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**HEALTH AND SAFETY EXECUTIVE  
AGRICULTURE INDUSTRY ADVISORY COMMITTEE (AIAC)**

**Current trends in agriculture machinery fatal incidents**

**Summary**

1. This paper gives an overview of recent agricultural machinery fatal incidents to
  - (a) enable AIAC members to better understand current trends in agricultural machinery incidents; and
  - (b) discuss factors relevant to these incidents and identify opportunities for further work to reduce the number of agricultural machinery fatalities.

**Background**

2. The AIAC receives information on agricultural fatalities. While the information presented enables members to consider incidents and trends within year, and provides an overview of trends across the industry, the lack of detail and analysis across an extended period of time and range of incidents makes it difficult to identify opportunities for new initiatives targeted at particular types of accident.
3. This paper looks at fatal agriculture machinery incidents over the period April 2003 – March 2014. It includes provisional data for the year 2013/14 so may be subject to change, but any changes are likely to be minor, and not affect the conclusions of the paper.
4. For the purposes of the analysis the term agriculture includes forestry, arboriculture, horticulture and amenity landscaping and a fatal machinery incident includes any fatality which involved an agricultural machine. This includes; being entangled in the moving parts of machine; being struck by part of a machine or attachment on a machine; run over by an agricultural machine; being killed by an overturning agricultural machine; being electrocuted while operating an agricultural machine; or falling from an agricultural machine.

*Statistics*

5. During the period 2004 - 2014, 406 people died in work related agricultural incidents. Of these 199 (49%) involved an agricultural machine. The table below summarises the 199 fatal machinery incidents.

<b>Accident type</b>	<b>Number of fatalities</b>	<b>% of machinery incidents</b>	<b>% of total fatal incidents</b>
Workplace transport	124	62	30
Contact with moving machinery	35	18	9
Struck by machinery	25	12	6
Electrocution	8	4	2
Falls	8	4	2

### *Workplace transport*

6. Workplace transport accounts for 62% of fatal machinery incidents. Of the 124 people killed, 64 people were run over, 55 people were killed when the vehicle overturned and 5 were killed in collisions
7. Almost every type of commonly encountered machine in agriculture has been involved in a workplace transport fatality although tractors, ATV's and telehandlers account for 88% of the workplace transport fatalities.
8. Of the 64 people run over, 8 were children and 21 (30%) were killed when the vehicle was in reverse. Of most concern is that 37 (60%) of the people run over in agriculture are the vehicle driver who has either left the operating position while the vehicle is in motion, tried to start the vehicle from somewhere other than the operating position or commenced work on or around the vehicle without engaging the handbrake.
9. Of the 55 people killed when vehicles overturned, 25 were killed by tractors, 24 were killed by ATV's, 3 were killed by ride on mowers, 2 were killed by four-wheel drive vehicles and 1 was killed by a telehandler.
10. In 12 of the 25 overturning tractor fatalities the driver was ejected from the cab, with no evidence that they were wearing a seatbelt and in two cases the deceased was a passenger, including one child.
11. 24 people were killed when ATV's they were riding overturned. Factors identified as contributing to the incidents were: operator untrained; excess speed; poor route selection; lack of maintenance (particularly tyres and brakes); and operator not wearing PPE.

### *Contact with moving machinery*

12. Contact with moving machinery accounts for 35 (18%) of the agriculture machinery fatalities. Round balers (6), chainsaws (5), unguarded power take off shafts (4), feed mixers (3) potato harvesters and combines (2 each) account for the majority of the incidents, but just about every type of common agriculture machine has been involved in a fatal incident.
13. In 29 of the fatal incidents the machine was undergoing some form of maintenance at the time the incident occurred (planned maintenance, breakdown repairs or clearing blockages). In 9 incidents the machine was described as 'inadequately guarded'. In only 6 of the incidents, 5 of which were chainsaws, was the machine in normal use when the accident occurred.

### *Struck by machinery*

14. Being struck by an agricultural machine or part of a machine accounts for 25 (12%) of the fatal agricultural machinery incidents. Typical cause of incidents were implements falling from machinery or the deceased becoming trapped between different parts of the machine.

15. In eight incidents the deceased was struck by something falling from a vehicle or machine, or the machine itself where it fell from supports which it was being maintained. In five incidents the deceased was trapped by a descending trailer tailgate (either because it was being lowered by the operator, unaware that the deceased was present or because the operator was struck by the descending tailgate while checking that the trailer was empty). Four were trapped by descending loader arms and four by loader buckets which became detached from the loader arms (on three occasions due to using the bucket as a means of driving in fence posts). In addition, there were single fatal incidents where the deceased was struck by a baler tailgate, bale grab, digger, and telehandler bucket

### *Electrocution*

16. Electrocution accounts for 4% of the fatal incidents involving agricultural machinery. 7 of the 8 electrocutions were the result of contact with an overhead power line. 2 of these involved tipper lorries, 2 tractors and tipping trailers, 1 a lorry mounted crane, 1 a potato harvester and 1 a soil auger. The remaining incident occurred during welding.

### *Falls*

17. Falls account for 4% of the fatal incidents involving agricultural machinery – 8 over the period in question. The majority of these occurred when telehandlers or tractor mounted fore end loaders were used to provide improvised means of gaining access to height (2 potato boxes, 2 telehandler buckets and an apple box. The deceased either fell from the improvised working platform or the platform fell from the forks of the telehandler or fore-end loader. Two others involved falls from MEWP's while the final fall was from a tractor cab.

## **Recommendations**

It is recommended that AIAC members note:

- (a) Workplace transport is the biggest cause of fatal incidents involving agricultural machinery. Of particular concern is the number of operators run over by their own vehicle. It is recommended that 'Safe Stop' continues to be promoted amongst AIAC member organisations;
- (b) More than 80% of fatal agricultural machinery incidents involving contact with the moving parts of the machine occur when the machine is undergoing planned or unplanned maintenance, or when blockages are being cleared. The chainsaw is the only machine routinely involved in incidents in normal use. It is recommended that 'Safe Stop' continues to be promoted by and amongst AIAC member organisations and that AIAC supports initiatives by the industry to improve standards of chainsaw training;
- (c) Persons struck by agricultural machinery are often using the machines in ways not foreseen by the manufacturer and consider the extent to which manufacturers should address these and how AIAC can promote good practice;
- (d) Contact with overhead power lines is the biggest cause of electrocutions in agriculture. It is recommended that AIAC members consider how they may promote good practice by and amongst their members and support existing engagement with the Energy Networks Association Public Safety.; and

- (e) The high incidence of fatal falls from agricultural machinery that occur when machines are used as a means of supporting an improvised work platform and consider means of further promoting good practice.

### **Action**

17. Members are invited to note the causes of machinery fatalities and consider what each organisation can do within its own field of influence to reduce the number of fatal incidents involving agricultural machinery. In particular, AIAC members should note that we are not facing new problems, but need to consider new strategies for solving existing ones.

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