HEAVY EQUIPMENT SAFETY TRAINING HANDBOOK

November 2010
Corresponding Fish and Wildlife Service Manual Chapter: **Vehicles and Equipment Management Part 321 Motor Vehicles and Equipment Operator Program**
Originating Office: **Division of Contracting and Facilities Management**

HEAVY EQUIPMENT SAFETY TRAINING HANDBOOK

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INTRODUCTION

The U.S. Fish and Wildlife Service (Service) is a land management agency responsible for more than 100 million acres and over 10,000 employees. Because the Service accomplishes a wide variety of operational tasks to support mission goals, it is extremely important that we provide a consistent and effective safety training program for heavy equipment operations. The Service has been proactive in the area of heavy equipment safety training since 1979 when we first established a training policy for heavy equipment operators. We designed the training program to meet policy standards and to integrate with mission goals. We have refined this program throughout the years to reflect changes in technology and field practices (see Appendix C. HEAVY EQUIPMENT SAFETY TRAINING HISTORY).

We use full time, part time, seasonal, and volunteer operators to accomplish projects "on the ground" level. This range of personnel creates the challenge of providing adequate and timely training to operators located throughout the country. To accomplish this task, we use a cadre of experienced heavy equipment operators who have received instructor training and other necessary resources. The instructors are provided logistical support and training materials from the Regional Heavy Equipment Coordinator who also manages the "in the field" classroom and operation segments of the program. The National Conservation Training Center (NCTC) in Shepherdstown, WV provides for program administration, web-based pre-class training, and web-based refresher training. In 2010 the Service will establish the requirement for employees to successfully complete a refresher training program every 3 years for each type of equipment they operate.

Any person who operates Service-owned, leased, rented, or borrowed heavy equipment (regardless of job series) must take 8 hours of safety training for each type of equipment before they operate the equipment. This training includes 3 hours of pre-class study, 4 hours of classroom instruction, and at minimum, 1 hour of equipment operation to demonstrate their ability to apply the safe heavy equipment operating procedures for the terrain and conditions in their area. After completing the training, the operator must demonstrate through written exams and a pass/fail instructor evaluation the following knowledge and skills:

- The Operator's Manual
- Proper methods of fueling, maintenance, and lubrication as required by the manufacturer
- Pre-start procedures, which include proper safety checks
- Starting and warming up the machine
- Proper operational procedures, which include use of all controls
- Demonstration of travel maneuvers necessary for the types of terrain they will encounter
- Proper hook-up of equipment and attachments that may be used with the machine
- Operation of the equipment with various attachments
- Proper shut-down procedures
- Proper transportation and load securement procedures as defined in 243 FW 5
- Proper personal protective equipment as defined in 241 FW 3
- Service policy as it pertains to heavy equipment (See Appendix B. REFERENCES):

    - 321 FW 1 *Operator Requirements and Responsibilities*
    - 243 FW 1 *Safe Operation of Motor Vehicles and Motor Equipment*
    - 243 FW 2 *Special Purpose Trucks*
    - 243 FW 3 *Heavy-Duty Motor Equipment*
    - 243 FW 4 *Powered Industrial Trucks*
    - 243 FW 5 *Towing, Cargo Carrying, and Load Securement*
    - 243 FW 6 *Off-Road Utility Vehicles*
    - 241 FW 3 *Personal Protective Equipment*
    - 242 FW 3 *Noise Control and Hearing Loss Prevention*

Currently there are 11 types of equipment for which the Service has developed a safety training program. They are:

- Motor grader,
- Self propelled scraper pan,
- Skid steer,
- Agricultural tractor,
- Crawler dozer,
- Crawler loader,
- Wheeled loader,
- Powered industrial trucks (forklift) Classes 1-7,
- Excavator,
- Backhoe/loader, and
- Specialty tracked equipment.

1.1 Definition: As described in Service Manual 321 FW 1, a heavy equipment operator is:

- An employee or volunteer who operates heavy duty equipment and whose operator duties are specifically mentioned in his or her position description or Volunteer Services Agreement (Optional Form (OF) 301A), or
- An individual identified in a Service written agreement (e.g., Memorandum of Understanding) who operates Service heavy equipment.

1.2 What is heavy equipment? Table 1-2 in 321 FW 1.5 gives examples of heavy equipment:

Heavy Duty Motor Equipment	
Equipment	**Comments/Examples (if applicable)**
(a) Crawler-dozers and crawler-loaders	
(b) Four-wheel-drive loaders	Articulating or straight frame
(c) Motor graders	Articulating or straight frame
(d) Draglines	
(e) Power excavators	
(f) Motor cranes	
(g) Agricultural tractors that are:	• Self-propelled, • 2/4 wheel or track driven, • More than 20 engine HP, • Equipment designed to furnish power to agricultural/forestry/construction/ industrial tools or attachments, • Manufactured with a Roll-Over-Protective-Structure (ROPS), and • Defined in 29 CFR 1928.51(b)(1).
(h) Amphibious/soft tracked equipment (wheeled or tracked) over 1,900 pounds curb weight including:	• Weasels • Thiokols • Roligons • Marsh Masters • SnowCats • Muskegs • Gyro-Tracs • Geo-Boys • Hydro-Axes
(i) Self propelled scraper pans,	
(j) Industrial tractors	Front-end loader/backhoes
(k) Skid steers,	
(l) Forklifts	Classes 1-7
(m) Industrial powered lift trucks	

Specialized equipment other than that listed in the table above requires a training program that meets the same standards as those required in 321 FW 1. Contact your Regional Heavy Equipment Coordinator to develop a program to meet those needs.

This standard includes all heavy equipment that is Service-owned, leased, rented, or borrowed and is operated by Service employees or volunteers.

1.3 What training is required? 321 FW 1 identifies the training required for all types of heavy equipment and describes the supervisor's responsibility to document the type and extent of training for each operator using FWS Form 3-2267 (See APPENDIX D – FORMS).

- The Service does not offer training for motor cranes. Operators for that type of equipment must be licensed by the State for crane certification, or, if State licensing is not required, must have successfully completed a nationwide crane certification program meeting Federal OSHA 29 CFR 1926.550 and ASME/ANSI B30.5-2000 standards. Equipment manufactured as draglines will maintain the functionality of a dragline. If you use a dragline for craning operations, the operator and equipment must meet the standards cited above. Dragline operators must complete a manufacturer-offered safety training program containing, at minimum, the requirements for heavy equipment safety training described in 321 FW 1.

- Completion of the Specialty Tracked Equipment Safety Training (STEST) course is specific to amphibious equipment or equipment for forestry applications. Additional training is required for operation of other types of specialty tracked equipment and the Regional Heavy Equipment Coordinator determines if there is a unique difference in safe operation of a specific type of equipment compared to the type of equipment the employee originally completed STEST on.
    - For example: A student completes the 8 hour STEST for an amphibious type of equipment (e.g., a *Marsh Master)*. Before operating a specialty tracked piece of equipment for a forestry application (e.g., a *Geo-Boy/Gyro-Trac/Fecon),* he/she would need to contact the Regional Heavy Equipment Coordinator to arrange 4 hours of additional training. The additional training includes:
        - 4 hours of instruction, (3 hours classroom and 1 hour of operation) provided by a Service Heavy Equipment Safety Instructor.

- If a backhoe is an attachment for a skid steer, crawler dozer, or an agricultural tractor, then the student must complete the Service's *Backhoe/Loader Safety Training Course* in addition to the safety training course for that equipment.

- Amphibious excavator operators must complete the Service's Hydraulic Excavator Safety Training Course in addition to a manufacturer-provided operator training for that type of equipment.

1.4 How do you sign up for the training? First, contact your supervisor for authorization to attend training. Then contact your Regional Heavy Equipment Coordinator to enroll in the program. He/she will advise you how to register for the program and complete the web-based pre-class training requirement through the Department's Learning Management System (LMS). After completing the pre-class assignment, the Regional Heavy Equipment Coordinator will coordinate your participation in the classroom and operational segments of the program at a field location that will best meet your schedule and that of your Region. The Coordinator will issue your Certificate of Completion after you have successfully completed the program and your training has been documented. See APPENDIX A. HEAVY EQUIPMENT SAFETY TRAINING FLOWCHART

1.5 Is refresher training required? Beginning in 2012, operators must take refresher training for each type of equipment they operate every 3 years. The Regional Heavy Equipment Coordinator coordinates the web-based refresher training program. This program requires an additional component of supervised equipment operation for those employees who have not operated that type of equipment within the past 3 years and for those employees who have exhibited a deficiency in their competency to operate the equipment. The operator's supervisor and the Regional Heavy Equipment Coordinator determine if the operator needs to successfully complete an operational requirement.

1.6 What type of personal protective gear must I wear? The following Service Manual chapters describe the type of personal protective equipment (PPE) that a heavy equipment operator must wear:

- 241 FW 3: *Personal Protective Equipment,*
- 243 FW 1: *Safe Operation of Motor Vehicles and Motor Equipment,*
- 243 FW 3: *Heavy-Duty Motor Equipment,* and
- 242 FW 3: *Noise Control and Hearing Loss Prevention*

In general, hard hats, safety toed boots, gloves, hearing protection, and safety glasses are required to operate heavy equipment. Operators must wear hard hats when operating equipment, even if the equipment has an enclosed cab. Operators must also wear hard hats when operating agricultural tractors for land clearing operations, such as mowing. Other PPE, such as dust masks, respirators, and personal floatation devices may be required for safety, depending on the circumstances. As described in 241 FW 3: *Personal Protective Equipment,* when a Project Leader or supervisor develops a Job Hazard Assessment (FWS Form 3-2279) , he/she identifies the required PPE for the operation of specific tasks.

1.7 Can operator privileges be suspended or revoked? Regional Heavy Equipment Coordinators and Regional Safety Managers must work through line management (supervisors) to suspend or revoke operator authority if operators fail to maintain their qualifications or if they demonstrate a careless disregard in operating the Service's or their personal motor vehicles or motor equipment.

HEAVY EQUIPMENT OPERATOR – Wildland Fire Operations CHAPTER 2

2.1 Definition: We define a wildland fire as any non-structure fire that occurs in the on land covered mainly by vegetation and does not include agricultural, industrial or urban areas. We have identified three distinct types of wildland fires: wildfire, wildland fire use, and prescribed fire.

2.2 What type of heavy equipment operator positions may be involved during wildland fire operations? Dozer Operator (DOZP), Tractor Plow Operator Initial Attack (TPIA), and Tractor Plow Operator (TROP).

2.3 What training is required? We must assign only qualified personnel to duties related to wildland fire suppression or prescribed fire. All employees assigned to dedicated fire program management responsibilities at the local, geographic, or national level must meet established interagency and agency competencies (knowledge, skills, and abilities) and associated qualifications. The National Wildfire Coordination Group (NWCG), Wildland Fire Qualification Systems Guide PMS 310-1 establishes the guidance. The *Fire Management Handbook* identifies the training required for the Dozer Operator (DOZP), Tractor Plow Operator Initial Attack (TPIA), and Tractor Plow Operator (TROP) positions. It also describes the supervisor's responsibility to document the type and extent of training for each operator using the Incident Qualification and Certification System, and to document the operator's ability to meet the heavy equipment safety training requirements in 321 FW 1.

2.4 How do you sign up for the training? Contact your Regional Fire Coordinator for information about the Dozer Operator (DOZP), Tractor Plow Operator Initial Attack (TPIA), and Tractor Plow Operator (TROP) courses. Contact your Regional Heavy Equipment Coordinator for information about the Service Heavy Equipment Safety Training program.

2.5 Is refresher training required? All personnel participating in fire suppression or prescribed fire activities who may be subject to fireline assignments must take annual Fireline Safety Refresher Training. They must also meet the Service Heavy Equipment Safety training refresher requirement described in 321 FW 1.

2.6 What type of personal protective gear must I wear? The following Service Manual chapters provide guidance for the type of personal protective equipment (PPE) that an operator must wear:

- 241 FW 3: *Personal Protective Equipment*,
- 243 FW 1: *Safe Operation of Motor Vehicles and Motor Equipment,*
- 243 FW 3: *Heavy-Duty Motor Equipment,* and
- 242 FW 3: *Noise Control and Hearing Loss Prevention*

In general, hard hats, safety toed boots (Kevlar toed for fire line operations), gloves, hearing protection, and safety glasses are required for operating heavy equipment unless guidance in the Interagency Standards for Fire and Aviation Operation Redbook dictates otherwise. Operators must wear hard hats when operating equipment, even if the equipment has an enclosed cab. Operators must also wear hard hats when operating agricultural tractors for land clearing operations, such as mowing. Other PPE, such as dust masks, respirators, and personal floatation devices may be required for safety, depending on the circumstances. As described in 241 FW 3: *Personal Protective Equipment,* when a Project Leader/supervisor develops a Job Hazard Assessment (FWS Form 3-2279), he/she identifies the required PPE for the operation of specific tasks.

2.7 What are the requirements for operation of specialty tracked or amphibious type heavy equipment in wildland fire operations? Before operators may operate such equipment as Marsh Masters, Roligons, Wilco Marsh Buggies, etc., for wildland fire duties, they must complete the Service's Specialty Tracked Equipment Safety Training program, wear specified personal protective gear, and have (at minimum) 40 hours of operational experience for the specific type of equipment.

NATIONAL HEAVY EQUIPMENT COORDINATOR CHAPTER 3

3.1 What is the role of the National Heavy Equipment Coordinator? The position of the National Heavy Equipment Coordinator is located within the National Wildlife Refuge System (NWRS) Division of Information Technology and Management in the Washington Office. As a key player for the accomplishment of Service goals, the coordinator develops and evaluates the safe and effective deployment of heavy equipment. We rely on an inventory of heavy equipment valued at nearly $10 billion for water management, flood control, and fire management activities for a land base of over 100 million acres. We also use heavy equipment to build and maintain roads, trails, and similar structures that allow nearly 40 million visitors per year to safely enjoy wildlife-dependent activities. The need for heavy equipment varies from site to site, so the logistics of having the right equipment and qualified operators at the right time and place is an important facet for the effective deployment of resources.

3.2 What are the duties of the National Heavy Equipment Coordinator? The National Heavy Equipment Coordinator's primary duties fall into four broad categories: Training, Equipment Management, Workforce Management, and Liaison.

- **Training.** The National Heavy Equipment Coordinator:
  - Ensures that quality heavy equipment safety training is available by developing a standardized and consistent program that we implement throughout the Regions.
  - As part of a national team of peers from other Regions, develops and implements the Service Heavy Equipment Safety Training Program as described in 321 FW 1: *Operator Requirements and Responsibilities*. The Heavy Equipment Safety Training Program uses a "train-the trainer" approach to deliver training throughout the Service. The team coordinates training program content with State and national certification entities to ensure our training meets criteria for certification standards, tests, or other requirements, especially when transporting machinery/equipment or using public roadways while operating the heavy equipment.

- **Equipment Management.** The National Heavy Equipment Coordinator develops acquisition and deployment strategies for heavy equipment that meet the field stations' missions as well as our effective management practices. He/she:

  - Plans, coordinates, and evaluates budgets, materials, and services needed to effectively deploy heavy equipment;
  - Analyzes purchasing and leasing options of new and used heavy equipment; and
  - Explores/identifies exchange programs for sharing equipment and evaluates transportation requirements.

- **Workforce Management.** The National Heavy Equipment Coordinator:
  - Establishes approaches for the effective development and deployment of the overall maintenance workforce within the Service;
  - Works in concert with National/Regional workgroups (Leadership Development Council, Wage Grade Advisory Committees, workgroups dealing with policy issues, etc.) to develop policies on maintenance programs within the Service and to recommend strategies on topics such as training and workforce development; and
  - Analyzes and develops plans to help ensure that the Service adequately funds and staffs for maintenance of assets and equipment.

- **Liaison.** The National Heavy Equipment Coordinator serves as the national liaison by coordinating Regional heavy equipment efforts with Regional Heavy Equipment Coordinators, Regional office staff, field station managers, and operators.

REGIONAL HEAVY EQUIPMENT COORDINATOR CHAPTER 4

4.1 What is the role of the Regional Heavy Equipment Coordinator? As key players in the accomplishment of Service goals, the Regional Heavy Equipment Coordinators develop and evaluate the safe and effective deployment of heavy equipment in their Regions.

4.2 What are the duties of a Regional Heavy Equipment Coordinator? A Regional Heavy Equipment Coordinator's duties are to:

- Serve as a member on a national team of peers from other Regions to formulate the development and implementation of a National Heavy Equipment Safety Training Program.
- Develop a cadre of Heavy Equipment Safety Instructors to meet Regional logistical requirements.
- Ensure that all heavy equipment safety instructors' training meets the standards in 321 FW 1 to provide consistency throughout the Service.
- Develop an annual assessment of the Regional heavy equipment training needs and coordinate the deployment of the instructors to meet field station training requests.
- Coordinate efforts with NCTC for employee enrollment and completion of a training course using the pre-class study and refresher programs.
- Use the Department of Interior Learning Management System (i.e., DOI Learn) to register and complete the instructor-led heavy equipment safety training course(s).
- Ensure the instructors' program delivery meets the requirements in 321 FW 1 and does not exceed the ratio of five students per instructor at the field training location.
- Issue certificates of completion and FWS 3-2268 form for employees who have successfully completed Heavy Equipment Safety Training Courses (See APPENDIX D. FORMS).
- Develop an instructor refresher program as required in 321 FW 1, in conjunction with national guidelines.
- Evaluate the training program and develop recommendations for improvement that address the requirements of the operators in the field. These evaluations and recommendations use quality control methods such as student feedback.
- Assist program managers with budget requirements for acquisition, leasing, and rental of heavy equipment. Coordinate these efforts with the Regional Maintenance Management Coordinator. Analyze purchasing and leasing options for new and used heavy equipment and provide technical assistance about heavy equipment options to the field stations.
- Coordinate with Regional and field station managers on development of an exchange program for sharing equipment, planning transportation of Service equipment, adjusting staff schedules for details or temporary assignments of operators to other stations, and researching methods to most efficiently provide needed services, supplies, and parts.
- Use databases such as the Service Asset and Maintenance Management System to analyze needs and document actions.
- Develop policies on maintenance programs that include strategies for training and development of the maintenance workforce.
- As part of a Regional Office team, periodically participate in field station reviews to evaluate the effectiveness, safety, and administration of maintenance programs with emphasis on effective use and safety concerns related to operation of heavy equipment. The team includes Regional Safety Managers and other Regional program managers.
- At their discretion, designate Regional Lead Heavy Equipment Safety Instructor(s) to more effectively manage the logistics of the instructor-led component of the heavy equipment safety training program within their Region.

HEAVY EQUIPMENT SAFETY INSTRUCTOR CHAPTER 5

5.1 Definition. A Heavy Equipment Safety Instructor is a Service employee who, at the request of the Regional Heavy Equipment Coordinator, provides the Heavy Equipment Safety Training Program as described in 321 FW 1 to Service employees and others using Service equipment. Generally, the instructors have a strong background in heavy equipment operations with an emphasis in construction. The title and duties of "Heavy Equipment Safety Instructor" can only be included in an employee's position description after his/her completion of specific training described in 321 FW 1 and a review of his/her qualifications by the Regional Heavy Equipment Coordinator.

5.2 ***Who determines how many Heavy Equipment Safety Instructors are required to meet the Regional needs?*** The Regional Heavy Equipment Coordinator, working with line management (supervisors and safety managers), determines the number and location of heavy equipment safety instructors each Region requires.

5.3 How can an employee become a Heavy Equipment Safety Instructor? Before an employee may provide heavy equipment safety training, he/she should exhibit:

- A strong background and experience in the safe operation of a variety of types and categories of heavy equipment,
- Good judgment and operational skills, and
- Above all, a safe work ethic.

To be approved as a candidate for Heavy Equipment Safety Instructor training, employees must first submit documentation to the Regional Heavy Equipment Coordinator that includes:

- A written recommendation signed by their immediate supervisor, including approval to participate in the trainer program and to travel from their assigned duty station to conduct training;
- Detailed documentation describing past heavy equipment operations;
- Verification of a current and class of State Department of Motor Vehicles driver's license. A State Commercial Driver's License (CDL) is recommended; and
- Completion of Service Heavy Equipment Safety Training course(s).

In addition, a candidate must have the following skills:

- An operational understanding of training fundamentals,
- The ability to develop instructional materials for heavy or specialized equipment, and
- The ability to instruct others on various types of heavy equipment, including operational safety and maintenance.

Once the candidate's support documents have been submitted, a team consisting of the Regional Heavy Equipment Coordinator, the candidate's immediate supervisor, and the Regional Safety Manager will review the documents. Based on this review, past work experience, skills/abilities, and safety record, the team determines if the candidate has the qualities necessary for an effective Heavy Equipment Instructor. Once the candidate has been approved, The Regional Heavy Equipment coordinator will enroll him/her in an instructor-based "train-the trainer" program for an individual piece of equipment or for a variety of heavy equipment family groups. This program must comply with all of the requirements described in 321 FW 1.

5.4 What are the duties of a Heavy Equipment Safety Instructor? Heavy Equipment Safety Instructors provide the Heavy Equipment Safety Training program to employees based on a schedule developed by the Regional Heavy Equipment Coordinator. Instructors should follow the guidelines below:

- All training, for each type or family group of heavy equipment, must meet the requirements of and include all the training agenda items for heavy equipment training as described in 321 FW 1.

- Trainers must incorporate local and State regulations pertaining to the operation and transportation of heavy equipment into their program. They also must follow the Service format within their respective programs and include information on Federal regulations such as OSHA and NIOSH.
- Each training program must follow the format and material content outlined in the Service Heavy Equipment Instructor Manual for that type of equipment.
- Training format must also comply with the information in the Heavy Equipment Instructor Guide, Training must include a minimum of 4 hours of classroom instruction and 1 hour of operation for each category of equipment, demonstrating the employee's capability to safely operate the equipment and attachments in the terrain conditions that he or she may encounter. The classroom instruction can be accomplished in a formal classroom setting, open classroom around the piece of equipment, or a mix of both techniques.
- Each training program must maintain a **student to instructor ratio of not more than 5 to 1**.
- All instructors must wear approved PPE as required in 241 FW 3: *Personal Protective Equipment*, 242 FW 3: *Noise Control and Hearing Loss Prevention*, and 243 FW 1: *Safe Operation of Motor Vehicles and Motor Equipment.*
- Instructors must ensure that every student also wears required PPE..
- All instructors should use the equipment-specific Safety Training Course Exam located in Tab 13 of the Instructor Manual to determine a student's knowledge and retention of course material. The student must get a passing score of 80% and a "pass" rating for the operational safety skill evaluation to successfully complete the course.
- An instructor must "fail" a student if they cannot perform the safety tasks outlined in 321 FW 1. Then contact the Regional Heavy Equipment Coordinator to develop a solution for the deficiency.
- Instructors are required to complete the following documentation of a student's performance and attendance (and give copies to the Regional Heavy Equipment Coordinator):

    - *FWS 3-2392 Equipment Operator Evaluation (Knowledge & Skills)*
    - *Student Final Exam*
    - *Training Course Evaluation*

  These forms are located in Tab 14 of the *Instructor Reference Guide for Heavy Equipment Safety Training.*
- As part of a Regional office team, a Heavy Equipment Instructor may have to perform an inspection to analyze a station's heavy equipment fleet's operational status and to recommend solutions, with emphasis on safety compliance and adherence to manufacturer standards/recommendations.
- An instructor must attend refresher training, as required in 321 FW 1, every 3 years to maintain his/her designation as an instructor. The Regional Heavy Equipment Instructor develops and provides this refresher program.
- Instructors must emphasize that the training they give is strictly the basic safety training program required before heavy equipment operation, and that it does not authorize an employee for fire program support operations. Successful completion of specific fire-related training is required before an employee can operate heavy equipment on a fire detail. Contact the Regional Fire Management Coordinator to determine the type(s) of additional training required to operate heavy equipment in a fire operation.

5.5 What is the goal of a Heavy Equipment Safety Instructor? Each instructor's goal is to provide instruction and materials that equip employees with sufficient knowledge, skills, and abilities to conduct safe heavy equipment operations. Achieving these goals impacts not only the operator, but the many visitors who surround us during our operations. Meeting these goals also gives operators a greater knowledge of maintenance requirements for heavy equipment, which extends the useful life of the equipment and minimizes repair and replacement costs.

The instructor's knowledge and skills are important resources for the Region and for the Service to support equipment acquisition, readiness, and to identify resource capabilities and limitations.

5.6 Can the authorization of a Heavy Equipment Safety Instructor be suspended or revoked? Yes, if the Regional Heavy Equipment Coordinator and line management (supervisors) determine that the instructor has repeatedly exhibited poor performance or judgment during training sessions, if there are other safety considerations, or if there are other due cause concerns related to sustaining a successful training program, they can suspend or revoke an instructor's authorization.

The Regional Heavy Equipment Coordinator, working with line management (supervisors), can reinstate the instructor's suspended or revoked authority by documenting mitigating information/actions that satisfactorily addresses the cause of the original determination.

6.1 What is the role of NCTC for Heavy Equipment Safety Training? The National Conservation Training Center (NCTC) in Shepherdstown, WV is the primary training center for the Service.

Since the Service Heavy Equipment Safety Training Program requires heavy equipment operation to evaluate the knowledge and abilities of the student to safely operate the equipment, NCTC cannot support that component of the training program at their facility. It is more cost efficient and effective to provide the classroom and operational component for the program at designated locations throughout the Service.

NCTC provides the administrative and logistical support and acts as a central point of contact for the training program through the use of the Department's Learning Management System (LMS) (i.e., DOI Learn), see Appendix A.

NCTC's support includes:

- Using the LMS to enroll students in all program courses, track the pre-class study requirement for each specific category of heavy equipment, and track the refresher training programs.
- Providing course management access for the National/Regional Heavy Equipment Coordinators to determine student compliance with and completion of pre-class study, develop class rosters, print certificates of completion, and track refresher training requirements on a semiannual basis.
- Providing printing and re-printing cost estimates for specific Heavy Equipment Safety Training Student/Instructor Manuals per Regional Heavy Equipment Coordinators requests.

6.2 What future role can NCTC provide? NCTC may help leverage new technology and training methods, such as distance learning and interactive web-based activities, to enhance the Heavy Equipment Safety Training Program for the Service.

MANUFACTURER-OFFERED HEAVY EQUIPMENT TRAINING CHAPTER 7

7.1 What is manufacturer-offered heavy equipment training? This is training that a manufacturer of heavy equipment (e.g., John Deere, Inc.; Caterpillar, Inc.; New Holland, Inc.; Komatsu, Inc.; etc.) provides. This training may include safety topics, maintenance, and operational techniques, and it can vary from one manufacturer's course to another.

7.2 Can Service employees/volunteers take manufacturer-offered heavy equipment training? Yes, the partnership that we have developed with heavy equipment manufacturers has guided the design of their courses to meet our operators' requirements. Generally, there is a tuition fee associated with these courses in addition to the travel and per-diem costs.

7.3 Will successful completion of these courses authorize a Service employee to operate a piece of heavy equipment? Because the manufacturers cannot meet all the training requirements for authorization to operate heavy equipment described in 321 FW 1, just taking manufacturer-offered training courses does not authorize an employee to operate heavy equipment for the Service. However, by combining other elements listed below with attending a manufacturer-offered course, an employee can meet all the heavy equipment training requirements:

- The Regional Heavy Equipment Coordinator must determine if the manufacturer course agenda is compatible to Service training requirements prior to enrollment in a manufacturer-offered training course.
- Before taking the manufacturer-offered course, the employee must be enrolled in the Service Heavy Equipment Safety Training Program (through the Regional Heavy Equipment Coordinator) and must have completed the pre-class study program for the specific category or group of heavy equipment he/she is training to operate. Completion of the pre-class study program provides the student with the Service training requirement for understanding Service policy and load securement. The manufacturer-offered course cannot provide this knowledge base.
- If the Regional Heavy Equipment Coordinator determines through the evaluation of the manufacturer-offered course that the operational seat time does not meet the Service seat time performance criteria, the employee must demonstrate the Service seat time performance criteria for a Service Heavy Equipment Safety Instructor.
- The employee must give a copy of the manufacturer course completion certificate to the Regional Heavy Equipment Coordinator for inclusion in the LMS, which tracks how requirements have been met.

LOAD SECUREMENT TRAINING CHAPTER 8

8.1 What is load securement training? Load securement training is training that we require for Service employees and volunteers who are involved with transportation and securement practices associated with light and heavy-duty equipment and cargo. See 243 FW 5: *Towing, Cargo Carrying, and Load Securement*.

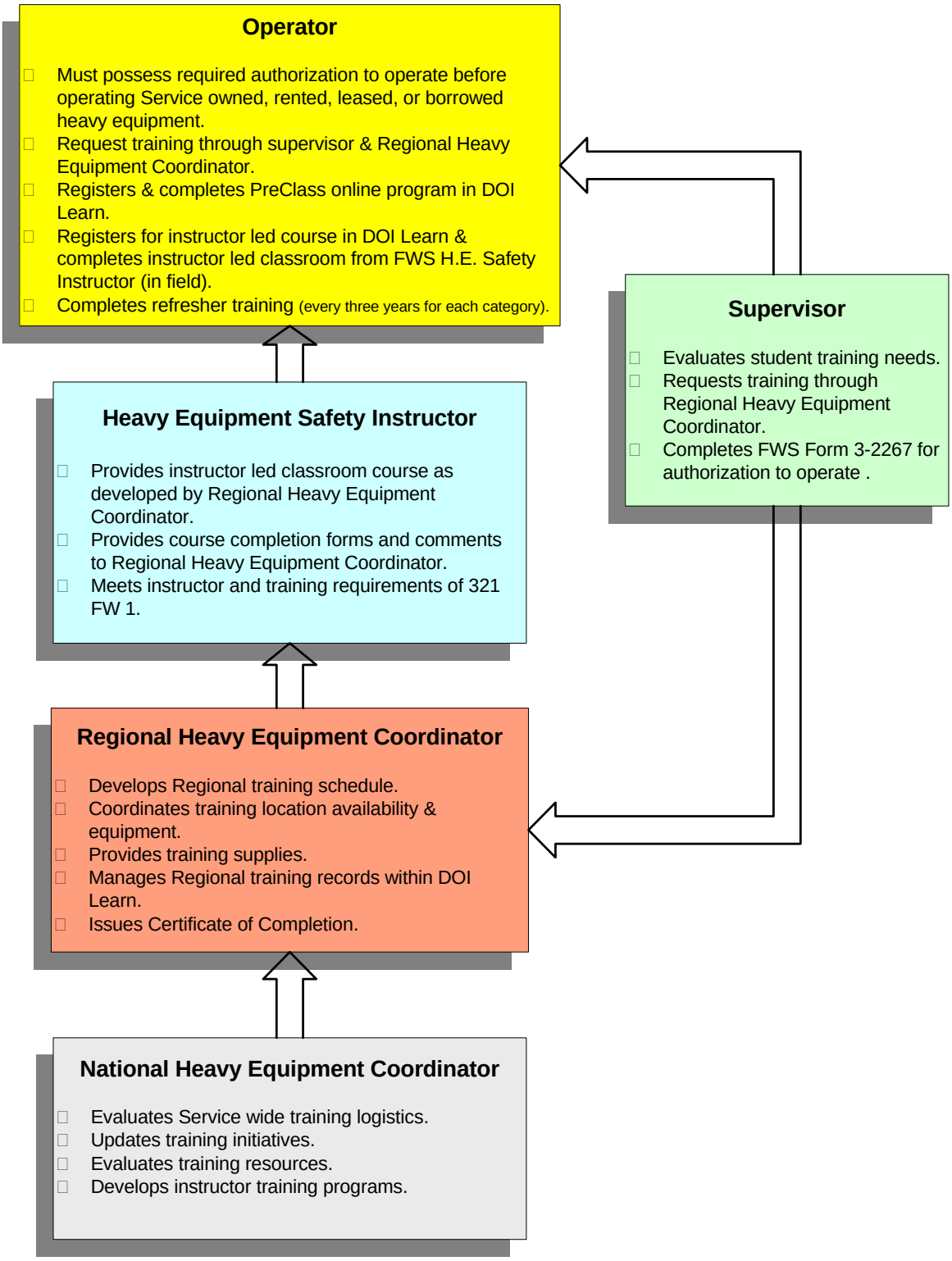
8.2 Who must have load securement training? Any employee or volunteer who independently loads and secures, or assists another individual with loading or securement of any Service-owned or leased equipment for transportation must attend load securement training. Even if the employee or volunteer is not the driver of the transport vehicle, he or she must attend load securement training to assist in the process. Supervisors of these employees and volunteers may also participate in this training.

8.3 How can a Service employee or volunteer obtain load securement training? Employees and volunteers can take load securement training as part of the Service Heavy Equipment Safety Training program. If you are not required to take Heavy Equipment Safety Training but are required to transport light equipment such as mowers or Off-Road Utility Vehicles (ORUVs) as part of your duties, you may register for the training by contacting the Regional Heavy Equipment Coordinator.

APPENDICES

APPENDIX A - HEAVY EQUIPMENT SAFETY TRAINING FLOWCHART

U.S. Fish & Wildlife Service Heavy Equipment Safety Training Flowchart



APPENDIX B - REFERENCES

CODES, REGULATIONS, AND GUIDELINES

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

Code of Federal Regulations: http://www.gpo.gov/nara/efr/index.html

29 CFR 1910, OSHA Standards, General Industry
29 CFR 1926, Safety and Health Regulations for Construction

ADMINISTRATIVE MANUALS AND HANDBOOKS

U.S. Fish & Wildlife Service, Fish and Wildlife Service Manual
Division of Policy and Directives Management (PDM)
Internet Web Site: http://www.fws.gov/policy/manuals

Chapter	Title
321 FW 1	Operator Requirements and Responsibilities Internet Web Site: http://policy.fws.gov/321fw1.html
243 FW 1	Safe Operation of Motor Vehicles and Motor Equipment Internet Web Site: http://policy.fws.gov/243fw1.html
243 FW 2	Special- Purpose Trucks Internet Web Site: http://policy.fws.gov/243fw2.html
243 FW 3	Heavy-Duty Motor Equipment Internet Web Site: http://policy.fws.gov/243fw3.html
243 FW 4	Powered Industrial Trucks Internet Web Site: http://policy.fws.gov/243fw4.html
243 FW 5	Towing, Cargo Carrying, and Load Securement Internet Web Site: http://policy.fws.gov/243fw5.html
243 FW 6	Off-Road Utility Vehicles Internet Web Site: http://www.fws.gov/policy/243fw6.html
241 FW 3	Personal Protective Equipment Internet Web Site: http://policy.fws.gov/241fw3.html
242 FW 3	Noise Control and Hearing Loss Prevention Internet Web Site: http://policy.fws.gov/242fw3.html

APPENDIX C - HEAVY EQUIPMENT SAFETY TRAINING HISTORY

How did the training program develop? The following timeline is a synopsis of the program's development:

1979: Release of Service Administrative Manual 23 AM 8 *(Motor Equipment Management)*. The chapter stated:
"No employee will be permitted to operate any piece of light or heavy duty equipment, except in an emergency, until he/she had demonstrated satisfactory attitude, proficiency, and aptitude in operating the specific type of machine. Each different type of machine requires separate qualifications….. "

1982: Release of 24 AM 4 *(Heavy Equipment)* that described the specific training requirements for each type of light and heavy duty equipment employees and volunteers operate. The training and testing requirements were:
Training: Training employees to appreciate and meet the hazards of equipment operation is essential to the conduct of a safe operation. Operators of motorized equipment must be trained, tested, and authorized as required in 23 AM 8.2J.
Testing: Operators are to be tested in accordance with the requirements of 23 AM 8.2J. The operator must demonstrate, at a minimum, knowledge of the following operations:

A. The proper methods of fueling, adding oil, adding water, servicing the battery and lubricating the equipment.
B. The pre-start procedures, to include proper safety checks.
C. The proper starting and warm up of the engine.
D. The proper operating procedures, to include use of all controls and demonstration of travel maneuvers necessary for the type of terrain that they will encounter.
E. The proper hook-up of equipment and accessories used on the equipment.
F. The operation of the equipment with various attachments or accessories such as plows or blades.
G. The proper shut-down procedures.

1983: The Service contracted with John Deere, Inc. to provide a "Train-the-Trainer" program for three to four Service equipment operators in each Region so that the newly trained operators would then be able to act as Service equipment safety instructors. John Deere also produced a student manual meeting the requirements of 24 AM 4. This 2-week program provided training to approximately 30 Service operators on farm tractors, backhoe/loaders, crawler dozers, crawler loaders, wheeled loaders, motor graders, and excavators.

1987: The Service contracted with Texas A&M to provide a "Train-the-Trainer" program to more Service equipment operators and to produce a student manual. This 2-week program provided training to approximately 30 Service operators on farm tractors, backhoe/loaders, crawler dozers, crawler loaders, wheeled loaders, motor graders, and excavators.

1993: The Service combined the student manuals John Deere and Texas A&M produced to meet the needs of the program.

1995: The Service released two Manual chapters (321 FW 1: *Requirements and Responsibilities* and 241 FW 2: *Motorized Vehicles and Equipment*) which mirrored requirements in 23 AM 8 and 24 AM 4 and identified responsibilities and training requirements for operators of heavy equipment and their supervisors.

2003: The Service held a Heavy Equipment Policy and Training Workshop at NCTC to evaluate the existing program and recommend changes. Instructors from each Region, Regional Office personnel, and Washington Office personnel participated in the workshop. They

delivered recommendations to the Leadership Development Council to standardize the heavy equipment training program. Their recommendations included:

- Revision of existing training manuals,
- Creation of National and Regional Heavy Equipment Coordinator positions,
- Revision of existing Service policy for equipment operation and training (321 FW 1 and 243 FW 1),
- Involvement of NCTC with the training program, and
- Development of a charter to establish a Service National Wage Grade Advisory Committee.

2003: The Service contracted with VISTA Training, Inc. in Burlington, WI to revise the existing training manuals and develop web-based pre-class and web-based refresher training programs for each type of equipment. The contractor worked with a Service technical team to develop all the programs. The contractor delivered final copies of the manuals and programs in December of 2004.

2004: The Service released policy changes regarding motorized equipment operation and training. The revised chapters were:

- 321 FW 1 *Operator Requirements and Responsibilities*
- 243 FW 1 *Safe Operation of Motor Vehicles and Motor Equipment*
- 243 FW 2 *Special Purpose Trucks*
- 243 FW 3 *Heavy-Duty Motor Equipment*
- 243 FW 4 *Powered Industrial Trucks*
- 243 FW 5 *Towing, Cargo Carrying, and Load Securement*
- 241 FW 3 *Personal Protective Equipment*

2004: The Service developed National and Regional Heavy Equipment Coordinator positions in the GS-0346 Logistic Management Specialist series. The Service filled the National Heavy Equipment Coordinator position in August of 2004. Regions 2 and 6 filled their Regional Heavy Equipment Coordinator positions in September and December of 2004. The remaining Service Regions filled their positions in 2005.

2005: NCTC began to administer the Heavy Equipment Safety Training Program using the Learning Management System for course enrollment, pre-class study programs, and the refresher program.

APPENDIX D – FORMS
(Available online at www.fws.gov/forms/default.cfm)

FWS 3–2267..... Authorization for Operation of Motor Vehicles and/or Equipment

FWS 3–2268..... Completion of Heavy Equipment Training

FWS 3-2392..... Operator/Authorization Test - (Knowledge & Skills)