



iRescue 2010

Learning Symposium

Heavy Vehicle Collision

Under ride/Over ride Presentation

- Introduction – Daryl Rush ARRO Education and Research Officer
- Case Study Presenters – Andrew Booth and Neil Poulton, Country Fire Authority, Dandenong Fire Brigade



Collision types and the vehicles involved vary and traditionally we all say 'every incident is different'



Rear impact collisions often result with vehicles becoming involved in fire



Collisions aren't always involving 'traditional' road-going machinery



Characteristics of the over ride collision include the larger vehicle's mass riding over the top of the smaller vehicle



Intrusion into and the amount of final load bearing down on the smaller vehicle varies, and often dictates the amount of access that rescuers have



Characteristics of the under ride collision include the smaller vehicle's mass being forced under the larger vehicle, and act like a wedge



Vehicles of lightweight construction impacting with larger vehicles

Fatal crashes involving heavy vehicles

BITRE (Bureau of Infrastructure, Transport and Regional Economics)

Deaths in Crashes involving a heavy truck - Australia

Calendar year	Single Vehicle Crash	Multiple Vehicle Crash		Pedestrian Crash	Total
		Occupant of Light	Occupant of Heavy		
2004	38	159	26	29	252
2005	35	168	13	22	238
2006	32	165	11	31	239
2007	39	149	17	31	236
2008	34	145	19	32	230



A collision type that is not often considered is the 'jack-knife'.

Not what we may 'normally' consider to be a true collision type, a 'jack-knife' is most commonly caused by the sudden application of brakes (or locking of trailer brakes) and brake failure. Other driving behaviours may also causes a 'jack-knife'.

Incident Case Study

- Case Study of a 'jack-knife' that resulted in an 'override' collision of a small passenger vehicle
- Incident occurred in Victoria
- Presented by Country Fire Authority, Dandenong Fire Brigade Officers - Andrew Booth and Neil Poulton
- Opportunity to communicate with rescuers about this incident:
 - about what they encountered at the scene;
 - what actions they took;
 - what lessons learned they learnt; and
 - how that may benefit others in the future.



View on arrival, approaching the scene
(note: photo was taken later in the incident)



**Vehicle crossed over median strip
coming to rest in opposing lanes**



The car was well under the truck , note the truck chassis and drive wheels



The car was well under the truck with access to the driver impeded



Crews worked to gain access to the driver for the ambulance officers



The drivers side of the car was completely inaccessible



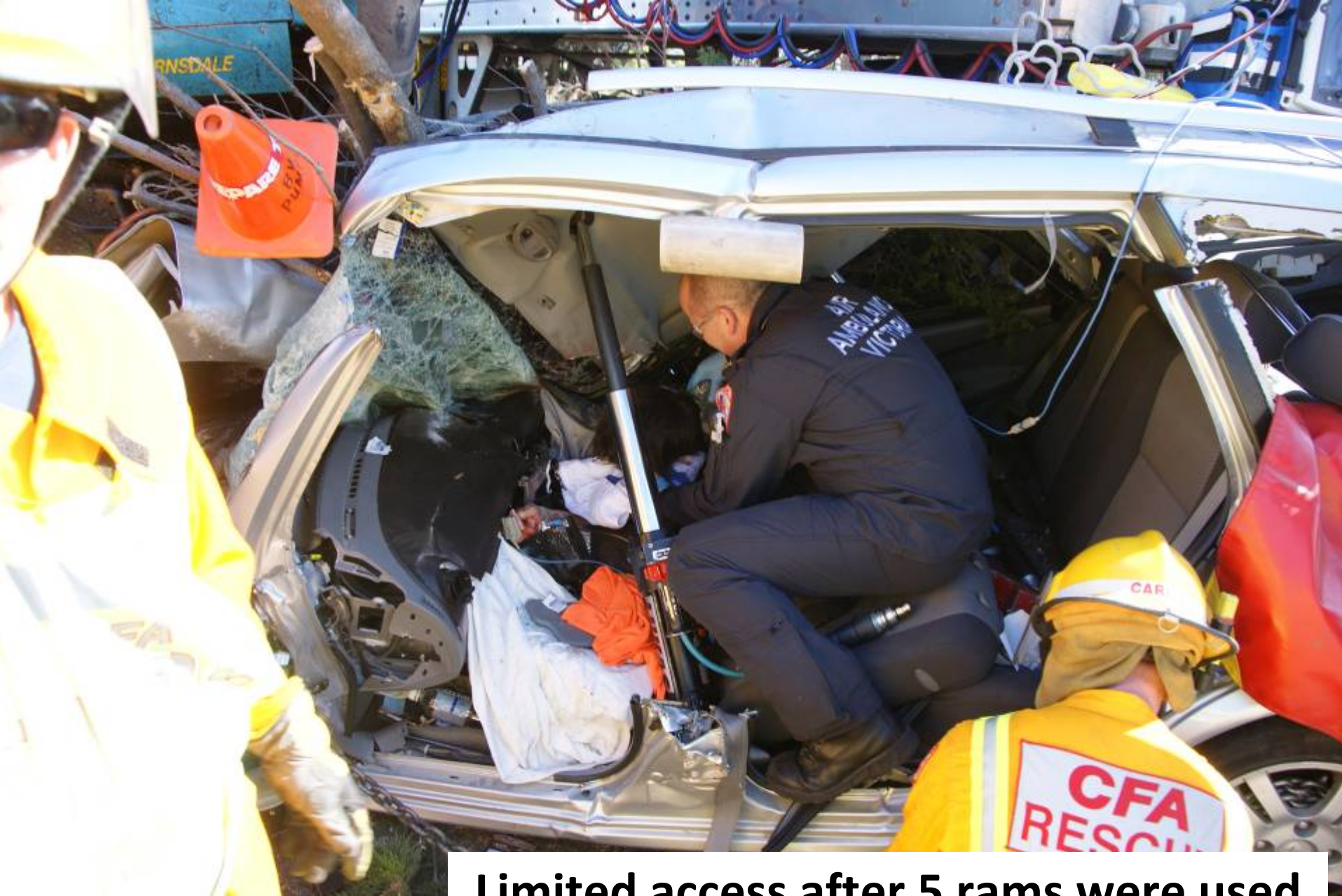
Access was made for the ambulance officers to assess the patient



Cribbing was made around vegetation that was stuck under the truck



High pressure air bags were used on both sides of the truck to lift it



**Limited access after 5 rams were used
in the car to move the roof away**



This is the access available to the patient after ramming; still unable to assess the foot well



Preparing for winching operations



Chain attachments



Making sure the patient is ready for winching



Winching the car out with a re-direct





Raising the truck for winching the car out



Cribbing and lifting stacks



Installing cribbing and jacking stacks



The jacking and support stacks of cribbing



Large amounts of damage sustained by the truck



Controlling the winching



Setting up a bracing system for the truck



The truck moved with the car when it was being winched, so the truck was held by the tirfor winch back to the trailer



The tirfor winch in position



**Showing the re-direct anchor at the fence post.
It was 3 feet into the ground**



Working on the car once it was released from under the truck



**4 ambulance officers are working on the patient
as the drivers side is being removed**



Preparing to extricate the patient



Extricating the patient



Remarkably there were no lower leg injuries to the patient



The drivers compartment, and footwell had very little impediment



The only injuries sustained to the patient was a broken right for arm and minor injury to the left shoulder



The front of the car

Case Study Practical

- Case Study Presentation continues with a 30min simulated recreation of the incident and practical demonstration of the techniques and equipment used
- Case Study Presentation concludes