EMBRY-RIDDLE AERONAUTICAL UNIVERSITY

COMPREHENSIVE SAFETY PLAN

10. SUBJECT: Ladder Safety

"Take nothing for granted;
do not jump to conclusions;
follow every possible clue
to the extent of usefulness .
Apply the principle that
there is no limit to the amount
of effort justified to prevent
the recurrence of one Accident
or the loss of one life."

— Accident Investigation Manual of the U.S. Air Force

10. SUBJECT: Ladder Safety

REGULATORY STANDARD: 29 CFR 1910.25 Portable Wood Ladders.
29 CFR 1910.26 Portable Metal Ladders.

BASIS: Ladders are a major source of injuries and fatalities. OSHA estimates that there are approximately 25,000 injuries and as many as 35 fatalities each year due to falls from stairways and ladders. Most of these accidents can be prevented if proper safety precautions are initiated. This poses a serious problem for exposed workers and their employer. The OSHA Standards governing Stairs and Ladders establish uniform requirements to ensure that the hazards existing in U.S. workplaces are evaluated, safety procedures implemented, and that the proper hazard information is transmitted to all affected workers.

GENERAL: Embry-Riddle Aeronautical University will ensure that all potential hazards regarding ladders within our facility or job sites are evaluated. This standard practice instruction is intended to address comprehensively the issues of; evaluating and identifying potential deficiencies, evaluating the associated potential hazards, communicating information concerning these hazards, and establishing appropriate procedures, and protective measures for employees.

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Embry-Riddle Aeronautical University Ladders Safety Program

1. Written Program. Embry-Riddle Aeronautical University will review and evaluate this standard practice instruction on an annual basis, or when changes occur to the governing regulatory standards, that prompt revision of this document, or when facility operational changes occur that require a revision of this document. Effective implementation requires a written program for job safety and health, that is endorsed and advocated by the highest level of management within this company and that outlines our goals and plans. This written program will be communicated to all required personnel. It is designed to establish clear goals, and objectives.

2. General Requirements. All facilities and equipment owned by this company will be maintained in a safe and healthful manner. Certain work conditions may contain a reasonable probability of injury that can be prevented by proper maintenance and supervision. Embry-Riddle Aeronautical University will do all possible to ensure the safety of our employees. No employee will knowingly be subjected to a hazardous condition without all possible protective measures first being implemented.

3. Fiberglass/Wooden Ladders Safety Policy. To insure safety and serviceability the following precautions concerning the care and use of fiberglass/wooden ladders will be observed:

3.1 Care, fiberglass/wooden ladders. The following safety precautions will be observed in connection with the care of fiberglass/wooden ladders:

3.1.1 Ladders will be maintained in good condition at all times, the joint between the steps and side rails will be tight, all hardware and fittings securely attached, and the movable parts will operate freely without binding or undue play.

3.1.2 Metal bearings of locks, wheels, pulleys, etc., will be frequently lubricated.

3.1.3 Frayed or badly worn rope will be replaced.

3.1.4 Safety feet and other auxiliary equipment will be kept in good condition to insure proper performance.

3.1.5 Ladders will be inspected frequently and those which have developed defects will be withdrawn from service for repair or destruction and tagged or marked as "Dangerous, Do Not Use."

3.1.6 Rungs should be kept free of grease and oil.

3.2 Use. The following safety precautions will be observed in connection with the use of fiberglass/wooden ladders:

3.2.1 Portable rung and cleat ladders will, where possible, be used at such a pitch that the horizontal distance from the top support to the foot of the ladder is one-quarter of the working length of the ladder (the length along the ladder between the foot and the top support). The ladder will be so placed as to prevent slipping,

or it will be lashed, or held in position. Ladders will not be used in a horizontal position as platforms, runways, or scaffolds.

3.2.2 Ladders for which dimensions are specified should not be used by more than one person at a time nor with ladder jacks and scaffold planks where use by more than one person is anticipated. In such cases, specially designed ladders with larger dimensions of the parts should be procured.

3.2.3 Portable ladders will be so placed that the side rails have a secure footing. The top rest for portable rung and cleat ladders will be reasonably rigid and will have ample strength to support the applied load.

3.2.4 Ladders will not be placed in front of doors opening toward the ladder unless the door is blocked, locked, or guarded.

3.2.5 Ladders will not be placed on boxes, barrels, or other unstable bases to obtain additional height.

3.2.6 Ladders with broken or missing steps, rungs, or cleats, broken side rails, or other faulty equipment will not be used, ladders having any of these conditions present will be destroyed and disposed of. Improvised repairs will not be made.

3.2.7 Short ladders will not be spliced together to provide long sections.

3.2.8 Ladders made by fastening cleats across a single rail will not be used.

3.2.9 Ladders will not be used as guys, braces, or skids, or for other than their intended purposes.

3.2.10 Tops of ordinary stepladders will not be used as steps.

3.2.11 No ladder should be used to gain access to a roof or elevated work area unless the top of the ladder is extended at least 3 feet above the point of support.

3.2.12 The bracing on the back legs of step ladders is designed solely for increasing stability and not for climbing.

4. Portable Fiberglass/Wooden Ladders. In order to insure safety under normal conditions of usage, this company will purchase and maintain portable fiberglass/wooden ladders that conform the following minimum requirements for the construction, care, and use of common types of portable fiberglass/wooden ladders.

4.1 General requirements.

4.1.1 Materials. All fiberglass/wooden parts will be maintained free from sharp edges and splinters; sound and free from accepted visual inspection from shake, wane, compression failures, decay, or other irregularities.

4.1.2 Step spacing. Must not be more than 12 inches. Steps will be parallel and level when the ladder is in position for use.

4.1.3 Side rail width. The minimum width between side rails at the top, inside to inside, must not be less than 11 1/2 inches. From top to bottom, the side rails must spread at least 1 inch for each foot of length of stepladder.

4.1.4 Metal spreaders/locking devices. A metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in open positions must be properly maintained for each stepladder. The spreader must have all sharp points covered or removed to protect the user.

4.2 Portable stepladders. Stepladders longer than 20 feet will not be used by this company. Stepladders of one of the following types specified will be used:

4.2.1 Type I--Industrial stepladder, 3 to 20 feet for heavy duty, such as utilities, contractors, and industrial use.

4.2.2 Type II--Commercial stepladder, 3 to 12 feet for medium duty, such as painters, offices, and light industrial use.

4.2.3 Type III--Household stepladder, 3 to 6 feet for light duty, such as light household use.

4.3 Portable rung ladders.

4.3.1 Single ladder. Single ladders longer than 30 feet will not be used by this company.

4.3.2 Two-section ladder. Two-section extension ladders longer than 60 feet will not be used by this company.

4.3.3 Trestle and extension trestle ladder. Trestle ladders, or extension sections or base sections of extension trestle ladders longer than 20 feet will not be used.

4.4 Special-purpose ladders.

4.4.1 Painter's stepladder. Painter's stepladders longer than 12 feet will not be used.

4.4.2 Mason's ladder. A mason's ladder is defined as a special type of single ladder intended for use in heavy construction work. Mason's ladders longer than 40 feet will not be used.

5. Metal Ladders Safety Policy. To insure safety and serviceability the following precautions concerning the care and use of metal ladders will be observed:

5.1 Care, metal ladders. The following safety precautions will be observed in connection with the care of metal ladders:

5.1.1 Ladders must be maintained in good usable condition at all times.

5.1.2 If a ladder is involved in any of the following, immediate inspection is necessary:

5.1.2.1 If ladders tip over, inspect ladder for side rails dents or bends, or excessively dented rungs; check all rung-to-side-rail connections; check hardware connections; check rivets for shear.

5.1.2.2 If ladders are exposed to oil and grease, equipment should be cleaned of oil, grease, or slippery materials. This can easily be done with a solvent or steam cleaning.

5.1.3 Ladders having defects are to be marked and taken out of service until repaired by either maintenance department or the manufacturer.

5.2 Use, metal ladders. The following safety precautions will be observed in connection with the use care of metal ladders:

5.2.1 A simple rule for setting up a ladder at the proper angle is to place the base a distance from the vertical wall equal to one-fourth the working length of the ladder.

5.2.2 Portable ladders are designed as a one-man working ladder based on a 200-pound load.

5.2.3 The ladder base section must be placed with a secure footing.

5.2.4 The top of the ladder must be placed with the two rails supported, unless equipped with a single support attachment.

5.2.5 When ascending or descending, the climber must face the ladder.

5.2.6 Ladders must not be tied or fastened together to provide longer sections. They must be equipped with the hardware fittings necessary if the manufacturer endorses extended uses.

5.2.7 Ladders should not be used as a brace, skid, guy or gin pole, gangway, or for other uses than that for which they were intended, unless specifically recommended for use by the manufacturer.

6. Portable Metal Ladders.

6.1 General requirements. ERAU will purchase only ladders without structural defects or potential accident hazards such as sharp edges, burrs, etc. ERAU will purchase ladders meeting industrial grade specifications. Homemade or in-house constructed ladders will not be used.