of the WIP is pulled up out of the cart and onto the table. This eliminates the horizontal pulling motion as well.

## PART II

### ***SAFETY AND HEALTH INVESTMENT PROJECTS*** ***SHIP Final Expenditure Report*** ***Budget Summary***

<b>Project Title:</b>	Panel Production Line Ergonomics Improvement		
<b>Project # :</b>	2008 WC 00034	<b>Report Date:</b>	2/1/10
<b>Contact Person:</b>	Mustafa Haziq	<b>Contact #:</b>	253-333-2003
<b>Start Date:</b>	6/24/2008	<b>Project Completion Date:</b>	12/1/2008

1.	Total budget for the project		\$ <u>9,127</u>
2.	Total SHIP Grant Award		\$ <u>7,986</u>
3.	Total of SHIP Funds Used		\$ <u>7,986</u>
4.	Budget Modifications (if applicable)		\$ <u>1,141</u>
5.	Total In-kind contributions		\$ <u>1,216.75</u>
6.	Total Expenditures ( Lines 3 + 4 + 5)		\$ <u>9,627</u>

#### Instructions:

- Complete the Supplemental Schedule (Budget) form first (on the next page).
- The final report must include all expenditures from date of completion of interim report through termination date of grant
- Indicate period covered by report by specifying the inclusive dates
- Report and itemize all expenditures during specified reporting period per the attached supplemental schedules
- Forms must be signed by authorized persons (see last page)
- Forward one copy of the report to (Name), SHIP Project Manager, PO Box 44612, Olympia, WA 98504-4612.

***SAFETY AND HEALTH INVESTMENT PROJECTS***  
***SHIP Final Expenditure Report***  
***Supplemental Schedules (Budget)***

<b>Project Title:</b>	Panel Production Line Ergonomics Improvement		
<b>Project # :</b>	2008 WC 00034	<b>Report Date:</b>	2/1/2010
<b>Contact Person:</b>	Mustafa Haziq	<b>Contact #:</b>	253-333-2003
<b>Total Award \$:</b>	9,127		

**ITEMIZED BUDGET --** How were SHIP award funds used to achieve the purpose or your project?

	Budgeted for Project	Amount Paid Out	Difference
<b>A. PERSONNEL</b>			

Explanation for Difference and other relevant information:

	Budgeted for Project	Amount Paid Out	Difference
<b>B. SUBCONTRACTOR</b>	4,274	4,274	0

Explanation for Difference and other relevant information:

Includes budget modification

	Budgeted for Project	Amount Paid Out	Difference
<b>C. TRAVEL</b>			

	Budgeted for Project	Amount Paid Out	Difference
<b>D. SUPPLIES</b>	4,853.11	4,784	69.11*

Explanation for Difference and other relevant information:

Includes budget modification. Difference due to freight cost was estimated, actual was slightly less than estimate.

\*this amount was included in original budget projection but due to savings this amount was not requested or received by the grant.

	Budgeted for Project	Amount Paid Out	Difference
<b>E. PUBLICATIONS</b>			

Explanation for Difference and other relevant information:

	Budgeted for Project	Amount Paid Out	Difference
<b>TOTAL DIRECT COSTS</b>	9,127	9057.89	69.11

	Budgeted for Project	Amount Paid Out	Difference
<b>INDIRECT COSTS</b>			

	Budgeted for Project	Amount Paid Out	Difference
<b>TOTAL SHIP BUDGET</b>	9,127	9057.89	69.11

	Budgeted for Project	Amount Paid Out	Difference
<b>F. IN-KIND</b>	500	1216.75	716.75

Explanation for Difference: Did not realize the speed of the scissors lift was going to be too slow (it was an operational issue, not a safety issue, but tended to deter operators from using the system). So, a larger pump and motor has to be purchased for the lift, causing the difference in cost.

## PART III

### Attachments:

#### Case study

**REMINDER!!:** All products produced, whether by the grantee or a subcontractor to the grantee, as a result of a SHIP grant are in the public domain and can not be copyrighted, patented, claimed as trade secrets, or otherwise restricted in any way.