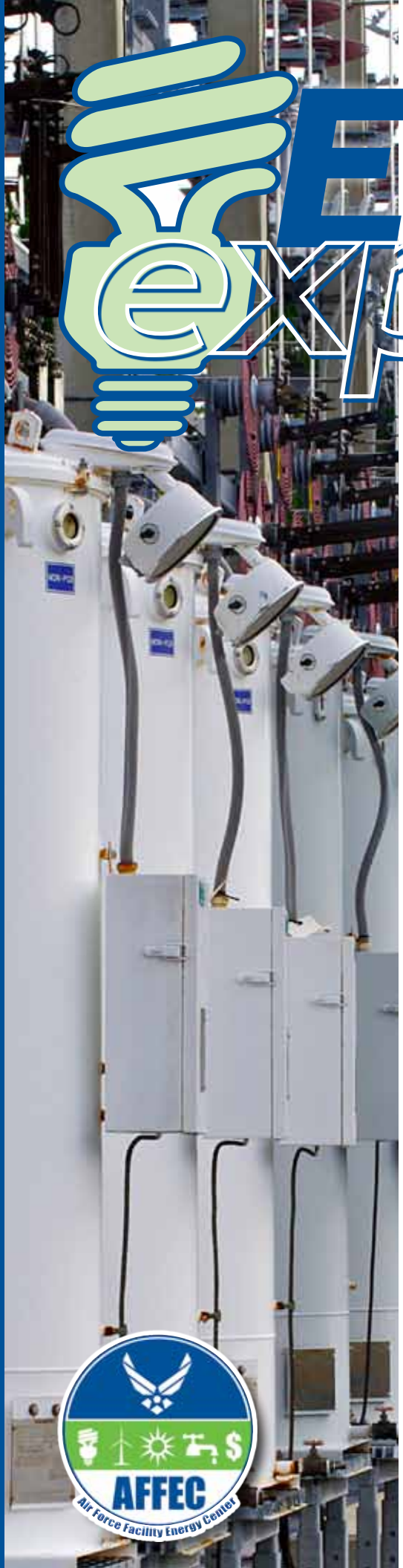

"Make Energy a Consideration in All We Do"

ENERGY eXpress

The Air Force Facility Energy Center Newsletter July 2012

AFCESA helps bases fight rising utility costs

Ms. Jennifer Elmore
AFCESA/CEBH

The Air Force has cut facility energy use 30 percent since 1994 but utility rates have increased nearly 100 percent during the same time period. Are we fighting a losing battle? Air Force civil engineers say no, and we can't afford to give up.

"We're spending $1 billion a year on utilities," said Mr. Ken Gray, Rates and Renewables branch chief at AFCESA, Tyndall Air Force Base, Fla., "but if we hadn't put all that effort into reducing our energy use, we would be spending $1.5 billion a year."

AFCESA's Utility Rate Management Team is developing a plan to dive deeper into the data. The URMT is plotting electricity, natural gas, water and sewer rates for installations around the world in an effort to identify the outliers. Gray said, "We're taking a more analytic view of trends in overall Air Force usage of utilities and the costs we're paying. We want to identify which bases are significantly higher than the rest and see if we can rein in the costs." He says there may be lessons learned at the lower price locations that can be applied elsewhere.

Gray predicts evaluating the data won't be an easy task. The URMT will have to consider many variables such as delivery method, base location – Guard bases located at airports may pay higher rates – and wet versus dry climates. "We're comparing the southwestern desert bases with bases in the northeast, which I know is not a real good comparison, but it's a starting point," said Gray. "We've never sat down and done this kind of analysis before."

The URMT is also researching benchmark averages for utilities. For example, according to the American Water Works Association, the average water rate in the United States has been flatlined at $1.50 per 1,000 gallons for the past three years. However, the Air Force average water rate is $3.80. "If the U.S. average is really flat, why is the Air Force average going up at 10 percent a year, and why are we paying double?" questions Gray. The Air Force spends approximately $100 million a year on potable water. The highest rate of $37 per 1,000 gallons is at a Guard base in New York. The lowest price is at a Guard base in Mississippi.

The URMT plotted natural gas prices and discovered the price is declining eight percent a year. "This is a case where we said, 'Wow, this could really be exciting because we can fight the assumption that utilities only go up,'" said Gray.

While the URMT looks for outliers that need attention quickly, it continues

STORY CONTINUED ON PAGE 2

Sidebar Photo: This electrical substation at Tyndall AFB, Fla., is part of the infrastructure that helps provide approximately $1M worth of energy to the base each month. (U.S. Air Force photo)

Air Force Energy Managers to meet at GovEnergy Conference

The annual Air Force Energy Managers Meeting will be held in conjunction with the GovEnergy Conference on Thursday, Aug. 23, 2012. The location will be provided at a later time.

This year's Air Force day will require pre-registration and is limited to Air Force personnel and direct support contractor personnel assigned to AF installations. To register; please send your name and base/organization to Ebony Payton, Ebony.Payton@Tyndall.af.mil or call (850) 283-6236, DSN 523-6236. Capacity is limited, so please register early!

AIR FORCE ENERGY DAY DRAFT AGENDA

GovEnergy, St Louis, Mo., Thursday, August 23, 2012

0730-0800	Registration	
0800-0815	Welcoming Remarks, Agenda	Mr. Rick Stacey
0815-0825	Introductory Remarks, Introduce Keynote Speaker	TBD
0825-0910	Keynote: Leadership Perspectives	Dr. Kevin Geiss
0910-0940	REAP Award Presentations	Mr. Rick Stacey
0940-1000	Break	
1000-	EPG & Governance	TBD A7/A7CA
-11	Energy Surety	Dr. Daryl Hammond
113 -0	unch	
130 -345	nergy Conservation	Mr. Ken Walters
	- Meters: AMRS Update	
	- EISA07, Section 432	
	- N n (Tririga) Update	
1345-1410	gy Iss	Ken Walters
	- SIAs & ergy Audits	
	- Energy Com issioning Teams	
1410-1430	Break	
1430-1510	Renew E rgy date	Mr. Ken Gray
1510-1610	Capital estm ts	Mr. Mike Rits
	- ESPC SC	
	- ECIP and N	
1610-1700	Open Discussi nd Wrap-u	Mr. Rick Stacey

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Bases Fight....

CONTINUED FROM PAGE 1

regularly scheduled utility acquisition assessments. "Once every four years we will go to a base and look at all of its utility contracts and bills and how it processes payments," said Gray. "We ensure the Air Force is getting the optimum deal for utilities." This year the focus is on Texas and Florida bases. The URMT also plans to follow up with Colorado bases assessed in 2010 to find out whether its recommendations were implemented. Bases with scheduled assessments are asked to provide the current utility contract and two years worth of bills, and answer taskers sent from AFCESA to the major command.

Gray says these efforts could pay off in a big way. "If we can influence the total $1 billion utility bill by just a half of a percent, that's $5 million a year we would save."

Roofing Projects Save Big Bucks, Enhance Infrastructure

Ms. Amanda N. Mehrtens
86th CES/CEAO

Roofing projects may not be glamorous, but they are helping Ramstein Air Base, Germany seal up building "envelopes." A building envelope is the physical separation between the interior and exterior, basically the foundation, roof, walls, doors, and windows. Buildings can be significantly affected by the characteristics of their "envelopes." Ramstein engineers metered heat usage and proved buildings with poor envelopes were costing the Air Force excessive energy and money.

Two ways a roof can affect energy efficiency are through reflectivity and insulation. Roofs at the end of their lifespan at Ramstein are being replaced with more energy-efficient designs. A roof with the right reflectivity helps keep a building cool in the summer, and proper insulation holds in heat in the winter.

Six new roofs were constructed in 2010 and an additional 14, funded by the Energy Conservation Investment Program, should be complete by the end of summer. Together, these projects are expected to save over $500,000 and 12,400 MBtu per year in utility costs. An additional 19 roofs are planned through 2014 at Ramstein and the neighboring military communities. The potential future savings add up to approximately $835,000 and 19,000 MBtu. The dollar savings for these projects cover the cost of the new roofs within the first five to ten years. Over the remaining lifetime of the roofs, pure dollar savings are realized. Additionally, these upgrades result in reduction of greenhouse gasses through the cutback in heat used to regulate temperature in the buildings.

Upgrading to the latest energy-efficient technologies and ensuring modern materials and construction methods are used can make a big difference. But, technology can only go so far. Human behavior is the most important factor in resource-saving efforts. A study completed in the fall of 2008 on Fort Belvoir, Va., showed the behavior of the residents in military family housing had an even greater effect on energy efficiency than the latest technology. Education and adjustment of occupants' behavior complement the use of technology, and can maximize savings.

Besides turning off lights and conserving water, there are other ways people can optimize their home or office envelope during the summer and winter. Simple acts include utilizing blinds or installing exterior shades to block the sun when trying to stay cool in the summer. Adjust blinds and shades throughout the day to follow the sun's path, and take advantage of lower nighttime temperatures to ventilate. In the winter season, do the opposite! Allow the sunlight in during daytime hours, and then close window coverings in the evenings to trap the warmth. Close off rarely used rooms in order to keep the heat where it is needed most. If we make wise decisions about energy usage and smart upgrades to our infrastructure, we can provide a comfortable work environment and avoid unnecessary waste as well.

(Above) *A new roof at Ramstein Air Base, Germany is part of a project expected to save approximately $835,000 and 19,000 MBtu per year in future energy costs. (U.S. Air Force photo)*
(Below) *Workers stand on a roof at Ramstein Air Base, Germany which is just one of 19 planned roof replacement projects over the next two years. The new roofs are expected to pay for themselves within the first five to ten years through energy and dollar savings. (U.S. Air Force photo)*

Air Force Leaders speak at renewable energy industry day event

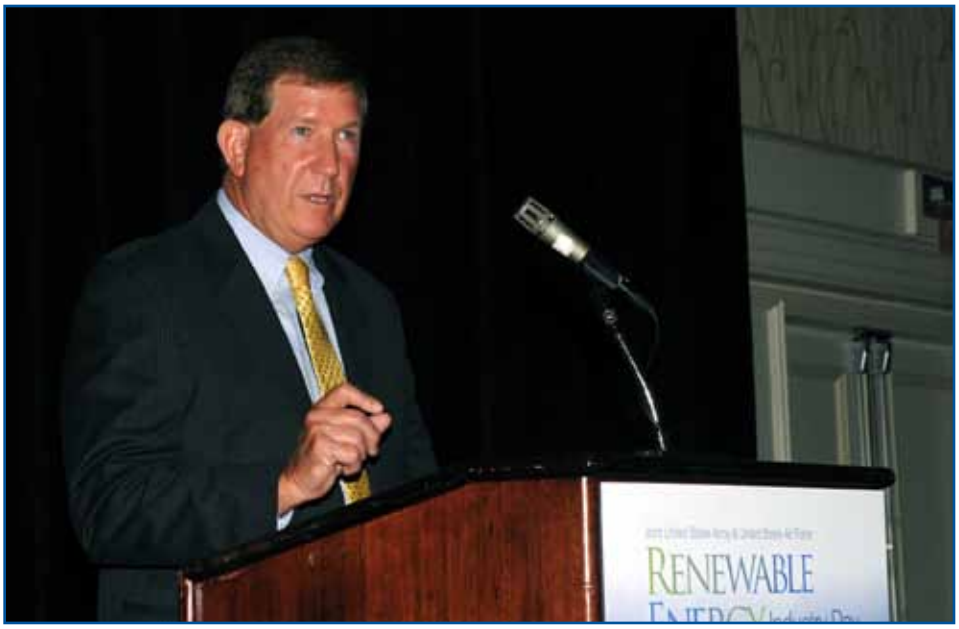
Tech. Sgt. Julie Weckerlein
Air Force Public Affairs Agency

Military and industry leaders gathered for the annual Renewable Energy Industry Day to discuss opportunities for public-private collaboration to meet the military's energy needs June 12 in Arlington, Va.

Assistant Secretary of the Air Force Installations, Environment and Logistics, the Honorable Terry Yonkers, spoke of the military's challenge to be "energy secure" despite high demand, restricted budgets and growing fuel prices.

"As our budgets come down, our energy prices go up," he said. "We need to reduce this trend in energy purchases. We believe in the long run, renewable energy is a reliable, economical alternative."

The Air Force is the largest consumer of energy in the federal government, spending more than $8.2 billion for electricity and fuel last year alone. But the Air Force also made strides in saving taxpayer dollars by making changes across the service with an energy strategy to reduce demand, increase alternative fuel supply, such as solar power, and change the culture by training Airmen to be more energy aware.



The Honorable Terry Yonkers, Assistant Secretary of the Air Force for Installations, Environmental, and Logistics, speaks at the Joint United States Army and United States Air Force Renewable Energy Industry Day on June 12, 2012, in Arlington, Va. The event brought together government and industry leaders to discuss opportunities for public-private collaboration in renewable energy development. (U.S. Air Force photo by SrA Christina Brownlow)

"The Air Force is fully committed to culture change, reducing demand and increasing supply," Yonkers said. "The overriding concern is to secure energy for the future."

Hanscom Starts New Energy Competition

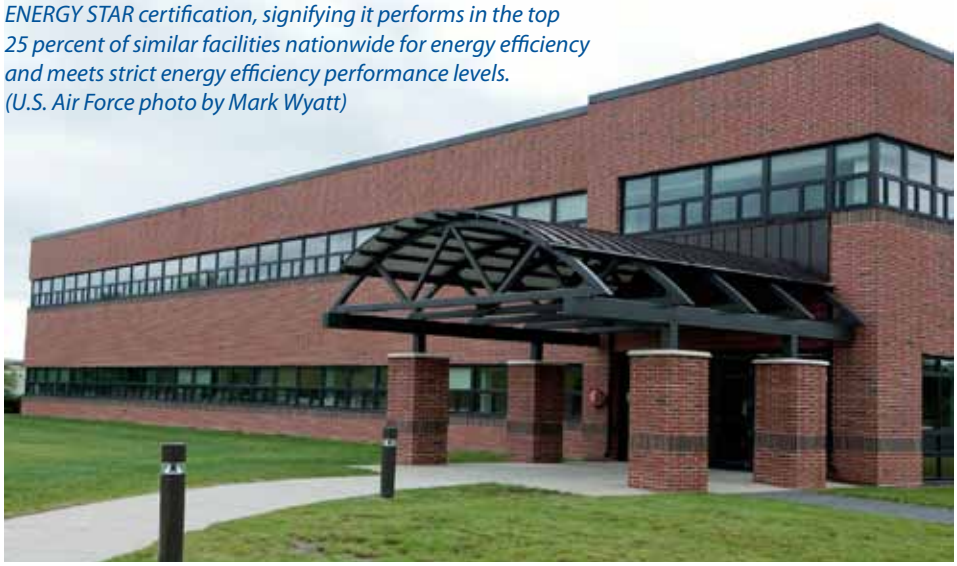
Ms. Sarah Olaciregui
66th Air Base Group Public Affairs

A new energy competition is underway at Hanscom Air Force Base, Mass., called "How Low Can You Go?" The competition requires little effort but will deliver big results by focusing on energy consumption during the weekend.

"We want people to place special focus on their pre-weekend shutdown measures," said Mr. Tom Schluckebier, the base civil engineer. "It requires small steps, such as tilting the window blinds to block direct sunlight to reduce cooling needs during warmer months, or turning off appliances."

STORY CONTINUED ON PAGE 5

This is an exterior view of the newest office space, Building 1604, at Hanscom Air Force Base, Mass. The building earned the U.S. Environmental Protection Agency's ENERGY STAR certification, signifying it performs in the top 25 percent of similar facilities nationwide for energy efficiency and meets strict energy efficiency performance levels. (U.S. Air Force photo by Mark Wyatt)



Hanscom starts....

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The competition focuses on three groups of similar sized buildings in a tournament-style playoff.

Group 1 includes three specific buildings that range in size from 109,000 -120,000 square feet. Group 2 consists of specific buildings that are all around 45,000 square feet. Finally, Group 3 includes three buildings that range from 93,000 -103,000 square feet or more.

Base civil engineers recently gathered baseline electrical consumption data for the facilities involved. The baseline readings will be used to compare the weekend electrical intensity.

The top two performing buildings the first weekend will compete head-to-head the weekend of July 14 and 15, with an overall winner from each group declared on July 27.

The competition is part of an overall Air Force Materiel Command initiative to reduce energy consumption. The effort, called the AFMC Energy Excellence Award, runs throughout 2012 and each base within the command can earn points by conducting their own competition as well as pursuing several other energy-saving initiatives.

The results of the AFMC competition will be announced in early 2013.

New Boston Goes Green with Geothermal Technology

Mr. Scott Prater
Schriever Sentinel

The 23rd Space Operations Squadron at New Boston Air Force Station, N.H., expects to save more than $40,000 in energy costs this year.

In December, civil engineers refitted a warehouse on base with the latest geothermal HVAC system. The technology incorporates heat pumps, distribution subsystems and above all, the Earth's constant temperature, to create a drastically more efficient heating and cooling system.

Mr. Bryan Henderson, 23 SOPS civil engineer, said though the cost to install the geothermal technology in New Boston Air Force Station buildings is 20 to 30 percent higher than traditional systems, the technology will pay for itself in lower utility expenses during the next three to five years.

"Actually, we'll save increasingly more every year as the price of heating oil rises," Henderson said. "Plus, the maintenance costs of our new system will decrease dramatically. It presents a huge savings for the base."

Geothermal technology calls for construction crews to drill wells, sometimes 100 feet down, next to a building. They then lay a system of pipes into the wells in a closed loop. Fluid is pumped through the system of pipes, where the ground heats it. When it returns to the surface as part of the closed loop, it registers between 55 and 57 degrees. Heat pumps and exchangers then bring that energy into the building as warm air.

(Above) *A machine drills one of 15 geothermal system wells outside the 23rd Space Operations Squadron civil engineering warehouse. Construction crews completed installation of the largest geothermal HVAC system installed at New Boston Air Force Station, N.H. in December, 2011. (U.S. Air Force photo)*
(Below) *Two geothermal HVAC units are shown inside the 23rd Space Operations civil engineer warehouse facility. Engineers expect to save $40,000 in utility costs this year thanks to the installation of three systems at New Boston Air Force Station, N.H. (U.S. Air Force photo)*

"In reality, we are just moving heat," Henderson said. "The Earth is the engine. It's doing a majority of the work. People think, 'it's only 57 degrees,' but it requires much less energy to heat something from 57 degrees to a comfortable room temperature than it does to heat winter-cold air to a comfortable room temperature."

And for those 90-plus degree days, engineers simply reverse the system to cool the buildings.

The geothermal systems are so successful at saving energy, squadron leaders plan to outfit the remaining 10 buildings on base with the technology as replacement needs occur.

"The installation of ground-source heat pumps was one of many successful strategies implemented by the 23 SOPS energy team," said Lt Col David Hanson, 23 SOPS commander. "In this fiscallyconstrained environment, where every dollar can mean success or failure for the warfighter in the field, these initiatives are the right thing to do."

Spotlight on Success

Eglin Biomass Project Development

AFCESA/CENR visited Eglin AFB to follow up and assist in developing the installation's request for proposal document for a potential 25MW biomass plant. The development team identified an alternate 2,000-acre area (Turkey Creek) which is closer to existing utilities and has the potential to be a more economical site. Following a formal mission impact assessment of the area, a 50-acre (max) site will be selected. A follow-up meeting will be scheduled in July to proceed with further RFP development. (Mr. Márquez, HQ AFCESA/CENR, DSN 523-6342)

Florida Base Utility Acquisition Assessments

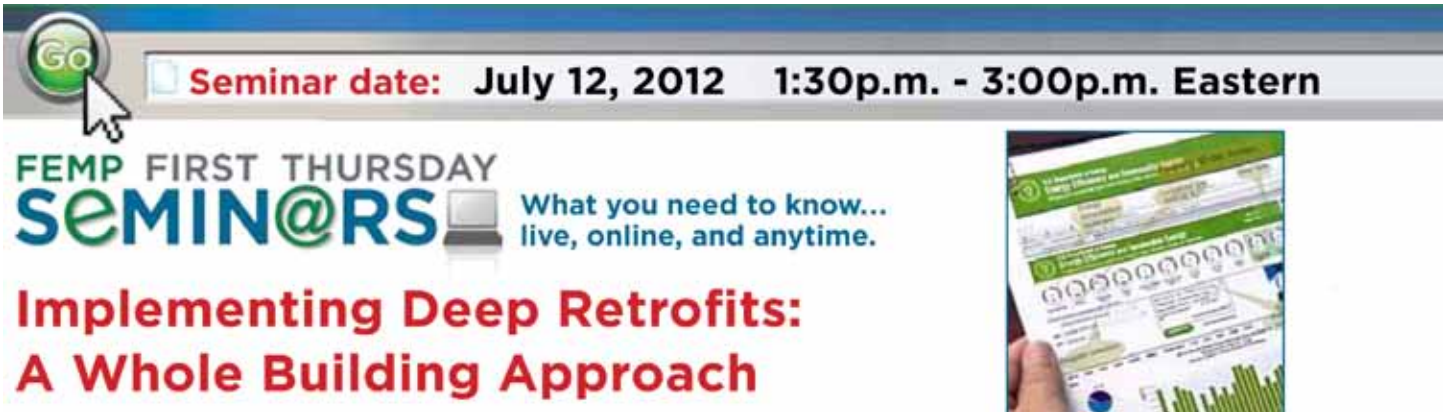
The Utility Rate Management Team conducted studies at Eglin/Hurlburt Field, Patrick/Cape Canaveral, MacDill, and Homestead during May. After receiving/reviewing utility contracts and bills from the bases, the URMT visited the bases to discuss the various supply arrangements, base mission and energy goals, and opportunities for potential savings. A report with findings and recommendations will be provided 60 days after receipt of all information necessary to complete the assessment. (Ms. Coleal, HQ AFCESA/CENR, DSN 523-6295)

Utilities Privatization at Minot Air Force Base

The Defense Logistics Agency energy contracting officer awarded the contract to privatize the Minot AFB electric distribution system, on September 30, 2011, to Verendrye Electric Cooperative. Following award, Verendrye and the base civil engineer conducted a joint inventory of the electrical system. SAF/IEI signed the Bill of Sale on June 6, 2012, and the DLAE contracting officer established July 1, 2012 as the contract start date. (Mr. Majka/HQ AFCESA/CENU/DSN 523-6521)

Utilities Privatization Business Case Analysis Process

AF/A7C-2 requested a business case analysis process be developed to replace the UP award decision requirements deleted by the FY12 National Defense Authorization Act. A draft process is in coordination. The BCA will be used to continue the AF UP Program while OSD develops instructions to implement NDAA language. The UP integrated process team will be drafting a revised UP RFP template (Mr. Majka, HQ AFCESA/CENU, DSN 523-6521)



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The Energy Express is a publication of the Air Force Facility Energy Center, Air Force Civil Engineer Support Agency, Tyndall AFB, Fla. Please send your comments, story ideas, and photos to amy.ausley@tyndall.af.mil, DSN 523-6492.