

Robins engineers, scientists provide expertise for public, private sectors

ROBINS REV-UP

SUCCESS HERE = SUCCESS THERE!



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COME ONE, COME ALL!

New book club to hold its inaugural meeting Jan. 30

Page 3

SUICIDE PREVENTION

Base Mental Health pros offer suicide prevention tips

Page 9

WHAT'S HAPPENING?

Services has a number of things to do in January

Pages 11



ON THE COVER

Jeffrey Hunter 802nd Maintenance Support Squadron me-chanical engineer, uses an optical comparator to measure the dimensions of a part to determine whether or not it is built to drawing specifications. See pages 4 through 7 for more. (U.S. Air Force photo/TOMMIE HORTON)

COMMANDER'S ACTION LINE

ROBINS.ACTIONLINE@US.AF.MIL DSN 468-2886

The Commanders Action Line is an open-door program for Team Robins personnel to give kudos, ask questions or suggest ways to make Robins a better place to live, learn, work and play. The most efficient and effective way to resolve a problem or complaint is to directly contact the responsible organization.

That gives the organization a chance to help you, as well as a chance to improve its processes. If you do contact the Commanders Action Line, please fully explain whom it is you want to recognize and why, what you have a question about, or your suggestion. Discourteous or disrespectful submissions will not be processed. Commander's Action Line items of general interest to the Robins community will be printed in the Robins Rev-Up.

78th Comm Group First Response Center – 478-926-4357 or DSN 468-4357
78th Civil Engineer Service Call Desk – 478-327-7447 or DSN 497-7447
78th Force Support Squadron CC– 478-926-5023 or DSN 468-5023
78th Medical Group Patient Advocate – 478-327-8475 or DSN 497-8475
78th ABW Safety Office — 478-926-6271 or DSN 468-6271
78th Security Forces Squadron CC – 478-926-3212 or DSN 468-3212
Civilian Personnel Customer Service – 478-926-3212 or DSN 468-3212
Civilian Personnel Customer Service – 478-222-0601 or DSN 472-0601
Comptroller Front Office – 478-926-4462 or DNS 468-4462
Family Housing – 478-926-3776 or DSN 468-3776
Equal Opportunity – 478-926-2131 or DSN 468-2131
Household Goods – 478-926-2131 or DSN 472-0818
Inspector General Complaints – 478-222-0818 or DSN 472-0818
Inspector General Inspections – 478-327-5523 or DSN 497-5523
Sexual Assault Response Coordinator (SARC) – 478-327-7272 or DSN 497-7272
Vehicle Dispatch (Transportation) – 478-926-3493 or DSN 468-3493

SUBMISSION GUIDELINES

Submissions must be received by 4 p.m. Wednesday, the week prior to the requested Friday publication. They should be emailed to 78abw.pa.office@us.af.mil

Submissions should be of broad interest to the base populace. For information, call 478-926-2137.

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Come One, Come All! Come All! Base commander's new book club

ROBINS PUBLIC AFFAIRS

ol. Lyle Drew, 78th Air Base Wing commander, is offering base employees and their dependents an opportunity to read between the lines.

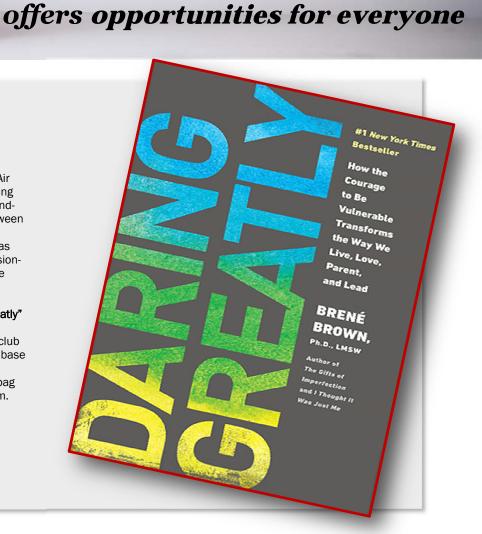
Drew, who has made his ideas about the importance of professional development very public since taking the reins last summer, is starting a book club.

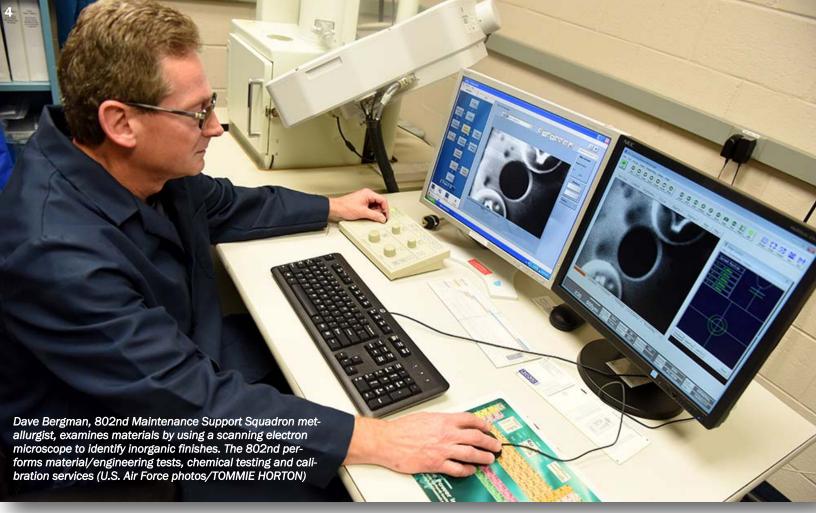
The First book is "Daring Greatly" by Brene' Brown.

Col. Drew will host the book club twice on Jan. 30 upstairs in the base library, Bldg. 905.

The first session is a brown-bag lunch from 11 a.m. to 12:30 p.m. The second session is from 6 to 7:30 p.m.

The club is open to all base employees and their family members.





ER for the Air Force

Robins engineers, scientists provide expertise for public, private sectors

By TIM KURTZ

Warner Robins Air Logistics Complex Operations Management

nbeknownst to many, the Warner Robins Air Logistics Complex has an emergency room. But Robins' "ER" isn't staffed with medical doctors and nurses. It's manned by engineers, engineering technicians and scientists.

The Lab Production Flight in the 402nd Maintenance Support Group's 802nd Maintenance Support Squadron has earned its ER comparison. It has done so by expertly handling crisis cases since the 1950s.

The 802nd performs material/engineering tests, chemical testing and calibration services. It not only handles cases for WR-ALC, the Air Force and Department of Defense customers, but it also contracts with any organization, public or private, that needs the flight's highly-regarded, problem-solving expertise.

Randy Broach, chief of the lab flight, said he picked up the ER equivalence from his squadron director, Jay Wood. And Broach wholeheartedly agrees with the analogy.

"We are an emergency room for the Air Force," Broach said, "because any given day the Air Force can come in and say, 'We need to get this requirement accomplished,' and we will do it.

"We primarily support the depot and the (system program offices)," Broach said. "We support about every single organization on base, and we have capabilities to do more."

Broach, a professional engineer, said the flight's personnel have reached an impressive level of proficiency and are gaining more all the time. That's why MXSG wants to attract more work from private industry. The group intends to get the word out about its laboratory capabilities so more outside organizations will contact the base business office seeking the flight's services.

"Each lab has a specific purpose, but with the capacity and capability to perform other functions, which is what we are branching out into," Broach said. "It's still not common knowledge. We don't get those requests often. We want to make sure people know what we can do so we can get those requests. We love to do the work. And we can save people money and time."

The flight tackles high-tech crises in three elements: the Chemical Lab, Failure Analysis/Engineering Test Group, and First Article Test.

The three labs are made up of 60 people; scientists – particularly chemists, and mechanical, electrical, material and chemical engineers. Material engineers are particularly prevalent.

"We have an insane amount of expertise in the group," Broach said. "There are some really outstanding, knowledgeable folks on the team. They're doing nothing but getting better. As we remove constraints from the process, they are just getting faster and better. The folks we have here work really hard."

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The flight chief said his team is trying to "bring in some young blood" to keep the expertise level high. The flight lost five people in "hard to fill positions" to retirements early in the year. Two chemists and two material engineers have been hired since then and were quickly brought up to speed by the experienced lab personnel.

Despite the loss of personnel, the 802nd pros have stayed ahead in the many, varied and complex aspects of their work within the flight's three elements.

First Article Test

A first article is an initial sample part from a machine or system supplied by the manufacturer. The First Article Test element, or FAT Lab, does dimensional, material and electrical analysis to verify that parts meet required specifications and standards to do the intended job.

"That skill set leads to the reverse engineering skill set," Broach said.

The FAT Lab also does spectrum analysis in its Spectroscopy Lab. Spectroscopy is the science and practice of using spectrometers and spectroscopes to analyze spectra, which is produced when material interacts with or emits electromagnetic radiation. These techniques are used in chemical analysis and in studies of the properties of atoms, molecules and ions.

Broach said first article testing is an "incredibly necessary part of the process," espe-

cially in these times of aged weapon systems. He said the FAT Lab has done from 500 up to 1,300 tests in one fiscal year. This past fiscal year, the lab projected doing close to 900 projects. By the end of September, not only had the team completed 871 projects due in FY17, it also had finished 66 projects for October of FY18 and was already working on projects due in November of FY18.

"We have a fairly robust team for first article test," Broach said. "We have gotten very proficient at doing those very fast."

Other operations conducted within the FAT Lab include physical property testing, material analysis and identification of metal alloys, and analytical instrumentation for quantitative analysis of metal alloys.

A good example of the work done within the First Article element comes from the Metrology Lab. Metrology is the science of weights and measures.

In this case, the lab was tasked to solve a problem with the brake adjuster for a trailer that loads munitions for the B-1 bomber.

Chad Campbell, the 802nd MXSS mechanical engineer/test engineer who handled the brake adjuster job, said the base support equipment office sent the task to the FAT lab. The reason for the assignment: there was no source of supply and not enough information to buy or make the part needed for the fix.

At the start, Campbell had an incomplete drawing of the adjuster and a useable "good

part." He took the good brake adjuster apart and measured it with tools in the shop. Then, he produced a 3-D scan to create a model and used reverse engineering to make a prototype and check the fit of a gear. He figured the dimensional characteristics of the gear, then, created a drawing so the part could be procured.

"The ultimate end goal is Air Force-level detail drawings and a technical data package," Jeffrey Hunter, a dimensional analyst/chemical engineer in the 802nd, said.

Hunter said they really don't need to know what the part does for first article testing. Sometimes the lab technicians know the name of the part and can check to verify it meets drawings or specification requirements without knowing what its use is. Other times, such as for failure analysis, they need to know the part's function.

Most first articles the lab works are for weapon systems supported on Robins, Hunter said.

"Basically, we're checking parts before a contractor mass produces the part. Pretty much everything we do is for direct support," he said.

"Even the outside work we get is for DoD stuff," Campbell added.

Campbell and Hunter said the brake adjuster project cut across more than one element of the 802nd, but showing how the work was accomplished only scratched the surface of what can be done in the FAT lab.

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Austin Walker, 802nd Maintenance Support Squadron materials engineer, loads liquid nitrogen used to cool an electron detector. The 802nd performs material/engineering tests, chemical testing and calibration services for Warner Robins Air Logistics Complex, the Air Force and Department of Defense customers. They also contract with other organizations, public and private, that need use of their highly-regarded, problem-solving expertise.



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"There's a whole lot of capability here we didn't even touch," he said.

"A good reason for people to know about us here; we perform a lot of what outside contractors do, but we can do it all and save money," Campbell said. "I think for purposes of workload, it does matter that people know what we're doing. I think we're an under-utilized Air Force capability."

"We're so versatile here we have the capability to do it all in one shop. Contractors are more specialized," Hunter said.

Failure Analysis/Engineering Test Group element

Broach said the 802nd's failure analysis lab is the only one of its kind in the entire Air Force.

The lab does much more than figuring out why equipment fails. It does engineering tests, Non-Destructive Inspection training and qualification; and planning, scheduling and lab support.

This laboratory performs testing of material hardness and tensile, as well as G-force testing. It utilizes analytical techniques such as Optical Microscopy, Scanning Electron Microscopy and Energy Dispersive X-ray Analysis

The lab's engineering test and analysis capabilities include environmental stress testing, unique mechanical/electrical testing, fatigue testing, first article support and prototype manufacture.

The laboratory features a complete machine shop. Various fixtures to support engineering tests can be developed on the spot, greatly reducing testing and re-work time.

Broach said the failure analysis lab does a lot of testing on "coupons," which usually are samples of metal pieces that need to be tested for factors such as strength, size or dimension.

An exemplary case being handled in the Failure Analysis element came to Robins from Shaw AFB, S.C., home of the 20th Fighter Wing and three F-16CM Fighting Falcon squadrons.

Daniel Doak, a U.S. Air Force Reserve major and a mechanical engineer in the failure analysis materials flight, said personnel at Shaw Air Force Base discovered some training missile fins were missing and found the parts on the ground.

Doak's job was to study the fins and determine what caused the parts to come off the missiles and, importantly, why the same fin came off three separate missiles.

Doak said he was attempting to speculate the cause of failure by studying the makeup of the part and verifying its material properties. His aim is to determine if it was an isolated incident, if further inspections of the missile inventory are necessary, or if the parts needed to be removed or replaced.

"So I'm going for the root cause." Doak said.

The engineer said safety, efficiency and costs are among the most important aspects of the analysis work he performs.

Hunter provided another example of the failure analysis lab's special capabilities. Explosive Atmosphere Testing is done in the Tinney 4D5 explosive atmosphere chamber. It proves devices like medical lights or electronic equipment onboard an aircraft can operate in a fuel-rich environment without causing an explosion.



Left, Jumaane Robinson, 802nd Maintenance Support Squadron dimensional analysis engineer, measures the dimensions of a part to determine whether or not it is built to drawing specifications.

Below, Ben Torey, 802nd Maintenance Support Squadron materials engineer, checks the plating thickness of a part using an optical microscope that allows him to inspect materials at 25 to 1,000 times magnification.



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Chemical Lab

Setting the chemical lab apart from the other two 802nd flight elements is the visual presence of ages-old laboratory stereotypes – lab coats and beakers. The use of such old-school lab gear is part of a story of consistency in analytical excellence that dates back to the 1950s.

Bruce Bundrick, an Air Force shelf life executive agent in the 802nd MXSS, said the area between buildings 110 and 125 is the second oldest facility on base.

The chemical lab's core capability is in classical wet chemistry, which includes maintenance support analysis of fuels, hydraulic fluid, plating shop elements, industrial oil, and C-130 propeller foam density.

Beyond wet chemistry, the lab also specializes in a wide array of analytical capabilities and techniques. Some of those include polarized light microscopy, scanning electron microscopy with elemental analysis, X-ray fluorescence, Fourier Transform Infrared spectroscopy, gas chromatography and gas chromatography/mass spectrometry, inductively coupled plasma, and thermal analysis.

Laura Preiss, a chemist, said much of the chemical lab's work is done in "direct support of getting aircraft out the door."

Some examples of the work done for the complex maintenance mission are:

The lab tests compressed breathing air apparatus used for operations like the aircraft paint/depaint shop.

OSHA swipe testing for particulate contamination to surfaces is conducted by the lab to monitor worker exposure to hazardous chemicals in areas where grinding is done.

Joint Oil Analysis Program tests are done on aircraft engine oil post flight. The analysis ensures flight safety by checking for metals in oil.

The lab utilizes a Salt Spray Chamber, testing corrosion on parts by simulating exposure to salt atmosphere and aging.

Preiss said the chemical lab's extensive abilities are often a surprise to others. "We always show up for a meeting somewhere and get folks who say, 'Oh, can you do this?' and the answer is often, 'Yes, or we can get one of our other labs to do it'."

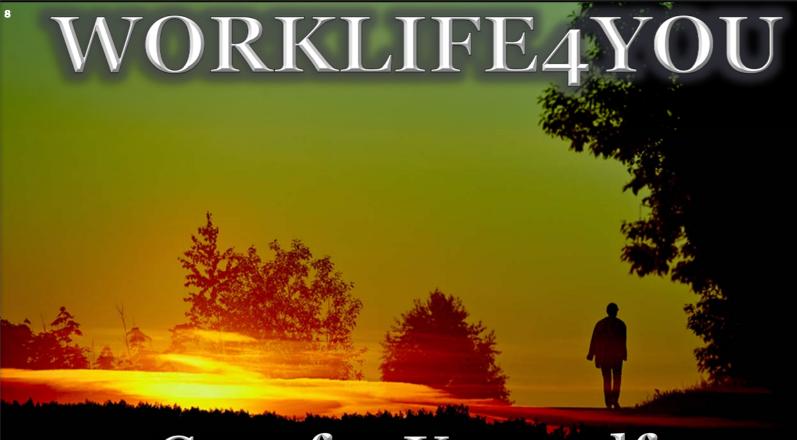
Bundrick said the lab does work for customers DoD-wide and contractors, which are typically DoD connected. He, too, espoused the ER comparison.

"We're like the emergency room," Bundrick said. "You must have excess capacity that's avaliable so when an emergency hits, you can take care of it. The customer can't wait."

Max Hetzer, a chemist/chemical engineer known by his colleagues as "The Doctor," said the chemical lab can do the work of contractors in rapid time "depending on the complexity of the samples." He said the team there is capable of a three-day average turnaround on "basically anything that comes to the lab."

"We're pretty much customer focused, and that's how it's supposed to be," Bundrick said. "We have to take care of the customer. Sometimes that's telling the customer something they don't know.

"It sounds cliché and everybody says it," Bundrick said, "but at the end of the day I'm doing my little piece of the puzzle so someone out there working in hazardous conditions can get their job done."



Care for Yourself

Caring for an ill, injured, or disabled loved one can be both rewarding and exhausting. For family caregivers who are already juggling many priorities, it can stay in good health. Your overall wellness is essential to your ability to keep take a lot out of you. Sometimes you may be left feeling rundown or sick. Work-providing for those you care for. Life4You can help you take care of yourself as you care for others. Here are five tips for avoiding burnout:

Learn about the condition or illness affecting the person you care for. Learn as much as possible about the condition and how it could change over time. This can help you be better prepared.

Having an idea of what to expect can lower your stress level.

It will help you plan for future medical needs. It might also give you time to learn skills you will need later.

Some health problems may cause your loved one to act out, say harmful things, or not even remember who they are. Staying educated about the illness can help you understand when this is a symptom and not act negatively toward it. Remember, sometimes your loved one is not sure how to deal with it either.

Do not be afraid to ask for help. Think positively about the hard work you do, but remember that it is OK to ask for help.

Make a list of tasks you would like help with and people you can call. Ask a trusted neighbor to pick up some items for you from the store.

Ask family members to assist with household chores, paperwork, or research. You might be surprised at how willing they are to help.

Contact your local area agencies or volunteer groups for assistance. Many groups offer meal delivery, transportation, and respite care. WorkLife4You specialists can connect you to these services and other resources.

Take breaks. Find some time each day when you can safely step away — for example, when you have respite care or a trusted friend or family member visiting. During your break you can:

Go outside for a walk.

Go for a bike ride.

Read a book.

Listen to music. Chat with a friend.

Schedule weekly or monthly respite care to give yourself breaks.

Even if you only have a few free minutes, give yourself a much-needed breather.

Take care of your health, too! To give the best care possible, you need to

Eat healthy meals and snacks.

Engage in daily physical activity. It can help lower stress, increase your energy, and help keep your heart healthy.

Get regular health and dental checkups, and any health screenings you may need annually.

Make sure you get your annual flu shot and other appropriate immunizations. Try to maintain regular sleeping patterns as much as possible.

Connect with other caregivers who may be going through the same thing. Your mental health is important too.

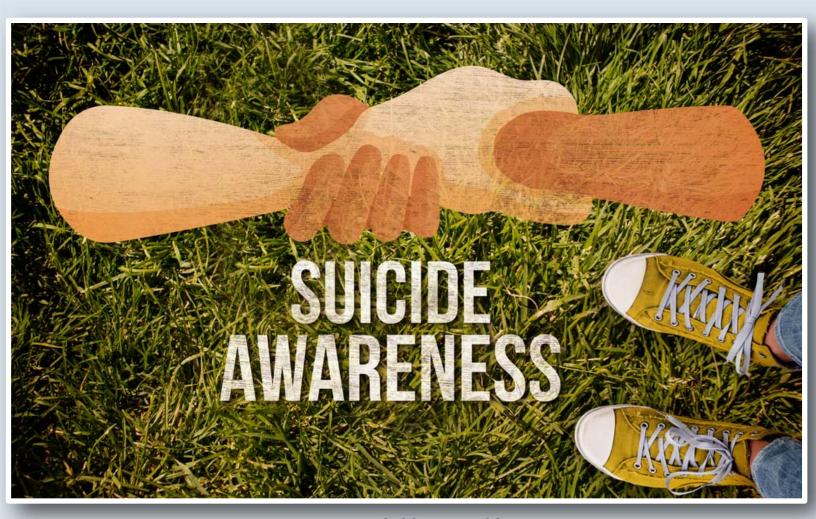
Stay positive! Be realistic about what you can and cannot do. This can help you keep a positive attitude, which can lighten the duties of caregiving.

Even if the person you care for is not able to show happiness or appreciation, you can feel good about the care you are giving and the love he or she is receiving. You may not be able to make the person you care for better, but you can protect his or her dignity and do your best to help them feel safe and loved. There are many things you cannot control, but you can control your actions. Learn to recognize the things you cannot control, and do not lose time worrying about how you cannot change them.

Being a family caregiver can be challenging; there is no doubt about it. You are there to support your loved one, and we are here to support you. Call Work-Life4You today for expert guidance and resources that can help you take care of yourself.

WorLife4You is a voluntary and confidential employee benefit available to you and your family at no cost. Contact a work/life expert today.

Connect with us 24 HOURS A DAY (800) 222-0364 TTY: (888) 262-7848 WorkLife4You.com Registration Code: usaf



Robins' Mental Health Office offers prevention tips

By **HOLLY LOGAN-ARRINGTON**Robins Public Affairs

riends and family often wrestle with feelings of regret when losing a loved one to suicide.

Most are left wondering what they could've done to prevent the situation.

Robins' Clinical Psychologist and Installation Suicide Prevention Program Manager, Capt. John Terry, said while suicide has a low base rate of occurrence and there is insufficient data to accurately predict those most at risk for suicide, there are things people can do to help.

"Suicides are caused by multiple factors and are rarely explained by a single event," he said. "Several co-occurring factors including relationship or marital problems, financial, legal or disciplinary problems and mental health issues are risk factors for suicide. Preventing the accumulation of risk factors by engaging in Comprehensive Airmen Fitness is the best strategy to prevent risk for suicide. CAF consists of ensuring engagement in and balance between physical, social, spiritual and emotional resiliency."

Terry said promoting CAF and ensuring a culture of Wingmanship are the best strategies to prevent suicide.

"Wingmanship increases awareness of risk factors that a fellow Wingman may experience and allows for action to be taken to ensure the individual seeks help," he said. "The acronym ACE (Ask, Care, Escort) communicates the steps to ask if someone is having thoughts of suicide, demonstrate caring by listening to their concerns, and escorting them to an appropriate helping agency or supervisor."

While there is no correlation between time of year and suicide,

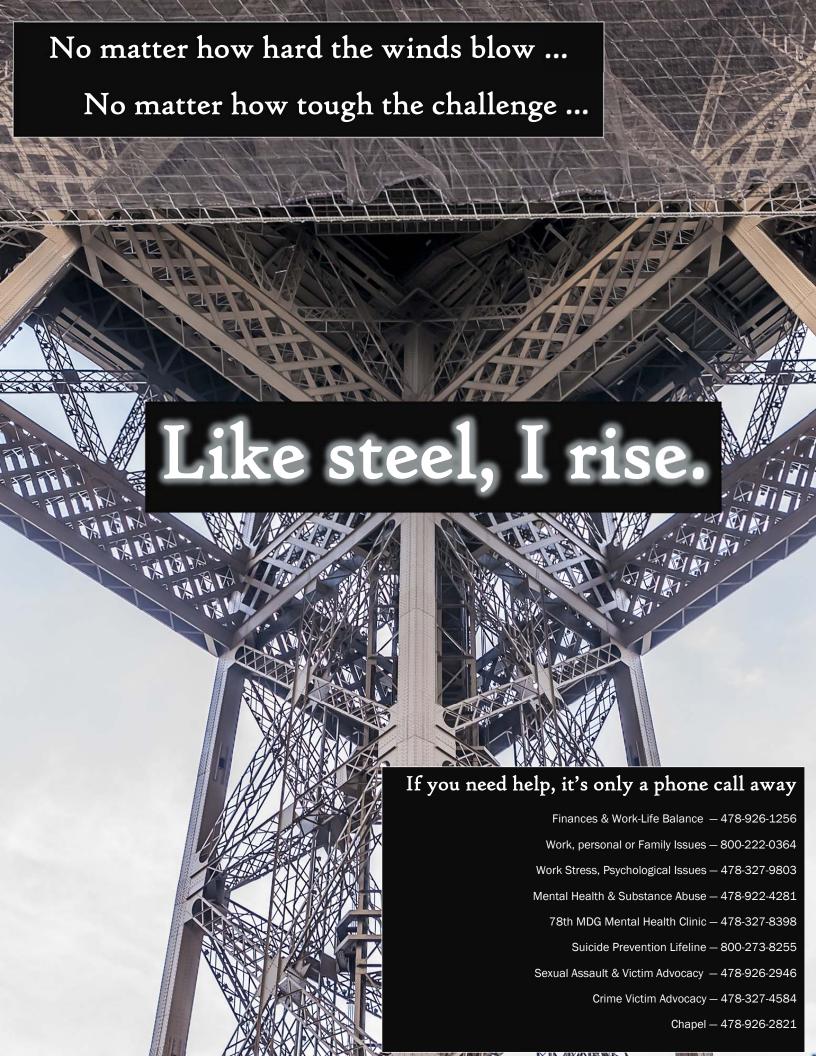
Know the Signs

- Noticeable changes in a person's behavior such as talking about suicide
- 2. Increase in alcohol or drug use
- 3. Changes in mood
- 4. Withdrawal from family and friends
- 5. Problematic or excessive sleep
- 6. Seeking access to weapons

periods of transition or disruptions in social support networks can be times of concern, Terry said.

For more information on suicide prevention, visit the following websites:

- Airman & Family Readiness Center
- http://www.afpc.af.mil/lifeandcareer/
- Air Force Medical Service
- www.afms.af.mil/suicideprevention/index.asp
- National Suicide Prevention Lifeline 1-800-273-TALK (8255)
- Military One Source 1-800-342-9647
 - http://militaryonesource.mil
- Wingman Toolkit
 http://wingmantoolkit.org/



What's Happening

78th FSS

College Football

Saturdays
3 to 10 p.m.
Bar & Food Specials (Burger, fries & drink)
Wings Lounge
Heritage Club Lounge - 478-222-7897 or DSN
4472-7897

NFL Sunday Ticket

Sundays
Doors open at Noon
Bar & Food Specials
Wings Lounge
Heritage Club Lounge - 478-222-7897 or DSN
4472-7897

Ladies Day at the Pine Oaks

Every Wednesday 9 a.m. & 4 p.m. Members pay their regular rate Non-Members Ladies golf for \$12 – 9 Holes or \$24 – 18 Holes Pine Oaks Golf Course - 478-926-4103 or DSN 468-4103

Friday Special at the Base Restaurant

Fried Catfish, Hush Puppies, Vegetable and Cole Slaw or Potato Salad \$6.50 Base Restaurant Bldg. 166 - 478-222-7827 or DSN 472-7827

Daily Lunch Special at the Base Restaurant

Spicy Breaded Chicken Sandwich with Fries \$3.50; Half Sandwich or Sub with Tomato Soup \$4; Mushroom & Swiss Burger with Fries \$3

Base Restaurant Bldg. 166 - 478-222-7827 or DSN 472-7827

Thunder Alley

Friday Nights
Family Night 9 to 11 p.m.
Adults \$10 / Child 12 & Under \$5
Saturday Nights
Glow in the Dark 9 to 11 p.m.
\$10 per person
Bowling Center - 478-926-2112
or DSN 468-211

Pizza of the Month at the Pizza Depot

The Big Kahuna 18-inch Pizza \$11 Pizza Depot - 478-926-0188 or DSN 468-0188

Sub of the Month at the Pizza Depot

Manwich Sub \$7.25

Roast Beef, Ham, Turkey, Salami, Pepperoni, Lettuce, Tomato, Onion, Cucumber and Green Peppers

Includes Fries and 16 oz. Fountain Beverage Pizza Depot - 478-926-0188 or DSN 468-0188

Monday Specials at the Pizza Depot

11 a.m. to 1 p.m.

Steak & Fries Lunch with tea or fountain drink \$7.50

Pizza Depot - 478-926-0188 or DSN 468-0188

Wednesday Specials at the Pizza Depot

11 a.m. to 1 p.m. Pancit & Egg Rolls \$7.95 Pizza Depot - 478-926-0188 or DSN 468-0188

Thursday Specials at the Pizza Depot

11 a.m. to 1 p.m.

8-inch, one-topping pizza with tea or fountain drink \$4

Pizza Depot - 478-926-0188 or DSN 468-0188

Friday Special at the Pizza Depot

11 a.m. – 1 p.m.

Two Fried Catfish Filets, Hush Puppies, Vegetable & Mac 'N Cheese \$6.95 Pizza Depot - 478-926-0188 or DSN 468-0188

Curbside Dinner to Go

Call in your order by noon each day and pick up between 3:30 to 6 p.m. at the drive-through in front of club.

12-Piece Mixed Chicken with Large Mash Potato & Gravy and green Beans \$21.95
Eight Chicken Fried Steaks with Large Mash Potato & Gravy and green Beans \$19.25
16-inch Meat Lover Pizza with Pasta & Marinara Sauce and 6 Pieces Garlic Bread \$19.95
Pizza Depot - 478-926-0188 or DSN 468-0188, or 478-926-2670 or DSN 468-2670

Join Us For Story Time!

Every 1st & 3rd Wednesday of the Month Base Library - 478-327-8761 or DSN 497-8761

Karaoke & Club Mug Night (Club Mug Only)

Every Thursday 5 to 8 p.m. \$1 Domestic Draft Beer Heritage Club Lounge - 478-926-2670 or DSN 468-2670













