

**SUMMARY**

When tactical teams are engaged in high-risk operations, they rely on specialized equipment to bring the situation to a peaceful resolution. Advances in covert surveillance technology give team members the ability to see beyond their line of sight and capture video intelligence for enhanced situational awareness.

**MORE INFORMATION**

See individual URLs.

▲ **Tactical Electronics** makes a wide variety of search-and-inspection devices... from pole cameras to under-door cameras to video fiberscopes.

# TACTICAL POLE CAMERAS AND SCOPES

EYES-ON EQUALS INTELLIGENCE EQUALS OFFICER SAFETY.

BY SUSAN GEOGHEGAN

handles. The Griptilian is strictly a manually opening folder; the Volli uses the AXIS-Assist to fully open the blade. Where the Griptilian uses the (excellent) 154CM blade steel, the Volli uses the (outstanding) S30V blade steel.

### S30V

The most important factor in choosing a patrol or tactical knife is the blade steel. A confusing variety of blade alloys exists. Even among the police-oriented steels, there are many steels. The "good" blade steels are 440-C, AUS-8, N690Co and VG-10. Lots of tactical folders use these blade steels, and ones that are similar. They are corrosion-resistant stainless steel but are soft, i.e., they start off sharp, dull easily, and sharpen easily.

The "better" blade steels are 154CM, ATS-34 and BG-42. Actually, these stainless-steel alloys are better than "better." They are very hard, and have excellent edge holding. They are harder to sharpen but need sharpening less often. These alloys are so good, that price-wise they may be the best bang for the buck for a patrol knife.

The "best" blade steel for the rigors of police use is S30V. It is hard for edge holding, and has the toughness for blade abuse. While other alloys are just fine for patrol-type use, the S30V is the right alloy for tactical operator-type use. The downside has always been price—and Benchmade just fixed that with the Volli.

The Volli uses a 3 1/4-inch long-drop point blade. Since S30V is so strong, the Volli easily gets by with a 0.100-inch thick blade. Many other police-oriented knives use thinner blades with much weaker blade steels. The Volli is available as either plain edge or partially serrated, with partially serrated being the most common choice for patrol use. The tactical folder comes with a bright finish or black finish. This is only for esthetics—the Volli S30V blade steel has such incredible corrosion resistance, a finish is not needed.



### AXIS-Assist

Lock-back knives can unlock under a firm grasp—the palm simply exerts unlocking pressure right on top of the lock located on the knife back. The liner-lock knives can unlock during hard twisting motions—the knife rotates the liner under the fingers, which is like the fingers pressing out on the inward locking liner. This is such a problem with liner-lock knives that some of them come with secondary locks to keep the locking liner in place. None of these aggressive motions will unlock a tang-lock tactical folder, which is also the strongest of all the lock designs.

The Benchmade AXIS-Assist is a long-proven mechanism to both open and firmly lock a tactical folder blade. The Volli has dual, ambidextrous thumb studs to start the one-hand opening, and then the spring takes fully



over to open the blade. Just one time try to open a tactical folder with your support hand in the middle of a struggle to fend off a duty gun disarm attempt and you will see the benefit of an assisted-opening folder in police work.

The locking bar in the middle of the liner slides forward in the tang slot and the blade is locked, period. The tang-lock is as close as any folding knife gets to being a fixed blade. The locking bar is also ambidextrous, so the Volli can be unlocked by sliding the bar to the rear with either the thumb or index finger or more commonly by a pinch between both.

What makes the Volli a bit unique is the safety located on the back of the knife. If the officer is concerned about the folder inadvertently opening, the safety can be slid forward to hold the blade closed. Heads-up...you have to remember the safety has been activated and

▲ The Benchmade Volli is available in either Black or Satin finish. The Volli uses rugged G10 handles.

if you need to use the tactical folder, you may have a lot more things on your mind. Some other tactical folders have such safeties that can unknowingly work themselves to the safety engaged position. Not so with the Volli. The safety has to be pushed down while it is slid forward. The Volli safety cannot be accidentally engaged—which is a very good thing.

### Textured G10

G10 is epoxy-impregnated fiberglass and it is tougher than all of the plastic handles, even the good ones. G10 is the ideal handle material for police use. It is impervious to blood, and all kinds of chemicals. It will not crack, chip or warp. G10 is also both rigid and strong, which adds to the overall locking strength of the Volli. The Volli uses stainless-steel liners, the skeleton frame the G10 handles are fastened to in four places with cap screws. The Volli uses indestructible handles around a strong framework to lock a tough blade in place.

The handles strike a fairly good balance between being textured enough for a good grip under stress and being smooth enough to carry in your uniform pocket without tearing your knuckles up every time you reach in. A slightly rougher, more aggressively machined G10 surface would be OK, but something short of the "fully textured" G10. A small index finger groove, subtle finger grooves, and slight palm swell all add to the ability to hang onto the Volli under actual police use.

The Volli uses a reversible, split-arrow pocket clip with a blade-up carry. And carry it we did...and still are. The Volli is very light, just over 4 ounces, and about disappears in the duty pants, and off-duty pants. The S30V blade started off sharper than razor sharp... the sharpest production blade we have ever reviewed. The S30V alloy is so hard, the Volli stayed sharp. That makes it perfect for a police knife because we never sharpen our knives. The Volli has our highest praise...it is an awesome tactical folder. Think Griptilian. Think Volli.

▼ The Benchmade Volli is available in either a plain edge blade or a partially serrated edge. The Volli uses the excellent S30V stainless blade steel.



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**EYEON, LLC**

www.eyepole.com



EyeOn, LLC is the manufacturer and sole source provider of the EyePole Tactical Surveillance Pole Camera, a completely self-contained telescoping surveillance tool. EyeOn's Under Door Camera (UDC) is designed for use in a broad range of applica-

tions that include law enforcement, SWAT, and search and rescue operations.



▲ The EyeOn Under Door Camera is available with a microphone.

▼ The SVCI Tactical GraviCam Self-Leveling Pole Camera System.



tions that include law enforcement, SWAT, and search and rescue operations.

The UDC attaches to the EyePole with a simple quick disconnect, making the camera heads interchangeable. The camera head displays in color and automatically switches to IR for night vision up to 40 feet, providing clear, covert views in rooms with limited ambient light. An optional Dual Camera option provides back-of-door views supplied with a second camera aimed at a 90-degree angle.

Equipped with a compact, shock-resistant Charge Coupled Device (CCD) camera built into the leading edge of the camera tongue, the UDC provides high-resolution black-and-white images, which are transmitted to a monitor outside of the room being investigated. Other under-the-door devices transmit the image through a series of lenses which are susceptible to physical damage, misalignment, and limited viewing capabilities. EyeOn's Under Door Camera's black-and-white image sensor with low light and ultra-low light settings combines sensitivity with resolution, a capability not found in any other under-the-door device.

An ultra-sensitive microphone is also available, providing audio that can be monitored or recorded from the audio-out port on the handle of the EyePole. An aluminum "probe" is installed at the camera head to facilitate the lifting of heavy attic accesses without affecting the camera head angle (90 deg.) A 5-inch LCD monitor is attached

to the EyePole via a tilt/swivel heavy-duty threaded connection. Controls are located at the handle, and include the charging port, power switch, audio and video out, and brightness control. The EyePole requires no assembly; simply remove it from the case and hit the power button.

Bill Mickel, owner of Eyeon, stated, "With the EyePole you get a complete, load-bearing Pole Camera and Under Door camera due to its interchangeable camera heads. No field assembly or external wires make it unique for fast and simple deployment. And yes, it can actually do the heavy lifting."

**S.V.C.I. TACTICAL**

www.svcitactical.com

Founded in 2005 by President and Owner, Matt Stehno, S.V.C.I. Tactical provides customized mobile command, surveillance, and tactical equipment for law enforcement and public safety. Starting out as a one-man operation, SVCI Tactical has grown into an aspiring small business that employs six full-time skilled craftsmen, and a number of part-time staff to handle sales and office management.

In addition to designing and upfitting vehicle-based equipment solutions for law enforcement, the company specializes in covert modular IP-based surveillance equipment. The GraviCam Tactical Self-Leveling Pole Camera System is a specialized tool that



◀ **Brite-Strike Tactical**  
Observation Camera TOC-100

can be detached and viewed remotely up to 30 feet away, allowing officers and operators to covertly observe and gather intelligence.

The IP67-rated mini waterproof camera comes with a 3-foot flexible extended tube and offers a night vision range of 4.92 feet. Equipped with a CMOS image sensor, the camera provides a transmission frequency of 2468MHz, a 50-degree horizontal view angle, and operates on 25MHz bandwidth. Its rugged, lightweight ergonomic pistol grip design makes it easy to handle in challenging conditions.

Brite-Strike does not mass produce its products for merchant retailers, instead manufacturing in small batches to ensure meticulous quality control. This allows the company to continuously incorporate the latest technology to remain a prime leader in the industry. The TOC-100 is priced at \$700, but according to Brite-Strike President and CEO Glenn Bushee, a number of vendors offer it to law enforcement agencies for \$500.

**W**ith tactical pole cameras and scopes, officers can covertly see and monitor activity behind walls and ceilings, under doors, and in darkened conditions. The following companies provide a broad range of video systems and vision solutions that allows tactical team operators to perform their jobs safely and effectively in time-critical situations.

Absorbing Technology), and the PIISA® (Perimeter Infrared Intruder Security Alert).

The TOC-100 Wireless Tactical Observation Camera is a cost-effective solution for smaller police departments and SWAT teams operating under tight budgets. It features a 3.5-inch TFT-LCD wireless monitor with high-definition digital resolution. It

**BRITE-STRIKE  
TECHNOLOGIES, INC.**

www.brite-strike.com



Founded by two police officers, Brite-Strike is a leading provider of tactical illumination products for law enforcement, the military, and the general public. The majority of Brite-Strike employees are active-duty police officers who share ownership in the company. Their product line for the law enforcement and military markets extends from LED flashlights and tactical balls to remote pressure switches and cameras.

The company has several proprietary technologies, including APALS® (All-Purpose Adhesive Light Strips), LAT™ (Light



▼ The wireless monitor of the **Brite-Strike** TOC-100 can be detached and viewed up to 30 feet away.



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▲ The TacView 2600 is a street-proven pole cam.

utilizes gravity to keep the camera image in an upright orientation as the tool is manipulated in use.

The GraviCam features a lightweight Extend-A-Pole that adjusts from 40 inches to 66 inches and provides optimal length for viewing residential attics, crawl spaces, and vehicles. Its compact design and non-slip handle afford greater control and ease of handling. The high-resolution self-leveling color day/night camera maintains an upright image orientation while manipulating the pole assembly. Enclosed with protective HD aluminum, the camera provides 65 feet of infrared illumination in complete darkness.

The articulating camera mount allows the camera to be positioned in a wide range of angles and also allows for easy camera exchange. Equipped with a single-point, quick-release adjustable nylon strap and a 5- to 10-foot-long coil interface from pole to monitor, the GraviCam maintains its pole

position for extended periods of time with less fatigue, even with single-person operation.

The portable soft side Monitor/Utility kit includes a 7-inch high-resolution color LCD monitor that can be easily connected to tactical vests. The pouch features snap-on upper flaps to secure flaps down, providing an unobstructed view of the screen. A built-in rechargeable lithium ion battery provides an operational run time of up to three hours, and the battery charger / power supply unit with 15-foot long cord continuously powers the system and charges the battery at the same time.

A number of optional accessories and upgrades are available, such as tripod & clamp assembly, WIFI wireless system, a 100-foot extension cable spool, 9- to 17-foot-long commercial space-clearing pole assembly, and external battery kits for extended run time of the system. According to Stehno, the GraviCam is a “very easy tool to utilize in building-clearing movements, as well as barricade/containment operations.” Pricing on the base kit (GraviCam, Monitor, Charger/Power Supply, and Pelican 1720 case with foam) is \$4,200.

The range of use and environments is endless, and includes schools, attics, high-rise buildings, parking garages, and under water. It is submersible in up to 30 feet of water, making it ideal for maritime operations and in poor-visibility environments. The PCSS1 has the ability to transmit live wireless video of tactical operations directly to the monitor, allowing for after-action reviewing and archiving.

The PCSS1 Pole Cam is equipped with multiple ‘quick-change’ extensions and flexible rotating waterproof camera heads for viewing orientation in any scenario. Weighing less than three pounds, the system features a collapsed length of 23 inches, an extended length of 80 inches, and a quick-change extension length of 20 inches. Both the color and B/W cameras come equipped with IR LEDs for low-light environments. An optional custom thermal camera is also available. Heavy-duty and rigid, it can also be used for pushing up ceiling tiles and opening attic doors.

The kit also comes with a hard wire cable compatible with the Handheld Monitor and a rugged Storm Case® with precision-cut foam for safe transport. The SD card recording option incorporates an internal mini DVR, and the camera system records real-time video of live operations and training scenarios directly to a high-capacity SD card. Four 3V Lithium batteries provide up to eight hours of runtime.

**TACTICAL ELECTRONICS**

www.tacticalelectronics.com



Since 1997, Tactical Electronics has been involved in a wide range of research, design and manufacturing projects, all mission-specific

to tactical operations. They offer the most versatile, user-friendly search-and-inspection electronics on the market, from Pole Cameras to Under Door Cameras to Video Fiberscopes. The PCSS1 Pole Camera Search System is a tactical electronics pole camera that provides wireless video surveillance and observation of subjects around corners and barriers.

With the highly portable PCSS1, tactical teams have the ability to view events and persons in any number of applications, such as hostage rescue and crime scene investiga-

**TACVIEW, INC.**

www.tacview.com

TacView, Inc. was formed in 2002 by George T. Gilmer, a 23-year veteran police officer. Sgt. Gilmer is a former academy training instructor, D.A.R.E. officer, and tactical team member who served in patrol, narcotics, and crime scene investigation. In the Narcotics Division, Gilmer was in charge of procuring and operating the unit’s electronic surveillance equipment, handling the narcotic detector dog, working under cover, and writing search warrants. From this experience, he developed the TacView, a small camera with 24 IR diodes attached to a telescopic pole. After the development of many prototypes, Gilmer felt compelled to share

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▼ The **Zistos** Stealth SCOPE uses IR light and a 9mm diameter videoscope.



this equipment with other officers at the lowest possible cost.

The TacView® 2600 is equipped with a pole that extends up to a second story window, allowing officers to look into an area without exposing their faces. With IR and color capabilities, the TacView can search in daylight or total darkness. With optional FLIR® devices, it allows thermal imaging to also be mounted on the pole. This lightweight telescopic infrared/color camera collapses to fit in a rifle case, and uses rechargeable or AA batteries.

The TacView also comes with a color monitor, carrying case, and 100 feet of extension cable for remote viewing. Clamps are included for mounting the camera head covertly or onto the top of a ballistic shield. A harness is provided to allow the monitor to be worn on the chest or back of the operator with a spring clamp for quick mounting to a load-bearing vest.

In 2012, the TacView pole camera was used to search the apartment of suspect James Egan Holmes after he opened fire on the audience in an Aurora, Colo. movie theater. Based on information that Holmes' apartment was booby-trapped with explosive devices, a joint local and federal bomb squad was dispatched to the apartment complex. Perched on the platform of a fire truck, they were able to extend the camera and see into the third-story window before entering the apartment without detonating the devices.

Feedback from police agencies and tactical teams that use the TacView 2600 is overwhelmingly positive. According to Sgt.



▲ The **Zistos** Dual-View Under Door Camera

Ralph Monget, SWAT Team Commander for the Las Cruces, N.M. Police Department, the TacView has paid for itself several times over. "Since receiving this pole camera, it has been deployed with my team on multiple operations and has saved many officers from having to stick their head into an unknown area with armed persons on the other side."

Dean Michael, CIDUSM/Task Force Coordinator for the USMS Northern Ohio Violent Fugitive Task Force said that the device has surpassed their expectations. "On countless occasions, we have been able to insert the unit into a darkened attic enabling us to view a suspect who incorrectly believed that he was adequately hidden. For years, I have always dreaded sticking my head into a darkened attic. Now, with the use of your

equipment, those days are gone." TacView 2600 is priced at \$2,995. The compact Patrol Version is \$1,995.

**ZISTOS CORPORATION**

www.zistos.com



Zistos is a leader in the development of cutting-edge technologies that enable trained personnel to see and gain access into areas often considered inaccessible. Among the company's more notable pioneering innovations is their core imaging capabilities that include

thermal imaging, low-light video technologies (electronic intensifiers), cutting-edge illumination sources, and engineered systems designed for dependable rapid deployment. Implemented in tactical, rescue, counter-terrorism, and industrial operations, Zistos products are customized to meet precise client specifications to ensure increased safety in time-critical situations.

Designed for tactical surveillance applications, the new Zistos StealthSCOPE™ is a videoscope that combines a powerful internal 980nm IR laser light source—completely invisible to humans—with electronically enhanced, low-light video processing. Its 9mm diameter allows it to be inserted into small openings and tight areas, generating images of objects and individuals as far as 20 feet away in pitch darkness. This battery-powered device has a built-in high-resolution monocular video display and offers lightweight and highly portable

standalone operation.

StealthSCOPE is equipped with an integrated high-resolution OLED monocular that allows users to view images without additional display hardware. A larger LCD monitor can be plugged into the scope so several people can view the image simultaneously. StealthSCOPE features a four-way, articulating tip and a submersible, semi-rigid, flex-and-stay guide tube that holds its shape for safe and easy viewing around corners, over walls, under doors, and inside vents and ceilings. The internal, field-swappable, rechargeable lithium ion battery provides all needed power, and features a quick-glance battery power indicator, even when powered off.

For covert viewing into rooms that are locked or barricaded, the Zistos® Dual-View Under-the-Door Camera (ZDV)—along with detachable pole with universal joint—affords safe deployment and horizontal pan-

ning of any room. The illumination control on the WalkAbout selects which view to display, and the camera requires only ¼-inch (6.0mm) door-to-floor clearance.

Frame integration electronics and IR illumination provide superior images (up to 20 feet, 6M) in total darkness. An integrated miniature microphone adds audio with enhanced circuitry that amplifies low sounds while suppressing loud sounds. The under door camera is also available in a more affordable model with a single (forward-looking only) view.

*Susan Geoghegan is a freelance writer living in Naples, Fla. She can be reached at skgwriter@comcast.net.*



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