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## **HEALTH AND SAFETY EXECUTIVE**

### **AGRICULTURE INDUSTRY ADVISORY COMMITTEE (AIAC)**

#### **Current trends in agriculture machinery fatal incidents April 2003 – March 2017**

##### **Summary**

1. This paper updates the AIAC paper '*Current trends in agricultural machinery fatal incidents*' (14/11/01 dated November 2014 and updated in 2016. Data from the 2016 report is 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 as both safety alerts and through HSE's annual report 'Fatal injuries in agriculture, forestry and fishing in Great Britain' <http://www.hse.gov.uk/agriculture/pdf/ag-fatal-1617.pdf> 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 over an extended period of time and range of incidents makes it difficult to assess the progress of existing interventions and 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 2017, so includes an additional year when compared to the previous paper. Any significant changes over the past year are noted. The data for 21016/2017 is provisional so may be subject to change, but any changes are likely to be minor, and unlikely to 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 in these industries). This includes being; entangled in the moving parts of machine; struck by part of a machine or attachment on a machine; run over by a machine; killed by an overturning machine; electrocuted while operating a machine; or falling from a machine.

## Statistics

5. During the period April 2003 – March 2017 501 (471) people died in work related agricultural incidents. Of these 243 (226) (49%, 48%) involved an agricultural machine. Therefore there have been 17 fatal incidents involving agricultural machinery since March 2016. The table below summarises the 243 (226) fatal machinery incidents.

| Accident type                 | Number of fatalities | % of machinery incidents | % of total fatal incidents |
|-------------------------------|----------------------|--------------------------|----------------------------|
| Workplace transport           | 148 (139)            | 60 (62)                  | 30 (30)                    |
| Contact with moving machinery | 42 (41)              | 17 (18)                  | 8 (9)                      |
| Struck by machinery           | 32 (28)              | 13 (12)                  | 6 (6)                      |
| Electrocution                 | 12 (9)               | 5 (4)                    | 2 (2)                      |
| Falls                         | 9 (9)                | 2 (4)                    | 2 (2)                      |

**Table 1: Accidents involving agricultural machinery April 2003 – March 2017  
(April 2003 – March 2016 in italics)**

6. The table indicates that there has been little change in the frequency or type of machinery accidents since March 2003, nor in the past 12 months.

### Workplace transport

7. Workplace transport continues to account for the majority of workplace deaths involving machinery (60%, 62%). Of the 148 people who received fatal injuries, 73 (69) people were run over, 68 (65) people died when the vehicle overturned and 7 (5) died in collisions with fixed objects such as doorways, gate posts or trees.
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 89% (88%) of the workplace transport fatalities.
9. 2016/17 included the death of a child run over by a reversing telehandler. Of the 73 (69) people run over since April 2003, 9 (8) were children and 25 (24) (34% (35%)) died when the vehicle was in reverse. Of most concern is that 40 (39) (55%, 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. Following the principles of 'Safe Stop' would have prevented these incidents.
10. Of the 68 (65) people who died when vehicles they were operating overturned, 30 (28) were riding in tractors, 30 (29) 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 20 (18) 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. 30 (29) 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 side-by-side 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 42 (41) (18%, 18%) of the agriculture machinery fatalities. Unusually, there was a fatality in 2016/17 involving entanglement with an unguarded power take off, the first for a number of years. Round balers 7 (7), chainsaws 7 (7), unguarded power take off shafts 5 (4), feed mixers 4 (4) potato harvesters and combines 2 (2) 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 (33) (80%) 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 10 incidents the machine was described as 'inadequately guarded'. In only 9 (8) of the incidents, 7 (7) 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 32 (28) (13%, 12%) of the fatal agricultural machinery incidents. Typical causes of incidents were implements falling from machinery or the deceased becoming trapped between different parts of the machine, often when attaching it or removing it from a three-point linkage.
16. In 12 (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 2016/2017 this included two vehicles falling from lift trucks that had been supporting it and two occasions where the deceased was struck by implements being detached from a tractor. In 6 (6) 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 (5) 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. There were three fatalities due to electrocutions in 2016/2017, all involving machinery contact with overhead power lines. Electrocution accounts for 5% (4%) of the fatal incidents involving agricultural machinery. The majority of incidents (11 out of 12) were the result of contact with an overhead power line. 2 of these involved tipper-lorries, 4 (2) tractors and tipping trailers, 2 (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 2% (4%) of the fatal incidents involving agricultural machinery – 9 (9) 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 remains 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 and wider industry;
- (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) 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. The Electricity Networks Association has launched its Look Out! Look Up! Campaign and video in an effort to educate farmers to the risks;
- (d) 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;
- (e) There has been little change in the rates or types of fatal machinery incidents in the past two years. AIAC members are asked to consider if there are any new initiatives that could be developed to improve the management of machinery risks.

## 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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