

# Aviation Survival Training Center Goes Solar

## Alternative Energy Project Produces One Million BTUs Per Hour

**AFTER THREE YEARS** in operation, one of the Navy's alternative energy projects at the Aviation Survival Training Center (ASTC) in Jacksonville, Florida is proving nearly twice as effective as originally estimated.

The project was originally projected to save the Navy \$90,750 per year and to have a payback of roughly 11 years. However, three years of moni-

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The most prominent part of the system are the solar thermal panels on the roof. Water pumped through these collectors serves to absorb solar energy. The heated water then flows from the collectors to two large drain back tanks, one each for the pool and the domestic water system. A heat exchanger located in each tank then transfers the solar energy to the water used in the pool and the domestic hot

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*—Rear Adm. Eleanor Valentin*

toring reveal that the project is actually producing a savings of \$171,700 annually, which will result in a payback of approximately six years. This is a big step toward achieving the Secretary of the Navy's goal of producing at least half of shore-based energy requirements from renewable sources by 2020. According to Installation Energy Manager Joshua Bass, "When economically viable, renewable energy projects provide a tremendous benefit for both the taxpayer and the environment. To be able to save the taxpayer's more than \$170,000 a year while simultane-

ously eliminating the carbon emissions resulting from the use of natural gas boilers or other fossil fuel combustion processes, is an incredible success for the Navy."

This project is an integrated solar thermal and natural gas system that replaces the obsolete steam heating system that had been in operation on Naval Air Station (NAS) Jacksonville for decades. The complete system consists of natural gas fired unit heaters for space heating and solar thermal panels for pool and domestic hot water heating. There are six natural gas fired unit heaters to heat the pool, one heater for the shop area, and one unit for the drying room. (Note: The pool area did not receive heat of any type when the building was steam heated.) There are 168 flat plate collectors, each four feet by ten feet, along with drain back tanks, heat exchangers, controllers, pumps, and pipes that interconnect the systems in the building.

water system, respectively. The water from the heat exchanger is then pumped back up to the solar thermal panels to start the process over again.

The project was funded by Navy Bureau of Medicine and Surgery (BUMED) and administered by Naval Facilities Engineering Command (NAVFAC) Southeast, Public Works Department Jacksonville. Since the ribbon cutting ceremony nearly two years ago, NAS Jacksonville has reaped significant benefits in terms of energy generation and efficiency gains.

The former Resource Efficiency Manager at NAS Jacksonville stated,



The new energy system consists of 168 flat-plate, solar-thermal collectors on the roof of Building 928 that are interconnected with an efficient, natural gas fired heating system.

*Cliff Plante*

“On a cloudless day, the solar panels produce one million BTUs of energy per hour—enough to heat the center’s 270,000-gallon pool by one degree every two hours.”

Rear Adm. Eleanor Valentin, commander, Navy Medicine Support Command agreed when she said, “Projects like this are the kind our

Navy is looking for to reduce our dependency on fossil fuels.”

“ASTC Jacksonville is vital to warfighter readiness by training more than 2,300 aviators and aircrew in aviation survival each year,” she stated. “So it’s important to maintain a comfortable training environment for students. You can’t concentrate on

learning lessons when you’re shivering during winter months.”

“I expect this center will receive many visitors in the future from commands seeking similar benefits from renewable energy,” added Valentin. “Congratulations to everyone associated with this impressive project.”

## The Basics About Aviation Survival Training Center Jacksonville

ASTC Jacksonville is one of eight such centers within the Naval Survival Training Institute (NSTI), which is a component of the Navy Medicine Operational Training Center based in Pensacola, Florida. The other seven ASTCs are located at Patuxent River, MD; Norfolk, VA; Cherry Point, NC; Pensacola, FL; Miramar, CA; Lemoore, CA; and Whidbey Island, WA.

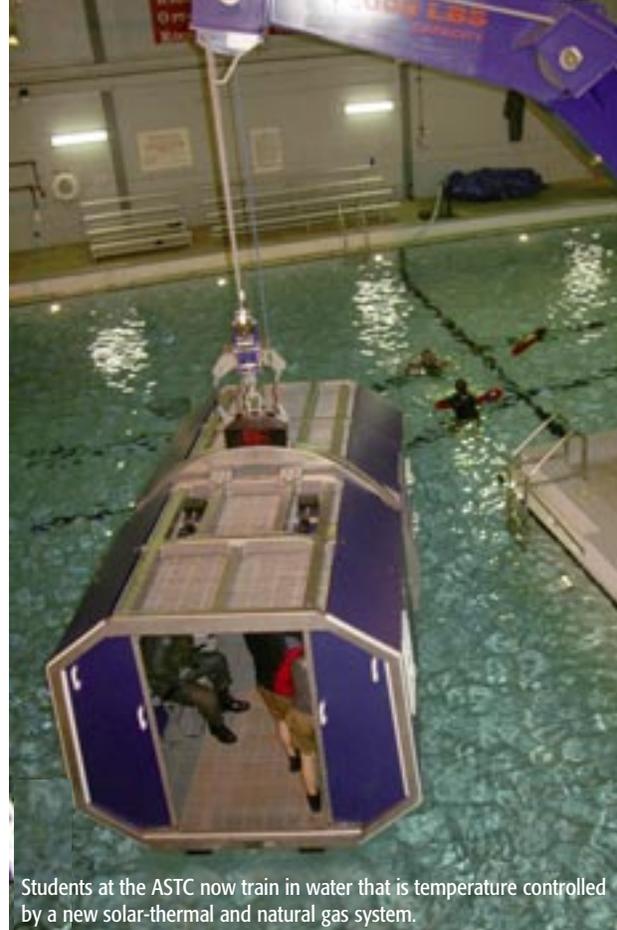
The mission of NSTI is to provide safe, effective, and relevant aviation survival and human performance training as the execution arm of the Naval Aviation Survival Training Program (NASTP) which is mandated by the Chief of Naval Operations (CNO). The focus of this training is to enhance the operational readiness of the joint warfighter, to include designated aviators and aircrew (joint and allied), student aviators and aircrew (joint and allied), contract pilots, selected passengers, project specialists, VIPs, and non-aircrew from the U.S. Marine Corps. Naval aviation survival training emphasizes mishap and acci-

dent prevention, enhancing and sustaining performance, and mishap survival. NSTI strives to provide the most up-to-date, operationally relevant training possible. By CNO direction, the NASTP Model Manager (NASTP-MM) conducts annual Site Safety and Standardization Inspections, Training Quality Assessments, and Quality Assurance and Revalidation Inspections of all eight ASTCs to ensure safety and standardization of operations. The NASTP-MM provides a central point of expertise for all NASTP issues.

ASTC Jacksonville serves as the Training Agent for Aviation Survival Training and the subject matter experts on all military operational medicine. ASTC Jacksonville provides aviation survival and safety training for Navy and Marine Corps Aviation and supports all Department of Defense activities. Training includes classroom or squadron lectures, simulator devices, and a curriculum that emphasizes hands-on exposure to survival skills.



Twenty of the 168 solar thermal panels peek over the roof of the ASTC. The system replaces a portion of NAS Jacksonville's aging and inefficient steam heating grid.  
*Clark Pierce*



Students at the ASTC now train in water that is temperature controlled by a new solar-thermal and natural gas system.

Former NAVFAC Southeast Commanding Officer Capt. John Heinzl highlighted the perspective from former Commander Navy Region Southeast Adm. Tim Alexander during the October 2010 ribbon cutting ceremony. "Adm. Alexander's top three priorities," said Heinzl, "are encroachment, excess infrastructure and energy. He considers this solar project to be a major improvement within the tri-base area. It was great to see the nexus of commands that made this project happen—from the

Public Works Department to the headquarters elements of BUMED, NAVFAC Southeast and NAS Jacksonville. My hat is off to our contractor partners Teco Energy, Energy Systems Group, and Florida Solar for their commitment to innovation, safety and quality."

ASTC Jacksonville Director Lt. Cmdr. Frank Ormonde stated the expected savings in his facilities' energy usage has actually doubled since the obsolete steam heating system was replaced by an integrated solar thermal and natural gas system.

ASTC Jacksonville is one of eight such centers in the Navy and the first to implement such a major renewable energy project. ⚓



Rear Adm. Eleanor Valentin, commander, Navy Medicine Support Command discusses the poolside infrared heaters with NAS Jacksonville Resource Efficiency Manager Cliff Plante.  
*Clark Pierce*

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