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SKILLS AND SURVIVAL FOR ALL SITUATIONS

SHOTGUN SKILLS AND DANGEROUS ANIMALS

As a firearms trainer, over the past several years, it seems to me the shotgun has diminished in popularity, yielding to the now-coveted 5.56 carbine.

BY: ANDY BLASCHIK IMAGES COURTESY TACTICAL FIREARMS ACADEMY

Most local law enforcement agencies in the state of Florida, where I instruct, have put the shotgun aside. As an armed professional firearms instructor, I have long favored the shotgun over the carbine in the urban environment. Shotguns are versatile. They provide longer range with slugs, high lethality at short range with buckshot (for entry type scenarios) and can deliver a range of less-lethal munitions. For citizens who seek my advice and teaching on firearms choice for home or office protection, I assist them in choosing the best firearm for their needs by asking a few simple questions. When they are educated to the fact that handgun bullets do not consistently stop humans like they do in Hollywood, unless placed in a very specific spot (i.e. the ocular cavity) it becomes clear that the training one needs to receive to be able to reliably achieve such a task is lengthy. The shotgun often seems to be a better choice. The energy and trauma delivered is much more than standard handgun cartridges deliver and shot placement may be more liberal and still stop an attacker. Clients often ask: "Can I handle it?" In most cases, with appropriate training, the answer is yes, and there is more than just the 12 gauge; there is a 20 gauge and a .410 gauge as well, with less recoil.

In 2016, an incident happened at a local zoo involving the death of an animal trainer. I received an email several months later that asked if I would be interested in developing a curriculum and providing firearms training to a small group at the continued on next page

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After an incident at a zoo involving the death of an animal trainer, the author was retained to train the zoo employees. Many had little to no experience in firearms.

zoo. My first questions were: who were these people and what experience did they have? The answer was vet staff, maintenance personnel and animal handlers, with no firearms experience. The next question was, what type of firearms? Their answer was that they were not sure. After evaluation and based on their needs, I recommended the Remington 870 pump 12 gauge, 14 inch shotgun.

I had a basic Shotgun Fundamentals and a Tactical Shotgun lesson plan already on the books, but this task was a little different. We were no longer talking about human subjects, but four legged creatures. I had to do some tweaking on my lesson plans, but "green" students are a pleasure to teach because they have no bad habits to fall back on. The 12 gauge pump shotgun was a little intimidating to some. Most of the students were female, with smaller body frames to work with. The program was set up with an initial 12 hour introduction followed by dry fire drills every month and eight hours of range training and qualifications every three months. Shooters had to qualify to be on the zoo's Critical Response Team (CRT) holding an 80 percent or higher score and qualifying two out of three attempts from three yards out to 25 yards shooting all slugs. Targets were 4 inches and 10 inches diameter.

The Remington 870 that I recommended for the organization mirrored a personal shotgun that I still use today for security work and disaster services. It is a Remington 870 pump with a 14 inch barrel and standard magazine capacity of 4 with a plus 1 extension for specialty round exchange. It includes a Mesa Tactical six shot shell carrier with their Urbino pistol grip stock with limbsaver pad. They are outfitted with a Trijicon MRO with a QD mount along with a Wilson Combat ghost ring rear sight and green fiber optic front sight adjusted for the 14-inch barrel. (Ed. Under the National Firearms Act, 1934 shotguns with a barrel shorter than 18 inches or an overall length less than 26 inches are considered to be NFA firearms which must be registered by the owner and a $200 tax stamp paid to the Feds.) We settled on the 14-inch because the site's housing areas and hospital operating rooms are very tight. Also, the transportation of the animals in and around vehicles made entering and exiting vehicles efficiently an implied task for the students, so we were cautious about using a longer barrel length.

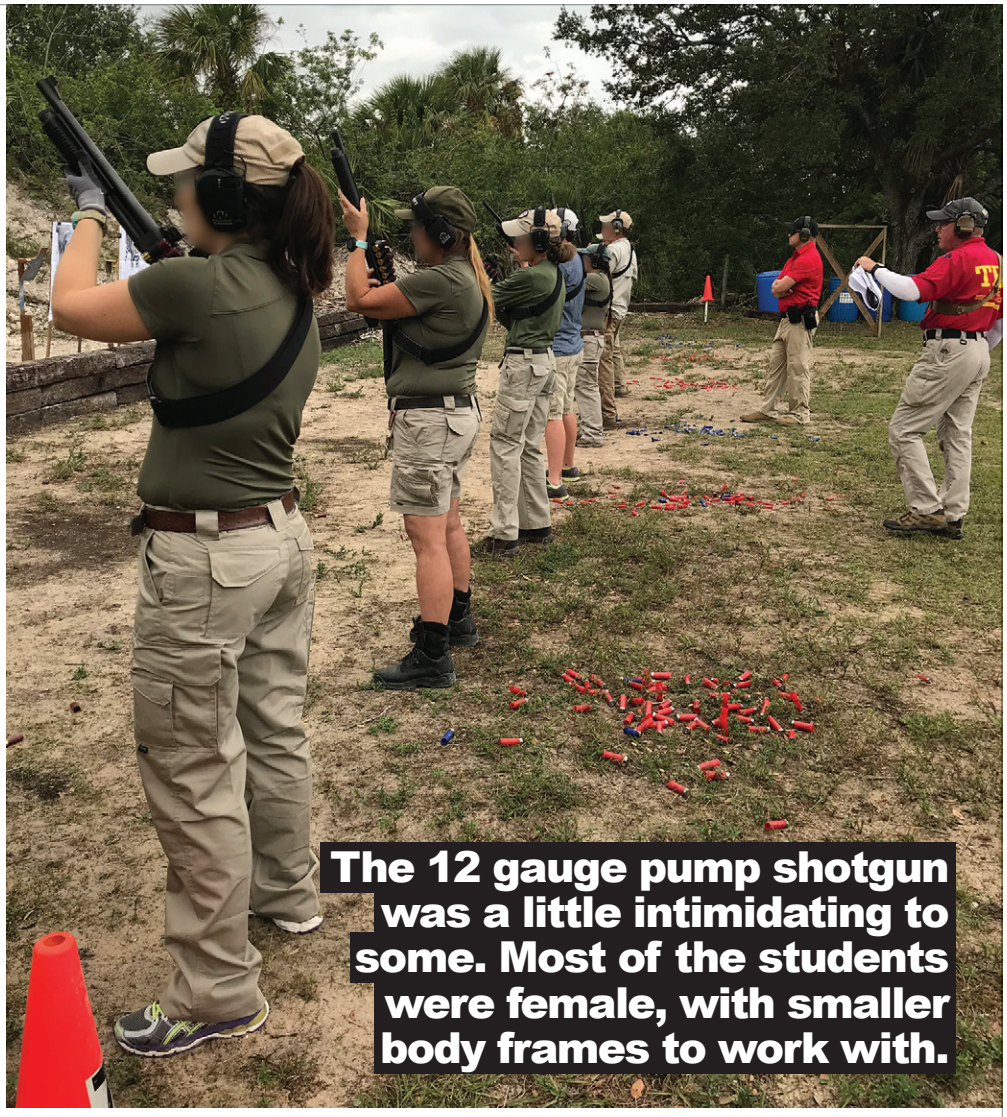
Our standard for learning the shotgun starts with nomenclature and method of operation followed by a complete field strip so that the student understands all the aspects of the platform. Like all of the classes at Tactical Firearms Academy, we start with dummy rounds and teach the student all of the ma-

nipulations so we can catch any safety issues without dire consequences.

We use the "cruiser ready" (mag tube full, chamber empty) configuration protocol with the mechanical safety "off". Some agencies have shifted to preferring the safety "on", but I believe the original cruiser ready can be executed safely and with benefit over the modified version. Training is required. The shotgun safety does not work in the same fashion as a carbine or pistol. Shotguns don't have active hammer/striker blocks like handguns do. We teach port arms carry (muzzle up) and when the shotgun is loaded for use then it is in a low or high cover ready. The shotgun is not loaded until on scene. When the shotgun is no longer needed then it is brought back to "cruiser carry" and the shooter then verifies an empty chamber while orienting the weapon safely. When the shotgun is deployed from the safe or truck rack there is a verification process that is taught and conditioned into the operator. Red dot on, safety off and chamber empty.

Fundamentals taught are: mindset, aggressive stance, four points of contact on the stock/forend, sight alignment, sight picture, trigger press and follow through, reset (yes reset with a shotgun) and a reminder to breathe. Shotguns are loaded to cruiser carry with three primary shells (low recoil) slugs in the mag tube and the shell carrier is loaded with the same except the two forward cells are specialty rounds; 00 buck. The magazine tube has three rather than four rounds to allow for the specialty round exchange as slugs are used for longer distance and 00 buck for up close, which is generally consistent with the LEO community.

Some people state they do not like the shotgun because it beats them up. During training, the stance is squared to target, aggressive and gripping with four points of contact. A technique that we teach includes isometric tension, getting the shotgun off the shoulder and into the "pocket" closest to the face. While keeping the butt stock firm in the pocket, the support hand on the fore end pushes the shotgun away or in other words stretch the shotgun from the center of the receiver in both directions. The support arm acts as a so-called muzzle brake softening the recoil to a manageable degree. As the shotgun recoils, the operator then works the action, working with the recoil. Pulling back on both hands to the pocket basically adds to the recoil and after just a few rounds most people have enough of that. You must put quite a few rounds down range to master what many people call, "the beast".



The 12 gauge pump shotgun was a little intimidating to some. Most of the students were female, with smaller body frames to work with.

Students learn the combat loading through the ejection port with both over- and underhand techniques as well as the specialty round exchange, which is exchanging one load for another based on the needs of the scenario. The students remember this technique using the phrase "if you need it, you feed it" Shooting on the move is also required as when the animal is hit and put down, the shooter moves in to access and then call the vet staff to make a final determination. I could not convince zoo personnel to carry a sidearm, so we deploy the CRT personnel in teams of two and adopted the use of synchronized shots for certain applications. Using the shotgun for a precision shot tool is doable. We now have these teams shooting 50 yards and out to 100 yards on six to 10 inch plates.

Communication is also needed in order to coordinate movement and shot placement because with the CRT, a dart team is also deployed with any response. The dart person is shadowed by the CRT member as they move into a hot zone. The target zone with the zoo CRT is the head area. You must remember that this is not a hunting exercise, but an attempt at instant incapacitation of the animal upon human intervention or containment. On the monthly drills we utilize Simunition kits behind the scenes to practice callouts with vet staff members: dart team and lethal force. On the quarterly exercises we conduct the training scenarios after park hours and bring in the complete staff to roleplay an entire callout. Using full size colored animal targets on clear plastic sheeting allows for the background to bleed through and give a very realistic view. The head area is covered with ¼ inch Lexan to allow the Simunition round to splat and give a clear hit or miss indication. Each CRT member has a different color of Simunition to indicate which person hit. On movement, or charging exercises, we use a Lexan "shield" with an animal target affixed. We can't move as fast as a sprinting tiger, but we can still experience hitting moving tar-

Allowing a Class One dangerous animal loose in public can lead to dire consequences.

gets. Not all dangerous animals are tigers and jaguars. The zoo also has bears, rhinos and others.

Tranquilizing an animal is always the first option unless human intervention is observed. If the background is not clear for a well-placed shotgun slug (such as in a tree or on a containment wall) then the only other option is the tranquilizing dart. Another zoo that we are training uses the vehicles in many of their role plays simply because of the amount of ground that is covered. Vehicle tactics and containment become more important. The shotgun is deployed by the driver and the shot is taken from the security of the vehicle. It is not until the animal is down that an approach would be made. Upon an approach, inside 10 yards, the slug is changed to a specialty round which is the 00 buck. If it sounds a lot like a SWAT training program, that is because a lot of it was inspired by basic SWAT tactics. Lethal force is only used with human intervention or containment issues. Allowing a Class One dangerous animal loose in public can lead to dire consequences. At Tactical Firearms Academy we can adjust and adapt tactics and procedures to fit any specialized requirement. We started with one zoo and now other zoological societies have asked us to reinforce their firearms programs as well. We are always happy to accommodate. A shotgun is a great home defense weapon and is easily adaptable to different situations. The zoo CRT is just one great example. ✓

BIO

*Andrew Blaschik has been the owner and operator of Tactical Firearms Academy (**www.tacticalacademy.us**) since 2001. He started KGB Armament (**KGBarms.com**) in 2006. Andrew's certifications include Master Instructor with the International Association of Law Enforcement Firearms Instructors (IALEFI), licensure as a firearms instructor for law enforcement and Criminal Justice Standards & Training Commission (CJSTC) Florida Department of Law Enforcement and he serves as an instructor for the police academies for Broward College, Institute for Public Safety and Miami Dade College School of Justice.*

GEAR REVIEW

CONCEALMENT COFFEE TABLE

A quality firearm in the hands of a skilled operator is one of the most effective self-defense tools ever devised. A concealed firearm often has more value than one carried openly, and it is less likely that a criminal could steal guns from your home if he doesn't know they are there.

This table has a secret compartment that drops out from the bottom when an RFID key is swiped in front of the table lock. The false bottom drops and the tray slides out, presenting your hidden cache. Whether or not you like the idea of using an RFID card to access your weapons, the Tactical Walls website will provide food for thought on concealment. **www.tacticalwalls.com**

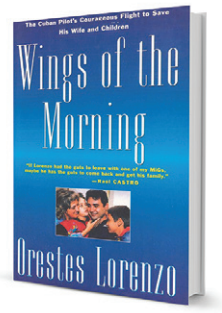
ORESTES LORENZO COLLECTION

WINGS OF THE MORNING

Major Lorenzo in the cockpit of MiG-23.

BY: ORESTES LORENZO

SUMMARY BY: JOHN STEVENSON



On March 20, 1991 Major Orestes Lorenzo of the Cuban Air Force took off from Santa Clara, Cuba in a MiG-23 fighter bomber on what should have been a routine familiarization flight in a new aircraft.

What no one else but his wife knew was that Major Lorenzo would not be returning to his base that day. He had memorized two alternate routes to his secret destination: The United States Naval Air Base on Boca Chica Key in Florida. If he made it, he intended to declare his desire to seek asylum in the United States.

He plotted a course and was using dead reckoning to navigate to the USA, but his need to keep everything in memory alone was a gamble. He flew the correct heading, but he used the wrong calculation for the time that it would take him to reach US airspace. By the time he realized his miscalculation he was well inside US airspace and he was being targeted to be shot down by air defense systems.

Major Lorenzo recognized his error, slowed his airspeed and quickly gained altitude so as to appear less threatening. He then approached and landed on Boca Chica Naval Air Station, without being shot down. On the ground, he confirmed his desire to escape the Cuban socialist republic and defect to the USA. Major Lorenzo was debriefed over several weeks and granted the asylum that he sought.

With asylum granted, Orestes Lorenzo turned to focus on the second part of his plan. His wife and two sons had been unable to defect with him, so he attempted to pressure the Cuban government to allow his family to leave, but the Lorenzos underestimated the level of priority Marxist-socialist regimes invest in obscuring their inadequacies and failings. By stealing an advanced military jet and escaping, Major Lorenzo had given the Castros a black eye which they would neither forgive nor forget.

Lorenzo had grown up in Cuba and had seen the changes that came about after the revolution. His father was a loyal communist who believed in the State completely; Lorenzo believed as his father did. But as he grew to be a young man, he began to question the system that denied people the right to seek answers to Life's questions. Cubans were forbidden from reading or listening to any

news or information that was not consistent with State approved narratives. He also saw that those who decried capitalism at the top of the establishment lived with the privileges of royalty, not as the revolutionaries they claimed to be. The socialist republic only delivered equality in suffering and privation for those outside the regime elite. Cuba declined rapidly into an economically failed police state where even the celebration of Christmas and belief in God were forbidden.

Lorenzo began his campaign to free his family by going to every radio station and newspaper that would grant him an interview. He handed out flyers and postcards with pictures of his family on it trying to apply leverage through world opinion to convince Raul and Fidel Castro to release his family. He went on a well-publicized hunger strike in Madrid, Spain during an international summit meeting where the Cuban government had a delegation in attendance. Lorenzo spoke at a meeting of the U.N. Commission on Human Rights, and even to Mikhail Gorbachev personally, but to no avail.

Lorenzo also enrolled in a flight school to obtain his private pilot's license. He then sought financial help from a friend and supporter of his efforts. He needed thirty thousand dollars to purchase a used twin-engine Cessna 310F. The plane was fast and small, but had enough room to carry his wife and sons.

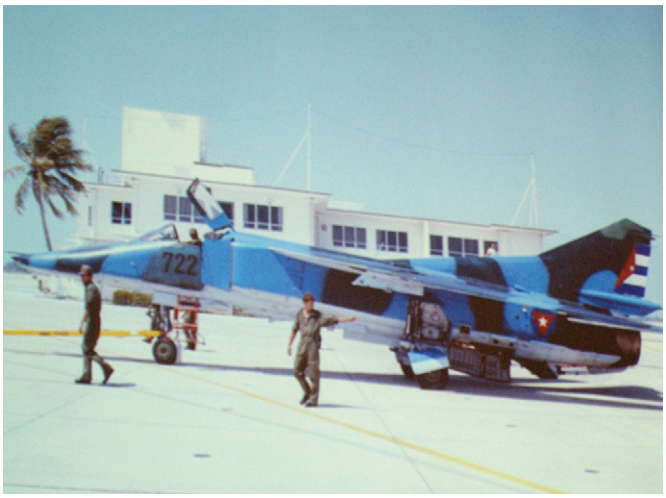
Using his knowledge of Cuba's air defenses, Lorenzo devised a timetable for how long he would have from the moment he believed his plane would be detected by Cuban radar operators until they would be able to fire on his aircraft. He decided that if everything worked perfectly, he would have fifteen minutes before anyone would be able to shoot him down. The Castros micro-managed command and control in order to maintain their lock on power.

Lorenzo then chose a landing site for a rescue. He chose El Mamey Beach on the northern coast. It was near his parent's home so Vicky and the kids (who were under surveillance) would have the plausible alibi of visiting family. The beach also had a highway running near it which might support landing an aircraft.

Lorenzo's final step was to draft a message smuggled to his wife explaining the plan and establishing a set of code words that would be worked into a regular phone conversation so that Lorenzo could tell Vicky when to be at the pickup site without Cuban law enforcement officers catching on.

A group of ladies from Mexico regularly traveled to Cuba on humanitarian missions. They had volunteered to help in any way that they could and when Lorenzo asked them to covertly deliver his message, they agreed without hesitation.

Lorenzo's messenger friend called him from Mexico to confirm delivery after she returned. After having checked the weather forecast for the next day, December 19, and confirming that the weather would be favorable for his mission, Lorenzo asked his Mexican friend to place the coded call.



ORESTES LORENZO COLLECTION

LORENZO'S MIG BEING TOWED AT NAS KEY WEST.

Knowing that a call from a friend in Mexico would arouse less surveillance attention than a call from the U.S., the coded coordination instructions were delivered from Mexico. The call went as hoped, the message was received and confirmed.

On the morning of December 19, Vicky Lorenzo took her two sons to a bus station to travel to the town of Matanzas where her in-laws lived. The town was adjacent to El Mamey Beach.

While his family was making their way to the pickup sight, Orestes Lorenzo was waiting for 5:07 p.m., the exact moment, according to his calculations, that he would need to take off from Marathon Key, Florida to fly the thirty-eight minutes to El Mamey Beach, Cuba. His goal was to arrive with just enough daylight left to land and retrieve his family and under cover of the descending night, make an escape. Lorenzo believed that Cuban surface to air missiles had a range of twelve nautical miles, so he had to get in, pick up the family and get at least 12 miles off of the Cuban coast in fifteen minutes. It was a tight window.

Lorenzo took off and climbed to 1,000 feet. Off the coast of Cuba, he switched off his navigational lights and transponder and descended as close to the ocean's surface as he could. Then, using his LORAN indications, airspeed indicator and compass, he flew toward his improvised airstrip.

He arrived at the prearranged stretch of highway near El Mamey Bridge on schedule. Lorenzo had allotted only one minute on the ground. He spotted his family as he lined up his approach. He concentrated on finding a gap between vehicles on the highway that was large enough for him to land in. Barely clearing the roof of an oncoming car with his landing gear, Lorenzo slammed his plane onto the highway as the aircraft shuddered at stall speed. He came to a stop almost nose to nose with a bus. Throwing the door open, his family rushed aboard. He barely had space to pivot the plane in order to line up for takeoff.

While his family prayed in the back of the plane, Lorenzo advanced the throttles to the firewall and began a takeoff run. One wing cleared an oncoming car with only inches to spare as they raced toward a bend in the highway, but he was able to drag the Cessna into the air even while brushing tree tops. He banked north toward the safety of the USA and the Lorenzo family made it back to Marathon Key, celebrating excitedly on the taxiway tarmac.

The story of Orestes Lorenzo demonstrates cleverness, daring and just how far people will go to obtain freedom. Prior to the rescue, Raul Castro was quoted as saying, "If Lorenzo had the guts to leave with one of my MiGs, maybe he has the guts to come back and get his family." Apparently he did. ✓

BIO

John Stevenson is a former police officer, U.S. Border Patrol agent and Federal Air Marshal.

B SHONTS

RELOAD YOUR AMMO

GETTING STARTED

PHIL WENDT III

main: Media separator.
inset: Dillon vibratory case cleaner.

Depending on political circumstances, economics, war or natural disaster there may come a time when ammunition is not readily available.

BY: JAMES LeBLANC

You can store a large inventory of ammunition, but this can be expensive, especially for multiple calibers. You can also do like many people already do, and reload ammunition. This is cheaper, the ammunition can be more precisely tailored to your weapon (and thus more accurate, especially for rifles) and you can do it at home or in a remote location.

At a basic level, reloading involves using a virgin or once-fired brass case, a new primer, powder and a bullet and a reloading press to put it all together. Reloading setups can run from basic single stage presses to progressive presses (where a loaded round is produced for every pull of a handle) that can reload 400-1,000 rounds per hour. If you shoot less than 200 rounds per month, a small single stage press may be a better choice than a larger progressive press, which can have automatic powder and primer

HORNADY.COM - RCBS.COM

above: Hornady reloading dies in .223 Remington.

right: Lyman digital reloading scale.

below: RCBS micrometer.

PHIL WENDT III

PHIL WENDT III

12 gauge shotshell reloading MEC 600 jr set up to reload 1 1/8 oz. loads To the left of the press is a MEC 12 ga. super sizer, a tool that swages the base down fully to ensure positive feeding and extraction in tight shotgun chambers.

capabilities. The important thing is that you can reload almost anywhere and you do not need any electrical power (although some progressive presses have automatic shell and bullet feeders that do require electricity).

Starting with the basics, you need to decide on what calibers you want to reload. Your choices are: pistol, rifle or both. We'll look at pistol first, and use 9mm since it is the most common weapon caliber. What follows also applies to .40 S&W and 45ACP.

The first thing needed is brass. You can buy virgin brass or once-fired brass. Once-fired brass is cheaper and works just as well. It is usually of mixed manufacturers, which for pistols, is not a major factor. Range brass for 9mm is around $30/1,000 to $50-$60/1,000 for tumbled brass. The brass should be tumbled so it is clean. Next is powder. There are dozens of powders for pistols, noted by different composition, shape and burning rate. You want a powder that can work for several calibers. Unique and 231 can be used for multiple calibers. A pound of powder is 7,000 grains. A typical 9mm load with either powder is around 4.5-6.0 grains. This pound of powder (around $28/pound) would be enough for an average of 1,400 rounds. Next is primers, in this case, small pistol primers. These cost around $35/1,000, but are more economically purchased in 5,000 primer flats. Bullets can be either hard cast alloy (linotype), coated cast bullets or jacketed bullets (different variations such as hollowpoints and semi-wadcutters are also available). Depending on source, they can cost for 115 grain 9mm coated around $67/1,000. Jacketed bullets or 45ACP bullets will cost more due to the copper jacket and weight.

Now, we need to reload, and this requires a reloading press, reloading dies, a shellholder to hold the case in the press and some type of powder measure. The simplest reloading press is a single stage Lee which can be had for around $40 and should be mounted on a bench. Lee also makes a handheld press for around $45. For pistols, you will need a 4-die set: a carbide resizing/depriming (the old primer must be removed so a new one can be inserted) die, an expander die (to open the case mouth up for the bullet), a seating die and a taper crimp die. The carbide sizing die eliminates the need to lubricate the cases as you have to do with bottleneck rifle cases (which involves extra steps). A 4-die set can run from $40 up to $80 (most die sets do not include a taper crimp die except for Lee – you have to buy this separately). Powder scales can be a simple balance beam or digital scale where each charge is weighed and put into the case, or you may want to use a powder measure which dispenses the same charge every time once it is adjusted. In a single stage press you first resize/deprime and insert a primer, then expand the case mouth and drop powder into the case, then seat your bullet and then taper crimp. A tray to hold the cases is a useful tool. A revolver cartridge requires a roll crimp and is usually done on the seating step. Once the round is completed it is a good idea to use a case gauge to make sure your reloaded round will chamber in a SAAMI pistol chamber. If your round does not fit in the case gauge, it will usually not chamber in your weapon. Usually, it requires a minor adjustment to the taper crimp.

A micrometer is a useful tool to measure overall case length, especially on rifle cases. You do not want your overall loaded round to be too long or it may not chamber. Reloading books are available to give suggested starting and maximum powder loads with various

PHIL WENDT III

left: A dedicated Redding powder measure, set up for 5.56 reloading.

PHIL WENDT III

RCBS Rock Chucker, RCBS JR3 RCBS RS. Rock Chucker has a homemade primer catcher shield to catch erratic deprimed primers. A low power magnification, adjustable lighted manicuring lamp (below) is very handy for inspecting crimps.

PHIL WENDT III

below: The World's Finest Trimmer from Little Crow Gunworks.

LITTLECROWGUNWORKS.COM

Reloading may be an essential skill in the future. It can also save you a lot of money if you like to train.

bullets or you can get this information from the powder manufacturer or on the internet.

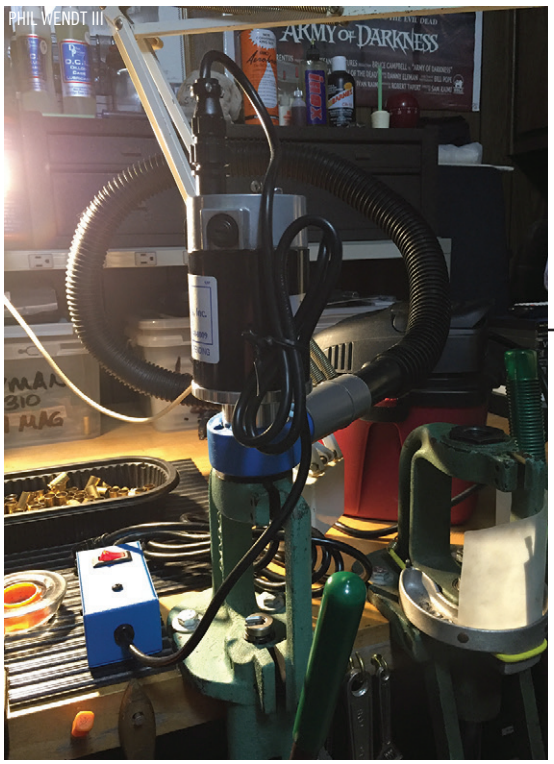
Single stage reloading presses are made by Lee, RCBS, Hornady, Redding and Lyman. In each of these single stage presses, you must perform the process of one die on all pieces of brass, then remove that die and move to the next die, and so on. This works well and many reloaders still use single stage presses since they are simple and reliable, but it is time consuming. Each of these manufacturers also make turret presses, where all dies are mounted on a turret and each stage is done and the turret rotated for the next stage. This saves a tremendous amount of time since the dies are installed and adjusted one time. A powder measure can also be mounted on the turret press.

Rifle cartridges are next. Typically, the most common rounds for rifles are .223/5.56 and .308. Other rounds, like 7.62x39 for the AK-47 are typically cheaper to buy and inventory than to reload, although it can be done. It is important to know that many rounds produced in Russia and the Eastern bloc countries use steel cases, which cannot be reloaded easily, and Berdan primed cases (this also applies to pistol rounds from these countries), which also cannot be reloaded practically. All U.S. and most European brass is Boxer primed, i.e., the brass has only a single flashhole rather than two found in a Berdan primer.

Again, you will want a versatile powder that can be used for multiple calibers. Winchester 748, IMR 4895, Varget, Ramshot TAC, and BL-C2 are some of the more common ones. A .223 round takes, on average, 25 grains of powder. Thus, a pound of powder (7,000 grains) will give you approximately 280 rounds of .223.

Rifle die sets usually consist of a resizing die, an expander die for the case mouth and a seating die. Some reloaders crimp cannelured bullets, but I have never found it necessary. If the expander die is adjusted properly, there will be enough case mouth tension on the bullet without crimping. Prepping rifle brass is slightly different than pistol brass. With pistols, a carbide sizing die eliminates the need for having to lubricate the cases. Rifle cases (because they are longer and bottleneck shaped) must be lubricated before they are resized. Then, the lubricant must be wiped off before priming. There are pads and sprays to lubricate rifle brass, but I have found that Redding Imperial Sizing Wax (about $9 for a 2 oz. tin) is the cheapest and most effective product for this. You simply run your finger across the wax and wipe it on the case. Done properly, there is usually enough on your finger to do two or three and it wipes off easily. I have reloaded thousands of rounds using one two-ounce tin and I have not even used a quarter of it.

Another step in reloading rifle brass is trimming the overall case length. This step is not necessary in pistol brass. Brass is malleable and flows under pressure. If it gets too long it will not chamber in your rifle, or, if you force it, the case mouth will crimp tightly around the bullet and raise case pressures to a dangerous level. There are a number of ways to trim brass. All of the above reloading press manufacturers make case trimmers where the brass is chucked into a collet and a cutting head with a pilot is moved into the case mouth and the brass trimmed. Once the brass is removed from the case trimmer it should be lightly chamfered to remove any roughness from the trimming. Some are handheld, some look like miniature lathes and others use cordless drills and still others are dedicated case trimmers like the



far left: A pair of Truline Jrs., set up for .38 spl and .44 spl.

left: Dillon RT1200 case trimmer in a RCBS Junior, hooked up to a 1 gallon shop vac to clean up the brass trimmings.

Giraud. Some of the best are The World's Finest Trimmer from Little Crow Gunworks and the Giraud Tri Way case trimmer, both of which use an electric drill. The ultimate case trimmer is the Giraud Power Trimmer, which can do hundreds of cases per hour.

I have found that purchasing once fired military brass by the thousand is the most economical way for .223 brass. A thousand pieces of brass can be found on the internet for around $80. This brass is ready to load. It is polished, sized and trimmed, with any primer crimps (found on military brass) removed. This brass generally works well for AR-15s and bolt action rifles.

Once you fire a round, remember to collect and save your brass when it is safe to do so. Brass can be reloaded over and over. Without an electric tumbler, you can wipe it down with a brass cleaner or 0000 steel wool or shake it in a plastic canister with tumbling media. Brass fired through a suppressed weapon will be dirtier due to blowback, but this can be easily wiped off.

On my .308/300WM tactical rifles I am much more particular on how I reload. These rounds (.308 or 300 Winchester Magnum) may be called on for precise shots at long ranges and I want all of the rounds to be as consistent as possible. Typically, I use one brand of headstamp, e.g., Winchester or Lapua. I make sure the case is full length resized and trimmed. I also recut the flashhole and the primer pocket to ensure consistency (not necessary on Lapua brass) and I use match primers and a digital scale (an RCBS Chargemaster 1500), accurate to .1 grains of powder. I also use a micrometer seating die so all rounds are precisely the same length. A regular seating die will work well, but I prefer the adjustable micrometer style – even though they are more expensive.

I also use a progressive reloading press (one loaded round for every pull of the handle) for rifle and pistol rounds. While all of the above-mentioned manufacturers make excellent progressive presses, my preference is Dillon Precision. They are an industry standard and have a "no bullshit" guarantee. If anything breaks or if you have an older press, they will send free parts or refurbish it for free. You can produce up to 1,000 rounds per hour, depending on the press you use. Precision rounds can be made on a progressive press and changing between calibers takes me about three-five minutes. I have shot many three- and four-round one-hole groups at 100 yards with ammunition made on a Dillon press, as have friends using my loads and my rifles.

One other area where reloading can be precisely tailored is in the production of subsonic rounds. These rounds are typically used with suppressors and have velocities under 1,100 ft/second. Subsonic loads can be precisely made on any of the above-mentioned presses. Commercial subsonic rounds are available, but expensive. The regular rounds you reload can also be used with a suppressor, but will have a supersonic crack. It is important to check your subsonic reloads at 25 yards for stability before you fire them from a suppressor. If they tumble/keyhole at 25 yards, they will cause a baffle strike and damage your suppressor. You must also check to make sure your subsonic load will work well in your rifle. Many subsonic .223 rounds work well as far as being quiet, but will not cycle an AR-15 bolt, so you have to pull the charging handle back for each round, which is inconvenient and noisy.

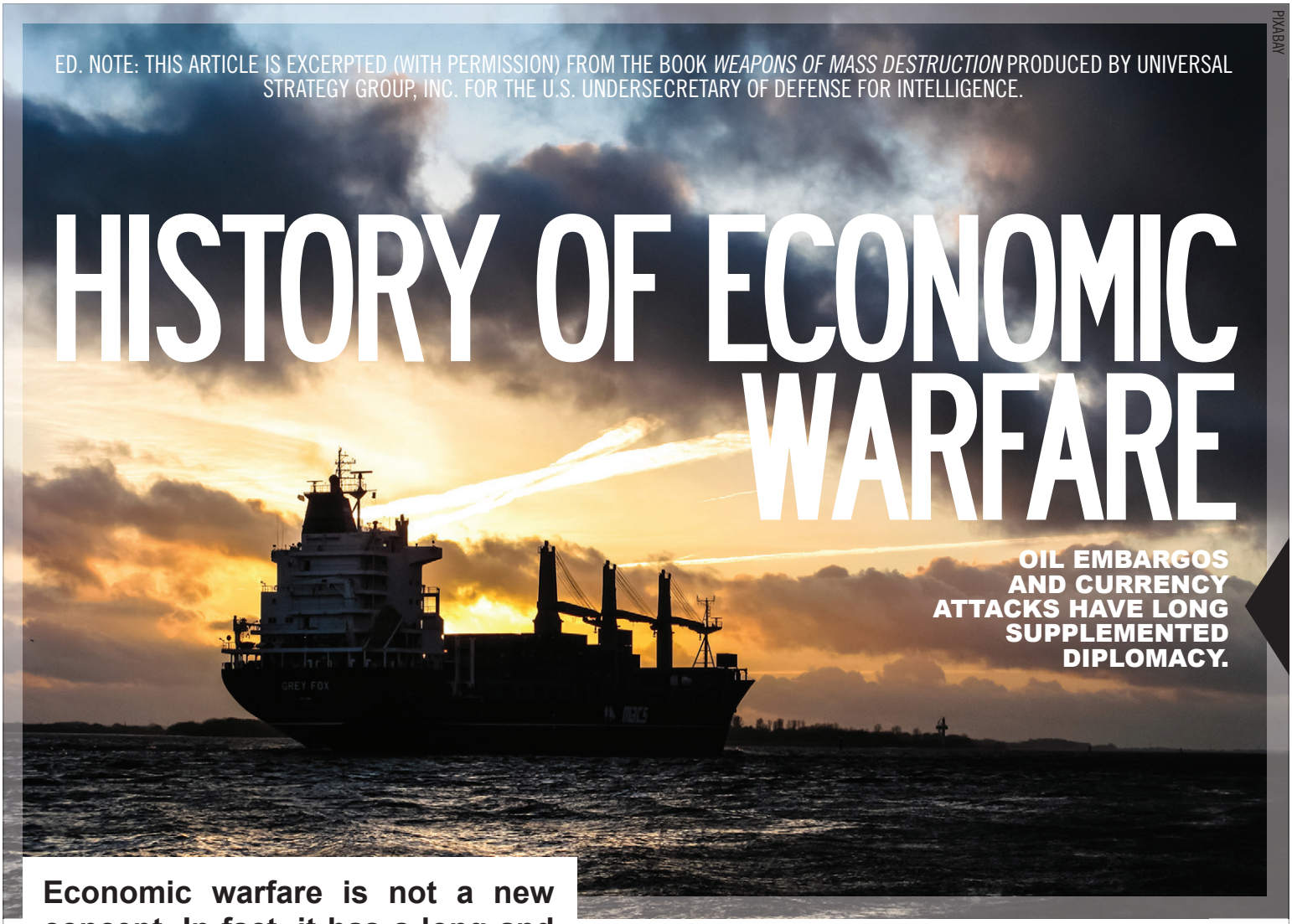
I have been reloading for 40 years and currently use two Dillon 550Bs, a Dillon 650, a Redding turret press (for resizing rifle brass) and 12 Ga. and 20 Ga. Hornady shotgun progressive presses in my shop. Reloading may be an essential skill in the future. It can also save you a lot of money if you like to train. It is always *your* responsibility to make sure all *your* projects are safe and legal. ✓

BIO

Jim LeBlanc is the owner of Contingency Planning Consultants, L.L.C. and is the Vice President of the New Orleans Chapter of the InfraGard Louisiana Members Alliance. He previously served as the chief financial officer for a major chemical company for 23 years, and as a reserve deputy for his local sheriff's office. He is author of Real Risk Management (Center for Security Policy, 2016).

ED. NOTE: THIS ARTICLE IS EXCERPTED (WITH PERMISSION) FROM THE BOOK *WEAPONS OF MASS DESTRUCTION* PRODUCED BY UNIVERSAL STRATEGY GROUP, INC. FOR THE U.S. UNDERSECRETARY OF DEFENSE FOR INTELLIGENCE.

HISTORY OF ECONOMIC WARFARE



PIXABAY

OIL EMBARGOS AND CURRENCY ATTACKS HAVE LONG SUPPLEMENTED DIPLOMACY.

Economic warfare is not a new concept. In fact, it has a long and storied history and has played a significant role in the outcome of major conflicts.

BY: KEVIN FREEMAN

For the purposes of this study, economic warfare is defined as a state-sponsored act against another state's economy to coerce that government into taking a certain action, and financial terrorism is defined as secret, behind-the-scenes manipulation of a nation's economy by state or non-state actors. These definitions expand on the traditional definition of economic warfare as:

… an intense, coercive disturbance of the economy of an adversary state, aimed at diminishing its power. It is analytically distinguished from "military warfare," which attacks the adversary's military capabilities, not its economic resources. In practice, of course, the two forms of warfare may overlap, as for example strategic bombing [of] military targets as well as destroying [an] industrial plant.[1]

Traditional economic warfare involves measures such as blockades, tariffs, currency manipulation and embargoes, which were the primary economic weapons used in previous centuries.[2] For example, in the 1700s and 1800s, the key to economic dominance was having control of trade routes, and Great Britain, the naval power of the time, used the blockade most effectively. Britain's opponents eventually began to apply a form of economic warfare by using neutral countries to avoid the blockades when transporting their products.[3]

By the 1930s, currency and trade wars dominated the international financial scene. In the midst of a global depression, nations attempted to devalue their currencies in order to gain an export advantage. While the source of these currency wars was economic competition, there is little doubt that they helped contribute to the outbreak of World War II.[4] During the same period, the United States used the trade embargo in an attempt to curtail Japanese aggression. President Franklin D. Roosevelt took successive actions to (1) cut off Japanese access to steel and scrap metal supplies, (2) freeze all Japanese assets in the United States and (3) institute an oil embargo against Japan that cut off 90 percent of the empire's oil supply and eliminated three-quarters of its foreign trade. These actions left the Japanese two broad options: retreat or start a military conflict.[5]

During WWII, the U.S. leadership understood the importance of economic warfare policies. FDR instituted a Board of Economic Warfare that was tasked with securing the resources necessary to pursue the war and to prevent our enemies from doing the same. Dean Acheson, assistant secretary of state during WWII, explained the strategy: "We waged economic war on foes and friends within their grasp alike, spreading deprivation with even-handed harshness."[6]

In the 1940s, the Nazis routinely counter-

feited foreign currency as a wartime tactic. Adolf Hitler's security service attempted to destroy the British currency by counterfeiting banknotes worth millions of pounds, which fooled even the Bank of England. The operation was named for Major Bernhard Krueger, who led the forgery effort. Every month, Krueger's men turned out over £500,000 of notes to be distributed in Britain, and they even branched out to print U.S. dollars. Krueger's operation was so successful that it forced the Bank of England to withdraw all notes larger than £5 from circulation during the war, and to change the paper on which the £5 note was printed. Near the end of the war, the Bank of England banned all pound notes from £10 to £1,000.[7]

During the Cold War, the United States and the Soviet Union regularly attacked each other's economies. For example, they created trade restraints to prevent the other side from funding its military weapons programs.[8] However, such actions were primarily designed as containment measures rather than direct attacks.[9] This approach changed during the Reagan administration, when the U.S. made a deliberate attempt to use economic weapons to hasten the demise of the Soviet Union.[10] To exploit the inherent weakness of the Soviet economy, which was smaller than the economy of California, the administration forged an alliance with Saudi Arabia in which the Saudis agreed to increase oil production, thereby lowering world oil prices. This move undercut the Soviets' chief economic export—oil—and forced the Soviets to ramp up production to compete.[11]The administration also forced a technological embargo on the Soviet Union while simultaneously allowing the Soviets to steal technology specifically designed to malfunction, according to Thomas Reed, who was a member of Reagan's National Security Council. For example, the United States arranged for the Soviets to obtain badly needed computer chips that were secretly defective. Used to sabotage the Soviet oil and fuel systems, these chips caused the largest natural gas explosion in world history—a blast along a trans-Siberian pipeline so large that measuring agencies thought a 3-kiloton nuclear device had been detonated.[12] The program was called "Farewell" and as Reed pointed out, the "campaign was cold-eyed economic warfare, put in place to inflict a price on the Soviet Union for corrupting the lofty ideals of détente. While there were no physical casualties from the pipeline explosion, there was significant damage to the Soviet economy."[13] In some ways, this effort could be viewed as a forerunner to the Stuxnet virus that appears to have been designed to sabotage Iran's nuclear program.[14]

The United States employed economic warfare not only against our Cold War rivals, but against our own allies as well. In 1956, the U.S. cut off Egypt's arms supply, fearing Egyptian leader Gamal Abdel Nasser would attack Israel. Nasser then turned to the Soviet Union to purchase weapons, prompting the U.S. to withdraw financial support for Egypt's Aswan Dam project. Nasser reacted by nationalizing the Suez Canal, which had been under European control.

After encouraging Israel to encroach into the Sinai Peninsula, the British and French used the resulting Israeli-Egyptian clash as a pretext to send their troops in to regain control of the canal. The move provoked Soviet threats, a Syrian oil embargo, and, most damaging for the French and British, the opposition of the United States. CIA director Allen Dulles denounced the invasion as "the straight old-fashioned variety of colonialism of the most obvious sort."[15] Agreeing with Dulles, President Eisenhower decided to intervene on Egypt's behalf. Eisenhower realized that Britain's currency was vulnerable, as it did not have enough reserves to stem a run on sterling. The U.S. began selling sterling, declaring that we would only prevent a currency crisis if Britain withdrew its troops from the Suez.[16] Overall, $650 million was sucked out of Britain's reserves to deal with the crisis. The United States increased the pressure by suspending its oil shipments to Europe, putting enormous pressure on the European economy, which helped force France and Britain to capitulate to Eisenhower's demands. As historian D. B. Kunz explained, "Economic diplomacy defined the course of the Suez crisis from beginning to end." In the end, the IMF had to bail out the British to the tune of $1.3 billion, with the United States eventually lending Britain an additional $500 million.[17]

Unlike earlier efforts to competitively devalue the currency of enemy nations, the weapon of forced devaluation emerged in the forms of counterfeiting and mass selling on global financial markets.

After joining the United States in cutting off oil supplies to Europe during the Suez crisis, oil-producing nations in the Middle East recognized the potency of oil as a weapon. The region was further empowered in 1960 by the creation of OPEC, which originally included Iran, Iraq, Kuwait, Saudi Arabia and Venezuela, with Libya, the United Arab Emirates and Qatar, among others, joining later. OPEC used oil as a weapon during the Nixon administration, when the U.S. disconnected the dollar from the price of gold and allowed the currency to float freely against other currencies. The dollar quickly lost value, and OPEC, which priced oil in dollars, cut supplies, which drove up prices. The result was a stagnating U.S. economy—it essentially went into "oil shock." According to a state department assessment:

The OPEC Oil Embargo, which lasted from October 1973 to March 1974, posed a major threat to the U.S. economy. Implementation of the embargo, and the changing nature of oil contracts, set off an upward spiral in oil prices that had global implications. The price of oil per barrel doubled, then quadrupled, leading to increased costs for consumers worldwide and to the potential for budgetary collapse in less stable economies.[18]

Over time, economic weapons have become more sophisticated and more effective. The Suez Crisis demonstrated the effectiveness of both oil embargos and currency attacks. Unlike earlier efforts to competitively devalue the currency of enemy nations, the weapon of forced devaluation emerged in the forms of counterfeiting and mass selling on global financial markets. Hedge fund manager George Soros is credited with perfecting the latter technique by making a direct attack on the British pound, shorting the equivalent of $10 billion in pounds and forcing the value of sterling down. "On Black Wednesday, [September 16, 1992,]" writes economic historian Dan Briody, "the pound crashed, crippling the British economy and embarrassing the prime minister. Soros made a profit of $950 million."[19] Other governments have suspected Soros of

instigating the collapse of their currencies. In 1997, Malaysia's prime minister, Mahathir Mohamad, blamed Soros for the collapse of the Malaysian ringgit, whose value plunged 20 percent that summer, taking the Malaysian stock market down with it. "We have definite information that [Soros] is involved," declared Mohamad. "He is not the only one but he started it. He has wiped out billions from our economy."[20] This activity attracted the attention of the authors of *Unrestricted Warfare*, who wrote:

Precisely in the same way that modern technology is changing weapons and the battlefield, it is also at the same time blurring the concept of who the war participants are. From now on, soldiers no longer have a monopoly on war. Global terrorist activity is one of the by-products of the globalization trend that has been ushered in by technological integration. Non-professional warriors and non-state organizations are posing a greater and greater threat to sovereign nations, making these warriors and organizations more and more serious adversaries. During the 1990's … we began to get an inkling of a non-military type of war, which is prosecuted by yet another type of non-professional warrior … Perhaps he or she is a systems analyst or a software engineer, or a financier with a large amount of mobile capital or a stock speculator … his or her faith is by no means inferior to Osama bin Laden's in terms of its fanaticism. Moreover, he or she does not lack the motivation or courage to enter a fight as necessary. Judging by this kind of standard, who can say that George Soros is not a financial terrorist?[21]

The authors were convinced that Soros had instigated an attack on the Asian economies, but they were not certain whether he was acting as an independent agent or in concert with others.[22] They were certain, however, about the effectiveness of financial weaponry, likening the financial attacks to economic occupation and declaring that they had set back the "Asian Tigers"[23] development by a full decade while enriching the attackers.[24]

Other recent examples of economic warfare include a counterfeiting operation by North Korea in which they produced massive quantities of phony U.S. $100 bills that are essentially indistinguishable from real U.S. money. In 2007, the North Koreans bought enough paper to print $2 billion in fake $100 bills.[25] While this is clearly not enough to destabilize the U.S. economy, it is certainly troubling and could undermine confidence in the U.S. economy.

The United States has most recently entered into what many observers describe as an economic war with Iran, with the aim of forcing Iran to abandon its attempt to develop nuclear weapons. To accomplish this, the U.S. has led the call for international sanctions against the Iranian regime and recently forced the international payment system SWIFT to cut off Iran's access.[26] The repercussions have been severe, as Iran is experiencing a serious economic slowdown and significant inflation [2012]. Iran has responded with threats to close the Straits of Hormuz, which, if successful, would dramatically raise oil prices worldwide. It also has arranged with India to trade oil for non-dollar currencies or even gold in a move viewed as a direct assault on the hegemony of the dollar.[27] ✓

BIO

*Kevin D. Freeman (**www.GlobalEconomicWarfare.com**) is the best-selling author of Secret Weapon: How Economic Terrorism Brought Down the U.S. Stock Market and Why It can Happen Again and Game Plan: How to Protect Yourself from the Coming Cyber-Economic Attack. He is the host of "Economic War Room" (coming soon to The Blaze).*

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Bugs are nutritious, sustainable and can taste great if you know how to prepare them!

PIXABAY - MAKAMUKI0

WIKIPEDIA/HEGARIZ

EATING SAGO GRUBS

With the global population expected to reach 9 billion by 2050, new agricultural strategies and food sources are needed in order to produce significantly more food on roughly the same amount of arable land, all while using fewer of the world's precious resources.

Sago grubs are reported to contain more vitamins, unsaturated fat and minerals with less cholesterol than other typical meats like chicken and beef.

BY: ALY MOORE

Bugs are an important source of food to many animal species, including man. For a comparable amount of protein to traditional livestock, insects pack much more of a nutritional punch. Gram for gram, they have more iron and calcium than beef, chicken or pork. Insects have a significant protein content, varying from 20-76% of dry matter depending on the type and developmental stage. "Good" fat—polyunsaturated fat—content variability is even larger at between 2-50% of dry matter. Most insects are packed with minerals (K, Na, Ca, Cu, Fe, Zn, Mn and P) and vitamins (B group vitamins, vitamins A, D, E, K, and C.)

In short, bugs are nutritious, sustainable and can taste great if you know how to prepare them. After learning about the amazing world of edible bugs, I wanted to share this knowledge with cultures that consider them nothing more than pests. I founded Bugible.com, now the leading bug blog in North America, and EatBugsEvents.com, a service creating approachable and fun events around eating insects—from bug dinners to insect and wine pairings. My goal is to educate people about the benefits of eating insects and to reduce the stigma around using these ingredients.

Knowledge about eating bugs is even more important if you are an avid traveler. Whether you are a resident of Florida or Puerto Rico, or whether you find yourself in Africa, Southern Asia or Southern America, you might consider the sago grub for a nutritious and delicious snack. This critter is attracted to dying or damaged parts of palms, cut or split palm trunks, and can also be found near decaying sugarcane plants.

SAGO GRUB LARVAE

Sago grubs are the larva of the palm weevil (*Rhynchophorus ferrugineus)*—one of the two species of snout beetle known as the red palm weevil,Asian palm weevil or sago palm weevil. Adult beetles are relatively large (2-4

PIXABAY - MLICKEL29

The weevil usually infests younger palm trees, laying around 200 eggs in the crown of the palm. In highly dense infestations, the sounds of larvae burrowing and chewing can be heard when placing your ear to the trunk of the palm.

cm long) and rusty red in color. Sago grubs excavate holes in palm tree trunks up to a meter long, weakening and eventually killing the host plant. Not surprisingly, sago grubs are considered a major pest.

Originally from tropical Asia, these bugs have been reported in places like Africa, the Mediterranean, Spain, Malta, Italy, Portugal, Morocco, Tunisia, and the Americas. The weevil usually infests palm trees that are younger than twenty years old. Adult females lay around 200 eggs in the crown of the palm, at the base of young leaves or in open lesions on the plant. Eggs hatch into white, legless larvae that feed on soft fibers and terminal buds, tunneling through the internal tissue of the tree. Sago grubs can grow to lengths of six to seven centimeters. At pupation, they leave the tree and form a cocoon built of dry palm fibers in leaf litter at the base of the tree. The total life cycle takes around seven to ten weeks.

Sago grubs are yellow-white in color, segmented, legless and have a chitinous (A tough, semitransparent substance that is the main component of the exoskeletons of arthropods, such as the shells of crustaceans and the outer coverings of insects.) head that is a darker brown than the rest of the body. Their horizontal jaws are conical and quite powerful, as they are used to burrow through their host plants.

FINDING SAGO GRUBS

The best place to collect sago grubs is in sago palms. As mentioned above, they feed on the starchy pith of decaying palm trees. Infested trees will have yellowing and wilting palms. Tree cross loss or leaf wilt are typically only visible long after the palm has become infested—usually six months or longer. In highly dense infestations, the sounds of larvae burrowing and chewing can be heard when placing your ear to the trunk of the palm.

To search for sago grubs, you can chop a palm trunk and assess the spongy internal composition of the tree. Those hoping to "farm" sago grubs sometimes deliberately cut openings on fallen palms to attract adult females to lay eggs inside. In about six weeks, the larvae will be plump enough to harvest. If left much longer, they may go into cocoons.

Once harvested, sago grubs should be kept in the shade with pieces of damp wood. They can survive for a few days like this, but will die more quickly under direct sunlight or in dry environments.

EATING SAGO GRUBS

Sago grubs are typically "clean" bugs to eat, as they typically only feed on and live inside palm tree pith. They are considered delicacies in Southeast Asian countries. These high-nutrient meals are frequently eaten alive, toasted or steamed. They are creamy tasting when raw and reminiscent of bacon when cooked; very different tastes, but both good.

RAW SAGO GRUBS

It is common to eat live sago grub. If you desire to give the live grubs a taste, hold the chitinous head with two fingers and avoid getting bitten. Squeeze the head to kill it first and take a bite from the back. The first bite of a raw sago grub might leave you with more of a "Lion King" experience than you bargained for, as it will burst in your mouth. You have to be prepared for a bite of bug guts. The skin is tough and chewy.

One thing to remember: You don't eat the head. You pick a sago grub up by its head and then, holding the head, put it into your

mouth. The flavor might surprise you; the taste of raw sago grub has been described as coconut milk with a bit of sweetness.

COOKING SAGO GRUBS

If chomping on squirming sago grubs is more savage than you prefer, no problem. The grubs can be fried, boiled, grilled and more—it's easy to cook these critters. One of my favorite recipes involves steaming the larvae wrapped in sago palm leaves. Cooked this way, they taste a bit like oysters or snails with a little hint of that bland vegetable taste. Most of the taste associated with sago grubs actually comes from the cooking method.

Perhaps the simplest way is to stir-fry them in a pan until they are completely dry and crispy. First, wash and rinse the grubs. Next, cut an opening in the grubs so that they won't burst while being cooked. You might notice yellow stuff ooze out of the grubs—that's the fat. Sago grubs are packed with oil. Finally, simply pour the grubs into a pan and stir fry them slowly. Salt, veggies, or other seasoning can be added for flavor. Other common ways to prepare sago grubs include roasting them on a spit.

BENEFITS

Sago grubs are reported to contain more vitamins, unsaturated fat and minerals with less cholesterol than other typical meats like chicken and beef. According to Elemo[1] et al., (feedipedia.org/node/18680 2011), the dried sago grub is a great source of protein (66.3%), amino acids, oil (37.1%), ash (5.2%), and linoleic acid—an essential fatty acid (3.51% of total lipid). The sago grub is also an excellent source of magnesium, calcium, zinc, iron, potassium, phosphorus, fatty acid, lipid, dietary fiber and carbohydrates.

Sago grubs are not only valued for their nutritious content.Their oils are very suitable for pharmaceutical use.The grubs also make great animal feed or fish bait. The high dietary fiber found in the grubs makes them useful in aiding digestion.The sago grubs also offer economic opportunities to farmers in developing parts of the world as a source of income generation.

Sago grubs go by many names: sago worm, coconut worm, palm tree worm, palm grubs, palmetto grub, palm tree weevil, Asian palm weevil, grugru, grew-grew, sago palm weevil and edible maggot.While that last name may not be a promotional aid to marketing, whatever you call them, you should also call them

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If prepping fresh live grubs isn't quite your thing yet, acclimate yourself by purchasing a package of salted ones to nibble on.

food. Populations in areas where "food security" is a major problem have made use of these super-foods for centuries, and there is no reason you can't improve your resilience by embracing alternative proteins like sago grubs as versatile ingredients. Your family need not be forced by circumstance in the future to acquire a taste for something that is simply a fun adventure to share today. ✓

BIO

Aly Moore is the founder of ***Bugible.com****, a blog about the world of edible insects, and* ***EatBugsEvents.com****: unique events crafted around edible insects like wine/bug pairings and bug dinners. Aly studied food policy at Yale University, and has been featured on sites like Food & Wine and Forbes. She speaks about the role edible insects can play in addressing the challenges of feeding our growing population for audiences like Complex Magazine, Kaiser Permanente, The LA Natural History Museum and others.*

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In 1992 there were not a lot of options for a young patrolman new to the job.

ALL FLASHLIGHTS ARE NOT EQUAL

BY: DAVE CADY

At that point of my career I possessed a (five) D cell "Maglite". In my world that was top of the line. In those days we did not have the internet. Choices and technology were limited. The D cell Maglite provided an adequate beam of light when needed, especially if your batteries were fresh and it was durable with its anodized aluminum body. Some viewed the Maglite as an impact weapon, but I remember learning, and then teaching, that the Maglite was not a weapon. It was a tool and the human head was never a target; the same lesson taught for our impact weapons. Soon the mini Maglite was on the scene and it offered the ability to carry a small light on the belt as well. The Maglites were not just for cops. Mechanics, soldiers, tow truck drivers and homeowners all enjoyed the security of anodized aluminum and the beam that was created by D, C and AA cell battery technology.

Flashlights have come a long way and the prepared citizen is aware of the security advantages that a good flashlight provides. I quickly took advantage of the wide array of tactical and personal flashlights that hit the market. Chasing a man with a gun into an abandoned house quickly taught me that darkness can befall you anywhere and anytime. I entered behind him in close pursuit. Daylight became darkness….I radioed my position and let the patrol guys take the lead. They had flashlights. They were equipped with a rechargeable light that was kept in a holder on the equipment belt. That lesson taught me that I needed the same type of equipment but for plain clothes use.

SureFire, Streamlight and countless others now make all sizes and types. Key Factors to consider and compare when selecting a flashlight:

- Light output
- Type of battery and run time
- Size and weight, Aluminum or Plastic
- Price range, a high priced flash light does not always mean it's the best. We should seek the brightest light possible. The type of bulb and advanced circuitry technology will make a difference. A rechargeable battery feature can also add to the cost. A flashlight that is water resistant and impact strong should be a consideration. Also multiple lighting modes and heat resistance.
- Try to shop in person. We all know that the internet can make products much more affordable. Sometimes it can be a problem because we do not have a chance to handle the product. If possible find it, handle it and compare price.
- How does the light switch on and off. Some with multiple lighting modes can be confusing to operate while accomplishing other tasks. They can also

From left to right: a 600 lumen OLight, generic cheap light, a well-worn Streamlight ProTac 1L, an older model incandescent Surefire, and a classic Maglite.

ALL PHOTOS BY B SHONTS

There are incredibly bright LED lights in palm sized packages, in models to fit most budgets. There is no excuse to not have a light wherever you go.

CR123A batteries are more expensive than AAA or AA batteries, but they provide a higher voltage output for a smaller size and weight, making possible a brighter, smaller and lighter flashlight.

be hard to activate when wearing gloves.

• Is a tool required to change the batteries? This is a very important feature if you will be using the light in the field.

FLASHLIGHT PERFORMANCE

In 2009 ANSI FL1 standards were introduced. These standards were created to insure that models tested and rated all performed in the same way. Compliance to the standards is voluntary. Some manufacturers conduct their own testing. Most manufacturers will include performance data on the packaging of the product.

BEAM DISTANCE

This is measured in meters. This is how far the beam will shine before the light becomes dim. The beam should be at least the equivalent of a full moon. Full moon illumination is generally considered adequate for safe and careful travel outdoors.

RUN TIME

It is measured in hours. Run time is commonly given for each light setting. A light that has been tested should have a graph printed or enclosed in the packaging. This information will provide the best illustration of the performance of the light over time.

IMPACT RESISTANCE

Lights are tested by dropping them at least six times onto concrete surfaces at a rated distance. The distance is measured in meters. This test is administered to determine if the light remains functional after occasional accidental drops.

WATER RESISTANCE

This is determined using the IPX system. Water resistance is an important factor. The user will determine what level of water resistance is needed. Will the light be used in the rain or around bodies of water? Three ratings are used.

IPX4- Splash resistant from all angles.

IPX7- After an impact test the light can have temporary immersion: up to 30 minutes at a depth of 1m.

IPX8- After an impact test the light can be submerged: up to 4 hours at a specified depth.

BULB TYPE

Advancements in LED technology have rendered other bulb types almost obsolete. LED bulbs take the lead in energy efficiency, run time, impact resistance and brightness options.

BEAM TYPE

The lens reflector that surrounds the bulb is responsible for how the light is dispersed. There are three common options.

Flood: This is a single beam width. Great for common tasks in camp or walking at night.

Spot: A single beam condensed into a spotlight to penetrate long distances. The best choice for searching.

Adjustable: The beam width can range from wide to focused. The operator can adjust the beam to suit the situation.

REGULATED OUTPUT

A light with a regulated power supply maintains a steady, near peak brightness level throughout most of the batteries' life cycle. Near the end the regulated power supply lights can lose power quickly

and significantly. Unregulated lights start bright and then progressively grow dimmer as they drain power from the batteries.

BATTERY TYPES

This is probably one of the most critical choices you can make.

Disposable: The most common and readily available battery sizes currently in use are AAA or AA. CR123A is also a common choice. They tend to be more expensive and can also be harder to find. The upside to the CR123A is the higher voltage output for a smaller size and weight, making possible a brighter, smaller and lighter flashlight. Flashlights using D cell batteries are still available if you want a baton sized tool for security purposes.

Rechargeable: Built-in lithium-ion batteries can be recharged through a USB connection from a computer, AC or DC outlet or solar panel. This type of feature can cost a few bucks more but in the long run it can be the best. The USB charging point is the same one that is most common on android cell phones.

Renewable: The flashlights with the built-in battery that is energized by a hand crank or solar panel. This type of light is a must for your emergency kit. I do not recommend that this type of light be your front line flash light.

MODES

Some models offer two or more modes of operation. A single setting is sufficient for general purpose use. The higher the output the shorter the run time. Some lights are user programmable, meaning you could set the sequence that the light changes intensity. You could start at maximum output and with another press of a switch you could go to strobe or low output. My patrol light and the light I carry on my tactical vest have the same sequence. High-medium-low and strobe. The strobe comes in handy in emergency situations. It's a great marker light when you're on the side of the highway or signaling for help. The high intensity setting works great when distracting an attacker. The initial blast to the eyes can cause some disorientation when using a high intensity light and it can be used to distract if you have teammates maneuvering in darkness against a subject.

MATERIALS AND SHAPE

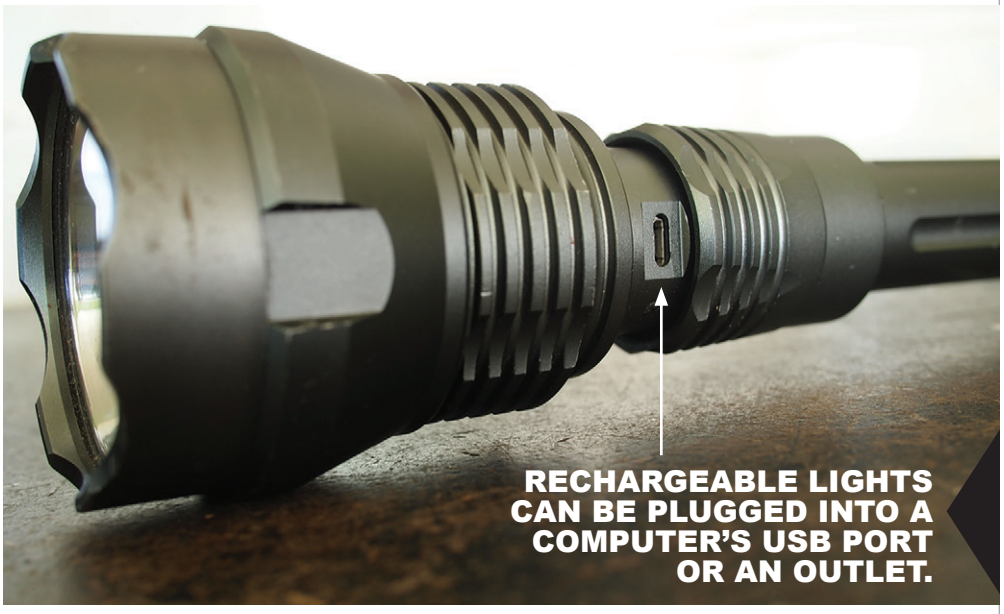
The most common materials for construction are plastics or aluminum alloy. The body styles can vary in thickness and weight. The length of the light should also be considered. Will the light be kept in a pocket? Will it be in a holder on your belt? How about your purse? My wife is very conscious about the weight of her purse. For Christmas I bought her a Smith & Wesson Model 642 air weight. She keeps it in her pistol pocket purse. A double CR123A cell flash light that is four inches long rounds out her self- defense package. It provides a lot of light with little weight.

MEASURING LIGHT

When I researched my most recent flashlight purchases I found the universal measure in use now is Lumens. The Lumen is a directional measure of light. Formally, it is defined as the luminous intensity from a light source of one candela into the angle of one steradian (a cone radiating out from a sphere). That is, it is the intensity of a cone of light radiating out from the light source in one direction. More lumens= brighter light.

For my full time job I am an Investigator for our County District Attorney's Office. I'm not a suit and tie guy; more like 5. 11 shirts and pants. I can be in court or get down and dirty. I carry a two cell CR123A light in my flashlight/magazine holder with 600 lumens single output. The aluminum body is very durable. The light also has a pocket clip on it. When I am working part-time as a patrol officer in my home community, my patrol light is a regulated power supplied aluminum body light; eight inches in length. It is carried on my equipment belt. This light has enough weight and length to be able to be used as an impact weapon if needed. Lights of this type can be great when using a wrist lock or a lock on the pressure points. The power output at maximum is 800 Lumens. It has three settings. Maximum beam is the first press of the switch and three quick presses of the switch bring me to strobe. It is great for oncoming vehicles when on a traffic stop at night. (In my earlier patrol days I had occasion to dive over the hood of a stopped car to avoid being hit by an oncoming vehicle). My third light is a USB rechargeable pocket light. It has three brightness settings and strobe. Maximum power is found with the first touch of the switch. That will give me 1100 lumens of blinding light. That light is tucked into a slot on my tactical-vest.

In today's world I truly believe that you need a source of light readily available to you at all times. I recommend that you get your hands on, and test any light for your needs before you purchase it. Go-bag, emergency kit, or purse; there should be some form of flashlight... Let there be light! ✓



RECHARGEABLE LIGHTS CAN BE PLUGGED INTO A COMPUTER'S USB PORT OR AN OUTLET.

BIO

Dave Cady holds a 4th Dan Black Belt in Tae Kwon Do. He is in the 24th year of his law enforcement career. He has held positions in Patrol, Criminal Investigations, Narcotics and SWAT. In addition, Dave is a singer/songwriter and recording artist. His music videos can be found on YouTube search: Dave Cady.

Whether you are disarmed facing an AK-47 wielding jihadist, facing the challenges of providing for your family or looking for the courage to speak an unpopular truth, there are times when each of us can use a little inspiration. Sometimes it helps to put your challenges in perspective. Sometimes it's encouraging to see how selfless human beings can be. This account is taken from multiple open source reports and this incident is the inspiration for the popular Clint Eastwood movie "15:17 to Paris".

ALEK SKARLATOS

Despite repressive gun laws, the terrorist was armed with what appeared to be an AK-47 and a Luger pistol...

U.S. AIR FORCE PHOTO/TECH. SGT. RYAN CRANE

Chris Norman, Anthony Sadler, President Hollande, Spencer Stone and Alek Skarlatos after their Legion of Honour ceremony, August 2015.

On 21 August 2015, 25-year-old Moroccan Muslim, Ayoub El Khazzani, stepped out of the restroom of a train bound for Paris. Khazzani had resided in Europe (off and on) since 2007. Despite the existence of repressive laws designed to keep firearms out of the hands of citizens, witnesses stated he was shirtless, brandishing a rifle that appeared to be an AK-47 and had a Luger pistol and a bottle of gasoline with him.

A Frenchman unsuccessfully attempted to disarm the attacker and was shot in the neck with a 9mm round. As Khazzani fumbled the operation of his rifle, the terrorist was attacked by disarmed Americans: Spencer Stone, Tony Sadler and Alek Skarlatos. Stone choked Khazzani and sustained slashing wounds to the head, neck and hand from a box cutter the terrorist wielded. Skarlatos delivered muzzle strikes to the attacker's head (with the attacker's rifle) until the man lost consciousness.

Other bystanders joined in to subdue the unconscious attacker. Stone applied pressure to another passenger's wound and successfully controlled the bleeding while multiple passengers provided unarmed security and assisted the small number of injured. No lives were lost.

Khazzani was reportedly already recognized to be at the highest level of terrorism suspicion by the French and other governments before the incident occurred. It is not known how many accomplices he may have had and he has subsequently claimed to have found the weapons and been robbing the train before being attacked by the passengers. Skarlatos, Stone, Sadler and British businessman Chris Norman, were given France's highest award, the Knights of the Legion of Honour. French President Hollande said the men "gave us a lesson in courage". ✓