

Robotics team 'gets to the bottom of it' with search

By Linda Herridge
Staff Writer

Teamwork and the use of sophisticated sensor equipment already available at Kennedy Space Center led to the successful recovery of a Shuttle Training Aircraft thrust reverser.

"We used technology to do the work, which makes it more efficient," said Steve Van Meter, KSC robotics specialist with the Spaceport Engineering and Technology directorate. The recovery team saved the Agency approximately \$110,000 by retrieving the part rather than hiring a salvage contractor that couldn't guarantee a recovery in shallow water.

The part was retrieved by employees from KSC, Johnson Space Center, Space Gateway Support (SGS) and United Space Alliance.

Search methods in the Banana River, north and south of the Roy D. Bridges Jr. Bridge, included using sonar, a global positioning satellite (GPS) navigation system, metal detectors and KSC's Remotely Operated Vehicle (ROV) VideoRay over a three-week period in January.

A side-scan sonar detector towed behind the search boat transmits a signal below the water's surface. The water depth in the search area ranged from 3



JOE GERKY, a Johnson Space Center employee (right) and Steve Van Meter, KSC robotics specialist, check the lifting slings on the thrust reverser.

to 30 feet, according to Van Meter. The team used a GPS integrated to the side-scan sonar to determine the location of targets in relationship to the boat's location.

Targets were then scanned with a metal detector to determine their composition. If metal was detected, the team anchored the boat and sent the ROV VideoRay underwater to provide a view of the item on a TV monitor.

"Shallow areas are very difficult to search using sonar," said Van Meter. "But we were successful with this form of detection equipment due to past experience working in the KSC lagoon waters." While searching for the thrust reverser, the team

found several items in the river, including old crab traps and small metal items.

Mike Lane, KSC electrical engineer at the Development and

Integration Lab, used sophisticated software to download information from the GPS system to an office computer to create an accurate picture of search sites.

The divers spent many hours in the murky, 55-degree-Fahrenheit water, braving conditions that included possible encounters with snakes and alligators.

When the team located the thrust reverser south of the bridge, the SRB recovery divers were called in to attach lift bags to the part to help float it to the surface. The thrust reverser, approximately 4 feet wide and 5 feet long, weighed 585 pounds.

The part was towed to the bridge and SGS brought in a heavy-lift crane to hoist it out of the water and onto a truck. After transport to the Shuttle Landing Facility, it was packaged and readied for shipment to JSC.

HARDING . . .

(Continued from Page 7)

possible, she's making the best use of her personal time.

"My free time is spent with family, friends and music," she said. "My niece and nephew, Hope and Caleb, help to keep life fun because they are at the age of discovering the world around them. I also serve as the musician of the children's choir at my church."

As a child, Harding was as much in awe of the world as her niece and nephew are today.

"The return-to-the-moon projects sound really exciting, since I was

a pre-schooler the first time around," she shared.

"My father found a 1973 photograph from a family summer vacation trip to KSC. The picture shows me with my mom and sister standing in front of a large board listing the Apollo/Saturn V launches from Complex 39.

"He sent it to me last spring, reminding me that you never really know how things will work out for you in life," said Harding. "It's simply a matter of being prepared for whatever blessings come your way."

Visit <http://www.nasa.gov> for information on Gravity Probe B.

Are you ready for the All American Picnic?

The KSC All American Picnic will run from 10 a.m. to 4 p.m. Saturday, March 27 at KARS Park 1. Today is the last chance to purchase advance price tickets from the Sundry stores located in HQ, O&C, SSPF, OSB, the CCAFS Hangar I Annex, room 204 and the KARS Country Store.

Advanced tickets are \$5 for adults, \$3.50 for children ages 3 to 12 years and free for children under 3. Tickets at the gate are \$7 for adults and \$5 for children 3 to 12. Each person must have a ticket to enter the park and for food.

Plan for a great day of festivities, food and laughter. Visit the KSC internal Web site at <http://kscpicnic.ksc.nasa.gov> for the updated information. You will be sure to enjoy the chili cook-off competition, dunking booth, children's games, parade and so much more. Look for a complete review of the picnic in the April 9 *Spaceport News*.



John F. Kennedy Space Center

Spaceport News

Spaceport News is an official publication of the Kennedy Space Center and is published on alternate Fridays by External Relations and Business Development in the interest of KSC civil service and contractor employees.

Contributions are welcome and should be submitted two weeks before publication to the Media Services Branch, IDI-011. E-mail submissions can be sent to Jeffery.Stuckey-1@ksc.nasa.gov

Managing editor Bruce Buckingham
Editor Jeff Stuckey
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Editorial support provided by InDyne, Inc. Writers Group.
NASA at KSC is located on the Internet at <http://www.ksc.nasa.gov>
USGPO: 733-133/600053