



# Master Tech BOOT CAMP

## General Overview:

The **Mobile Solutions Master Tech Boot Camp** training is a comprehensive 5-day program that offers working industry professionals an opportunity to sharpen a wide range of skills in fabrication, system design and tuning, and electrical measurements, particularly in the area of OEM integration with factory installed audio systems.

Training is structured so that you could attend the 5-day Master Tech Boot Camp training by arriving at Phoenix Sky Harbor Airport (code PHX) on a Sunday afternoon, attending the training Monday through Friday and then fly out Friday night or Saturday morning.

Your time away from the shop is minimal and there are no days while you are attending training that you will not be in class. This eliminates any extra hotel days or days away from the store, ultimately keeping more of your training costs down.

## Why Should You Attend?

It's simple - no other non-product specific training programs are available for this industry's top level technicians that have this range of topics. This training will elevate your overall knowledge and skills to the next level. It will offer you opportunities to do better work, more reliably, with better overall results.

Stop saying no to jobs and stop underestimating the jobs you do take. No matter how good you are, **Mobile Solutions Master Tech Boot Camp** training can make you better!

## September 2009 Schedule

Start Date	End Date	Registration Deadline	Deposit	Total Cost
Mon. - Sep. 21, 2009	Fri. - Sep. 25, 2009	Sat. - Aug. 29, 2009	\$500	\$1,199

**Example** - You wish to take the Master Tech Boot Camp Session. You will place a \$500 deposit before the registration deadline and the balance of \$699 is due on the first day of training. Total cost for your training session is \$1199 (\$500 + \$699).

## Additional Information

The remainder of this document contains the day-to-day overview of the training topics.

If you have any questions regarding registration or about the training sessions, please call a Mobile Solutions Training Coordinator **toll free at (888) 480-5959**.

You can also visit us at [www.mobilesolutions-usa.com](http://www.mobilesolutions-usa.com).





## Day 1

# Subwoofer Enclosure Blueprinting and Fabrication

### Training Topics

1. *Design and Analysis of Subwoofer Enclosures*
2. *Maximize Efficiency of Building MDF Enclosures on the Table Saw*
3. *Maximize Efficiency of Circle Cutting and Ring Building*
4. *Take it to the Next Level – Fiberglass and Composite Enclosures*

### **Design and Analysis of Subwoofer Enclosures**

What makes one subwoofer system perform better than another? Why do certain designs sound better or play louder, or even escape customer damage better than others? Before you cut any wood, before you even decide on the subwoofer(s) that you will use, you need to have a very probable outcome in mind that meets the customer's expectations and the overall design goals of the system. All subwoofers and subwoofer enclosures are obviously not the same and it's critical to get the performance optimized before mistakes are made.

This section of the course allows you to learn the important "need to know" information when designing your subwoofer enclosures and gives you the edge over your competition that cuts wood first and evaluates performance (or lack of it) later. Work smarter and not harder with enclosure design strategies including computer analysis of predicted performance, transfer function (in vehicle) considerations, and the physical layout of the materials you will use to achieve an efficient design. There is nothing better than planning your work and then working your plan!

### **Maximize Efficiency of Building MDF Enclosures on the Table Saw**

The next section of the course moves into safer and more efficient table saw uses. The table saw is a tool that demands respect and you would be surprised at just how much better you can leverage this versatile tool! Sure you're using one now, but how much more effective could you be. You'd be surprised.

Increase your skill-set by learning more effective methods that will inspire even the most seasoned installers. This section of the course demonstrates how to make any cut safely and easily. This section of the course also teaches you how to build multiple jigs and fixtures that reduce time and increase accuracy. Building a truck enclosure is a breeze with these techniques. Need to cut compound angles? No problem, with a jig it's easy and can be duplicated over and over to maximize your profits. Put away that belt sander, stop wasting time and start counting those labor dollars!

### **Maximize Efficiency of Circle Cutting and Ring Building**

Stop cutting circular shapes with a jig saw! Make round things fit perfectly in round openings. Learn our newest techniques with the Perfect Circle and other hand held router based techniques. We have developed a unique way to build a four piece jig with the plunge router. This technique will save hours and make you hundreds custom labor dollars.

### **Take it to the Next Level – Fiberglass and Composite Enclosures**

Learn the secrets that save time and take the guess work out of using fiberglass in enclosure applications. Our course is very different, in comparison to what everybody else the car audio industry offers. We use proven techniques derived from the composite industry.

This portion of the course covers all materials, tools and supplies needed to be successful with composites. Learn how to generate complex shapes that apply to subwoofer enclosures and then can also apply to the subsequent topics of panels and other fabricated parts. Maximize enclosure volume by taking fiberglass impressions of the vehicle. This course provides you with "hands-on" experience with fiberglass. You will have the chance to practice on a single part mold. Once you work with fiberglass this way, you will ask yourself how you could have wasted so much time doing it "the old way".



## Day 2

# Creating Trim Panels and Interior Trim Enhancements

### Training Topics

1. *Welding Techniques –Importance of structure behind the scenes*
2. *Using the Router to create and develop your designs*
3. *Adding trim enhancements with plastics and aluminum*
4. *Adding trim enhancements and tricks with lighting*
5. *Filler, Primer, and Surface Preparation Techniques*

### **Welding Techniques – Behind the Scenes**

Under every well designed mobile audio/video system is a good sub-structure. In this section of the course, you will learn some basic techniques of wire feed MIG welding and applications you can use on a daily basis. Projects such as amp racks, subwoofer enclosure mounts, panel brackets, battery or power distribution mounts, and more are all within your ability using these important techniques. Car manufacturers don't mount things using wood and you should consider that you can do a better job of mounting too. Once you get comfortable welding, the sky is the limit. The best part is you can charge more for a metal part than a piece of wood!

### **Using the Router to create and develop your designs**

Router techniques are the foundation of modern custom installation. This section of the course focuses on how to reproduce existing shapes and create repeatable templates as well as starting designs from scratch. Even if you are using a router in a table now, this part of the course will absolutely give you tons of tricks that will speed up and improve your process!

We'll show you how to machine square and rectangular jigs with incredible accuracy for face plates and dash bezels so they fit better than OEM! We'll show you how to make inserts and how to create panels that look complex, but have sensible breaks in the placement of materials for mounting points and easier upholstery. We will show you how to take a design you like and, with just a little more effort, create something completely new that keeps your work looking fresh and each job unique.

### **Adding trim enhancements with plastics and aluminum**

We'll cover several real-world examples of how to use different plastics and aluminum parts on a daily basis's. Increase your dash integration by using similar materials used by the Auto Manufactures. Learn how to machine different plastics and non-ferrous metals (such as aluminum) with remarkable precision. Also included are detailed techniques for cutting, sanding, and polishing various plastics and aluminum.

### **Adding trim enhancements with lighting**

This training will also demonstrate excellent examples of using Neon and LED lighting applications for acrylic and polycarbonate. Learning our safe cutting methods and finishing techniques will increase any custom revenue without adding extra liability to your shop.

In this section you will also get a great technique to help branding your work. Mobile Solutions has pioneered a process that simple and inexpensive. Transform any picture, paper logo or custom print to a permanent Plexiglas (clear acrylic) visual element. Each participating technician will have the chance to build their own acrylic logo and show their skills. Bring your business cards or store's literature!

### **Filler, Primer, and Surface Preparation Techniques**

This section of the course focuses on the important preparation techniques that can ultimately save time by ensuring your finished results are as great as you expect and that installations last for a long time. Learn how to mix and apply filler more effectively, learn about sandable primer and sealers, and learn about sanding effectively to cut your time making a mess to a fraction of what you are doing now. Most of all you'll learn about preparing panels with the right tolerances that account for the type of finishing materials that will be used (whether vinyl, suede, carpet, paint, metal, plastic, or anything else).



## **Day 3**

### **Cosmetic and Structural Integration**

#### Training Topics

1. *3D Router Techniques*
2. *ABS , Expanded PVC and Other Plastics*
3. *Modifying Existing Panels – Cutting, Bonding, Texture, Painting*
4. *Custom Grilles from Pressed Metals*
5. *Vinyl Wrapping Demystified*

#### **3D Router Techniques**

We'll walk you through the entire process of creating 3-Dimensional dash and trim panels that look unbelievable. This will come in handy if you need to make a dash kit for a complex dash shape or for adding factory looking designs in your interior panels.

#### **ABS, Expanded PVC, and Other Plastics**

There are many uses for plastics in the automotive environment and you will learn how to utilize plastics in your installations that will provide a high level of fit and finish. ABS is readily available and you will learn ways of sanding, bending, and machining it to create unique parts that many other installers are building out of wood. Next, you will learn about expanded PVC and even more uses for creating durable parts that can even accept threaded hardware to be used in your installations. Other plastics will be covered including future applications of bio-degradable Polylactide (PLA) plastics. The whole idea with plastics is to think like the car manufacturers think with use of like materials.

#### **Modifying Existing Panels – Cutting, Bonding, Texture, Painting**

Now that you know about all the materials, this section of the course shows you some very unique ways to integrate into plastic panels. You will learn how to cut panels to create openings for trim pieces, face plates, speaker grilles, etc. with incredible precision. You will learn the correct materials used in bonding both rigid and flexible plastics. You will learn how to make modifications when it involves shaping or filling so that there's no chance for cracking or moisture damage. You will learn several techniques for texturing and painting to achieve factory looking interior finishes. You will also learn about preparation for off-site finishes like sending parts to a car painter or water transfer vendor.

#### **Custom Grilles from Pressed Metals**

In this section of the course you will learn how to make grilles that look like they are manufactured. Depending on the material you select, you can choose to make factory looking grilles or use something that repeats a theme throughout the vehicle. You will be amazed at how professional looking your speaker grilles can be and you will finally have the edge over your competitors.

#### **Vinyl Wrapping Demystified**

We'll also cover in-depth upholstery techniques that take your work to the next level. We actually build several different types of trim panels during this course, start-to-finish we demonstrate the entire process.

Learn how to use vinyl with other materials on a complementary palette just like OEM interior designers do it. Learn different hot and cold vinyl wrapping techniques. Learn vinyl & suede inlay techniques and vinyl embossing. This course will capture the interest of even the most seasoned technicians.

This section of the course also builds on the previous day's surface preparation techniques. You will learn about different glue types. Also included is a comprehensive overview of many OEM fabric and vinyl selections as well as time-saving upholstery tools. All the pieces of the cosmetic puzzle come together in this part of the training.



## **Day 4**

### **Audio System Design, Tuning, and Calibration**

#### Training Topics

1. *Listening to customer expectations and how that translates to system design cues*
2. *Electrical System Evaluations – How much power can this car support?*
3. *Sound System Gain Architecture (it's more than a dial on the amplifier!)*
4. *Implementing a complete level setting and tuning strategy, one component at a time*
5. *How and what to charge for this service*

#### ***Listening to customer expectations and how that translates to system design cues***

In this section of the course you learn how to ask questions so you can understand your customers' expectations, before you build the car and even before selecting equipment. You will also learn that people mistakenly disregard portable media players (like iPod) to be the reason for mediocre sound and how to overcome that perception.

#### ***Electrical System Evaluations***

This section of the course is the cornerstone of how you design an audio system with unparalleled reliability. You will learn how to either work within the capacity of the stock electrical system or what you need to do for upgrades if the audio system power exceeds the capacity of the stock electrical system. Either way, you will learn how to make solid system design decisions based on measured results instead of assumptions or guess work!

#### ***Sound System Gain Architecture (it's more than a dial on the amplifier!)***

If you want mobile audio systems to go out the door exceeding all your customers' expectations, and still be "bulletproof", a firm grasp of the concepts of proper gain setting is essential. We'll show you the differences in sound quality that executing proper system level setting can make and also demonstrate why understanding and implementing "gain overlap" is crucial to getting the maximum performance and reliability from the system.

#### ***Implementing a complete level setting and tuning strategy, one component at a time***

You'll discover how to set up the system for your customers' tastes and preferences, and make them feel as though it is not simply an installation, but a completely custom system designed specifically for them. You will learn how to set gain structure from every component in the system so that you achieve the maximum performance, lowest noise floor, and highest signal to noise ratio. You will learn equalization and crossover tips to make audible improvements rather than just making the system "sound different". Finally, you will determine how to compute the power output of the audio system and you will be surprised at how great sounding a properly adjusted, modestly powered system can sound.

#### ***How and what to charge for this service***

The techniques you learn in this part of the course shouldn't just be used during special occasions, rather they should be so routine that you implement them on every mobile audio system (with amplifiers) that you do. You will learn about how to allocate labor time and how to position the service for a labor cost, just as if you were installing something or charging for a repair. More than any other process, this will be the difference that makes your installations perform well beyond your competition. Best of all, you will have fewer instances of damaged equipment from misuse and abuse. Ultimately this section of the course will allow you to sell more systems because you will be able to confidently deliver noticeable results to you customers.



## Day 5

# Building Aftermarket Audio Systems from OEM Source Units

### Training Topics

1. *Upgrading OEM Audio Systems – It's the next "big" thing!*
2. *Audio and Electrical Measurement Tools You Need*
3. *How to approach any car with audio upgrades – a step-by-step process*
4. *Integration products to get you the right results*
5. *How and what to charge for your premium integration services*

### ***Upgrading OEM Audio Systems – It's the next "big" thing!***

Actually it's not the next big thing, it's here now! If you are not adapting strategies to integrate aftermarket products in today's vehicles, you will find yourself with progressively fewer and fewer cars to work on. The feature sets and cosmetic integration of many factory installed audio systems means that changing the in-dash source unit is not always an option. This does not mean that you can't build a great audio system though. Keeping the in-dash source unit and building a system downstream is not only an elegant approach to upgrading a vehicle's audio system, but it places you in the company of a more skilled group of technicians who can command better labor rates because the other guys are still trying to do things the old way.

### ***Audio and Electrical Measurement Tools You Need***

The real measure of a professional technician is their tools. The big difference today is that technicians really need some important electrical and audio measurement tools to be effective and accurate with today's vehicles. In this section of the course we will cover important tools like DMMs, Oscilloscopes, Real Time Analyzers, Polarity Testers, Signal Generators, Test Leads, and more. Learn what they do, why you need them, and how to get them to cut your installation time while improving your results. Without accurate, understandable measurements, all you are really doing is guessing. Let your competition guess while you are measuring things in the cars they can't even work on.

### ***How to approach any car with audio upgrades – a step-by-step process***

In this section of the training, participants will gain the knowledge and understand the challenges of working with any factory audio system. It doesn't matter what kind of car it is, you will learn how you can add amplifiers, speakers, and subwoofers to any car so real audio system improvements can be made. You will experience demonstrations in a comprehensive, step-by-step process so you develop the understanding of a bullet proof factory audio system integration approach. Start saying "yes" to customers that the other guys have to turn away!

### ***Integration products to get you the right results***

Manufacturers offer many different integration electronic "interface" solutions that do not necessarily cover all the bases on every type of job. Learn what the differences are in LOCs, summing devices, signal correction, single ended or balanced inputs, signal grounding schemes, and many other devices. After this session, you will have a real command of what integration device(s) are right for the job and will deliver the best results. Take the guess work out of the equation and start giving your customers more reasons to seek out your specialist installation skills.

### ***How and what to charge for your premium integration services***

Now that you know how to approach the integration of factory installed audio systems, you must consider how to charge for it and how to allocate labor time. The perception is that since parts of the audio system are remaining in place, it's less labor to integrate than to change out the components. In most cases, this is not an accurate perception and you will learn some of the key points to discuss with customers so that they place a high value on the integration services that you offer and that they will not be able to find at your competitor. The final piece of the puzzle will be how you allocate your time spent doing the work and investigating the aspects of the vehicle to determine the best approach.



## Who Should Attend the Master Tech Boot Camp Training?

- Business Owners actively involved with the day-to-day activity of the business
- Installation Managers
- High Volume Sales Associates
- Senior Installation Professionals
- Installation Technicians of all skill levels
- Shop personnel serving an installation related function

## About the Presenters:

- **Bryan Schmitt** of Mobile Solutions USA has over 18 years of experience in management, technical training, and fabrication of world class demonstration vehicles. Bryan holds an Honorary MECP Master Installer Certification as well as a BS in Mechanical Engineering.
- **Todd Ramsey** of Ramsey Consulting Group, Inc. has over 20 years of technical and training experience in the automotive and consumer electronics industries. Todd holds an Honorary MECP Master Installer Certification and ASE A6 Electrical Certification.

## Registration and Attendance Policies

All training deposits are non-refundable. If you should need to reschedule your training, you may do so for any other session in the same year for a nominal \$50 administrative fee. Training fee credits do not apply to parts purchases or open parts account balances. Employers who will be funding the attendance cost for an employee have the option to use the Mobile Solutions “non-compete” attendance contract to ensure the employee stays with them for the term of the contract (typically 6-12 months).

Tuition costs include all handouts, materials, and a certificate of completion. Coffee, fruit and doughnuts or bagels will be served in the mornings, lunches will also be provided daily. You are only responsible for your air/ground transportation costs, hotel, and dinners in the evening.

## Recommended Hotel

Mobile Solutions has negotiated aggressive rates for your accommodations with the Country Inn Suites - Tempe Airport for your training visit. The cost of a standard room is \$119 per night (discounted from \$199 per night). Ask for the Mobile Solutions rate or contact Christie Liskey, the Hotel Sales Manager at 480-858-9898 Ext. 7022 if you have additional questions.

**Country Inn Suites Tempe Airport**  
808 N. Scottsdale Rd.  
Tempe, AZ 85281

**Ask for the Mobile Solutions rate!**  
Tel: (480) 858-9898  
[http://www.countryinns.com/phoenixaz\\_airporttempe](http://www.countryinns.com/phoenixaz_airporttempe)

## Additional Details

Renting a car is not always necessary. The Country Inn hotel (as well as some others) provides a daily shuttle to the Mobile Solutions training location (it's just a few miles from many area hotels). If you wish to go out and explore the Phoenix area in the evenings you may want to check into renting a car. Mill Avenue (close to all the hotels) has several bars, restaurants, and scenery that most attendees find suitable for a great night out. If shopping or golfing is your thing, Phoenix has plenty of that as well. Book an extra day or two if you want to see the Arizona sights.

