### New Vehicle Technology How it Affects Current and Future Product Design and Testing

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### Industry Wide Representation

- Voice for the entire industry
- Manufacturers, distributors, wholesalers, importers, retailers & repairers
- Networking, advocacy, defending & promoting industry



### **Technical-Physical**

- Assisting companies to develop products for Australian auto industry
- Access to centre of excellence and boutique testing services
- Assisting to understand 'canvas'

# NOW vs THEN

#### **19MY Ford Ranger**



AUSTRALIAN AUTOMOTIVE

- ABS
- ESC
- Pre-collision assist with pedestrian detection
- Traffic sign recognition
- Lane keep assist
- Semi-auto park assist
- 6 Airbags
- Adaptive cruise control
- Parking distance sensors
- Auto diming headlights
- Rear camera

- Daytime running lamps
- Bluetooth connectivity
- Heated and electric seats
- On-board diagnostics system
- Touch screen infotainment
- Rain sensing windscreen wipers
- Traction control
- Trailer sway control
- Hill launch assist
- Driver impairment monitor...



## NOW vs THEN

#### 82MY Ford Falcon ESP 5.8



• Rear disc brakes...





# WHAT IS THE IMPACT?

#### **Suspension Systems**

- Electronic Stability Control
- Hill hold Assist
- Brake Performance

### **Frontal Protection System**

- Adaptive cruise
- Lane Keep assist
- Parking assist (distance and automated)
- Powertrain cooling

### **Rear/Tow Bars**

- LED lighting
- Rear parking sensors
- Rear cross traffic alert

### **Electronic Accessories**

- CANBus system integration
- Smart alternators
- Connected vehicles



# HAVE WE BEEN HERE BEFORE?

### 2002- Tetraethyllead (leaded fuels banned)

• Mass fears over industry performance

Landscape changes invariably causing casualties along the way, i.e:

- Fuel- LPG conversions, ethanol components, EV
- OEM behaviours
- Electronic traction aids reduces focus on flex and lockers
- Polycarbonate headlamps



#### **TEL=Tetra-Ethyl Lead**



# WHY IS IT SO DIFFICULT?

#### Tier 1 OEM Suppliers Develop New Technology in Hyper-focused Field

- OEM & Suppliers develop and validate (internally) technology and release to public
- Not sufficient technical documentation for systems for many years/decades

### **Evolution of Technology**

- Explosion of technology Growth of EV is arguably one of if not the biggest changes in the history of automotive
- Connected vehicles, autonomy, entirely new infrastructure, and an entirely new chassis architecture





# HOW DO WE TEST IT?

#### Compliance = Test to the legislation (if there is one)

- Sometimes no legislation new technology just invented.
- Legislation takes time and justification to develop

### Example: ADR31/02

First mandated the required performance of a vehicle's ESC system - new models after Nov 2011, all vehicles Nov 2013

- ESC first appeared in mass produced cars in the mid 90s
- Widespread by the early 2000s
- Over a decade in the dark





## COMPLIANCE TEST PROCEDURE



## SUMMARY

- No driver assistance system is perfect but what is acceptable?
- Product design is getting more sophisticated
- Testing is getting more niche
- What are we doing about it?



- Voice for the industry
- Government relations & Advocacy



- Technical side of the AAAA
- Assisting Product Development



#### AUSTRALIAN AUTOMOTIVE AFTERMARKET ASSOCIATION

### Vehicle Technology & Government Regulation

### LESLEY YATES Director - Government Relations & Advocacy

## Vehicle Modifications

- Aftermarket Lights, Recovery Straps, Fuel Cans,
- Steps, Canopies, Bull Bars
- Suspension Lift/ Tyres
- Gross Vehicle Mass & Gross Combination Mass Upgrades
- Brake Towing Capacity
- Power to Weight
- Electric Vehicle battery standards
- Repair terminology
- Aftermarket Seat Belts
- Child restraints





### Vehicle Standards – Federal and State 'harmony'



### **Vehicle Standards Regulations**

- 1. Weight of evidence it's ours not theirs.
- 2. Employment/Economic contribution not their department.
- 3. Vehicles are perfect OEM testing regime, full ADR testing.
- 4. Risk averse and why not, it's not their problem.



### AAAA Advocacy

- 1. Consultative/Inquiry/Review
  - Member engagement/Focus groups
  - Previous policy position
  - Best Practice Australia and Internationally
- 2. Reactive
  - Seeking clarification/ expressing concern
  - Adversarial/Media & consumer engagement



## Vehicle Modifications



- Gross Combination Mass
  - Federal Government Guideline
  - Industry is divided/AAAA Technical Working Group
  - Government and industry dialogue
- Gross Vehicle Mass Upgrades
  - 'Acceptable' upgrades
  - Evidence Packs



## **Current Challenges**

- NSW: Axle Mass
  - OEMs permission
  - 'Clarification' mashup of VSB 14, VSB 6 & 0-4-6
- Victoria
  - IM240
- Policy via Certifier Bulletins
  - Relationship building / working closer



### The Future



Sustainability:

- Industry practices that are supported by evidence Evidence Packs:
- Front foot what would 'worry' a regulator?

Regulator interaction:

Relationship building



## Positioning



- Responsible 'above the line' modifications.
- Positioning We are part of the safety solution.
- Product Development, testing, validation, certification.
- Leveraging Consumer choice/fit for purpose/safer vehicles.
- Industry leadership.

