

***GOLDEN TRIANGLE
BUSINESS ROUNDTABLE***



***CONTRACTOR SAFETY
SURVEY***

2002 REPORT

Executive Summary

This report is compiled by the Industrial Safety Training Council from voluntary responses to the Golden Triangle Business Roundtable Contractor Incident Data Survey. Historical data for 1993 through 2001 is reported here as well as the results received from the 2002 survey.

Trends

1. The total number of OSHA Recordable Incidents continues to decrease.
2. A decrease in average Experience Modifier Rates.
3. A decrease in incident rates 1992-2002, with the exception of a slight increase in 2001.
4. Incident severity rate has decreased from 1996-2002.
5. Golden Triangle Area statistics reported are far below national trends as reported by the Bureau of Labor Statistics, U.S. Department of Labor.

Incident Specific Analysis - 2002

Most frequent response for each category:

1. Type of contact: CAUGHT BY/BETWEEN
2. Nature of illness/injury: FRACTURE
3. Body part injured: FINGER/HAND
4. Possible causes at time of incident: DECISION MAKING & PHYSICAL ACT
5. Pre-existing causes: COMMUNICATION

This data was compiled from survey responses reporting more than 22 million exposure hours and 69 recordable incidents, 11 with lost time and 58 medical treatment cases.

Tables of all survey results can be found in the Appendix.

Purpose

This Contractor Incident Data Survey is conducted to collect data on the contractor accident experience and safety performance for the Golden Triangle Area. Information specific to each OSHA Recordable accident is analyzed to identify target areas where the greatest impact can be made to eliminate accidents.

Scope

Data collection surveys are distributed requesting data from all Contractor employers currently listed as subscribers to the Industrial Safety Training Council. Historical data for the years 1994-2000 has been compiled to include the following:

- Total number of OSHA Recordable incidents
- Total number of lost workday cases
- Exposure hours
- Experience Modifier Rate
- Standard Industrial Classification (SIC) Code

Subsequent annual surveys request the following information:

- Exposure hours
- Statistics from OSHA 200/300 Log
- Number and types of OSHA recordables
 - * Type of contact
 - * Nature of illness/injury
 - * Body part injured
 - * Possible incident/accident causes

Examples of all forms used can be found in the Appendix.

Disclaimer

This report is a compilation of the responses to the annual survey conducted of area contractors by the Golden Triangle Business Roundtable. Those not responding are not in the compilation and so the reader should not assume that the compilation represents the experience of all area contractors or even all area contractors working at Roundtable member facilities, only the experience of those responding to the survey. As a matter of policy, the Roundtable has maintained the confidentiality of those responding and the sites for which they have responded.

Methodology

In order to analyze the data received, information was entered into an Excel spreadsheet by year with the statistical formula established for:

Incident Rate*

$$\frac{\text{Total OSHA Recordable Incidents} \times 200,000}{\text{Exposure Hours}}$$

Incident Severity Rate*

$$\frac{\text{Total Lost Workday Cases} \times 200,000}{\text{Exposure Hours}}$$

Average Experience Modifier

$$\text{Average} = \frac{\text{Sum of EMR numbers}}{\text{total responses}}$$

Percent Distributions

$$\% = \frac{\text{category responses}}{\text{total responses}} \times 100$$

*where 200,000 is the base for 100 full-time workers (40 hours per week, 50 weeks per year)

Conclusions

The responses to the 2002 GTBR Safety Survey reveal that we have had a substantial decrease for the overall reporting period of 1993-2002, and the Severity Rate continues to decline. This would indicate that, while medical treatment has increased, the lost day injuries percentage reported for the Golden Triangle area have decreased. Based on survey responses, reductions in the following categories are noted for the period 1993-2002.

<u>Category</u>	<u>Reduction reported</u>
Incident Rate	86%
Severity Rate	99%

The largest percentages of injuries reported by type of contact are as follows:

<u>2001</u>		<u>2002</u>	
Struck by/against	41%	Caught by/between	30%
Caught by/between	14%	Struck by	22%
Slip (same level)	10%	Slip (same level)	9%
Overexertion	7%	Fall (to lower level)	8%

The largest percentages of injuries reported by nature of illness/injury are as follows:

<u>2001</u>		<u>2002</u>	
Cut/puncture	26%	Fracture	42%
Fracture	18%	Cut/puncture	30%
Sprain/strain	17%	Sprain/strain	17%

The largest percentages of injuries reported by body part injured are as follows:

<u>2001</u>		<u>2002</u>	
Finger/hand	15%	Finger/hand	42%
Foot/toes	14%	Knee	8%
Arm and Back	11% each	Ankle	8%

The final category of information requested was possible incident/accident causes, both at the time of the incident and pre-existing causes. The results are as follows:

2001

At time of incident:

Decision making	33%
Workplace hazards	21%
Physical acts	17%

Pre-existing causes:

Risk taking	28%
Knowledge/skills	15%
Communication	13%

2002

At time of incident:

Decision making	30%
Physical acts	30%
Tools/equipment	14%

Pre-existing causes:

Communication	24%
Risk Taking	22%
Job procedures	17%

Recommendations

1. More emphasis on hazard recognition and analysis to mitigate or remove workplace hazards. Increase worker awareness of the physical hazards and measures to be taken to protect themselves from injury.

2. Hand and finger injuries continue to be the leading injuries reported. Reinforced efforts to reduce hand injuries through awareness and diligent use of PPE, engineering controls, and training.

3. Decision making and physical acts are reported as leading accident causes.
 - Emphasize a workplace culture where risk taking and unsafe acts are not tolerated.
 - Take steps to insure that employees are aware of hazards and know how to protect themselves.
 - Continue with efforts to eliminate or control workplace hazards.

4. Develop a proactive approach involving line workers in a job safety analysis (JSA) to identify the potential for injury and to determine the measures to take in order to complete each task injury free.

5. Caught by and struck by/against have accounted for a vast majority of the injuries reported for the last two years. Increased focus on reducing this type of contact through awareness, training and hazard controls would have a dramatic impact on worker injuries.

6. Cuts and punctures, sprains and strains, and fractures have led the nature of illness/injury category for the past two years and combine to be a factor in 89% of the injuries reported for 2002. Use of PPE, training in proper lifting techniques, conditioning and body positioning could help to reduce these types of contact.

APPENDIX

DATA TABLES
HISTORICAL DATA

Totals of all Data by Year

	<u>Exposure Hours</u>	<u>OSHA Recordables</u>	<u>LWD* Cases</u>
1993	27,440,266	585	316
1994	31,600,604	567	408
1995	38,165,872	546	345
1996	38,684,397	457	400
1997	39,508,566	423	214
1998	32,092,756	327	120
1999	29,101,172	160	71
2000	19,658,830	102	47
2001	13,492,250	91	27
2002	22,447,655	69	11

*LWD, Lost Work Day

Statistical Analysis by Year

	<u>Incident Rates</u>		<u>EMR†</u>
	<u>Frequency</u>	<u>Severity</u>	<u>Average</u>
1993	4.26	2.44	0.89
1994	3.58	2.58	0.80
1995	2.86	1.80	0.75
1996	2.36	2.06	0.72
1997	2.14	1.08	0.71
1998	2.04	0.75	0.70
1999	1.10	0.49	0.70
2000	1.04	0.48	0.76
2001	1.35	0.40	0.79
2002	0.61	0.10	0.69

†EMR, Experience Modifier Rate

**Bureau of Labor Statistics Estimates of
Nonfatal Occupational Injury and Illness
Incident Rate for Selected Industries
2001***

<u>Industry</u>	<u>SIC Code</u>	<u>Incident Rates</u>	
		<u>Frequency</u>	<u>Severity</u>
Construction		7.9	4.0
Heavy Construction (except building)	1600	7.8	4.0
Special Trade Contractors	1700	8.2	4.1

**Estimates of
Nonfatal Occupational Injury and Illness
Incident Rate for Selected Industries
Golden Triangle Area, 2002**

<u>Industry</u>	<u>SIC Code</u>	<u>Incident Rates</u>	
		<u>Frequency</u>	<u>Severity</u>
All Responses		0.61	0.10
Heavy Construction (except building)	1600	0.43	0.04
Special Trade Contractors	1700	0.90	0.18

*U.S. Department of Labor

DATA TABLES

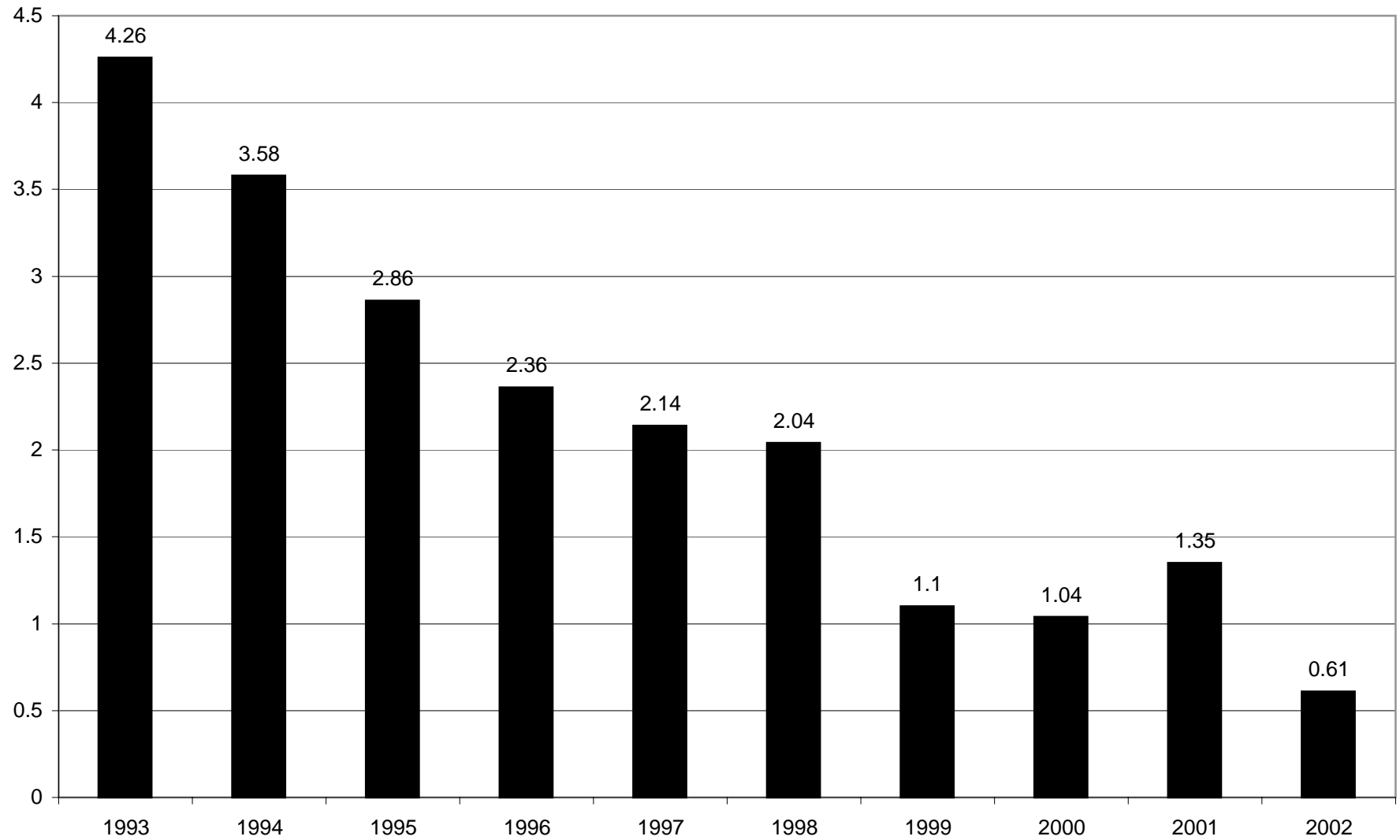
INCIDENT ANALYSIS

INCIDENT SPECIFIC DATA 2002

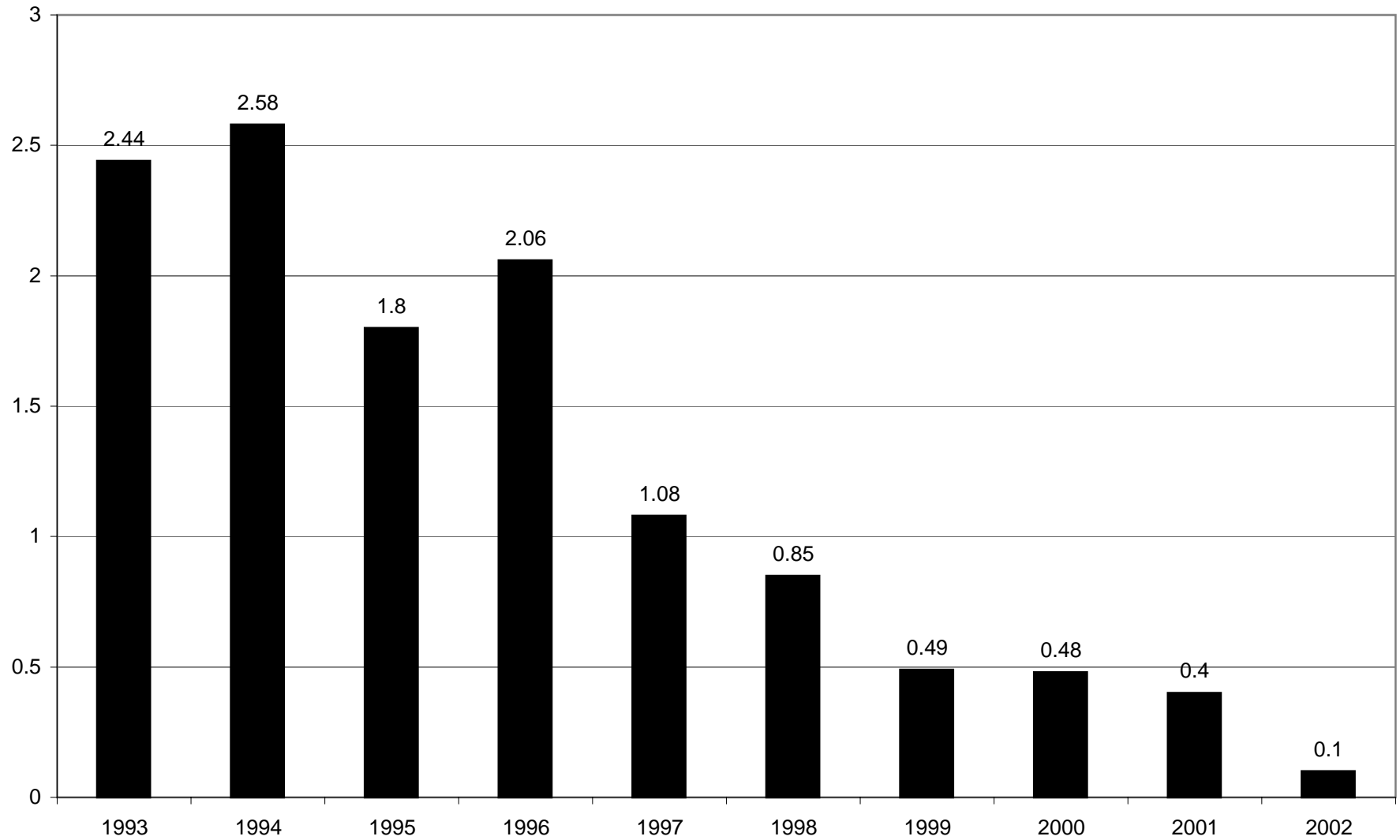
Type of Contact		Nature of Illness/Injury		Body Part Injured		Possible Incident/Accident Causes	
	%		%		%		%
Struck By/Against	17 22.4	Death	0 0.0	Shoulder	1 1.3	At Time of Incident	
Slip (Same Level)	9 11.8	Amputation	0 0.0	Elbow	0 0.0	Use of Guards	4 5.2
Other	7 9.2	Thermal Burn	0 0.0	Wrist	1 1.3	Use of PPE	5 6.5
Caught By/Between	23 30.3	Chemical Burn	2 2.6	Finger/Hand	32 41.6	Tools/Equipment	11 14.3
Overexertion	7 9.2	Irritation/Infection	0 0.0	Arm	5 6.5	Workplace Hazards	4 5.2
Fall (To Lower Level)	8 10.5	Crushed	3 3.9	Chest/Ribs	1 1.3	Decision Making	23 29.9
Chemical Exposure	2 2.6	Cut/Puncture	23 30.3	Back	5 6.5	Physical Act	23 29.9
Thermal Exposure	0 0.0	Bruise	0 0.0	Hip	0 0.0	Procedures	7 9.1
Welding Flash	0 0.0	Fracture	32 42.1	Knee	6 7.8		
Temp Exposure (Other)	0 0.0	Sprain/Strain	13 17.1	Foot/Toes	2 2.6	TOTALS	77 100
Fire/Explosion	0 0.0	Joint Dislocation	0 0.0	Ankle	6 7.8		
Repetitive Motion	2 2.6	Repeated Trauma	0 0.0	Leg	4 5.2	Pre-existing Causes	
Electrical Exposure	1 1.3	Electrical Shock	1 1.3	Abdomen	0 0.0	Physical Incapacity	0 0.0
Radiation Exposure	0 0.0	Hernia	1 1.3	Groin	0 0.0	Knowledge/Skills	3 7.3
Noise Exposure	0 0.0	Inhalation	0 0.0	Eye	2 2.6	Internal Factors	0 0.0
		Poisoning	0 0.0	Ear	0 0.0	Risk Taking	9 22.0
		Heat Disorder	1 1.3	Face/Head	5 6.5	Engineering/Design	1 2.4
		Other	0 0.0	Mouth	4 5.2	Job Procedures	7 17.1
				Internal	1 1.3	Maintenance	0 0.0
				Multiple	1 1.3	Error Inducing	3 7.3
				Other	1 1.3	Org. Factors	2 4.9
						Training	1 2.4
						Communication	10 24.4
						Other	5 12.2
TOTALS	76 100	TOTALS	76 100	TOTALS	77 100	TOTALS	41 100

CHARTS

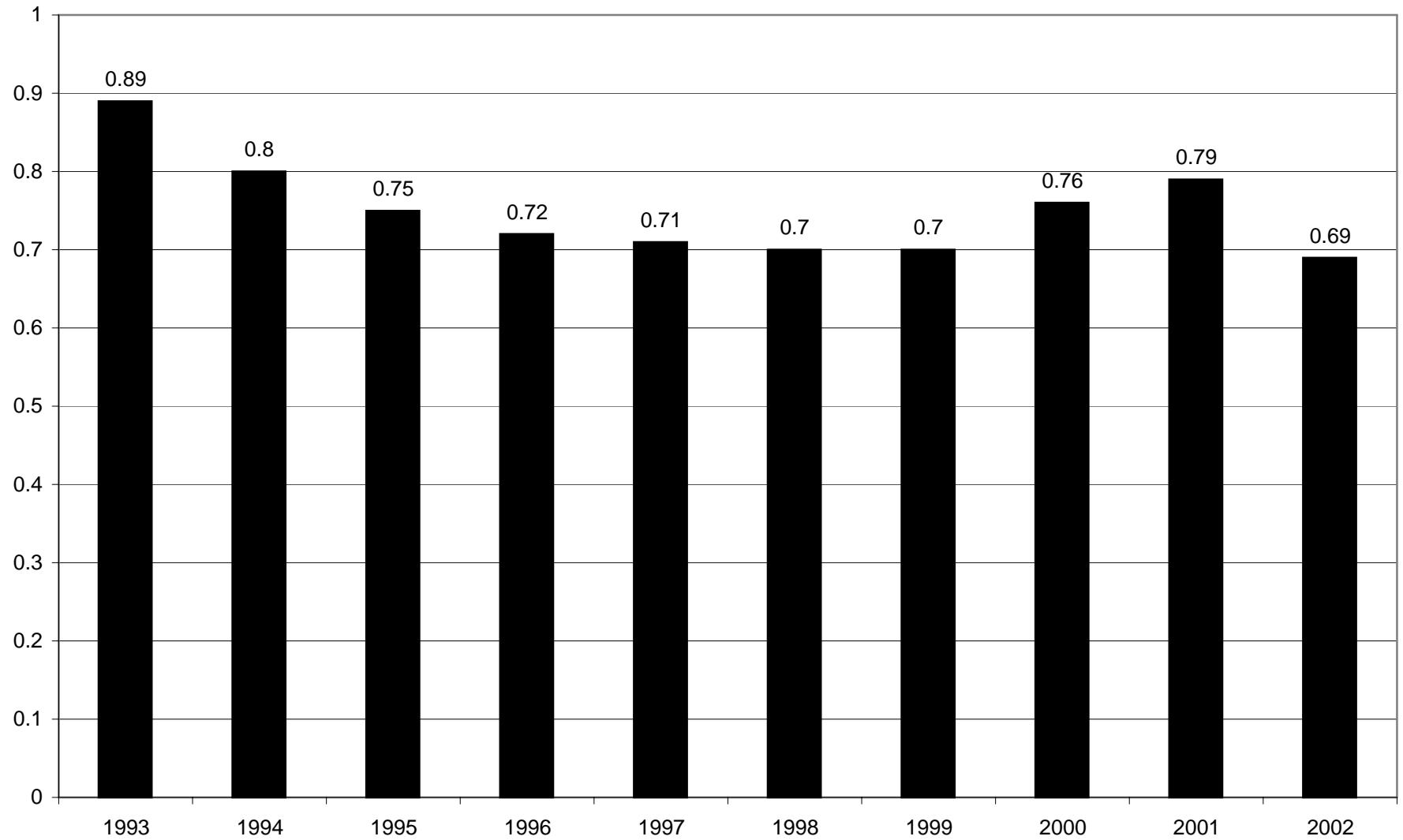
INCIDENT RATE



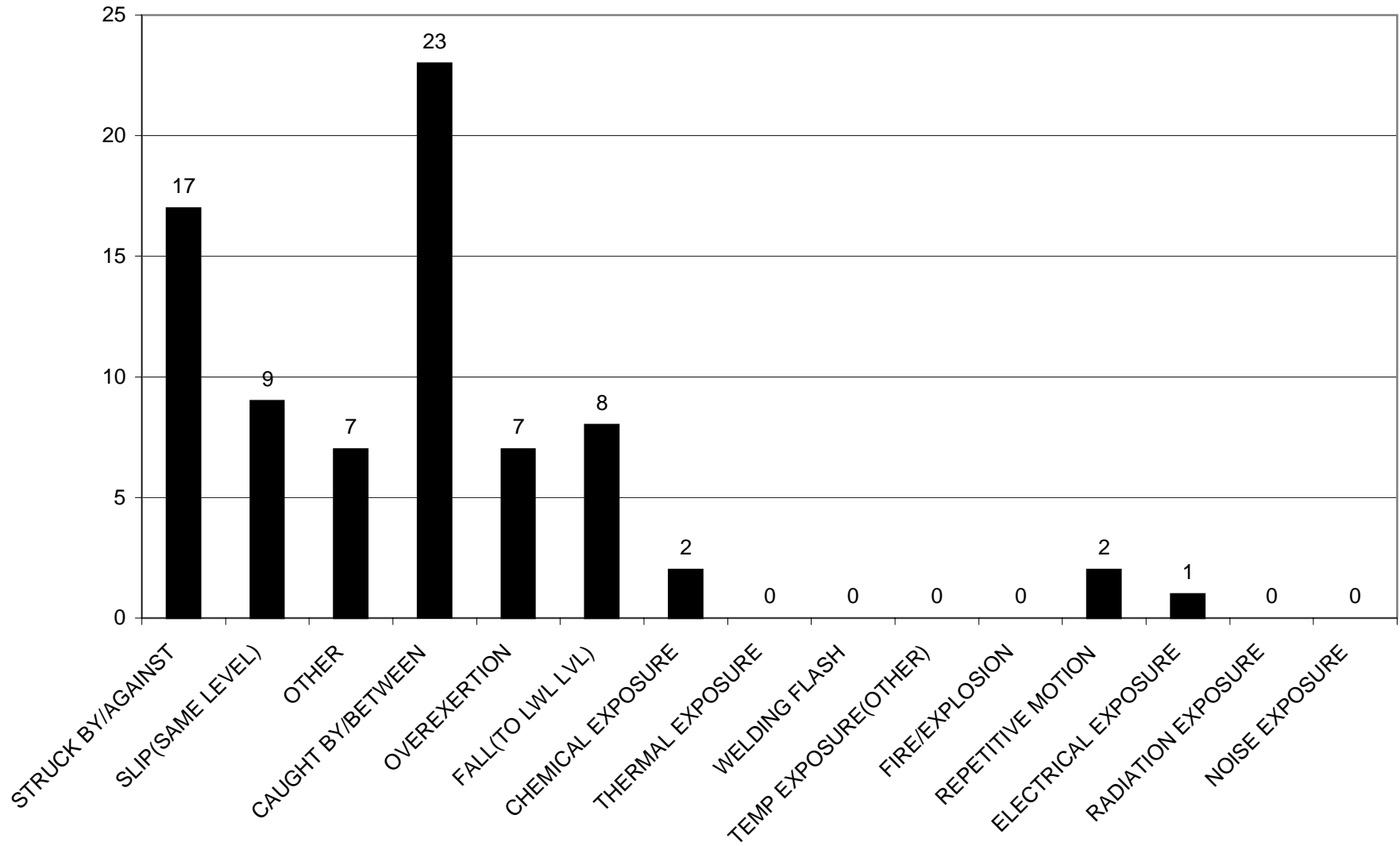
SEVERITY RATE



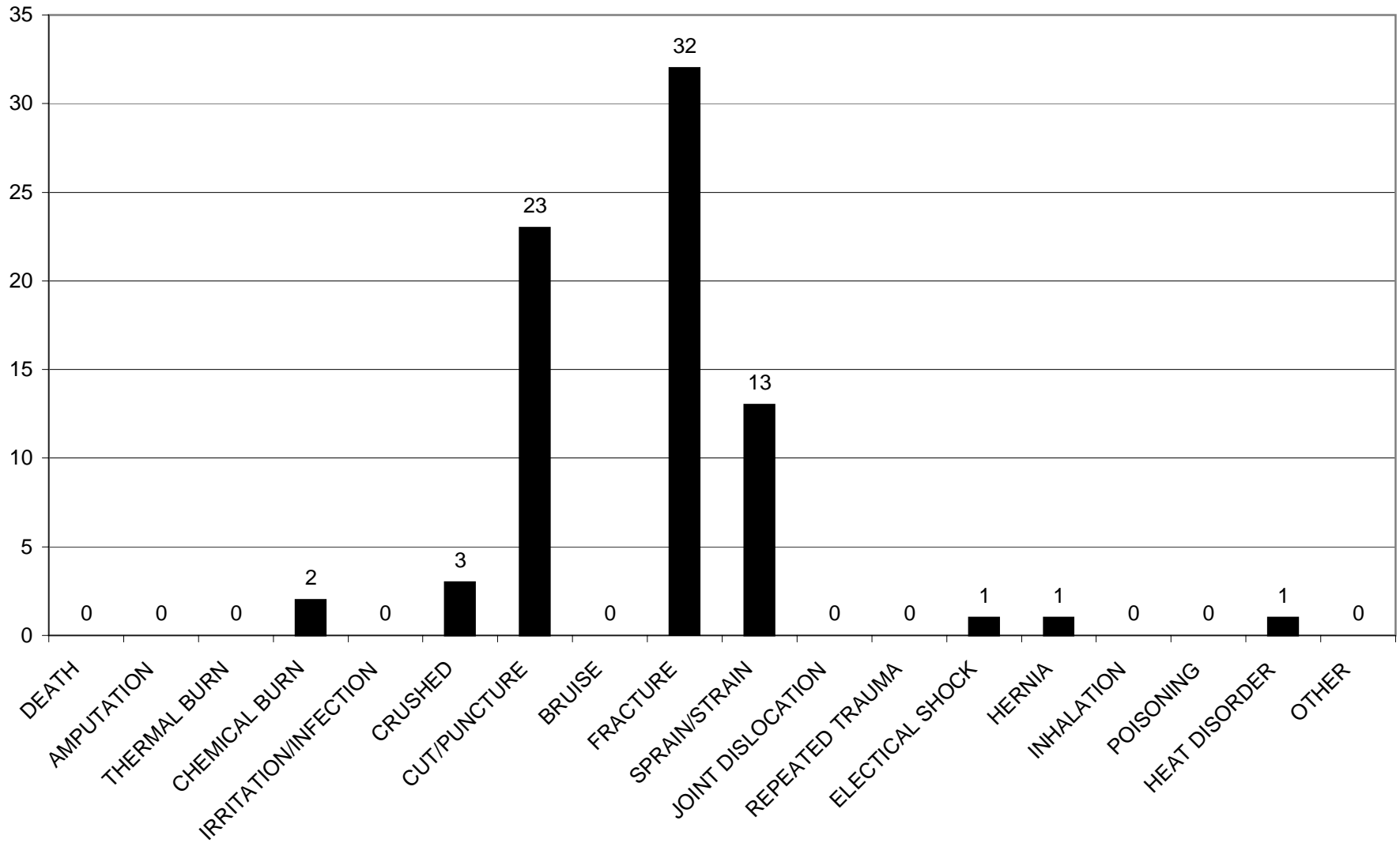
AVERAGE EMR



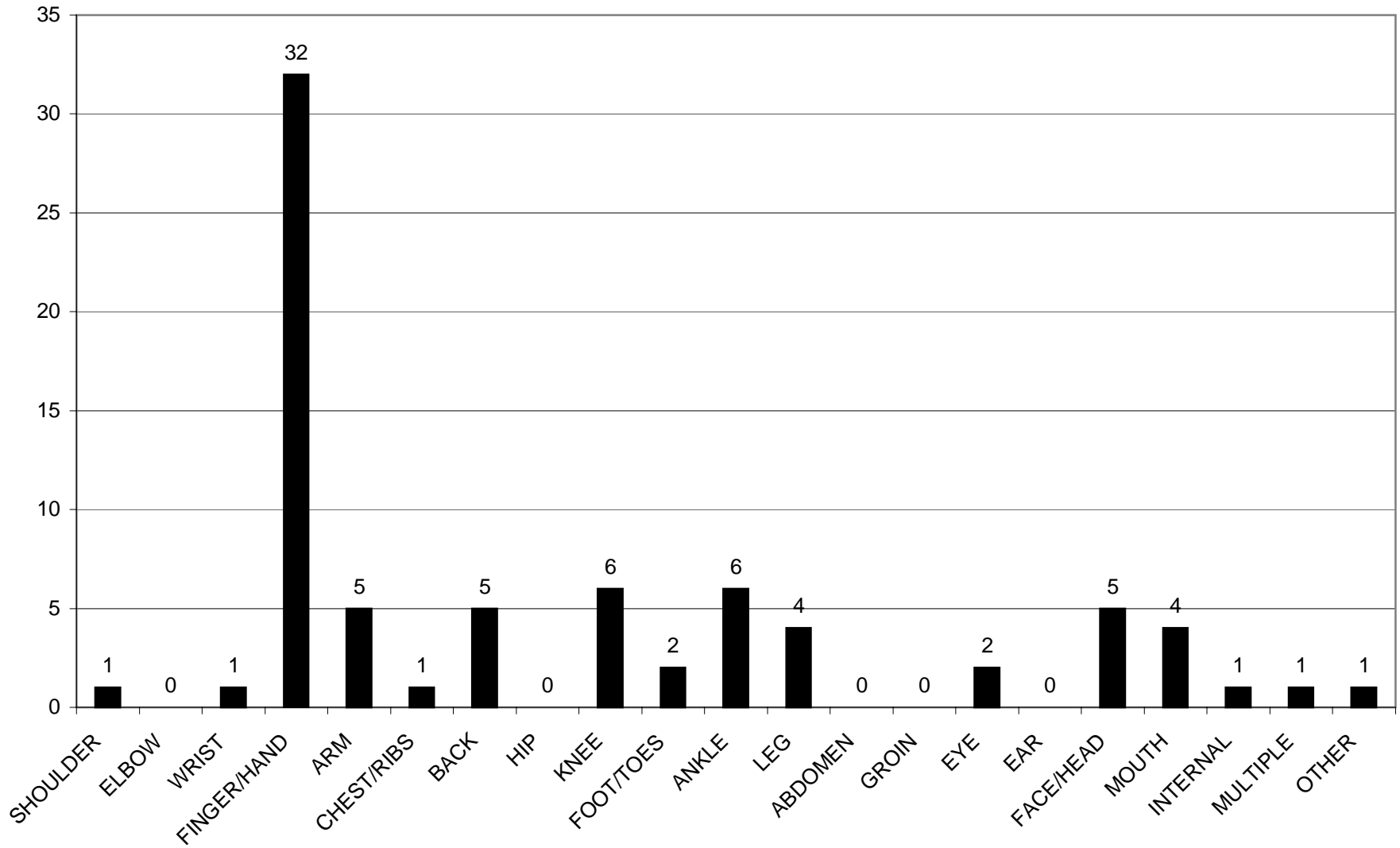
TYPE OF CONTACT



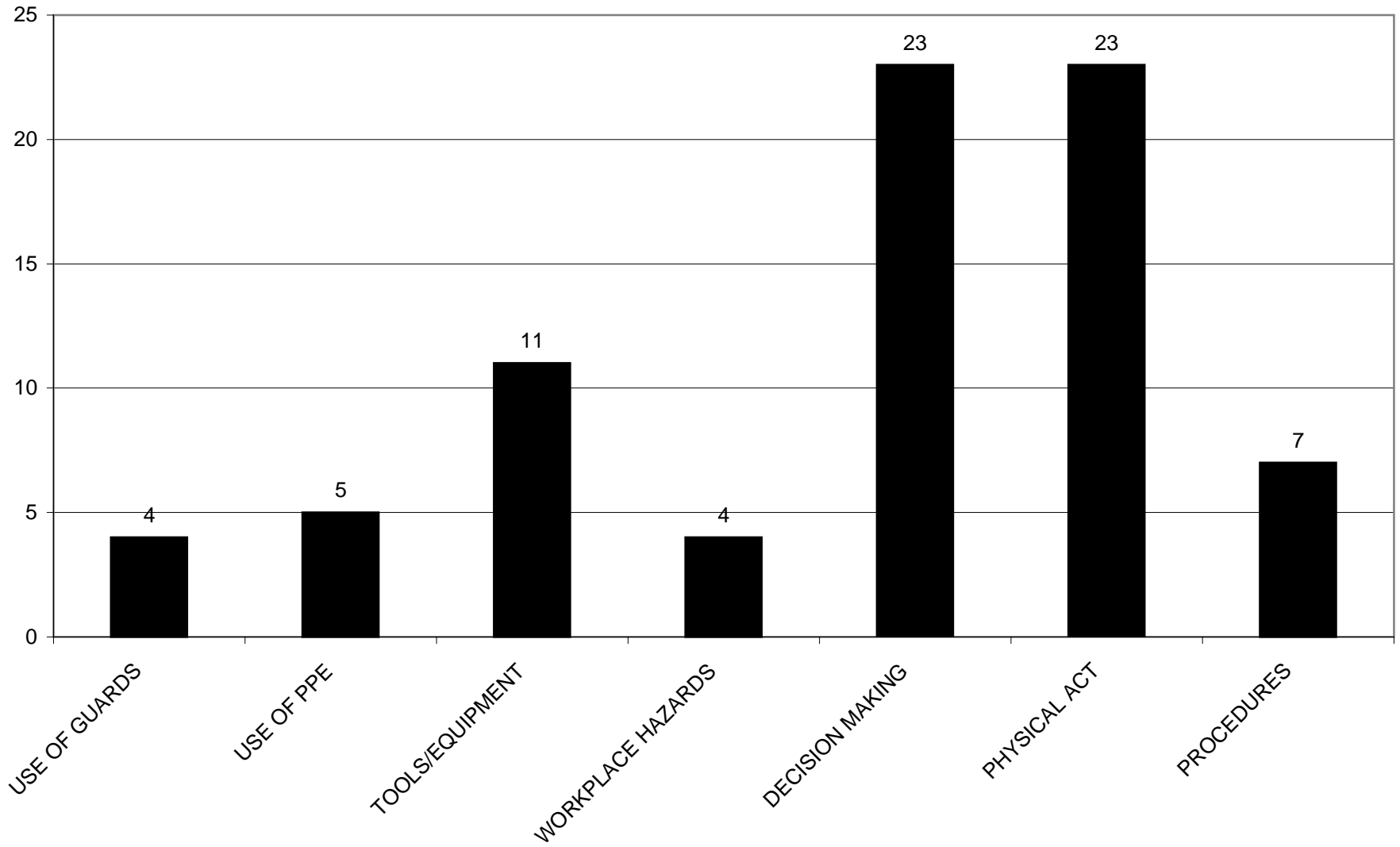
NATURE OF ILLNESS/INJURY



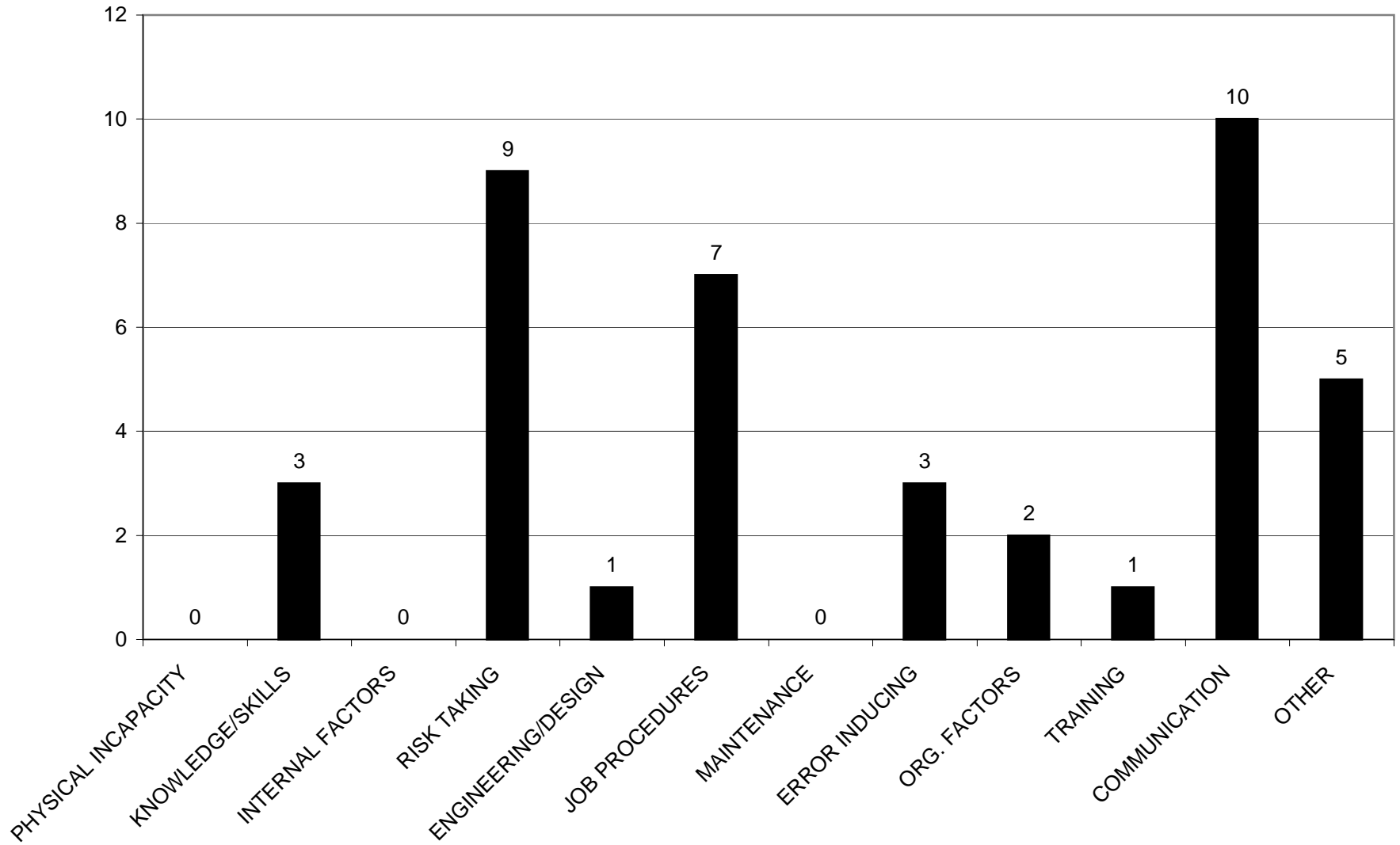
BODY PART INJURED



POSSIBLE CAUSES AT TIME OF ACCIDENT



POSSIBLE PRE-EXISTING CAUSES



EXAMPLES OF FORMS

GTBR SAFETY SURVEY (Golden Triangle Area Only)

COMPANY NAME: _____

COMPANY ADDRESS: _____

SIC Code* : 1500 _____
 1600 _____
 1700 _____

NOTE: Company name & address, SIC Code, EMR, and Golden Triangle Exposure Hours must be provided for a valid response.

1. EXPERIENCE MODIFIER RATE (EMR) _____

2. EXPOSURE HOURS _____
(REPORT ONLY HOURS FOR PERSONNEL WORKING IN THE GOLDEN TRIANGLE)

3. STATISTICS FROM OSHA 300 LOG - Number of incidents involving:

FATALITIES (G)	_____	DAYS AWAY (L)	_____
LOST TIME (H)	_____	MEDICAL TRTMT (I&J)	_____

QUESTIONS 4-7: INDICATE NUMBER, EACH TYPE OSHA RECORDABLE

4. TYPE OF CONTACT

____ Struck By/Against	____ Fire/Explosion	____ Welding Flash
____ Slip (Same Level)	____ Thermal Exposure	____ Radiation Exposure
____ Fall (To Lower Level)	____ Temp Exposure (other)	____ Repetitive Motion
____ Caught By/Between	____ Chemical Exposure	____ Overexertion
____ Electrical Exposure	____ Noise Exposure	____ Other

5. NATURE OF ILLNESS/INJURY

____ Death	____ Cut/Puncture	____ Electrical Shock
____ Amputation	____ Bruise	____ Hernia
____ Thermal Burn	____ Fracture	____ Inhalation
____ Chemical Burn	____ Sprain/Strain	____ Poisoning
____ Irritation/Infection	____ Joint Dislocation	____ Heat Disorder
____ Crushed	____ Repeated Trauma	____ Other

6. BODY PART INJURED

____ Shoulder	____ Hip	____ Eye
____ Elbow	____ Knee	____ Ear
____ Wrist	____ Foot/Toes	____ Face/Head
____ Finger/Hand	____ Ankle	____ Mouth
____ Arm	____ Leg	____ Internal
____ Chest/Ribs	____ Abdomen	____ Multiple
____ Back	____ Groin	____ Other

7. POSSIBLE INCIDENT/ACCIDENT CAUSES

<u>AT TIME OF ACCIDENT</u>	<u>PRE-EXISTING CAUSES</u>	
____ Use of Guards	____ Physical Incapacity	____ Maintenance
____ Use of PPE	____ Knowledge (Skill)	____ Error Inducing
____ Tools/Equipment	____ Internal Factors	____ Organization Factors
____ Workplace Hazards	____ Risk Taking	____ Training
____ Decision Making	____ Engineering/Design	____ Communication
____ Physical Act	____ Job Procedures	____ Other
____ Procedures		

* Please see attached sheet for explanation of SIC Codes.

SIC CODES 1500, 1600, 1700

1500 - Building Construction - General Contractors and Operative Builders

- 1521 General Contractors - Single Family Houses
- 1522 General Contractors - Residential Buildings, Other Than Single Family
- 1531 Operative Builders
- 1541 General Contractors - Industrial Buildings and Warehouses
- 1542 General Contractors - Nonresidential Buildings, Other Than Industrial Buildings and Warehouses

1600 - Heavy Construction Other Than Building Construction - Contractors

- 1611 Highway and Street Construction, Except Elevated Highways
- 1622 Bridge, Tunnel, and Elevated Highway Construction
- 1623 Water, Sewer, Pipeline, and Communications and Power Line Construction
- 1629 Heavy Construction, N.E.C., EXCEPT Dredging and Surface Cleanup Activities

1700 - Construction - Special Trade Contractors

- 1711 Plumbing, Heating, and Air-Conditioning
- 1721 Painting and Paper Hanging
- 1731 Electrical Work
- 1741 Masonry, Stone Setting, and Other Stone Work
- 1742 Plastering, Drywall, Acoustical and Insulation Work
- 1743 Terrazzo, Tile, Marble, and Mosaic Work
- 1751 Carpentry Work
- 1752 Floor Laying and Other Floor Work, N.E.C.
- 1761 Roofing, Siding, and Sheet Metal Work
- 1771 Concrete Work
- 1781 Water Well Drilling
- 1791 Structural Steel Erection
- 1793 Glass and Glazing Work
- 1794 Excavation Work
- 1795 Wrecking and Demolition Work
- 1796 Installation or Erection of Building Equipment, N.E.C.
- 1799 Special Trade Contractors, N.E.C., EXCEPT Base Housing Maintenance

N.E.C. = Not Elsewhere Classified

DEFINITIONS OF POSSIBLE CAUSES

AT TIME OF ACCIDENT - Act/condition which immediately led to the incident

<u>Use of Guards</u>	Guards, alarms, etc., not used, not used properly, disabled, faulty, or inadequate, or equipment not properly secured or isolated
<u>Use of PPE</u>	PPE not used, not used properly, faulty or inadequate
<u>Tools/Equipment</u>	Wrong tool used, correct tool unavailable or failed during use
<u>Workplace Hazards</u>	Dangers in the work setting - poor lighting, walking or working surfaces, housekeeping clearances, ventilation, heights
<u>Decision Making</u>	Inappropriate decision - unaware of hazards, distraction, inattention, improper work speed, poor judgment, body position or overexertion
<u>Physical Act</u>	Activity inappropriate, horseplay, operating equipment without authority, improper mixing of chemicals, poor placement/loading of materials
<u>Procedures</u>	Written procedures available but not used (Safety Procedures, Operating Procedures, or Maintenance Practices)

PRE-EXISTING CAUSES - Underlying factors contributing to the incident

<u>Physical Incapacity</u>	Permanent/temporary disability contributed (vision, hearing, injury, illness, drugs, alcohol, fatigue)
<u>Knowledge/Skills</u>	Lacked experience/training, misunderstood directions
<u>Risk Taking</u>	Actions taken without evaluation of consequences, actions could have been rewarded or not properly punished in the past, improper expectations from supervision
<u>Engineering/Design</u>	Improper/incomplete design/construction, field change orders not evaluated, released by operations before ready
<u>Job Procedures</u>	Task procedures not available/inadequate (standards, reference documents, hazard evaluation, etc.)
<u>Maintenance</u>	Improper/incomplete preventative/reparative maintenance (wear/corrosion, service life extension, etc.)
<u>Error Inducing</u>	Conditions conducive to errors (noise, repetitive tasks, physical demands, extreme concentration, O2 deficiency, etc.)
<u>Organization Factors</u>	Management systems inadequate or otherwise contributed (poor follow-up on unsafe conditions, inspection programs, purchasing procedures, job placement, management of change, etc.)
<u>Training</u>	Training was inadequate, unavailable or ineffective
<u>Communication</u>	Instructions not given, incomplete, unclear, ineffective, etc. (horizontally, vertically, between different organizations)
<u>Other</u>	Cause other than one mentioned