Government of **Western Australia**
Department of **Mines, Industry Regulation and Safety**

Safety and Health Snapshot

for the Western Australian minerals sector

Amputations, fractures and crushing (AFC) injuries

Issued November 2019

Since May 2016, the number of AFC injuries sustained in the Western Australian mining industry has increased, with fractures still the most common AFC injury. AFC injuries are primarily serious in nature and can have adverse effects on workers' quality of life and their capacity to work in the industry. A total of 256 AFC injuries were reported from May 2018 to April 2019.

During this period AFC injuries represented 20% of all injuries reported, and 23% of serious injuries.

For more information about occupational safety and health, visit our website **www.dmirs.wa.gov.au**

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Department of Mines, Industry Regulation and Safety

Injuries by severity

240 of the 256 AFC injuries

were **classified as serious**

AFC injuries by commodity (top 5)

36% were **iron ore**

25% were **gold**

10% were **nickel**

5% were **tin, tantalum and lithium**

6% were **bauxite and alumina**

AFC injuries by area

224 of the 256 injuries occurred during **surface operations**

32 of the 256 injuries occurred during **underground operations**

AFC injuries by occupation

Fitters had the highest proportion of injuries at **23%**

Processing plant operators had the 2nd highest proportion of injuries at **7%**

AFC injuries by activity

27% involved moving object or equipment

8% involved walking
7% involved getting off vehicle or equipment

AFC injuries by type of work

Maintenance had the highest proportion of injuries at **43%**

Operations had the 2nd highest proportion of injuries at **42%**

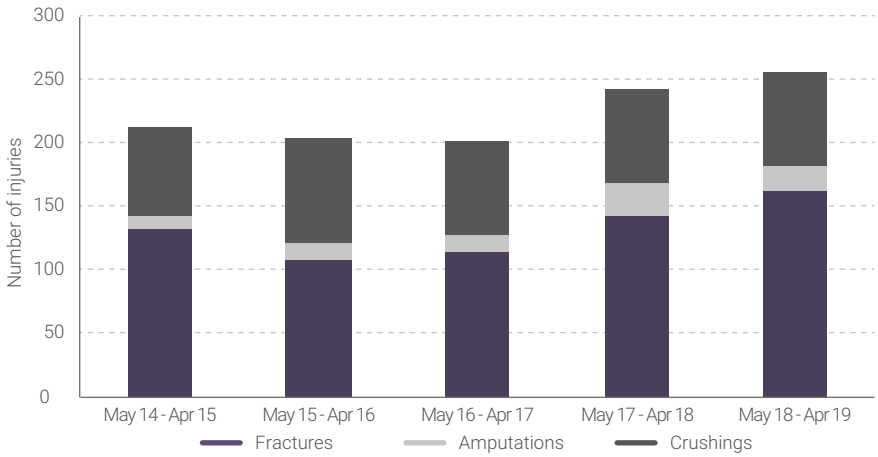
Part of body (top 3 AFC)

Fingers **56%**

Ankle 8%

Hand 5%

Number of AFC injuries over 5-year period from May 2014 to April 2019



Note: The information in this snapshot has come from a keyword search of incident reports.

Some recent incidents

Crush injuries 02/05/18

A worker at an open pit received a crush injury to his finger. He was sourcing ground engaging tools (GET) for a bulldozer at the supply warehouse goods storage and pick up yard and had placed them on a forklift tyne. The GET rolled onto his hand and his finger was pinched between the GET and the forklift tyne. The worker was treated at the medical centre before being flown to hospital in Perth for surgery.

Crush injuries 22/08/18

A driller working on a diamond drill rig at an underground mine attempted to manually feel a break in the core sample. When he handled the drill rods, the chuck moved up the rod and trapped his hand between the chuck jaws and the water swivel. The driller managed to free his hand by releasing and moving the chuck mechanism. First aid was given and a supervisor informed. After receiving initial attention at a regional nursing post, he was flown to hospital in Perth for further treatment, which included amputation of two fingers.

Spotlight on *Mines Safety Significant Incident Report No. 241*

Underground worker crushed between integrated tool carrier (IT) work basket and roof of excavation (backs)

7 June 2016

Contributory causes

- Lack of effective communication between personnel.
- The injured person was new to the task and was undergoing training.
- Tilting of the work basket was not included in the training documentation.
- The operator directing the work basket was not aware of the position of the offsider when the direction was given to tilt the work basket.
- The operating procedure did not identify the potential for a crush hazard while conducting work from the basket.

Spotlight on *Mines Safety Significant Incident Report No. 242*

Tyre fitter's fingers crushed while operating hydraulic bead breaker

14 June 2016

Contributory causes

- The equipment design does not encourage the correct positioning of hands nor restrict access to moving parts.
- There is no guarding to prevent inadvertent contact with moving parts nor labelling on the equipment to warn of the nip or crush point.
- Work instructions did not outline the controls for all hazards associated with the task.

Safe work practices

All personnel need to remain vigilant and ensure that they do not enter any area or place themselves in a position where an AFC injury could occur. The following safe work practices are recommended to reduce the incidence, frequency and consequence of AFC injuries.

- Identify all potential AFC hazards, assess the risk of injury and implement sufficient effective safety controls in line with the hierarchy of control.
- Eliminate the need for personnel to undertake any task where AFC hazards are present.
- Introduce automation, tooling and load shifting equipment to reduce the need for any hands on tasks.
- Install guarding for all equipment moving parts and pinchpoint hazards.
- Improve the selection of working at height equipment (e.g. EWPs and underground baskets) to ensure it is fit for purpose, has height limiting sensors and is fitted with physical barriers.
- Provide safe access and egress and handrails on all walkways, fixed plant and mobile equipment.
- Establish stop points in work tasks to ensure management and supervision are present to implement effective prevention strategies.
- Train personnel to identify the key AFC hazard categories and apply the correct hierarchy of controls.
- Implement an effective ergonomic program for the management of all hazardous manual tasks.