

## FOLDAWAY PLATFORM SOLVES BLAST BOOTH ERGONOMIC PROBLEMS AT NADEP JACKSONVILLE

Avionics workers at Naval Aviation Depot (NADEP), Jacksonville, Florida sandblast the outer surfaces of *Pods* before painting them to make them look new again. *Pods* are the metal containers that enclose avionics equipment such as radar and sonar. During the sandblasting procedure, a sealed cabinet is used to prevent inhalation of the blasting materials and the dirt, grease, and old paint from the pod's surface.

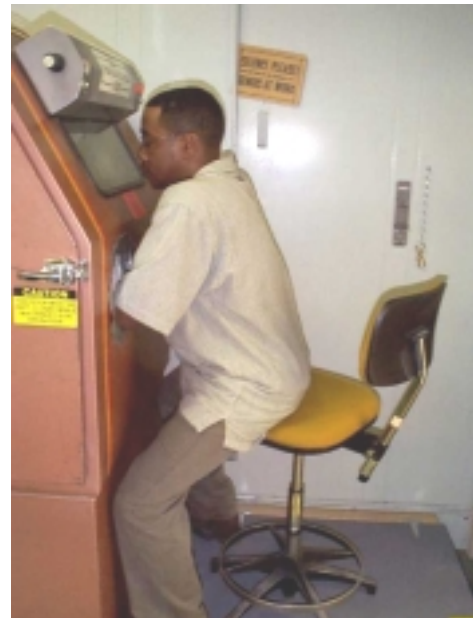


**Workers of above- or below-average height had to adopt awkward postures to use the blast cabinet**

The avionics blaster stands outside the blast cabinet and reaches into the cabinet to sandblast the pods through two arm ports. The blaster can see what he is doing by looking into the blast cabinet through a viewing port above the armholes. The armholes have protective sleeves and gauntlets or gloves that extend into the blast cabinet. The blasters put their hands and arms into the blast cabinet arm ports and through the protective gloves to hold and handle the parts being sandblasted.

The blast cabinet and viewing port were constructed at fixed heights with medium-height workers in mind. Blasters in the NADEP, Jacksonville avionics shop range in height from less than medium height to very tall. Since the blast cabinet armholes are not height-adjustable, some workers had to accommodate their work postures to the height of the armholes and viewing port. This configuration forced workers who were *not* medium-height into uncomfortable postures that they had to maintain while sandblasting, sometimes for hours.

The first attempt to make the workers more comfortable was to place an adjustable chair beside the blast cabinet. The chair did not leave the blaster enough knee room to get close enough to the blast cabinet to use the armholes without bending forward and reaching out for long periods. Blasters could turn their legs to one side to reduce the reach and sit up straighter, but this twisted posture was not an



**Adjustable chair left too little knee room and required the blaster to bend forward**

improvement. Even while sitting up perfectly straight, some workers could not see well enough through the viewing port to observe their work. As a result, workers were forced to stretch, reach, and bend for several hours at a time. They complained of fatigue and pain in the back, shoulders, neck and arms. The avionics blasters requested help from the NADEP, Jacksonville Ergonomics Team to solve their ergonomic problem.



**Space saving foldaway platform provides ergonomic comfort for blast cabinet workers**

tasks that require assuming awkward postures for long periods of time tend to fatigue the muscles that are used to assume that posture. This overburdening may lead to a cumulative trauma disorder, or CTD, a disability that usually involves weakness and discomfort. The discomfort often improves after discontinuing activities that weaken the affected muscles and getting medical treatment for the CTD. The goal of an ergonomics program is to reduce the frequency and severity of CTDs by redesigning work tasks or workstations using procedures and tools that minimize the risk of



**Workers have more flexibility to comfortably sit or stand using the foldaway platform**

CTDs. The layout of the Avionics Department's blasting operation made it a suitable candidate for ergonomic intervention.



**Foldaway platform eliminates awkward postures while using blast cabinet**

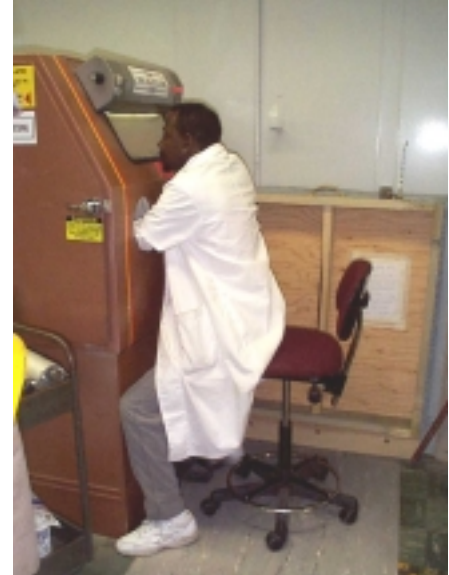
The NADEP Ergonomics Team initially considered the addition of a permanent platform in front of the blast cabinet so the shortest workers could stand, and taller workers could sit on an adjustable stool. Given the duration of the task, these limits on work postures would not have been reasonable

solutions. An additional challenge was the location of the blast cabinet in a corner of the shop where space was limited. The location left no room for a fixed platform that would be large enough to accommodate a stool and to store it when not in use. Relocation of the blast cabinet was not a viable option due to the installed ventilation system and utilities.

Mr. Fred Harris, an Avionics worker and Ergonomics Team member, in collaboration with the NADEP Carpenter Shop designed and installed a *foldaway platform* that fastens to the wall next to the blast cabinet on hinges. The *foldaway platform* folds down to accommodate shorter workers who may



prefer to stand while blasting and can be folded up and secured out of the way to allow taller workers to stand or sit. By allowing workers the flexibility to shift positions comfortably while blasting, the *foldaway platform* has greatly reduced worker risk for CTDs.



**Tall workers have the option of standing or sitting when the *foldaway platform* is conveniently stored away on the wall.**

The Avionics Shop praises this uncomplicated ergonomic design solution that successfully prevents CTDs and increases productivity. Avionics Shop workers are pleased that the *foldaway platform* works well for them.

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