THE MAGAZINE FOR FULL-AUTO ENTHUSIASTS • Vol. 5 No. 9 • February 1992 • $4. U.S. $5. Can.

Machine Gun News

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Tim Bixler fires Mini Uzi with SCRC Mark 25A suppressor.

SCRC Mark 25 and Mark 25A Suppressors

by Al Paulson

While the South Central Research Corporation may not be as well known to the public as Jonathan Arthur Ciener and AWC, SCRC has been working in the Class 3 realm since the late 1970s. Its president—Tim Bixler—first came to my attention in 1980, when one of his inventions was illustrated in Nelson and Musgrave's new book, The World's Machine Pistols and Submachine Guns, volume II. Since then, Bixler has earned the reputation as a versatile master craftsman with uncompromising attention to detail. While readers of Machine Gun News may know Bixler best for his work on the folding submachine gun used in the movie RoboCop II, Bixler also designed and patented the best quick-mount coupling for the H&K MP5 3-lug barrel. But Bixler also builds suppressors. This article will examine the history behind the development of the Mark 25 series and evaluate the performance of both early and late model cans.

Bixler's varied background has prepared him well for developing and producing Title 2 technology suitable for the most demanding applications. After mustering out of the Navy, Bixler worked as a machinist, Chicago cop, and a commercial hardhat diver. Statistically, the latter job proved to be more dangerous than being an American in Vietnam during the Tet Offensive. The odds against Bixler grew with the years of living on the edge. Since a pool of divers competed for jobs that paid $1,000 per dive, individuals experienced tremendous pressure to push the edge of the envelope. Furthermore, if one diver was crazy enough to take a certain risk, then every diver had to take that same risk or lose the job. Bixler eventually developed the bends in one knee, cutting short his diving career. He continued to work for his company as a machinist, building diving equipment from scratch.

Meanwhile, Bixler cultivated his interest in skydiving, machineguns, and suppressors. He got to know Dr. Phil Dater soon after Dater began manufacturing suppressors in 1976. Perhaps 10 percent of Dater's earliest work went to Bixler.

Dater's business grew rapidly, especially after an article by Peter Kokalis in the November 1981 issue of Soldier of Fortune. All this time, Dr. Dater continued working as a diagnostic radiologist. By early 1983, the demands of the suppressor business had grown to the point that it was

no longer fun. So Dater talked the problem over with several friends and customers, and soon Lynn McWilliams had created Armament Systems and Technology, Inc. to produce and market Dater's suppressors. Tim Bixler was McWilliams' vice president in charge of manufacturing, and actually performed much of the machine work himself.

The story of the Mark 25 can actually starts soon thereafter, in 1984.

Dr. Dater designed an ultralight suppressor for the Jati submachine gun at the request of the importer. The can featured two coaxial tubes, a thermal diffuser in the rear quarter of the inner tube, and a vacant forward inner tube. Dater simultaneously developed an improved model that incorporated baffles in the front three-quarters of the inner tube. That became the prototype for AWC's Mark 9 suppressor. Unlike the production version, the prototype featured a one-piece thermal diffuser and rear mount. Dater told me that Bixler suggested that they separate the diffuser and rear mount, so they could simply change the mount to mate the can to a variety of weapons. Only rarely would it be necessary to change the diffuser as well. This transformed the best muzzle can of the day into a truly peerless design.

For a variety of reasons, Armament Systems and Technology was allowed to die at the end of 1986, and McWilliams continued business as AWC Systems Technology. Bixler turned his full attention back to his own company, SCRC. Among his diverse projects was an attempt to improve upon Dater's Mark 9 can and its shorter variant, the Mark 9A.

Bixler developed a more strongly sloping stainless steel baffle using a different process. This lowered the can's sound signature by about 2 decibels. Bixler called his standard 12-inch (30.5 cm) can the Mark 25, and his compact 10-inch (25.4 cm) can the Mark 25A. Both have a diameter of 2 inches (5.1 cm). These variants will henceforth be referred to as "old model" suppressors. The old model Mark 25 weighs 2.0 pounds (0.91 kg), while the old model Mark 25A weighs 1.9 pounds (0.85 kg). Aside from the baffle design, the old model SCRC Mark 25 series cans were the same as AWC's Mark 9 cans. The SCRC cans could be provided with a patented mount for the 3-lug barrel of an MP5, any barrel threaded 1/2 x 28 TPI, and the Ingram M10 and M11. Other meticulously engineered mounts replaced the barrel-retaining nuts on the Uzi and Walther family of weapons. And the cans could also be provided with special ported barrels for the Sten and S&W M-76.

The tremendous care in the design and manufacture of Bixler's mounts is legendary among suppressor cognoscenti. Bixler's investment in tooling and meticulous craftsmanship exceed what is necessary to make a quality functional mount. Bixler's Uzi mount, for example, seems more like fine art than utilitarian engineering.

The simple elegance of the design belies the work that went into it. The same mount is used for the Uzi and Mini-Uzi. Once the mount is installed on the rear of the can, the suppressor is mounted on the weapon by simply removing the existing barrel nut, and then dropping the suppressor directly over the existing barrel. The can is then screwed onto the receiver until it locks up against the little trip latch that secures the normal barrel nut.

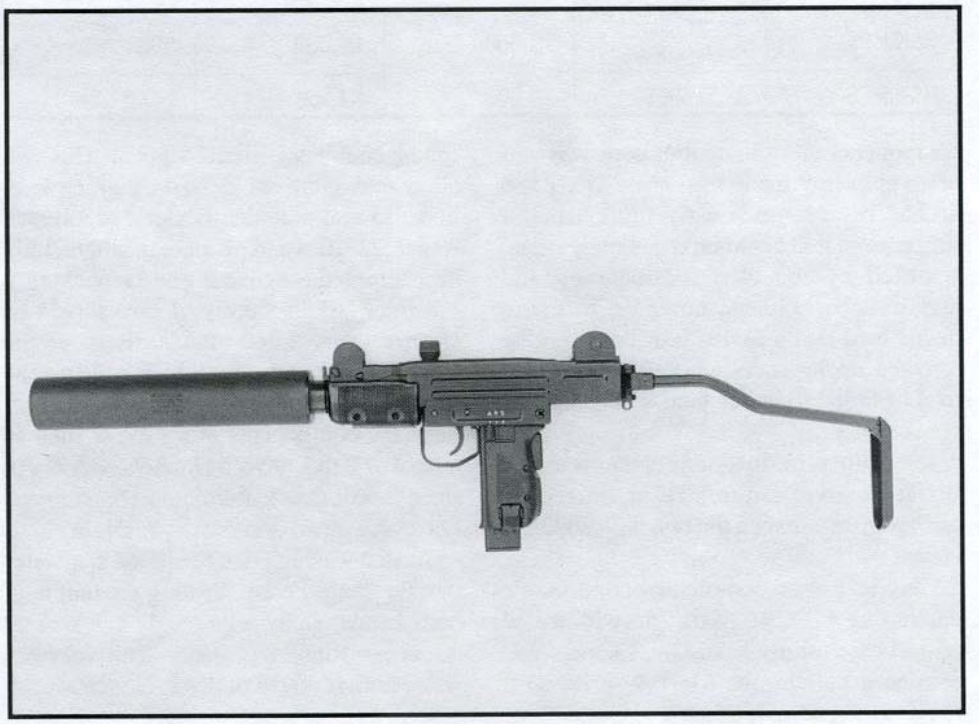
The Luger-like fit of this mount on IMI weapons means that the threads are a bit too tight for the Uzi clone made by Group Industries. Owners of the Group Industries HR 4332 should forward their gun on a Form 5 to SCRC so Bixler can custom fit the suppressor to the gun.

While other manufacturers commonly use simplified serrations on their Uzi suppressors to engage the trip latch, Bixler's rear mount absolutely duplicates the barrel nut issued with the Uzi. Bixler's mount has 82 teeth cut at the same leading and trailing angles as the Uzi nut, which required developing special tooling at great expense. The mount is properly heat treated, and it's coated with black Teflon S. All of Bixler's work reflects this compulsive attention to detail and quality. Yet his prices do not reflect the 110 percent effort that goes into every product.

After producing suppressors for awhile, Bixler devoting several years to the Model 21 folding submachine gun project. While the gun is best known for its appearance in RoboCop II, it is not just a prop that looks like a radio when folded, which can actually shoot too. Having shot the weapon myself, it clearly should be viewed a serious weapon first and foremost. It handled superbly—much better, in fact than an Uzi or Ingram. The Model 21 would have proved to be a superb tool for police, executive protection teams, and military aircraft and vehicle crews had it gone into full production. The Model 21 would have been outrageous for many sporting applications as well.

After Bixler completed nine guns on transferable receivers, he went back to further improve the Mark 25 and 25A suppressors. He redesigned the thermal diffuser, shortened its spindle to make room for two more baffles, and eliminated the wire mesh wrap around the diffuser spindle. He used different spacing between baffles in the front versus the rear of the central core. Bixler then permanently sealed the components within the inner coaxial tube to idiot-proof the suppressor. These variants will henceforth be referred to as "new model" suppressors.

The decision to seal the (continues)



Mini Uzi with SCRC Mark 25A suppressor.

Table 1.Sound signatures in decibels of suppressor tests.

Gun	Suppressor	Winchester USA supersonic	Samson subsonic	Temperature Degrees Fahrenheit
H&K MP5	None	159	156	52
H&K MP5	SCRC new model MK-25	125	123	52
H&K MP5	SCRC new model MK-25A	127	123	52
H&K MP5	None	160	158	74
H&K MP5	AWC MK-9	128	127	74
IMI Mini Uzi	None	159	157	52
IMI Mini Uzi	SCRC old model MK-25A	131	130	52
IMI Mini Uzi	SCRC new model MK-25A	135	128	52

Table 2.Net sound reductions in decibels.

Gun	Suppressor	Winchester USA supersonic	Samson subsonic	Temperature Degrees Fahrenheit
H&K MP5	SCRC new model MK-25	34	33	52
H&K MP5	SCRC new model MK-25A	32	33	52
H&K MP5	AWC MK-9	32	31	74
IMI Mini Uzi	SCRC old model MK-25A	28	27	52
IMI Mini Uzi	SCRC new model MK-25A	24	29	52

Table 3.Net sound reductions expressed as fractions of original (unsuppressed) sound pressure level.

Gun	Suppressor	Winchester USA supersonic	Samson subsonic	Temperature Degrees Fahrenheit
H&K MP5	SCRC new model MK-25	1/2,500	1/2,000	52
H&K MP5	SCRC new model MK-25A	1/1,500	1/2,000	52
H&K MP5	AWC MK-9	1/1,500	1/1,250	74

components into the central core was sort of an epiphany for Bixler, since Dater and he had been staunch early proponents of suppressors that could be completely disassembled by the user for cleaning and maintenance. Others, however, had long maintained that a sealed unit could not be screwed up by users who either failed to read or failed to understand a manual's instructions for disassembly/maintenance/reassembly. Bixler's current can reflects an interesting compromise between the two philosophical views.

While I was completely comfortable purchasing an SCRC Mark 25A with sealed central core for my Mini Uzi, I hope AWC continues building its Mark 9 series so it can be completely field stripped. This will allow maximum choice in the marketplace. I should also note that Bixler's suppressed Ruger .22 rifles and pistols can still be fully disassembled for cleaning and repacking.

The Mark 25 family of cans should be cleaned every 2,000 rounds. Remove the front and rear end caps, which will free the central core from the outer coaxial tube. Soak the components in a solvent such as Varsol or Kroil. Avoid Hoppe's Number 9, since it will attack aluminum components. Let soak for two or more days. Drain. Pour some dishwashing detergent and hot water into the central core. Sealing the unit with both hands, shake vigorously for several minutes. Rinse repeatedly with very hot water until no signs of detergent remain. A thin coating of carbon will remain on the inner components, which may function as an acoustic buffer, according to one school of thought. Stand the core on its rear end to drain and air dry, or blow dry with compressed air. Treat threaded surfaces with a colloidal molybdenum or copper high-temperature anti-sieze compound and reassemble.

When using Norinco anti-smoke supersonic tactical ammo (available only to police departments), the suppressor will require cleaning every 500 rounds, since this ammunition generates a large volume of peppery residue. This ammo is especially useful for entry teams who do not require heavy subsonic projectiles.

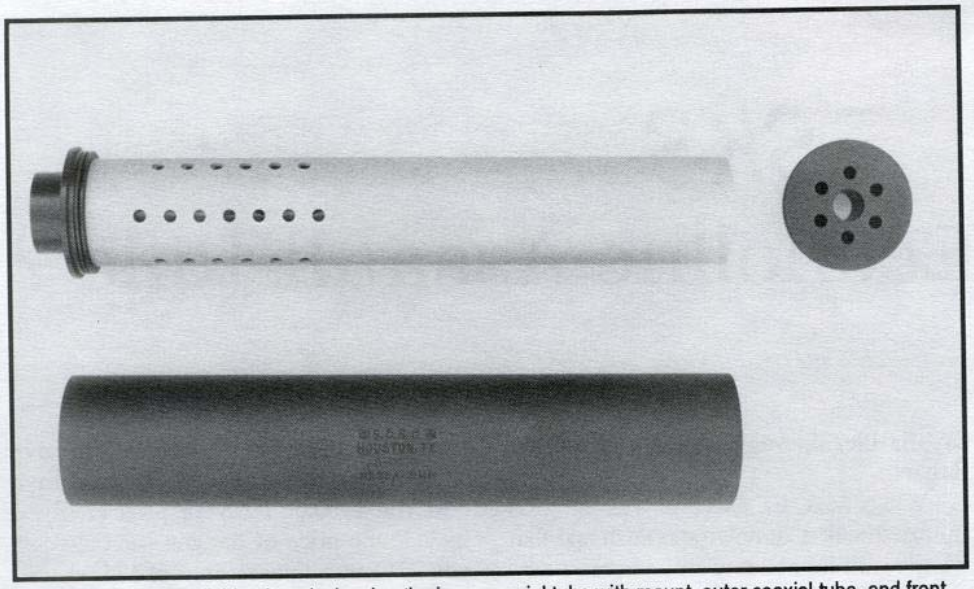
I measured sound signatures of early and late model suppressors on both the closed-bolt MP5 and open-bolt Mini Uzi using a Bruel and Kjaer Type 2209 Impulse Precision Sound Pressure Meter (set on A weighting) with a B&K Type 4136 1/4-inch condenser microphone. The microphone was placed 1.00 meter away from the front of the suppressor or muzzle, at an 90 degree angle from the bullet flight path. The meter was calibrated just before and just after the tests with a B&K 4230 calibrator. No instrument drift was observed. The ambient temperature ranged from 52 to 74 degrees Fahrenheit. Tests included both Winchester USA 115 grain FMJ and Samson subsonic 158 grain FMJ ammunition.

An interesting twist to this story is that Tom Seslar of S&H Arms hosted Tim Bixler and me in the Seslar home for three days and helped us conduct these tests. How many people would take three days off from their busy schedule to help a freelancer write about a competitor's wares? What a gentleman! My thanks to Tom and Peggy Seslar for their hospitality and help.

So what did we learn from the tests? The sound signatures are shown in Table 1. Table 2 shows the net sound reductions in decibels. And Table 3 expresses the net sound reductions as fractions of the unsuppressed sound pressure levels.

Several things leap out from the data. The old model SCRC design is a bit quieter than the AWC design. The new model SCRC design is a bit quieter than the old model SCRC with subsonic ammunition, but it's louder with supersonic ammo. The long variant is a bit quieter than the short variant. And the suppressors are noticeably quieter on the closed-bolt MP5 than on the open-bolt Mini Uzi.

While the data show that all the suppressors are quieter with subsonic ammo, the data fail to convey that the subsonic



The SCRC Mark 25A field stripped, showing the inner coaxial tube with mount, outer coaxial tube, and front end cap. The front end cap illustrates Bixler's compulsive attention to detail, since it sports three sets of spanner holes for disassembly.

signatures sound much quieter to the ear, since there is no ballistic crack (sonic boom). Subsonic ammo should be the ammunition of choice for tactical applications unless body armor will likely be encountered.

All the suppressors tested in this study provided excellent sound suppression. All were handy and well-engineered. While both the long and short models handled well on both guns, the shorter version was significantly handier on the Mini Uzi. Best of all, the SCRC Mark 25A was noticeably quieter than the full-length AWC Mark 9 with subsonic ammo. So you can have your cake and eat it too.

Subsonic ammo will also be a lot more satisfying for sporting applications (unless financial constraints dictate cheaper supersonic ammo). This is especially true with the new model SCRC suppressors, which are louder than the old models with supersonic ammo but are quieter with subsonic ammo. Since the SCRC suppressors can be only partially field stripped for cleaning, however, corrosive ammo must be avoided.

In conclusion, the SCRC design is quieter than the AWC design and offers a similar range of mounting options. The AWC design does have some unique features, however. The AWC suppressors can be completely disassembled for cleaning. The SCRC design can only be partially disassembled. And the AWC suppressors feature interchangeable mounts. The SCRC mounts are permanently attached. The SCRC design is particularly well suited for agencies that favor idiot-proof maintenance and for individuals who don't relish the mess and effort of disassembling a suppressor and bronze-brushing the stainless steel baffles to a shine. The SCRC design also suits those who want the maximum possible suppression for their investment. The SCRC Mark 25 and Mark 25A are world-class performers. **MGN**

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