

Truck Fires Program Final Report

Reducing the Risk of Heavy Vehicle Fires



ABSTRACT

The Final Report for the National Heavy Vehicle Regulator on the Truck Fires Program conducted by ARTSA Institute, National Bulk Tanker Association and the Truck Industry Council

9 November 2022

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Background

ARTSA (now ARTSA Institute) and the National Bulk Tanker Association (NBTA) in 2019, submitted a successful application for Round 4 funding of the National Heavy Vehicle Safety Initiative. The truck Industry Council (TIC) would later join ARTSA and NBTA in producing the guidance materials.

Truck fires have been a long-standing issue within the heavy vehicle sector there is a considerable body of evidence that highlights both the frequency and major causal factors in truck fires. NTI Insurance are the major heavy vehicle insurer in Australia. Their report f

The NTI's report from 2020² states that:

- Over 10% of major losses were due to fire
- 32% of fires were in the engine bay and truck cabin area
- 55% of engine bay and truck cabin fires were due to electrical failure
- The balance of failures were mainly due to wheel and tyre issues

ARTSA estimated based upon NTI data is that there are close to 200 insurance claims per annum to do with truck related fires. It is likely that the real number could be almost twice that number. It is likely that on average, there is at least one of these events every day of the year.

The consequences of these fires can be profound and far exceed the actual loss of the truck and trailer equipment and its load. The disruption, safety risk to drivers and the public and environmental outcomes can be profound.

Given the level of knowledge regarding causality and the steep upward trend in fire claims in the last 10 years, ARTSA and NBTA proposed the production and dissemination of material on the causality of truck and trailer fires, and how these failure points should be addressed.

The guidance material produced would be publicly available and organisations involved would be encouraged to actively share this information as part of their commitment to the project.

Truck Fires Conference



As a starting point for the Truck Fires Program, a conference was held at the Royal Randwick Racecourse in Sydney on 15th August 2019. Approximately 80 participants attended from truck and trailer manufacturers and suppliers, transport operators, regulators, insurers and forensic investigators.

A workshop was conducted to discuss the causes and prevention methods including improved maintenance and technology such as fire suppression equipment and wheel monitoring devices. There were 12 presentations from industry associations, technology providers, insurers, fire investigators and emergency services. Four sponsor companies exhibited equipment and services,

A report on the conference findings can be viewed [here](#) **[ARTSA HVFC Record.pdf](#)**

Presentations that were delivered are viewable and downloadable below.

- [Detecting Wheel Fires - Woodford](#)
- [Bulk Tanker incident and accident data 2016-2018 - Perkins](#)
- [Heavy Vehicle Fires - Meads](#)
- [Understanding the Fire Scene - McKay](#)
- [2019 ARTSA Fire Conference - Gibson](#)
- [Truck Fires - Causes - Hartwood](#)
- [Heavy Vehicle Fires - What can be done at the national level? - Farquharson-Jones](#)
- [Heavy Vehicle Fires - Cleary](#)



The conference flyer is in the Appendices.

Truck Fires Reference Group

A Reference Group was formed after the Sydney conference to provide direction and content for the initiative.

In undertaking this work, ARTSA-i and the NBTA enlisted the technical expertise available within the Truck Industry Council (TIC) to assist in the development of the guidance materials.

The Reference Group and writing and editorial teams who provided their expertise and considerable time to allow these series of documents to be created. Contributors included:

- Hartwood Consulting: Dr Peter Hart and Jas Babilija
- ARTSA-i: Greg Rowe
- NBTA: Justin Keast, Rob Perkins, Mark Anderson, Jason Stables, Shane Falkiner
- Truck Industry Council: Chris Loose
- Other organisations: Greg Hunter (MFB), Peter Cleary (Fire and Rescue NSW), Phil Brooks (NSW Police), Adam Gibson (NTI Insurance), Richard Calver (NatRoad), Steve Hudson (Liquip NSW), Brett Stewart (Isuzu)

Truck Fires Guidance Materials

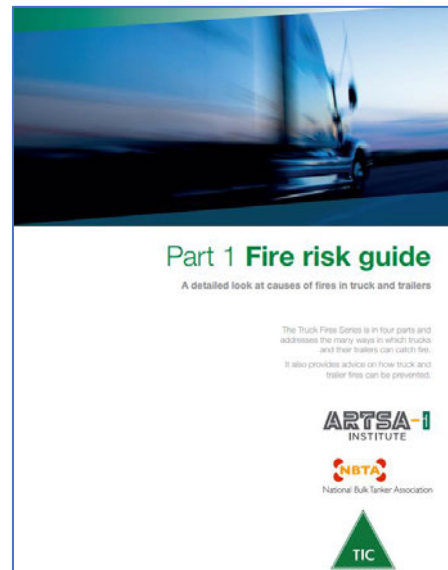
The guidance material is arranged in four parts. All parts of this guide can be downloaded from www.artsa.com.au/fire

Part 1 – Fire risk guide A detailed look at causes of fires in truck and trailers

Part 2 – Drivers guide What drivers can do to lessen the risk of fires

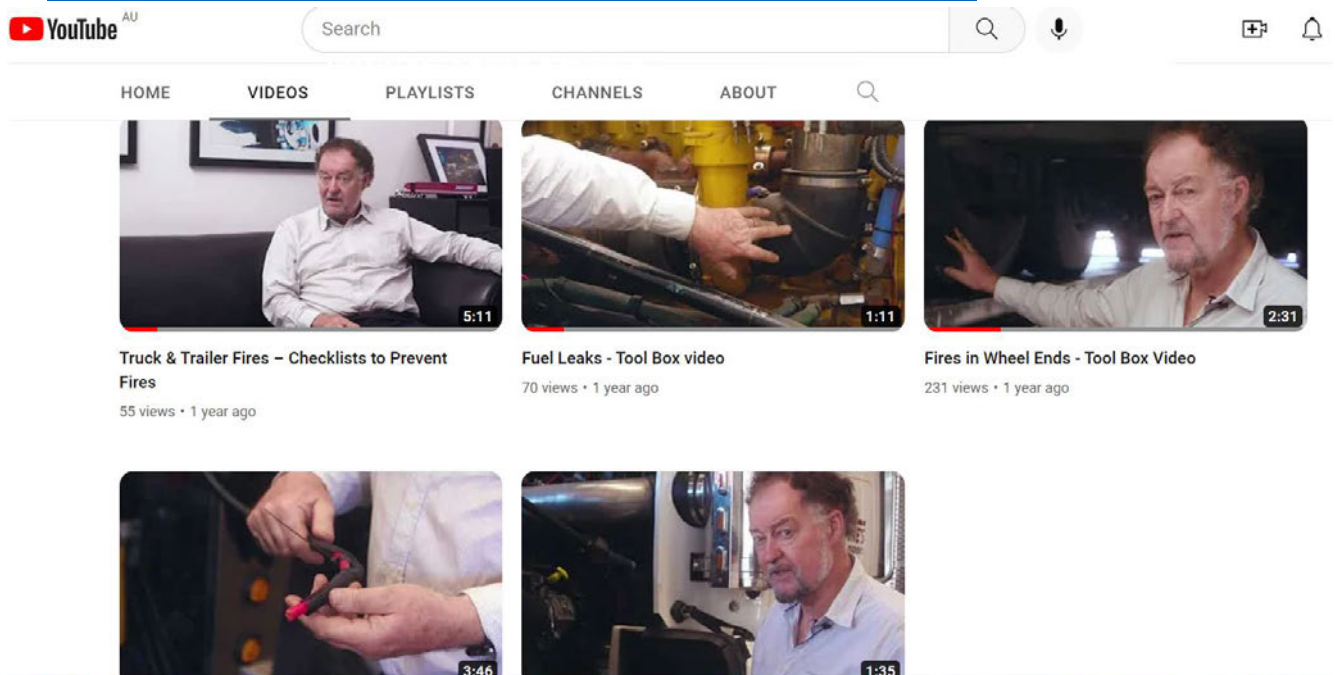
Part 3 – Maintenance guide What maintenance staff and fleet controllers can do to prevent fires

Part 4 – Fire investigation guide Advice on how to conduct a fire investigation



Also produced were six videos that highlight key issues such identifying the key risks as specific issues such as fire line fires and wheel end fires.

All the videos are available at the ARTSA Institute's Youtube Channel at www.youtube.com/channel/UCVMcfGPrX-a0cku_I7YygAw/videos



Lessons Learned

There were many lessons learned including:

- When researching available data on truck fires, there are very few sources of detailed information, that could assist in the prevention of future truck fires.

The NTI Insurance Company is the exception and produces the NTARC Major Accident Investigation Report (www.nti.com.au/getmedia/aa1a1adf-d573-49ed-a8aa-16c81b2b8813/NTI-NTARC-Report-2021.pdf) annually which details insurance claims over \$50,000 involving heavy vehicles. The data provided in the NTI report was used extensively in the guidance materials.

- The project partners also investigated fire incident data available through the Australasian Fire and Emergency Service Authorities Council (AFAC). The aim of the investigation was to hopefully identify key data to support the Truck Fires Program including:
 - number and severity of heavy vehicle fires
 - the year, model and configuration of the heavy vehicle
 - location of fire
 - causation

Unfortunately, this data is not collected by fire services attending heavy vehicle fires.

The collection of truck fire data, especially information about the year and model of the truck could help identify fire related issues in specific trucks and allow owners of the vehicles advance warning.

Appendices

Conference Flyer & Program



C O N F E R E N C E

Heavy Vehicle Fires

Causes and prevention

A recognised project under the NHVR's *Heavy Vehicle Safety Initiatives* program

15TH AUGUST, ROYAL RANDWICK RACECOURSE, SYDNEY



Truck and trailer fires are a major issue in the heavy vehicle sector. Why they occur and what can be done to prevent these fires is the focus of this one day event.

The conference will bring together forensic experts, policy makers, manufacturers, operators, regulators and component suppliers to share their experience on what is one of the largest claims categories for insurers in Australia. It is an issue that can cause massive inconvenience as well as considerable environmental and public safety risk.

The program (overleaf) includes speakers from:

- Fire & Rescue NSW
- National Heavy Vehicle Regulator
- Truck Industry Council
- NSW Police
- NTI Insurance
- Holmwood Group
- Forensic Engineering consultants
- Fire Technology Specialists

The event will launch an updated heavy vehicle fires advisory that will be useful for all parties involved in manufacturing, operating and maintaining heavy vehicle equipment.

Registration is now online at www.artsa.com.au/conferences
or fill out the registration form following and return to [REDACTED]

- S U P P O R T E R S -



TRUCK FIRES CONFERENCE 15 AUGUST AT ROYAL RANDWICK

- P R O G R A M -

9.00am	Arrival – Tea & Coffee	
9.30am	Welcome Address Housekeeping & Introduction of Sponsors	Dr Peter Hart – ARTSA Executive & Justin Keast NBTA Chairman
	The Scale of the Problem	
9.40am	What the Data Shows	Adam Gibson – Transport and Logistics Risk Engineer – NTI Insurance
9.50am	Bulk Tanker Incidents	Rob Perkins Executive Director, NBTA
10am	Managing the Incident	Superintendent Peter Cleary – HAZMAT – Fire & Rescue NSW
10.10am	When it hits the Fan	Chief Inspector Philip Brookes – NSW Police Force
10.20am	10 Things that Cause Fires	Dr Peter Hart – ARTSA Executive
10.30am	Panel Session	Dr Peter Hart, Adam Gibson, Rob Perkins, Peter Cleary, Phil Brookes
11.00am	Morning Tea - Sponsored by Sandvik	
11.30am	Technology and Forensic Investigation	
11.30am	Understanding the Fire Scene	Bob McKay – Managing Director – McKay Forensic Investigations
11.40am	Fire Suppression Technology	Kieran McHatton – General Manager – Fogmaker
11.50am	Detecting Wheel Fires	Brendan Villiers – Business Development Manager – LSM Technologies
12.00pm	Fires & Refrigerants	Brett Meads – Vice President VASA
12.10pm	Ten things that Prevent Fires	Jas Babalija – Mechanical Engineer – Hartwood Consulting
12.20pm	Panel Session	Bob McKay, Kieran McHatton, Brendan Villiers, Brett Meads, Jason Staples, Jas Babalija
12.45pm	Lunch - Sponsored by Fogmaker (Including Fogmaker Demonstration near front entrance)	
	Opportunities and Solutions	
1.30pm	What Can Be done at the National Level	Kym Farquharson-Jones A/Manager Safety Standards and Assurance NHVR
1.45pm	Risk minimisation in the Workshop and on the Road	Chris Loose – Technical Officer – Truck Industry Council
2pm	Workshop – National Strategy to Tackle Fires	All
	Wrap Up	
4pm	Close	