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HIGH-TECH BAYS

FABRICATION EQUALS OPPORTUNITY BY MICAH SHEVELOFF

Two mobile electronics retailers recently gave *AudioVideo* a guided tour through their unusual array of tools, machines, and organizational technology — all of which, combined, has allowed them each to carve a niche for themselves in a highly competitive market. Although it would be a stretch to call these devices essential in every installation bay, it is instructive to see how these establishments have flourished by placing an emphasis on quality and efficiency, while sidestepping the need to be cheap.

MATT FIGLIOLA, AI DESIGN:

“Our salespeople sell the shop, the facility, and the overall efficiency of our systems,” explained Matt Figliola, owner of AI Design, located just north of New York City in a town called Tuckahoe. AI Design is in an industrial building with no showroom and not a single piece of gear on display, other than an Alpine F1/Porsche demo car and whatever projects are being done at any given moment. There is barely even a sign out front: just a diminutive AI logo. “They tell a story about one of our impressive procedures, such as how we build a center console, or how we etch the Valentine radar detector display into the glass of a rear-view mirror. Once people come here and see the shop, they are usually sold on the



AT THE AI DESIGN INSTALLATION BAY (ABOVE): THE ASYMMETRICAL LIFT (UPPER LEFT) POSITIONS A VEHICLE UNIQUELY FOR EASY ACCESS TO ITS INTERIOR WHILE IT IS SUSPENDED. LEFT: A SYSTEM SCHEMATIC, ATOP THE VEHICLE TO WHICH IT APPLIES

spot. The effect of perception is almost immeasurable. Most consumers expect a traditional garage: dimly lit, messy, crowded, and small. Figliola emphasized that space itself is a tool. “It is important to be able to walk around a car freely and have plenty of available workbench area,” he added. “It must be comfortable for the installer, and the environment promotes better work and increases efficiency.” Anywhere from 40% to 50% of AI Design’s projects come from either car dealers or dealer

referrals. The shop has a relationship with people from Porsche, Ferrari, Chevrolet (mostly SUVs), Bentley, Aston Martin, Audi, Mercedes, and BMW dealerships.

Figliola has set up a facility that functions on the basis of extreme organization. Elaborate work orders and technical drawings (called system schematics) are created for each job so that there is never a lack of communication between the salesperson and the installer. Once completed, the documentation for each job



resides in a neat filing system within a spotless office area, allowing the AI Design team to look back and provide critical service information for a car that may reside out of state. "Our careful records have served us numerous times," reported Figliola. All painted areas of the cars being serviced are masked for protection.

One of the strengths of AI Design is the staff's ability to fabricate parts that look as though they were always part of the car. Figliola acquired a **Fortuna leather splitter** that allows him to control the thickness of any piece of leather he is working with, down to 5/1000th of an inch. "We can cover small parts, and it looks as though the leather was painted on," said Figliola, who used to cover the old-style cellular phone handsets to match an exotic interior. "We can cover intricate bezels and interior trim parts, and

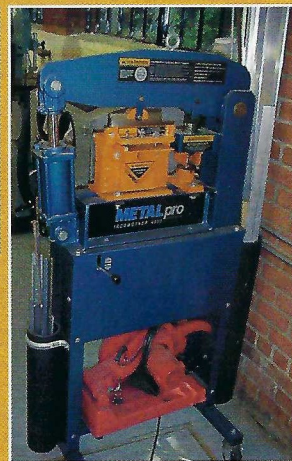
because the leather is so thin, it does not affect the final fit of the covered piece," he concluded.

Another skill that AI Design relies upon is the ability to fabricate custom brackets, for such chores as the relocation of the third seat in a Chevy Suburban.

"There really is only enough room for children back there, so if the customer wants the seat pushed back, we can provide him with 1/4" steel brackets anchored to the car using 1/4" reinforcement plates, maintaining the structural integrity Chevrolet engineered into the SUV when it was designed and built." Figliola uses a **hydraulic punch and shear** combined with a **mig welder** to reduce fabrication time of the bracket set dramatically. His production of these parts is so efficient that he has filled requests from other shops for his innovative seat-relocation brackets.



THE HYDRAULIC PUNCH & SHEAR (RIGHT) IS USED TO FABRICATE CUSTOM BRACKETS (ABOVE). AI EVEN SUPPLIES THESE TO OTHER SHOPS

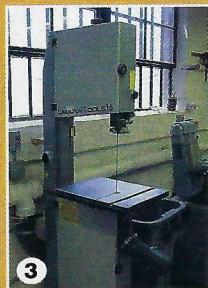
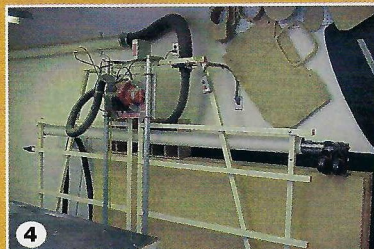


able to open the car doors easily while it is suspended, making it possible to do interior work on the vehicle where they otherwise could not. Figliola added that although the lifts were necessary in order to do the performance work, they have also reduced the strain of running heavy power cables from front to rear when building a large audio system. The quality and efficiency of radar detector and auxiliary reverse light installations was also greatly improved with the use of the lift. AI Design also operates the **Hunter wheel-balancing and tire-mounting machines**, capable of handling up to 24" wheels.

Because AI Design also does performance work, such as wheels, tires, exhaust, brakes, suspension systems and superchargers, there are several lifts in the facility. One is called an **asymmetrical lift**, because the car does not sit 50/50 between the posts on either side. The unique positioning allows the installers to be

"One of my favorite tools is my **band saw**, which has a really large throat," Figliola explained. "I can fit unusually large objects into the saw, and it makes very linear, even cuts. I get really creative with it, at times." The wood shop at AI Design is home to the **large-throated band saw**, as well as a **router/shaper**, a **12" disc/48" belt combo sander**, a **table saw**, a **panel saw** and an elaborate **dust-collection system**.

Figliola emphasized that one of the key benefits to having such specialized equipment is the reduced strain on his installers. "They don't dread having to create something, leaving it to the end of the job. They actually *want* to fabricate parts," he mused.



1 — A ROUTER/SHAPER IN THE AI WOOD SHOP

2 — THE FORTUNA LEATHER SPLITTER

3 — THE BAND SAW — ONE OF OWNER MATT FIGLIOLA'S FAVORITE TOOLS IN THE BAY

4 — A PANEL SAW WITH A VACUUMING SYSTEM THAT SIPHONS AWAY SAWDUST AS IT CUTS THE 4'-X-8' SHEETS LOADED INTO IT



**SCOTT WHITEHEAD,
RICHARD KALIN, BRIAN
ELLIS, BRYAN SCHMITT,
CHRIS WILLIAMS,
INNOVATIVE AUDIO:**

“Our goal is to be the dominant mobile video retailer in our marketplace,” said Richard Kalin, vice president of sales at Innovative Audio. The ever-expanding facility is located in a retail shopping plaza just outside of Seattle, in a town called Bellevue, WA. “Customers can choose from seven different models of drop-down screens in our showroom,” added Kalin. What drives car dealers and consumers alike into Innovative Audio is the staff’s ability to install both simple and complex systems flawlessly and efficiently. In order to service its numerous dealer accounts without the inconvenience and risk of driving cars back and forth, Innovative operates a flatbed tow truck, picking up and delivering each vehicle without ever driving it a single mile. Even the shop floor speaks of Innovative’s dedication; a 5/16”-thick layer of trowel-applied material that has not a single seam in it anywhere.

The installation shop at Innovative Audio currently has the capacity to handle 15 to 18 cars simultaneously, and the installers use 500 to 1,000 pounds of sheet metal and tube steel per month in fabricating custom parts.

“We are big-time research hounds, looking for inspiration for our craft from many industries,” explained Scott Whitehead, president of Innovative Audio. “It is our culture as a business to be very fabrication-oriented, and everyone is trained to work with all of our equipment,” said Whitehead. “I didn’t have a background in the 12-



THE BAY AT INNOVATIVE AUDIO (ABOVE) CAN HANDLE ANYWHERE FROM 15 TO 18 VEHICLES SIMULTANEOUSLY. AT LEFT, A STATION WHERE INSTALLERS CAN “PUNCH INTO” A JOB THEY’RE WORKING ON VIA A THUMBPRINT I.D. DEVICE (AT UPPER RIGHT OF COMPUTER SCREEN)

volt industry, so I don’t rely solely on the methods used by traditional installers. I am always trying to discover what would be the best way to accomplish something. I look in every industry I can think of, such as boat-building, HVAC, and vehicle prototyping,” he added. There are several individual shops within the installation area, including a metal-fabrication shop, a wood shop, a fiberglass layup room, and an open-face paint booth. An upholstery room and a CAD/design center are located on the second floor.

“One of our goals is to create brackets that allow us to install complete systems without having to drill any holes in the car. We build everything so that the vehicle can go back to stock condition.” Although the Innovative facility has many costly machines, Whitehead noted that they are not automated devices costing hundreds of thousands of dollars.

“We all keep an eye on the tool auctions, looking for anything that will add to our capabilities,” said Whitehead.

One Chevy Suburban being worked on during *AudioVideo*’s

visit to Innovative Audio was getting an AM/FM/CD/XM Satellite head unit, a CD changer, a 60-gig MP3 drive, a DVD player, a VCR, a satellite TV tuner, a broadcast TV tuner, a cell phone, a satellite phone, and four LCD monitors. All of the components were nearly invisible inside the SUV, integrated seamlessly with the interior. When it comes to trying new ideas or learning about new vehicles, Whitehead acknowledges that there is an initial investment; “If we lose money the first time around and don’t get an education out of it, something is very wrong,” he said.

Innovative audio has a portion of its business systems and facility dedicated to the private client — someone who might be high-profile and would prefer to maintain privacy. Select clients can log into Innovative’s secure server and view the showroom and installation facility via almost a dozen Web cameras, and actually see how their projects are progressing.

Chris Williams, a partner in the Innovative Audio venture, has dedicated himself to creating a labor- and costs-tracking system that is

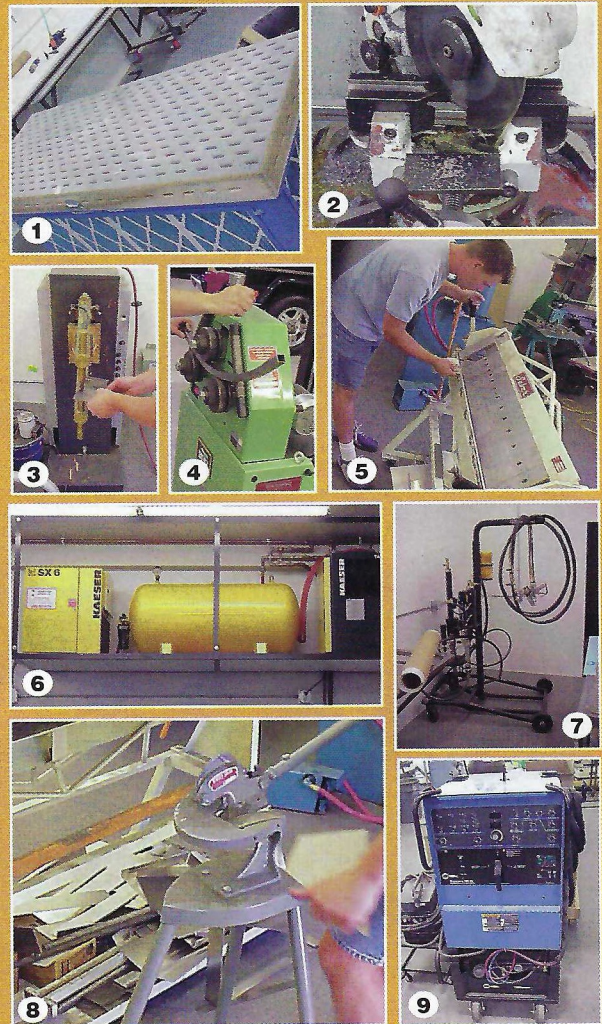


kiosk-based, with stations located throughout the shop area. "The installers punch into each job that they work on using a thumbprint ID device, and we have designed proprietary software with a touch-screen system that does all of our scheduling and shop costing," Williams explained. The software required thousands of hours of development, and is nearing completion and implementation throughout the facility. Williams has 22 years in the software business at nearby Microsoft, and found Innovative Audio as a customer. "Scott [Whitehead] is a sponge for growth and new ideas, and as we have worked together, I have gotten more and more involved. I am truly having a blast," Williams added.

Innovative is continuing with expansion plans, and expects to operate a 25,000-square-foot facility by January 2003. There will be 20,000 square feet on the ground level, and a 5,000-square-foot mezzanine. A recent hire was Bryan Schmitt, formerly a vehicle designer at Rockford Fosgate, to do technical training and develop efficient systems for the installers. "I can do CAD drawings (computer aided drafting), allowing us to design parts that we use a lot of, and have them made for us in large quantities," explained Schmitt. "We are using the latest technology to create electrical drawings of complex systems, one of which we provide to the customer when their job is completed," he added. During the sales process, it is not uncommon for the customer to get a tour of the Innovative facility that includes a CAD-drawn map explaining all of

the machinery and what value each one brings to the installation process.

There is a **downdraft sanding table** and an **inverted pin router** used to fabricate various parts and intricate templates in the wood shop. There is a **tig welder** that allows the installers to weld stainless steel and aluminum parts. The air-powered tools are run by a **screw-drive compressor** with a **refrigerated air dryer** that is virtually silent, and all of the shop areas have a **rapid-air-exchange ventilation system**. In addition to a **chop gun**, used to mix, chop and apply fiberglass onto a form or mold, there are several advanced-fabrication tools at Innovative Audio. Located in the metal fabrication area, there is a **cold saw**, used to rapidly cut metal stock, a **Beverly shear**, a **box and pan brake**, a **pneumatic press brake**, and a **resistance spot welder**. Additionally, the crew at Innovative has reconditioned a **turret punch** originally made in 1957. Whitehead noted that the same castings are still being used today, and the 18-station punch is ideal for making exact-sized openings in sheet metal. There is a **vertical mill** and a **lathe** in the shop, along with a **section bender**. These machines can be used to efficiently create virtually



1 – INNOVATIVE'S DOWNDRAFT SANDING TABLE
 2 – THE COLD SAW
 3 – A RESISTANCE SPOT WELDER
 4 – THE SECTION BENDER
 5 – BOX & PAN BRAKE
 6 – A SCREW-DRIVE COMPRESSOR, OUTFITTED WITH A REFRIGERATED AIR DRYER
 7 – THE CHOP GUN
 8 – A BEVERLY SHEAR
 9 – A TIG WELDER, FOR WELDING STEEL & ALUMINUM

any bracket, box, or customized component that the installers at Innovative Audio have come to rely upon.

Both of these retailers have placed an equal priority on organization and use of space, along with advanced machinery and computer technology. In many markets across the country, being able to apply just a few of these ideas may serve to vastly improve your customer's perception of the services you provide to them in your own high-tech bay.