PROJECT REVIEW

A national crash reduction program for the dairy transportation industry

December 2023

Foreword

As Australia's leading specialist insurer, NTI is committed to creating a safer, more sustainable future for the transport and logistics industry.

We are passionate about this commitment and feel privileged be a long-term industry partner. NTI has more than 30 years of history with the Australian Trucking Association as a foundation member and, more recently, an associate member. We are a corporate member of the Australian Logistics Council and a foundation partner of Healthy Heads in Trucks and Sheds.

Safety and sustainability have always been NTI's goals for the transport industry. We have a rich history of investing in the industry beyond insurance; this commitment is reflected in several initiatives, including:

- National Truck Accident Research Centre
- Risk Advisory Services
- Traction program
- Seeing Machines partnership
- COACH leadership program
- Broker education programs
- Better Business Hub – NHVR program.

NTI is proud to continue working closely with the National Heavy Vehicle Regulator (NHVR) on this crucial dairy transport safety initiative. We are grateful to have had the opportunity to work hand-in-hand with the industry to identify the key issues and fill the knowledge gaps.

We are excited to collaborate with dairy businesses across Australia and look forward to seeing what insights the safety program's materials generate in the months and years to come.

Chris Hogarty

NTI Chief Sustainability Officer

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Introduction

The Spilt Milk project

Spilt Milk is an NTI project funded by the Federal Government through the National Heavy Vehicle Regulator (NHVR), specifically its Heavy Vehicle Safety Initiative (HVSI).

Background

The dairy industry is a significant contributor Australia's economy. Ibis reports that dairy produces around $4.4 billion and exports around $3.4b of milk yearly.

Data from NTI's National Truck Accident Research Centre (NTARC) shows that, on average, dairy tankers are 2.4 times more likely to be involved in a major crash than other freight transport types. When we saw this data, we knew we had to do something about it. So, we submitted a grant application to the NHVR's HVSI program to fund an initiative.

The dairy industry has a history of successful but isolated initiatives to improve milk tankers' safety performance. Spilt Milk combined industry and stakeholder insights, expertise and initiatives to deliver practical, whole-of-industry solutions to this pervasive, whole-of-industry issue.

The Spilt Milk program goal is to reduce the number of major safety incidents with dairy tankers over the coming years, as measured by our annual National Truck Accident Research Centre report. We did this by first listening to and engaging with Milk Carrier and Dairy processors to understand why the number of incidents was so high. We then developed 6 core educational themes where there was gaps in knowledge. Lastly, the project co-created over 40 artefacts that make up a safety resource pack that the industry and programme participants can use in the months and years to come to educate stakeholders to reduce major incidents.

We look forward to participants in the industry continuing to engage with each other to identify how we can distribute and use these materials to make us all safer in the coming months and years.

Project Phases and Structure

The Spilt Milk grant initiative had the following four phases:

1. ***Recruitment and onboarding:*** Identify and enlist project participants for the 18-month program. Participants included leading dairy processors, large milk carriers and technical experts
2. ***Listening:*** Engage with the participants to identify issues and understand gaps and best practices from current initiatives and training programs. The phase included a driver survey, 10 driver ride-alongs, seven workshops, desktop research, a review of program participants' materials, and dairy tanker crash data analysis
3. ***Artefact creation:*** Develop training and education materials as part of a resource pack for program participants and the wider community
    - ***Validation:*** Generate a report with the initial findings and send to program participants to validate that we heard them correctly before moving into the next phase
4. ***Delivery:*** Deliver the resource pack, including all the initiative's safety training resources.

Industry Experts and Program Participants

During phase 1, we identified our key partners. NTI collaborated with more than 30 experts, with diverse backgrounds and experiences. Our industry experts included dairy processors, dairy transport operators, ABS braking specialists, tanker manufacturers, trainers and drivers.

We set out to create a program of safety resources with the industry and for the industry. The engagement process was highly collaborative, with carriers and consignors reviewing and co-creating some of the key artefacts. It was also important that drivers saw themselves in the materials. That is why, for example, we partnered with milk carriers to film real drivers on real runs for our training materials.

Participating dairy carriers:

Participating program consignors and dairy processors:

Delivery Partners

NTI engaged our network of creative, content, media and technical partners to develop and deliver the artefacts. This involved content development, content design, video production, podcast delivery and 3-D truck modelling. We know that the materials will be only valued and taken up if they are in the appropriate medium and use language that resonates with the audience. There partners are best in class and what they do and helped to develop and create purpose fit artefacts across multi channels.

Why dairy?

Dairy transport's unique challenges

Dairy in Australia

Dairy Australia reports that Australia's 5700 dairy farms are spread across eight unique regions spanning Victoria, South Australia, New South Wales, Queensland, Tasmania and Western Australia.

These regions are defined by geographic areas, and factory and producer locations, not state or local borders.

Most dairy milk production occurs in coastal areas on the southeast seaboard in Victoria, New South Wales, and Tasmania, taking advantage of the higher rainfall.

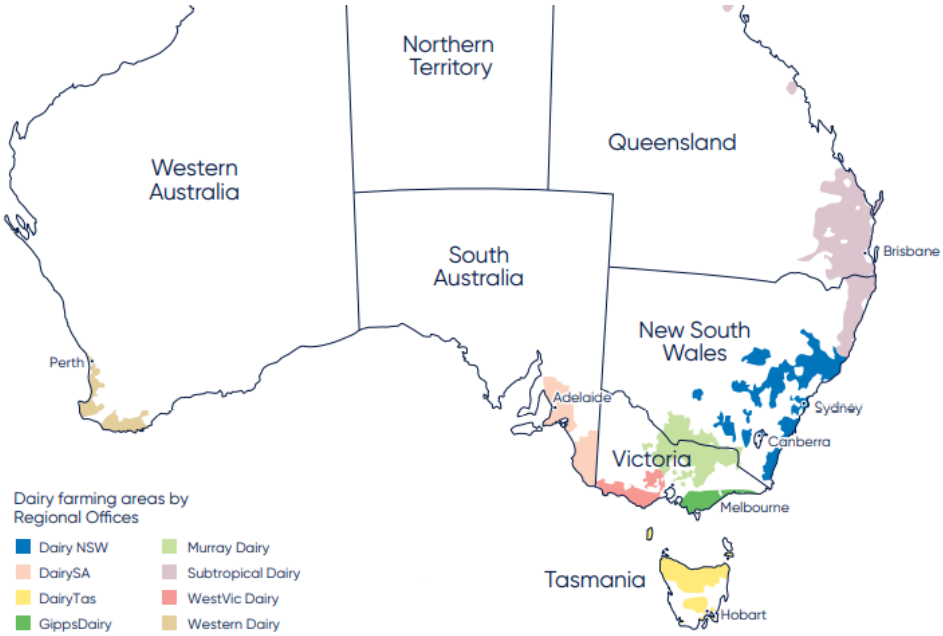


Figure 1 - Dairy Regions (Dairy Australia)

These coastal regions are typically rural and remote. Conditions are generally wet and foggy. The roads in these regions are typically narrow and winding, in poor condition and frequently have steep grades, making farm pick-ups even more difficult.

Unique operating environments

Dairy farms

Each dairy farm has a unique configuration of access and egress from public roads, storage capacity and loading facilities. Drivers work in a constantly changing environment, even within the same region.

Farm size and daily production rates also vary. It is not unusual for drivers to pick up 1000 to 15,000 litres at various farms on a typical run. As cows' daily milk production can vary by ±10%, schedulers and drivers do not know precisely how much milk they will load at each farm and rely on estimates from previous visits.

This variability makes it challenging for schedulers to ensure safety and efficiency without exceeding prescribed mass limits. Add in our changing weather patterns, and we have a varied and unpredictable transport category.

Vehicles

The milk transport industry uses a wide range of vehicle combinations. These combinations operate on access and mass schemes that vary considerably across a fleet and its routes. Typical combinations include:

- 6-axle semi-trailers
- 7, 8 and 9-axle B-doubles
- PBS, A-double and PBS dog trailer combinations.

The industry also employs a wide range of prime movers or towing vehicles from various manufacturers. Their 'driveability' and technology fit-outs vary considerably. European cab-over models are the most common, but there are many bonneted American models still in the fleet.

Roads and access

Dairy regions' road networks are typically narrow and winding, with sub-standard shoulders (often steep and typically in a poor state). These conditions add to farm pick-ups' difficulty.

Road and farm access conditions can limit the usable types and sizes of trucks. Many minor roads will not allow B-double or PBS vehicle access. To complicate this further, many farms on suitable B-double and PBS routes lack safe driveways for these combinations.

Pick-ups and driving

Milk is picked up 24 hours a day. Most transport companies have both day and night-shift drivers.

Many factors can influence when a farm pick-up occurs. These factors include milking times, vat capacity, milk temperature, road curfews and vehicle availability. Each farmer usually has a set time (or times) for trucks to arrive.

In coastal areas, early mornings and cold conditions often mean fog. There are some well-known crashes where fog was a major contributing factor, due to severely limited sight distances. Fog can be difficult to predict or forecast and an unexpected foggy morning can wreak havoc on schedules.

Seasonal variations

Milk production rates vary considerably due to seasonal factors, particularly in Australia's southeast. When rainfall is generous in early spring, high-quality grass is abundant. As a result, cows produce much more milk for a few months. This spike in production increases demand and puts pressure on carriers. Often, businesses recruit new drivers for this period, which can create skills and training challenges.

These challenges create further difficulties in Australia's current employment environment, with a severe shortage of skilled and experienced truck drivers. Transport operators often expect their permanent drivers to work and drive more hours during this period. The demand on the vehicle fleet to travel more kilometres frequently means double-shifting drivers, which has a flow-on effect on vehicle maintenance. Roads in poor condition further heighten the importance of vehicle maintenance, especially after a wet winter.

Finally, milk can vary in weight, but it is inconsistent across locations, meaning that one farm's milk may be 2–3% heavier than another's.

Scheduling

The factors discussed above make scheduling efficient, safe and compliant farm pick-ups a complex challenge.

Summary of operating condition challenges

- 5700 farms, each with unique characteristics and challenges
- Roads are typically narrow and winding, with poor shoulders
- Fog, floods, and fire
- A large variety of vehicles, combinations, and tanks
- A wide range of road access availability and conditions for vehicles
- Various mass compliance requirements and schemes
- Highly variable quantities of milk from each farm
- Varying milk densities
- Milk capacity gain during a pick-up run
- Drivers can have difficulties estimating tank levels at various capacities.
- Slosh and surge in tanks
- Farm pick-up times, farm close times
- Night shifts
- Seasonal peaks in production create pressure on existing drivers and fleet; extra drivers need to be found and trained for this period
- Scheduling for safety, compliance, and efficiency.

As a result of the limited notice provided to processors by farmers and farmers' increasing mobility between processors – a trend which is independent of, but potentially accelerated by, the DICoC – from around 1 June 2023 carriers may have less than a week's notice of significant changes to their freight task.

As a result many, perhaps most, drivers' routes are subject to change. Due to the limited time between notification of the change and commencement of collection at the new sites, drivers may be sent to collect from sites that a representative from the carrier has not yet visited.

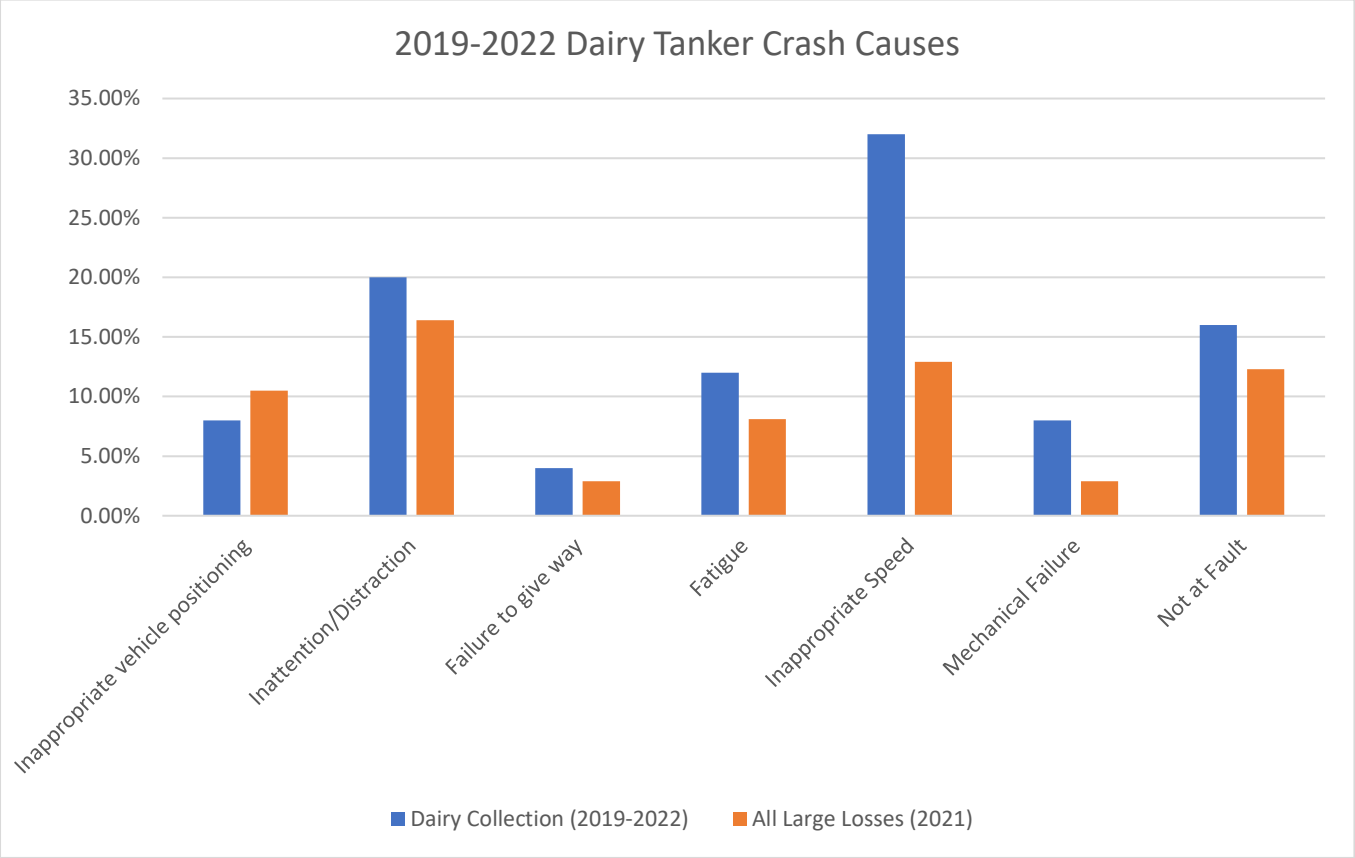
Consignor freight managers and carriers we engaged appeared to have individual strategies to mitigate the DICoC's impact on supply chain safety. However, there is no coordinated, industry-wide approach to addressing this challenge.

NTARC crash data

The project reviewed NTI's data on major incidents (greater than $50,000 incident cost) to identify trends in incidents involving dairy tankers (part of our annual National Transportation and Accident Research Report). Examining the causes of tanker incidents shows some critical differences between dairy tankers and the data for all vehicle types.

Inappropriate speed

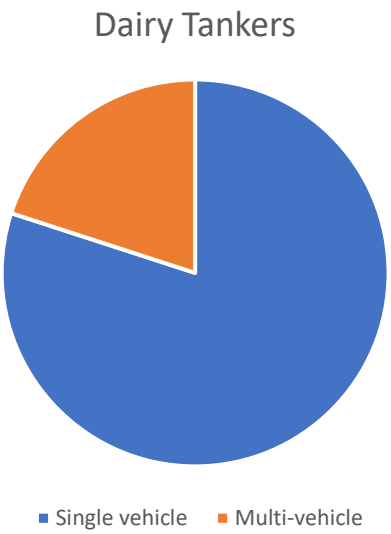
The most significant difference is the frequency of inappropriate speed crashes. These are predominantly single-vehicle 'untripped' rollover crashes. For dairy tankers, they represent one-third (32%) of all major incidents, compared to one-eighth (13%) for all unit types.

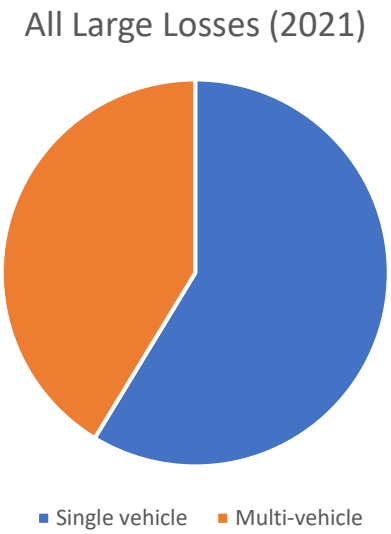


Note: The plot above does not include all loss causes, so totals do not equal 100%.

Single-vehicle vs multi-vehicle

Another critical difference in the dairy tanker crash data is the proportion of single-vehicle crashes: 80% only involved the tanker, compared to 59% for all vehicle types.

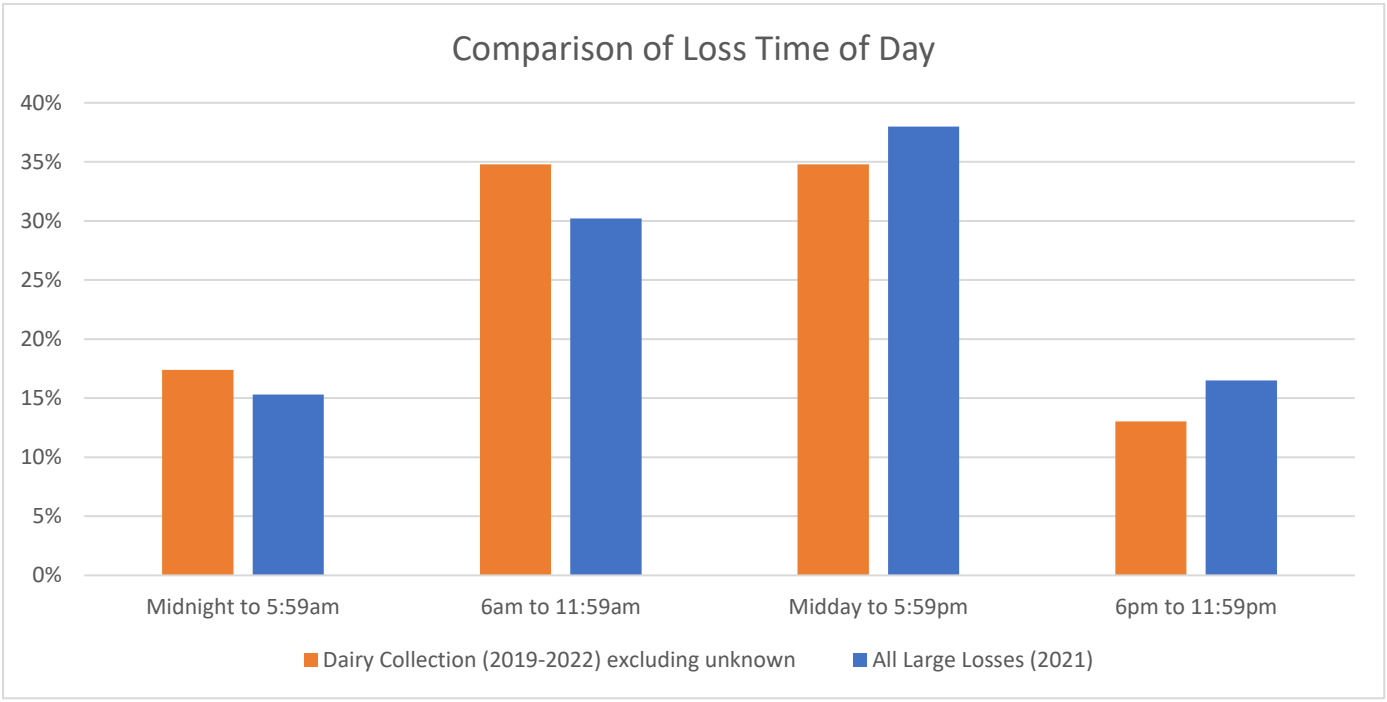




This difference likely reflects tankers' operating environments, with lower exposures to traffic than other freight tasks.

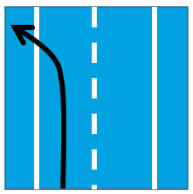
Time of day

The data shows that 'Dairy Collection' losses happen more often in the morning (midnight – 11:59 am) than the combined 'All Large Losses' category. However, the difference is smaller than might have been anticipated.



DCA categories

We also reviewed incidents involving tankers by their coding against Definitions for Coding of Accidents (DCA). We found that 60% of crashes involved dairy tankers leaving the roadway on their own.

Top 3 Dairy Tanker Incident DCA Categories			
Rank	**DCA Image**	**DCA Category**	**Percentage of crashes**
#1		Off path on curve	36%
#2		Off path on straight	24%
#3		Vehicles from same direction	12%

Identified themes

Overview

After analysing our crash data, and conducting desktop research on sizing of the issue and industry, our consultation period with the programme participants and industry partners highlighted high level themes for the project team and three key issues to be addressed in the materials being created.

Three key issues we need to address:

1. **Trainers:** Drivers value in-house trainers; however, there are few resources to support building or maintaining expertise
2. **Technology:** Participants understand of the industry's combinations, vehicles, components and technologies varied widely
3. **Knowledge:** Supply chain parties need support to understand dairy transport's challenges better.

Working from these themes and shifting to a 'subject-matter' view, we identified six key topic areas for the Spilt Milk project's artefact creation phase:

Key Topic Areas		
1		Vehicles and equipment
2		Slosh and surge
3		Electronic Stability Control
4		Farm risks
5		On-road risks
6		Supply chain risks

Vehicles and equipment

A recurring theme was the lack of detailed supporting material outlining the vehicles used in farm milk collection and the technologies they include (what's fitted, what they do and how they're used).

It is worth reiterating that this knowledge is collectively held in the bulk dairy supply chain. The opportunity here is not to deliver new information but to capture and distribute it to stakeholders.

Stakeholder-identified topics around vehicles and equipment include:

Milk tanker layout

Details outlining the key components and their functions, and milk tanker layouts. This information could include general construction, spill-over compartments, baffles (pin-mounted and flange-mounted), clean-in-place systems, pump and piping layout etc.

Tanker combinations and capacities

Information on common milk tanker combinations, capacity, mass, dynamic stability, and road and farm access requirements. These resources would be of particular value to schedulers and other stakeholders such as farmers, road managers and facility operators undertaking upgrades or construction.

Couplings, stability and the Holland Kompensator®

Drivers and driver trainers identified that there are limited resources around the dynamics of milk tanker combinations. The only existing artefact in widespread use is the VicRoads rollover training program, developed with significant input from Alan Pincott, a key Spilt Milk partner.

During consultation, we received specific requests for clarification around the impact of differing combination and coupling types (e.g. A-double vs B-double), and specifically about the Holland Kompensator® oscillating fifth wheel mounting system.

Slosh and surge

Understanding milk tanker rollovers and crashes

All agreed that it was important for everybody to understand crashes – what happens, and the 'how and why.' The shared understanding was that 'you can't control what you don't understand.' It was essential to develop a module that clearly explained what happens when combinations roll, the contributing factors and what drivers need to know.

While many liquid products are carted in tankers, milk tankers are unique. Food hygiene requirements dictate specific features, changing their dynamics and driveability.

Tankers for non-food liquids like fuel and dangerous goods typically have internal compartments and baffles to minimise sloshing. They also dictate loading plans. A milk tanker has little baffling apart from a 10,000-litre compartment at the front of the tank. This open internal structure minimises locations that might 'catch' bacteria, thus avoiding stringent tank-cleaning requirements. However, this makes milk tankers much more prone to rollovers than other tankers or trailers.

The concern is that many drivers do not understand where these compartments and baffles are and how full their tank may be at any given time during multiple farm pick-ups.

Roads and routes, change in risk along the journey (gain)

As previously described, dairy tanker drivers face unique risks – difficult road conditions, dynamic loads and more. Drivers must maintain their situational awareness, which is strongly impacted by their understanding of their vehicle and combination.

Industry feedback was universal in all stakeholders asking for a visual aid for each vehicle combination type that would be readily accessible to drivers as they change trucks.

Schedulers also need to understand this. They have the potential to ensure that the truck is not 50–75% loaded (the most dynamic and thus risk-increasing load range), on dangerous road sections.

Electronic Braking Systems (EBS) and Electronic Stability Control (ESC)

EBS and ESC are complementary technologies, with EBS a foundational component for ESC systems.

EBS: for faster braking responses

Electronic braking systems augment existing pneumatic controls. They generate electronic signals from the pedal to the valves that apply the brakes. These are much faster than pneumatic signals, allowing all brakes in a combination to respond nearly instantly. They're particularly valuable in longer and multiple-unit combinations.

ESC: to keep combos right-side up

ESC systems work alongside EBS to avoid rollovers. Sensors track wheel speed and lateral acceleration (cornering force). Where the system detects a truck entering a corner with too much speed or force, it can very lightly apply some brakes to add drag at each wheel, taking up any free play in the system and keeping the combination stable.

The system then monitors wheel speed. If a wheel's speed drops to zero or rapidly drops towards zero, it's likely to be off the ground.

Given the proportion of dairy tanker crashes involving a rollover, maximising the effectiveness of any technology that reduces the risk of such incidents is a priority.

As mentioned in our findings, most participants we engaged with were unaware of how to get the most value from EBS and ESC technologies. There is a significant opportunity to educate the industry about deploying and using them.

Starting with the 'why'

As many stakeholders were unaware of ESC's existence, operation, and potential benefits, resources in this area started with artefacts to raise awareness of and desire for ESC.

Supporting the 'how'

Once operators understand ESC's benefits, further artefacts focused on integrating the technology into business operations. These artefacts emphasise using the data ESC systems create to provide drivers and managers with data and feedback about their rollover risks.

People and coaching skills

With ESC providing many fleets with their first direct measure of driving behaviour, it is essential to help driver managers make good use of the information generated. We created resources to help managers have positive and effective discussions around driving behaviour based on insights provided by ESC data.

Farm risks

Building on the existing initiatives around capturing and distributing information about pick-up sites outlined in our pick-up site information capture, we provided templates and guidance for capturing and consistently sharing site information across the supply chain.

Site information exchange template

The first opportunity is to standardise procedures already in place. The one proposed addition is the final item below: guidance around the farm-to-public-road transition. The proposed structures would capture:

1. Key site hazards
2. Site name
3. Site contacts (name, number)
4. Location (region, district, locality, turn-in)
5. Site map
6. Access limitations
7. On-site equipment information
8. Turn-in and turn-out information (site distance, grades, cross-fall).

Site information exchange guidance

The next opportunity was creating a template to operationalise site information. This template includes guidance material for parties completing the template and businesses sharing the material.

Site access language and standards

To support better site design, on-site safety, efficient investment in site upgrades and uptake of higher productivity combinations.

The resources created explain how assessors determine what vehicles a site can accommodate, how changes to a site would allow higher productivity and how to construct a greenfield site to maximise productivity.

On-road risks

Understanding tanker crash risks

Drawing on information from NTI's National Truck Accident Research Centre (NTARC), we reviewed the causes and risk factors in dairy tanker crashes.

Informing supply chain parties of the factors contributing to crashes helps them make informed risk-management decisions.

Safe driving operations

These resources provide and support impactful safe tanker driving and operations training, either face-to-face or via electronic delivery (i.e. videoconferencing). These resources focus on hazards other than tanker slosh and surge, including operating conditions such as weather, challenging roads and other road users. They also address broader contextual and environmental factors such as physical and mental health, state-of-mind and structured thinking about the freight task.

Supply chain risks

Awareness of CoR obligations

Given the feedback on low levels of CoR awareness, particularly by parties further removed from the road, we created material that raises awareness of CoR and outlines the fundamental obligations of a supply chain party. Both sides of the processor-carrier relationship flagged that they felt they weren't getting the best value from their meetings. Spilt Milk provides guidance about what topics should be on the agenda to get the best outcomes regarding safety and value.

This includes two High Performing Dairy Supply Guides, a Site Information Exchange, and a meeting template.

Artefact Development

The team moved into artefact creation mode after phases 1 and 2 (recruitment and listening) and validating the themes. This stage was a collaborative process involving all the program participants. The development included videos, podcasts, templates, 'train the trainer' speaker's notes, trainee workbooks, depot posters, guides and a 3-D model diary tanker for training.

Spilt Milk: Resource Pack – 40 Artefacts

Topic	Primary Target	Guides	Training Slides	Speaker Notes	Trainee Workbook	Model Truck	eLearning Module	Videos	Depot Poster	Templates
1. Tanker Basics	Drivers / Driver Trainers	1	1	1	1	1	1	8	1	
2.Slosh and Surge	Drivers/ Driver Trainers		1	1	1		1	1 Hero (3 shorts)	1	1
3. ESC	Drivers/Driver Trainers	1						1	1	
4.On Road Hazards	Drivers/ Driver Trainers	2	1	1	1		1		1	1
4. On Farm Hazards	Full Chain	1					1		1	1
5. Supply Chain	Full Chain	2							1	1

Plus: One Overview Video on the Programme and One Artefact Guide on How to Use the Resources

Driver training materials

For each driver training topic, we provided a range of materials to assist trainers and drivers. Each set of materials was tailored to the subject matter and the audience's requirements:

1. **Tanker basics:** A visual guide and supporting materials covering the basics of tanker components, common tanker combinations and tanker combinations. It includes a visual guide, model truck, eLearning module, eight videos and a depot poster.
2. **Slosh and surge:** A training module in two parts, covering 'Why trucks roll' and second 'What makes dairy tankers different.' Each part includes training slides, speaker notes, a trainee workbook, depot poster and a template.
3. **On-road hazards:** A training module covering 'Transport activity management,' including loading and route planning, and situational awareness and on-road hazards. It includes two visual guides, training slides, speaker notes, a trainee workbook, depot poster and a template.

NOTE: All of the Spilt Milk videos are available on YouTube:
https://www.youtube.com/playlist?list=PLuoYgyVrzMp6pd__P0RoaiUp1znfDhem-

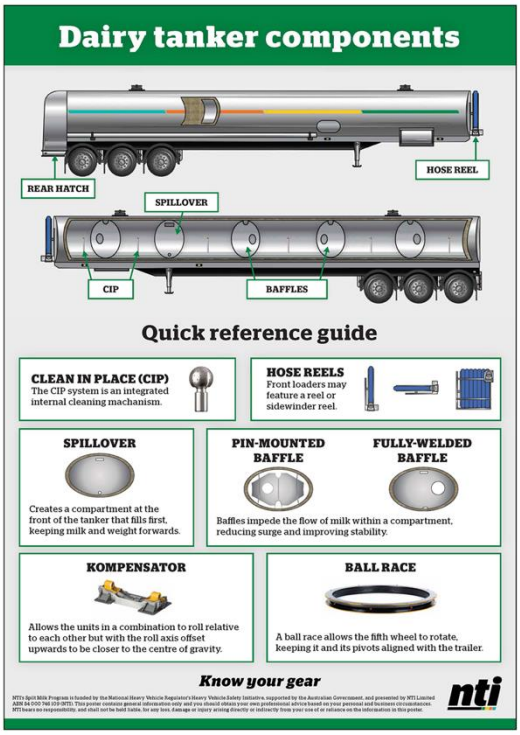
Tanker basics artefacts

A visual guide and supporting materials covering the basics of tanker components, common tanker combinations and tanker combinations. It includes a visual guide, model truck, eLearning module, eight videos and a depot poster.

Guide

Model truck

Poster



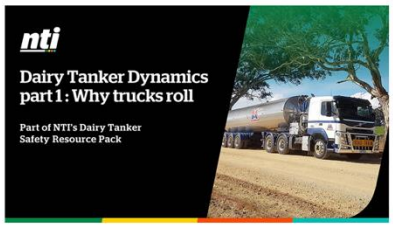
Video (8 total)

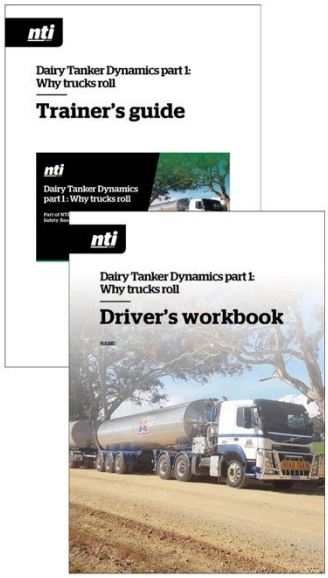
eLearning

Slosh and surge artefacts

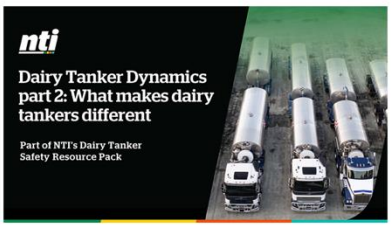
A training module in two parts: 'Why trucks roll' and 'What makes dairy tankers different'. Each part includes training slides, speaker notes, a trainee workbook, depot poster and template.

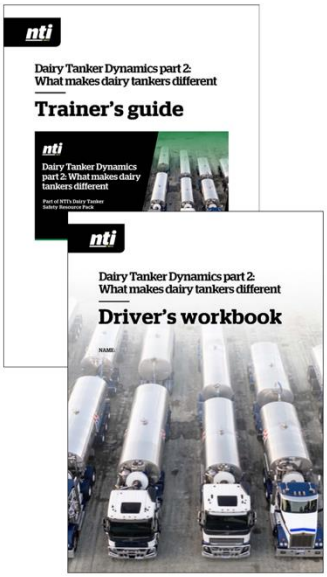
Part 1:
Why trucks roll



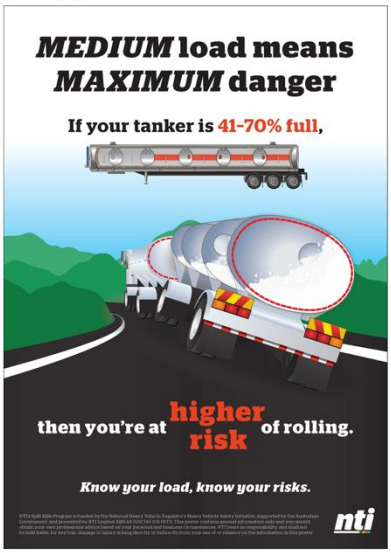


Part 2: What makes
dairy tankers different

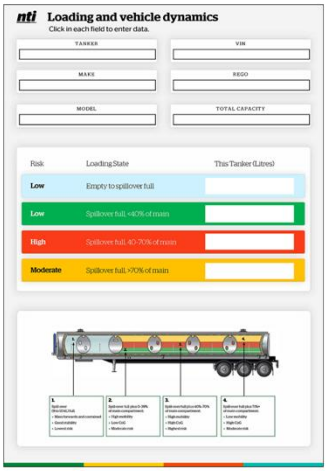




Poster



Template

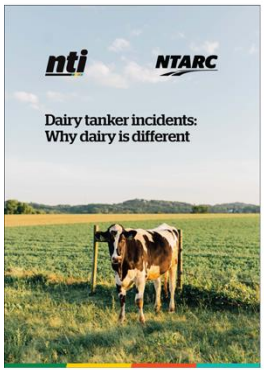


Video (1 'hero', 3 shorts)

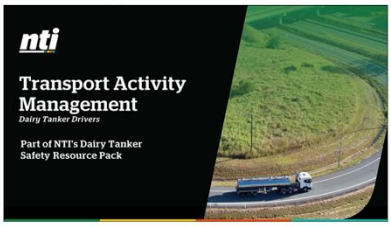
On-road hazards artefacts

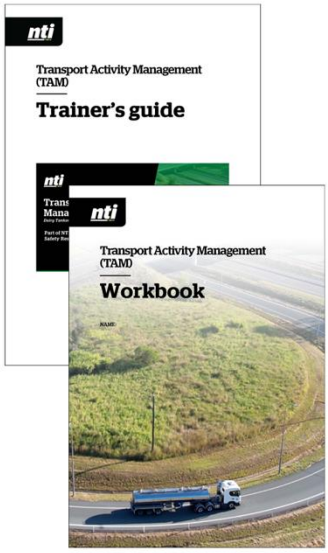
A training module covering 'Transport activity management', including loading and route planning, and situational awareness and on-road hazards. It includes a visual guide, training slides, speaker notes, a trainee workbook and a depot poster.

Guide

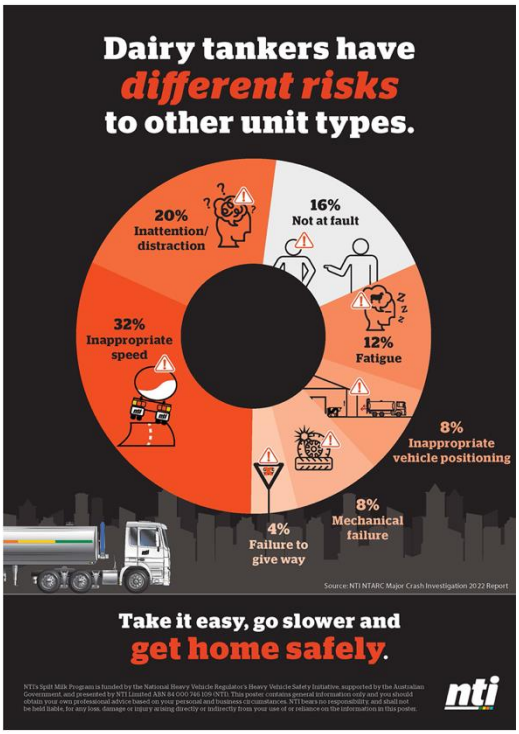


Training materials





Poster



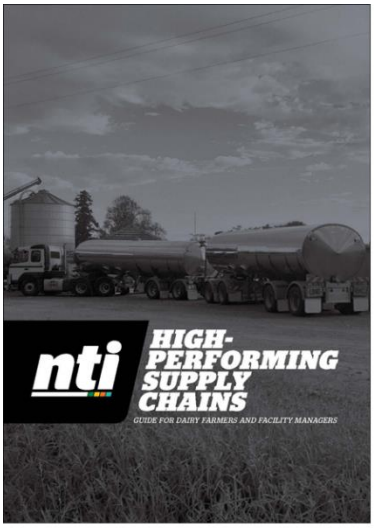
Other materials

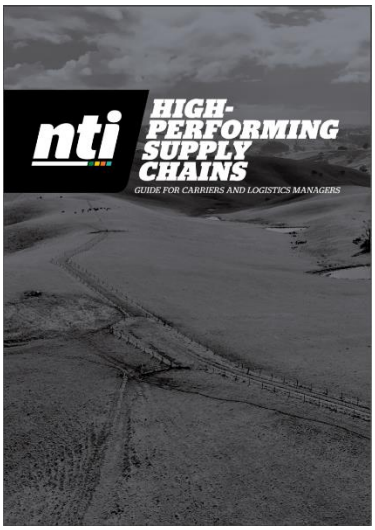
On-farm hazards artefacts

A training module covering 'Transport activity management' including loading and route planning, and situational awareness and on-road hazards. It includes a visual guide and a datasheet template.

Supply chain artefacts

The team developed two *High performance supply dairy supply chain guides: one for* farmers and facilities managers, and one for carriers and logistics managers. The guides aim to interpret the CoR responsibilities for on-farm, on-road and processing facility activities. The guides show what a high-performing dairy transport supply chain looks like, lays out principles, describes roles, explains how the principles work in practice and provides case studies to show them in action. A meeting agenda template helps ensure all critical items are covered in team meetings between carriers and processors. The project was not able to obtain full engagement or endorsement of these guides from the programme participants, and as a result, have not released these drafts to the public. NTI will continue to seek feedback and refine with a goal of public release. All programme participants received copies of these draft guides for consideration and integration into their operational processes.





Model truck

Driver trainers repeatedly expressed their desire for a see-through model of a dairy tanker to help illustrate slosh and surge. So, the project team engaged a model developer. Using scale measurements provided by dairy manufacturers, we created a model truck to assist the program participants with training. Twelve trucks were developed and delivered to programme participants for the purposes of driver training support.

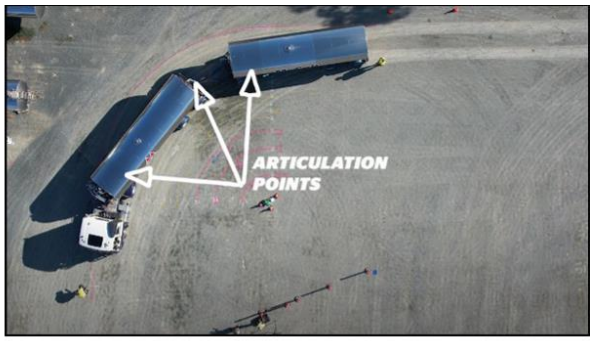
Slosh and surge video

It was difficult for trainers and drivers to understand the mechanics of exactly what happens in the tank when driving, or to visualise what happens on a turn when they are behind the wheel of different tanker configurations. We worked with the program participants to develop world-first videos and in-tank footage to illustrate these situations and thank **7RLogistics** for the truck and driver.

The video is available on YouTube:
https://www.youtube.com/watch?v=V0vs_H5-xx0&list=PLuoYgyVrzMp6pd__P0RoaiUp1znfDhem-&index=2&t=15s

Swept path video

It is critical for drivers to know their combination's 'swept path'. Swept path indicates turning performance – how much a trailer (or trailers) 'cut in' to a corner's apex. We shot the video with assistance from expert **Peter Harbridge** and using a yard and vehicles provided by **McColl's**, the video clearly indicates swept paths for typical dairy transport combinations.



The video is available on YouTube:
https://www.youtube.com/watch?v=pjI48aWsRVk&list=PLuoYgyVrzMp6pd__P0RoaiUp1znfDhem-&index=6&t=106s

Electronic Stability Control (ESC) video

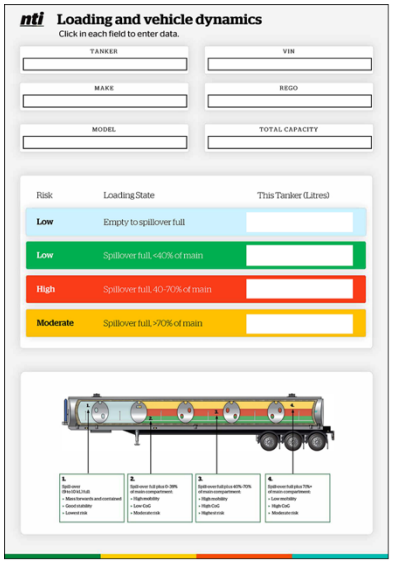
It's also critical for drivers to understand how ESC works and what systems are fitted to their vehicles. ESC systems automatically intervene – for example by applying brake or steering inputs – when it detects signs that a vehicle is likely to slide or roll. We shot the video with assistance from expert **ABS Braking's Shane Prendergast** using a yard and vehicles provided by **SRH**, the video clearly indicates swept paths for typical dairy transport combinations.

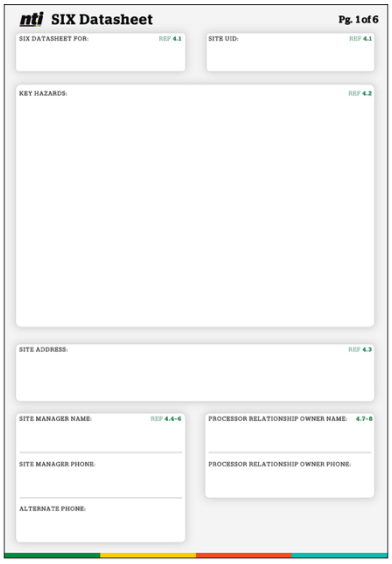
The video is available on YouTube:
https://www.youtube.com/watch?v=oompqtxepaY&list=PLuoYgyVrzMp6pd__P0RoaiUp1znfDhem-&index=7&t=8s

Templates

As noted above, we produced several templates. These are forms that drivers and dairy farm operators can fill out. They centralise critical information and help ensure all parties understand their risks, responsibilities, and requirements. The Loading and vehicle dynamics is meant to be filled out by drivers for each tanker they drive. We know that your fill risk changes based on how much milk is in the tank: Drivers understanding at what fill level they are most vulnerable is critical.

The Site Information Exchange template was the outcome of our workshop engagement meetings with Carriers and Consignors. In dairy transport, pick up contracts can change hands overnight. When this happens, all the institutional knowledge around safety issues goes with it. All programme participants agreed that they don't compete on safety and would welcome a template that Dairy Processors could own, and share with new carriers each time a contract changes hands. The template would include key safety information such as winding roads, access issues, ideal tanker size, daycare on site, etc. The ideal next step for the template would be widespread take up from industry and a centralised database.





Project governance

NTI's Project Management Office governed the project. This oversight included developing a charter and establishing a Steering Committee. The Steering Committee members were:

- Chris Hogarty, Chief Sustainability Officer, NTI
- Jason Chappel, State Manager VIC, NTI
- Brooke Caldwell, National Heavy Motor Product Manager - Fleet
- Luke Muller, National Manager Communications and Engagement
- Adam Gibson, Transport Research Manager.

The Steering Committee met monthly and reviewed the budget, project deliverables and risk register.
In addition to the steering committee, NTI allocated to the Project the following resources:

- Cara Walsh, Project Manager
- Natalie Easter, Communications Manager
- Kelly McLuckie, Culture and Change Manager
- Daniel Bray, Learning and Capability Facilitator
- Jenni Ross – Janett, Training Consultant
- Paul Soppitt – Financial Oversight
- Other internal resources on an 'as needed' basis for strategy and content development.

Our finance team oversaw all invoices and payments and the creation of the milestone reports submitted to the NHVR. NTI's Chief Finance Officer, Jeremy Mitchell, reviewed and signed all milestone and progress reports before submission.

Lessons learned

As with any project of comparable size, Spilt Milk had its share of successes and opportunities to improve. With the benefit of hindsight, we recognise a number of 'lessons learned' that will inform future projects and may be valuable to other industry partners. They include:

- Educating, recruiting and getting 'buy-in' from industry participants was difficult and took longer than expected – carriers and consignors are busy. This was unexpected and a stark contrast to similar work with the forestry industry (around a decade ago). We suspect this is largely because the forestry industry initiated their program. In future, we recommend securing industry support from the outset or, failing that, allocating more time to recruiting.
- As carriers are busy, scheduling workshops and filming dates was very challenging. Driver shortages further complicated scheduling.
- While we had, overall, good engagement from carriers, consigners were less enthusiastic. We suspect this is because the program was seen as focusing on vehicles, not facilities. Communicating the program's value to consigners at the outset may have helped.
- In retrospect, we aimed to deliver too many artefacts. A smaller, more closely focused program would have been simpler.
- Similarly, we would fine-tune the format of our deliverables away from formal, classroom-oriented training materials and toward artefacts to support informal, 'organic' training.

More broadly, we suggest that the industry needs to fully commit itself to improving training and safety outcomes.

In 2008 the forestry transport sector recognised that it had safety problems. Key players came together, sought outside input and collaborated on a safety training program. The results were striking; with near-immediate effect, incidents and fatalities began trending downwards.

The dairy transport industry needs to do the same. We have produced – with industry input – a sizeable array of informational, operational and training assets. Early feedback indicates that many of these have been well-received.

We have provided incident data and broken down the key concepts. We have provided training decks, depot posters, templates for consignors and more. However, we cannot mandate their use.

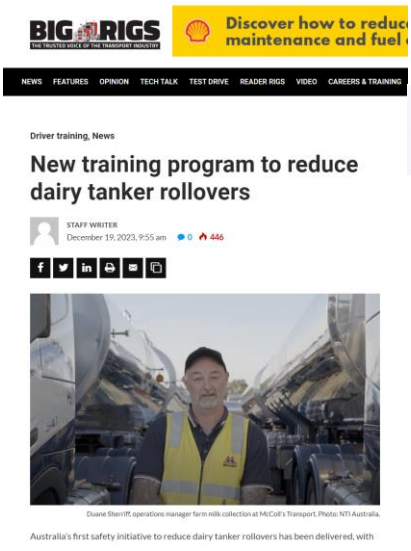
It's now time for the industry – carriers and consignors alike – to play their part.

Media

To promote project awareness and encourage industry uptake, we undertook a range of promotional and communications activities as the program progressed. As of January 2024 these included a total of 77 media pieces with a story audience minimum of 20,000:

- 6 newspaper stories
- 19 AM radio stories
- 2 FM radio stories
- 48 online articles
- 3 magazine articles
- 4 Press releases
- 4 Videos Displayed at a Brisbane truck show
- Two podcasts

In addition, we know anecdotally, that the program has been mentioned in LinkedIn and other social media channels (i.e. Dairy Tanker's Facebook page).


BIG RIGS

Discover how to reduce maintenance and fuel

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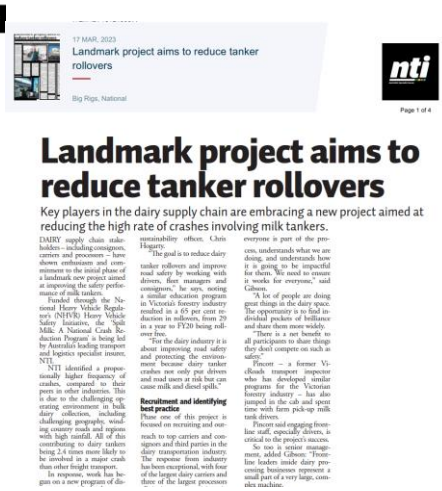
Driver training, News

New training program to reduce dairy tanker rollovers

STAFF WRITER
December 19, 2023, 9:55 am

Duane Sherriff, operations manager farm milk collection at McColl's Transport. Photo: NTI Australia.

Australia's first safety initiative to reduce dairy tanker rollovers has been delivered, with


17 MAR, 2023

Landmark project aims to reduce tanker rollovers

Big Rigs, National

nti

Page 1 of 4

Landmark project aims to reduce tanker rollovers

Key players in the dairy supply chain are embracing a new project aimed at reducing the high rate of crashes involving milk tankers.

DAIRY supply chain stakeholders – including consignors, carriers and processors – have shown enthusiasm and commitment to the initial phase of a landmark new project aimed at improving the safety performance of milk tankers.

Funded through the National Heavy Vehicle Regulator's (NHVR) Heavy Vehicle Safety Initiative, the 'Spilt Milk: A National Crash Reduction Program' is being led by Australia's leading transport and logistics specialist insurer, NTI.

NTI identified a proportionally higher frequency of crashes, compared to their peers in other industries. This is due to the challenging operating environment in bulk dairy collection, including challenging geography, winding country roads and regions with high rainfall. All of this is contributing to dairy tankers being 2.4 times more likely to be involved in a major crash than other freight transport.

In response, work has begun on a new program of dis-

sustainability officer, Chris Hegarty.

"The goal is to reduce dairy tanker rollovers and improve road safety by working with drivers, fleet managers and consignors," he says, noting a similar education program in Victoria's forestry industry resulted in a 65 per cent reduction in rollovers, from 29 in a year to FY20 being rollover free.

"For the dairy industry it is about improving road safety and protecting the environment because dairy tanker crashes not only put drivers and road users at risk but can cause milk and diesel spills."

Recruitment and identifying best practice

Phase one of this project is focused on recruiting and out-

reach to top carriers and consignors and third parties in the dairy transportation industry. The response from industry has been exceptional, with four of the largest dairy carriers and three of the largest processors

everyone is part of the process, understands what we are doing, and understands how it is going to be impactful for them. We need to ensure it works for everyone," said Gibson.

"A lot of people are doing great things in the dairy space. The opportunity is to find individual pockets of brilliance and share them more widely.

"There is a net benefit to all participants to share things they don't compete on such as safety."

Pincott – a former Victorian transport inspector who has developed similar programs for the Victorian forestry industry – has also jumped in the cab and spent time with farm pick-up milk tank drivers.

Pincott said engaging front-line staff, especially drivers, is critical to the project's success.

So too is senior management, added Gibson: "Front-line leaders inside dairy processing businesses represent a small part of a very large, complex machine.


THINK TANK

The SAF-Holland Kompensator fifth wheel is an application defining piece of equipment in the road tanker category. SRH Milk Haulage, a leading player in the segment, rely on it so much it's specified across the entire fleet.

In the cut and thrust of moving milk tankers between dairies and delivery destinations the conditions that fleets, who specialise in this unique application, encounter are less than ideal. Heavy loads moving inside bulk tankers on shifting, rutted and often muddy terrain are commonplace. The equipment adopted by these carriers, however, is not. Because of the challenging operating environment, milk tankers have distinct engineering and physical attributes that have made them particularly susceptible to rollovers — a situation the most experienced of

drivers find it often hard to anticipate. Findings from the NTI indicate that tanker rollovers, while not prevalent, account for the highest proportion of such incidents across the industry with dairy tankers found to be 2.4 times more likely to be involved in a major crash than other freight transport. Being stable is not just a state of mind. Kompensating fifth wheel assemblies have been providing fleets in the dairy industry with significant safety advantages over many years. For SRH Milk Haulage the use of the SAF-Holland Kompensator dates back to its

inauguration in 1994. The product is now in use company wide. The SAF-Holland Kompensator is a fifth wheel specifically designed to provide both front-to-rear and controlled side-to-side oscillation between the truck, customarily a Volvo in the case of SRH Milk Haulage, and semi-trailer. Company founder and Director Scott Harvey says every truck in his fleet of over 70 prime movers is equipped with a Kompensator for the safety aspect alone. "To the milk is going one way and the turntable is going the other, the Kompensator keeps it more stable," he

One of the big successes of the programme was seeing some of the programme participants promoting their involvement in the initiative, including McColls as seen here.

THE STANDARD

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Milk tanker operator McColls is aiming to reduce truck rollovers

By Andrew Miller
March 15 2023 - 6:00am

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McColl's Transport chief executive Simon Thornton said while tanker roll-overs were rare, the company was sponsoring a new initiative aimed a prevention. Picture supplied

The head of one of Victoria's biggest milk tanker companies says training and technology are overcoming the problem of truck rollovers, most prevalent in Gippsland and western Victoria.

A study has found tankers were 2.4 times more likely to be involved in a major crash than other heavy vehicles.

Summary

NTI is proud of the Spilt Milk program and congratulates its partners and stakeholders. We particularly thank our industry participants for their generosity with their time and resources. We set out to identify what some of the key safety considerations were that contribute to the 2.4 times higher rate of major incidents on diary tankers, and then create educational materials to close that education gap. We believe we have achieved that goal.

Initial responses have been positive. In particular, the videos we produced have delivered never-before-seen insights into how milk loads slosh and surge in real-life situations.

Similarly, our 'depot' artefacts – the guides, posters and templates – serve as useful reference material for operators around the country.

While we would certainly fine-tune our approach to any similar projects in the future, Spilt Milk has delivered on its brief and is contributing to improved dairy tanker safety for all partners who are using the materials.

Finally, as noted in 'Lessons learned,' the ball is now in the industry's court. We have provided the materials to improve driver safety and reduce incidents. It's up to carriers and consignors to put them to use and drive the good results we all want to see. We look forward to continuing to support the participants and industry where we can see the positive safety benefits in the years to come.

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Map of Australia demonstrating the eight dairy regions. (2022, January 16). *Australia's Dairy Regions.* Retrieved from https://www.dairy.edu.au/resources/photo-resource/dairy-regions-of-australia

Spilt Milk Information and Materials: https://www.nti.com.au/spilt-milk-materials

NTI's Spilt Milk Initiative is aimed at reducing dairy tanker rollovers. It is funded by the National Heavy Vehicle Regulator's Heavy Vehicle Safety Initiative, supported by the Australian Government, and presented by NTI Limited ABN 84 000 746 109 (NTI).