CAST METALS FEDERATION

SHIFT

Safety & Health Foundry Targets Initiative

SHIFT Accident Statistics

2016 Reporting Year

Headline News 2016

SHIFT Member data reported to CMF	**2016**	2015	2014	2013	2012
Number of companies reporting (total) so far is	**67**	**78**	**76**	**72**	**64**
Giving a total number of employees covered as	**9031**	**11222**	**9947**	**9595**	**8776**
Total Number of Accidents Reported to SHIFT is	**1761**	**2318**	**2376**	**2238**	**2270**
Of which are RIDDOR reportable being	**114**	**124**	**128**	**171**	**169**
Giving an accident rate per 100 employees of	**19**	**21**	**24**	**23**	**26**
and a RIDDOR rate per 100,000 employees of	**1262**	**1105**	**1287**	**1782**	**1926**
Number of ferrous companies reporting so far is	**33**	41	40	42	38
Number of non ferrous companies reporting so far is	**34**	37	36	30	26
Number of small companies reporting data is	**21**	23	27	24	21
Number of medium companies reporting data is	**28**	34	28	28	25
Number of large companies reporting data is	**18**	21	21	20	18
Number of sand casting foundries reporting data is	**44**	53	52	51	47
Number of die casting foundries reporting data is	**18**	18	18	15	13
Number of investment casting foundries reporting data is	**5**	7	6	6	4
Number of near-misses reported so far is	**458**	822	744	293	490
Number of members reporting near-misses is	**24**	30	29	24	18
Number of lost days due to work related injury reported so far is	**3417.50**	3094.75	3487	4342	2894
Number of members reporting work related injury lost days is	**59**	69	60	52	33
Number of lost days due to work related ill-health reported so far is	**195**	55	42	518.8	219.5
Number of members reporting work related ill-health lost days is	**6**	7	6	6	3
Number of lost days due to non-work work related injury or ill-health reported so far is	**14386.15**	15974.75	15124	14593	13272
Number of members reporting lost days is	**29**	38	41	30	23
Number of new reportees to SHIFT is	**4**	3	10	11	23
Number of returning reportees to SHIFT is			2	4	10

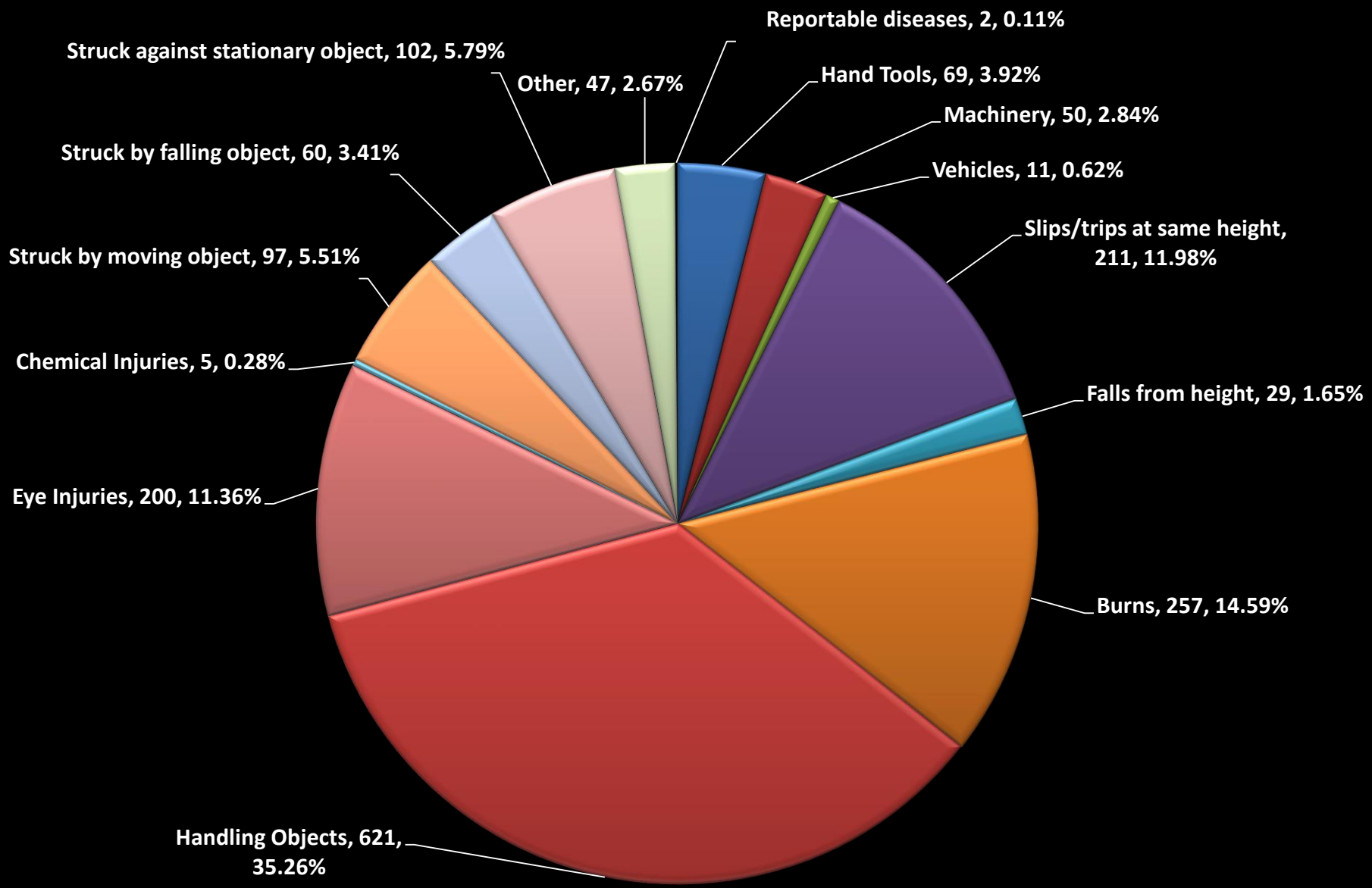
Reporting History (Last 5 years)

Date	Reporting Year	Number of Companies	Employees Covered
Oct 2013	2012	64 (includes 23 new and 10 returning entrants)	8776
April 2014 (reporting window reset to close end of March each following year)	2013	72 (includes 11 new and 4 returning entrants)	9595
April 2015	2014	76 (includes 10 new and 2 returning entrants)	9947
April 2016	2015	78 (includes 3 new entrants)	11222
November 2017	2016	67 (includes 4 new entrants)	9031

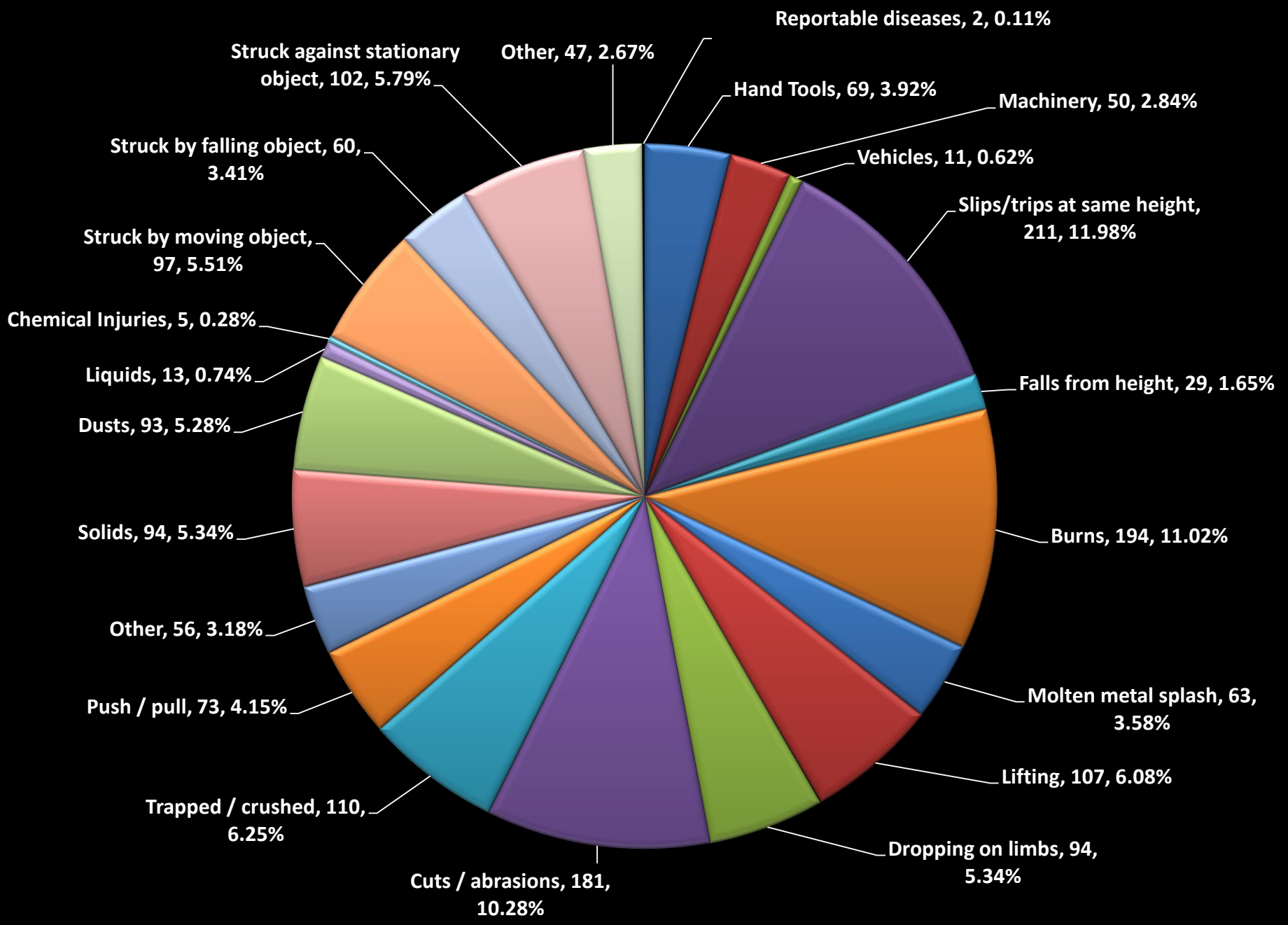
Phase II Reporting History (2012 on)

Key Headline Data	2016	Change against 2015	2015	2014	2013	2012
Companies reporting	**67**	**- 11**	**78**	76	72	64
Employees covered	**9031**	**- 2191**	**11222**	9947	9595	8776
Fatal Injuries	0	0	0	0	0	0
Major Injuries	**10**	**- 3**	**13**	18	17	30
Over 7 Day injuries	**104**	**- 7**	**111**	110	116	
Other accidents	**1647**	**- 367**	**2014**	2248	2067	2101
Total	**1761**	**- 377**	**2138**	2376	2238	2270
Accident rate / 100 employees	**19**	0	**19**	24	23	26
RIDDOR rate / 100K employees	**1262**	**+ 157**	**1105**	1287	1386 (adjusted to remove >3 day injuries)	1926

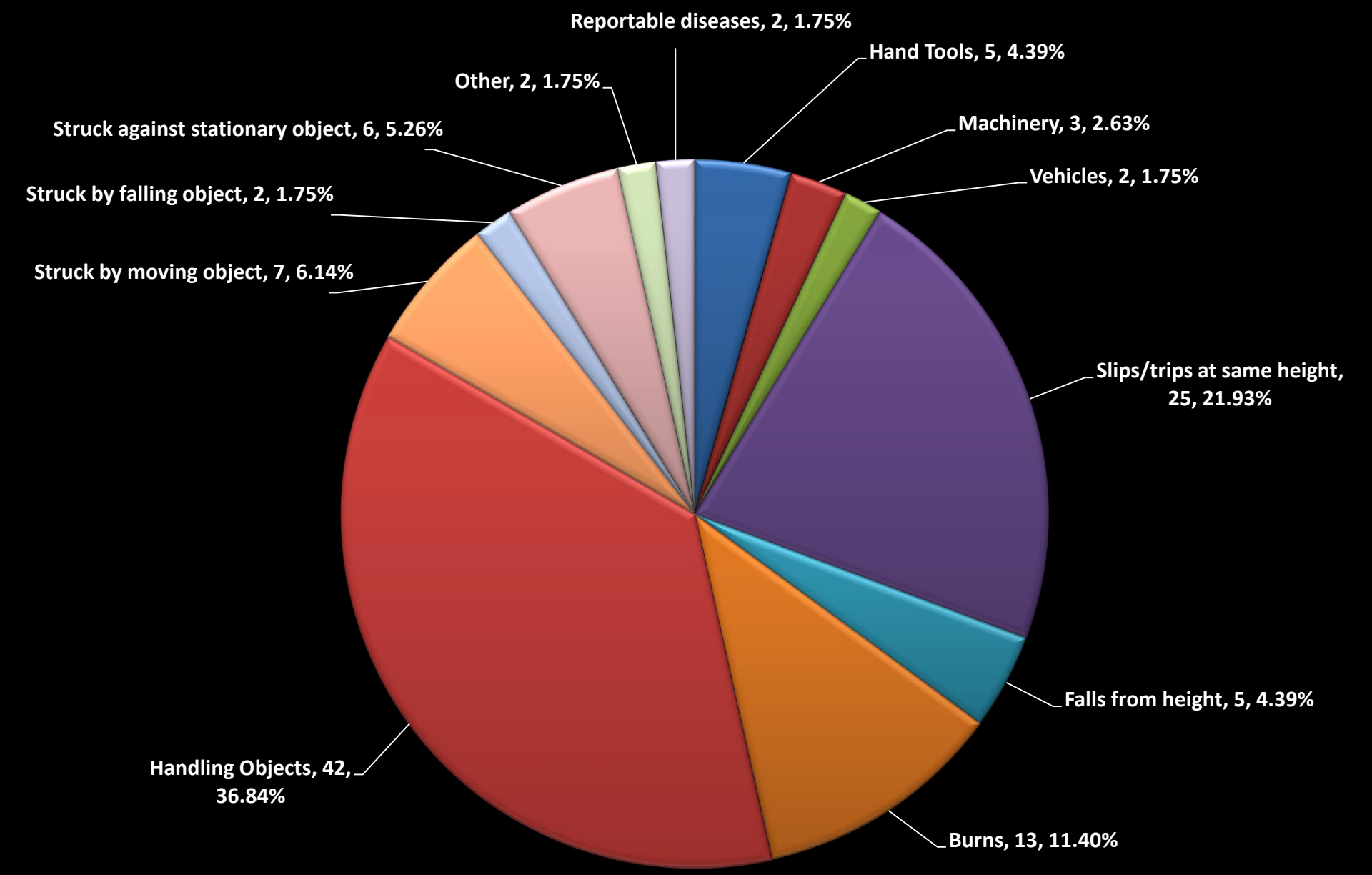
2016 Total Accident Breakdown - Macro Level



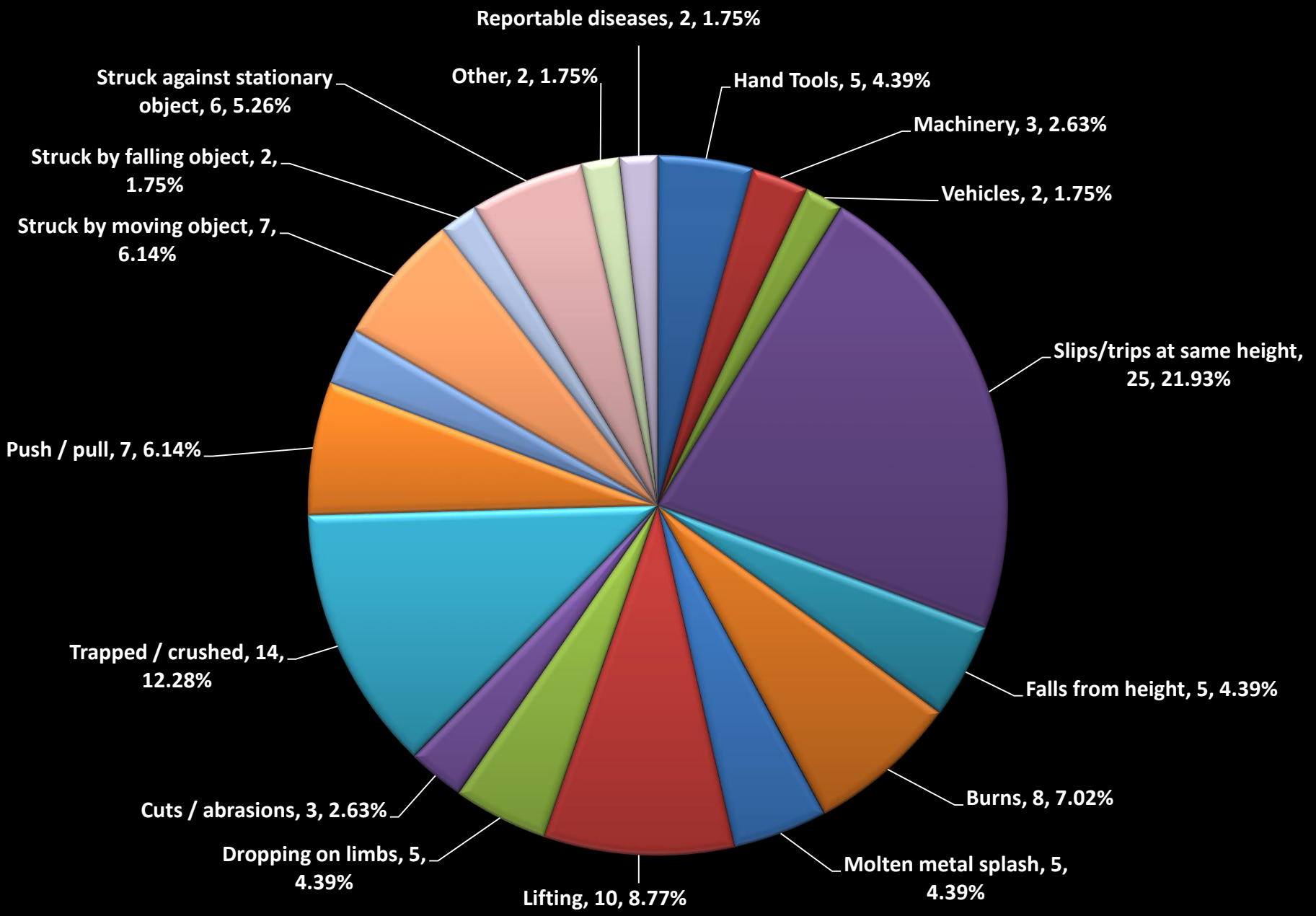
2016 Total Accident Breakdown - Micro Level



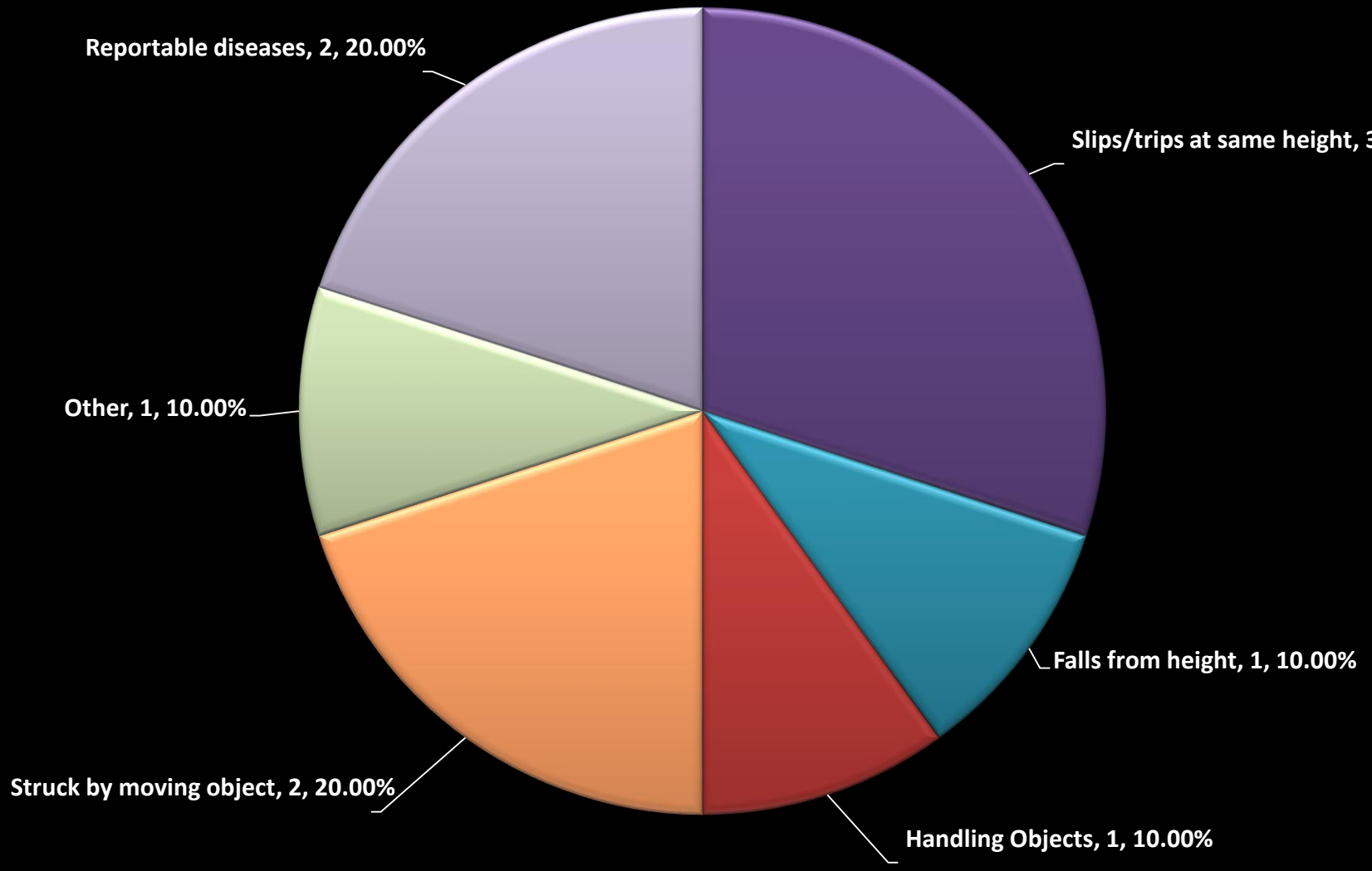
2016 Total RIDDOR Reportable Accidents - Macro Level



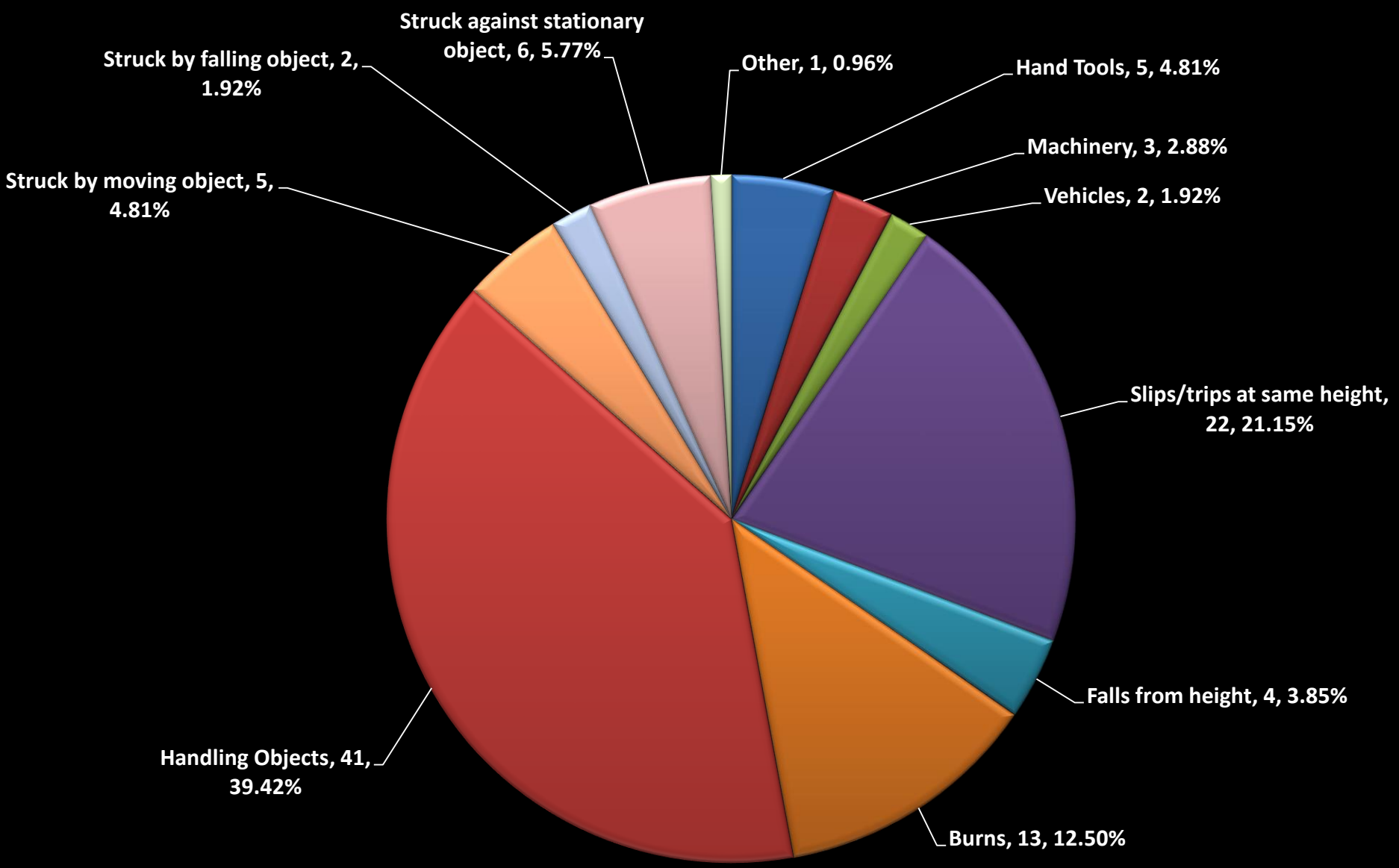
2016 Total RIDDOR Reportable Accidents - Micro Level



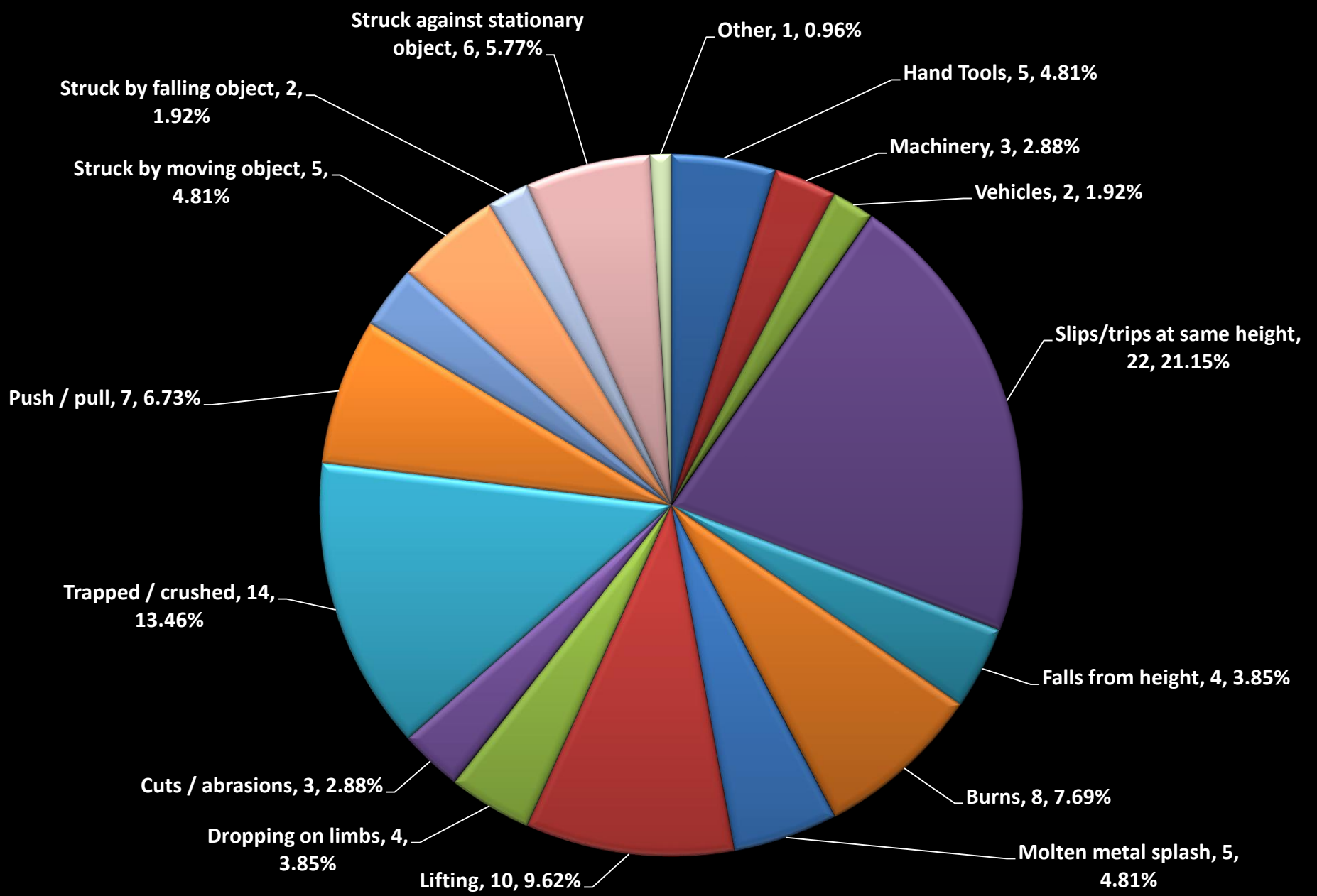
2016 Major Reportable Accidents - Macro Level



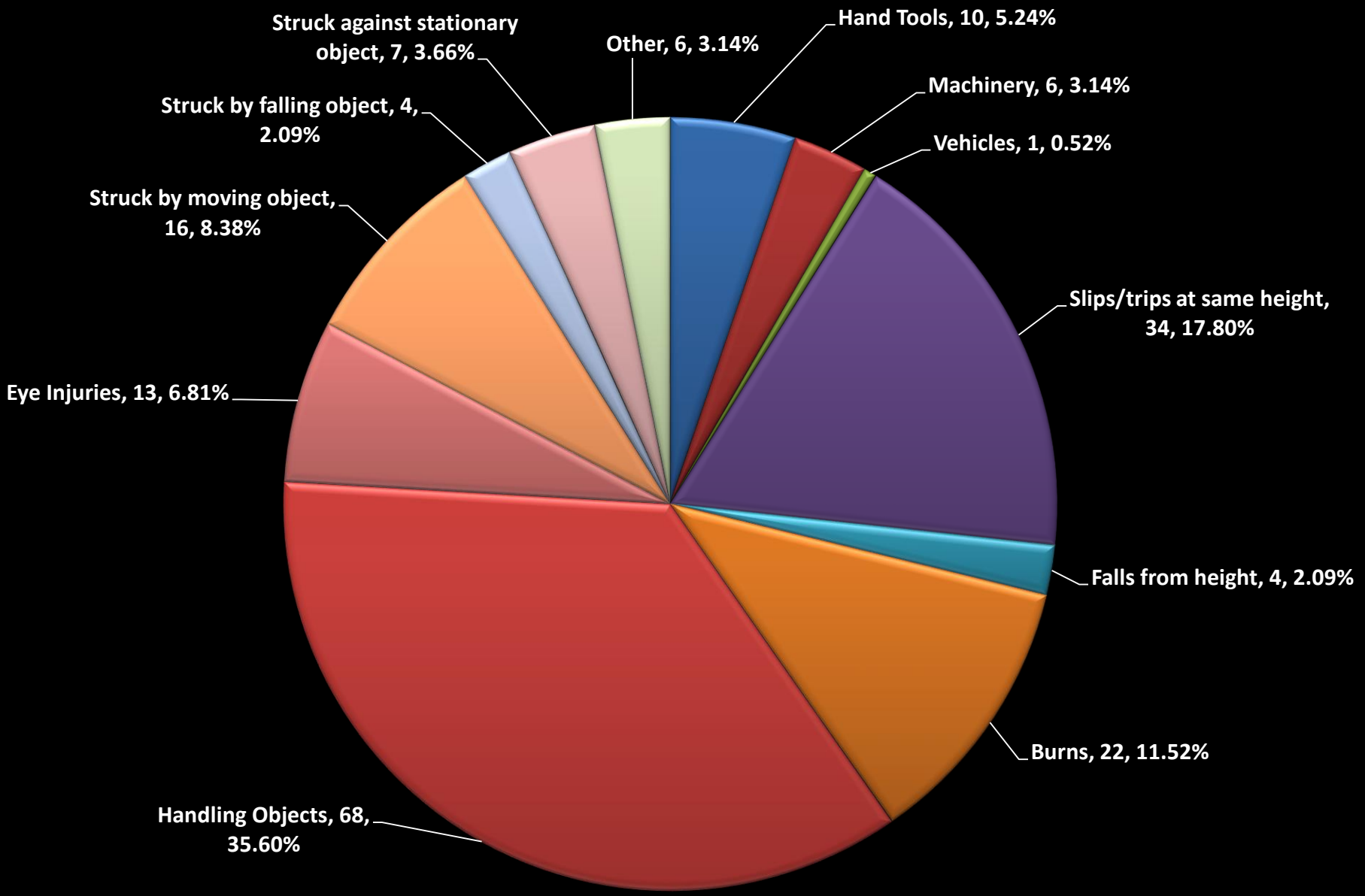
2016 Over 7 Day Reportable Accidents - Macro Level



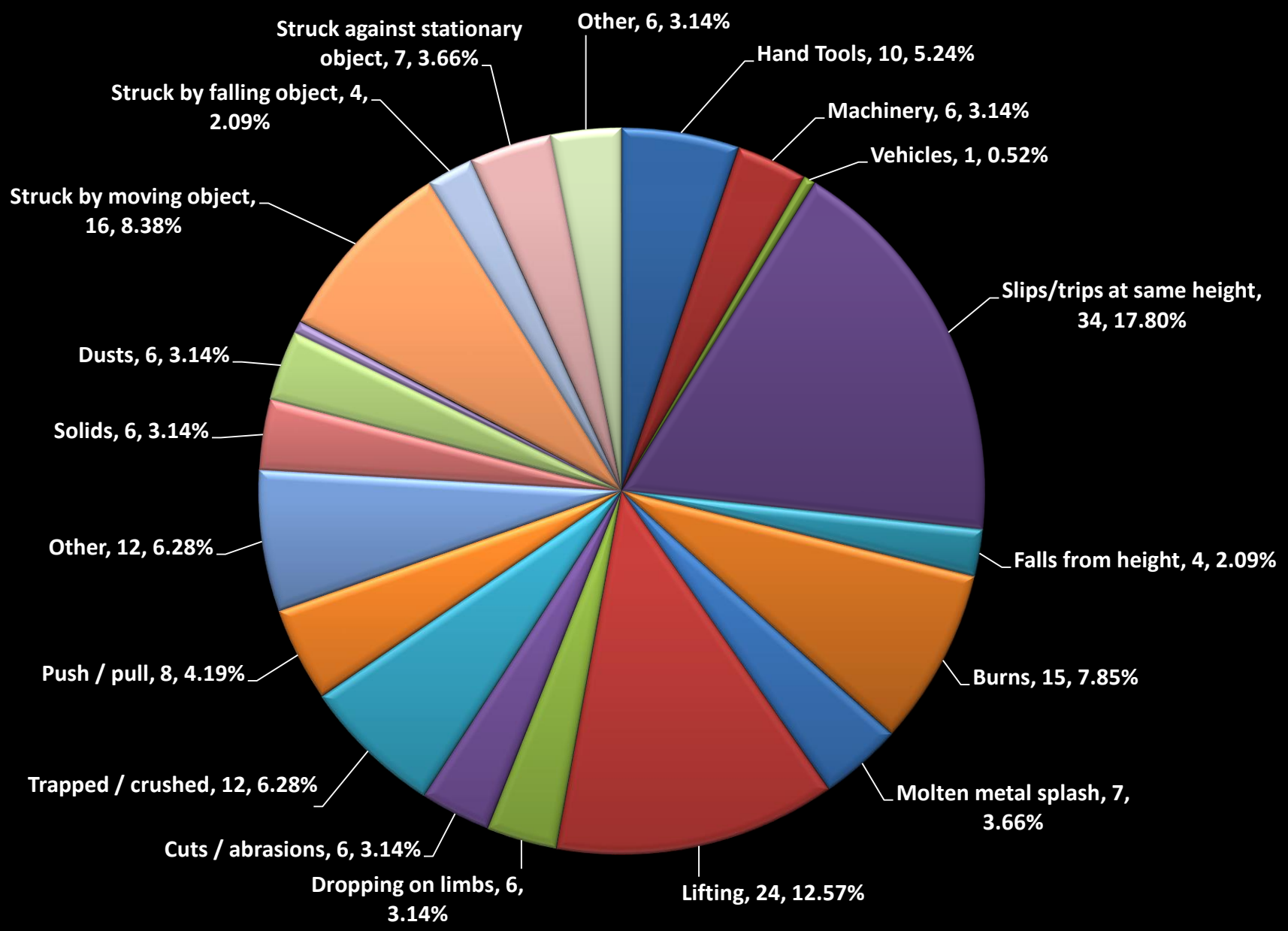
2016 Over 7 Day Reportable Accidents - Micro Level



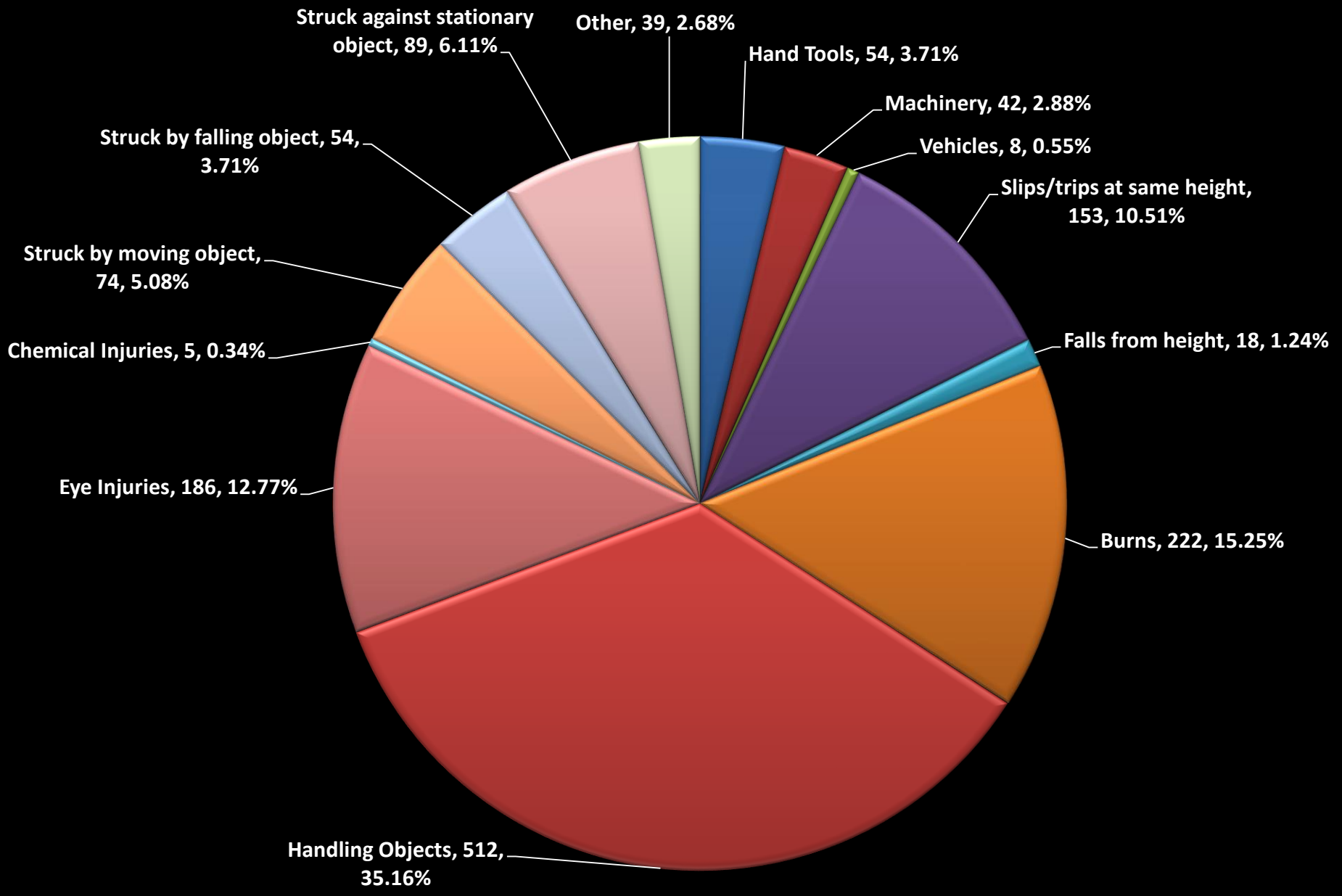
2016 Lost Time Accidents - Macro Level



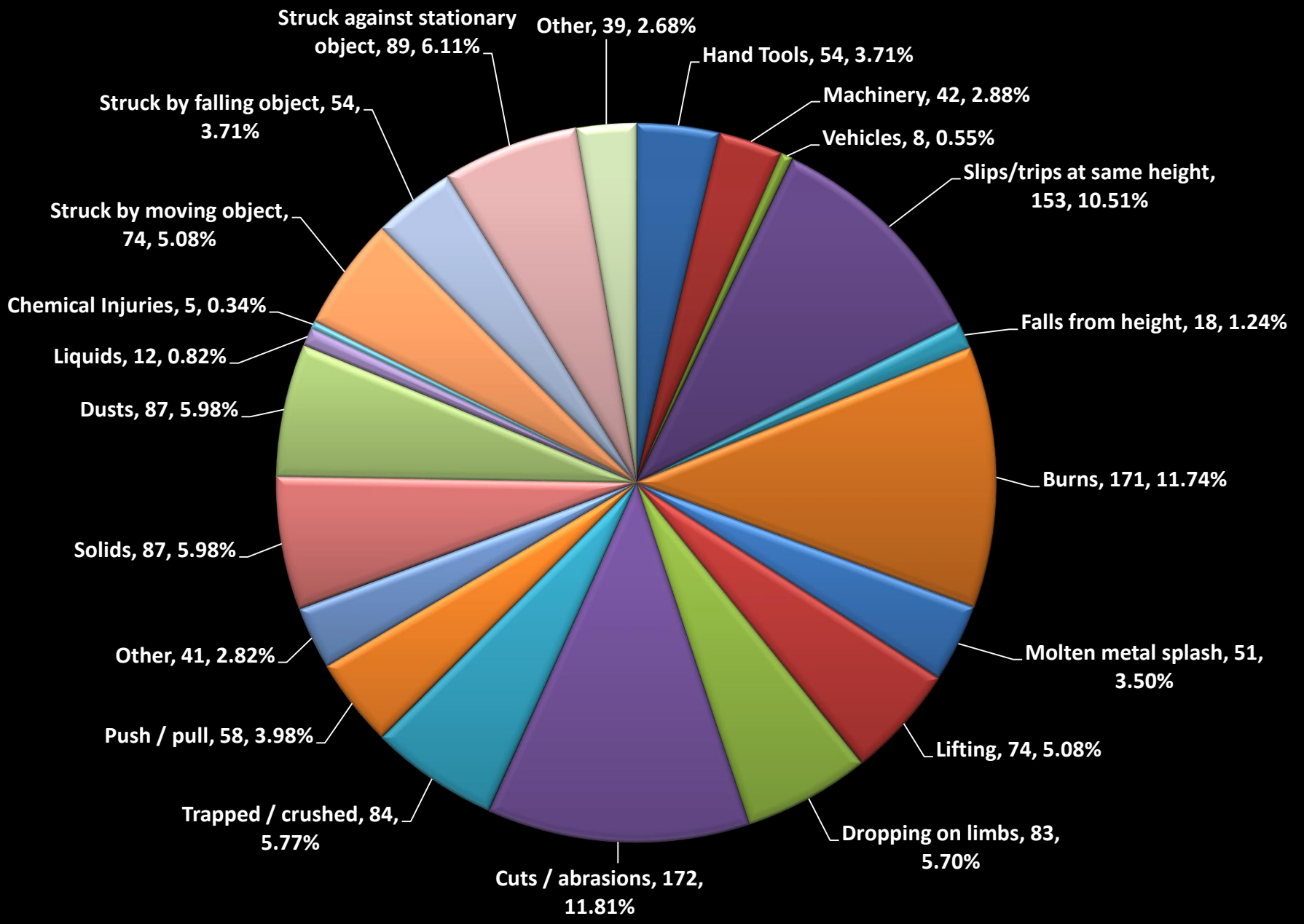
2016 Lost Time Accidents - Micro Level



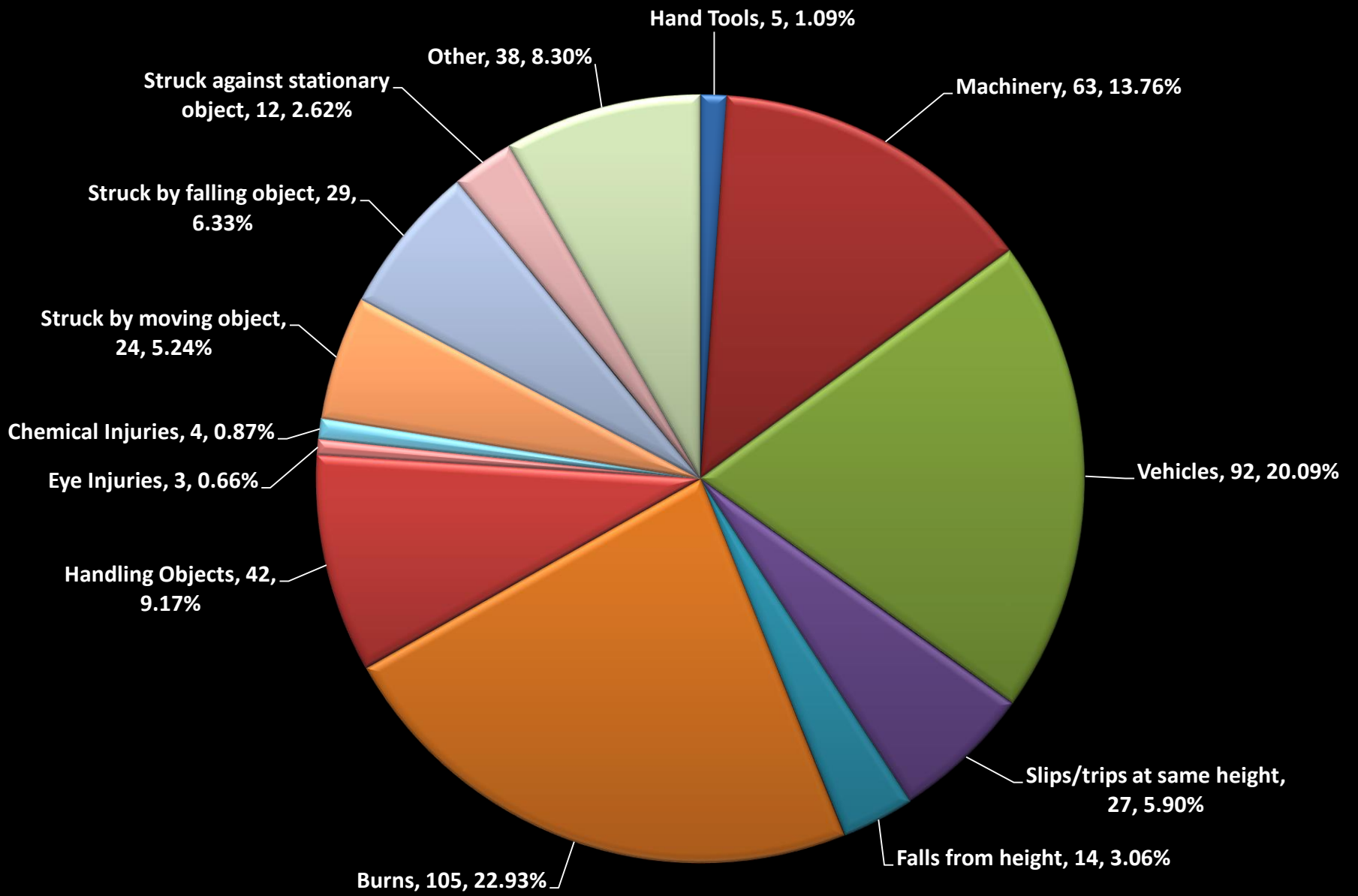
2016 First Aid Only Accidents - Macro Level



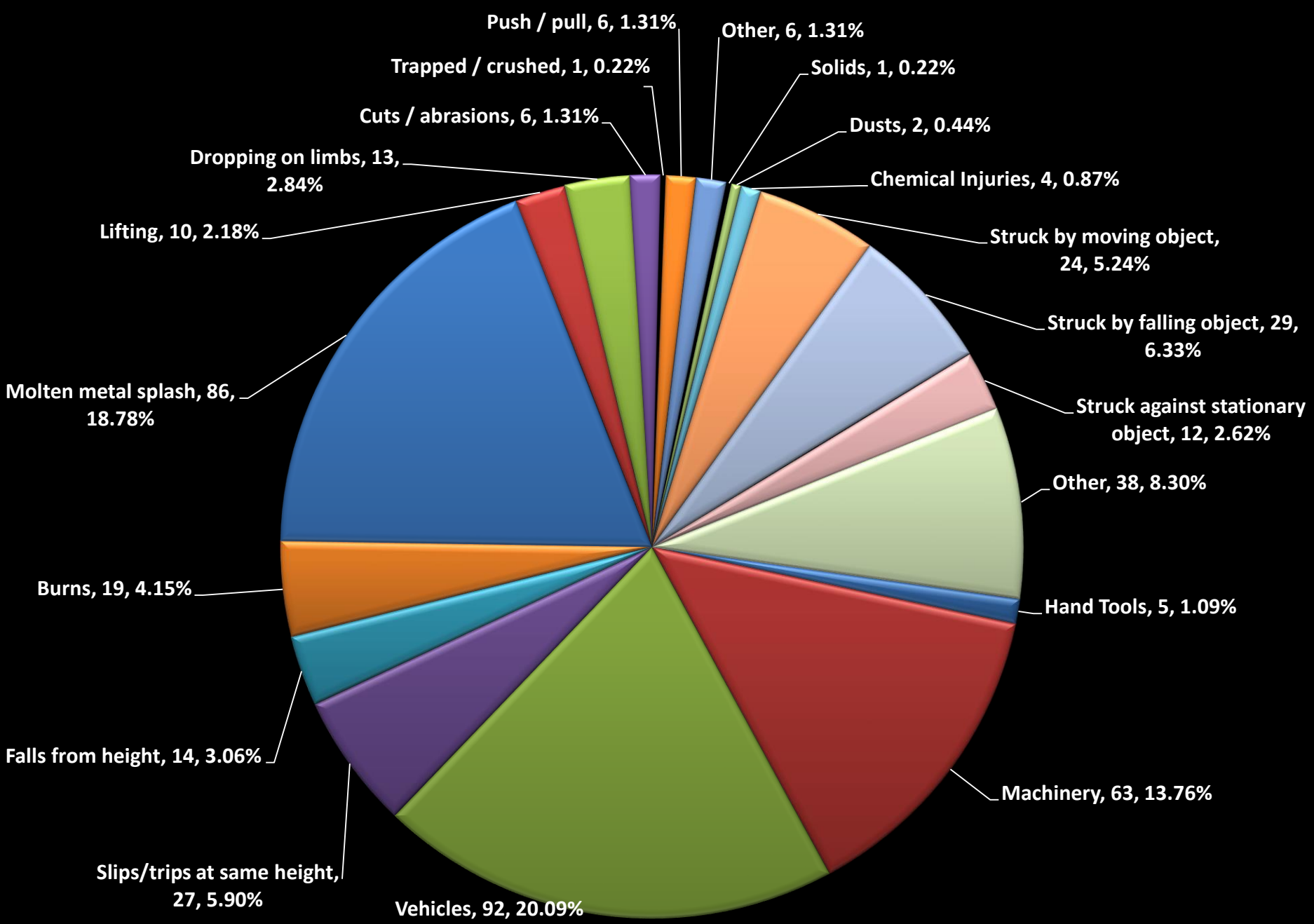
2016 First Aid Only Accidents - Micro Level



2016 Near Misses Reported - Macro Level



2016 Near Misses Reported - Micro Level



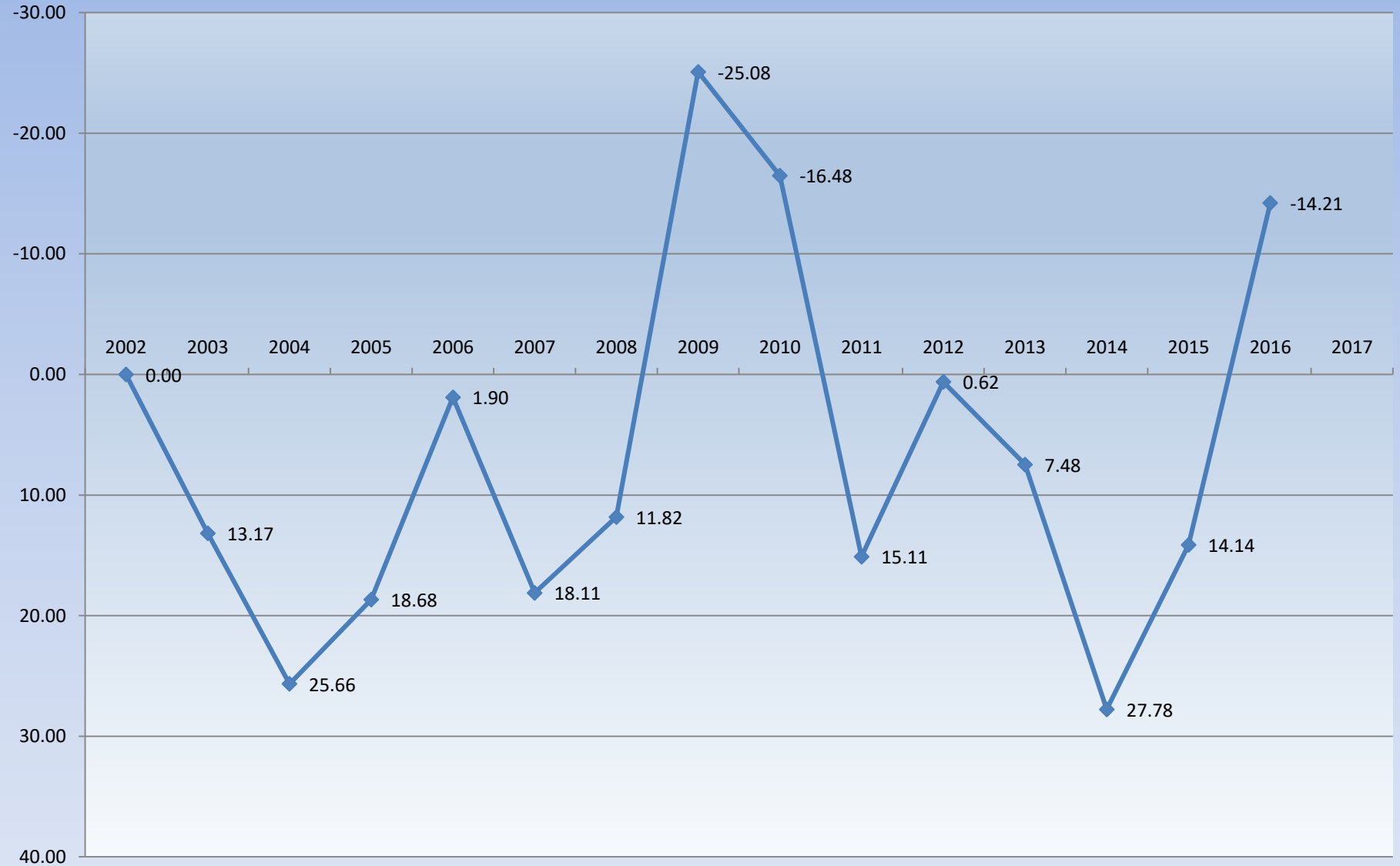
SHIFT RIDDOR Rates 2002 - date

RIDDOR - Target Rates vs Actual Acheivement

(Dec 2013 RIDDOR Change Compensated)

% Reduction in Rate to 2002 Year

Year on Year Percentage Change



New / Returning Reports 2016

Category	Number	Employees	Material	Process	Size of Company
New	4	467	1 Ferrous 3 Non-ferrous	1 Sand 3 Die-cast	2 Large 1 Medium 1 Small
Returnees	-				
Restructured	-				

Category	Number	Employees				
			Accidents	Rate/100 emp	RIDDOR	Rate/100K emp
New	4	467	52	11.13	2	428.27
Returning	-					
Restructured	-					

Process Comparisons – Ferrous vs Non-Ferrous

	Ferrous (33)		Non-Ferrous (34)	
Employees	4465		4566	
	Total Accidents	RIDDOR	Total Accidents	RIDDOR
Hand Tools	29	5	40	-
Machinery	35	3	15	-
Vehicles	5	1	6	1
Slips / Trips	97	15	114	10
Falls from Height	12	2	17	3
Burns	106	7	151	6
Manual Handling	230	21	391	21
Eye Injuries	111	-	89	-
Chemical Injuries	1	-	4	-
Struck by Moving Object	46	5	51	2
Struck by Falling Object	30	-	30	2
Struck against Stationary Object	39	4	63	2
Other	32	-	15	2
Reportable Diseases	2	2	-	-
TOTAL	775	65	986	49
Rate	17.36 / 100 emp's	1455.76 / 100K emp's	21.59 / 100 emp's	1073.14 / 100K emp's

Location & number of **total** accidents - Ferrous vs Non-ferrous

Locale	No. of acc's	% of total	Foundries with accidents in this area	No. of acc's	% of total	Foundries with accidents in this area
	Ferrous foundries			Non-ferrous foundries		
Melting, moulding, casting	283	36.52	33	531	53.85	32
Knockout, fettling, basic finishing	265	34.19	30	151	15.31	25
Machine shop	75	9.68	17	99	10.04	17
Tool room or maintenance areas	44	5.68	16	61	6.19	21
Finished stores, despatch & yard areas	49	6.32	22	46	4.67	21
Other Areas / Dept.'s	59	7.61	21	98	9.94	19

Location & number of **RIDDOR** accidents - Ferrous vs Non-ferrous

Locale	No. of acc's	% of total	Foundries with accidents in this area	No. of acc's	% of total	Foundries with accidents in this area
	Ferrous foundries			Non-ferrous foundries		
Melting, moulding, casting	31	47.69	18	27	55.10	11
Knockout, fettling, basic finishing	21	32.31	14	8	16.33	3
Machine shop	5	7.69	2	2	4.08	2
Tool room or maintenance areas	4	6.15	3	2	4.08	2
Finished stores, despatch & yard areas	3	4.62	3	4	8.16	3
Other Areas / Dept.'s	1	1.54	1	6	12.24	5

Process Comparisons – Sand vs Die-cast vs Investment

	Sand (44)		Die-cast (18)		Investment (5)	
Employees	5910		2224		897	
	Total Accidents	RIDDOR	Total Accidents	RIDDOR	Total Accidents	RIDDOR
Hand Tools	40	5	23	-	6	-
Machinery	40	3	7	-	3	-
Vehicles	7	1	3	-	1	1
Slips / Trips	130	17	64	7	17	1
Falls from Height	18	3	10	2	1	-
Burns	142	12	96	1	19	-
Manual Handling	349	32	196	7	76	3
Eye Injuries	130	-	57	-	13	-
Chemical Injuries	3	-	2	-	-	-
Struck by Moving Object	71	6	20	1	6	-
Struck by Falling Object	41	1	17	1	2	-
Struck against Stationary Object	62	6	30	-	10	-
Other	37	-	10	2	-	-
Reportable Disease	2	2	-	-	-	-
TOTAL	1072	88	535	21	154	5
Rate	18.14 / 100	1489.00 / 100K	24.06 / 100	944.24 / 100K	17.17 / 100	557.41 / 100K

Location & number of **total** accidents – Sand vs Die vs Investment

Locale	No. of acc's	% of total	Foundries with accidents in area	No. of acc's	% of total	Foundries with accidents in area	No. of acc's	% of total	Foundries with accidents in area
	Sand Foundries			Die-cast Foundries			Investment Foundries		
Melting, moulding, casting	435	40.58	43	333	62.24	17	46	29.87	5
Knockout, fettling, basic finishing	341	31.81	38	38	7.10	12	37	24.03	5
Machine shop	93	8.68	20	67	12.52	12	14	9.09	2
Tool room or maint. areas	56	5.22	23	45	8.41	11	4	2.60	3
Finished stores, despatch & yard areas	66	6.16	29	21	3.93	9	8	5.19	5
Other Areas / Dept.'s	81	7.56	26	31	5.79	9	45	29.22	5

Location & number of RIDDOR accidents – Sand vs Die vs Investment

Locale	No. of acc's	% of total	Foundries with accidents in area	No. of acc's	% of total	Foundries with accidents in area	No. of acc's	% of total	Foundries with accidents in area
	Sand Foundries			Die-cast Foundries			Investment Foundries		
Melting, moulding, casting	46	52.27	21	10	47.62	6	2	40.00	2
Knockout, fettling, basic finishing	25	28.41	14	2	9.52	1	2	40.00	2
Machine shop	5	5.68	2	2	9.52	2	-	-	-
Tool room or maint. areas	4	4.55	3	2	9.52	2	-	-	-
Finished stores, despatch & yard areas	5	5.68	4	2	9.52	2	-	-	-
Other Areas / Dept.'s	3	3.41	2	3	14.29	3	1	20.00	1

Process Comparisons – Company Size

	Large (18)		Medium (28)		Small (21)	
Employees	5708		2616		707	
	Total Accidents	RIDDOR	Total Accidents	RIDDOR	Total Accidents	RIDDOR
Hand Tools	38	3	20	-	11	2
Machinery	30	3	12	-	8	-
Vehicles	2	-	5	-	4	2
Slips / Trips	146	20	48	4	17	1
Falls from Height	14	1	6	1	9	3
Burns	136	6	67	3	54	4
Manual Handling	307	22	202	13	112	7
Eye Injuries	116	-	58	-	26	-
Chemical Injuries	3	-	2	-	-	-
Struck by Moving Object	62	5	30	2	5	-
Struck by Falling Object	39	2	14	-	7	-
Struck against Stationary Object	63	6	33	-	6	-
Other	26	1	18	1	3	-
Reportable Disease	1	1	1	1	-	-
TOTAL	983	70	516	25	262	19
Rate	17.22 / 100	1226.34 / 100K	19.72 / 100	955.65 / 100K	37.06 / 100	2687.41 / 100K

Location & number of **total** accidents – By Company Size

Locale	No. of acc's	% of total	Foundries with accidents in area	No. of acc's	% of total	Foundries with accidents in area	No. of acc's	% of total	Foundries with accidents in area
	Large Foundries			Medium Foundries			Small Foundries		
Melting, moulding, casting	433	44.05	18	221	42.83	28	160	61.07	19
Knockout, fettling, basic finishing	231	23.50	15	138	26.74	26	47	17.94	14
Machine shop	110	11.19	14	44	8.53	12	20	7.63	8
Tool room or maint. areas	62	6.31	14	35	6.78	18	8	3.05	5
Finished stores, despatch & yard areas	35	3.56	14	38	7.36	19	22	8.40	10
Other Areas / Dept.'s	112	11.39	15	40	7.75	21	5	1.91	4

Location & number of RIDDOR accidents – By Company Size

Locale	No. of acc's	% of total	Foundries with accidents in area	No. of acc's	% of total	Foundries with accidents in area	No. of acc's	% of total	Foundries with accidents in area
	Large Foundries			Medium Foundries			Small Foundries		
Melting, moulding, casting	32	45.71	12	15	60.00	10	11	57.89	7
Knockout, fettling, basic finishing	21	30.00	10	4	16.00	4	4	21.05	3
Machine shop	7	10.00	4	-	-	-	-	-	-
Tool room or maint. areas	3	4.29	2	2	8.00	2	1	5.26	1
Finished stores, despatch & yard areas	2	2.86	2	2	8.00	2	3	15.79	2
Other Areas / Dept.'s	5	7.14	4	2	8.00	2	-	-	-

Results Comparisons – 2014 to 2016 (59 Foundries)

	2016 (7391 emp)		2015 (7854 emp)		2014 (7723 emp)	
	Total	RIDDOR	Total	RIDDOR	Total	RIDDOR
Hand Tools	64	4	117	2	103	6
Machinery	45	2	73	7	63	10
Vehicles	10	2	14	1	27	5
Slips / Trips	184	21	202	22	193	17
Falls from Height	25	5	21	5	21	1
Burns	223	11	252	17	251	6
Manual Handling	578	39	582	36	702	37
Eye Injuries	176	-	252	-	260	2
Chemical Injuries	4	-	7	-	7	-
Struck by Moving Object	94	6	83	5	154	15
Struck by Falling Object	56	2	83	-	NA	NA
Struck against Stationary Object	100	5	101	1	142	-
Other	24	2	44	1	63	-
Reportable Diseases	2	2	5	5	3	3
TOTAL	1585	101	1836	102	1989	102
Rate	21.45 /100	1366.53 /100K	23.38 /100	1298.70 /100K	25.75 /100	1320.73 /100K

SHIFT Case Study 1 (Large foundry)

RIDDOR Analysis

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
RIDDOR	9	7	5	3	7	5	1	6	6	5	2	5
RIDDOR Rate / 100K	4348	3590	2551	1515	3889	2688	546	3125	3509	2941	1220	3049
Total	138	98	79	62	37	40	28	26	41	50	46	53
Overall Rate / 100	66.67	53.85	40.31	31.31	20.56	21.51	15.30	13.54	23.98	29.41	28.05	32.32

SHIFT Case Study 1 (Large foundry)
Total Accident Breakdown

	Hand Tools	M/C	Veh	F /S/T	FFH	Burns	Handle Object	Eyes	Chem	Struck by MO	Struck by FO	Struck SO	Other	Rep Dis	Total
2006	1	4	0	10	0	7	15	46	0	0		14	1		98
2007	2	0	2	6	1	5	19	32	0	5		4	3		79
2008	1	3	0	8	0	5	13	22	0	3		5	2		62
2009	0	1	0	6	0	3	12	10	0	1		4	0		37
2010	0	0	2	2	0	3	9	11	0	8		5	0		40
2011	1	2	1	1	0	1	8	7	0	5		2	0		28
2012	1	0	2	4	0	2	4	7	0	2		2	0		26
2013	3	1	1	5	1	3	4	10	0	11		1	0	1	41
2014	2	0	1	4	1	4	7	12	0	13		5	1	0	50
2015	3	8	0	6	0	4	10	5	0	3	3	2	0	2	46
2016	3	4	0	9	1	10	6	9	0	6	1	4	0	0	53

SHIFT Case Study 2 (Small foundry)

	2009	2010	2011	2012	2013	2014	2015	2016
RIDDOR	0	0	1	0	3	1	0	0
RIDDOR Rate / 100K	0	0	2174	0	8571.42	2083	0	0
Total	66	40	32	24	26	29	19	18
Overall Rate / 100	153.49	93.02	69.57	53	74.29	60	54.29	46.15

	Hand Tools	M/C	Veh	F /S/T	FFH	Burns	Handle Object	Eyes	Chem	Struck by MO	Struck by FO	Struck SO	Other	Rep Dis	Total
2009	3	3	0	7	0	6	19	21	0	2		4	1		66
2010	0	0	0	3	0	3	10	11	0	7		6	0		40
2011	2	1	0	2	0	2	4	12	0	7		2	0		32
2012	0	0	0	0	0	1	17	2	0	2		1	1		24
2013	1	0	0	1	0	2	15	6	0	0	0	1	0	0	26
2014	4	0	0	0	0	2	17	6	0	0	0	0	0	0	29
2015	0	0	0	2	0	0	13	2	2	0	0	0	0	0	19
2016	0	0	0	0	0	0	17	0	0	0	0	0	1	0	18

Case Study Progress Reports

Large Member

- Over 10 year reporting period the business has 16.3% less employees in 2016 than 2007[1]
- The business has maintained an active safety management as time has progressed including reporting of accidents[2]
- There is a significant increase in the level of activities in the business

Small Member

- Since 2009 to date there is a 9.3% reduction in the number of employees[1, 2]
- There is a defined increase in active safety management as time has progressed and the business has maintained the trend of experiencing less accidents per year

[1] By default a decrease in employee numbers will increase reported values for both RIDDOR and overall accident rates on a like for like number of accidents.

[2] An increase in reported accident numbers cannot be taken by themselves to be indicative of a decrease in safety performance. As active safety increases employees become more aware of the need to report accidents. This, taken with a decrease in overall employee numbers, will produce an increase in reported rates and does not mean that the foundry is a less safe place to be working or that due care for the health, safety and welfare of employees is not taking place.

Where accident rates decrease with smaller numbers of employees, it may mean safer working by employees in general or that management of safety continues to strengthen.

By default, an increase in the size of the workforce will result in decreased reported values for both RIDDOR and overall accident rates on a like for like number of accidents.

2017 Targets

Based on the information received from SHIFT members during the phase 2 base year of 2012, the target values to achieve the 25% reduction in accidents for the initiative by the end of 2017 were:

- 127 or less RIDDOR reportable accidents
- A RIDDOR rate of less than 1444
- A total number of accidents per 100 employees of 19 or less

However….. due to the change in RIDDOR reporting requirements that occurred in December 2013, the targets were revised in line with the changes and therefore the new targets to achieve are:

- ✓ **100 or less RIDDOR reportable accidents**
- ✓ **A RIDDOR rate of less than 1109**
- ✓ **A total number of accidents per 100 employees of 17 or less**

Summary

- Overall, the number of reporting members is the lowest figure since 2012. While the members reporting accident information in this current year are 4.7% higher than in 2012, the number is 14.1% lower than peak reporting which occurred in 2015. Therefore the number of employees covered by reporting in 2016 is some 2191 less than in 2015. Some individual members continue to show a significant uplift in numbers employed compared with 2015, while others remain stable and some show a reduction compared to the previous year.

- There is a sustained increase in the number of members who have reported for the last 3 rolling years, rising from 56 (2013 to 2015 period) to 59 for the period 2014 to 2016. The nett reduction in RIDDOR accidents is 20.31% in real terms between 2014 & 2016. However, it must be noted that between years 2015 & 2016 in isolation only, a rise of 14.21% has been recorded.

- The number of investment casting sector companies has remained stable although there is some variation in the reporting members between 2014 and 2016, with large changes to numbers employed within the sector, so any performance variation cannot be assumed to be naturalised.

- The primary four categories for accidents in 2016 have remained the same main categories throughout the full history of the SHIFT initiative. As in previous years, despite efforts made to date, more work remains to be undertaken to yield improvements in these areas.

Summary ....cont'd

- There is a non-significant reduction in the number of RIDDOR accidents reported for 2016 compared with 2015. However, given the significant decrease in the number of employees included reporting in the initiative, the change in the overall RIDDOR rate over the past year equates to a 14.21% increase. This figure however, is still 34.48% lower than that in 2012, which was the baseline level at the start of phase 2 for the initiative.

- The number of members reporting lost time due to injuries sustained in the workplace has increased by 78.79% compared to when phase 2 was launched in 2012. The downward trend of days lost as a result of workplace injuries has continued into 2016. in 2012 the average number of days lost of those who reported LTI's (lost time injuries) was 88, however in 2016 this has reduced to 58. This is a positive step for the industry.

- There has been a significant reduction in overall accidents reported by members (24.03%) compared with the previous year. This has resulted in a reduction in the overall accident rate per 100 employees of 9.52%. Considering the significant decrease in the number of employees included, given that there are a number of first time reporting members, coupled with a variation in employee numbers of others reporting, all of which tend to conflate matters; this is a positive step for the industry.

- Near miss reporting has significantly improved across the membership since phase 2 was launched in 2012, although reporting is still undertaken in less than 40% of the members, based on comparing like for like representation in both 2015 & 2016.

Conclusion

Although the number of members reporting accident information to SHIFT has declined in 2016 compared to 2015 for a number of reasons including a larger turnover of HSE professionals within member foundries than at any other time since the start of phase 2 in 2012, the number of actual members taking part in the initiative continues to grow. Membership continues to include foundries producing castings covering the entire range of metals, processes and technologies. Likewise membership sizes range from micro businesses through to the largest foundry groups in the UK.

Given the increase in members who are consistently reporting and new members starting to report, meaningful information as to injury severities, types, categories and locales on site continues to improve. However, there continues to be a hard core of membership to be persuaded to share their information. Further research needs to be undertaken to establish what is preventing the sharing of information by those that currently do not, taking into account full anonymity is guaranteed as individual reports are aggregated into the final published report and no business identifiable information is ever made public. Reporting members do equate for more than 50% of the total membership.

While the overall accident rate per 100 employees for SHIFT has decreased, it is possible that this is due to the mix of companies that have reported data, combined with the improving individual performance by some members. The increase in numbers consistently reporting does however, aide proving underlying performance for the initiative is continuing to improve. Over the past 3 years overall rates have fallen by 20.83%.

The 2016 dataset does show a reduction of 10.94% in the amount of reportable accidents over the past 3 years but when taken in isolation over the past 12 months, there has been a minor increase in the RIDDOR rate, due to the decrease in employee numbers covered by reporting foundries.

SHIFT – 2018 & Beyond

It is recognised that the world of health & safety continues to drive ever onwards. It is therefore understood that work remains to be done to improve the working environment in UK foundries thus aiding improving the protection of the safety of those employees at work.

It is also recognised that the occupational health of employees is receiving far more attention than it has received in all industries for a number of years. The UK regulator, the HSE, has launched new health priorities including occupational lung disease, musculoskeletal disorders and work-related stress.

As a result of the HSE priorities and sector plans launched in September 2017, coupled European legislation to be bought onto the UK statute books as part of the process of leaving the EU, it is widely understood that there are new avenues of work for CHASAC to explore with UK foundries. This is also as a result of the Long Latency Health Risks Project report becoming available, highlighting areas where improvements in techniques, monitoring, training and competence can make a difference to the working environment.

Therefore SHIFT will launch in the first quarter of 2018, phase 3, which will continue to build on the work undertaken by members so far and introduce further plans and dissemination of good practice to further aid UK foundries in their quest to be the best when it comes to caring for the health of their workforce.

SHIFT also remains committed to supporting the Social Dialogue Agreement on Respirable Crystalline Silica, better known as NEPSI, with a view to using best practice materials developed to aid UK foundries in improving the working environment with regards to hazards dusts.

SHIFT – 2018 & Beyond.....cont'd

The initiative is currently undertaking work targeting behavioural change in the workplace, which has been developed for the benefit of Team Leaders and Supervisors. An expanded version of this training exclusively for Directors and Senior Management has been added to the portfolio we can deliver, which encompasses the roles and responsibilities of these people in the workplace with respect of health and safety. We also maintain a provision to train/educate Directors & Senior Management in their roles and responsibilities with an external partner.

Therefore SHIFT will launch in the first quarter of 2018, phase 3, which will continue to build on the work undertaken by members so far and introduce further plans and dissemination of good practice to further aid UK foundries in their quest to be the best when it comes to caring for the health of their workforce.

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