

FRC EAST REDUCES ERGONOMIC INJURIES WITH CARTCADDY

Fleet Readiness Center (FRC) East in Cherry Point, NC is one of six fleet readiness centers operated by the U.S. Navy. The Center employs about 4,000 civilian and military, and 400 contractor personnel who work in a wide variety of skilled technical and professional positions. FRC East is a service provider specializing in support of Marine Corps aircraft, engines, and components. Many of the maintenance and repair tasks performed on aircraft in the FRC East workshops involve repetitive motions, forceful exertions, and working in awkward postures for long periods. When work tasks and workstations are not adequately configured to accommodate the worker's physical requirements, the worker is at an increased risk for occupational injuries and [work-related musculoskeletal disorders](#) (WMSDs).

The goal of the Navy's *Ergonomics Program* is to reduce the frequency and severity of WMSDs by redesigning work tasks or workstations through the introduction of procedures and tools that minimize [ergonomics](#) risk factors. These types of risk factors are often resolved by introducing ergonomic interventions. Interventions may take the form of equipment that moves or adjusts heavy or awkward items so that workers don't overexert themselves by manipulating the items manually. Interventions can also eliminate the need for working in awkward postures and/or employing repetitive motions to carry out work assignments.

One of the many maintenance tasks performed at FRC East involves work on parts of the AV8 Harrier aircraft. The AV-8B II (see photo on right) is a second generation, vertical/short takeoff and landing (V/STOL) light-attack jet aircraft utilized by the Marine Corps. The primary mission of the AV8-B is to provide responsive close air support for ground forces.



Parts of the AV-8B II are maintained at FRC East.

To perform maintenance on AV8 parts, FRC East technicians must move the parts to various repair stations around the depot. AV8 wings, are mounted on a wheeled stand to move them. In the past, moving the stand was accomplished by a team of 11 technicians. Pushing the 1,100

pound wheeled stand with the 1,400 pound AV8 wing on it put the



workers at risk of exposure to ergonomic hazards that included pushing a heavy load, forceful exertions, repetitive motions, and assuming awkward postures for long periods. The technicians were at risk of WMSDs and other injuries of the wrists, elbows, arms, shoulders, back, hips, knees and ankles.

A team of 11 technicians was required to move AV8 wings and other parts around the FRC East depot.

While moving AV8 parts, FRC East technicians experienced 29 WMSDs and other ergonomic injuries between 2007 and 2009. Not only were depot technicians dealing with ergonomic risk factors, but hazards such as slips and trips and the loss of productivity due to 11 men being asked to stop work to help move the aircraft parts.

FRC-East Ergonomist Richard Borcicky assessed the ergonomics issues involved in moving heavy aircraft parts around the depot. He concluded that a mechanical means of moving the wheeled stand would likely reduce ergonomic injuries and reduce the number of technicians needed to accomplish the task.



Moving equipment and aircraft parts with the *CartCaddy* requires only two operators and eliminates ergonomic injuries.

After conducting research on the Internet and obtaining assistance from the Marine Corps Air Station Contracting Department, Mr. Borcicky found the *CartCaddy* pictured in the above photo. The *CartCaddy* is a small, maneuverable, battery powered tugger that can be adapted to grab and move anything on wheels. It has a very smooth forward and backward acceleration that is easily operated. Two technicians (one to

operate the CartCaddy and one to monitor a clear path for the stand) can manipulate the large wheeled stand used to transport the AV8 wings. One operator can manipulate small carts in tight, confined areas. Not



The *CartCaddy* can be used to move a variety of items. When moving small wagons and parts, only one operator is necessary.

wings, has made the acquisition of the *CartCaddy* at a cost of \$7,500 a Win-Win for FRC-East.

Through the continuous process improvement initiative known as AIRSpeed, FRC East also shared the CartCaddy information with Aircraft Intermediate Maintenance Department (AIMD) Willow Grove. The AIRSpeed Program assisted AIMD Willow Grove to purchase their own CartCaddy. The CartCaddy purchases have contributed to reduction of ergonomic issues and slips, trips, and falls in the fleet.

For questions regarding this success story, please call 252-464-5165.

only can the *CartCaddy* be used for moving an AV8 wing, but many other items as well!

In 2010, after purchasing the *CartCaddy*, there were zero reported WMSDs or other injuries related to moving AV8 parts around the FRC East depot. The elimination of these injuries and the time savings involved by no longer having to call 11 employees together to move the AV8