



2010 EOD Competition

By Sgt. Rod Glover, Bomb Squad Commander/Hoover Police Dept.

The City of Hoover Bomb Squad, located in central Alabama, hosted a two day EOD Competition on October 19th and 20th. This was conducted as a training event, but was provided in a competitive environment. The Hoover Bomb Squad has hosted “robot rodeos” in the past but decided to expand on this by making it more of a training event by adding bomb tech scenarios. All training was provided at no cost to the attendees, competitors, or vendors. We were assisted by the FBI, ATE, and TSA, and all bomb squads were invited.

Day 1 consisted of 10 realistic scenarios which had to be solved using robots. These scenarios were designed to pose real world problems to tax the abilities of the robots and the abilities of the operators.

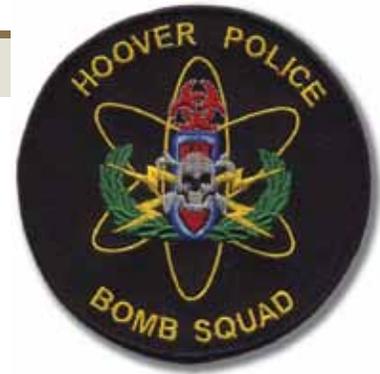
Day 2 consisted of 10 different scenarios which had to be resolved by bomb techs without the use of robots. These scenarios were also designed to test and tax the abilities of the bomb techs.

In addition to the scenarios, there

were separate classes and training in explosives, EOD, and counter-terrorism topics. Some of these were, NIED Stabilization, Emergency Care for Blast and Gunshot Injuries, Electronic Detonators, Explosive Storage and Transportation Issues for Bomb Techs, Precursor Chemicals Used in HME Production, and Chemical Suicides.

Teams were challenged to successfully complete as many scenarios over the two day period as possible. Each scenario was designed with specific tasks, new tools, and/or new techniques in mind. Points were awarded on each scenario based on speed, safety, and a successful resolution of the problem. There were first and second place trophies awarded for each day's events. The points were added for both days to recognize an overall “EOD Champion.”

Day 1 began with the opening ceremony with the Presentation of the Colors. Taylor Hicks, the American Idol Season 5 Winner, sang the National Anthem. Sherri Beck, the President of the Wounded EOD Warrior Foundation, provided information to the group about the foun-



dation's mission and their efforts to care for the wounded bomb techs returning from Iraq and Afghanistan. Several other dignitaries came to the event to honor the Wounded EOD Warriors such as Bart Starr, (MVP from the first two Super Bowls), Major General A.C. Blalock, (Adjutant General for the Alabama National Guard), U.S. Senator Jeff Sessions, (Member of the U.S. Senate Armed Services Committee), and many others.

After a safety briefing and explanation of rules, the scenarios began. The competitors were briefed on a situation instead of being given a specific task. They then had to determine the best course of action.

Day 1 Robot Scenarios:

#1 An 18-wheeler was northbound on I65 coming into Birmingham. The Alabama State Troopers had made a traffic stop on this vehicle inside the city limits of Birmingham at the 3rd Avenue overpass. The placards on the vehicle did not match the bill of lading. As the Trooper began to open the trailer, the driver pulled a weapon and was shot and killed by the Trooper. As assistance arrived and the scene grew, information was received from the Montgomery Division of the FBI that the driver of this vehicle was a member of a radical Sovereign Citizen group. It was believed this individual may have been attempting to deliver a large vehicle bomb to the U.S. Federal Court in Birmingham.

The task for the bomb squad was to open the trailer door, find the TPU for the device, and shoot it. This required manipulating the unlocked door to the trailer, locating the TPU for the LVIED and taking a precise shot without hitting the barrels of HME located inside.

Observations: We found that some squads had not practiced manipulating



the door of an 18-wheeler. It was also a problem for some to raise the robot up high enough to shoot into a trailer and then take an accurate long shot.

#2 The team was told they were on A75 on the southern border of Afghanistan. They were 5km from the Pakistani border in support of an operation to keep the Spin Boldak border crossing open and keep fuel flowing to our troops. A patrol had found what they believed to be a roadside bomb about 2 meters from the left side of the roadway. They had set up a perimeter and were holding security until the EOD team arrived and cleared the roadway. A fuel convoy was approaching from the opposite direction and was to be at the team's location within 30 minutes. The team had ECM operating.

The team's mission was to locate any suspicious items and clear the area for the safe passage of the convoy. It was required that a simulated counter charge (provided for the team) be placed at the IED. The team could decide to fire their counter charge by hard wire or fire from their robot. In either case, their time would stop when the simulated counter charge was initiated. The roadside IED consisted of two concealed 155 mm projectiles nose-fused with a command firing wire leading into the tree line. There was also a secondary device which would be found if the team properly performed their "5/25s" before attacking the main device.

Observations: Several teams were killed due to not checking their "5/25s." The obvious IED at the staging area was overlooked because of focusing on the main device.

#3 The team was told the location of the incident was the main gate at Ft. Bliss. Security personnel had stopped a vehicle and detained the driver of a black 4WD pickup. While performing routine vehicle checks at the gate, security personnel had found what they believed to be a large pipe bomb in the bed of the pickup. It was in an open top box next to the cab of the



truck. The gate had been closed, the area evacuated, and the driver of the vehicle detained. The driver of the vehicle, an E4, states he was going through a divorce and his estranged wife is 89D soldier.

The task is to be able to get access to the pipe bomb with a robot, remove it from the vehicle, and place it in a containment vessel for removal from the area.

Observations: The vehicle was a 4WD with a lift kit making it sit higher than a standard pick up. This created problems for the robot to be able to reach up and over into the bed of the truck. If the tailgate was lowered it created a long reach for some robots. The teams were shown an improvised tool made from earth magnets from a computer hard drive that could be lowered into the box and pick up metallic objects. When this tool was used, it simplified the problem.

#4 The location of this incident was a parking lot at the intersection of Lejeune Blvd., and Iwo Jima Blvd. outside Camp Lejeune, North Carolina. The team had been called to investigate a possible explosive device found under a low trailer at this location.

The task is to reach the device, remove it, and place it in a containment vessel.

Observations: Some teams had difficulty in maneuvering and operating under very low objects. They were also shown tools that would allow them to reach and remove the device. They were also shown the "Gripper PAN mount" which allows placing a disrupter closer to the target.

#5 The team was told they were working a presidential detail. When doing a sweep of the area a canine explosive detection team had alerted to a van parked in a parking lot. When the vehicle was swept, a wooden box was seen in the van. The box had to be removed and placed in a containment vessel.

The task is to open the van door or doors with the robot. There were swing out doors on the rear and a sliding door on the passenger side. The box had been placed behind the driver's door which required a longer reach for the robot. Also the package weighed 50 pounds and its size was at the maximum for most robot grippers.

Observations: Some teams had difficulty manipulating the doors of the vehicle, as well as the reach needed to access the package. Also the weight of the package, which was to simulate a case of cast boosters, was something that most teams had not expected.

#6 The team was told they must maneuver up a set of steps, cross a platform, and travel down the other side. They then had to travel through a path around several other barricades to reach a firing point. At this point they had to locate a PVC pipe bomb set in a disrupter pit 18 feet away. They had to fire their disrupter and break the pipe.

The task was to maneuver up, down, and around barricades. They then had to locate a target and execute a long distance precise disrupter shot.

Observations: Some teams had problems with steps. Several teams had difficulty with the long shot on the PVC pipe.

#7 The team was told an attempt had been made to throw a suspected explosive device over a chain link fence surrounding a police parking lot. The device, contained in a backpack, had hung on the top of the fence and had to be removed. The device then had to be placed in a containment vessel.

The task was to be able to reach the height of the package and cut it from the fence.

Observations: It was found some robots did not have sufficient reach to access the package. We also found some of the teams did not have the necessary cutting tools to cut the package from the fence.



#8 The team was told a bomb threat had been received at a large chemical plant experiencing labor problems. A search of the area was conducted by security personnel. They located a 55-gallon drum with a box taped to the top. The barrel had a chemical ID number of 2760. The barrel had been punctured and was slowly leaking with visible product on the ground.

The task was to send the robot to the area and gain access to the package on top of the drum without overly contaminating the robot. The package on top of the drum had to be cut off and then placed in a containment vessel for removal from the area.

Observations: Many teams did not have, or ask for, an Emergency Response Guidebook to identify the product in the drum. Because of this they did not take into consideration the hazards of shooting a disrupter shot in a highly explosive environment. Some teams did not attempt to keep their robot out of the leaking chemical. This scenario allowed us to discuss disrupter shots in flammable atmospheres, robot contamination, and robot decon procedures.

#9 The team was told they had been called to a construction site of a mosque. A conex had been set up as a temporary construction office on this site. Construction workers arrived this morning and found the door open and a possible explosive device located inside.

The task was to enter the conex through the swing-out doors, maneuver around several pieces of office furniture, open an





interior door, locate the suspicious item and remove it to a containment vessel. This was a low-light situation requiring the use of lights or night vision on the robot.

Observations: None of the teams had any problem with the low light situation. Some found the very tight quarters to be challenging, but all teams successfully completed these tasks.

#10 The team was told a suspicious package had been found at an abortion clinic. They had to use their robot to locate the package and place a MWB to destroy it.

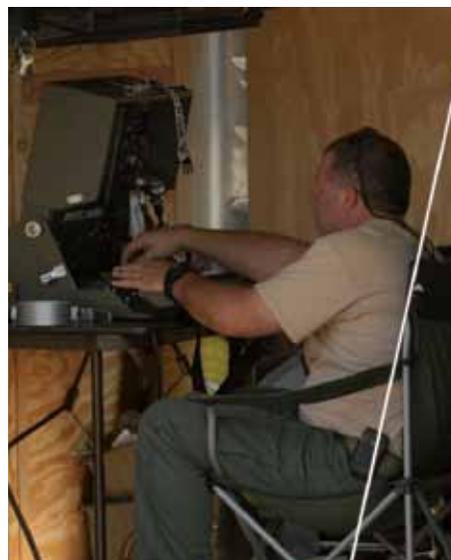
The task was to locate the package, identify any other items or hazards, and place a MWB to destroy the suspect item.

Observations: Some teams were more familiar than others in deploying MWB from the robot. Some were not familiar with the best MWB set up for the particular package used in this scenario.

After this day's events, Pyro Productions, a major pyrotechnics company located in Alabama, provided training to those interested on commercial pyrotechnics. After this training Pyro Productions donated a large fireworks show in honor of our U.S. Military and to the Wounded EOD Warriors for everyone to

enjoy. We then retired to the hotel where Birmingham Budweiser provided an abundant amount of adult beverages and Remotec provided pizza.

Day 2 began at 8 a.m. We started again with a safety briefing for the attendees and competitors. It was explained that no robots would be allowed on these scenarios. The competitors were told full coverage bomb suits had to be used with face shields. If a situation was presented where they would not wear a bomb suit, they had to be able to articulate their reason for that decision to the scenario coordinator.



Day 2 Scenarios

#1 The driver of a city school bus had found a large metal pipe bomb on his bus. The team had to respond, remove, and RSP the device.

The tasks were to search the bus wearing a bomb suit, rig the device off the bus to a location where a disrupter shot could be made.

Observations: Many teams had problems with rigging, causing the device to become tangled or lodged in the seats. Some found it necessary to make several approaches.

#2 A metal pipe bomb had been sealed inside a heavy cardboard box. The pipe bomb had to be RSP'd without opening the box.

The tasks involved in this scenario were to obtain a good X-Ray and then execute an exact shot to remove the end cap from the pipe bomb.

Observations: We found many teams had difficulty with the concept of shooting a pipe they could only see on X-Ray. Teams with the Open Vision X-Ray fared much better and were much faster. This scenario allowed the competitors see the AVON round is very forgiving and even a poorly placed shot can be successful. Also, they were shown that shooting horizontally takes out one dimension and allows a faster placement of the disrupter.

#3 This problem involved a possible WMD device. The device was a cardboard box 10" x 12" x 16". A board with a simple circuit and a 9VDC battery were placed inside the box. Several glass bottles were also placed inside the box. The device must be RSP'd by shooting the battery out of the box without breaking any of the bottles.

The tasks were to take an accurate X-Ray and determine the exact location of the battery and bottles. The disrupter then had to be set up to provide a clear shot without hitting the bottles. The proper round had to be selected to effectively make this shot.

Observations: Many teams used the "WAG" method to match the X-Ray to

their shot. They were not familiar with using the software for their X-Ray for determining distance or the use of an "aiming grid" to set up their shot. Some chose the wrong round, a water shot, and broke bottles by putting too much energy inside the package. This was an opportunity to show the need for an X and Y axis X-Ray to set up the disrupter.

#4 The team was told a cache of weapons had been found in a secluded area. They had go to this location and determine if this cache was booby-trapped and what items needed to be moved or destroyed. The cache was set up in a large conex in a wooded area.

The task given to the team was different than the real tasks tested. The teams made their way to the conex down a dirt road. After a thorough inspection of the outside of the conex, they all made entry. All were very cautious, looking for any booby-traps. When the team was finally inside, they were told a team member, on the outside of the conex, had just hit a booby-trap and was severely injured. We used a 190-pound mannequin to simulate a wounded team member. They had 3 minutes to get to him and apply a tourniquet to his leg to prevent him from bleeding to death. The team then had to evacuate him to a safe area.

Observations: Teams were not expecting an EMS call. Only one team was carrying any emergency medical gear, while the others had to field fabricate a tourniquet. The whole area was booby-trapped, and many of the teams got tunnel vision on the downed member and became victims themselves. This scenario gave us the opportunity to show the need to be prepared to care for one of our own. After the scenario, each team was instructed by trained paramedics on how to quickly fabricate and apply a tourniquet and other methods to reduce bleeding.

#5 This scenario was an obstacle course to be run in a bomb suit. A full coverage suit was mandatory, but the face shield was waived for this event. There were several short stages with real EOD functions to be performed at the end of each stage. There were 5 stages:

75-meter drag 200 pounds

Problem: Set up X ray in a confined space and retrieve cassette

50-meter Rope Pull (200 pounds after a 75-meter run)

Problem: X ray interpretation/identify components

75-meter double water can carry (45 pounds each)

Problem: Set up PAN shot on package and set laser

25-meter dummy drag

Problem: Disassemble collapsing circuit

50-meter sprint

Observations: We all need to be in better shape. The oldest guy to run this (from the Georgia Bureau of Investigation) was the fastest. That was encouraging for us older guys. All of the GBI guys were impressive.

#6 The team was told they had arrived on the scene of a bomb call in the middle of the night and must perform a dual PAN shot with a 5 m/s delay between shots. They were short on supplies and could only use what was provided to them at the scenario. This was to be set up as a water shot. They were given:

- 2 Electric Matches
- 2 Electric Detonators 25 m/s delay
- 1 Nonel Detonator 250 m/s delay 16 ft. lead
- 36 Feet of Nonel Tubing
- 2 12 Gauge Shotgun Shells (Not PAN rounds)
- 1 Roll Firing Wire

They were also told they could not use:
Shock Tube T's
Tape
Surefire or other shock tube initiator
Electric Firing Machine

Observations: This was one of the more interesting scenarios. We have all been on a call and realize we don't have everything we need. This was the stimulus for this problem. Some teams thought they could initiate shock tube with electric matches. You can with some and some you can't. The ones we provided would not. Some had never fabricated a PAN round and many had forgotten how to calculate shock tube. Some of the techs had not initiated shock tube with an electric detonator and most bomb techs are lost if you take away their tape. Eventually most of the teams solved this problem. We need to be able to function when all of the tools we are trained to use are not there. We have to make it work anyway.





#7 This scenario consisted of a large office-type house trailer. The bomb tech had to enter one end of the trailer, RSP each device as he/she encountered it, then exit the other end. This scenario was the idea of David Heaven. We liked it and put it into action. It required the tech to identify what each device was, how it functioned, and what RSP was necessary. It also required the tech to be able to determine what type circuit they were dealing with. There were electric switches, mechanical switches and combinations of both. There were a total of 10 devices and if any device functioned, the bomb tech failed and no points were awarded. The techs were allowed to do this problem without a bomb suit.

Observations: Most techs seemed to dread this problem but most of them did a good job. It showed the need to have a “ready bag” or “go bag” with everything you might need if, while doing a search, you encounter several hazardous items.

#8 This scenario was put together with the assistance of the 46th Civil Support Team based out of Montgomery, Alabama. This was set up in a smaller

portable office trailer. One end of the trailer was set up as a working HME lab and the other as a bio lab. The entire trailer was booby-trapped. In the real world, respiratory protection would have been needed, however due to some teams not having respiratory protection with them, it was waived for this problem.

The task was to clear the trailer of booby-traps to allow the 46th CST to enter and disassemble the lab.

Observations: More joint training needs to be conducted with the Civil Support Teams to allow smoother operations. We found some techs would see an obvious booby-trap and concentrate on it, and then allow something else to get them. One team wanted to shoot a disrupter in a bio lab which could have resulted in a release of bio agents. We all need to train more for a possible WMD incident.

#9 This scenario required the bomb tech to enter an office trailer and retrieve a briefcase from the inside. It was considered a successful operation when the tech exited the trailer with the briefcase.

The main task required the tech to do an

extensive recon of the building. It then required a correct interpretation of what they saw.

Observations: This building had been extensively alarmed. There were PIR’s, microwave, and pressure sensors, and every door and window had also been protected. It was a combination of hard-wired and wireless sensors. The briefcase also had a micro-switch underneath it, attached to a wireless transmitter which talked to the master control panel. This had to be found and gagged before the briefcase could be moved. This was a major access problem but one everyone seemed to enjoy. It showed a wide range in abilities and training with the teams. It also showed a real need for advanced training in access and electronics.

#10 The teams were told the FBI had stopped a vehicle towing a boat in a parking lot at a public boat launch in Norfolk, VA. They had reason to believe the vehicle could possibly contain an explosive device.

The task was to clear the vehicle of any explosive devices.

Observations: The teams immediately focused on the truck which had cargo in the bed covered by a tarp. Two teams pulled off the tarp using remote procedure which detonated the device underneath, but everyone survived. Remote procedures were excellent. The main device was hidden in the boat, which was a large, elaborate pontoon boat. There was a command switch on the steering wheel and an improvised inertia switch hidden in the bow. The switches were wired in parallel to several cases of high explosives. It was difficult to access or work on a boat in a bomb suit, so most chose to come out of the suit when the devices were encountered due to lack of visibility. Practicing on different types of vehicles, boats, aircraft, etc... is something most of us fail to do.

Conclusion

We observed a wide range of abilities and training at this event. We saw teams that “hit the ground running,” worked as a team, communicated with each other and took everything seriously. We saw

others that wanted to stand on the sidelines, do nothing, and armchair quarterback. We saw equipment that teams depend on every day that didn't work.

We worked together. We made contacts. We saw things that worked and some that didn't. We learned and we had fun. It's a lot of work to put something like this together, but as the situation in the world deteriorates, this training becomes more critical. We will answer more calls, we will encounter more sophisticated devices, and we will deal with better bomb builders. We must be ready to handle the threat.

The competition was close.

Day 1 Winner Of The Robot Competition

Alabama Bureau Of Investigation

Day 2 Winner Of The Bomb Tech Competition

Shelby County, TN Sheriff's Department Bomb Squad

A Strong 3rd Place on both days was the **Georgia Bureau Of Investigation Team.**

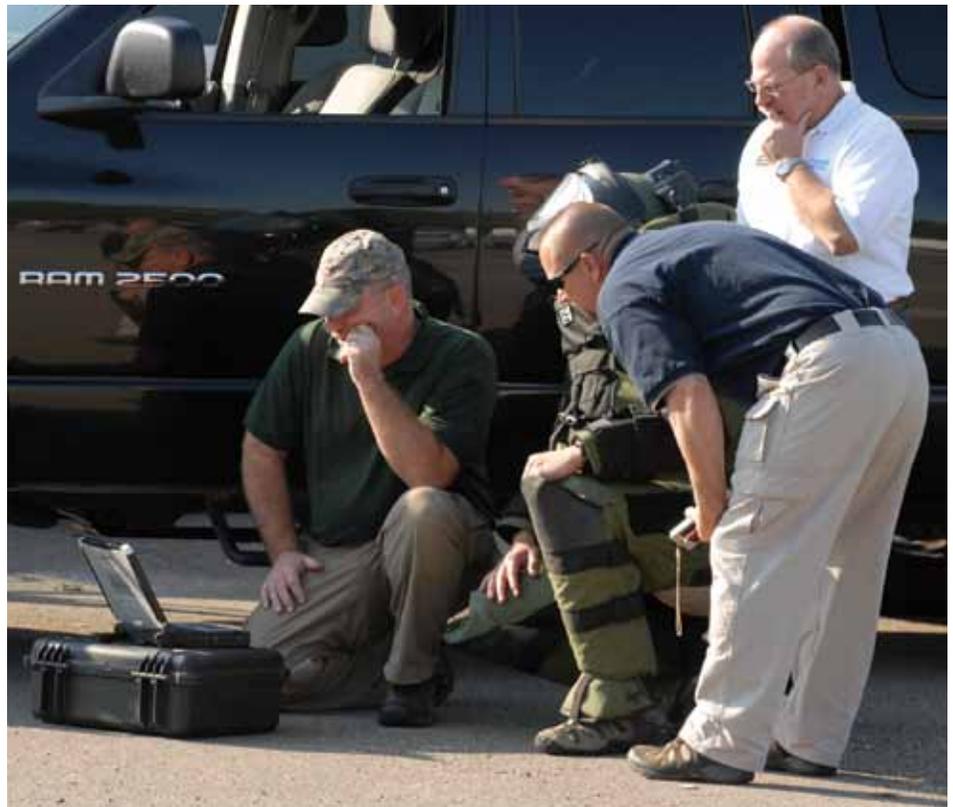
Overall 2010 EOD Champion

Shelby County, TN Sheriff's Department Bomb Squad

We plan on next year's event being bigger and better than this year's. We want to have more challenging events with more competitors. The date has not been set, but if you're interested in par-

ticipating, contact us and let us know so you can be put on our e-mail group for more information.

Sgt. Rod Glover is the Bomb Squad Commander of the Hoover Police Department.



On October 19-20, 2010 the Shelby County Sheriffs Office Bomb Squad sent two of our bomb technicians to compete in Hoover, Alabama. The purpose of this competition was two fold. On day one the bomb squads were tested on their remote capability using the department-owned robotics. On day two all scenarios had to be completed by hand deploying disposal equipment.

The exercises consisted of ten events on each day designed to test teams' ability to deal with real world bomb squad scenarios. The host agency was the Hoover Alabama Police Department, with bomb squads represented from around the southeast region.

After conclusion of day one, the Shelby County Sheriff's Office Bomb Squad was 2nd behind the Alabama State Police, and at the end of day two, our agency was declared the overall winner of the two day event. The professional skill, knowledge and actions of Deputies Chad Cunningham and Judson Maxwell reflect great credit on the bomb squad and the Shelby County Sheriffs Office throughout the southeast.

