Some basic principles on tool use and Blade choice:

Reciprocating saw use:

The use of a reciprocating saw (Sawzall) for extrication is a very valuable tool, and is now being widely used as a vital piece of our extrication equipment and one would say is a very simple tool to use.

But we still see poor tool use and skills at incidents we attend, so here are some tips for correct tool use and a guide to which tool blade to use.

- Hold the tool correctly with a firm grip
- In most cases make sure the foot plate is firmly against the part you are cutting
- Let the tool do the work, use a slight force to ease the tool through the cut, do not over push
- Feel for the tools response and adjust accordingly
- Too much force applied to the tool will cause the blade to get too hot, causing a reaction in the metal which causes the blade tips to melt and round off which can reduce the blade life
- For harder materials such as metal a slower speed is recommended of around 1600rpm
- Be careful when cutting through foam insulation, as this can give off toxic fumes as the blade melts the foam
- Blades will be hot after each cut
- Too much force will cause the blade to grab the metal and cause the saw to violently move back and forth instead of the blade, when this happens, reduce the force being applied to the tool
- Try to use a rocking motion when cutting, this uses different areas of the blade
- Consider adjusting the foot plate during long cuts to change the area of the blade in use which will increase its use time and effectiveness
- Ensure the power lead or the safety button is off before you change blades
- Use the correct length and type of blade for the right application
- The speed of the cut will depend on what we are cutting. Forcing the tool will have next to no effect or benefit other than damage the blade
- On many occasions a blade that is too long is used for cutting windshields, with poor skills this causes it to dig into the dash, use a shorter blade or upskill.
- Always use hard or soft protection as the situation dictates

Let's look at Blade type's

High TPI (Teeth Per Inch) blades of around 18-24 TPI are mainly used for cutting thin sheet metal or when accurate cuts are needed, this type of blade has little use for the crash scene and extrication. The blades can easily become clogged and blunt and will struggle with cutting plastics and other materials found in todays motor vehicles. This type of blade will not last long and will require replacing on a regular basis, with poor performance it will slow down space creation techniques and the extrication time   will be increased.

A blade with 6-8 TPI or less should ideally be used for cutting laminated glass only, as it produces larger shards of glass debris and not so many fine dust particles. Fine glass dust will still be present so eye, face and respiratory protection must be used by the team cutting and other rescuers in the immediate area. Consider other methods to reduce the glass dust.

For all other cuts that are likely to be carried out during space creation a blade with 10 or 14 TPI should be used for maximum performance. Or even better a variable tooth blade of around 10-14 TPI, this is a blade with has a different tpi at varying intervals along the blade.

This type of blade enables a fast and effective cut, it is also capable of cutting laminated glass very well, this blade will also last a lot longer than most.

Some will say that they have cut cars with a blade with a low TPI of 6-8, yes these blades will eventually cut through the material, but it is a very rough cut creating a lot of noise and vibration, if that is what you are used to, you may think that there is not a problem with this type of blade, but if you haven't experienced using the types of blade mentioned here then you will not have a clear knowledge of what is best. If this is the case try and get hold of a better blade and see what the difference is, im sure you will be surprised. Don't be afraid of the unknown, trial it, test it and buy the right equipment. Don't always stick with what you have always used, it may not always be the best option.

The problem sometimes comes from departments purchasing equipment, they sometimes have very little knowledge of what is needed at, they are not always up to date with what we need on the frontline. Also strongly guided by costs and making savings.

There are a lot of good blades on the market, which makes selection difficult, the Lenox blades are considered the best on the market, but if you are on a strict budget there are cheaper blades available that are up to the task. There are many companies out there, I will post some if there is a request.

Things to look for when selecting a blade are;

- The right selection of lengths
- The right thickness to prevent bending or snapping
- Most of all the RIGHT TPI for what you are cutting

Yes these blades can be expensive, but what price do we put on a life that needs our help.

Effectiveness, efficiency and correct techniques will result in a swift and positive outcome for the casualty and rescuer.

TEETH PER INCH SELECTION GUIDE

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Following a lot of research on reciprocating blades, evaluating their ability to cut high strength materials. There was a point that we were stating that to cut very strong metals the current reciprocating blades where not up to the job, you can see this on video if you visit the video page on "YouTube"

There are now carbide tipped blades that can in fact cut these high strength materials, it does take some time so don't expect a quick cut, obviously depending on the thickness of the material being cut.

I have cut a large section of B-post with very high strength materials in it, I was able to cut through in about 5 minutes and the blade had plenty of use left in it. So, its great to see tool options moving forward to help with vehicle rescue options. Below are a few images of the blades from different manufacturers.

If you have any comments or suggestions, please email me at rtc.rescue@gmail.com