

*WAH guide for the*

# FALL PROTECTION PROFESSIONAL



**2nd Edition 2022**

[www.wahmember.com](http://www.wahmember.com)



This manual, the WAH fall protection programs, and the "Fall Protection Specialist" title, have been created for people employed to protect others from falls. These programs are developed mainly for employers and their staff since they are the only group responsible for protecting their people. Employers are the only entity that has an interest in the safety culture at work. This program can be used by people and organizations other than employers, just recognize who it was developed for. You can be an employer, business owner, at-height worker, safety professional, tradesperson, foreman, lead, PPE manufacturer, rescuer, technician, consultant, or salesperson and you will benefit from WAH programs and [wahmember.com](http://wahmember.com) resources.

I have written several books and training manuals and a common challenge is updating content as changes occur. Federal and state regulations are relatively static, taking years if not decades to change, however, there are several of them. Interpretation letters, manufacturer bulletins, alerts, recalls, technology, and court decisions continually evolve the content. Voluntary consensus standards are updated every few years and equipment is constantly changing. Keeping printed material current is a challenge, to say the least! Thankfully, the risks associated with working at height and the forces of gravity have not and will not change, so this program can be used regardless of the area of the country in which you work. The content and principles can be applied to meet all federal, state, provincial, municipal, or internal requirements. This program is supported by a website, [www.wahmember.com](http://www.wahmember.com). This book provides guidance and content regardless of jurisdiction and the website provides details to support your fall protection program and the specific jurisdiction.

This book is edited and printed once per year. The website is updated frequently and has the most current information. The website provides fall protection program templates, planning forms, training programs, checklists, inspection forms, toolbox talks, and much more. This manual provides foundation and guidance; the website provides specifics. I hope it works for you and together we prevent some falls, keep people playing with their kids, and living life to the fullest.

Mistakes in this book are mine and constructive criticism is always appreciated, [denis@wahmember.com](mailto:denis@wahmember.com). If you find errors or dated information, let me know and it will be fixed in the next edition.

Kevin

# TABLE OF CONTENTS

## **CHAPTER 1 INTRODUCTION TO FALL PROTECTION**

- 7 The “Culture” of Working at Height
- 8 Fall Hazard Risk
- 9 Defining Fall Protection & Trigger Heights
- 10 Dangerous Equipment
- 10 Regulatory Bodies
- 12 Fall Protection Principles
- 15 Hierarchy of Fall Protection
- 16 Training
- 19 Chapter 1 Review

## **CHAPTER 2 FALL PROTECTION PROGRAM MANAGEMENT**

- 22 Fall Protection Program
- 22 Surveying / Cataloguing Fall Hazards
- 24 Plan of Action
- 25 Program Staffing
- 28 Permanent Fall Protection and Engineering
- 30 Inspections
- 32 Rescue Planning
- 33 Program Evaluation
- 34 Chapter 2 Review

## **CHAPTER 3 EQUIPMENT AND SYSTEMS**

- 37 Fall Protection PPE
- 39 Identifying PPE Systems and Use Principles
- 41 Controlling Fall Energy
- 46 PPE System Considerations
- 50 Full Body Harnesses
- 54 Connecting Hardware
- 58 Energy Absorbing Lanyards
- 62 Self-retracting Devices
- 66 Rope Devices (Fall Arrestors & Rope Adjusters)
- 70 Anchorage Connectors
- 74 Positioning Lanyards
- 78 Ladder Safety Systems
- 82 Temporary Horizontal Lifelines
- 86 Descent Control Devices
- 90 Ready-made Rescue Devices
- 94 Chapter 3 Review

## **CHAPTER 4 GENERAL WORK AREAS & SYSTEMS**

- 96 Pre-planning Work
- 97 Unprotected Edges
- 98 Leading Edges
- 99 Fixed Ladders
- 101 Portable Ladders
- 102 MEWP's
- 104 Commercial Flat / Low-sloped Roofs (non-construction)
- 105 Using Designated Areas
- 106 Residential Construction
- 107 Steep Roofs (non-construction)
- 109 Natural Slopes
- 110 Self-supported Scaffolds
- 112 Structural Climbing
- 113 Suspended Scaffolds
- 114 Using Rope Descent Systems / Bosun Chairs
- 116 Using Rope Access
- 117 Working Over Water
- 118 Vehicles / Heavy Equipment / Rolling Stock
- 119 Telecommunication Structures
- 121 Wind Turbine Generators
- 122 Aircraft
- 124 Water Tanks
- 125 Utility Vaults
- 126 Warehouse / Order-picking
- 127 Drilling / Service Rigs
- 128 Formwork and Reinforcing Steel
- 129 Openings
- 131 Fall Protection Not Feasible
- 133 Personnel Baskets

## **APPENDICES**

- 134 Fall Hazard Assessment Form
- 135 Fall Protection Procedure Template
- 136 Fall Protection Training Needs Assessment
- 137 Fall Protection Work Permit
- 138 Fall Protection Program Template Instructions
- 139 Service Company Listings
- 140 [www.wahmember.com](http://www.wahmember.com) Resources
- 141 Glossary



# CHAPTER 1

## INTRODUCTION TO FALL PROTECTION

### THE “CULTURE” OF WORKING AT HEIGHT

It's important for the **Fall Protection Specialist** to understand the culture that surrounds work at height and how it helps or hinders their efforts within an organization. WAH believes cultural issues surrounding work-at-height is the most difficult aspect for a specialist. Reluctance to embrace **fall protection** can be encountered by an individual worker or group, management of an organization, and outsiders looking in.

Using fall protection **PPE** is relatively new, only becoming mainstream and required by laws in the mid-90's. Generations have worked at height with no fall protection and fatalities were considered part of the job. Even today, being resistant to fall protection is common. Working at height requires men and women with a certain level of bravery, confidence, determination and ability. Trades that constantly work-at-height are a very confident, capable group of people. They often view fall protection as a vote of non-confidence in their ability or lack of trust. So confident are these groups, that the daily inconvenience and difficulties of using fall protection PPE doesn't provide enough value when compared to the odds of a "once in a career" occurrence. Especially when they know they are a safe, capable worker. Using fall protection is recognition that a fall can occur, which is counterproductive to their personality and how they rationalize the work they do when they began doing it. Individual workers or industry groups do not want to fall, but varying cultures can create a natural reluctance to fall protection.

Organizations often have barriers to fall protection as well. Most times organizational barriers are due to ignorance or lack of resources. Many organizations do not know how to protect their people at height or they lack the resources to do so. In extreme situations, some organizations have a culture of openly disregarding rules (and usually all other basic safety rules) and do nothing to protect their people from falls.



*The workplace is significantly different than life outside of work, although the risk is the same.*

One of the greatest barriers to fall protection is outside of work. Social media, television and entertainment venues (stunts, circus, etc.) glorify and sensationalize the risks of being at height. The fear of falling is frequently used to attract attention. Websites are full of people taking incredible risks for sensational footage. People laugh, comment and share video clips of people taking risks and falling, many times with serious injuries. Even without the internet, neighborhoods are full of people on roofs, in trees, hiking near cliffs, and standing on top of whatever to complete chores or recreate. The Fall Protection Specialist needs to recognize that the workplace requires actions and attitudes contrary to life outside of work. Getting individuals and groups to change their habits can be very difficult. It is going to be a long time before the "culture of the public" recognizes the risks of working-at-heights to the level the safety industry does.

Fortunately, these cultures are changing. Worksites, trades schools, regulators, unions, managers, owners, architects and industry groups are recognizing the value in protecting people from fall hazards. Fall protection equipment is becoming lighter, stronger and more user-friendly. Innovations in PPE and work practices occur every month. Employers recognize

#### Websites:

wahmember.com  
 osha.gov  
 assp.org  
 osha.oregon.gov  
 dir.ca.gov  
 lni.wa.gov  
 usace.army.mil

**fall protection specialist:** a person dedicated to protecting people who work at heights.

**fall protection:** a generic term to describe structure, equipment or practices to prevent a fall or mitigate the effect of a fall from elevation.

**PPE:** personal protective equipment.

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Websites:

[bls.gov](https://www.bls.gov)  
[cdc.gov](https://www.cdc.gov)

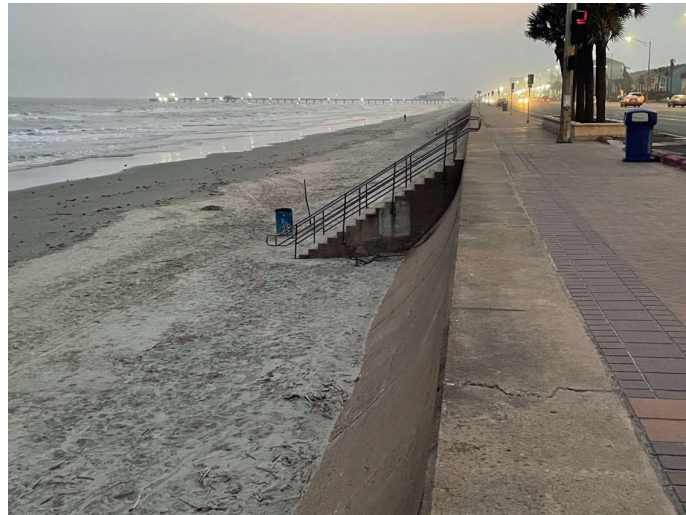
<sup>1</sup> Bureau of Labor Statistics, 2021, BLS, accessed 5/21, <https://www.bls.gov/charts/census-of-fatal-occupational-injuries/fatal-occupational-injuries-by-event-drilldown.htm>

<sup>2</sup> Center for Disease Control, 2021, CDC, accessed 5/21, <https://www.cdc.gov/nchs/fastats/accidental-injury.htm>

the moral, financial, emotional and legal benefits of addressing fall hazards. Workers themselves see the value in protecting their health and livelihoods.

**FALL HAZARD RISKS**

Fall Protection Specialists are often asked by their employer to determine fall protection solutions, spend money, comply with laws and provide direction how to manage the fall protection program. Determining what is and isn't acceptable for an organization can be daunting, so an understanding of how much risk could or should be taken on is a challenging task. It is also important to understand how occupational health and safety regulators evaluate fall hazards since compliance is one of the objectives of a fall protection program.



*This is a sea-wall and walk-way at a tourist location. There is a 9'9" fall off the sidewalk to the concrete slope and beach. This is a low-risk, high frequency occurrence that is illegal at work but acceptable for the public.*

Understanding the risk of fall hazards enables a Fall Protection Specialist to exercise judgement when abnormal or unprotected fall hazards are encountered. There are several examples where a person can be legally exposed to fall

hazards (portable ladders) where there is no risk of breaking the law, but loss of life or injury is the risk. There are other examples where breaking a law is the only risk and loss of life is very low (fifty feet from the edge of a flat roof). A Fall Protection Specialist makes decisions based upon local laws and an organizations philosophy. Some organizations do the minimum where others do more. WAH strongly recommends every Fall Protection Specialist to meet with senior management and discuss the organizations philosophy regarding fall protection. It will drive many decisions.

Risk is defined as the "possibility of loss or injury". Whenever a person is exposed to a fall hazard, the possibility of loss or injury exists. If a fall occurs, any degree or number of the following losses occur:

- Loss of life or quality of life by affected employee.
- Financial loss, fines or citations.
- Financial loss, insurance or compensation costs.
- Civil lawsuits.
- Production, sales or contract reductions.
- Reputation, employee culture and morale.

Statistics are often used to portray how much risk is associated with working at height. These statistics can be viewed differently. The Bureau of Labor Statistics provides the most applicable data every year categorizing work-related fatalities by event for work-related fall accidents. <sup>1</sup>In 2019, there were 711 fatalities recorded from "Falls to Lower Level" (73 in Canada). From one perspective, this number is incredibly high. Over seven hundred fatalities can be argued as unacceptable. From another perspective, over 157.53 million people were employed working an average of 34.4 hours per week for a total over 5.4 billion hours worked per week (280 billion per year). From this perspective, many people can argue there are much greater issues in the workplace than fall protection.

Other reliable statistics are fall fatalities outside of work. BLS data is limited to labor statistics. Looking at CDC data, <sup>2</sup>there were 39,433 unintentional fall deaths accounting for 23% of all unintentional injury deaths (173,040). These statistics are only

describing fatalities and do not account for accidents that result in permanent disability or lost-time accidents. Obviously, these numbers are much higher.

There is a natural reluctance by many workers-at-height not to use fall protection and they believe it is more hindrance than help. Providing statistics rarely changes this opinion and many times solidifies an opinion that it won't happen to them (711 fatalities per year out of 157 million people). Statistics often re-enforce a belief that playing the odds is better than wearing a harness and being tied-off all the time.

WAH prefers to use a different tactic to demonstrate risk to people. Rather than using statistics, ask people how many times they have fallen? Include every trip on stairs, off balance stumble, knocked over, slide down a ladder, fall out of a vehicle, got dizzy, trip over a toy, or whatever. The point to be made is that gravity doesn't know if you are at work or not and doesn't care about you. Age, ability, status, education or attitude are irrelevant. Gravity knows one thing and it treats us all equally. It's complete ignorance to think that a fall can't happen at work because a person works safely, is experienced, or trained. Everyone has fallen and thankfully most falls are not from a great height and most do not cause



Example of guardrails around a walking / working surface higher than 4' above the next level.

serious injury. After people recognize that they have fallen, the follow up question is "Who do you know has been messed up due to a fall? How many degrees of separation is there between you and someone who has died from a fall?". Everyone knows someone who has had a significant fall, especially at work. WAH believes this personal statistic is more impactful in changing attitudes regarding risk than published data and statistics.

### DEFINING FALL PROTECTION & JURISDICTION

Fall Protection is a generic term to describe any feature, procedure, equipment, or structure that prevents a fall from elevation or mitigates the effects of a fall.

In a very broad context, using anti-slip footwear, working safely, holding on, and staying away from an edge can be defined as fall protection; however, when the term fall protection is used, it is usually referring to the addition of some protective feature (guardrails, nets, PPE, warning line).

Fall protection is usually governed by the state, province or federal government through occupational health and safety regulations. Authorities regulate when employers are obligated to provide fall protection, usually described by task, location, or height measurement (see Dangerous Equipment for an exception). Once a worker is working above "X" height, the employer has a duty to provide fall protection or be subjected to discipline. The "trigger height" is the height at which fall protection is required (i.e. walking-working surfaces higher than 4' must include guardrails). The trigger height is measured from the working surface to the ground or next hazard. Fall Protection Specialists must recognize that losses (loss of employee, compensation costs, etc.), can happen at lower levels, but the trigger height is when compliance issues are encountered. There are several trigger heights. The jurisdiction and type of work determine what regulations and trigger heights apply.

Unfortunately, there are several different organizations having jurisdiction over workplace safety. The geographical area, state, country, agency, type of work, and an organizations'

#### Websites:

[osha.gov/laws-regs](https://www.osha.gov/laws-regs)

[Ini.wa.gov/safety-health/safety-rules](https://www.ini.wa.gov/safety-health/safety-rules)

[osha.oregon.gov/rules/Pages/default.aspx](https://www.osha.oregon.gov/rules/Pages/default.aspx)

[dir.ca.gov/samples/search/query.htm](https://www.dir.ca.gov/samples/search/query.htm)

[www.publications.usace.army.mil/USACE-Publications/Engineer-Manuals/](https://www.publications.usace.army.mil/USACE-Publications/Engineer-Manuals/)

*walking-working surface: whatever the worker is standing and working on.*

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*Fall Protection Specialists must know who has jurisdiction at an organization, even if the local policy states "follow most stringent". When decisions must be made, the governing jurisdiction must be known to exercise good judgement.*

local policy includes several different rules, creating confusion and conflicts. It is important to know which organization has jurisdiction over the work to avoid mistakenly being non-compliant and preventing confusion. A complete list of trigger heights and applicable jurisdictions can be found at [wahmember.com](http://wahmember.com) with the Regulations Table. To illustrate the confusion that's created, for federally regulated worksites, there are three different trigger heights for the exact same hazard, but in different industries.

- Walking / Working Surface (industry) 4'
- Walking / Working Surface (construction) 6'
- Walking / Working Surface (maritime) 5'



*OSHA is the federal level regulator and has jurisdiction over the largest number of employees in the US. OSHA "sets the bar" for State OSHA programs. State-run programs, as a minimum, must be equal to the requirements in federal regulations.*

**DANGEROUS EQUIPMENT**

Regulations require fall protection at any height when a person is working over dangerous equipment. Any equipment or structure that is immediately life-threatening needs to be protected, regardless of the height of the fall. For example, fall protection would be required for any work going on above galvanizing tanks. Falling into the tank is life-threatening, regardless of the height into the tank. The same principle applies to work around augers, conveyors, energized lines, or similar equipment.

Generally speaking, dangerous equipment is usually protected with barrier-type protection (guardrails, walls, nets, covers, etc.) because of the high risk. There are additional occupational health and safety rules about the guarding of dangerous equipment. It is rare to guard dangerous areas with PTRS or PFAS because of the increased risk of misuse.

Exposure to falling into dangerous equipment usually occurs during maintenance or troubleshooting situations. Fall Protection Specialists need to recognize that the use of fall protection PPE is commonplace for many people and forgetting to remove a lanyard or not pay attention to where loose lines happen to even the most safety conscious and experienced workers. Whenever PPE is used, look for dangerous equipment and take appropriate control measures:

- o Driveshafts, rotating or spinning equipment
- o Automatic opening or closing equipment (elevators, etc.)
- o Vehicles and heavy equipment
- o PPE hanging loosely or dragging

**REGULATORY BODIES**

**Federal Occupational Safety and Health Administration (OSHA).** OSHA is the federal level regulator and has jurisdiction over the largest number of employees in the US. OSHA "sets the bar" for State OSHA programs. State-run programs, as a minimum, must be equal to the requirements in federal regulations. Within the federal regulations, there are separate requirements for construction, general industry, maritime and agricultural industries that include fall protection requirements within OSHA.

**State OSHA Programs.** Each state can operate a State OSHA program. Most state programs simply mirror the federal fall protection requirements. At the time of this writing, only California and Washington State have fall protection regulations that differ from OSHA. Michigan and North Carolina have specific fall protection laws for telecommunication structures and Oregon mirrors all of OSHA requirements with some additional state requirements.

**US Army Corps of Engineers (USACE).** Another jurisdiction is the USACE. USACE primarily oversees dams, canals, and flood areas as a wide range of public works in the US and abroad. Their safety regulations apply to all USACE's work and the contractors they employ. Safety requirements are published in the EM385 Manual with specific fall protection requirements in Section 21.