



Extrication Challenges of Advanced Steel In Vehicles: Part 5 – New Rescue Techniques

SUBJECT: Advanced Steel
TOPIC: Extrication Challenges of Advanced Steel in Vehicles: Part 5
OBJECTIVE: The rescuer will understand optional techniques to consider when confronted with a person trapped in a crash-damaged vehicle with an advanced steel structure and the department does not possess the ability to cut the advanced steel.
TASK: Given an acquired vehicle with a simulated advanced steel structure, the department's rescue tools, and the scenario of a broadside collision, the rescue team will perform optional techniques that could be used to free a trapped occupant that do not involve cutting into or through any of the simulated advanced-steel areas of the vehicle.

THE SERIES...

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Pie Cut



If only the B-pillar contained advanced steel and not the roof rail, it might be possible to cut the roof rail on both sides of the top of the pillar in a "pie cut" fashion and lay the pillar down.

In Part 5 of the University of Extrication series on advanced steels, we present a pictorial guide to optional techniques that could be considered when a person is trapped in a late-model vehicle that has advanced steel in its structure. The scenario is that the rescue team does not have the capability of cutting the advanced steel and have decided to utilize alternative techniques. These alternative techniques include the "Pie Cut", "Lifting the B-Pillar", "Spreading the B-Pillar", "Ramming the Roof Off", and "Total Sunroof" evolutions.

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Photos by Ron Moore



Lifting the B-Pillar (1)

With this training exercise, we are simulating that most of the B-pillar and all of the roof rail consists of advanced steel that the rescue team cannot cut through. Rescuers should be trained to attempt to cut all along the roof rail, just in case there is "soft" steel somewhere within the structure. Here, efforts to cut through the pillar near the rocker channel are successful. One popular Chrysler vehicle's structural design has mild steel at the bottom of the B-pillar, spot welded to the main portion of the pillar.

Lifting the B-Pillar (2)



Once the B-pillar is cut through at the bottom, it can be lifted up and away from the simulated trapped patient. The patient doesn't care if you lay the B-pillar down or lift the B-pillar up; they just want out.

Ram the Roof Off



When a rescue team cannot cut through a B-pillar or roof rail that contains advanced steel, a backup plan can be to ram the roof off the top of the B-pillar. Even though advanced steel may be present, a powerful ram may be able to push the roof rail up until it begins to tear at the spot welds.

Spreading the B-Pillar



If an advanced steel B-pillar cannot be cut through, an alternative can be to ram the B-pillar away from the trapped occupants. Here, a push off the center "tunnel" moves the pillar.



A spread from B-pillar to B-pillar can also be used to move a crash-damaged pillar off of the patients trapped inside. Monitor roof movement as it may begin to lower into the vehicle as the B-pillars move outward.



After an initial push behind the B-pillar, a second push along the front side may be enough to completely tear the B-pillar from the roof rail. Note that cribbing will be necessary beneath the rocker to support the push of the ram.



Design features in today's vehicles pose new and potentially dangerous challenges when extricating victims from an accident scene. See demonstrations and hear from experts in excerpts from State Farm satellite network broadcasts. Check out the latest auto manufacturer emergency response guides. Visit www.sfsafetraining.com.

When a team encounters a vehicle with all roof pillars, the entire roof rail and the entire rocker channel containing advanced steel, an optional technique can be the "total sunroof" evolution. First, the roof is cut from the front windshield header to the rear window. Here, a reciprocating saw is used.

Total Sunroof



A relief cut is made at the front and rear on the "hinge" side of the roof and the entire roof panel is lifted up and away from your trapped patient. A rapid extrication could be accomplished once the "total sunroof" is open.

With the "total sunroof" completed, if the side of the vehicle were still crushed in on your patient, you could push the sides away very easily now that the roof has essentially been disconnected from the side structure of the vehicle.



TASK: Given an acquired vehicle with a simulated advanced steel structure, the department's rescue tools, and the scenario of a broadside collision, the rescue team will perform the "Pie Cut", "Lifting the B-Pillar", "Spreading the B-Pillar", "Ramming the Roof Off", and "Total Sunroof" evolutions.

