

General Contracting Industry



This study reflects on information derived from insurance claims. These claims form a database that can be analyzed to determine the many and varied causes of loss. CNA Risk Control presents this study of specific CNA claims and industry trends. We begin with a review of exposures inherent to the general contracting industry and conclude with suggested practices to manage these risks.

General Contracting Industry Defined

For the purpose of this study, the general contracting industry is defined as small-, medium- and large-sized general contractors who work for architects, engineering firms, real estate developers, the federal government and the military. A general contractor may subcontract up to 100 percent of a project and focus on performing construction management, while others may perform a majority of the work themselves. However, others may choose to subcontract a portion of the work to various trades and complete the balance of the project themselves. Work activities typically include carpentry, electrical, mechanical, drywall, concrete, steel erection and finish, painting, as well as data/communication systems installation.

Given the diverse operations of the general contracting industry, it is important to be aware of the various workplace exposures employees' face and the potential impact on the employer.

General Contracting: An Analysis of Loss Exposures for the General Contracting Industry

General contracting trades are typically labor intensive with a significant amount of reaching, climbing ladders/scaffolding, kneeling and bending by skilled trades people. These skilled workers also spend a significant amount of time driving to and from construction and customer sites. The following is a review of exposures based on an analysis of claims incurred by general contractors insured by CNA between January 1, 2004, and December 31, 2007.

Workers' compensation and auto claims combined account for over 79 percent of the total claim frequency and approximately 60 percent of total claim dollars. Property claims do not occur with the same frequency or severity as the other types of claims. That is why this study focuses on workers' compensation, auto and general liability lines of coverage.

Line of Coverage	Percent of Total Claims	Percent of Total Claim Dollars
Workers' Compensation	41	38
Auto	39	22
General Liability	17	37
Property	3	3

Workers' Compensation Claims

By Type of Incident Causing the Injury, Shown as a Percentage of Total Claims

Incident Type	Percent of Total Claims
Struck By	21%
Manual Handling/Physical Stress	20%
Slips/Trips/Falls on Level Surface	11%
Struck Against	8%
Falls from Elevation	7%
Foreign Object in the Eye	7%
Caught In, On or Between	5%
All Others	21%

Shown as a Percentage of Total Claim Dollars

Incident Type	Percent of Total Claim Dollars
Manual Handling/Physical Stress	22%
Falls from Elevation	21%
Struck By	16%
Slips/Trips/Fall on Level Surface	14%
All Others	27%

This data indicates worker injuries are caused by situations involving manual handling/physical stress activities, struck by, and slip/trip/fall situations. Manual handling/physical stress and falls from elevation represent the highest severity of claims in terms of claim dollars paid, followed by struck by and slip/trip/fall on level surface related injuries.

Manual Handling and Physical Stress

Claims related to manual handling/physical stress include sprains, strains and hernia ruptures that were mainly associated with the handling of equipment, tools and building materials such as concrete forms, plywood sheets, lumber, rebar, drywall and brick.

Manual material handling overexertion injuries are the result of moving or positioning plywood, concrete forms, and rebar. Typically, the material is positioned on the floor or ground and requires the employee to perform bending, lifting and reaching movements throughout the day. This includes items that are stored on pallets that are on the floor, as the pallet height is typically only four inches. The average employee who bends 100 times a day working 250 days a year will bend 25,000 times annually, which could increase the probability of developing low back pain.

Falls from Elevation

Analysis of workers' compensation claims shows that the majority of injuries were related to ladder use and resulted in lower back injuries, sprains, fractures, and contusions. Ladder-related injuries often result from employees needing to make multiple ascents and descents to retrieve tools and materials, and re-position work. This is often due to poor preplanning on the part of the employee. With an aging worker population, falls from ladders will become more frequent. Ascending and descending a ladder on a frequent basis accelerates the onset of fatigue that in turn contributes to falls from the ladder. When workers are tired they will not use every rung on the ladder or will take shortcuts such as jumping from the ladder. Other claims include falls from scaffolding.

Struck By

These claims include lacerations, contusions, and fractures to the fingers, hands and feet from materials/moveable objects and tools and equipment such as sheet metal, hammers, grinders, saws, boards, knives, nails and rebar. These are often the result of actions such as handling, manipulating and maneuvering tools, machinery and equipment. They are impacted by the lack of preplanning and poor job setup.

Auto Claims

By Type of Incident Causing the Loss, Shown as a Percentage of Total Claims

Incident Type	Percent of Total Claims
Struck by Object	17%
Rear-ended Other Vehicle	14%
Backed Into Claimant	7%
Struck Object in Roadway	5%
Failure to Yield	3%
Lost Control of Vehicle – Left Road	3%
Other Vehicle Failed to Stop	2%
All Others	49%

Shown as a Percentage of Total Claim Dollars

Incident Type	Percent of Total Claim Dollars
Rear-ended Other Vehicle	30%
Failure to Yield	12%
Turned Left in Front of Oncoming Vehicle	9%
Struck Object in Roadway	4%
Lost Control of Vehicle – Left Road	4%
Backed Into Claimant	3%
All Others	38%

Analysis of auto claims data reveals that struck by object claims related to cracked/broken windshields and windows, and rear-end accident collisions are the most frequent incident types. Rear-end collisions and failure to yield incidents have the greatest severity. Examination of frequency data shows that the greatest number of rear-end collisions and struck by object incidents most frequently involved pickup trucks, vans, sport utility vehicles and passenger cars.

Failure to yield and turning left in front of oncoming vehicle accidents were key factors in rear-end accidents. Driver inattentiveness and the lack of concentration on driving often related to failure to stop at stop signs and red lights. This raises the concept of human factors in the cab and how many stimuli the brain can handle while driving/operating a vehicle. Other factors are aggressive driving, time management and route planning.

General Liability Claims

By Type of Incident Causing the Loss, Shown as a Percentage of Total Claims

Incident Type	Percent of Total Claims
Damage to Property	23%
Slips/Trips/Falls on Level Ground	17%
Struck By	16%
Construction Defect	9%
Falls from Elevation	6%
Exposure To/Contact with Mold/Fumes	3%
All Others	25%

Shown as a Percentage of Total Claim Dollars

Incident Type	Percent of Total Claim Dollars
Struck By	18%
Falls from Elevation	13%
Construction Defect	11%
Slips/Trips/Falls on Level Ground	11%
Damage to Property	8%
Completed Operations	6%
Exposure To/Contact with Mold/Fumes	5%
All Others	28%

Review of general liability claims data shows that damage to property, slips/trips/falls on level ground and struck by injuries are the most frequent type of loss. Struck by and falls from elevation claims have the greatest severity.

Five of the top 36 general liability claims in terms of claim dollars were struck by accidents. These account for approximately 10 percent of overall general liability claims dollars, with 6 of the top 36 claims being falls (9 percent) and 4 of the top 36 being fire claims (3 percent).

A number of struck by accidents are from damage to underground fiber-optic lines, power lines and phone lines while digging and excavating resulting in power and phone outages and, in some cases, water damage. There are injuries to claimants and their property from falling panels, boards, pipes and beams. In addition, numerous claims are from damage to vehicles, equipment and property to the operation of industrial equipment such as backhoes, excavators and forklifts.

Fractures, strains and contusions resulted from falls on construction sites, worksites, sidewalks, and parking lots due to uneven surfaces, wet surfaces, and obstacles such as fencing, cords, drywall, and forklifts.

Leading Issues and Trends

The most critical concern to the general contracting industry is maintaining a skilled workforce that will allow projects to be performed on time, on cost and on quality. There has been a demographic shift occurring in the U.S. workforce caused by retiring “baby boomers.” General contractors are now feeling the impact of the baby boomer generation because the industry does not have enough new highly skilled tradespersons entering the industry to work new construction projects.

General contractors have to become more innovative in attracting talented young, skilled labor to the industry so that contractors will be able to maintain the quality of work and productivity needed to complete construction projects while remaining competitive.

An emerging issue in this industry is the wellness of the construction worker as obesity has become a growing problem in the U.S. In the general contractors industry, obesity can affect productivity, quality and risk of injury by accelerating onset of fatigue and increasing risk factors associated with musculoskeletal disorders, trips and falls, and facilitates task shortcuts. Also affected is the overall health of the employee which can contribute to an increase in worker absenteeism. General contractors must become more aware of wellness programs to incorporate into their operations.

The number of workers 55 and older will increase by 49 percent from 2004 to 2014. The percentage of 55 and older in the total workforce will increase from 11.9 percent in 1994 to approximately 21.2 percent in 2014.¹ The average age of the workforce will be 41.6 years by 2014.² Contractors, unions and the government must begin to cooperatively work together to recruit and develop, through increased education and training, young employees with trade and management skills.

Suggested Practices

The analysis of claim data presented in this study suggests a number of practices that could be effective in reducing worker injury, property damage and customer losses. The general contracting industry is characterized by a changing workforce in need of skilled workers. Workers' compensation losses are largely driven by poor postures, high fatigue levels, and a maturing workforce. Vehicle losses are most likely the result of driver inattentiveness.

In general liability, there is poor utilization of utility locators (“call before you dig”) to locate and mark utility lines when below surface excavation is needed. Fall incidents typically occur due to housekeeping issues common on construction sites.

A proven methodology that focuses on the human interface with materials, products, equipment and tools has been shown to be effective in addressing these exposures. Following are the key elements of the Lean methodology.

Workers' Compensation

To address the workers' compensation loss drivers, an approach that focuses on understanding staging, positioning, work flow, and work method techniques from a human factor, Lean and engineering perspective/methodology is necessary.

Struck by and manual handling/physical stress injuries are indicated as loss leaders in the workers' compensation analysis. Each of these loss drivers can be addressed through the development and implementation of CNA's “Motion is Money” process, which enhances worker productivity and reduces risk factors. By examining the staging, positioning, work flow and work method techniques of the employees, a business solution can be developed to make changes

that will reduce or eliminate the exposures. Evaluating these activities through the application of human factors, using Lean and engineering methodologies, can help to identify and analyze non-value added task elements such as walking, bending, reaching, and twisting. Evaluation is critical to achieving risk reduction, improved productivity and enhanced quality.

The pre-planning of tasks, tools, and equipment prior to the installation process can help to decrease frequent climbing on ladders, reduce fatigue levels and injuries, and increase employee productivity.

The general contracting industry needs to expand its understanding of static postures and their impact on employees. When appropriate, general contractors should incorporate the use of platform ladders, or folding ladders with standing platforms. Using a platform ladder will allow the employee to freely move and turn, eliminating static and awkward body postures while improving productivity and quality. When possible on the job site, aerial lifts should be used to elevate employees into their work positions to eliminate ladder exposures.

Fall-related workers' compensation claims data shows a small trend where fall protection devices should have been utilized. To reduce or eliminate this exposure, a proven fall protection process should be a part of the safety program,

CNA's Risk Control construction specialists can assist in the development and implementation of a comprehensive safety program involving CNA's "Motion is Money" process and other safety processes to address the workers' compensation exposures discussed in this guide. Our Motion is Money pocket guide is available for superintendents and foreman to conduct observations and measures on the job site to better understand where productivity improvements can be made.

To address fall exposures specifically designed for contractors, CNA's Risk Control services include a construction gap analysis, to evaluate overall operations and determine strengths and weaknesses, and the FallPRO process, a comprehensive method of evaluating and developing business solutions.

CNA's School of Risk Control Excellence offers construction boot camps to address exposures and risk management techniques to mitigate these exposures.

CNA's resources, including guides and bulletins on ladder safety, scaffolding, and raising materials off the ground and floor, can aid in the implementation of a safety program. These tools are available at www.cna.com/riskcontrol

Auto

The fleet safety process should be approached from a human factor perspective for both in and out of the cab behaviors such as eating, drinking, smoking while driving, climbing in/out of vehicles and raising and lowering trailers.

Auto safety is an essential part of a company's safety program. Few companies can operate without an occasional business use of hired or non-owned vehicles by employees. The analysis of general contracting claims data indicates that accidents in which the insured driver rear-ended other vehicles are the leading loss source in terms of accident severity. Accidents involving failure to yield and turning left in front of another vehicle were also significant in terms of total claims dollars.

A better understanding of the cognitive ability of the employee to comprehend and function in an environment with multiple stimuli is needed. In addition, typical practices of developing MVR criteria, point systems for driver violations, driver orientation and drug testing of employees should be a part of a comprehensive fleet process.

Contractors often complete heavy physical work throughout the day, resulting in the accumulation of mental and physical fatigue that can affect their reaction time while driving. Management must understand these issues and provide education on in-cab behavior guidelines to employees. General contractors must begin to explore beyond the traditional vehicle education and training methods and expand into understanding and incorporating human factors methodologies into their fleet.

CNA offers resources, such as the School of Risk Control's Fleet Institute, to aid contractors in addressing issues and exposures presented in this study. CNA's fleet and ergonomic specialists can assist in the development and implementation of a comprehensive fleet process.

CNA's guides and bulletins on managing fleet safety, backing techniques, accident prevention and driver safety awareness are resources that can help to implement a fleet safety program. Visit www.cna.com/riskcontrol to view these resources.

Furthermore, to meet the needs of our insured's, CNA has customized fleet courses that can be instructor led or presented in Webinar format.

General Liability

Having a comprehensive worksite process that includes preplanning of access and entry points to the overall job site and should be a part of the construction management function. Each day as the job site progresses, foremen and superintendents need to be aware of the potential of site access by vendors, visitors and non-working personnel.

Preplanning needs to be a routine part of the excavation process with emphasis on the marking, designating and outlining of specific utility lines located within the vicinity of excavation activities. Each foreman and employee operating excavating equipment should thoroughly review the plan on a daily and hourly basis as excavation progresses. In addition, management should develop and implement a policy of pot-holing or otherwise locating utility lines allowing for the machine operators to know exactly where the lines are located.

A comprehensive written process should be developed and followed to locate, identify and mark property during a job specific task where the equipment to be used is in close proximity to other property. A spotter should be used for tasks that require the operation of equipment in tight quarters.

CNA offers construction specialists who can assist in the development and implementation of a comprehensive safety program involving the Motion is Money process and other safety processes to address the exposures discussed in this guide.

CNA offers exposure guides such as Risk Transfer: A Strategy to Help Protect Your Business as well as Risk Control bulletins discussing the Safety Responsibility of Job Site Foreman and Slips and Falls while on the job site.

School of Risk Control Excellence

Courses applicable for the General Contracting Industry:

- Accommodating the Maturing Driver** – Highlights how age impacts driving and what safety measures can be adopted
- Builders Risks – Protecting the Job Site from Fire, Wind, Water and Theft** – Provides tools and techniques to help limit exposures to hazards such as fire, wind, water and theft
- Case Management – A Partner With Workers’ Compensation** – Addresses techniques to maximize the delivery of healthcare and return-to-work outcomes
- Contractor Utility Disruption** – Offers precautionary practices to follow prior to the start of any underground work
- Controlling Equipment Theft** – Identifies ways to control equipment theft and mitigate the associated risks
- Department of Transportation (DOT) Primer** – Covers how to comply with DOT regulations, such as driver qualification files, vehicle inspection and maintenance, substance abuse and driver training requirements
- Drug and Alcohol Prevention** – Identifies ways to properly manage the work risks and legal issues of drug screening with pre-employment, post-accident, reasonable suspicion and random testing
- Excavation Safety – National Utility Contractors Association Certification** –
- FallPRO** – Outlines steps for implementing a comprehensive fall protection process for the leading cause of fatalities in the construction industry
- Federal Highway/Harwood Grant Training – A Road Construction Industry Consortium Training Program** – Addresses problems that are causing accidents based on data from insurance claims
- General Contracting Boot Camp** – Addresses industry loss drivers from a safety and industrial practice viewpoint
- In-Cab Behaviors** – Introduces human factors concept of addressing vehicle accidents
- Incident Investigation** – Identifies causes that can lead to incident investigation steps
- Lower Back Pain and Manual Material Handling** – Covers symptoms, characteristics and risk factors that contribute to the development of lower back pain
- Managing Chemical Health Risks to Protect Your Employees and the Company’s Liability** – Explains the effect that chemicals in a product might have on the health of the employees
- Managing Your Hearing Loss Trends** – Identifies risk management steps to limit further loss of hearing claims
- OSHA 10-Hour for Construction** – Provides training on construction safety, health and emphasizes hazard identification, avoidance, control and prevention
- OSHA 10-Hour for Road Builders** – Focuses on situational hazards that roadway construction workers face daily
- Return-to-Work Process** – Explores elements of the return-to-work process and workers’ compensation requirements
- Risk Transfer** – Addresses the importance of developing a risk transfer strategy and gives practical guidelines for establishing a risk transfer program

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- ❑ **Risk Transfer for Construction** – Addresses strategies for allocating and insuring risks to help minimize exposure and shift it to the responsible party
 - ❑ **Slips, Trips and Falls** – Explains how to implement an effective slip, trip and fall prevention program
 - ❑ **Understanding Driver Fatigue** – Highlights sources of driver fatigue and provides controls that companies can use to reduce exposures

To find out more about these classes, go to: www.cna.com/riskcontrol

Footnotes

¹ Toossi, M. (2005, November). Employment outlook: 2004-14: labor force projections to 2014: retiring boomers. Retrieved October 30, 2008, from

<http://www.bls.gov/opub/mlr/2005/11/art3full.pdf>

² Silverstein, M. (2007, December). Will you still need me when I'm 64? Designing the age-friendly workplace. *EHS Today*. Retrieved October 9, 2008 from

http://ehstoday.com/safety/ehs_imp_77115/

To learn more about how CNA Risk Control can work with you to help you mitigate risks, please speak with your local independent agent, call us toll-free at 866-262-0540, or view our Risk Control tools online at www.cna.com/riskcontrol.

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