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HEALTH AND SAFETY EXECUTIVE

AGRICULTURE INDUSTRY ADVISORY COMMITTEE (AIAC)

Current trends in agriculture machinery fatal incidents April 2003 – March 2016

Summary

1. This paper updates the AIAC paper '*Current trends in agricultural machinery fatal incidents*' (14/11/01 dated November 2014, data from the earlier report shown in italics) and gives an updated overview of recent agricultural machinery fatal incidents to:
 - (a) enable AIAC members to better understand current trends in agricultural machinery incidents;
 - (b) note any significant changes since November 2014; and
 - (c) 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 2016, so includes two more years than the earlier paper. Significant changes over the past two years are noted. The paper includes provisional data for the year 2015/16 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 in this paper, the term agriculture reflects the composition of AIAC/AFAG and includes forestry, arboriculture, horticulture and amenity landscaping. A fatal machinery incident includes any fatality which involved a machine used for field work in these industries (although the incident may not have occurred in the field). 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 a machine; being killed by an overturning machine; being electrocuted while operating a machine; or falling from a machine.

Statistics

5. During the period April 2003 – March 2016, 471 (406) people died in work related agricultural incidents. Of these 225 (199) (48%, 49%) involved an agricultural machine. Therefore there have been 26 fatal incidents involving agricultural machinery since March 2014. The table below summarises the 225 (199) fatal machinery incidents.

Accident type	Number of fatalities	% of machinery incidents	% of total fatal incidents
Workplace transport	139 (124)	62 (62)	30 (30)
Contact with moving machinery	41 (35)	18 (18)	9 (9)
Struck by machinery	28 (25)	12 (12)	6 (6)
Electrocution	9 (8)	4 (4)	2 (2)
Falls	9 (8)	4 (4)	2 (2)

**Table 1: Accidents involving agricultural machinery April 2003 – March 2016
(April 2003 – March 2014 in italics)**

6. The table indicates that there has been little change in the frequency or type of machinery accidents in the past two years.

Workplace transport

7. Workplace transport continues to account for 62% (62%) of fatal machinery incidents. Of the 139 people who received fatal injuries, 69 (64) people were run over, 65 (55) people died when the vehicle overturned and 5 died in collisions
8. 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% (88%) of the workplace transport fatalities.
9. Of the 69 (64) people run over, 8 (8) were children and 24 (21) (35% (30%)) died when the vehicle was in reverse. Of most concern is that 39 (37) (60%) (57%) 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.
10. Of the 65 (55) people who died when vehicles they were operating overturned, 28 (25) were riding in tractors, 29 (24) died as a result of overturning ATV's, 3 (3) were killed by ride on mowers, 2 (2) were killed by four-wheel drive vehicles, 2 (1) were killed by a telehandler and 1 (0) by a self-propelled sprayer.
11. In 18 (12) of the 32 (25) overturning tractor or self-propelled vehicle fatalities the vehicle was fitted with a cab and 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.
12. 27 (24) people were killed when ATV's they were riding overturned. Factors identified as contributing to the incidents were: the operator being untrained; excess speed; poor route selection; lack of maintenance (particularly tyres and brakes); and the operator not wearing PPE. In addition, there were two fatal incidents involving SBS ATV's. In each case the operator was ejected from the cab and the incidents are referred to in paragraph 10.

Contact with moving machinery

13. Contact with moving machinery accounts for 41 (35) (18%, 18%) of the agriculture machinery fatalities. Round balers 7 (6), chainsaws 7 (5), unguarded power take off shafts 4 (4), feed mixers 4 (3) potato harvesters and combines (2 (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.
14. In 33 (29) (80%, 83%) 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 8 (6) of the incidents, 7 (5) of which were chainsaws, was the machine in normal use when the accident occurred.

Struck by machinery

15. Being struck by an agricultural machine or part of a machine accounts for 28 (25) (12%, 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.
16. In 8 (8) 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 6 (5) 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). 5 (4) 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, telehandler bucket or material ejected by a flail hedge trimmer.

Electrocution

17. Electrocution accounts for 4% (4%) of the fatal incidents involving agricultural machinery. 8 (7) of the 9 (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 1 a flat-bed lorry cab and 1 a soil auger. The remaining incident occurred during welding.

Falls

18. Falls account for 4% (4%) of the fatal incidents involving agricultural machinery – 9 (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 and one from a tractor cab. While the most recent fall was from a trailer collecting bales.

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) 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. AIAC should consider the extent to which manufacturers should address this 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 Forum;
- (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;
- (f) There has been little change in the rates or types of fatal machinery incidents in the past two years.

Action

17. Members are invited to note the causes of machinery fatalities, that there is little to indicate that the management of machinery or transport risks is improving 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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