Small Boats Among the Big Ships

You've probably heard of the U.S. Navy's famous Patrol Torpedo (PT) boats of World War II. Originally armed with four machine guns and four torpedoes, they were pound-for-pound the Navy's most heavily armed vessels. The 80-foot wooden warships served throughout the Pacific, in the Mediterranean, and even in the English Channel. Their most famous actions include evacuating General Douglas MacArthur from the Philippines and assisting John F. Kennedy's exploits when his PT109 was cut in half by a Japanese destroyer. By the end of World War II, the PT boats had racked up an impressive list of accomplishments [1].

Why bring up PT boats in CrossTalk? Sure, the editors like stories framed with little-known bits of military history, but they're an excellent analogy for this issue's *Small Projects, Big Issues* theme.

At the war's inception, the PT boat retained the basic mission of all battleship-age torpedo boats: Use stealth and speed to sink a capital ship using torpedoes. Initially, the enclosed waters of the Philippine and Solomon Islands provided opportunities to continue their historical mission. But opportunities for surface combat would soon wane. Aircraft and radar made it much more difficult for the PTs to get close enough to use their powerful stings.

Despite this, the PTs found themselves even more in demand. Scouting, interdicting enemy barge traffic, performing reconnaissance, rescuing downed flyers, giving close shore convoy support, gathering intelligence, supporting ground operations, and many other missions that came the PTs' way. They soon bristled with new weapons: auto-cannon, mortars, and rockets. Some PTs abandoned their torpedoes entirely for more guns! Occasionally, though, they were still able to slam a torpedo into a major warship, as they did during the Battle of Leyte Gulf – *the largest naval battle in modern history* [2].

Small projects can learn important lessons from the small boats. First, the PTs were able to change their basic mission of hunting capital surface ships by adapting to fill an important niche in overall naval strategy. Originally designed for a role in the big ship navy, the PT boats found that circumstances dictated a very different one. They adapted well to their new role due in large part to the compactness of the boat and its crew. All teams must be able to adapt, but change comes more easily to smaller entities. This built-in flexibility allows small teams to operate with less stringent operating processes, often much less.

More importantly, consider how a PT boat differed from other U.S. Navy warships. Table 1 compares a PT boat to a heavy cruiser. Both are warships, but the differences are striking. Crew training cannot be over-emphasized. Losing even one man on a small crew could be devastating if another sailor couldn't take over. So every PT sailor had to be able to do almost any job on the boat, just like a small project software developer needs to be able to do any job on a project: requirements, design, coding, information and technology, documentation, configuration management, and even leadership.

For leadership, consider the PT boat skipper. He knows each sailor in his crew personally. His chain of command: one executive officer. Before a mission, he can muster the entire crew for a direct, verbal briefing. He knows the complete capabilities of the boat: weapons, engines, communications, and performance. From the cockpit, he can issue orders to any member of the crew verbally or via hand signal. He's confident his cross-trained crew can step in should a shipmate be disabled. The short, focused PT boat missions alleviate him from the more mundane aspects of captaincy. In battle, he operates alone or with other PT boats, all with the same *modus operandi*. Naval doctrine of the day was developed for the larger ships, but the realities of the PT's missions made it clear that they needed different methods, different tactics – *different processes* – to achieve that result. Aided by their compact nature, the PT crews readily established their own successful processes.

If your project calls for a PT boat, put one in place and run it accordingly. Using processes and procedures established for the normal behavior expected of large-scale projects can easily be counterproductive – or worse. Don't operate a PT boat like a heavy cruiser or expect it to act like one. If you do, you'll be sunk.

—Dan Knauer
TLA
A Three-Letter Acronym Corporation

References

1. Keating, Bern. "The Mosquito Fleet." Scholastic Book Services, USA: Dec. 1971.
2. "Battle of Leyte Gulf." Wikipedia <http://en.wikipedia.org/wiki/Battle_of_Leyte_Gulf>.

Additional Reading

The Internet provides several excellent sources of information on the PT boats including:
1. The Historical Naval Ships Organization <www.hnsa.org>.
2. PT Boats Inc <www.ptboats.org>.
3. John Drain's PT Boat Site <www.pt-boat.com>.

Table 1: *PT Boat Versus Navy Warship*

Aspect	PT Boat	Heavy Cruiser
Composition	Wood	Steel
Engines	Three Packard V-12 motors	Boiler-driven turbines
Fuel	Aviation gasoline	Oil
Armament ratio	One weapon per man	One weapon per 20 men
Transport to operating area	Carried aboard ship	Arrived under own power
Mission duration	Nightly patrols returning to same base	Multi-week cruises returning to varying ports
Crew training	Cross-trained in two disciplines; familiar with all tasks on boat	Single assignment plus battle station