

MVC/RTC RESCUE PREPAREDNESS

a DOCUMENT FOR DISCUSSION
'change in direction needed'

Paper by - Len Watson

Extrication: **SRS**



DO NOT place tools within airbag deployment path
Operate tools away from airbag deployment path
Give **WARNING** before cutting/spreading/ramming
and enforce the 500/250/150 mm (20/10/6") Rule



Or the cutter can turn sharply downwards with considerable force

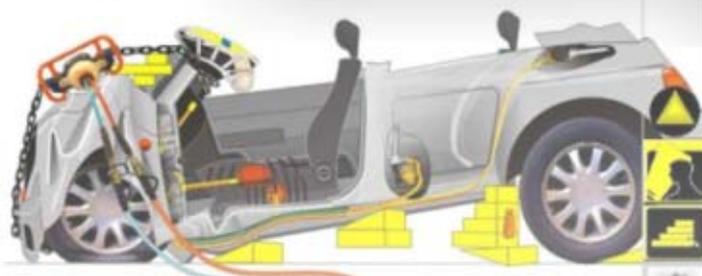


Pigtails can snag on the bodywork
DO NOT have the handle facing inwards
DO NOT place your knee under the tool
WATCH OUT for your operating hand/fingers



Metal relocation:

Steering wheel relocation



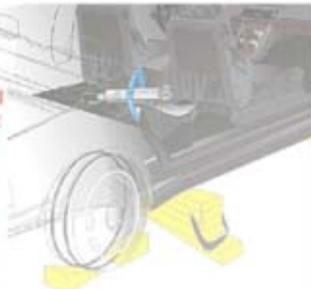
CONSIDER!

A deployed 'SMART' multi-generator airbag with (WCS) seat sensing may still retain a number of unspent generators within the module



Cutting the seatback frame:

When the cutter is introduced at the front of the seatback, it can come in contact with the front doorpost as it takes up the least line of resistance and trap the operator's hand or fingers or alternatively, turn inwards on the casualty



When the cutter is introduced from the inboard side of the seatback, it can turn sharply and can knock the operator off balance and/or trap the operator.



The tool is infinitely more powerful than the operator and taking the least line of resistance, it will force the wrongly positioned operator in on to the casualty



NEVER stand on the inside of the tool
between the tool and the vehicle



MVC/RTC RESCUE PREPAREDNESS

'change in direction needed'

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General overview:

Motor vehicle accident rescue is a topic that covers an extremely wide range of operations. While it is plain to see the need to have a rescue response to deal with everyday RTC/MVC emergencies, it is not so plain to see what is best value or when a particular entrapment 'type' happens more or less frequently, and the need for a workable plan or solution to adequately meet that emergency. The more severe life threatening crash, vehicles that end up on their roof, crashes with a higher mass differential (Car v truck) or between heavy vehicles, have little recognition given to them with regards to adequate extrication training.

Within the 'grass roots' of the emergency services, the everyday workload arising from road traffic collisions has become an instinctive area for development. Although vehicle entrapment rescue goes back a long way, it was only from the mid 1970's that some appropriate solutions began to stir.

Not surprisingly, power rescue tool companies have grown up around this initiative. Although the grand daddy of them all - Hurst, offered the 'Jaws of Life' and Lukas, the very first cutter, as a revolutionary solution to contend with motor vehicle entrapment, it was through the 1980's that most power hydraulic rescue tool companies emerged and started to develop into the multi-nationals they are today.

This equipment was a vital step forward in the development of road rescue, but the only training available at that time was from the manufacturers' appointed distributors. The knowledge base of sales representatives seemed surprisingly good but over a period of time was found to be somewhat limited and flawed. Although their efforts were uncultured, they were very effective in terms of showing-off tool effectiveness. Equipment maintenance and basic techniques and evolutions were excellent for forcing open accident jammed doors and the removal of the vehicle's sides and roof, but took no account of casualty care and medical intervention. Moreover, actual entrapment release was never addressed and areas such as 'dash roll-up', 'dash relocation' and forced seat adjustment and removal, had only ever been used as a means to demonstrate the power and use of their tools. The saying - why let a casualty get in the way of a very fine rescue? - over-spilled and can now be heard at some rescues as a term of rebuke.

As the rescue initiative grew, in many parts of the world, police, ambulance and other emergency services, were all performing RTC/MVC extrication rescue. Eventually, by 1990 it became broadly accepted that the fire service would adopt the role of technical rescue for trapped vehicle occupants. It was a natural choice as fire stations were strategically sited and could respond quicker to incidents. The fire service was a disciplined service and specifically trained for hazardous environments and fire trucks had the capability of carrying the heavy equipment and the necessary volume of personnel to conduct a more efficient rescue.

The first Extrication competition for vehicle entrapment rescue was held in Canada in 1984. What began as a friendly exchange between local fire departments has now grown into an international event and the Transport Emergency Rescue Committee (TERC) has run the

competition every year since in either Canada or the US. Under their influence and guidance the concept was imported by a group of firefighters and launched under the name of CUEES to the UK and the first vehicle extrication competition was run alongside the national fire show in 1989. Additionally, other committees were formed by like-minded rescuers, which expanded the concept through the 1990's into Ireland, Australia and South Africa.

In essence, what started as a friendly in Canada was recognised as a huge learning curve and an ideal platform for the exchange of information that would motivate, innovate and corroborate good practice. Additionally, it can be seen as the only true indicator of extrication rescue performance, which it is not just there for participants but open to all rescuers to attend.

The first books on RTC/MVC rescue began to appear around 1990. All except one was written and produced by private resource and mostly this anomaly prevails unto the present day. Many training departments world-wide adapt and borrow from these publications. Unfortunately these publications only cover technical rescue (procedures, techniques and evolutions for dismantling crashed vehicles). Appreciation for in-vehicle life saving care had not yet been written and although some books did include basic information and even a monograph by the British Association for Immediate Care (BASICS - UK), a pressing need continued to exist for a production that would encapsulate and interact both disciplines (technical and medical rescue).

One would imagine that at that time the books available for paramedics and pre-hospital care workers would cater for in-vehicle resuscitation. On the contrary, medical books have not addressed this area and a total lack of appreciation prevails. Even with two recent eBook productions that attempt to address extrication rescue and trauma care, there still remains a huge divide between technical and medical interaction. This ultimately reflects in performance; 'extrication evolutions to end result', injury aggravation and deterioration, team performance and casualty outcomes. Not to put too fine a point on it, but lives and future quality of life is at stake, are out there waiting to be saved!

A logic for rescue

As far back as 1990 when the technical manual 'RTA persons trapped' appeared on scene, it gave recognition to various different aspects of release from vehicle entrapment. The manual explained a logic for entrapment rescue that differentiated between extrication philosophies, namely:-

- Immediate Release/Rapid extrication
- Rapid intervention
- Controlled release management

Ahead of its time, the logic took on board new conceptual thinking and in an effort to establish this framework, went into some detail to rationalise and lay down the concept. Those of you old enough to remember the early days of RTC/MVC rescue may say that 'Immediate release and rapid extrication' is nothing new, as 'grab and handle' techniques have been practised from the beginning and that we all worked hard to develop RTC/MVC rescue to what it is today. Be assured that the concept of immediate release/rapid extrication holds nothing of the past but is intended as a well versed and practised method of release for the more serious RTC/MVC's that occasions critical injury and death.

Immediate release/rapid extrication

In chapter 10 of the manual, titled - 'Immediate Care and Medical Appreciation' - under the heading 'The option of 'immediate release' it says -

Where the impact sustains severe body deformity and passenger cell intrusion restraining the casualty in situ within the interior of the car, firmly held by the collapsed superstructure and removal or release cannot be effected by conventional means or persuasion, the attending Fire/Rescue service may be called upon to effect the immediate release of the casualty. In the event of vital deterioration in the casualty's condition, the availability of controlled release management may not be open to choice.

Where the casualty's condition is concerned the medical attendance are best qualified to issue such a directive.

Some injuries cannot be stabilised at the accident site and, as it will be necessary to transport the patient to hospital with the minimum of delay, the casualty's immediate release may be required. Such injuries that progressively deteriorate the casualty's condition are not easily recognised by unqualified personnel, particularly where it is accentuated by the rarity of low involvement. Therefore it will be necessary for Fire/Rescue personnel to comply with such a directive with a uni-disciplinary approach in effecting the casualty's immediate release. The alternative may well prove fatal for the casualty.

Of course this philosophy is based on the realisation that most life-threatened casualties, that die within the first hour after the accident, will be trapped in vehicle. The evidence for this is consensus based as there is no data to draw from, but ignore it at your casualty's peril. The passage gives no indication as to the casualty's Glasgow Coma Scale (GCS) but within the manual it does state - *'No brain or solid organ destruction, no breathing or carotid pulse - call for an immediate release.'*

If you consider there are entrapments and entrapments, you may ponder upon the title of 'immediate release', but the manual continues and refers to the availability for immediate release and this is worth repeating:-

The nature of the more severe entrapment will invariably allow for the option of immediate release to be a viable proposition. However, there are always exceptions and it may be found that the severity of the entrapment prevents the assertion that a quick method of release is indeed possible. To understand this fully we must be clear in our understanding of what the term 'immediate release' really means.

The option of immediate release/rapid extrication refers to the availability to extricate a trapped casualty in the shortest period of time with the equipment at our immediate disposal. No time evaluation can be placed on this type of involvement other than to say - it may dramatically shorten the working duration associated with controlled release. In a dire emergency it may even be considered ethical to conduct the rescue irrespective of consequences to the casualty.

**VEHICLE ENTRAPMENT RESCUE
(IMMEDIATE RELEASE/RAPID EXTRICATION)**

Where a casualty's life is in immediate danger from their surroundings, IMMEDIATE PATIENT REMOVAL ONLY FOR:-

- 1. FIRE**
Fire spread from uncontrollable fire
- 2. SUBMERGENCE -**
- 3. TOXIC FUMES**
High threshold for asphyxiation/toxicity
- 4. HAZ MAT**
Direct contact with caustic/corrosive/poisonous through absorption substances
- 5. POLICE DIRECTIVE**
Uncontrolled civil disturbance/terrorist activity
- 6. MEDICAL REQUIREMENT**
Where medical intervention cannot sufficiently slow systemic deterioration

At the initial stages of an entrapment access to the victim/s is normally achieved via the undamaged door/s or alternatively through a window opening. Where a casualty is restrained by virtue of their injuries it is usually only a matter of manipulating them free and conducting their removal from the wreckage. This method of grab and handle removal may be considered appropriate in an emergency where circumstances dictate such an approach, but where possible it is best left to Ambulance personnel who are well versed in casualty handling and are capable of administering analgesic gas where

appropriate. Where a restricted space casualty requires removal from a rapidly deteriorating situation their rescue is more likely to be performed by lay-persons before the arrival of emergency personnel. Where casualty rescue has been left or where circumstances designate it to the Fire/Rescue Service, then the casualty will need to be handled with as much care as circumstances permit. This responsibility will usually be fulfilled by first attendance personnel.

Where the removal of the casualty is impeded by superstructure entrapment, power operated hydraulic rescue equipment can be bought to bear in effecting a rapid release, quickly gaining sufficient space to extricate the casualty. The weighing of the situation may well indicate immediate release/rapid extrication to be all that is prudent in the circumstances. However, it would be pointless to exercise this approach unless the balance can be weighed constructively.

We need only examine the reasons that dictate the necessity of an immediate release to realise the essential requirements necessary to issue such a directive. Over reaction to a situation will lead to the casualty suffering or their condition worsening, or in extreme cases it may even lead to their eventual demise.

In all but the most severe entrapments immediate release will be open as an option and realistically speaking, from a usage point of view it is intended literally to be interpreted on a life or death basis. The medical attendance will be the main exponents of this rescue measure and as such will rely heavily on Fire/Rescue personnel for advice and support.

Of course the option of immediate release is not always possible but when it is, considering that the majority of all car occupant deaths are the result of head-on and front off-centre impacts where the vehicle finishes upright on roadway, rapid extrication offers a real life-saving option that could be performed at many 'life/death' crashes.

So what can be considered the criteria to call for a 'rapid' extrication? Obviously the person will be pinned or restrained by bodywork deformity preventing their removal from the wreckage. So what about the casualty, what parameters can be set to prompt the paramedic to call a 'rapid extrication'? After initial casualty survey and 'patent' airway intervention, the Paramedic might consider the following as a valid reason to call for a 'rapid extrication' –

- Suspended casualty/Circulatory arrest
- Impaired airway – *Unable to achieve a patent airway*
- Obtunded casualty/Bradycardia – *Deeply unconscious, low breathing rate (<10)*
- Tachycardia - *Fast breathing rate (30>)*
- No radial pulse/Poor capillary refill - *Hypovolaemic shock (BP <80 systolic SAE <93)*

Although immediate medical intervention can slow casualty deterioration, it should not be taken into account when considering a 'rapid extrication'. Immediate medical intervention should then be looked upon as a bonus as a 'rapid extrication is performed'.

Methods of immediate release/rapid extrication

The logic in 'RTA persons trapped' continues in a further section titled -

The urgency associated with immediate release must not be allowed to overwhelm the situation throwing caution to the wind. Where appropriate precautions need to be taken in securing the vehicle/s and the setting up of the working area. Potential or deteriorating risks need to be tackled and should not be allowed to continue unchecked for longer than is absolutely necessary.

The section goes on to explain various methods that can be employed to effect an 'immediate release/rapid extrication'. Where power rescue equipment is available certain techniques and evolutions will lend themselves to speeding the release of the casualty e.g.

- Forced door opening
- Dash roll/relocation
- Relocating the steering wheel and column
- Strategic ramming/spreading
- Forced seat adjustment/removal
- Foot pedal relocation /removal

One of the evolutions outlined for a rapid extrication - 'Forced reversing of the front seat' - offers a very useful technique. This section has to be read carefully, ingested and practised as the evolution can have some adverse side effects. At the International Extrication Challenge in Burlington, Canada in September 2001, the author expounded a new concept based on his original technique. He detailed the scenario where an 'immediate release/rapid extrication' could be called for and in the training area at the 'International', performed an adaptation of forced seat reversing, which created great interest. The forced opening of the driver's door and 'forced seat reversing' took a little less than three minutes to complete.

In 'RTA persons trapped', the manual goes further and presents the need for a strategy change when a casualty deteriorates during a controlled extrication or in the event circumstances change -

When conducting the controlled release of a casualty their condition may deteriorate necessitating their immediate release and prompt removal to hospital. Where appropriate, planned operational strategy should be abandoned and the immediate release of the casualty effected on instructions from either the medical attendance, Officer-in-Charge of the Fire/Rescue Service, or the Officer-in-Charge of the Police presence.

It is essential that Fire/Rescue personnel realise the full implications associated with immediate release and the context in which such a directive is given. The qualifications necessary to assume the authority to issue such a directive will depend on the rank or the competence of the person issuing such an order and the hazardous nature and/or potential risk of the situation

The police or armed forces may also be placed in the invidious position of having to issue such a directive. Terrorist activity or civil disturbance may compromise a situation to such an extent that the option of immediate release can be preferable when weighing up the degree of risk.

Although less than explicit in the medical interpretation for an 'immediate release' the author is quite emphatic in his explanation but warns:-

The ideology of immediate release and controlled release management must be treated as separate entities. No confusion must exist between them and all personnel must be made aware of the advantages and disadvantages associated with these options. Wherever possible the casualty must be given the best chance of making a full recovery and it is with this in mind that all parties concerned should agree that where circumstances permit, the vehicle should be removed from the casualty and not the casualty from the vehicle.

Rapid intervention and controlled release management

Incorrect handling of extrication entrapment can no longer be considered as 'acceptable'. Limited training and inadequate facilities are a sham and unreasonable, and have no place in any 'best value' policy. Only education and advancement in training and interaction between the medical and technical disciplines can bring about the necessary change in existing poor standards.

The whole concept of controlled release management has evolved around the well being of the casualty. The team effort of Ambulance, Fire/Rescue, Emergency Doctor and Police working together to ensure the patient gets the proper attention necessary to afford them the best possible chance of making a full recovery. From the instant the emergency call for help is

received the whole operation should be geared to cater for the contingency in a proficient, efficient and realistic manner.

With the majority of superstructure entrapments where the victim is pinned in position and requires resuscitation and urgent need for advanced airway therapy, suitable access will invariably be an essential requirement. Extrication science has evolved into a complicated subject with many hidden hazards with the requirement for new and specialised skills. Limited training programs and equipment inventories must not be allowed to subtract from gaining immediate access for life saving care any longer.

Making the area safe, securing the vehicle and primary roof removal can, where versed, be conducted in a very short space of time. Roof removal will afford realistic access and encourage the medical attendance to make the best use of their hi-tech life saving initiative.

Realise that an obstructed airway may not wait on inefficient roof removal. Lets be real - have you timed it - it takes 7 ~ 10 minutes to remove a car's roof, and that's on a good day. For some in-explicit reason at the 'extrication competition' level we can almost double this time frame. With the right equipment and where specifically practised as a rapid intervention measure it can be reduced to less than 4 minutes, but the type of fixed glazing installed can influence this. A surgical airway will depend on the paramedic's skill level and on whether they are left or right handed when performed through the door's window opening. When dealing with the front seat entrapment, in most cases it can be performed through the windscreen opening. Where the casualty's neck impacts with the steering wheel rim, a mini-trac may not be sufficient. Also, remember that late deployment of airbags is a known occurrence. Additionally, in the front off-centre impact, bending and intrusion in the windscreen pillar has been recognised as a major source of head and neck injury and can considerably lessen the paramedic's workspace.

Primary roof removal

In the head-on/front ¼ oblique/side-on impact where a victim requires immediate aggressive invasive intervention, speed will be a prime requisite. Rapid intervention in the form of primary roof removal must be conducted efficiently to offer realistic access for patient management. It is therefore essential that basic physical rescue techniques are understood by medics and acted on. Efficiency must not be impeded by over-zealous safety measures that have been born of 'vehicle extrication competitions', but on the other hand, close quarter work around the casualty must be carried out safely to prevent any significant injury to the casualty and Rescuers alike.

Once realistic access has been gained by the primary removal of the roof, the medical attendance can attempt to retrieve/stabilise the casualty. Where the situation then merits a rapid extrication, although certain options have been withdrawn to physical rescue by conducting primary roof removal, all reasonable efforts will have initially been made to stabilise the casualty in situ.

Words of command must be understood and immediately acted on -

- **Hands-off** - *A call for all fire rescue activity on the vehicle to cease in order to prevent any movement or jarring being transferred to the casualty (suitable for surgical procedures, IV cut downs and difficult intubation).*
- **Shut-down** - *A call for silence and the shut down of all engines and generators (suitable for chest and abdominal auscultation).*
- **Hands-off and Stand clear** - *A call to remove all personal contact and stand clear of the vehicle (suitable for in-vehicle defibrillation).*

Controlled release management and interactive training

The majority of entrapments are likely to be handled as a 'controlled release' where the vehicle is removed from the casualty and the path of egress is conducive to patient packaging and removal without worsening the casualty's condition or injuries.

Controlled release management will mainly involve the medical attendance and employ the Fire/Rescue Service in systematically dismantling the motor vehicle with the casualty in situ.

Gaining the optimum space in a time effective manner will allow the situation to become more manageable.

Again borrowing from Len's book -

The multiple RTC/MVC disaster is rare and accounts for a small percentage of the fatality and serious injury rate. The real disaster can be seen as the daily involvement, which individually may be low in number of sufferers, but when viewed in terms of the whole, contains the vast majority of the real carnage that sustains the morbidity rate.

In the U.K. car user fatalities amounted to approximately 40% of the total recorded fatality figure in 1986. The serious injury rate paints a similar picture. It is commonly acclaimed that besides preventable death many thousands of casualties a year are suffering prolonged disability unnecessarily. At the British Association conference in Belfast in 1987, Mr. Stephen Westaby a member of a working party on trauma set up by the Royal College of Surgery and Medicine stated, "Because we are not getting it right at the onset, we are wasting hundreds of millions of pounds in follow up care and in paying out social security to someone who suffered disability".

So it would appear, the important issue to get right is the daily RTC/MVC operation where persons are deemed trapped. The questions I would ask you to consider are:-

- Since 1987 how much if anything has changed?
- Has your RTC/MVC training program moved ahead to meet end user needs and does it actually benefit customer outcomes?

With the advances already made in the field of RTC/MVC rescue it is both important and necessary to realise all possibilities in all aspects of release management.

General approach to fire/rescue involvement -

In general terms the fire/rescue involvement has now, to a large degree, become a known quantity, easily recognised when assessing the accident damage. Where appropriate the correct approach to controlled release management will necessitate the vehicle/vehicles being secured and the area made safe. Setting up the working area and control. With the most common area of involvement (head-on/front ¼ oblique impacts) the systematic dismantling of the vehicle will generally include roof and side removal as the initial operational involvement.

Think about it, you are not going to dismantle the vehicle if the person has no signs or symptoms of injury. Common sense requires that Fire/Rescue personnel must first read the accident by the casualties injuries or better still, by the medical attendance primary assessment and then by the accident damage irrespective of its history. It is the actual damage that Fire/Rescue extrication involvement will most relate to.

The idea of opening up the passenger cell in the controlled release management of the casualty has grown along with the RTC/MVC. initiative and can now be seen to work hand in glove in caring for the trapped victim. To systematically dismantle the motorcar with the casualty in situ, has become an associated practice in dealing with the commoner entrapment the world over.

Releasing of crushing and crush injury -

Pinned in the front seat or trapped by the legs in the front footwell will be found to be the main cause associated with superstructure entrapment. Most front seat/footwell entrapments can be dealt with by conducting a fairly moderate approach but any approach or space gained must be conducive to the injuries needs and/or the casualties condition. In many cases a systematic approach in dealing with restricted space and/or seat adjustment or removal may be all that is required.

Where this type of involvement takes on a dimension all its own, invasive care is likely to be all-important to the outcome of a successful operation. Because of the complicated nature of the more severe front seat entrapment, a detailed study of fire/rescue evolutions will be necessary to analyse the problem and a comprehensive, systematic approach adopted to combat the various problematic areas.

Severe entrapment will be found to restrict available space around the casualty and deny access to any injury within the immediate area of confinement. Such accident deformity will generally be associated with severe head on or front 1/4 oblique impacts with a tree or post or between vehicles of different masses.

Casualties subjected to pinning/crush injury are best comforted by the medical attendance, but of course medical personnel will need to be in attendance for that to happen. Infusion and oxygen/analgesic/drug therapy will need to be constantly monitored. In dealing with the majority involvement associated with pinning/crush injury, the well-equipped Fire/Rescue team can conduct various techniques to release the casualty. A casualty trapped by the superstructure in the front seat/footwell as associated with the head on/front ¼ oblique impact can be released using several definite strategies. However it must be appreciated by virtue of the complicated nature of this type of entrapment, certain techniques/evolutions may be unviable or dangerous and no estimated time of release can be relied on.

Realistic vehicle extrication management with a view to patient care and immobilisation requires the services of conversant personnel who have the capacity to weigh up the situation and act competently and efficiently in the best interests of the casualty. This cannot be achieved by inadequate training programs or by an 'on the job' experience led culture, that has as many warts as good practices.

Equally, one-sided training programs who's curriculum only covers the bare essentials so that they can be certified as MVCRTC training programs, must be outlawed and relegated to history. The day of the five day 40 hour MVC/RTC program does not, under any stretch of the imagination, equip the firefighter as a competent extrication technician. Just view what is actually achieved in such a basic course and what is actually needed to meet and justify 'best practice' and you will see that the fault-line runs all the way through the emergency services. In the end a justifiable, comprehensive interactive training policy for the team approach will eventually be adopted, so why not take the bull by the horns and begin now.

The RTC/MVC training program needs to be comprehensive in line with user needs and still remain achievable. Here in 'Controlled Release Management' we discussed only one area of entrapment. We need to be fully appreciative of the nature of entrapments and for that they can be categorised into two groups, those that are injury related, and those injured that are actually pinned in the wreckage by bodywork intrusion.

Types of entrapment

Injury related

- *A casualty trapped by virtue of their injuries where to lift them free, without taking appropriate measures to stabilise their injuries, may worsen their condition.*

Actual

- *Superstructure entrapment where the victim is pinned in situ by bodywork intrusion within the passenger cell. The most common areas are:-*
 - *Footwell entrapment*
 - *Side intrusion (front seat occupant)*
 - *Side intrusion (rear seat occupant)*
 - *Rear footwell (legs front seat under-ride)*
 - *Collapsed roof structure*
 - *Collapsed roof structure (vehicle on-roof)*

Areas of training :-

Technical

- Vehicle stabilisation (various)
- Controlled roll over winching
- Glass management
- Door opening/forcing/removal
- Roof removal/relocation (Roof flap to rear/side/forward)
- Side removal (4dr and 2dr cars)

- Steering wheel relocation
- Dash relocation
- Seat adjustment/forcing/removal
- Footwell evolutions
- Roof fold down (car on its side)
- Inverted side removal (4dr and 2dr cars)
- Clam evolution - inverted side removal, ramming and strategic cutting (2dr, 4dr cars/hatchbacks/convertible/sports)
- Floorpan and front seat removal (Overturned vehicle)

Technical: Commercial vehicles

- Securing
- Stabilisation
- HAB/LAB heavy lifting (including on a gradient)
- Jacking: Parabolic and bogie suspension (including on a gradient)
- Vehicle separation (including on a gradient)
- Truck cab extrication (various evolutions for cab types)

Interactive (Team approach for medical and technical rescue)

Interactive workshops directed by exact session briefs to guide and interact the disciplines of both medical and technical rescue are designed to offer best practice and increased efficiency. This area of training must be orchestrated by expert input and made accountable by audit.

- Methods of immediate casualty removal (*Interior orientation and effective casualty removal with c-spine management*)
- In-vehicle CPR and defibrillation management
- *Vehicle on all fours 4dr and 2dr cars)
- *Vehicle on its side
- *Vehicle on its roof
- *Truck under ride (one under)
- *Truck cab extrication

**Vehicle stabilisation, immediate access, advanced casualty care, extrication, packaging and removal.*

Interactive training requires a partnership between all the rescue team. Forward thinking training departments can deliver a skill level to meet all contingencies and this can be achieved on a cost-effective footing. I have lost count of the vehicles I have seen in fire station yards with roof and sides removed. In fact it is much easier to count the vehicles that have been optimised in training, where airway and C-spine management, interior orientation and casualty removal on the long spine board is practised beforehand. When have you seen 'controlled roll-over winching' and various stabilisation techniques performed before the car is cut up? Again, very rarely do I see evidence of footwell techniques or forced front seat reversing/removal having been performed. Moreover, how many ambulance technicians, paramedics or emergency doctors undergo any form of realistic training prior to practising on the streets?

At the extrication competitions I have never seen a vehicle on its roof handled with any degree of real competence. Presumably these are the top teams performing, yet all that I ever witness is limited extrication evolutions, inefficiently performed, which are not necessarily conducive to casualty needs. Could it be an indicator of poor training standards or are the techniques and evolutions that appear in technical manuals not workable? You decide - Have you ever performed these less used techniques? Lets face it, the less used evolutions are the one that need to be practised most.

It would seem that no one person has all the answers or indeed can any group set themselves up as an informed working party overnight. Whoever heard of consultants or specialists with a proven track record being employed to advise the ambulance or fire service in methods of realistic training? The authors of the technical manuals have their intellectual copyright and illustrations plagiarised and company investments undermined without so much as credit or acknowledgement. Tax payers money is being used to re-invent the wheel to suit budgets and very basic targets, which apart from time wasting and smacking of empire building, is very costly and must have gone some way to stifle and delay private enterprise developing RTC/MVC rescue further.

It would appear that the main reason for the slow development of RTC/MVC rescue is that no one in authority has ever risen to the challenge. Certainly the funding has not been made available and this reflects heavily in the lack of suitable training venues. The 'make do' attitude can be understood somewhat because of the divorced attitude of senior management, particularly as they are virtually untouched by it in their service careers, especially in the larger metropolitan areas where they achieve promotion earlier.

To date RTC/MVC rescue has been very much a 'hands-on', experience led development, where front line crews perform the real workload. Individual involvement is low and it takes years to accumulate valuable experience. This is even more exacerbated if no one is allowed to specialise and while dedicated rescue vehicles are diluted by constant crew change round, with only two rider positions, it is never likely to change. All the while the motorist is suffering and dying. It is not that the problem goes unrecognised but more a cultural mindset where entrenched managerial roles remain traditionalised.

Grass root firefighters and ambulance personnel have identified a need for improvement and have openly proffered their dismay for years. The constant battle to save life at the 'RTC/MVC persons trapped' will not go away and how the rescue team performs does matter, much more than government, policy study and planners realise, if they realise at all, as no mention or adjustment is ever made to transport statistics and of course, no real importance given to post accident planning.

Indictment of poor performance

Although this article was written some time ago and revised only lately with the minimum of amendments, it remains vitally relevant. I will leave you, the reader, with this thought – how relevant today is the statement made at the British Association Conference in Belfast in 1987 by Mr. Stephen Westaby –

"Because we are not getting it right at the onset, we are wasting hundreds of millions of pounds in follow up care and in paying out social security to someone who suffered disability".

If you wish to comment, have something that you would like to share; a better way to do something or a concern that you need addressing, we at resQmed have an open door policy. Air your views, contribute, agree or disagree; we would love to hear from you –

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References and further reading:

- Crash Rescue, Vehicle extrication rescue and in-vehicle trauma care – Len Watson – ISBN 978 0 9550551 6 4 – visit <http://www.resqmed.com/CrashRescue.htm>
- Mechanisms of Injury, The Kinematics of Vehicle Crashes and Likely Injury Patterns – resQmed - for more information visit <http://www.resqmed.com/TrainingProgs.pdf>
- RTC/MVC extrication RESCUE – Len Watson – ISBN 978 0 9550551 7 1 – for more information visit [http://www.resqmed.com/RTC extrication rescue.htm](http://www.resqmed.com/RTC%20extrication%20rescue.htm)
- Safety At Scene – Dr. Vic Calland – ISBN 978 0 9551319 0 5 - [http://www.resqmed.com/Safety At Scene.htm](http://www.resqmed.com/Safety%20At%20Scene.htm)

- Essentials of Immediate Care – John Eaton – ISBN 0 443 053456 -
- Vehicle Rescue and Extrication - Ron Moore - ISBN 0 8016 3351 6 – Visit www.firehouse.com
- Vehicle Entrapment Rescue and Pre-Hospital trauma Care – *ABM Wilmink, L M Watson, G S Samra, A W W Wilson - published Injury 1996. For a free download of the complete document go to –* www.resqmed.com/VehiExResTraumaCare.pdf
- Vehicle Extrication - S Kidd & J Czajkowski - ISBN 0 87814 915 5 -
- The Team Approach issue 1 – Free - <http://www.resqmed.com/TheRescueTeam1.htm>
 - A + C Spine management
 - The Platinum 10