



prop-wash (prăp'-wôsh) n. the surge or eddy of water from a propeller. Never an end in itself, prop-wash is essential for ships and airplanes to move and do their work for the American people. PTC provides "prop wash" in many forms - all of which help human performers do their job.

Lightweight Satellite Transceiver (LST-5D) (PW005)

Background:

Coast Guard cutters operating in the South Atlantic Ocean and Caribbean Sea frequently have poor HF radio communications. This makes it difficult to conduct anti-narcotic operations and Search and Rescue. The Coast Guard used supplemental funding supplied by Congress to provide satellite connectivity using the LST-5D transceiver. The LST-5D was installed on 45 cutters including the 210', 110', and mature class, 3 Transportable Command Center Vans and 2 shore stations.

Problem Statement:

The Coast Guard's Telecommunications and Information Systems Command (TISCOM) requested assistance to determine the performance support needed for Coast Guardsmen to operate and maintain the new LST-5D. Although the initial request was for a look at the training need, the TISCOM staff eagerly embraced a systemic HPT look at all the things that affect performance, e.g., skills & knowledge, tools and equipment, motivation and incentives, personnel selection, policy and procedures.

Analysis:

PTC staff visited two 210 cutters, the prototype 110' patrol boat and its servicing Electronic Support Detachment, TISCOM, and the Atlantic Area command office. The total cost of the analysis was about \$4015 for travel. Along with documenting the major accomplishments and tasks associated with the operation and maintenance of the LST-5D, the analysis uncovered several interesting issues. For example, the Electronic Technicians on the 210' cutter remarked that they learned basic electronic trouble shooting in "A" school – all they really needed was a good diagram of the system. In another case, one of the cutters sailed an entire patrol having to manually align the antenna with the satellite. Without a clear understanding of the systems capabilities, they thought the extreme rolling of the ship exceeded the antenna's ability to stay aligned with the satellite. Once they understood that the LST-5D's design had included provision for the movement of the ship, they knew it was broken and were able to get it repaired.

Solution:

LST-5D Operators needed a well designed job aid that ended up being printed on paper so classified frequency information could be filled in and the job aid shredded when the frequencies changed. Operators also needed information on the designed capabilities of the system. Maintainers needed a comprehensive schematic diagram of the system.

Performance Improvement:

In February of 2002, the PTC staff evaluated the value of the job-aid following about 8 months of field use. A phone survey of 7 of the 110' WPBs in the 7th District showed great satisfaction. Some of the questions and answers were as follows:

“Can a user without any prior training pick up the job aid and successfully operate the equipment?”

The unanimous answer was “Yes.”

“Does the job aid meet all of your needs as to the operation of the equipment?”

The unanimous answer was “Yes.”

“Are there any functions of the equipment required by the every day user, not covered by the job aid?”

The unanimous answer was “No. It is very complete.”

“Is there anything else about the operation of the equipment that the job aid should have covered?”

The unanimous answer was “No. I can not think of anything.”

TISCOM reported that they've sent the job-aid to the Coast Guard Aviation community and other agencies that use the LST-5D, such as U. S. Customs, SPAWAR, NSA, USAF, and Navy Special Forces. All agencies commented on its value and excellent usability.

Return on Investment:

Prior to this HPT effort, headquarters planned to set up a 5-day resident course with a throughput of about 30 students per year. The course required five LST-5D units for simulation purposes at a cost of roughly \$53K/unit. The installation cost was about \$30K non-recurring and \$20K recurring for maintenance and grooming. Costing the course out 10 years and taking into account 3% inflation (including student's TAD costs but no salaries) the course would have cost the Coast Guard almost \$615,000. The analysis effort and job aid production cost \$4015 in travel and \$350 in job aid production. The ROI numbers looks like this:

- Over 10 years cost avoidance of \$614,630/ cost \$4365 = 14, 080%
- Just the 1st Year cost avoidance of \$307,180/ cost \$4365 = 7,037%
- Using just the equipment cost avoidance of \$265,000/ cost \$4365 = 6,071%

For Questions please contact [LT Rich Stoud](#) at (757)856-2028 or [CDR Tim Quiram](#), at (757)856-2356.