

Professional Aviation Safety Specialists

Professional Standard and Guide



Determining Structural Soundness

and

Climbing Safety Profile

of

Tower Mast and Pole Structures

Table of Contents

Scope and Purpose	4
Introduction	5
Background	5
Document Organization	6
Pre-Climb TMPS Safety Inspection Checklist	7
TMPS Full Structure Assessment Inspection Checklist	8
TMPS Full Fall-Protection Assessment Inspection Checklist	10
Appendix A - Detailed Pre-Climb Inspection Procedures	11
For All Structures	11
For Guyed Structures	16
Appendix B - Detailed Full Structure Assessment Procedures	18
All Structures	18
Guyed Structures	21
Appendix C - Detailed Full Fall Protection Assessment Inspection Procedures with Background Information	22
Appendix D. TMPS Fixed Ladder Full Assessment Guide	33
Appendix E. Elevated Maintenance Platform Full Assessment Guide	36
Appendix F - Wire Rope Clips Installation and Use	38
Appendix G - Standards and Tolerance	40
Vertical Alignment and Linearity (Plumb)	40
Twist	40
Straightness of Members	40
Guy Tension	40
Ground System Resistance	40
Appendix H - Descriptions of Tower, Mast, and Pole Structures	41
Technical Characteristics	41
<i>Tower Structures</i>	41
<i>Heading</i>	41
<i>Adcock Towers</i>	43
<i>Mast Structures</i>	43
<i>Guyed Lattice Masts</i>	43
<i>Self-supporting Lattice Masts</i>	44
<i>Self-supporting Poles</i>	45
<i>Guyed Poles</i>	45
<i>Complex Tower and Mast Systems</i>	46
Appendix I - NWS Windchill Chart	47
Appendix J. Technical Basis	48
Appendix K. Legal, Regulatory and Policy Basis	49
Appendix L. Nominal Grievance Templates	50
Appendix M - Hazard Pay Differential Matters	58
§550.904 Authorization of hazard pay differential.	58

§550.905	Payment of hazard pay differential.....	58
§550.906	Termination of hazard pay differential.	58
§550.907	Relationship to additional pay payable under other statutes.	58
Appendix A to Subpart I of Part 550—Schedule of Pay Differentials Authorized for Hazardous Duty Under Subpart I.....		59
ATTACHMENTS		68
Malta Dynamics Connecting Hardware Manual		68
Sala Body Harness Manual.....		68
Sala RAILOK 90 Rigid Rail Safety System Manual.....		68

Scope and Purpose

Many of the technical employees represented by the Professional Aviation Safety Specialists (PASS) are assigned tasks that require an evaluation of the structural soundness, and safety profile for climbing of, tower, mast, and pole structures (TMPS). TMPS are used primarily to elevate communications antennas and navigational aids. Most of those employees are assigned to the FAA's Air Traffic Organization (ATO). While this professional standard is tailored for PASS representatives and specialists assigned to that organization, most of the guidelines, process, and procedures are applicable to tower, mast, and pole structures found in any workplace.

Many specialists have reported serious concern to PASS doubting the structural soundness of TMPS that they, or those they represent, are assigned to climb. The ATO's operations and maintenance (O&M) program for the TMPS infrastructure has simply not kept pace with industry standards. Moreover, the need for recurring inspection and maintenance has increased dramatically as the infrastructure ages. The lack of a coherent, if not centralized, O&M program has led to a great disparity in age, types, configuration and condition of structures employed by the agency.

The agency's passive, *there's no need for fundamental change without a catastrophe*, approach to fall protection has led to a similar failure in keeping pace with industry fall protection standards. Moreover, the agency has actively worked to circumvent those standards by failing to adequately train, prepare, and staff an adequate cadre of specialists trained to execute the role of fall protection Competent Person. The Competent Person is the organizational bridge between the theoretical world and the actual workplace where unforeseen hazards manifest themselves as equipment is installed in unanticipated situations and configurations, work tasks change and infrastructure ages.

The Competent Person is the backbone of the fall protection program; charged with the day-to-day sustainment and local management of the fall protection program. The Competent Person must have delegated authority to direct work activity to immediately prevent or control any fall hazard. The lack of this cadre of Competent Persons, and inadequate training of most existing Competent Persons, has led to frequent occurrences of undocumented fall hazards, even with newly installed structures, and thereby a failure to effectively deal with them. Without a sufficient cadre of Competent Persons agency decision makers are in a self-imposed perpetual state of not knowing what they don't know, waiting for a catastrophe to indicate that something may be amiss.

PASS will not sit idly by waiting with the ATO for a catastrophe. We must all work together in ensuring that the state of the TMPS infrastructure and fall protection program is well documented, hopefully leading to a fundamental change in the ATO's approach to both. Hence, the objective of this standard is to empower workplace specialists and representatives with a practical guide for identifying and documenting defects in the TMPS infrastructure, and shortfalls in the O&M and fall protection programs.

Introduction

Background

Concerns with the safety of TMPS can be broken out into two general areas:

1. Structural soundness;
2. Fall protection during operations and maintenance.

Obviously, the structural soundness of a TMPS may directly impact on the ability of any fall protection system to properly function in controlling a fall. Indeed, if the TMPS were to completely fail any fall protection system becomes irrelevant.

Many defects and hazards will go undetected, until some catastrophic event, without a methodical inspection program. Fortunately, most structural defects and shortcomings of the fall protection system/program can be identified and addressed before they manifest as an operational risk or hazard to personnel.

With that in mind, it is important that specialists who encounter TMPS become familiar with, and apply the standards, procedures and issue resolution processes presented in this guide. PASS employee representatives for agency annual workplace inspections should also become familiar with the standards, inspection, and program elements in this guide. It's imperative that defects, physical and programmatic, are identified and resolved before employees are exposed to an unsafe work environment. It's imperative that PASS workplace representatives who don't climb structures work with specialists that do climb and work-on the TMPS to identify defects that may not be obvious from the ground, or to someone that doesn't engage in the work. That said, many structural defects and program shortfalls can be determined by most workplace representatives, even if they never engage in climbing a structure.

There are only two system of records provided by the ATO for Technical Operations specialists to document a hazard to personnel: Workplace Inspection Tool (WIT); Unsatisfactory Condition Report (UCR). Other documentation systems such as facility logs, acceptance inspections, etc. do not provide the reporting, follow-up, and control actions required for the timely addressing of a hazard to personnel.

The agency's workplace inspectors have exclusive control of the WIT, rendering it largely unavailable to specialists and workplace representatives. Therefore, the UCR is the primary means by which defects and hazards must be documented. A UCR may be initiated via the SMIS at www.faa.smis.gov or via the T-SAP portal. Some, usually programmatic, issues are more effectively communicated with a formal grievance documenting a breach of the collective bargaining agreement.

Document Organization

Three checklists are provided up-front to aid specialists in methodically evaluating the structural integrity of TMPS and fall protection program that should ensure that fall hazards are discovered, methods of control identified, and effective fall protection procedures implemented.

The checklists are necessarily succinct. Amplifying information is provided in the various appendixes. The first three appendixes follow the form of the checklists. The remaining appendixes are additional background and technical information.

Three examples of actual manufacturer information/data supplied with fall protection equipment are attached at the end.

The checklists/guides are organized around specific workplace and representational activity:

1. Pre-climb checklist;
2. Structure evaluation;
3. Fall protection program evaluation.

You should read through all of the material in the appendix associated with the checklist in-use until thoroughly familiar with the checklist assessment items. The manufacturers' informational documents are referenced in the discussion to emphasize that none of what follows is something unique to the ATO, or even governmental agencies. The standards referenced are mainstream industry generated consensus standards that are applied both nationally and internationally by the fall protection industry.

Pre-Climb TMPS Safety Inspection Checklist

TMPS Pre-Climb Safety Inspection Checklist	
This checklist assists you in determining if the TMPS is safe for work aloft, including climbing. Procedures for each task are provided in an Appendix A and should be used with this checklist. Structures may continue to be used when some deficiencies and defects are identified early, before they become significant issues. Other defects may impose an immediate hazard to personnel. The agency should require the TMPS to be placed off-limits in those cases. Some defects require review/assessment by a fall protection Competent Person or qualified structural engineer. ☞ Recommended action is provided at the end of the explanatory information if any of the following inspection questions are answered "No".	
Assessment Item	Y/N/NA
1. Are site/TMPS specific fall protection procedures, including emergency rescue procedures, available and effective?	
2. Are gusts, high winds, lightning or other storms not occurring or not likely to occur during use of the structure?	
3. Is the vertical climbing and work area free of coverage by any RF radiation source, outside of the fall zone of power lines, and free from exposure to other environmental or physical hazards?	
4. Is the structure's ladder and ladder safety system free of ice or other debris that could cause loss of proper function, footing, or handholds?	
5. Is the ground underneath and in the immediate area of the TMPS from connecting hardware or other material that may have fallen from the structure?	
6. Is the TMPS foundation (including guy anchors, and grout pads under plates) free of cracking, spalling, erosion, settlement, leaning/tilting, or signs of improper drainage?	
7. Are structure members, connections, ladders, ladder safety systems, and mounts free of: missing, broken or bent members or hardware; stress cracks or corrosion/rust, and; any other observable defect(s)?	
8. Are ground straps, cables, and connections free of the evidence of lightning damage?	
9. Are maintenance and obstruction lights operative and adequate?	
10. From a distance does the TMPS appear to be free of leaning, bowing, kinking or misalignment at any point, more than one foot horizontally for each 40 feet of height?	
11. From the base of each leg looking up, does the leg appear to be free of any bow, kink or twist, putting it out of a straight line for more than one foot for each 40 feet of height at any point ?	
12. Are elevated maintenance platforms free of loose, missing/deteriorated parts, protrusions in the deck/walking surface or other observed defect?	
13. Are guy wires, connecting hardware or anchors free of severe rust (heavy pitting of the metal items)?	
14. Are guy wires free from droops or sags greater than one foot from an imaginary line between the anchor and its connection to the TMPS? Note: This is a subjective assessment.	
15. Are jamb nuts tight and are there at least four threads of each connecting rod end visible inside the barrel portion (not flush with or inside the threaded female socket ends) on anchor turnbuckles?	
16. Are all guy wires free of sharp kinking or frayed wire strands at the bend where they are connected to the anchor or TMPS?	
17. Are guy wires free from sharp kinks and frayed wire strands at the bend where they are connected to the anchor or TMPS? Are wire clips and grips properly installed and free from other defects?	

TMPS Full Structure Assessment Inspection Checklist

TMPS Full Assessment Inspection Checklist	
Specialists should use this checklist as thoroughly and often as practicable in evaluating the state of the structures they are assigned to climb and work on. PASS employee representatives should use this checklist during annual facility safety inspections. Some items will not be accomplished in their entirety because the structure will likely not be scaled during the inspection. This checklist assists you in determining if the TMPS is safe for work aloft, including climbing. Procedures for each task are provided in Appendix B and should be used along with this checklist. Structures may continue to be used when some deficiencies and defects are identified early, before they become significant issues. Other defects may impose an immediate hazard to personnel. The agency should require the TMPS to be placed off-limits in these cases. Some defects require review/assessment by a fall protection Competent Person or qualified structural engineer. ☞ Recommended action is provided at the end of the explanatory information if any of the following inspection questions are answered “No”.	
Assessment Item	Y/N/NA
1. Conduct the pre-climb checklist (apply weather related items if applicable to the work).	
2. Is a complete set of baseline documentation available?	
3. Is facility reference data complete?	
4. Are concrete foundations and guy anchorages free of large cracks or spalled areas leading to any embedded metal (e.g. bolts, re-bar)?	
5. Is the site properly graded?	
6. Are grout pads underneath base plates sound; free of deterioration or otherwise required maintenance?	
7. Are all structural members in-place?	
8. Is structural bracing free of bends or bows more than three inches in a five-foot-long piece (six inches if a ten-foot-long piece, etc.)?	
9. Is structural bracing free from rusting such that metal is obviously missing or edges of steel are delaminating (edge appears as thin, separating layers rather than one solid thickness/piece)?	
10. Is leg metal free of rusting/corrosion to the extent that metal is obviously missing or edges of steel are delaminating (edge appears as thin, separating layers rather than one solid thickness/piece)? If leg is of a hollow type (tube or pipe), is a ring heard rather than a dull thud sound when struck with a hammer (at the base and each leg section plate)?	
11. Are structure legs free of splits/cracks at the corners or the weld to the base/section plate cracked?	
12. Are the bolts used for leg splices (or base connections) free of severe rust, and are all bolts in-place at the base/section plate or section splice?	
13. Are less than half of all bolts used to attach a brace to the TMPS leg (or its connection plate at the leg) missing and are welds free of cracks extending more one third of the total length of the weld?	
14. If insulators are used in leg construction (bases, section joints, etc.) are they free of cracks or other damaged?	
15. Are all ground system resistance measurements for each down conductor less than or equal to 10 ohms?	

16. Are pole and mast structures protected with at least one lightning air terminal and down conductor bonded to ground?	
17. Are TMPS that consist of multiple, parallel segments or legs that set on a pad or footing over a 9 sq. ft. area protected by at least two air terminals and down conductors bonded to ground?	
18. Do larger towers (e.g. radar antenna towers) have less than one down conductor for each leg?	
19. Are down conductors bonded to each section, secured to the structure at an interval of less than three feet and run on the inside surface of legs when practicable?	
20. Does the measured value for TMPS vertical alignment and linearity or twist fall within the tolerances provided in Appendix H?	
21. Is the fixed ladder system free of defects per the TMPS Fixed Ladder Full Assessment Guide provided in Appendix J?	
22. Are elevated maintenance platforms free of any loose, missing deteriorated parts, protrusions in the deck/walking surface, or other defect per the Elevated Maintenance Platform Checklist (Appendix K)?	
23. Are concrete guy anchors free from large cracks and broken/spalled areas leading to embedded metal, or more than two feet of exposed vertical concrete surface above grade due to erosion or ground settling?	
24. Are any guy wires connected to a metal rod smaller than one inch in diameter, that are in direct contact with the earth, less than 20 years old?	
25. Are guy cables free from missing clips/clamps either at the anchor or the TMPS connection point?	
26. Does the measured tension of any guy fall within the tolerances specified in Appendix H?	

TMPS Full Fall-Protection Assessment Inspection Checklist

[illegible]

Appendix A - Detailed Pre-Climb Inspection Procedures

For All Structures

The following procedures are from the perspective of a specialist or workplace representative. They do not prescribe maintenance activity.

The following standard documentation/action is prescribed in most circumstances where a defect is noted:

- Immediately notify the Supervisor, and any fall protection program Competent Person assigned to the activity, of the conditions/circumstances.
 - State the specific hazard.
 - Specifically ask the supervisor if he/she is directing you to continue work in the reported conditions.

If so, an administrative log entry recording the facts would be reasonable and in-order:

Notified supervisor [name] of my concerns with climbing [name of structure] in the presence of [condition/circumstances]. I was directed to continue the climb.

- Retain any documentation of the conditions (e.g. NWS warnings, alerts, forecasts, pictures demonstrating the condition/circumstances etc.)
- Contact your Regional Vice President or Regional Safety Representative for further assistance.

1. Are site/TMPS specific fall protection procedures, including rescue procedures, available and effective? (ANSI/ASSE Z359.2-2007 Sections 4.3 and 6; JO3900.63 Chapter 3, par. 2c(10), par. 9a(4), par. 10)

- Fall protection procedures must:
 - Be completed by a fall protection Competent or Qualified Person;
 - Be structure specific;
 - Provide for 100% continuous fall protection throughout the accomplishment of **all work tasks**.
 - Special attention should be provided for tasks that require detachment from a ladder safety system when not on a platform with a compliant rail system.
 - Identify, with specificity, any fall arrest anchorages.
 - All requirements for set up and use of any fall protection system.
 - Detailed instructions for assembling components.
 - Detailed instructions for inspecting the system before use.
 - Include emergency rescue procedures.
 - These procedures must be site/TMPS specific, including all the elements required of fall protection procedures.
 - Provide for rescue within six minutes.

- If the use of an outside rescue agency is indicated the agency must have advised the agency **in writing** of its availability, capability, and detailed instructions regarding of how they are to be advised of activities or called for rescue services.
 - The above two requirements most often require FAA in-house rescue when not working on an airfield with an available rescue service.
 - The facility emergency rescue plan contains some elements required for the rescue procedures (e.g. type and source of rescue prescribed). However, the plan is not sufficient without detailed rescue procedures.
- Cover the use of man-lifts and "bucket trucks."
- Additional in-depth information is provided in a description of item 2 in Appendix C - Detailed Full Fall Protection Assessment Inspection Procedures with Background Information

☞ The absence of complete fall protection procedures, prepared by a fall protection Competent or Qualified Person is an extremely serious matter. Fall protection procedures are the outcome of a thorough fall hazard survey of the workplace. Immediately notify the Supervisor, and any fall protection program Competent Person assigned to the activity, of the conditions/circumstances and document per the instructions at the top of this appendix.

You are strongly encouraged to file a grievance when procedures are not established and complete. Standard language is provided in Appendix L, Page 50. Contact your Regional Vice President, regional or National Safety Representative if you are not comfortable with filing a grievance.

☞ The absence of emergency rescue procedures, prepared and approved by a Competent Rescuer, is a life or death matter. Immediately notify the Supervisor, and any fall protection program Competent Person/Rescuer assigned to the activity, of the conditions/circumstances and document per the instructions at the top of this appendix.

You are strongly encouraged to file a grievance when emergency rescue procedures are not established, complete, and approved by a Competent Rescuer. Standard language is provided in Appendix L, Page 51. Contact your Regional Vice President, Regional or National Safety Representative if you are not comfortable with filing a grievance.

2. Are gusts, high winds, lightning or other storms not occurring or not likely to occur during use of the structure? (ANSI/ASSE Z359.2-2007 Section 4.2.4 ; JO3900.63 Chapter 3, par. 7)

- JO 3900.63, Chapter 3, par. 7:
Climbers must assess wind conditions and postpone climbing activities if the following conditions exist:
 - (1) *The climbers would be exposed to winds that may blow them from elevated locations, or*
 - (2) *The climbers could lose control of equipment or materials.*

This "policy" is void of useful guidance. It mocks reasonable people, with reasonable concerns when climbing in winds that are not in the midst of a tornado, typhoon or hurricane.

What is needed is a helpful framework in making a reasonably objective determination of the additional risk created by certain levels of wind speed and in determining when the benefits of the work justifies the additional risk. It's virtually impossible for a broad national industry consensus standard to state a specific wind speed where work becomes "hazardous" or define when the benefit of the work justifies exposure to the risk. Employers must fill in those

blanks based on the type of work, type of equipment and protective devices available, type of structures involved and any associated hazards, environmental factors, remoteness and access to emergency services and rescue, etc. The policy fails to address, or merely attempt to address, the issue in any serious manner. It's also important to remember that performing an emergency rescue in winds is an entirely different prospect than merely climbing in winds.

PASS does not believe the agency's hollow policy statement concerning "high winds" promotes the objective of OSHA's regulatory mandate to federal agencies to provide a place of employment free from recognized hazards that are causing or are likely to cause death or serious physical harm. Indeed, the "policy" actually works *counter* to ensuring a safe workplace. It back-handedly mandates that climbing should continue in all but tornado or hurricane force winds.

There is no established definition of what is considered "high winds" when climbing structures. As stated above, the variables involved in climbing structures are virtually infinite. However, in reviewing industry documents, there seems to be a general consensus that consideration should be given to curtailing climbing activities when sustained wind speeds approach 25 mph or in the presence of gusts exceeding 40 mph. Additional factors to consider:

- o Winds can create debilitating conditions in low temperatures;
(See Appendix I)
 - o Tag lines can become tangled and rendered unusable;
 - o Excessive wind noise can render communication difficult if not impossible; [See JO3900.63 par. 11b(4)]
 - o Height and duration of climb;
 - o Nature of work to be performed;
 - o Additional time will be required to complete the work;
 - o Additional fatigue;
 - o Additional risk associated with rescue.
- The agency's lack of meaningful policy does not mean that it's reasonably safe to climb in high winds. The lack of policy sets up confrontation between supervisors and specialists regarding these matters at the worst possible time for making reasoned decisions regarding personal safety; when operational pressure is on. The failure of the agency to train and assign a cadre of Competent Persons with the requisite authority to provide supervision of climbing activities, for immediate resolution to these circumstantial issues, real-time, as climbing activities are underway, exacerbates the situation enormously.

☞ Immediately notify the Supervisor and the fall protection program Competent Person, assigned to the activity of the conditions and document as described at the top of this appendix. Discuss the situation with your PASS Regional Vice President to determine that appropriate action to take.

Grievance templates are provided in Appendix M for work in various hazardous conditions when the agency has directed work to continue and refuses to remunerate the climber with Hazard Pay Differential, when qualifiers have been met. It is vital that you have completed the notification and documentation process as described at the top of the appendix before proceeding with the climb. Please discuss the specific circumstances with your PASS Regional Vice President, or Regional Assistant, before filing the grievance. Note: The grievance must be filed within 20 days of the climb.

3. Is the vertical climbing and work area free of coverage by any RF radiation source, outside of the fall zone of power lines, and free from exposure to other environmental or physical hazards?

- Pay particular attention to swaying cables and lines in windy conditions.
- What other operations are underway that could interfere with climbing activity?
- Is the location in the line of fire of a weapons firing range? Yes, there have been documented cases of this in the NAS. Personnel are out of the line of fire at ground heights but are exposed to errant projectiles at height.
- Are hunting activities underway nearby?

☞ Immediately notify the Supervisor and the fall protection program Competent Person, if any, assigned to the activity of the conditions and document. Discuss the situation with your PASS Regional Vice President to determine that appropriate action to take.

4. Is the structure's ladder and ladder safety system free of ice or other debris that could cause loss of proper function, footing, or handholds?

☞ If the defect is caused by something persisting (e.g. not weather related), report the condition in a UCR in addition to the standard documentation indicated at the top of this appendix.

5. Is the ground underneath and in the immediate area of the TMPS from connecting hardware or other material that may have fallen from the structure?

- Inspect the ground area around the TMPS for hardware (nuts, bolts, washers) that may have come loose from the structure or its appurtenances.

☞ Immediately notify the Competent Person assigned to the work activity, or the immediate supervisor of what was found. Do not take this lightly. What appears to be minor hardware could produce a significant hazard if it fell from the ladder safety system or something holding an apparatus to the tower structure.

Ask the supervisor/Competent Person for direction. Hopefully, climbing activity will be curtailed pending a full assessment of the structure and fall protection systems. If not, document the circumstances as indicated at the top of the appendix.

Additionally, open a UCR stating that hardware was found at the base of the structure and that the impact on the TMPS structure, its appurtenances, or safety of the TMPS environment is unknown.

Discuss the situation with your PASS Regional Vice President to determine any additional appropriate action that should be taken.

6. Is the TMPS foundation (including guy anchors, and grout pads under plates) free of cracking, spalling, erosion, settlement, leaning/tilting, or signs of improper drainage?

- Examine the concrete, if any, of the TMPS foundation (and guy cable anchors if applicable) to identify any signs of cracking, spalling, erosion, settlement, leaning/tilting, and proper drainage.

- o Original site grades should have been designed to ensure the flow of drainage water away from the structures on the site. Settlement and erosion may have changed site grading, resulting in water standing against or under the foundations.
- o Report foundation settlement, erosion or tilting issues that are creating obvious uneven support of the structure base or exposing more than two feet of usually buried concrete.

☞ File a UCR if any defects are identified.

7. Are structure members, connections, ladders, ladder safety systems, and mounts free of: missing, broken or bent members or hardware; stress cracks or corrosion/rust, and; any other observable defect(s)?

- Examine the structure from the ground, with the aid of binoculars when appropriate.
- Continue to inspect the structure during the climb or work aloft.
- Structural Members.
 - o Examine accessible vertical and horizontal structural members, ladders, and mounts for stress cracks, broken or bent members, rust and corrosion.
 - o Identify any broken or missing structural members or bracing.
 - o Identify any structural bracing rusted such that metal is obviously missing or edges of steel are delaminating (edge appears as thin, separating layers rather than one solid thickness/piece).
 - o Identify leg metal rusted/corroded to the extent that metal is obviously missing or edges of steel are delaminating (edge appears as thin, separating layers rather than one solid thickness/piece).
 - o Examine leg corners and welds to the base/section plate for splits/cracks.
 - o Visually inspect the structure for any sections of bracing appearing to be bent or bowed (e.g. not more than 7/64 inches in a five foot long piece, 7/32 inches if a ten foot long piece, etc. This will be a somewhat subjective assessment during a pre-climb inspection. A precise measurement can be made during follow-up action.)
- Structural Connections.
 - o Examine accessible bolts, and welds. Examine accessible connections for loose, missing, bent components, cracks, rust, and corrosion.
 - o Loose bolts must be noted and the location documented. Note locations of stress cracks.
 - o Identify any severely rusted or missing bolts used for leg splices, base/section plate connections, or section splices.
 - o Identify missing bolts or cracked welds used to attach a brace to the tower leg (or its connection plate at the leg).
 - o Insulators. Inspect insulators used, if any, in leg construction (bases, section joints, etc.) for cracking or other damage.

☞ File a UCR if any defects are identified.

☞ Notify the supervisor and Competent Person immediately of any defects are identified with the ladder safety system including the ladder itself. File a UCR if any defects are identified. Request an evaluation by a Competent Person, before continuing the climb, of any defect identified with

the ladder safety system, including the ladder, or other major structural issue. Document the defect and outcome of the dialog as recommended at the top of the Appendix.

8. *Are ground straps, cables, and connections free of the evidence of lightning damage?*

☞ File a UCR if any defects are identified rendering the system ineffective; e.g. breaks in conductors, missing connectors, etc.).

9. *Are maintenance and obstruction lights operative and adequate?*

☞ File a UCR if any defects are identified and not immediately corrected (i.e. light bulb replacement). Be cognizant of any fall hazards associated with maintenance of the lighting system. Request procedures from a Competent Person before attempting maintenance of a lighting system where fall hazards are present; e.g. reaching through or over railings, standing on a ladder with a railing within the fall zone, reaching out over an open staircase from the platform/landing opening at the top of the run, etc. Fall protection procedures are required for these types of hazardous situations. Document the defect and outcome of the dialog as recommended at the top of this appendix.

10. *From a distance does the TMPS appear to be free of leaning, bowing, kinking or misalignment at any point, more than one foot horizontally for each 40 feet of height?*

- This will be a somewhat subjective assessment during a pre-climb inspection. A precise measurement can be made during follow-up action.

☞ File a UCR if any defects are identified. Document the defect and outcome of the dialog as recommended at the top of this appendix.

11. *From the base of each leg looking up, does the leg appear to be free of any bow, kink or twist, putting it out of a straight line for more than one foot for each 40 feet of height at any point?*

- This will be a somewhat subjective assessment during a pre-climb inspection. A precise measurement can be made during follow-up action.

☞ File a UCR if any defects are identified. Document the defect and outcome of the dialog as recommended at the top of the Appendix.

12. *Are elevated maintenance platforms free of loose, missing/deteriorated parts, protrusions in the deck/walking surface or other observed defect?*

Evaluate elevated maintenance platforms used noting all loose, missing, deteriorated parts, or other observed defect.

☞ File a UCR if any defects are identified.

For Guyed Structures

13. *Are guy wires, connecting hardware or anchors free of severe rust (heavy pitting of the metal items)?*

- For anchor rods in direct earth contact: inspect the exposed portion of steel anchor rods at the point they contact the earth for corrosion and loss of material without disturbing the earth.

☞ File a UCR if any defects are identified.

14. *Are guy wires free from droops or sags greater than one foot from an imaginary line between the anchor and its connection to the TMPS? Note: This is a subjective assessment.*

- Report soil disturbance, sagging guy cables or other indications that a guy anchor has moved.

☞ File a UCR if any defects are identified.

15. Are jamb nuts tight and are there at least four threads of each connecting rod end visible inside the barrel portion (not flush with or inside the threaded female socket ends) on anchor turnbuckles?

- Inspect turnbuckles for corrosion and loose components.
- Ensure that four or more threads are visible inside the barrel at either end.
- Ensure the jam nuts for the turnbuckles are tight if present.
- Ensure the turnbuckles are properly safety wired/cabled to prevent loosening if no jamb nuts are provided.

☞ File a UCR if any defects are identified

16. Are all guy wires free of sharp kinking or frayed wire strands at the bend where they are connected to the anchor or TMPS?

☞ File a UCR if any defects are identified

17. Are guy wires free from sharp kinks and frayed wire strands at the bend where they are connected to the anchor or TMPS? Are wire clips and grips properly installed and free from other defects?

- Check guy attachments (at anchors and TMPS pull-offs) for chafing of cables and thimbles.
- Check for indications of rust in the cables, thimbles, clips/grips, ice clips, and any other attaching components used (bolts, plates, etc.).
- Check carefully for any sign of cable slippage and determine that all clips/grips (if used) are properly installed, spaced, and secure. Additional information regarding wire rope clips is provided in Appendix F.
- Inspect for cable roll-out of the thimble.
- Inspect for frayed or broken cable strands.
- Report any guys attached to anchors without turnbuckles.
- The guy connections at any torque arms, usually found on microwave towers, require visual inspection if accessible visually during the scope of the immediate work tasks(s).

☞ File a UCR if any defects are identified

Appendix B - Detailed Full Structure Assessment Procedures

All Structures

2. Is a complete set of baseline documentation available? (ANSI/222 Annex J; JO6930.25A par. 74b)

This is a condensed list of the minimum baseline documentation required by ANSI/TIA-22G and other standards. It is required for a rudimentary evaluation of any changes that may have taken place affecting structural integrity. Of most importance to specialists evaluating the structural integrity and safety of TMPS is: an accurate plot plan showing location of any guy anchors; details of attached appurtenances; locations of guy anchorages on towers, details of guy anchors, guy tension, and guy anchor details.

- Accurate site plot indicating:
 - Above ground lines within the fall-zone of the tower showing their purpose/use and magnitude of any power carried.
 - Buildings and other infrastructure within the fall-zone of the tower.
 - Location of guy cables and anchors.
- TMPS structural diagrams showing:
 - **Self Supporting Latticed Structures and Self Supporting Latticed Structures affixed with guys.** (Most self-supporting towers comprised of legs, horizontal members, horizontal and diagonal cross-bracing, etc.)
 - Sketch of overall structure, numbering all sections.
 - Map of sections including: section height, configuration of members and bracing, overall dimensions from leg to leg showing any taper.
 - Size of members and braces.
 - **Guyed Mast Structures** (a.k.a. guyed towers, without legs, relying primarily on guys for structural support).
 - Structure base type (fixed or pinned) and tapered or flat base.
 - Guy anchor dimensions: distance from the base to guy anchors and their relative elevations to the mast base and their orientation.
 - Sketch of overall structure, numbering all sections and showing position and details of guy attachment points (e.g. size and thickness of guy pull-off plate, type of hardware used, etc.)
 - Cross section mapping as described for self support towers including details of guy attachment points.
 - Anchor rod type, size, number
 - Guy assemble and connection details
 - Turnbuckle and shackle size
 - Guy anchor head plate size, shaft size, extension length and angle from horizontal plane.
 - **Pole Structures**
 - Sketch of overall structure, numbering all sections.
 - Configuration of each section: section height; length from splice to splice; number of sides, if any; diameter and

circumference of round sections; port hole opening size, location, and reinforcement points.

- o **All Structures** - Mapping of appurtenances (i.e. anything attached to the structure).
 - Inventory of existing antennas: elevation, type, dimensions, model number, support mount and location, spacing and orientation on the structural cross-section, corresponding transmission lines.
 - Inventory of any other appurtenances (fixed ladders, platforms, lighting systems, lightening protection systems, etc.): elevation, appurtenance type and dimensions, location, spacing, orientation on the structural cross-section.
- o **All Structures** - Connections.
 - Member end connection details.
 - If bolted: number, type and size of end bolts and center bolts.
 - Size and thickness of gusset plates with hole details.
 - Splice details.

☞ File a UCR if an accurate plot plan showing location of any guy anchors, details of attached appurtenances, locations of guy anchorages on towers, guy anchor details, guy tension, and guy anchor details are not available.

3. Is facility reference data complete?

- Record of TMPS maintenance, including record of guy tension measurements, completed annually. (JO 3900.63 Chapter 3, par. 9a(2); JO 6930.25A par 53d).
- Recorded "as found" annual guy tension measurements are required to determine if guy anchors may be unstable or pulling from ground.

☞ File a UCR if there is no record of annual maintenance performed within the past eighteen months or if guy tensions were not recorded and available.

4. Are concrete foundations and guy anchorages free of large cracks or spalled areas leading to any embedded metal (e.g. bolts, re-bar)?

- Additionally, report if TMPS foundation concrete been covered/buried such that it cannot be readily exposed to permit a base inspection.

☞ File a UCR if any defect is identified.

5. Is the site properly graded?

- Is more than two feet of vertical concrete surface exposed above grade due to erosion or ground settling?
- Has site grade settled, or otherwise changed, such that water does not drain away from the TMPS structure and any guy anchor points?

☞ File a UCR if any defect is identified.

6. Are grout pads underneath base plates sound; free of deterioration or otherwise required maintenance?

☞ File a UCR if any defect is identified.

7. Are all structural members in-place?

It is not always evident what members may have been intentionally removed as part of the engineered design, for things like base access, in the absence of structural baseline drawings.

Assume the missing member is not part of the engineered design the absence of sectional diagrams for further review by a qualified structural engineer.

☞ File a UCR if any defect is identified.

8. *Is structural bracing free of bends or bows more than three inches in a five-foot-long piece (six inches if a ten-foot-long piece, etc.)?*

☞ File a UCR if any defect is identified.

9. *Is structural bracing free from rusting such that metal is obviously missing or edges of steel are delaminating (edge appears as thin, separating layers rather than one solid thickness/piece)?*

☞ File a UCR if any defect is identified.

10. *Is leg metal free of rusting/corrosion to the extent that metal is obviously missing or edges of steel are delaminating (edge appears as thin, separating layers rather than one solid thickness/piece)? If leg is of a hollow type (tube or pipe), is a ring heard rather than a dull thud sound when struck with a hammer (at the base and each leg section plate)?*

☞ File a UCR if any defect is identified.

11. *Are structure legs free of splits/cracks at the corners or the weld to the base/section plate cracked?*

☞ File a UCR if any defect is identified.

12. *Are the bolts used for leg splices (or base connections) free of severe rust, and are all bolts in-place at the base/section plate or section splice?*

☞ File a UCR if any defect is identified.

13. *Are less than half of all bolts used to attach a brace to the TMPS leg (or its connection plate at the leg) missing and is are welds free of cracks extending more one third of the total length of the weld?*

☞ File a UCR if any defect is identified.

14. *If insulators are used in leg construction (bases, section joints, etc.) are they free of cracks or other damaged?*

☞ File a UCR if any defect is identified.

15. *Are all ground system resistance measurements for each down conductor less than or equal to 10 ohms?*

- Poor grounding of the structure can lead to premature failure of the foundation in addition to hazards to personnel.

☞ File a UCR if any defect is identified.

16. *Are pole and mast structures protected with at least one lightning air terminal and down conductor bonded to ground?*

☞ File a UCR if any defect is identified.

17. *Are TMPS that consist of multiple, parallel segments or legs that set on a pad or footing over a 9 sq. ft. area protected by at least two air terminals and down conductors bonded to ground?*

☞ File a UCR if any defect is identified.

18. Do larger towers (e.g. radar antenna towers) have less than one down conductor for each leg?

☞ File a UCR if any defect is identified.

19. Are down conductors bonded to each section, secured to the structure at an interval of less than three feet and run on the inside surface of legs when practicable?

☞ File a UCR if any defect is identified.

20. Does the measured value for TMPS vertical alignment and linearity or twist fall within the tolerances provided in Appendix G?

- Refer to data in item 3 if not able to perform the measurements during the inspection.
- A maintenance, or other record, of a deviation does not supersede the need for a UCR to record this hazard.

☞ File a UCR if any defect is identified.

21. Is the fixed ladder system free of defects per the TMPS Fixed Ladder Full Assessment Guide provided in Appendix D?

☞ File a UCR if any defect is identified.

22. Are elevated maintenance platforms free of any loose, missing deteriorated parts, protrusions in the deck/walking surface, or other defect per the Elevated Maintenance Platform Checklist (Appendix E)?

☞ File a UCR if any defect is identified.

Guyed Structures

23. Are concrete guy anchors free from large cracks and broken/spalled areas leading to embedded metal, or more than two feet of exposed vertical concrete surface above grade due to erosion or ground settling?

☞ File a UCR if any defect is identified.

24. Are any guy wires connected to a metal rod smaller than one inch in diameter, that are in direct contact with the earth, less than 20 years old?

☞ File a UCR if any defect is identified.

25. Are guy cables free from missing clips/clamps either at the anchor or the TMPS connection point?

☞ File a UCR if any defect is identified.

26. Does the measured tension of any guy fall within the tolerances specified in Appendix G?

- Refer to data in item 3 if not able to perform the measurements during the inspection.
- A maintenance, or other record, of a deviation does not supersede the need for a UCR to record this hazard.

☞ File a UCR if any defect is identified.

Appendix C - Detailed Full Fall Protection Assessment Inspection Procedures with Background Information

Note: The manufacturer manuals referred to for examples are attached to this guide.

1. Has a comprehensive fall hazard survey been conducted for the workplace as evidenced by a fall hazard survey report?

(ANSI/ASSE Z359.1-2007 Section 7.1.1; ANSI/ASSE Z359.2-2007 Sections 4.3 and 6; JO3900.63 Chapter 3, par. 2c(10), par. 9a(4), par. 10; 29 CFR 1910.132(d)(1))

See the opening statement under SYSTEM REQUIREMENTS on page 15 of the Railok 90 Manual:

"Plan your fall protection system and how it will be used prior to installation. Consider all factors that will affect your safety before, during, and after a fall"

While the quote is from a manual specifically for a ladder safety system, it should be applied to all circumstances where any mode of fall protection is implemented. Effective fall protection begins with an understanding of why the system was selected, and during what tasks and conditions it is intended to be used.

The fall hazard survey can be thought of as a specific type of job hazard analysis. The fall hazard survey should identify **all** fall hazards through 100% of the path of travel while performing **all predictable maintenance tasks**.

The survey must be conducted by a fall protection Competent Person in collaboration with specialists familiar with performing the tasks on the specific structure. This can be a straight forward proposition for new self supporting communication towers with OSHA compliant ladder, standard LSS, work platform with a standard railing, counter balanced hatch, no appurtenances requiring access off-platform, no appurtenances requiring elevation from the deck, and no need to lean over or reach through a railing to complete a work task. This type of pristine, comparatively hazard free environment, may occur at newer and larger facilities in metropolitan areas.

While there are many instances of this type of installation, there are just as many, if not more, examples of where one or more of those characteristics don't apply. Identification of all work tasks, regardless of how they may be accomplished, must be identified. Then, one-by-one, the Competent Person and specialist(s) with task and TMPS/facility knowledge will define the paths of travel for each task and prescribe a method of fall protection for 100% of the travel of that path and completion of the task. The fall hazard survey **can not** be accomplished at a desk.

Prescribing a "bucket truck" to control an identified fall hazard is 50% of the necessary information for the survey report. The other 50% is the information and procedures associated with the fall protection systems that are prescribed for the bucket truck. Can 100% of the task, for all tasks, be performed from the bucket? If not, stating "use bucket truck" is not sufficient.

Stating, "to be performed by contractor" is likewise insufficient. An in-depth discussion is beyond the scope of this guide. Contact your PASS Regional Vice President if this is ever used as a rationalization in an attempt to preclude the task of performing a fall hazard survey or prescribing fall protection for a task.

The agency implies that the completion of the Fall Hazard Checklist, provided as Appendix I of JO 3900.63, is sufficient in conducting a fall hazard survey. While the checklist is instructive, it is not all encompassing. It is actually grossly incomplete. It is more of a "check-the-box" tool than a comprehensive aid for a fall hazard survey.

For example, there is no provision for mapping the travel of the climber throughout the course of his/her work. There are many examples of structures where ladders are not in one

contiguous run; while each section may be an "OSHA compliant ladder." There is no provision for identifying specific anchorage points for work tasks while not attached to the LSS or on a platform with a compliant railing. The wide variation of specific cases is one of the reasons the survey must be accomplished by a fall protection Competent Person working **with** other specialists that actually perform the work and are familiar with the structure. It's not a task that can be adequately performed by an agency safety professional or supervisor walking around checking off items on a checklist to substantiate "compliance."

ANSI/ASSE Z359.2-2007 provides a comprehensive description of the fall hazard survey. You can, and should, obtain your copy through the FAA's IHS subscription service at:

<https://ksn2.faa.gov/ajw/es4/nes/res/ihsaccess.aspx>

A fall hazard survey report will document a comprehensive fall hazard survey. The fall hazard survey report should include, while not limited to:

- An enumeration of all fall hazards through 100% of the path of travel while performing all predictable maintenance tasks; not simply scheduled recurring preventative maintenance.
- One or more methods identified for elimination or control of each hazard.
- Drawings showing the location of hazards and distances to obstructions within the fall path of each location.
- Environmental factors that may affect the installation, use, inspection, maintenance, and dismantling of any fall protection system. These could include extreme heat or cold, radial ice, snow, proximity to weapons firing ranges, hunting areas, unstable/uneven walking surface, etc.
- Descriptions of all hazards should include:
 - Reason for the exposure;
 - Severity of the fall (injury or death);
 - Frequency of the task;
 - Duration of the task;
 - Obstructions in the fall path;
See the "FALL CLEARANCE" paragraph under the "SYSTEM REQUIREMENTS" section on page 15 of the Railok 90 manual.
 - Existing fall protection systems/equipment;
 - Access to the task/structure;
 - Environmental conditions (current and predictable)
See the "ENVIRONMENTAL HAZARDS" paragraph under the "SYSTEM REQUIREMENTS" section on page 15 of the Railok 90 manual.
 - Risks to, or caused by, other workers in the area;
 - etc.
- Each Service Area Office administers the fall protection program in its own manner. Ask the appropriate supervisor for a copy of the report. If it is not provided within two working days, or is inadequate, take the indicated action. A completed checklist from Appendix I of JO 3900.63 is **not** a fall hazard survey report. This checklist item has not been met if an annotated checklist is provided as the fall hazard survey.

☞ The absence of a complete fall hazard survey, prepared by a fall protection Competent or Qualified Person, as described above is a breach of the collective bargaining agreement. It more

than likely means that there are no, or incomplete, fall protection procedures, discussed next, as well. You are strongly encouraged to file a grievance. Standard language is provided in Appendix L, Page 52. Contact your Regional Vice President, regional or National Safety Representative if you are not comfortable with filing a grievance.

2. Are site/TMPS specific fall protection procedures, including rescue procedures, available and effective? (ANSI/ASSE Z359.2-2007 Sections 3.2.1.4, 4.3 and 6; JO3900.63 Chapter 3, par. 2c(10), par. 9a(4), par. 10)

You should obtain your own copy of ANSI/ASSE Z359.2-2007 at:

<https://ksn2.faa.gov/ajw/es4/nes/res/ihsaccess.aspx>

- Fall protection procedures must:
 - Be completed by a fall protection Competent or Qualified Person.
 - Be structure specific.
 - Provide for 100% continuous fall protection throughout the accomplishment of **all work tasks** as identified, and controlled, per the comprehensive fall hazard survey report.
 - **Special attention should be provided for tasks that require detachment from a ladder safety system when not on a platform with a compliant rail system.**
 - It's important that the cases of more than one body attached to a structure/anchorage/LSS at a time are anticipated, and documented in the procedures, so that the additional forces can be properly accounted for when prescribing anchorages and determining overall structure integrity under maximum loading.
 - Identify, with specificity, all fall arrest anchorages.

See section 2.5 ANCHORAGE STRENGTH on page 14 of the SALA Harness Manual.

- If not provided in facility baseline drawings: Documentation of certification by a fall protection Qualified Person that the anchorage can withstand two times the anticipated maximum arresting force or, documentation certifying that an anchorage can withstand 5,000lbs of force in the direction of anticipated use.
- The structural integrity of a fixed ladder itself, and its attachment to the tower structure, must be considered when using the ladder as an anchorage, as well as the ability of the structure to withstand arresting force. The maximum loading of the ladder/LSS must be provided (e.g. emergency rescue or tasks that require unusual loading of the ladder/LSS). Some of the older towers have ladder systems that were literally tack welded together out of 1/2" angle iron, then simply tack welded to the tower in a few places.
- Identify, with specificity, any work positioning anchorages.
 - If not provided in facility baseline drawings: Documentation of certification by a fall protection Qualified Person that the anchorage can

withstand two times the anticipated maximum arresting force or, documentation certifying that an anchorage can withstand 3,000lbs of force in the direction of anticipated use.

- Temporary anchorages must take into consideration the capability of the structure of the TMPS in addition to any certification provided with the anchorage device(s).
- o Identify, with specificity, any restraint/travel restraint anchorages.
 - If not provided in facility baseline drawings: Documentation of certification by a fall protection Qualified Person that the anchorage can withstand two times the anticipated maximum arresting force or, documentation certifying that an anchorage can withstand 1,000lbs of force in the direction of anticipated use.
 - Temporary anchorages must take into consideration the capability of the structure of the actual TMPS in addition to any certification provided with the anchorage device(s).
- o All requirements for set up and use of any fall protection system.
 - Detailed instructions for assembling specific components by manufacture/model/type/etc.
 - It's important the compatible components, with the expected characteristics, are specified in a manner that they are clearly distinguishable from those that aren't compatible. The use of incompatible connecting devices is one of the leading causes of fall protection system failure.
 - Many requirements for individual pieces of equipment are provided with manufacturers' manuals and should be incorporated into the additional steps required to document overall system procedures.

See the "COMPONENT COMPATIBILITY" and "COMPAYABILITY OF CONNECTORS" sections on page 16 of the Railok 90 manual.

See the forth bullet under the "Component Limitations" section on page 5 of the Malta Dynamics connecting hardware manual.

See the Instructions section on page 6 of the Malta connecting hardware manual.

See the fifth bullet under the "Instructions for Use" section of the Malta Dynamics connecting hardware manual.

See Section 5.0 INSPECTION on page 28 of the SALA Harness manual.
- o Detailed instructions for inspecting the system before use.

See the "Inspection" section on page 7 of the Malta Dynamics connecting hardware manual.

See Table 1 - Inspections Schedule on Page 20 of the Railok 90 manual. Notice the emphasis placed on the requirement to record the inspection on page 19 under "INSPECTION."

See Section 5.0 INSPECTION on page 28 of the SALA Harness manual.

- o Responsibility for maintenance of equipment. (ANSI/ASSE Z359.2-2007 Section 5.5.4.2)
- o Include site/TMPS specific emergency rescue procedures.
 - Emergency rescue procedures must be approved by a fall protection **Competent Rescuer** before use. (ANSI/ASSE Z359.2-2007 Section 3.2.6.3)
 - Emergency rescue procedures must be included in the facility emergency rescue plan. [JO3900.63 par. 10f(3)c)]
 - Appendix D of JO3900.63 is a template for a Site Rescue Plan. The Site Rescue Plan is not equivalent to emergency rescue procedures.
 - Provide for rescue within six minutes. (ANSI/ASSE Z359.2-2007 Section E6.1)
 - If the use of an outside rescue agency is indicated the outside agency **must** have advised the ATO **in writing** of its availability, capability, and detailed instructions regarding of how they are to be advised of activities or called for rescue services.
 - The above two requirements most often require FAA in-house rescue when not working on an airfield with an available 24/7 rescue service provided by the airport operator.
- o Cover the use of man-lifts and "bucket trucks" for any work task.

Again:

- An emergency rescue plan is not equivalent to emergency rescue procedures.
- Emergency rescue procedures are but a portion of the required fall protection procedures.
- All procedures must be specific to the TMPS, type/model of ladder safety system (LSS), and other equipment used.

☞ The absence of complete fall protection procedures, prepared by a fall protection Competent or Qualified Person, as described above, is an extremely serious matter. Fall protection procedures are the outcome of a thorough fall hazard survey of the workplace. It is the foundation of the workplace safety program. You are strongly encouraged to file a grievance when procedures are not established and complete. Standard language is provided in Appendix L, Page 50. Contact your Regional Vice President, regional or National Safety Representative if you are not comfortable with filing a grievance.

☞ The absence of emergency rescue procedures, prepared and approved by a Competent Rescuer, as described above, is a life or death matter. You are strongly encouraged to file a grievance when emergency rescue procedures are not established, complete, and approved by a Competent Rescuer. Standard language is provided in Appendix L, Page 51. Contact your Regional Vice President, regional or National Safety Representative if you are not comfortable with filing a grievance.

3. Has a qualified structural engineer certified that the structure, including constituent structural components (e.g. fixed ladders and ladder members), are able to

withstand the loading and fall forces encountered during all phases of work, including emergency rescue operations?

- This requirement is usually stated in manufacturer's instructions shipped with fall protection equipment.

See the "STRUCTURE:" section on page 15 of the Railok 90 Manual. Notice the caveat regarding multiple users.

See the third and forth bullets under "Limitations for Use" on page 3 of the Malta Dynamics connector hardware manual.

- This item is virtually impossible to meet if the TMPS has not undergone a full fall hazard survey and has had complete fall protection procedures established and provided to a structural engineer and fall protection Qualified Person to review along with specific TMPS structural data.
- This certification will normally be provided as an attachment to the fall protection procedures and positively identify the date, and any version, of the procedures and the identity of the structure to which they were evaluated.

Note: A standard structure with standard fall protection procedures can be indicated if provided with facility baseline data/drawings in a manner in which any deviation from the procedure or change in the structure can be readily identified. This is an especially thorny exception. The addition of any appurtenances, or deviation from the prescribed safety equipment (e.g. LSS, anchorage points, etc.), renders the installation "non-standard."

☞ File a UCR when a qualified structural engineer has not certified that the TMPS can withstand the load and fall forces anticipated by established site and TMPS specific fall protection procedures.

4. Are anchorages and connectors that are prescribed for use by more than one climber certified for that purpose by a fall protection Qualified Person?

(ANSI/ASSE Z359.1-2007 Section 3.2.5.2)

- This requirement is virtually impossible to meet if the TMPS has not undergone a full fall hazard survey and has had fall protection procedures established.
- Certification can be demonstrated in facility drawings or as an attachment to fall protection procedures.
- The certification statement should indicate:
 - The potential fall force the anchorage and connectors are certified for;
 - The use and intended direction of force;
 - Name of Qualified Person;
 - Date;
 - Serial number or other identifying mark(s) of the anchorage or connectors.

See remark 2 under each type of anchorage under section 2.5 ANCHORAGE STRENGTH on page 14 of the SALA harness manual.

☞ File a UCR when anchorages and associated connectors prescribed in fall protection procedures to be used by more than one person are not certified for that use by a fall protection Qualified Person.

5. Have all ladder safety systems (LSS) undergone a bottom-to-top inspection by a fall protection Competent Person within the last twelve months, or less if recommended by the manufacturer? (ANSI/ASSE Z359.1 Section 6.1; JO 3900.63 Chapter 3, par. 8i(5))

See Table 1 - Inspection Schedule on page 20 of the Railoc 90 manual.

- There are instances of LSS's in the ATO that require inspection on a more frequent than annual basis. Equipment must be inspected per manufacturers' recommendation if it is on less than an annual basis. Be certain to consult the manufacturer's recommendation. See checklist item 8 if manufacturer information isn't available.
- Note the inspection history over the last five years of the LSS.
- A written or electronic record of inspections must be kept for the duration of the service life of the equipment. (ANSI/ASSE Z359.2-2007 Section 5.5.2.2 and 5.5.2.4)
- Equipment that has not been inspected within the required period must be tagged and removed from service. (ANSI/ASSE Z359.2-2007 Section 5.5.3; ANSI/ASSE Z359.1-2007 Section 6.2.2) In this case the posting of an ANSI Z535.2-2011 compliant warning sign is required.

☞ File a UCR when a LSS has not been inspected within the last twelve months, or according to the manufacturer if more frequent, by a fall protection Competent Person. Follow the UCR up with a grievance if climbing the TMPS is not prohibited, as evidenced by the posting of an ANSI Z535.2 compliant warning sign, until the Competent Person inspection is performed. See Appendix L, Page 53 for a template.

6. Have all components of fall arrest, restraint/travel restraint, and work positioning systems, including all anchorages and individually issued equipment, undergone a thorough inspection by a fall protection Competent Person within the last twelve months? (ANSI/ASSE Z359.1 Section 6.1; ANSI/ASSE Z359.2 Sections 5.4.7 and 5.5.2; ANSI/ASSE Z359.14 Section 6.1; JO3900.63 Chapter 3, par. 8i(5))

See section 5.2 FREQUENCY on page 28 of the SALA harness manual. Notice the requirement that a Competent Person other than the user must perform the inspection at least annually.

See the "Frequency" section on page 8 of the Malta connecting hardware manual. Note the requirement for inspection by a Competent Person other than the user twice a year. Notice the requirement to record the inspection.

- The ATO has created a role called "Authorized Inspector" in JO 3900.63 (see Table 3-1) for some unknown reason. Some surmise that it's an attempt to reduce the cadre of properly trained Competent Persons. The requirement of ANSI/ASSE Z359.1-2007 section 6.1.1, ANSI/ASSE Z359.2-2007 section 5.5.2.2, and ANSI/ASSE Z359.14-2014 Section 6.1 that a Competent Person, other than the user, perform the inspection no less than annually is required; notwithstanding the agency's creation of an additional role and inspection requirement.
 - Explanatory notes in the sections of the ANSI Fall Protection Code enumerated above explain that these two distinct levels of inspection are required as the Competent Person has the breadth and depth of knowledge, and experience,

necessary to not only inspect the equipment but identify when the equipment may not be suitable for the application, when inspection intervals should be adjusted, or when Authorized Persons may need additional training on the use and inspection of equipment. It's not only about the inspection of the equipment itself.

- Inspections performed by an "Authorized Inspector" are not sufficient in meeting the annual inspection required by the ANSI Fall Protection Code.
- Inspection requirements set by the agency must meet or exceed those recommended by the manufacturer.
- Note the inspection history over the last five years of the LSS.
- Authorized Persons may need to provide information individually issued equipment/components.
- A written or electronic record of inspections must be kept for the duration of the service life of the equipment. (ANSI/ASSE Z359.2-2007 Section 5.5.2.2 and 5.5.2.4)
- Equipment that has not been inspected within the required period must be tagged and removed from service. (ANSI/ASSE Z359.2-2007 Section 5.5.3; ANSI/ASSE Z359.1-2007 Section 6.2.2)

☞ File a UCR when there is no record that fall protection equipment has been inspected within the last twelve months, or according to the manufacturer if more frequent, by a fall protection Competent Person. Follow the UCR up with a grievance if the equipment is not removed from service by tagging and controlling until the Competent Person inspection is performed. See Appendix L, Page 54 for a template.

7. Have all components of emergency rescue systems and equipment, including all anchorages and individually issued equipment, undergone a thorough inspection by a fall protection Competent Rescuer within the last twelve months? (ANSI/ASSE Z359.1 Section 6.1; ANSI/ASSE Z359.2 Sections 5.4.7 and 5.5.2; ANSI/ASSE Z359.4 Section 6.1; ANSI/ASSE Z359.14 Section 6.1; JO3900.63 Chapter 3, par. 8i(5))

- The ATO has failed to implement the role of Competent Rescuer in JO3900.63 (see Table 3-1) for some unknown reason. Some surmise that it's an attempt to reduce the cadre of trained Competent Persons. ANSI/ASSE Z359.4-2007 section 6.1 requires that a Competent Rescuer, other than the user, perform the inspection no less than annually. An annual inspection by a Competent Rescuer is the requirement; notwithstanding the agency's failure to implement the role of Competent Rescuer.
- Explanatory notes in the sections of the ANSI Fall Protection Code enumerated above explain that these two distinct levels of inspection are required as the Competent Rescuer has the breadth and depth of knowledge, and experience, necessary to not only inspect the equipment but identify when the equipment may not be suitable for the application, when inspection intervals should be adjusted, or when Authorized Rescuers may need additional training on the use and inspection of equipment. It's not all just about the inspection of the equipment itself.
- Inspection requirements set by the agency must meet or exceed those recommended by the manufacturer. (ANSI/ASSE Z359.4-2013 Section 6.1.2)
- Note the inspection history over the last five years of the LSS.

- Authorized Rescuers many need to provide information for individually issued equipment/components.
- A written or electronic record of inspections must be kept for the duration of the service life of the equipment. (ANSI/ASSE Z359.2-2007 Section 5.5.2.2 and 5.5.2.4; ANSI/ASSE Z359.4-2013 Section 6.1.3; ANSI/ASSE Z359.14-2014 Section 6.1.3)
- Equipment that has not been inspected within the required period must be tagged and removed from service. (ANSI/ASSE Z359.2-2007 Section 5.5.3; ANSI/ASSE Z359.4-2013 Section 6.1.4; ANSI/ASSE Z359.14-2014 Section 6.2.2)

☞ File a UCR when there is no record that fall protection rescue equipment has been inspected within the last twelve months, or according to the manufacturer if more frequent, by a fall protection Competent Rescuer. Follow the UCR up with a grievance if the equipment is not removed from service by tagging and controlling until the Competent Rescuer inspection is performed. See Appendix L, Page 55 for a template.

8. Is manufacturer provided fall protection equipment information and procedures readily available at the worksite? (ANSI/ASSE Z359.2-2007 Section 5.5.1.2; ANSI/ASSE Z359.1-2007 Section 6.2.1; ANSI/ASSE Z359.4-2013 Section 6; ANSI/ASSE Z359.11-2014 Section 6; ANSI/ASSE Z359.12-2009 Section 6.2; ANSI/ASSE Z359.13-2013 Section 6)

- Manufacturers' information is expected as an integral part of fall protection and emergency rescue procedures.
- Manufacturers' information must be retained an readily available for all fall protection equipment, including but not limited to:
 - o Ladder safety systems;
 - o Full body harnesses;
 - o Vertical lifelines;
 - o Horizontal lifelines;
 - o Lanyards;
 - o Energy absorbers;
 - o Energy absorbing lanyards;
 - o Self-retracting devices;
 - o Connecting hardware.
- Authorized Persons and Rescuers many need to provide information regarding individually issued equipment and components.

☞ File a grievance when the required manufacturers' information is not readily available. See Appendix L, Page 56 for a template.

9. Has each Competent Person received training at least every two years? (ANSI/ASSE Z359.2-2007 Section 3.3.4.5)

1. The best manner in which to address this issue would be to request the identity of the Competent Person assigned for each facility/site, that has a TMPS requiring work above ground level, along with the record of each person's training, during the establishment OSHECCOM.
2. If that doesn't work, or is not feasible, a formal information request under Chapter 71 of the Statute would be appropriate. Contact your PASS Regional Vice President for assistance with a formal information request if required.

☞ File a grievance if identified Competent Persons have not completed training at least every two years.

☞ File a grievance if a Competent Person has not been identified/designated to oversee the fall protection program for any site/facility.

10. *Has each Competent Rescuer received training at least every year?* (ANSI/ASSE Z359.2-2007 Section 3.3.5.5)

3. The best manner in which to address this issue would be to request the identity of Competent Rescuers available to provide oversight of the SSC's fall protection emergency rescue program along with the record of each person's training, during the establishment OSHECCOM.
4. If that doesn't work, or is not feasible, a formal information request under Chapter 71 of the Statute would be appropriate. Contact your PASS Regional Vice President for assistance with a formal information request if required.

☞ File a grievance if identified Competent Rescuers have not completed training at least every year.

☞ File a grievance if a Competent Rescuer has not been identified/designated to oversee the fall protection rescue program for any site/facility/office.

11. *Has each Authorized Person received training at least every two years?* (ANSI/ASSE Z359.2-2007 Section 3.3.6.4)

5. The best manner in which to address this issue would be to request the identity of all Authorized Persons assigned to the SSC along with the record of each person's training, during the establishment OSHECCOM.
6. If that doesn't work, or is not feasible, a formal information request under Chapter 71 of the Statute would be appropriate. Contact your PASS Regional Vice President for assistance with a formal information request if required.

☞ File a grievance if identified Authorized Persons have not completed training at least every two years.

☞ File a grievance if training records for Authorized Persons do not contain a certification record, retained on-file for the duration of the employee's employment as described by 29 CFR 1910.268(c).

12. *Has each Authorized Rescuer received training at least every two years?* (ANSI/ASSE Z359.2-2007 Section 3.3.7.4)

7. The best manner in which to address this issue would be to request the identity of all Authorized Rescuers assigned to the SSC along with the record of each person's training, during the establishment OSHECCOM.
8. If that doesn't work, or is not feasible, a formal information request under Chapter 71 of the Statute would be appropriate. Contact your PASS Regional Vice President for assistance with a formal information request if required.

☞ File a grievance if identified Authorized Persons have not completed training at least every two years.

13. *Has each Authorized Rescuer been evaluated at least annually with a written examination and observation of performance?* (ANSI/ASSE Z359.2-2007 Section 3.3.7.5)

- This evaluation may be incorporated into the biannual training rendering this a distinctly biannual event, occurring during the years in which formal training wasn't received.

9. The best manner in which to address this issue would be to request the identity of all Authorized Rescuers assigned to SSC's along with the record of each person's annual evaluation record, during the establishment OSHECCOM.
 10. If that doesn't work or is not feasible, a formal information request under Chapter 71 of the Statute would be appropriate. Contact your PASS Regional Vice President for assistance with a formal information request if required.
- ☞ File a grievance if identified Authorized Persons have not been evaluated at least annually.

Appendix D. TMPS Fixed Ladder Full Assessment Guide

TMPS Fixed Ladder Full Assessment Guide		
This guide is intended to be congruent with occupational safety and health guidelines only when evaluating fixed ladders attached to TMPS. Any checklist question answered with “No” is a defect and a UCR should be initiated. Some variance from the given parameters may be permissible in some applications/situations. Therefore, be certain to provide as much information, including drawings/pictures when practicable, for any “no” answer.		
Inspection Element	Y/N	Comments
Is the ladder constructed of metal?		
Is the distance between any two rungs greater than 12 inches?		
Are round rungs at least 3/4 inch in diameter? (5/8" for telecommunications towers)		
Is the distance between rungs uniform throughout the length of the ladder, including at section transitions?		
Is there a minimum clear length of all rungs at least 16 inches measured from the inside of the rails? (12" for telecommunications towers)		
Are all rungs free of sharp edges, burs, or projection that may be a hazard?		
Does the cross section of the side rail afford adequate gripping surface without sharp edges, splinters or burrs?		
Do all splices and connections have a smooth transition with adjacent members, with no sharp or extensive projections?		
Has the joining of dissimilar metals caused corrosion?		
Do welds appear sound without cracking?		
Are metal ladders painted, or otherwise treated to resist corrosion, when demanded by the environment?		
Is the pitch of the ladder at between 75 and 90 degrees?		
Front-side clearance: Is the distance from the centerline of the ladder to any obstruction on the climbing side of the ladder at least 30 inches?		
Lateral clearance: Is the climbing space clear to a lateral distance of 15 inches from the centerline of the ladder in either direction (left/right).		

Inspection Element	Y/N	Comments
Back-side clearance: Is the distance from the centerline of rungs to the nearest permanent object in the back of the ladder at least 7 inches?		
Do unavoidable obstructions occurring within the desired backside clearance area meet the criteria shown in figure D-3?		
Are any hatch covers counterweighted?		
Is the distance from the centerline of rungs or cleats to the edge of the hatch opening on the climbing side at least 30 inches?		
Do all hatches open a minimum of 60 degrees?		
Is there a clear front-side distance of not less than 24" going through any deck opening/hatchway?		
Are any head bump hazards within 30" of the centerline of the front-side of the ladder fitted with a deflector plate?		
Are no ladder cages used?		
Does the ladder continue to a height of the next regular rung exceeding a minimum of 42" above any maintenance platform/landing?		
Is the ladder mounted/dismounted from the side at platforms/landings?		

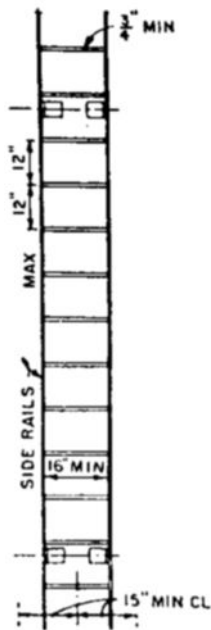


Figure D-1. Rail Ladder with Bar Steel Rails and Round



Minimum Ladder Clearances

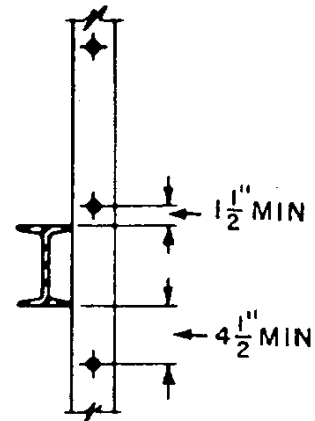


Figure D-2. Clearance for Unavoidable Obstruction at Rear of Fixed Ladder

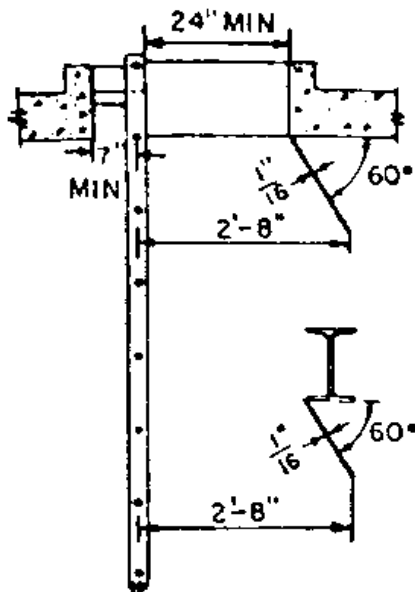
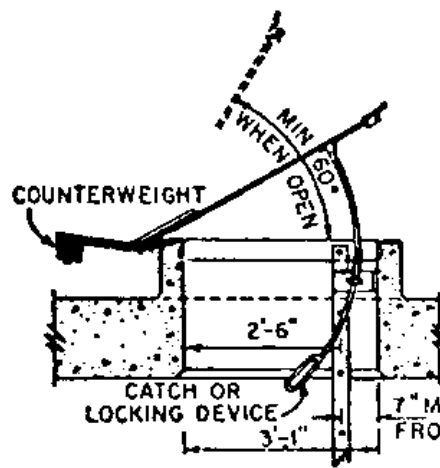
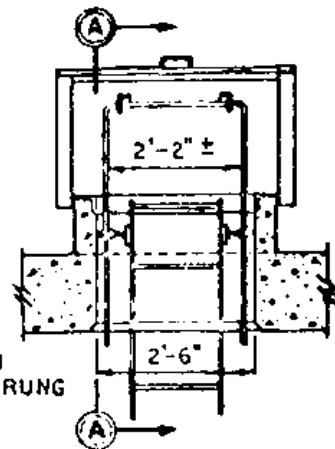


Figure D-3. Deflector Plates for Head Hazards



SECTION A-A



SECTIONAL ELEVATION

Figure D-4. Relationship of Fixed Ladders to a Safe Hatch

Appendix E. Elevated Maintenance Platform Full Assessment Guide

Elevated Maintenance Platform Checklist		
This checklist is intended as an aid in evaluating elevated maintenance platforms attached to a TMPS at a height of more than 4 feet. This guide is intended to be congruent with occupational safety and health guidelines. Any checklist question answered with “no” is a defect and a UCR should be opened for further investigation as an OSH hazard. Some variance from the given parameters may be permissible in some applications/situations. Therefore, be certain to provide as much information, including drawings/pictures when practicable, for any “no” answer.		
Inspection Element	Y/N	Comments
Are all fall edges protected with a standard guardrail system (top and mid rail into posts)?		
Is the guardrail capable of withstanding a load of at least 200 pounds applied in any direction at any point on the top rail?		
Is the top of the top rail of the standard guardrail a nominal 42” above the platform deck?		
Is the top surface of the top rail of the standard guardrail smooth throughout its length?		
Is the intermediate rail of the standard guardrail approximately halfway between the upper rail and the deck of the platform?		
Do the ends of the rails of the standard guardrail terminate into a pole, or in some other manner in which they do not constitute a projection hazard?		
Are posts and railings made of pipe at least 1½ inches nominal in diameter?		
Are posts and railings made of structural steel constructed with 2” X 2” X 3/8” angles, or of other shapes with equivalent strength?		
Are posts spaced not more than 8 feet on center?		
Are open platform sides protected with a standard toe board?		
Are toe boards a nominal 4” in height from its top edge to the deck of the platform?		
Are toe boards securely fastened in-place?		
Is there not more than a 1/4” gap between the bottom of the toe board and the top of the platform deck?		
Are deck hole covers, if any, designed to support twice their expected loads?		

Inspection Element	Y/N	Comments
Can platform hatches be closed before detaching from the ladder safety, or other active fall protection system?		
Can hatch covers be secured against accidental displacement in the fully open and closed positions?		
Do site specific fall protection procedures address hazards associated with hoisting activities?		
Is platform decking/grating adequately secured from movement?		
Are there any protrusions into or unevenness of the platform decking/grating that might present a tripping hazard?		
Is there an absence of any openings greater than 1" in any one direction on the walking surface?		
Is the platform decking/walking/working surface constructed in a manner in which drainage of liquids is maintained?		
Is the platform conspicuously marked with the designed maximum load?		
Are hatchways that must remain open while personnel are aloft provided with a removable approved railing system?		

Appendix F - Wire Rope Clips Installation and Use

Properly installed wire rope clips only offer approximately 80% of the breaking strength of the steel cable to which they are applied.

WARNING

Wire rope clips are not to be used for lifting loads.



Figure Z-1 Wire Rope Clip Assembly Step 1

Turn back the specified amount of rope from the thimble. Apply the first clip one base width from the dead end of the wire rope (U-bolt over dead end-live end rest in clip saddle). Tighten nuts evenly to recommended torque.

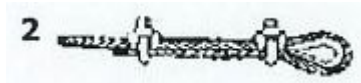


Figure Z-2 Wire Rope Clip Assembly Step 2

Apply the next clip as near to the loop as possible. Turn on nuts but do not tighten.



Figure Z-3 Wire Rope Clip Assembly Step 3

When these instructions require more than two clips, space additional clips equally between the first two, take up the rope slack, and then tighten all clip nuts evenly to the recommended torque.

NOTE: Apply the initial load and retighten nuts to the recommended torque. Rope will stretch and shrink in diameter when loads are applied. The tightening torque values shown are based upon the threads being clean, dry, and free of lubrication.

Table Z-1 Galvanized Wire Rope Clips

Clip Size Inches	Minimum No. of Clips	Amount of Rope to Turn Back in Inches	Torque in Ft Lbs*
1/16"-3/32"	2	3"	2.5
1/8"	3	4 3/4"	3.0
3/16"	3	5 1/2"	4.5
1/4"	3	7	15
5/16"	3	7 3/4"	15
3/8"	3	9 1/2"	30
7/16"	3	10 1/4"	40
1/2"	4	15 1/4"	45

These galvanized clips are intended for use in making eye terminations in right regular lay wire rope. Such an assembly is for non-critical light duty use where a small applied load is expected such as hand rails, fencing, guard lines, etc.

Table Z-2 Drop Forged and Stainless Wire Rope Clips

Clip Size Inches	Minimum No. of Clips	Amount of Rope to Turn Back in Inches	Torque in Ft Lbs*
1/8"	2	3/4"	4.5
3/16"	2	3 3/4"	7.5
1/4"	2	4 3/4"	15
5/16"	2	5 1/4"	30
3/8"	2	6 1/2"	45
7/16"	3	7"	65
1/2"	3	11 1/2"	65
5/8"	3	12"	95
3/4"	4	18"	130
7/8"	4	19"	225
1	5	26"	225

*Applies to new, clean, un-lubricated threads.

Appendix G - Standards and Tolerance

This table presents the standards and tolerances for tower, mast and pole structures, primarily defined and described in the latest edition of TIA Standard 222, as amended.

Standards and Tolerances

Parameter	Standard	Tolerance/Limit	
		Initial	Operating
Vertical Alignment and Linearity (Plumb)			
a. Tower/Mast Structures	0.00%	0.25% ¹	Same as initial
b. Tubular Pole Structures	0.00%	0.50% ²	Same as initial
Twist			
a. Any continuous 10' section of height throughout height of structure.	0.0 Degrees	≤ 0.5 degrees	Same as initial
b. Over total height of structure.	0.0 Degrees	≤ 5.0 degrees	Same as initial
Straightness of Members			
a. ≥ 31.25 inches long	0.00%	0.20% ³	Same as initial
b. < 31.25 inches long	0.00%	≤1/16 inch ³	Same as initial
Guy Tension			
a. Guys ≤1-inch diameter	TRDR value ⁴	Same as Standard	±10% of TRDR value ⁴
b. Guys >1-inch diameter	TRDR value ⁴	Same as Standard	±5% of TRDR value ⁴
Ground System Resistance	0.0 Ω	≤ 10.0 Ω	≤ 10.0 Ω

Notes:

- ¹ The horizontal difference between the vertical centerlines at any two elevations throughout the height of the structure must not exceed 0.25 percent of the vertical distance between the two elevations. (One part in 400 between any two points of reference.)
- ² The horizontal difference between the vertical centerlines at any two elevations throughout the height of the structure must not exceed 0.50 percent of the vertical distance between the two elevations. (One part in 200 between any two points of reference.)
- ³ The difference in distance perpendicular from centerline to the same edge of a designed uniform member at any two consecutive lateral support points of the member must not exceed 0.20 percent of the distance between the two points along centerline. (One part in 500 between any two points of reference.) This parameter does not apply to designed irregular (e.g. curved, tapered, etc.) members.
- ⁴ Value after the measurement has been corrected for ambient temperature.

Appendix H - Descriptions of Tower, Mast, and Pole Structures

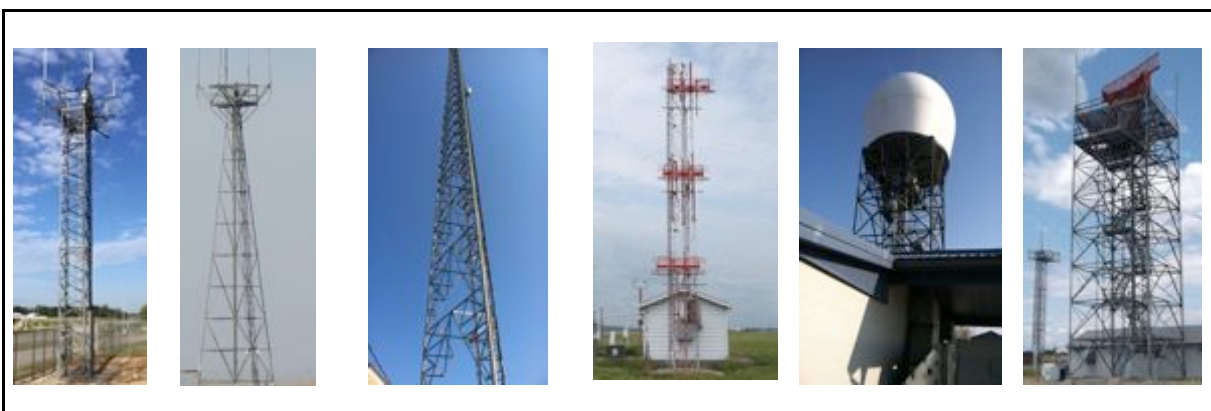
Technical Characteristics

Tower Structures

Towers are structures used to elevate and support surveillance, navigation, weather, and communication system antennas and sensors. Lighted navigational aids are also commonly mounted on towers, and towers interconnected with bridging to facilitate maintenance. Towers are commonly constructed of steel members based on a lattice or pole design. NAS equipment and other appurtenance loads, any anticipated loading by personnel when climbing or during operation of active fall protection systems, design wind speed, potential ice loading, soil conditions, and seismic conditions of the location, are necessary considerations during the design of all towers. Towers are generally self-supporting. Guys are affixed to some otherwise self-supporting towers to provide additional loading capacity and stability. Stairs, ladders, or tilt-down mechanisms, may be affixed to the structure for access to NAS equipment loads and other appurtenances.

Heading

Self-supporting towers resist lateral loads imposed on the steel structure by cantilever action transmitting those forces directly to the foundation. Self-supporting towers can be used as supporting structures for rotating radar antennas, beacon lights, communications antennas, runway approach lighting systems, instrument landing system glide slope antennas, radio microwave system antennas, or other electronic equipment.



Self-Supporting Towers



Self-supporting Towers Affixed with Guy Wires

Adcock Towers

Adcock towers are self-supporting towers with insulators built into the structure. They were first used for the low frequency radio range (LFR) navigation system that provided four electronically derived courses. The LFR were phased out due to advanced methods of electronic air navigation. However, the towers may continue to be used to support other services.



Adcock Towers

Mast Structures

Masts may have a pole- or lattice-based structure. Masts may be self-supporting or guyed. Masts can be affixed with stairs, ladders, or tilt-down mechanisms, for access to NAS equipment loads and other appurtenances.

Guyed Lattice Masts

Guyed lattice masts are supported or braced laterally with steel cables attached at various levels throughout the tower's height. The hardware system associated with these cables includes the tower structure connecting means, ground anchor and associated connecting means, turnbuckle, cable wire, thimbles, clevis and cable clamping means. The use of guyed lattice masts allows for significant savings in initial construction costs. The initial cost savings in structural steel, foundation construction, and real estate footprint, trade-off with higher life cycle maintenance costs as compared with the self-supported type for comparable heights and appurtenance loadings. Current maintenance data and

construction drawings for each guyed structure must be referenced when assessing structure condition and before making a major repair or adjustment. Guyed lattice masts are normally used to support electronic antenna systems for microwave or air-to-ground communications systems.



Guyed Lattice Masts

Self-supporting Lattice Masts

These masts are usually affixed with tilt-down mechanisms and support air-to-ground radio antennas or lighted navigational aid lamps/lamp bars.



Self-supporting Lattice Masts

Self-supporting Poles

These can be substantial hollow metal poles with a maintenance platform for access to lighted navigational aid lamp equipment. These poles are usually affixed with some type of ladder system. They are also sometimes used to support air-to-ground radio antennas. Self-supporting poles can also be relatively lightweight structures that must be completely lowered to access the supported NAS equipment. Tilt-down mechanisms are affixed to some pole masts. Some LLWAS employ substantial pole systems to elevate system sensors.



Self Supporting Poles

Guyed Poles

Poles can be affixed with guys for loading capacity and support.

Low Impact Resistance (LIR) Structures

LIR structures are usually tilt-down fiberglass pole or tower systems designed and constructed to collapse upon impact with aircraft. Sometimes frangible pole masts are elevated by a fixed tower or metal pole and designed to drop through a platform opening for access to the supported NAS equipment.



Impact Resistance (LIR) Structures

Low

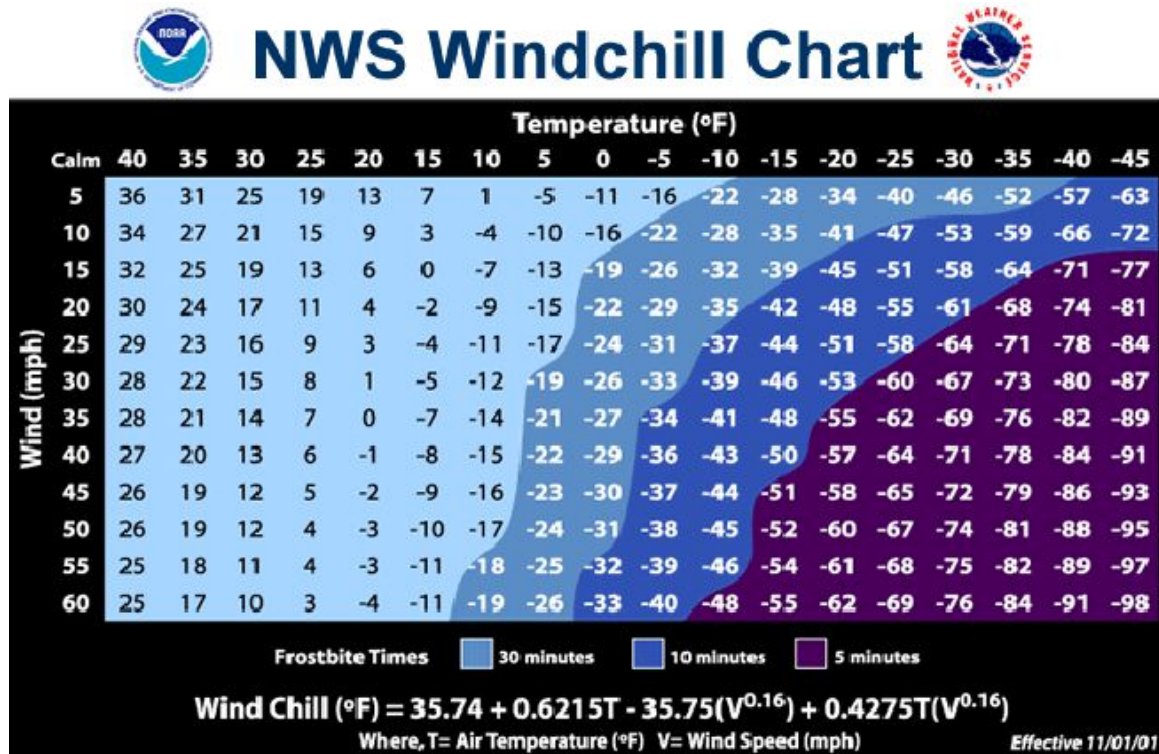
Complex Tower and Mast Systems

Some systems used to elevate and support NAS equipment are complex hybrids of various types of tower, mast, and pole structures. These complex structures are usually associated with lighted navigational aid systems.



Complex Tower, Mast, and Pole Systems

Appendix I - NWS Windchill Chart



Local weather forecasts including winds, tunderstorms and hazardous counditions are available at graphical.weather.gov and should be consulted before the beignning climbing activity.

Appendix J. Technical Basis

The standards, tolerances, practices and program elements presented in this document are derived directly from:

1. Telecommunications Industry Association (TIA) Structural Standard for Antenna Supporting Structures and Antennas (TIA-222-G) 2005, including Addendum 1 - 2007, Addendum 2 - 2009. This is an American national standard, approved by the American National Standard Institute (ANSI).

2. American Society of Safety Engineers (ASSE) Fall Protection Code ANSI/ASSE Z359. This is an American national standard, approved by the American National Standard Institute (ANSI). Including but not limited to:

- a. ANSI/ASSE Z359.0-2012 Definitions and Nomenclature Used for Fall Protection and Fall Arrest.
- b. ANSI/ASSE Z359.1-2007 Safety Requirements for Personal Fall Arrest Systems. Subsystems and Components.
- c. ANSI/ASSE Z359.2-2007 Minimum Requirements for a Comprehensive Managed Fall Protection Program.
- d. ANSI/ASSE Z359.3-2007 Safety Requirements for Positioning and Travel Restraint Systems.
- e. ANSI/ASSE Z359.3-2013 Safety Requirements for Assisted-Rescue and Self-Rescue Systems, Subsystems and Components.
- f. ANSI/ASSE Z359.6-2009 Specifications and Design Requirements for Active Fall Protection Systems.
- g. ANSI/ASSE Z359.11-2014 Safety Requirements for Full Body Harness
- h. ANSI/ASSE Z359.12-2009 Connecting Components for Personal Fall Arrest Systems.
- i. ANSI/ASSE Z359.13-2013 Personal Energy Absorbers and Energy Absorbing Lanyards.
- j. ANSI/ASSE Z359.14-2014 Safety Requirements for Self-Retracting Devices for Personal Fall Arrest and rescue Systems.
- k. ANSI/ASSE Z359.15-2014 Safety Requirements for Single Anchor Lifelines and Fall Arresters for Personal Fall Arrest Systems.
- l. ANSI/ASSE Z490.1-2009 Criteria for Accepted Practices in Safety Health, and Environmental Training.

29 CFR 1910 Occupational Safety and Health Administration (OSHA) Standards for General Industry.

FAA STD-019e-2005 Lightning and Surge Protection, Grounding, Bonding and Shielding Requirements for Facilities and Electronic equipment.

JO6930.25A-2006 Maintenance of Structures and Buildings

Appendix K. Legal, Regulatory and Policy Basis

PASS/ATO Collective Bargaining Agreement December 16, 2012.

Public Law (P.L.) 104-133 National Technology Transfer and Advancement Act of 1995.

Public Law (P.L.) 91-596 Occupational Safety and Health Act of 1970.

Executive Order (E.O.) 12196 Occupational Safety and Health Program for Federal Employees.

29 CFR 1910 Occupational Safety and Health Administration (OSHA) Standards for General Industry.

29 CFR 1960 Basic OSHA Program Elements for Federal Employees.

FAA Order 3900.19B Occupational Safety and Health Program.

JO 3900.63 Air Traffic Organization (ATO) Fall Protection Program.

Appendix L. Nominal Grievance Templates

The following templates are not exhaustive. However they address the most commonly encountered situations that should be immediately addressed with a grievance.

Replace the text between braces, along with the braces, with the indicated information.

Most of the grievances are written with PASS as the grievant. The PASS rep's name given in block 1A will be the same as the name in block 4 in many cases. The representative in block 1A doesn't have to be the SSC Rep. It can be any workplace representative. The Representative in Block 4 should almost always be the workplace (SSC) representative.

If the grievant is a person, rather than PASS, simply enter the employee's name. change the first paragraph in Block 8 to read: *This grievance is filed in accordance with Article 5, Section 1a of the CBA.* The grievances in Appendix M are show filing by an employee rather than by a workplace representative for PASS.

Be certain to sign and date the grievance and obtain the signature and date of the receiving supervisor. DO NOT assume that the grievance has been tendered until you receive a signed copy. Retain a copy of the grievance with both signatures and e-mail a scanned copy to your PASS Regional Vice President or Regional Assistant.

There will certainly be situations not shown in a template, and there will be situations not addressed by a template. Please contact your PASS Regional Vice President, Regional Assistant, or call the PASS National Office for any needed assistance.

GRIEVANCE RECORD		<i>FOR FAA USE ONLY</i>	
AGGRIEVED			
1A. EMPLOYEE'S NAME PASS { <i>Representative's Name</i> } { <i>SSC NAME</i> } SSC Representative	1B. FACILITY { <i>XYZ</i> }{ <i>FAC</i> } { <i>SSC NAME</i> }	1C. LOCATION { <i>City</i> } { <i>State</i> }	
2. ARTICLE/SECTION VIOLATED Article 54, Section 1	3. INCIDENT DATE { <i>Today's Date</i> } Continuous and Ongoing	4. NAME OF UNION REPRESENTATIVE { <i>Representative's Name</i> }	
5. INFORMAL GRIEVANCE OFFICIAL	6. INFORMAL DECISION DATE	7. ORAL PRESENTATION REQUESTED ☐ YES ☐ NO	
8. DESCRIPTION This grievance is filed in accordance with Article 5, Section 1b of the CBA. This grievance is filed on behalf of all bargaining unit employees who are, or are reasonably likely to, be assigned duties requiring them to perform work at heights on the {<i>XYZ</i>}{<i>FAC</i>}{<i>Description of TMPS</i>}. Site specific fall protection procedures have not been established for the {<i>Description of TMPS</i>}, as described in ANSI/ASSE Z359.2-2007 Section 4, by a fall protection Competent Person. <i>{Not required - but helpful: Any Amplifying Information that helps describe the need for site/TMPS specific procedures e.g. enumeration of work that must be performed while detached from the LSS; non-standard LSS system - systems with breaks that require disconnecting and reconnecting; non-compliant work platforms}</i>			
9. CORRECTIVE ACTION DESIRED 1. Post an ANSI Z535.2-2011 compliant warning sign on the {<i>Description of TMPS</i>} prohibiting any work aloft by any anyone other than a fall protection Competent Person, until procedures are established. 2. Perform a fall hazard survey of the workplace as described in ANSI/ASSE Z359.2-2007 Section 4.2. 3. Establish site specific fall protection procedures described in ANSI/ASSE Z359.2-2007 Section 4.3. 4. Any other remedy deemed appropriate by an appropriate authority.			
SUBMISSION		RECEIPT ACKNOWLEDGED	
10. EMPLOYEE'S SIGNATURE	11. DATE	12. MANAGEMENT OFFICIAL'S SIGNATURE	13. DATE
DISPOSITION			
14. DESCRIPTION			
FAA Form 3770-2 (3-78)			

GRIEVANCE RECORD		FOR FAA USE ONLY	
AGGRIEVED			
1A. EMPLOYEE'S NAME PASS { <i>Representative's Name</i> } { <i>SSC NAME</i> } SSC Representative	1B. FACILITY { <i>XYZ</i> }{ <i>FAC</i> } { <i>SSC NAME</i> }	1C. LOCATION { <i>City</i> } { <i>State</i> }	
2. ARTICLE/SECTION VIOLATED Article 54, Section 1	3. INCIDENT DATE { <i>Today's Date</i> } Continuous and Ongoing	4. NAME OF UNION REPRESENTATIVE { <i>Representative's Name</i> }	
5. INFORMAL GRIEVANCE OFFICIAL	6. INFORMAL DECISION DATE	7. ORAL PRESENTATION REQUESTED ☐ YES ☐ NO	
8. DESCRIPTION This grievance is filed in accordance with Article 5, Section 1b of the CBA. This grievance is filed on behalf of all bargaining unit employees who are, or are reasonably likely to, be assigned duties requiring them to perform work at heights on the { <i>XYZ</i> }{ <i>FAC</i> }{ <i>Description of TMPS</i> }. Site specific rescue procedures have not been established for the { <i>Description of TMPS</i> } as described in ANSI/ASSE Z359.2-2007 Section 6. <i>{Not required - but helpful: Any Amplifying Information that helps describe the need for site/TMPS specific rescue procedures e.g. enumeration of rescue work that must be performed while detached from the LSS; any situation requiring abnormal or expert rescue techniques.}</i>			
9. CORRECTIVE ACTION DESIRED 1. Post an ANSI Z535.2-2011 compliant warning sign on the { <i>Description of TMPS</i> } prohibiting any work aloft by any anyone other than in the presence of a fall protection Competent Rescuer, until procedures are established. 2. A Competent Rescuer perform a fall hazard rescue survey of the workplace as described in ANSI/ASSE Z359.2-2007. 3. A Competent Rescuer establish site specific rescue procedures described in ANSI/ASSE Z359.2-2007. 4. Any other remedy deemed appropriate by an appropriate authority.			
SUBMISSION		RECEIPT ACKNOWLEDGED	
10. EMPLOYEE'S SIGNATURE	11. DATE	12. MANAGEMENT OFFICIAL'S SIGNATURE	13. DATE
DISPOSITION			
14. DESCRIPTION			
FAA Form 3770-2 (3-78)			

GRIEVANCE RECORD		<i>FOR FAA USE ONLY</i>	
AGGRIEVED			
1A. EMPLOYEE'S NAME PASS <i>{Representative's Name}</i> <i>{SSC NAME}</i> SSC Representative	1B. FACILITY <i>{XYZ}</i> <i>{FAC}</i> <i>{SSC NAME}</i>	1C. LOCATION <i>{City}</i> <i>{State}</i>	
2. ARTICLE/SECTION VIOLATED Article 54, Section 1	3. INCIDENT DATE <i>{Today's Date}</i> Continuous and Ongoing	4. NAME OF UNION REPRESENTATIVE <i>{Representative's Name}</i>	
5. INFORMAL GRIEVANCE OFFICIAL	6. INFORMAL DECISION DATE	7. ORAL PRESENTATION REQUESTED ☐ YES ☐ NO	
8. DESCRIPTION This grievance is filed in accordance with Article 5, Section 1b of the CBA. This grievance is filed on behalf of all bargaining unit employees who are, or are reasonably likely to, be assigned duties requiring them to perform work at heights on the <i>{XYZ}</i> <i>{FAC}</i> <i>{Description of TMPS}</i>. A comprehensive fall hazard survey report has not been issued as the result of a comprehensive survey of the <i>{Description of TMPS}</i> as described in ANSI/ASSE Z359.2-2007 Section 4. <i>{Not required - but helpful: Any Amplifying Information that helps describe the need for site/TMPS specific hazard survey. e.g. enumeration of rescue work that must be performed while detached from the LSS; any situation requiring abnormal or expert rescue techniques.}</i>			
9. CORRECTIVE ACTION DESIRED 1. Post an ANSI Z535.2-2011 compliant warning sign on the <i>{Description of TMPS}</i> prohibiting any work aloft by anyone other than in the presence of a fall protection Competent Rescuer, until procedures are established. 2. Perform a fall hazard survey of the workplace as described in ANSI/ASSE Z359.2-2007 Section 4.2. 3. Establish site specific fall protection procedures described in ANSI/ASSE Z359.2-2007 Section 4.3. 4. Any other remedy deemed appropriate by an appropriate authority.			
SUBMISSION		RECEIPT ACKNOWLEDGED	
10. EMPLOYEE'S SIGNATURE	11. DATE	12. MANAGEMENT OFFICIAL'S SIGNATURE	13. DATE
DISPOSITION			
14. DESCRIPTION			
FAA Form 3770-2 (3-78)			

GRIEVANCE RECORD		<i>FOR FAA USE ONLY</i>	
AGGRIEVED			
1A. EMPLOYEE'S NAME PASS { <i>Representative's Name</i> } { <i>SSC NAME</i> } SSC Representative	1B. FACILITY { <i>XYZ</i> }{ <i>FAC</i> } { <i>SSC NAME</i> }	1C. LOCATION { <i>City</i> } { <i>State</i> }	
2. ARTICLE/SECTION VIOLATED Article 54, Section 1	3. INCIDENT DATE { <i>Today's Date</i> } Continuous and Ongoing	4. NAME OF UNION REPRESENTATIVE { <i>Representative's Name</i> }	
5. INFORMAL GRIEVANCE OFFICIAL	6. INFORMAL DECISION DATE	7. ORAL PRESENTATION REQUESTED ☐ YES ☐ NO	
8. DESCRIPTION This grievance is filed in accordance with Article 5, Section 1b of the CBA. This grievance is filed on behalf of all bargaining unit employees who are, or are reasonably likely to, be assigned duties requiring them to perform work at heights on the {<i>XYZ</i>}{<i>FAC</i>}{<i>Description of TMPS</i>}. The ladder safety system installed on the {<i>Description of TMPS</i>} has not been performed annually as required by ANSI/ASSE Z359.1-2007 Section 6, agency policy, and manufacturer's instructions. <i>{Not required - but helpful: Any Amplifying Information about the filed UCR. e.g. UCR # was filed on xx Month 2016. The structure has not been placed off limits as an interim control measure until the required inspection can be performed by a Competent Person}</i>			
9. CORRECTIVE ACTION DESIRED 1. Post an ANSI Z535.2-2011 compliant warning sign on the {<i>Description of TMPS</i>} prohibiting any work aloft by anyone until a Competent Person has performed the inspection of the LSS. 4. Any other remedy deemed appropriate by an appropriate authority.			
SUBMISSION		RECEIPT ACKNOWLEDGED	
10. EMPLOYEE'S SIGNATURE	11. DATE	12. MANAGEMENT OFFICIAL'S SIGNATURE	13. DATE
DISPOSITION			
14. DESCRIPTION			
FAA Form 3770-2 (3-78)			

GRIEVANCE RECORD		<i>FOR FAA USE ONLY</i>	
AGGRIEVED			
1A. EMPLOYEE'S NAME PASS { <i>Representative's Name</i> } { <i>SSC NAME</i> } SSC Representative	1B. FACILITY { <i>XYZ</i> }{ <i>FAC</i> } { <i>SSC NAME</i> }	1C. LOCATION { <i>City</i> } { <i>State</i> }	
2. ARTICLE/SECTION VIOLATED Article 54, Section 1	3. INCIDENT DATE { <i>Today's Date</i> } Continuous and Ongoing	4. NAME OF UNION REPRESENTATIVE { <i>Representative's Name</i> }	
5. INFORMAL GRIEVANCE OFFICIAL	6. INFORMAL DECISION DATE	7. ORAL PRESENTATION REQUESTED ☐ YES ☐ NO	
8. DESCRIPTION This grievance is filed in accordance with Article 5, Section 1b of the CBA. This grievance is filed on behalf of all bargaining unit employees who are, or are reasonably likely to, be assigned duties requiring them to perform work at heights on the {<i>XYZ</i>}{<i>FAC</i>}{<i>Description of TMPS</i>}. Fall protection equipment that has not been inspected by a Competent Person within the last 12 months has not been tagged and removed from service as required by the ANSI Fall Protection Code, agency policy, and manufacturer's instructions. Equipment includes {<i>description of equipment</i>}. <i>{Not required - but helpful: Any Amplifying Information about the filed UCR. e.g. UCR # was filed on xx Month 2016. The equipment has not been tagged and removed from service as an interim control measure until the required inspection can be performed by a Competent Person}</i>			
9. CORRECTIVE ACTION DESIRED 1. Tag and remove {<i>description of equipment</i>} from service until inspected by a Competent Person. 2. Any other remedy deemed appropriate by an appropriate authority.			
SUBMISSION		RECEIPT ACKNOWLEDGED	
10. EMPLOYEE'S SIGNATURE	11. DATE	12. MANAGEMENT OFFICIAL'S SIGNATURE	13. DATE
DISPOSITION			
14. DESCRIPTION			
FAA Form 3770-2 (3-78)			

GRIEVANCE RECORD		<i>FOR FAA USE ONLY</i>	
AGGRIEVED			
1A. EMPLOYEE'S NAME PASS { <i>Representative's Name</i> } { <i>SSC NAME</i> } SSC Representative	1B. FACILITY { <i>XYZ</i> }{ <i>FAC</i> } { <i>SSC NAME</i> }	1C. LOCATION { <i>City</i> } { <i>State</i> }	
2. ARTICLE/SECTION VIOLATED Article 54, Section 1	3. INCIDENT DATE { <i>Today's Date</i> } Continuous and Ongoing	4. NAME OF UNION REPRESENTATIVE { <i>Representative's Name</i> }	
5. INFORMAL GRIEVANCE OFFICIAL	6. INFORMAL DECISION DATE	7. ORAL PRESENTATION REQUESTED ☐ YES ☐ NO	
8. DESCRIPTION This grievance is filed in accordance with Article 5, Section 1b of the CBA. This grievance is filed on behalf of all bargaining unit employees who are, or are reasonably likely to, be assigned duties requiring them to perform work at heights on the {<i>XYZ</i>}{<i>FAC</i>}{<i>Description of TMPS</i>}. Fall protection rescue equipment that has not been inspected by a Competent Rescuer within the last 12 months has not been tagged and removed from service as required by the ANSI Fall Protection Code, agency policy, and manufacturer's instructions. Equipment includes {<i>description of equipment</i>}. <i>{Not required - but helpful: Any Amplifying Information about the filed UCR. e.g. UCR # was filed on xx Month 2016. The equipment has not been tagged and removed from service as an interim control measure until the required inspection can be performed by a Competent Rescuer}</i>			
9. CORRECTIVE ACTION DESIRED 1. Tag and remove {<i>description of equipment</i>} from service until inspected by a Competent Rescuer. 2. Any other remedy deemed appropriate by an appropriate authority.			
SUBMISSION		RECEIPT ACKNOWLEDGED	
10. EMPLOYEE'S SIGNATURE	11. DATE	12. MANAGEMENT OFFICIAL'S SIGNATURE	13. DATE
DISPOSITION			
14. DESCRIPTION			
FAA Form 3770-2 (3-78)			

GRIEVANCE RECORD		<i>FOR FAA USE ONLY</i>	
AGGRIEVED			
1A. EMPLOYEE'S NAME PASS { <i>Representative's Name</i> } { <i>SSC NAME</i> } SSC Representative	1B. FACILITY { <i>XYZ</i> }{ <i>FAC</i> } { <i>SSC NAME</i> }	1C. LOCATION { <i>City</i> } { <i>State</i> }	
2. ARTICLE/SECTION VIOLATED Article 54, Section 1	3. INCIDENT DATE { <i>Today's Date</i> } Continuous and Ongoing	4. NAME OF UNION REPRESENTATIVE { <i>Representative's Name</i> }	
5. INFORMAL GRIEVANCE OFFICIAL	6. INFORMAL DECISION DATE	7. ORAL PRESENTATION REQUESTED ☐ YES ☐ NO	
8. DESCRIPTION This grievance is filed in accordance with Article 5, Section 1b of the CBA. This grievance is filed on behalf of all bargaining unit employees who are, or are reasonably likely to, be assigned duties requiring them to perform work at heights on the {<i>XYZ</i>}{<i>FAC</i>}{<i>Description of TMPS</i>}. Manufacturer's information provided with fall protection equipment is not readily available as required by the ANSI Fall Protection Code. Equipment includes {<i>description of equipment</i>}.			
9. CORRECTIVE ACTION DESIRED 1. Tag and remove {<i>description of equipment</i>} from service until inspected by a Competent Person. 2. Any other remedy deemed appropriate by an appropriate authority.			
SUBMISSION		RECEIPT ACKNOWLEDGED	
10. EMPLOYEE'S SIGNATURE	11. DATE	12. MANAGEMENT OFFICIAL'S SIGNATURE	13. DATE
DISPOSITION			
14. DESCRIPTION			
FAA Form 3770-2 (3-78)			

Appendix M - Hazard Pay Differential Matters

Those working at height on TMPS may be eligible for Hazard Pay Differential for Height Work per Article 50 of the ATO/PASS Collective Bargaining Agreement, December 16, 2012.

From 5 CFR Part 550, Subpart I:

§550.904 Authorization of hazard pay differential.

(a) An agency shall pay the hazard pay differential listed in appendix A of this subpart to an employee who is assigned to and performs any duty specified in appendix A of this subpart.

§550.905 Payment of hazard pay differential.

(a) When an employee performs duty for which a hazard pay differential is authorized, the agency must pay the hazard pay differential for the hours in a pay status on the day (a calendar day or a 24-hour period, when designated by the agency) on which the duty is performed, except as provided in paragraph (b) of this section. Hours in a pay status for work performed during a continuous period extending over 2 days must be considered to have been performed on the day on which the work began, and the allowable differential must be charged to that day.

§550.906 Termination of hazard pay differential.

An agency shall discontinue payment of hazard pay differential to an employee when—

- (a) One or more of the conditions requisite for such payment ceases to exist;
- (b) Safety precautions have reduced the element of hazard to a less than significant level of risk, consistent with generally accepted standards that may be applicable, such as those published by the Occupational Safety and Health Administration, Department of Labor; or
- (c) Protective or mechanical devices have adequately alleviated physical discomfort or distress.

§550.907 Relationship to additional pay payable under other statutes.

Hazard pay differential is in addition to any additional pay or allowances payable under other statutes. It shall not be considered part of the employee's rate of basic pay in computing additional pay or allowances payable under other statutes.

Appendix A to Subpart I of Part 550—Schedule of Pay Differentials Authorized for Hazardous Duty Under Subpart I

HAZARD PAY DIFFERENTIAL, OF PART 550 PAY ADMINISTRATION (GENERAL

Height Work:	%
Working on any structure of at least 15 meters (50 feet) above the base level, ground, deck, floor, roof, etc., under open conditions, if the structure is unstable or if scaffolding guards or other suitable protective facilities are not used, or if performed under adverse conditions such as snow, sleet, ice on walking surfaces, darkness, lightning, steady rain, or high wind velocity	25

There're a lot of caveats at work in the language above. Let's break it down:

1. Work must be performed on a structure **at least 50'** above the base level, ground, deck, floor, roof, etc.

AND

2. Must be in open conditions - read "outside."

AND

3. If the structure is:

EITHER

- Unstable, OR
 - Scaffolding guards, OR
- other suitable protective facilities are not used;

OR

- If performed under adverse weather conditions, such as:
 - o snow;
 - o sleet;
 - o ice on walking surfaces;
 - o darkness;
 - o lightning;
 - o steady rain;
 - o high wind velocity.

AND

4. Safety precautions have not reduced the element of hazard to a less than significant level of risk, consistent with generally accepted standards that may be applicable, such as those published by the Occupational Safety and Health Administration, Department of Labor;

OR

Protective or mechanical devices have adequately alleviated physical discomfort or distress.

AND

5. The employee took reasonable steps to inform his/her supervisor, or other appropriate manager, of the conditions and was directed to continue work (see the procedure outlined at the top of Appendix A).

6. The employee requested payment of the differential for the shift in which the hazardous duty was performed.

We won't get into any hypothetical discussions, or "interpreting" of language in this guide as anything said can and will be misconstrued against us in a hearing. Please contact your PASS Regional Vice President or Regional Assistant to discuss any specific situation and if Hazard Pay Differential may be appropriate.

Some grievance templates follow if the circumstances warrant action. A grievance template is not provided for every situation.

GRIEVANCE RECORD		<i>FOR FAA USE ONLY</i>	
AGGRIEVED			
1A. EMPLOYEE'S NAME <i>{Employee's Name}</i>	1B. FACILITY <i>{XYZ}{FAC}</i> <i>{SSC NAME}</i>	1C. LOCATION <i>{City}</i> <i>{State}</i>	
2. ARTICLE/SECTION VIOLATED Article 50, Section 2	3. INCIDENT DATE <i>{Date of Climb}</i>	4. NAME OF UNION REPRESENTATIVE <i>{SSC Representative's Name}</i>	
5. INFORMAL GRIEVANCE OFFICIAL	6. INFORMAL DECISION DATE	7. ORAL PRESENTATION REQUESTED ☐ YES ☐ NO	
8. DESCRIPTION This grievance is filed in accordance with Article 5, Section 1a of the CBA. I was directed by <i>{name of supervisor or other appropriate manager}</i> to continue work at height on the <i>{Description of TMPS}</i> in the presence of high winds. Sustained wind speeds were in excess of <i>{X mph}</i> with gusting exceeding <i>{X mph}</i>. <i>{Amplifying Information regarding how you arrived at the wind speed. e.g. Zephyrus Windspeed Meter, WindAlert, Windfinder Pro, Wind Compass weather application for iPhone; Windfinder, Zephyrus Windspeed Meter for Android; handheld anemometer Manufacturer and Model number; NWS forecast, etc.}</i> The height of the <i>{Description of TMPS}</i> is <i>{height}</i>. I climbed to perform work at a height of <i>{height}</i>. I requested and was denied Hazard Pay Differential as provided for in Article 50, Section 2 of the CBA.			
9. CORRECTIVE ACTION DESIRED 1. Remuneration for all hours of duty on the day I performed Height Work under adverse wind conditions per Article 50 of the CBA; 2. Any other available and appropriate remuneration, interest, and premiums; 4. Any other remedy deemed appropriate by an appropriate authority.			
SUBMISSION		RECEIPT ACKNOWLEDGED	
10. EMPLOYEE'S SIGNATURE	11. DATE	12. MANAGEMENT OFFICIAL'S SIGNATURE	13. DATE
DISPOSITION			
14. DESCRIPTION			
FAA Form 3770-2 (3-78)			

GRIEVANCE RECORD		<i>FOR FAA USE ONLY</i>	
AGGRIEVED			
1A. EMPLOYEE'S NAME <i>{Employee's Name}</i>	1B. FACILITY <i>{XYZ}{FAC}</i> <i>{SSC NAME}</i>	1C. LOCATION <i>{City}</i> <i>{State}</i>	
2. ARTICLE/SECTION VIOLATED Article 50, Section 2	3. INCIDENT DATE <i>{Date of Climb}</i>	4. NAME OF UNION REPRESENTATIVE <i>{SSC Representative's Name}</i>	
5. INFORMAL GRIEVANCE OFFICIAL	6. INFORMAL DECISION DATE	7. ORAL PRESENTATION REQUESTED ☐ YES ☐ NO	
8. DESCRIPTION This grievance is filed in accordance with Article 5, Section 1a of the CBA. I was directed by <i>{name of supervisor or other appropriate manager}</i> to continue work at height on the <i>{Description of TMPS}</i> under the cover of darkness. I began work aloft at XX:XX Xm on <i>{Date of Climb}</i> and ended work aloft at XX:XX Xm. The height of the <i>{Description of TMPS}</i> is <i>{height}</i>. I climbed to perform work at a height of <i>{height}</i>. I requested and was denied Hazard Pay Differential as provided for in Article 50, Section 2 of the CBA.			
9. CORRECTIVE ACTION DESIRED 1. Remuneration for all hours of duty on the day I performed Height Work under cover of darkness per Article 50 of the CBA; 2. Any other available and appropriate remuneration, interest, and premiums; 4. Any other remedy deemed appropriate by an appropriate authority.			
SUBMISSION		RECEIPT ACKNOWLEDGED	
10. EMPLOYEE'S SIGNATURE	11. DATE	12. MANAGEMENT OFFICIAL'S SIGNATURE	13. DATE
DISPOSITION			
14. DESCRIPTION			
FAA Form 3770-2 (3-78)			

GRIEVANCE RECORD		FOR FAA USE ONLY	
AGGRIEVED			
1A. EMPLOYEE'S NAME <i>{Employee's Name}</i>	1B. FACILITY <i>{XYZ}{FAC}</i> <i>{SSC NAME}</i>	1C. LOCATION <i>{City}</i> <i>{State}</i>	
2. ARTICLE/SECTION VIOLATED Article 50, Section 2	3. INCIDENT DATE <i>{Date of Climb}</i>	4. NAME OF UNION REPRESENTATIVE <i>{SSC Representative's Name}</i>	
5. INFORMAL GRIEVANCE OFFICIAL	6. INFORMAL DECISION DATE	7. ORAL PRESENTATION REQUESTED ☐ YES ☐ NO	
8. DESCRIPTION This grievance is filed in accordance with Article 5, Section 1a of the CBA. I was directed by <i>{name of supervisor or other appropriate manager}</i> to continue work at height on the <i>{Description of TMPS}</i> while not attached to a ladder safety system, or in a work platform with a complaint railing system, without the benefit of fall protection procedures prepared by a fall protection Competent Person as described by ANSI/ASSE 359.2-2007. I requested and was denied Hazard Pay Differential as provided for in Article 50, Section 2 of the CBA.			
9. CORRECTIVE ACTION DESIRED 1. Remuneration for all hours of duty on the day I performed Height Work without suitable protective facilities per Article 50 of the CBA; 2. Any other available and appropriate remuneration, interest, and premiums; 4. Any other remedy deemed appropriate by an appropriate authority.			
SUBMISSION		RECEIPT ACKNOWLEDGED	
10. EMPLOYEE'S SIGNATURE	11. DATE	12. MANAGEMENT OFFICIAL'S SIGNATURE	13. DATE
DISPOSITION			
14. DESCRIPTION			
FAA Form 3770-2 (3-78)			

GRIEVANCE RECORD		<i>FOR FAA USE ONLY</i>	
AGGRIEVED			
1A. EMPLOYEE'S NAME <i>{Employee's Name}</i>	1B. FACILITY <i>{XYZ}{FAC}</i> <i>{SSC NAME}</i>	1C. LOCATION <i>{City}</i> <i>{State}</i>	
2. ARTICLE/SECTION VIOLATED Article 50, Section 2	3. INCIDENT DATE <i>{Date of Climb}</i>	4. NAME OF UNION REPRESENTATIVE <i>{SSC Representative's Name}</i>	
5. INFORMAL GRIEVANCE OFFICIAL	6. INFORMAL DECISION DATE	7. ORAL PRESENTATION REQUESTED ☐ YES ☐ NO	
8. DESCRIPTION This grievance is filed in accordance with Article 5, Section 1a of the CBA. I was directed by <i>{name of supervisor or other appropriate manager}</i> to continue work at height on the <i>{Description of TMPS}</i> on an unsafe work platform. I did not have the benefit of fall protection procedures prepared by a fall protection Competent Person describing the method of controlling the hazard. The height of the <i>{Description of TMPS}</i> is <i>{height}</i>. I climbed to perform work at a height of <i>{height}</i>. <i>{Amplifying information describing the noncompliance of the platform. e.g. 36" railings, large holes in the deck without protective railings, etc}</i> I requested and was denied Hazard Pay Differential as provided for in Article 50, Section 2 of the CBA.			
9. CORRECTIVE ACTION DESIRED 1. Remuneration for all hours of duty on the day I performed Height Work without suitable protective devices per Article 50 of the CBA; 2. Any other available and appropriate remuneration, interest, and premiums; 4. Any other remedy deemed appropriate by an appropriate authority.			
SUBMISSION		RECEIPT ACKNOWLEDGED	
10. EMPLOYEE'S SIGNATURE	11. DATE	12. MANAGEMENT OFFICIAL'S SIGNATURE	13. DATE
DISPOSITION			
14. DESCRIPTION			
FAA Form 3770-2 (3-78)			

GRIEVANCE RECORD		<i>FOR FAA USE ONLY</i>	
AGGRIEVED			
1A. EMPLOYEE'S NAME <i>{Employee's Name}</i>	1B. FACILITY <i>{XYZ}{FAC}</i> <i>{SSC NAME}</i>	1C. LOCATION <i>{City}</i> <i>{State}</i>	
2. ARTICLE/SECTION VIOLATED Article 50, Section 2	3. INCIDENT DATE <i>{Date of Climb}</i>	4. NAME OF UNION REPRESENTATIVE <i>{SSC Representative's Name}</i>	
5. INFORMAL GRIEVANCE OFFICIAL	6. INFORMAL DECISION DATE	7. ORAL PRESENTATION REQUESTED ☐ YES ☐ NO	
8. DESCRIPTION This grievance is filed in accordance with Article 5, Section 1a of the CBA. I was directed by <i>{name of supervisor or other appropriate manager}</i> to continue working at height on the <i>{Description of TMPS}</i> without the benefit of a LSS attached to a compliant ladder as required by ANSI national industry consensus standards, OSHA, and agency policy. Moreover, I did not have the benefit of fall protection procedures prepared by a fall protection Competent Person describing the method of controlling the hazard. The height of the <i>{Description of TMPS}</i> is <i>{height}</i>. I climbed to perform work at a height of <i>{height}</i>. <i>{Amplifying information describing the noncompliance of the ladder. e.g. rungs with 1" of toe room, round rungs less than 3/4" (5/8" if a telecommunications tower) diameter, less than 16" of clear rung width (12" if a telecommunications tower), etc.}</i> I requested and was denied Hazard Pay Differential as provided for in Article 50, Section 2 of the CBA.			
9. CORRECTIVE ACTION DESIRED 1. Remuneration for all hours of duty on the day I performed Height Work without suitable protective devices per Article 50 of the CBA; 2. Any other available and appropriate remuneration, interest, and premiums; 4. Any other remedy deemed appropriate by an appropriate authority.			
SUBMISSION		RECEIPT ACKNOWLEDGED	
10. EMPLOYEE'S SIGNATURE	11. DATE	12. MANAGEMENT OFFICIAL'S SIGNATURE	13. DATE
DISPOSITION			
14. DESCRIPTION			
FAA Form 3770-2 (3-78)			

GRIEVANCE RECORD		<i>FOR FAA USE ONLY</i>	
AGGRIEVED			
1A. EMPLOYEE'S NAME <i>{Employee's Name}</i>	1B. FACILITY <i>{XYZ}{FAC}</i> <i>{SSC NAME}</i>	1C. LOCATION <i>{City}</i> <i>{State}</i>	
2. ARTICLE/SECTION VIOLATED Article 50, Section 2	3. INCIDENT DATE <i>{Date of Rescue}</i>	4. NAME OF UNION REPRESENTATIVE <i>{SSC Representative's Name}</i>	
5. INFORMAL GRIEVANCE OFFICIAL	6. INFORMAL DECISION DATE	7. ORAL PRESENTATION REQUESTED ☐ YES ☐ NO	
8. DESCRIPTION This grievance is filed in accordance with Article 5, Section 1a of the CBA. I was directed by <i>{name of supervisor or other appropriate manager}</i> to standby for possible rescue of personnel working at height on the <i>{Description of TMPS}</i> without the benefit of rescue procedures prepared by a fall protection Competent Rescuer as described by ANSI/ASSE 359.2-2007. I was subsequently required to perform rescue activities at the height of <i>{height}</i> . I requested and was denied Hazard Pay Differential as provided for in Article 50, Section 2 of the CBA.			
9. CORRECTIVE ACTION DESIRED 1. Remuneration for all hours of duty on the day I performed Height Work without suitable protective facilities per Article 50 of the CBA; 2. Any other available and appropriate remuneration, interest, and premiums; 4. Any other remedy deemed appropriate by an appropriate authority.			
SUBMISSION		RECEIPT ACKNOWLEDGED	
10. EMPLOYEE'S SIGNATURE	11. DATE	12. MANAGEMENT OFFICIAL'S SIGNATURE	13. DATE
DISPOSITION			
14. DESCRIPTION			
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GRIEVANCE RECORD		<i>FOR FAA USE ONLY</i>	
AGGRIEVED			
1A. EMPLOYEE'S NAME <i>{Employee's Name}</i>	1B. FACILITY <i>{XYZ}{FAC}</i> <i>{SSC NAME}</i>	1C. LOCATION <i>{City}</i> <i>{State}</i>	
2. ARTICLE/SECTION VIOLATED Article 50, Section 2	3. INCIDENT DATE <i>{Date of Rescue}</i>	4. NAME OF UNION REPRESENTATIVE <i>{SSC Representative's Name}</i>	
5. INFORMAL GRIEVANCE OFFICIAL	6. INFORMAL DECISION DATE	7. ORAL PRESENTATION REQUESTED ☐ YES ☐ NO	
8. DESCRIPTION This grievance is filed in accordance with Article 5, Section 1a of the CBA. I was directed by <i>{name of supervisor or other appropriate manager}</i> to standby for possible rescue of personnel working at height on the <i>{Description of TMPS}</i>. I was subsequently required to perform rescue activities at the height of <i>{height}</i>. I did not have the benefit of a compliant ladder safety system, or work platform with a compliant railing, for all or portions of the rescue. I requested and was denied Hazard Pay Differential as provided for in Article 50, Section 2 of the CBA.			
9. CORRECTIVE ACTION DESIRED 1. Remuneration for all hours of duty on the day I performed Height Work without suitable protective facilities per Article 50 of the CBA; 2. Any other available and appropriate remuneration, interest, and premiums; 4. Any other remedy deemed appropriate by an appropriate authority.			
SUBMISSION		RECEIPT ACKNOWLEDGED	
10. EMPLOYEE'S SIGNATURE	11. DATE	12. MANAGEMENT OFFICIAL'S SIGNATURE	13. DATE
DISPOSITION			
14. DESCRIPTION			
FAA Form 3770-2 (3-78)			

ATTACHMENTS

[Malta Dynamics Connecting Hardware Manual](#)

[Sala Body Harness Manual](#)

[Sala RAILOK 90 Rigid Rail Safety System Manual](#)