44

ENSURING A SAFE, HEALTHY AND APPROPRIATELY SKILLED WORKFORCE

"The safety and health of our employees is of paramount importance and we consistently review the effective safety and health controls that we have implemented to support safety in the workplace, manage occupational health and hygiene and demonstrate good labour practices."

– Dr Patrice Motsepe
Executive chairman

Safety

Occupational health and wellness

Human resources management

REFERENCE: **2019** *F2019 focus*

SAFETY

"Our commitment to the safety and health of all our employees lies at the heart of our culture and the way we run and manage the Company."

Mining, crushing and milling, and the processing and beneficiation of minerals and metals present challenging working conditions. Hazard identification and risk assessment is critical to ensuring appropriate controls for mitigation of harm.

Safety is a critical component of operational performance and directly affects our most important stakeholder – our employees. Safety also directly affects productivity, efficiency, financial capital and our relationships with our broader stakeholders.

The most significant safety concerns at our operations include falls of ground, trackless mobile machinery, working at heights and fatigue.
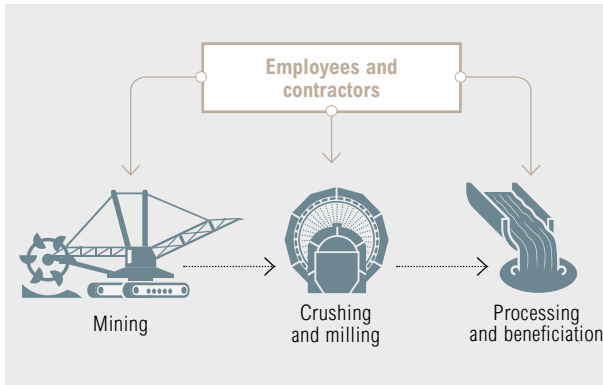
Reporting context

REPORTING FRAMEWORKS

ICMM | UN SDGs:
5 | 3 GOOD HEALTH AND WELL-BEING | 8 DECENT WORK AND ECONOMIC GROWTH

FTSE/Russel SHS

PRINCIPAL LEGISLATION

» The Mine Health and Safety Act (MHSA)
» The Occupational Health and Safety Act (OHSA)
» The Mining Charter

Employees and contractors

Mining

Crushing and milling

Processing and beneficiation

How we manage safety

ARM takes a holistic approach to employee wellness that considers occupational hygiene, health and safety.

Risk assessments are performed and continuously reviewed at each operation to identify and assess their specific safety and health risks. These assessments include input from regulators, specialists, our employees and labour representatives. Risk assessments are also conducted before commencing any new tasks, expansions or changes to current operations as well as in planning and execution of projects.

Safety policies are set at Group level and inform operational safety policies and strategies that are adapted to meet the specific safety challenges at each operation.

Operational safety and health policies and management systems align with OHSAS 18001, the international standard on health and safety management systems, and ISO 45001, the revised international standard which replaces OHSAS 18001. All operations except for Machadodorp Works are certified in terms of either standard. Black Rock, Beeshoek and Khumani mines are certified in terms of ISO 45001 while Nkomati and Two Rivers mines are in the process of converting from OHSAS 18001 to ISO 45001 certification. Machadodorp Works was OHSAS 18001 certified and while not formally undergoing re-certification in F2019, remains aligned with the standard. Modikwa Mine and Cato Ridge Works remain OHSAS 18001 certified.

Contractors are treated as employees, receiving the same training and are included in our safety reporting, as required by legislation and industry standards.

Leading and lagging safety indicators are included in the calculation of performance incentives for operational, divisional and corporate staff.

Assurance of safety processes and practices includes external Safety, Health and Environmental (SHE) audits facilitated every second year by the ARM Corporate Office (performed in F2019) and annual OHSAS 18001 and ISO 45001 certification audits. Safety metrics are also included in the annual external assurance of sustainability data.

ENSURING A SAFE, HEALTHY AND APPROPRIATELY SKILLED WORKFORCE continued

Safety training is provided to employees and contractors at induction and on an ongoing basis to entrench a culture of safe working practices.

All operations have implemented fatigue management guidelines in line with the Fatigue Management COP issued by the DMRE. An awareness campaign was rolled out and supervisors have been instructed to assess workers for signs of fatigue and take appropriate steps. In support of this, ARM Ferrous prepared and distributed a fatigue management calendar and booklet that provides information about the causes and effects of fatigue, ways to prevent fatigue and what to do in the event of fatigue.

An awareness campaign was run across operations regarding the court ruling on private cannabis use. The campaign highlighted the safety impacts of cannabis usage and the legal framework through the Mines Health and Safety Act that prohibits intoxication in the workplace. The campaign emphasised our zero tolerance strategy regarding substance abuse in the workplace.

We assess and monitor our safety performance through:

Leading and lagging indicators that are reported and reviewed at quarterly operational, divisional and corporate SHEQ and related meetings as well as the quarterly meetings of the ARM Social and Ethics Committee.	Internal safety competitions to raise awareness and create constructive internal benchmarking between operations.	Benchmarking against industry peers.

Safety and health awareness campaigns

Safety training at induction

Supervisors conduct planned task observations to ensure understanding and compliance with safety procedures

The commitment by management and each individual to safe work is the core of our zero harm philosophy

Detailed and specific safety training during on-the-job training and competency training

Ongoing training to entrench safe working procedures and practices

2019 Zero harm to our employees.

A tragic fatal accident occurred in a fall of ground incident at Modikwa Mine on 27 March 2019. Mr Thomas Maluleke, employed as a Rock Drill Operator, was fatally injured in the accident. Mr Maluleke is survived by his wife and five children. After year end, Mr Ishmael Malatji, a load haul dump truck operator at Two Rivers Mine, was fatally injured in an accident involving trackless mobile machinery.

ARM operations recorded 90 Lost Time Injuries[1] (LTIs) in F2019 (F2018: 91) and 76 Reportable Injuries (F2018: 68). Total man-hours worked for the year reduced 11% in F2019 and the ARM Group Lost Time Injury Frequency Rate (LTIFR) increased to 0.42 per 200 000 man hours (F2018: 0.38).

LTIFR increased in both the Platinum and Ferrous divisions. Inherent risk is higher at Modikwa Mine than at the other mines in the Group as it is the only conventional stope/mining operation. Fifty six of the total LTIs were recorded at Modikwa Mine.
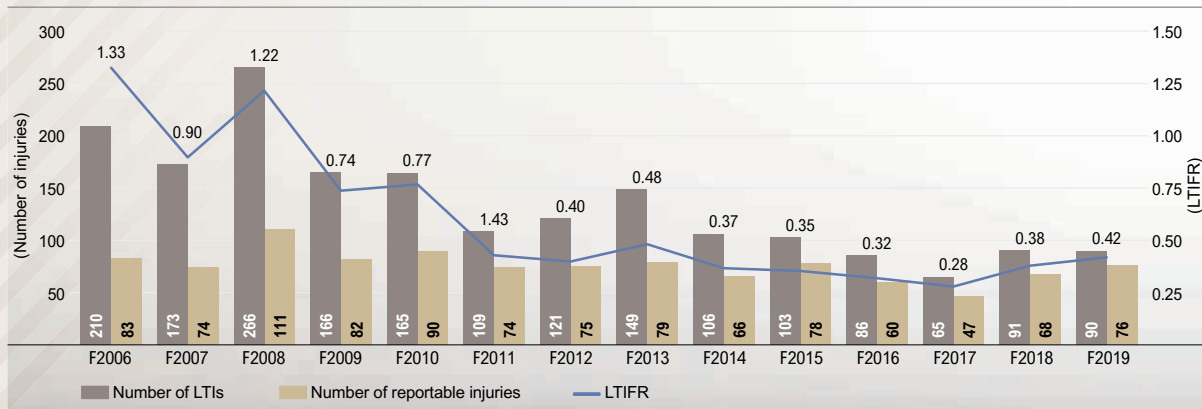
LTIs and the LTIFR increased at Black Rock Mine due to the expansion project currently underway, which involves a large number of contractors on site, a significant increase in non-routine activities, the redeployment of employees to new work areas and the introduction of new tasks. A concentrated safety initiative was launched at Black Rock Mine to improve safety performance.

Injuries and action plans to prevent recurrences are discussed comprehensively in every operational safety meeting, in operational sustainability meetings, quarterly joint venture sustainable development committees and the quarterly ARM Social and Ethics Committee meeting.

1 Safety definitions and additional safety statistics are available in the sustainability data tables available at **www.arm.co.za**

SAFETY PERFORMANCE: LAGGING INDICATORS (LTI AND REPORTABLE INJURIES)

	F2006	F2007	F2008	F2009	F2010	F2011	F2012	F2013	F2014	F2015	F2016	F2017	F2018	F2019
Number of LTIs	210	173	266	166	165	109	121	149	106	103	86	65	91	90
Number of reportable injuries	83	74	111	82	90	74	75	79	66	78	60	47	68	76
LTIFR	1.33	0.90	1.22	0.74	0.77	1.43	0.40	0.48	0.37	0.35	0.32	0.28	0.38	0.42

ARM tracks Total Recordable Injuries (TRI) in terms of the definitions of the ICMM. TRI includes Non-Lost Time Injuries (Medical Treatment Cases), Lost Time Injuries and fatalities. A total of 225 TRIs were reported during F2019 (F2018: 195), resulting in a TRIFR per 200 000 man hours of 1.05 (F2018: 0.81).

Safety achievements during the year included:

» Two Rivers Platinum Mine achieved 5 million fatality free shifts on 18 February 2019.
» Nkomati Mine achieved 7 million fatality free shifts on 28 June 2019 over a period of 10 years and 9 months.
» As at 30 June 2019, Cato Ridge Works completed 35 months without a Lost Time Injury.
» As at 30 June 2019, Machadodorp Works completed 40 months without a Lost Time Injury.
» Beeshoek Mine was awarded the first prize for the most improved safety performance and the second prize for the best safety performance in its class during the 2018 Mine Safe Conference.
» On 13 May 2019, Khumani Mine achieved 3 000 fatality-free production shifts and received a trophy from the DMRE in recognition of this significant milestone.
» Khumani Mine achieved the lowest LTIFR in the history of the mine (0.08) in F2019.
» Beeshoek Mine recorded 17 000 fatality free production shifts on 18 September 2018, an accomplishment that took 15 years and 6 months to achieve. The mine was announced as second runner-up for the Best Performing Surface Mine in the annual Northern Cape Mine Managers' Association convention in November 2018.
» Black Rock Mine achieved 7 million fatality free shifts on 7 March 2019, an achievement that took ten years to complete. Black Rock was recognised as second runner-up for the Best Performing Underground Mine in the annual Northern Cape Mine Managers' Association convention in November 2018.
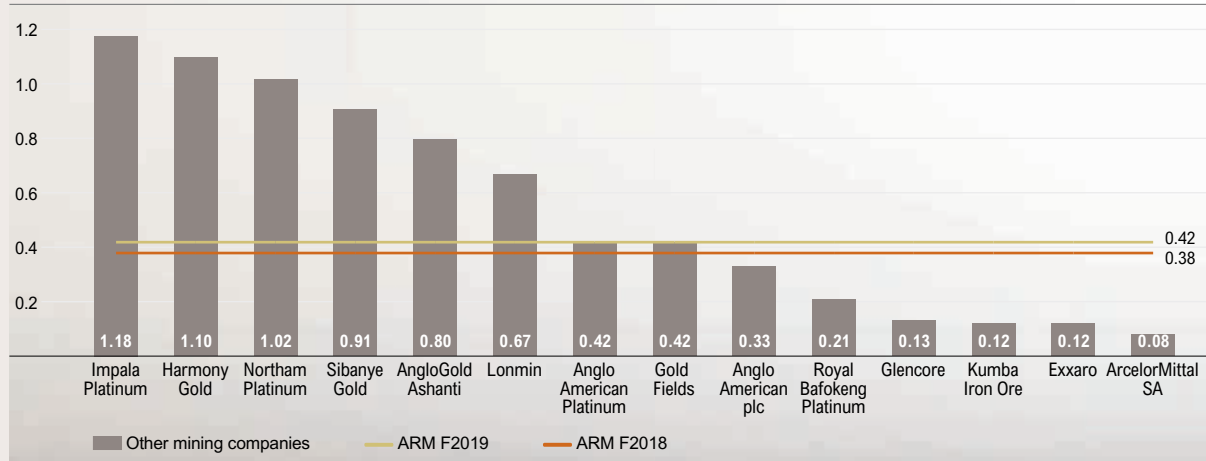
Operation	Total fatality-free shifts worked*	Last fatality*
Beeshoek Mine	4 163 581	March 2003
Black Rock Mine	7 282 943	April 2009
Khumani Mine	2 733 621	April 2015
Cato Ridge Works	2 442 821	February 2008
Machadodorp Works	1 103 713	February 2011
Modikwa Mine	313 501	March 2019
Two Rivers Mine	5 250 729	January 2012
Nkomati Mine	7 003 970	September 2008

*   As at 30 June 2019.

Benchmarking our LTIFR against industry peers provides context against which we can monitor our safety performance. However, it is important to note that mining companies are not directly comparable due to the risks inherent in different mining and extraction processes, equipment and levels of complexity. The graph below compares ARM's LTIFR relative to the LTIFRs sourced from the latest published reports of peer mining companies.

The priority safety focus area in terms of safety related to transport and machinery is on collision awareness and avoidance systems, which are also referred to as Proximity Detection Systems or PDS. Collision awareness systems (vehicle-to-vehicle as well as vehicle-to-person detection systems) have been installed at ARM mines and collision avoidance systems are in the process of being installed. The operations are working jointly with vehicle manufacturers to develop solutions for current trackless mobile machinery.

LTIFR INDUSTRY BENCHMARK
(LTIFR)

Company	LTIFR
Impala Platinum	1.18
Harmony Gold	1.10
Northam Platinum	1.02
Sibanye Gold	0.91
AngloGold Ashanti	0.80
Lonmin	0.67
Anglo American Platinum	0.42
Gold Fields	0.42
Anglo American plc	0.33
Royal Bafokeng Platinum	0.21
Glencore	0.13
Kumba Iron Ore	0.12
Exxaro	0.12
ArcelorMittal SA	0.08

ARM F2019: 0.42
ARM F2018: 0.38

■ Other mining companies   — ARM F2019   — ARM F2018

2019 Zero harm to our employees. (continued)

Divisional and overall performance across the main lagging safety performance indicators we use to monitor our safety performance is shown in the table below.

	F2019			F2018			
	ARM Ferrous	ARM Platinum	ARM total	ARM Ferrous	ARM Platinum	ARM Copper*	ARM total
Lost Time Injuries	17	73	90	11	77	3	91
LTIFR[1]	0.19	0.60	0.42	0.13	0.49	0.26	0.38
Reportable Injuries	15	61	76	11	55	2	68
RIFR[2]	0.16	0.50	0.35	0.13	0.39	0.17	0.28
Fatalities	–	1	1	–	1	–	1
FFR[3]	–	0.008	0.005	–	0.007	–	0.004

1 LTIFR: Lost Time Injury Frequency Rate
2 RIFR: Reportable Injury Frequency Rate
3 FFR: Fatality Frequency Rate
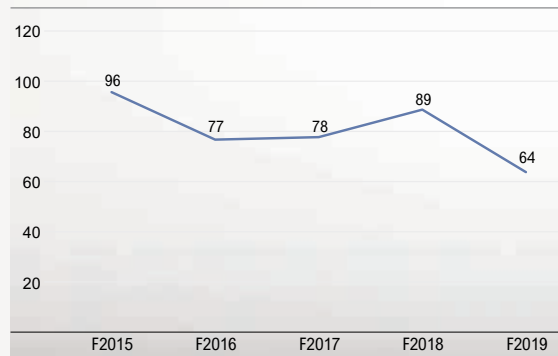* Lubambe Mine was disposed of in December 2017.

2019 Improving compliance to regulatory and internal standards, thereby reducing stoppages due to Section 54 and Section 55 Notices.

There were 19 Section 54 Notices issued by the DMRE at ARM operations in F2019 (F2018: 31) and shifts (or part of shifts)[4] affected by these stoppages reduced from 89 to 64. Eighteen of these notices were issued in the ARM Platinum division – 12 at Modikwa Mine and 6 at Two Rivers Mine. One Section 55 Notice was issued at Modikwa Mine, not affecting any shifts.

The smelters in the Group were not issued with any Compliance or Prohibition Notices in terms of the Occupational Health and Safety Act during F2019 (F2018: 0).

4 Note that stoppages may be applied to a particular activity within an area or to a specific area only, while production continues in the rest of the operation. Therefore not all shifts affected are completely lost, and quantification of shifts lost is challenging.

SHIFTS AFFECTED[4] BY SECTION 54 NOTICES

More detailed safety statistics, including Section 54 and Section 55 Notices by operation, are available in the sustainability data tables on the ARM website **www.arm.co.za**

	F2019			F2018		
	ARM Ferrous	ARM Platinum	ARM total	ARM Ferrous	ARM Platinum	ARM total
Section 54 Notices	1	18	19	2	29	31
Shifts affected by Section 54 Notices	0	64	64	3	86	89
Section 55 Notices	1	1	2	1	7	8
Shifts affected by Section 55 Notices	0	0	0	0	0	0

2019 Continued focus on monitoring and implementation of existing leading practices. Active participation in new initiatives and leading practices.

ARM participates in a number of industry forums and initiatives related to health and safety to help us improve our health and safety performance by adopting good practice. These initiatives include:

THE MINING INDUSTRY OCCUPATIONAL SAFETY AND HEALTH (MOSH) INITIATIVES

The Minerals Council South Africa (MCSA) established the MOSH Learning Hub in 2009 to encourage mining companies to learn and adopt leading practices from areas of excellence across the industry. The MOSH Initiatives aim to help the mining industry to meet the Tripartite occupational health and safety Targets and Milestones. ARM is represented by the Executive: Sustainable Development and the Group Occupational Health and Wellness Superintendent on the MOSH Task Force of the MCSA and the Occupational Health and Safety Policy Committee of the MCSA.

THE CULTURE TRANSFORMATION FRAMEWORK (CTF)

The CTF arose from a tripartite process between government, labour and industry with the goal of fostering collaboration between these stakeholders. The Framework aims to eliminate discrimination and create a safe, healthy and productive mining industry in South Africa, with risks controlled at source. ARM's culture, systems and programmes align with the goals of the CTF.

THE INTERNATIONAL COUNCIL ON MINING AND METALS (ICMM)

As a member of the ICMM, ARM benefits from access to a network for learning from peers and implementing good practice.

2019 Implementation of the Critical Control Management process developed by the ICMM to enhance current risk controls.

ARM is implementing the Critical Control Management (CCM) process across operations as part of our commitment to continued improvement. The CCM process focuses on prevention of major unwanted events and the critical controls to be put in place to prevent these. Early implementation is complete at some operations and good practice is being shared within the Group. Full implementation is on track for completion during F2020, after which an external audit of the process will be conducted. The CCM process is globally recognised as a process that could significantly help to prevent disabling or fatal accidents.

2019 Continued alignment with the occupational health and safety Milestones[1] and targets set for 2024 during the 2014 Tripartite Summit of the Mine Health and Safety Council.

ARM monitors and reports internally in terms of the Milestones at quarterly operational Sustainable Development Committee/Compliance Review meetings. Progress towards achieving the targets is reported to the DMRE in the annual Mining Charter reports, and is also reported to the MCSA.

During F2019, Safety Days were held at all mines in alignment with the MCSA's National Safety Day.

1 The Tripartite Summit committed government, employers and employees to achieve the 2024 goals, which address occupational health and safety; PTB, HIV & Aids; and culture transformation.

FOCUS FOR F2020

» Zero fatalities, zero harm to our employees.
» Implementation of the Critical Control Management process to enhance current risk controls.
» Improving compliance to regulatory and internal standards, thereby reducing stoppages due to Section 54 and Section 55 Notices.
» Continued focus on monitoring and implementation of existing leading practices. Active participation in new initiatives and leading practices.
» Continued alignment with the occupational health and safety Milestones and targets set for 2024 during the 2014 Tripartite Summit of the Mine Health and Safety Council.