

# Establishing a Training Program for New Dozer Operators for the S.C. Forestry Commission



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## **Introduction**

The South Carolina Forestry Commission, as well as a majority of the entire southeastern contingent of state government wildland fire response agencies, relies heavily upon the use of dozers with plows, commonly referred to as tractor plow units, as their main firefighting tool. These units unload off transport trucks or trailers and use their blades and plows to separate fuel (burnable material) from the fire thereby starving the fire of one of its three needs which are fuel, heat, and oxygen.

The SC Forestry Commission has implemented tractor operator training in the past, most recently using the Tractor and Plow Safety, (T.A.P.S.), training module which was created by the Southeastern States Forest Fire Compact Commission over twenty years ago. This training was used by our state to train tractor plow operators in the past but has not been used as an official training program for over twenty years. Training has therefore been performed by pairing a new operator with their supervisor as well as experienced tractor plow operators (Forestry Wardens or Forestry Technician I's). Many are trained at the local level using the agency's "Essential Task Orientation" booklet for "Fire Suppression Operators" developed September 1998, then verified by someone other than their supervisor. The verification procedure seems to vary throughout the agency while some personnel are not aware of the booklet altogether based on surveys which will be discussed later in this document. The terms dozer operator, tractor plow operator, and heavy equipment operator are being used interchangeably in this document and defined as a wildland firefighter that is trained to use a bulldozer with or without an attached plow to suppress wildfires or establish fire prevention or control breaks (firebreaks).

## **Problem Statement**

This project was initiated to determine if there was a need and a desire to have a new dozer operator training program that would be consistent throughout the agency. Many experienced operators have been retiring and taking their knowledge and experience with them. There is also a trend of hiring sector supervisors, (Fire Management Officers- FMOs), that do not have dozer experience. This is perhaps leading to new hires not receiving efficient and effective dozer operator training. However, after contacting several of my peers, local senior tractor plow operators, as well as a few agency senior staff members, it was unanimous that we need a program. The project then changed to address a new question. How can the S.C. Forestry Commission establish a standard new operator training curriculum that would effectively and efficiently prepare them as dozer/tractor plow operators that are used for wildland fire suppression?

## **Data Collection**

I collected data to determine what challenges the supervisors of the dozer operators had experienced when hiring a new operator and how long it took to approve an operator to start going to fires as a trainee. I also wanted to determine what types of training would be the most beneficial as well as the time span to allow for the training. I developed a survey to send out to the sector FMOs to gather information that would help develop a training program to meet the needs of the new operators, (Refer to FMO survey questions and results in Appendix B, page 24).

After discussing a training program with a counterpart for some time, I observed a hands-on two-day training his team developed based on learning stations at past Geographical Area Heavy

Equipment Operator Academies which had been organized by the US Forest Service and partnering state fire response agencies that were held in other states. After observing the training in person and then reviewing the After Action Review remarks, I was able to see what parts of the training were successful and which ones needed additional improvement. A summary is included in Appendix C pages 37-39.

In May, I was able to attend as a representative of the S.C. Forestry Commission, the 2022 Geographical Area Heavy Equipment Operator Academy hosted by the Mississippi Forestry Commission. I was able to take a tour of the overall training then return to each station and meet with instructors and students to ask more questions. In addition to observing this training, I met with the training coordinator for the Mississippi Forestry Commission, and he was able to share their complete state training program.

I made several contacts while at the academy that could aid with our training program. The S.C. Forestry Commission's Forest Protection Chief sent an email to other agency representatives asking them to help me with my project. Georgia, North Carolina, Texas, and Virginia responded in addition to the information already gathered from Mississippi. I was able to gather data concerning training programs used by these southeastern states which had been developed for their new dozer operators.

At this point, I was able to initiate a one-day local training for three new employees from Williamsburg and Georgetown counties. Charles Ingram Lumber Company gave our team permission to utilize some of their property in Carver's Bay, Georgetown County, as a test site. Using experienced operators as well as training I learned at the dozer academy, we were able to

create different training stations teaching the new operators several of the skills mentioned in the FMO survey. Within a week after the training, I collected After Action Reviews from the cadre and students. A summary is included in Appendix C pages 40-41.

## Data Analysis

### A. FMO Survey

The survey was sent to 24 Fire Management Officer positions as well as to their supervisors (Unit Foresters) and the three Assistant Regional Foresters. I received 24 responses. Most were actual FMOs while at least two responses came from other personnel in higher management positions. For example, a Unit Forester helped at least one employee that was filling in as an FMO and at least one Assistant Regional Forester replied due to his former experience as a sector supervisor. One question asked was, “Since July 1, 2019, what is the average time span for a Forest Technician I (tractor plow operator) to become checked off as having no restrictions (from hire to no restrictions on the “Personnel Available for Dispatch” form)?”. Figure 1 shows that sixty-five percent of the replies stated that it took one to two years.

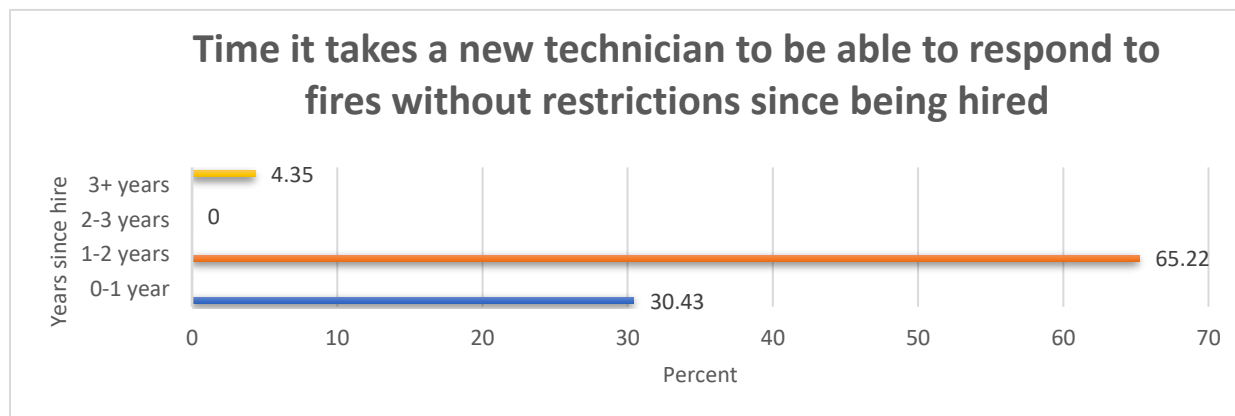


Figure 1

This majority timeframe of 1-2 years considers the ability of the operator to gain a commercial driver's license which they must acquire within 105 working days, (15 days for online coursework in addition to 90 days of training and testing) and is usually their primary goal upon being hired due to the amount of training needed to pass the required testing per South Carolina Department of Motor Vehicles, (SCDMV). They must take wildland fire courses S-130 and S-190 as well as incident command system courses I-100 and I-700 prior to a five-day Basic Fire School. The time varies for training the new hire on the actual dozer depending on previous experience operating heavy equipment.

Another significant question was, "What is the current criteria for checking a new Forest Technician I off as having no restrictions?". This varied a great deal with most FMOs responding that the new hire must gain experience and have a safe working knowledge of their equipment as well as fire behavior. The most informative a laid-out plan was "1. Demonstrating proficiency in the operation of the machine. 2. Demonstrating proficiency and good judgment in tactics. 3. Demonstrating the ability to recognize and react to changes in fire behavior and weather changes 4. Consistently uses safety practices. 5. The consensus of myself and senior operators that have been observing, feel the new operator has gained and uses knowledge sufficient for them to safely and effectively perform their duty without direct supervision[sic]." There were some answers that showed minimal standards such as "test drive and load and unload dozer at least 10 fires and 6 months (experience)[sic]".

The FMOs were then asked, "How are you currently training a new employee to be proficient with their equipment?". The majority answered that they usually provide lots of service work opportunities (firebreaks and prescribed burning) to give them equipment and fire behavior

experience as well as pairing the new employee with seasoned operators to get “on the job training”. While services and working with seasoned operators and FMOs is still a preferred method, it does not give the new employee a standard basic knowledge in his/her early career that could increase the effectiveness of hands-on local training.

When asked, “What other issues do you face training new dozer operators?”, some new FMOs responded that they had not been trained on a dozer and lacked the knowledge or skill to teach a new employee. There were several answers that mentioned that it depended on the fire/burning season to give the new employees on the job training and there was no structured operator training.

Survey recipients were told in an email prior to the survey that their answers could help provide information to aid in the development of a basic dozer operator training curriculum. To establish what was the most desired training, the recipients were asked, “What aspects of tractor plow operation training would be the most beneficial for an employee with 0-3 years’ experience?”. They were given a set group of choices to pick and could pick more than one. Those that chose the “other” category listed experience needed in all, equipment inspection and maintenance procedures, or a response that was directly related to one of the choices. One of the most interesting facts shown by the responses for the question of what aspects of training would be desired was the geographical concerns. As seen in Figure 2, the results were almost even comparing operating in bay type soils (45.83%) which is a coastal plain concern and operating on a slope (45.83%) which is more of piedmont concern (although there are areas of steep slope in the pee dee and coastal regions).



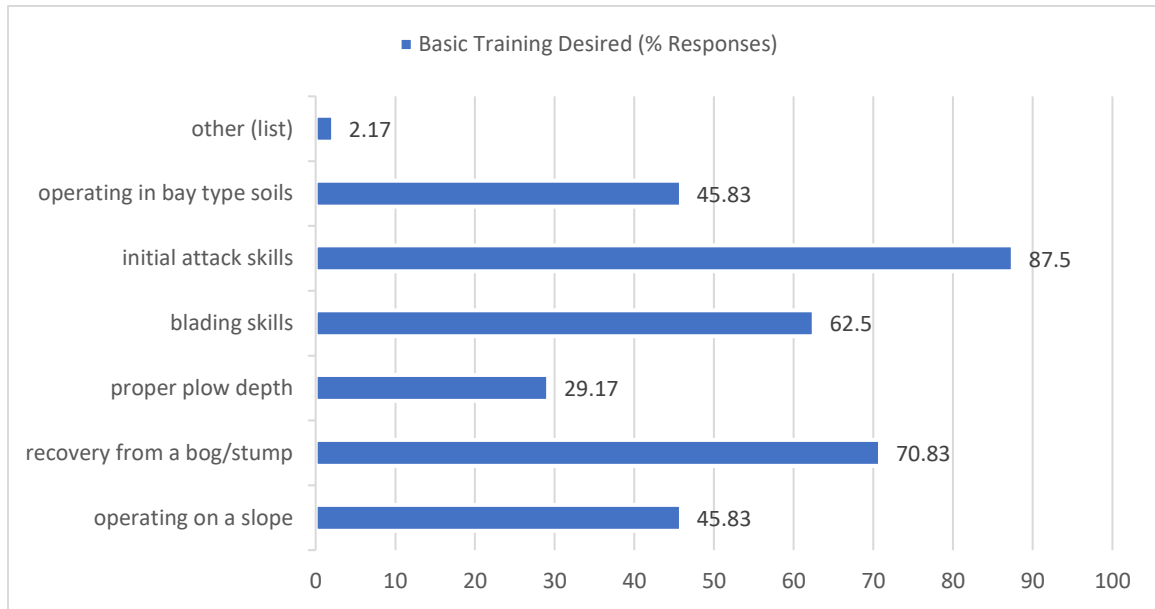


Figure 2

When questioned, “How soon should a new hire be required to attend this training?”, it was fairly even at 0-6 months having 54 % and 6 months-1 year having 50 % of the responses. Some of the recipients responded to more than one choice (26 responses out of 24 responders).

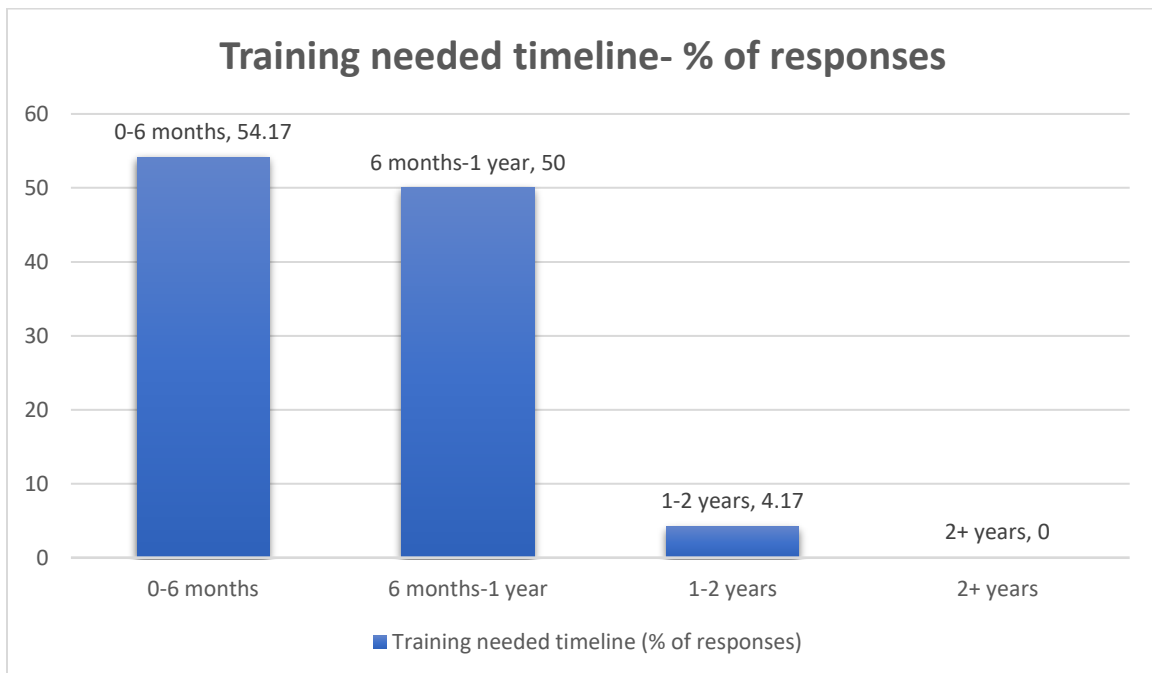


Figure 3

The most positive feedback received was from the question, “Would you be able to serve as or provide an instructor for a section of the training?”. Seventy-four percent of the recipients responded “Yes” with several listing themselves as a willing instructor or listing the names of experienced operators that they directly supervised.

Due to the amount of material that would need to be taught based on feedback from the FMOs, the length of the training had to be determined. To get feedback concerning this question, it was asked, “Would it be more beneficial to have a longer block of training such as a week-long class in one area or split it up over one to two months in two-three day classes in different regions?”. There were 23 responses. One stated that it should be a real-world application, four stated a weeklong course, six stated both (some were fine either way as long as there was standard training while others suggested a week-long basic course followed by short two-three day courses in other regional terrains), and twelve preferred shorter segments of two-three days. Figure 4 shows the percentages of the responses for each choice.

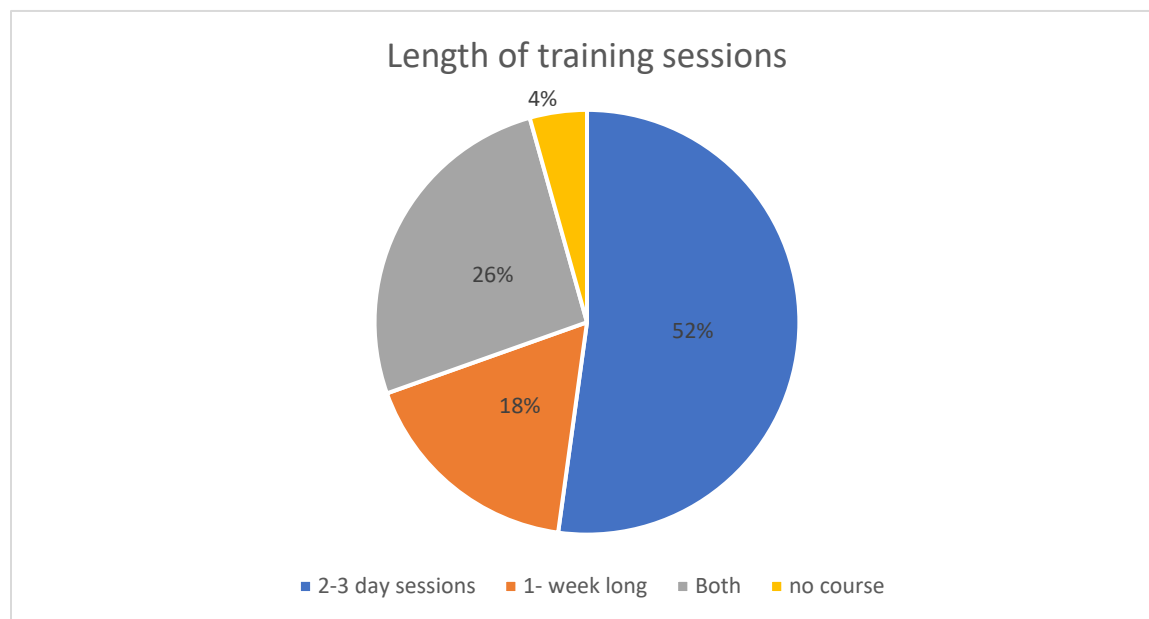


Figure 4

B. Hands-on trial run classes in S.C. and observance of an established federal course

After discussing a possible dozer operator training course with one of my counterparts, he and his staff created a dozer skills class at the Piedmont Forestry Center occurring May 15-17, 2022. I attended as part of the cadre and an observer to gain information for my Certified Public Manager course. Five students participated in the program. The training was entirely in the field consisting of different stations including slope, recovery from a bog and stump, Best Management Practices (BMPs), plow issues, as well as night operations. One of the main points from the After Action Review was to have multiple stations occurring at the same time so there would be less students at a station at one time and they would obtain more “seat time” as an operator. All were very positive about the training and the skills learned.

June 27-28, 2022, I was able to attend the Geographic Area Heavy Equipment Operator Academy as an observer and representative of the S.C. Forestry Commission. This year, the training was hosted by the Mississippi Forestry Commission. This course allows federal and state agencies to send employees to obtain a wealth of heavy equipment operator training with very experienced cadre members. Students had classroom time and were divided into task forces. A task force leader carried students to the training site and to each station. Each student would take turns as an operator and a swamper, (Swamper- A worker on a dozer crew who pulls winch line, helps maintain equipment, etc., to speed suppression work on a fire). They attended a different station each day. These stations were arranged into geographical areas such as piedmont, coastal, and mountains as well as a transport driving proficiency station. This was the first time it was arranged in this manner as opposed to stations set up by skillset. I was allowed to tour the entire training

and then come back to each station as I preferred to experience what the instructors were showing the students. I was able to record videos and take pictures of the live training. Each instructor was more than happy to spend time with me to help our agency prepare a training program.

After attending the upstate S.C. Forestry Commission trial course as well as the federal training academy, I was then able to prepare a course layout for a local training day in Georgetown County. Working with the Georgetown Sector FMO and three Georgetown County Forestry Technician I's, a course outline was finalized, and the training site was prepared. On August 9, 2022, cadre, logistical staff, and three students with less than eight months experience met at the training site. A safety briefing was held and then everyone reported to the first station.

At the first station, students learned to use their winch cable to straighten out their "jackknifed" plow while in a bog then pull out of the bog. Then they learned to pull themselves out of a bog by using a method involving a chain hooked to their blade and an anchor point such as a tree. This was hands-on experience. Students took turns being the operator and the swamper.

At the second station there were several tasks to learn and perform. After instruction, students were able to execute the technique of using a chain to right a flipped over plow when there was no solid anchor point in addition to using their winch to right a flipped over plow when an anchor point was present. Students learned how to use a chain to pull themselves off a stump. They were also instructed to plow into thick Carolina Bay vegetation communicating to their supervisor by radio to experience plowing in some of the most dangerous fuel loadings in the state. This allowed the students to also receive firsthand knowledge of how difficult plowing in this fuel type

can be due to its volatility, thick horizontal continuity, and organic soil. Lastly, each student was shown an open area that was created by a cadre member and asked if it was a safety zone or a deployment site. Everyone present discussed the difference and the importance of knowing where each one was located while engaged on a fire. As stated in the Data Collection section of this document, students and cadre were then asked to fill out After Action Reviews and return to me. The reviews showed that all participants enjoyed the training and learned a great deal. Some of the cadre having five to eight years of experience stated they also learned lessons from more seasoned operators. The most common suggestion was the same as the remarks made by different students attending the upstate trial training which was there should be multiple stations at the same time. This type of structure would allow a lower number of students at each station providing more one on one time with the instructor as well as each student receiving more “seat time” and hands-on training then swapping stations at certain intervals. A more feasible number that was suggested would be two to four students at each station at a time. Another suggestion was to have an additional day of field training.

#### C. New operator training provided by other southeastern state agencies

As mentioned in the “Data Collection” section of this document, representatives from five state forestry agencies responded to a request for their new operator training curriculum. The respondents include representatives from Georgia, Mississippi, North Carolina, Texas, and Virginia. They were asked several questions in addition to any willingness to share their training materials. All these states combined fire classes into their dozer operator training. As stated on page four of this report, the S.C. Forestry Commission teaches fire behavior as well as new employee procedures at its Basic Fire School. Students must complete I-100, I-700, S-130 online

portion, and S-190 prior to Basic Fire School attendance. They complete the field portion of S-130 and take S-131 while at the weeklong school. Many positions throughout the agency attend this school including employees that are not equipment operators such as pilots, dispatchers, and foresters.

The Georgia Forestry Commission offers many “tricks of the trade” information in their post hire academy. These training units include fire behavior, a deeper look into the National Fire Danger Rating System, tactics, troubleshooting mechanical issues, safety, human factors such as stress, in addition to using case studies to improve employee situational awareness.

In addition to basic level NWCG courses, the Mississippi Forestry Commission requires that their employees attend a five-day equipment operator academy. There are many similarities between its content and the Geographic Area Equipment Operator Academy except there are agency specific guidelines and references.

Some of the states built their training programs based on the Tractor and Plow Safety course (T.A.P.S) that was mentioned in the introduction. The North Carolina Forest Service even requires the T.A.P.S. course within a new Forest Fire Equipment Operator’s (similar to our Forest Technician I position in the response to fires) first six months. They also attend a local terrain “FFEO School” within six to twelve months in addition to a non-local terrain school.

The Texas A & M Forest Service is in the process of updating their training program for their dozer operators. Currently, they require all their operators to complete a forty-hour course with one day of classroom and the remaining days spent in the field. The training includes an obstacle course, equipment inspections, loading and unloading, practicing line construction with a plow

and blade, recovery operations (winch and being high centered), broken equipment, and equipment rehabilitation. All operators work on their Firefighter Type 1 (FFT1) and Incident Commander Type 5 (ICT5) task books.

The Virginia Department of Forestry requires their tractor operators to acquire local knowledge filling out a state position specific task book. They are then eligible to attend the advanced equipment operator course that utilizes much of the material found in the T.A.P.S. training. Virginia's operators also have the option of attending a "Mountain Tractor" course.

I did not get the entire curriculum for the Florida Division of Forestry; however, I did learn that they have a stand-alone winching course. Similar material from this course would be extremely beneficial to our operators.

After reviewing these other southeastern training programs, it appears that keeping our Basic Fire School separate from additional dozer operator training would best suit our agency's particular needs.

#### D. Dozer Operator Training Core Group

To make developing a dozer operator course more efficient, I wanted to create a small core group of experienced personnel to help create a new operator curriculum. Two representatives from each region were represented, one representative from the state forests (he also has been an instructor at the Geographic Area Equipment Operator Academy), the agency Equipment and Fleet Manager, the agency Training and Safety Manager, as well as the agency Protection Chief. I created a draft curriculum and PowerPoint for the proposed training making recommendations based on the FMO survey as well as utilizing other southeastern state's training. After sharing the

proposed curriculum with the core group through emails, we met on September 12, 2022. We reviewed the FMO survey, other state's training courses, the two in-state trial courses, the Geographic Heavy Equipment Operator Academy observations, and the proposed curriculum as well as the PowerPoint. On September 21, 2022, a member of the agency's information and education staff recorded videos of swamper and operators performing tasks to add to the PowerPoint training.

## **Conclusion**

After reviewing the materials presented in the September 12 meeting, the Dozer Operator Training Core Group decided on proposing a requirement for a new FMO or Forestry Technician I to attend a three-day Basic Dozer Operator course after attending Basic Fire School.

Topics proposed for the basic course are:

### **A. Safety with two field exercises**

"Safety first" is a common theme at workplaces. Therefore, safety is "Unit 1". Personal protective equipment (PPE) required is first, followed by our agency's equipment use policy. Our agency has not been teaching the National Wildland Coordination Group's dozer/tractor hand signals that are in the *Fireline Handbook* so the group decided that we should be teaching them to new employees as well as experienced operators. Our "Code Red" procedures for an agency involved death or serious injury are taught to all employees but the group believed that an actual exercise designed so the S.C. Forestry Commission dispatch would be called by an instructor following the steps using a simulated event would be more beneficial to the operators as well as training dispatchers. Other procedures would be taught to include an 8-line medical procedure providing



medical information to first responders. Our agency has not taught an accepted process for making the decision to leave a dozer to escape to a safety zone or shelter in place inside the equipment should a fire overtake their position, so this was added to the curriculum. It was decided to show safe loading and unloading techniques for a dozer on a transport as well as how to escape out of the window on an enclosed cab if you cannot exit out of the doors. When I asked a local sector about escaping out of the window, some had been operating the equipment for over six months and were not familiar with this feature. The filming of this procedure has also started the process of purchasing emergency hammers for all the agency's enclosed cab dozers should the window need to be broken out due to an extreme emergency.

#### B. Types of heavy equipment and their capabilities

It is important to know what types and sizes of dozers that the S.C. Forestry Commission has in its fleet as well as the nomenclature of parts of the dozers. Every operator should know the basic capabilities of their equipment and what factors can influence their performance.

#### C. Maintenance and in-field repairs with field exercises

Preventative maintenance is a vital function of an operator's duties. Learning how to check fluid levels, filters, and look for problems can increase the lifespan of your equipment. Also, learning how to make in-field repairs is a job function of an operator. Our agency has not been teaching how to make in-field repairs and most of our operators and FMOs get this experience on the job. Unfortunately, this may lead to a life-threatening situation where time is critical.

- D. Three hands-on field stations to include skills such as basic maneuvering on an obstacle course, plowing, blade work, righting a flipped over plow, and recovery methods (such as basic winching).

The importance of performing these skills in a safe and less stressful environment rather than on a wildland fire should increase the retention of what is learned. Students will take turns being in the seat as an operator and as a swamper. Taking turns for both positions is essential because an operator may be by themselves on an incident.

The first Basic Dozer Operator course is proposed to be held in May 2023. After completion of the basic course, the students would return to their local units to gain additional local knowledge from their FMO and/or senior dozer operators. After approximately a year, they would then attend the Intermediate Dozer Operator course. The intermediate course proposal is currently being built by the Dozer Operator Training Core Group. According to the FMO survey, the highest-ranking skill desired to be taught was initial attack skills (87.5% of the responses). However, the basic course will be concentrating more on actual dozer operation and maintenance. The core group will include tactics in the intermediate course along with more advanced recovery, blading, and plowing techniques as well as a night operations exercise. The core group also recommended that the first class for the intermediate course be in the fall of 2023 consisting of operators with two to five years of experience. We would essentially be catching those operators up on skills they may have missed by not having a structured curriculum. There are approximately thirty Forestry Technician I's that have been hired in the past three years. Due to class size limitations needing to remain at four to six students per station, supervisors may have to nominate candidates for the intermediate course each year. These two courses should be required for all

new FMOs and Forestry Technician I's within their first three years and open to other employees as well to learn new skills or as a refresher. For employees that aren't new, (not having to attend Basic Fire School), it could be considered as additional skills and knowledge training hours. This would have to be approved by the Safety and Training Coordinator.

In addition to dozer operator training, it is also recommended to build a swamper course. This course would allow non-operator positions that are also wildland firefighter certified, such as foresters, to learn how to effectively assist an operator as a swamper on a fire. Perhaps this could be incorporated into future dozer operator courses once we have performed the first classes.

The S.C. Forestry Commission's State Lands Coordinator is supporting this course as well and has offered the use of the old Tillman Nursery and the Manchester State Forest facilities for the course. The core group will plan on viewing the site and determining a classroom location as well as field station locations. Manchester State Forest is approximately 20-25 minutes from hotels and restaurants that could be used to support this course. Camp Burnt Gin is a local camp that should also be visited to determine if it would meet some of the training's logistical needs. It is also recommended to utilize a small incident command team to support the logistics of the course(s). Introducing new employees to the incident command system at an early stage in their careers would set a stage for accepting it so it is not new to them on an incident. They would have practical knowledge of the process and not just online video training.

This curriculum promotes a variety of training opportunities for equipment operators, their supervisors, dispatchers, foresters, and any personnel involved with the incident command team.

The agency can continue to build from these courses and achieve a safer and more efficient employee.

## **ACKNOWLEDGEMENTS**

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**Stroud, Allen   Mississippi Forestry Commission**

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**Ulmer, Scott**

**Webb, Colton**

**Weeks, Michael**

## APPENDIX A

### GLOSSARY

**After Action Review (AAR)-** A professional discussion of an event, focused on performance standards, that enables firefighters to discover for themselves what happened, why it happened, and how to sustain strengths and improve on weaknesses. ([www.nwcg.gov](http://www.nwcg.gov))

**Assistant Regional Forester-** This position reports directly to the Regional Forester for each of the three regions in the S.C. Forestry Commission's structure. They are tasked with overseeing the safety and training of staff in the region.

**Carolina Bay-** Elliptical or oval depressions of uncertain origin found in North and South Carolina, along with a few bays in Georgia, Virginia and Delaware. They are considered to be a freshwater wetland, most often isolated. ([www.dnr.sc.gov](http://www.dnr.sc.gov))

**Deployment Site-** A site that is used when fire conditions are such that escape routes and safety zones have been compromised. A wildland firefighter that uses a deployment site will be opening their fire shelter (deploying) and getting inside as a last resort of survival. ([www.wildfirelessons.net](http://www.wildfirelessons.net))

**Fire Management Officer (FMO)-** Supervisor of the dozer operators (Forestry Technician I's and Warden's) in a sector. The majority of the FMOs in the agency are also law enforcement certified.

**Firebreak-** A natural or constructed barrier used to stop or check fires that may occur, or to provide a control line from which to work. ([www.nwcg.gov/term/glossary](http://www.nwcg.gov/term/glossary))

**Forest Fire Equipment Operator (FFEO)-** The term for a heavy equipment operator responding to wildland fires for the N.C. Forest Service.

**Forestry Technician I-** Dozer operators in the S.C. Forestry Commission whose primary task is fire suppression and prevention. They are trained in wildland fire in addition to various forestry duties to assist in the forest management program.

**Forestry Warden-** Dozer operators in the S.C. Forestry Commission that are trained in wildland fire whose position is for fire suppression and prevention. They differ from a forestry technician I in the fact that they are not required to assist with forest management duties. This is a “grandfathered” position as the agency is no longer hiring this position.

**Fuel Loading-** The amount of fuel present expressed quantitatively in terms of weight of fuel per unit area. This may be available fuel (consumable fuel) or total fuel and is usually dry weight.

([www.nwccg.gov](http://www.nwccg.gov))

**Incident Command System (ICS)-** A standardized on-scene emergency management construct specifically designed to provide an integrated organizational structure that reflects the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries. The Incident Command System is the combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure, designed to aid in the management of resources during incidents. ICS is used for all kinds of emergencies and is applicable to small as well as large and complex incidents. ICS is used by various jurisdictions and functional agencies, both public and private, to organize field-level incident management operations.

(<https://training.fema.gov/programs/emischool/el361toolkit/glossary.htm>)

**National Fire Danger Rating System-** This system tracks the effect of previous weather events through their effect on live and dead fuels and adjusts them accordingly based on future or predicted weather conditions. ([www.nwcg.gov](http://www.nwcg.gov))

**National Wildfire Coordinating Group-** A group consisting of representatives from multiple state, federal, tribal, and fire department organizations that provides national leadership to enable interoperable wildland fire operations among federal, state, local, tribal, and territorial partners.

**Plow-** A heavy duty plowshare or disc plow usually pulled by a tractor (*dozer*) to construct a fireline. ([www.nwcg.gov/term/glossary](http://www.nwcg.gov/term/glossary))

**Region-** The South Carolina Forestry Commission is divided into three regions- the Coastal Region consisting of the southern counties of the state, the Pee Dee consisting of the northeastern counties of the state, and the Piedmont Region consisting of the northwestern counties of the state.

**Safety Zone-** An area cleared of flammable materials used for escape in the event the line is outflanked or in case a spot fire causes fuels outside the control line to render the line unsafe. In firing operations, crews progress so as to maintain a safety zone close at hand allowing the fuels inside the control line to be consumed before going ahead. Safety zones may also be constructed as integral parts of fuel breaks; they are greatly enlarged areas which can be used with relative safety by firefighters and their equipment in the event of blowup in the vicinity. ([www.nwcg.gov/term/glossary](http://www.nwcg.gov/term/glossary))

**Sector-** Units are split into four sectors consisting of one or more counties. There is one FMO that supervises a sector and multiple dozer operators assigned to a sector.



**Swamper-** A worker on a dozer crew who pulls winch line, helps maintain equipment, etc., to speed suppression work on a fire. ([www.nwcg.gov/term/glossary](http://www.nwcg.gov/term/glossary))

**Task Book-** NWCG position task books (PTBs) are a key component of the qualification process for specified NWCG positions. The PTB provides an observable, measurable, and standardized means to evaluate and document trainee proficiency. ([www.nwcg.gov](http://www.nwcg.gov)) *Some individual states may develop agency specific position task books.*

**Tractor plow unit-** A dozer with a plow attached used to install firebreaks. In the case of this document research, dozer operator or tractor plow operator is the term used for any person operating a dozer either with or without a plow attachment to perform wildland fire suppression or prevention duties.

**Unit-** Each region is divided into two units consisting of multiple counties.

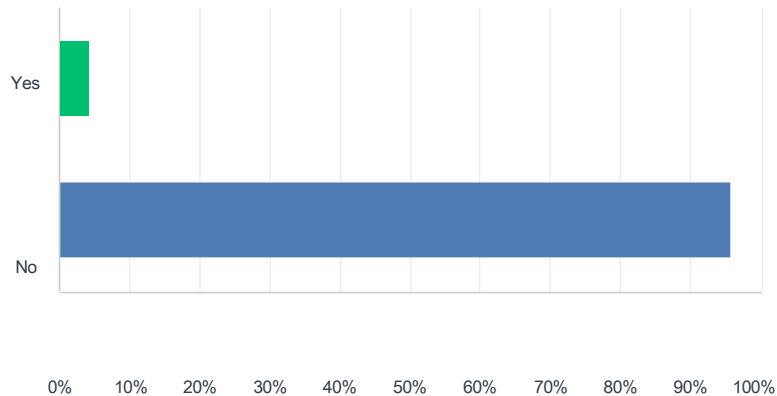
**Wildland Fire/Wildfire-** an outdoor fire originating from an unplanned ignition such as lightning, powerlines, unauthorized or accidental human caused fires or intentionally set by humans and is declared a wildfire. (Adjustments made to the definition from [www.nwcg.gov/term/glossary](http://www.nwcg.gov/term/glossary))

## Appendix B

### FMO Survey

Q1 Since July 1, 2019, have you had to send an inexperienced Forest Technician I to a fire without an experienced SC Forestry Commission employee (other operator, FMO, or forester)?

Answered: 24 Skipped: 0

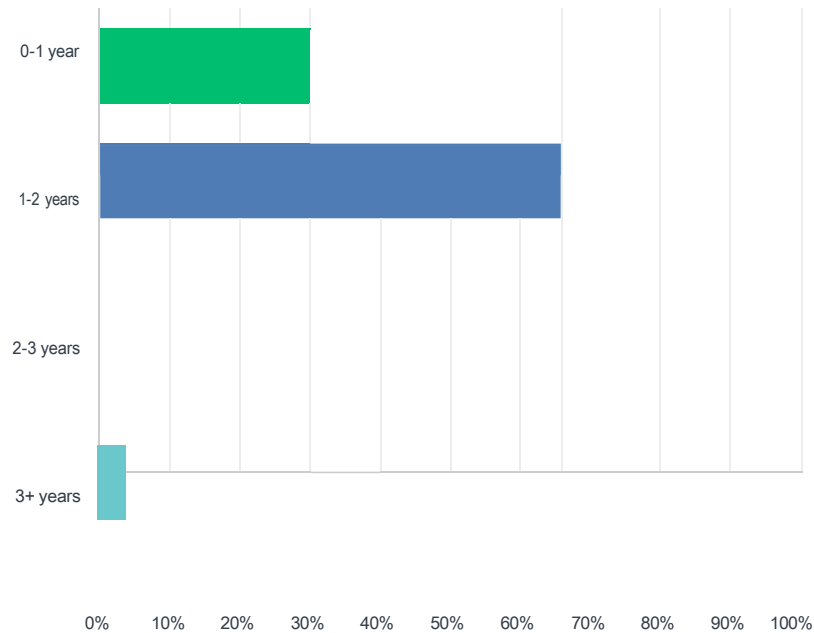


ANSWER CHOICES	RESPONSES	
Yes	4.17%	1
No	95.83%	23
TOTAL		24

#	IF YES, WHAT WERE THE CIRCUMSTANCES SURROUNDING THE INCIDENT?	DATE
1	SOMETIMES WE HAVE TO WAIT AT A FIRE UNTIL SOMEONE WITH EXPERIENCE ARRIVES TO MENTOR SAID EMPLOYEE	6/27/2022 10:27 AM
2	Limited staffing and several fires in the area. Although he wasn't by himself long, And I had confidence in the operator as he's proven himself on fire's in the past.	6/17/2022 8:05 AM
3	Not allowed. Wait time is increased to wait on an experienced tech.	6/15/2022 11:50 AM
4	Not that I am aware of.	6/15/2022 11:22 AM

Q2 Since, July 1, 2019, what is the average time span for a Forest Technician I to become checked off as having no restrictions (from hire to no restrictions on the "Personnel Available for Dispatch" form)?

Answered: 23 Skipped: 1



ANSWER CHOICES	RESPONSES	
0-1 year	30.43%	7
1-2 years	65.22%	15
2-3 years	0.00%	0
3+ years	4.35%	1
TOTAL		23

### Q3 What is your current criteria for checking a new Forest Technician I off as having no restrictions?

Answered: 22 Skipped: 2

#	RESPONSES	DATE
1	Comfort level of FMO after observing on wildfires and prescribe burning.	6/30/2022 8:57 AM
2	INPUT FROM EXPERIENCED OPERATORS AND MYSELF. ALSO HOW THE TECH FEELS ABOUT HIS RESPONSIBILITIES ON THE FIRE LINE	6/27/2022 10:27 AM
3	I have not had a new tech.	6/17/2022 9:49 AM
4	When the Technician can respond to fires and make their own decisions regarding attacking the fire, while also operating the equipment in a safe and effective manner.	6/17/2022 8:46 AM
5	Starting with the new employee check off, then experience the tech has previously and also how much they've gained since they joined, then sitting down with them and feeling out how they feel about going to fires by themselves.	6/17/2022 8:05 AM
6	Safe and efficient loading and unloading Fire awareness Solid fire attack	6/16/2022 1:01 PM
7	Filling out the assigned heavy equipment skill book, and getting signed off as complete by an outside supervisor.	6/16/2022 12:16 PM
8	test drive and load and unload dozer at least 10 fires and 6 months	6/15/2022 9:33 PM
9	If they feel confident enough with their abilities, and have been to enough fires that I feel confident in their abilities to complete the task	6/15/2022 6:46 PM
10	Have not had a new employee in last 5 years	6/15/2022 4:10 PM
11	1year plus multiple fires, multiple RX burns. Fire school and checked off by ARF	6/15/2022 11:50 AM
12	Be proficient with the dozer. Make sure that they understand what the fire is going to do.	6/15/2022 11:46 AM
13	Basically load and unload safely. Talking with FMO to get a feel of the experience level of the forest tech 1.	6/15/2022 11:22 AM
14	1.Demonstrating proficiency in the operation of the machine. 2. Demonstrating proficiency and good judgement in tactics. 3. Demonstrating the ability to recognize and react to changes in fire behavior and weather changes. 4. Consistently uses safety practices. 5. The consensus of myself and senior operators that have been observing, feel the new operator has gained and uses knowledge sufficient for them to safely and effectively perform their duty without direct supervision.	6/15/2022 10:59 AM
15	Can see confidence in person of what they are doing and doing it like 2nd nature.	6/9/2022 12:48 PM
16	proficiency & decision making	6/8/2022 1:39 PM
17	After enough fire experience and comfort on the dozer,plus some seat time	6/3/2022 4:26 PM
18	Fires in terms of terrain, fire activity and numbers, amount of services performed, and completion of equipment inspections and exercising	6/2/2022 11:21 AM
19	The task book check off and some will catch on quicker than others.	6/2/2022 10:31 AM
20	The FT I needs to be competent in both fire ground operations and equipment. The FMO needs to feel the same. It's more than a check list.	6/2/2022 6:17 AM
21	How they operate fire plow on fires, firebreaks, and control burns and also base it on the amount of fires they go to and type of fires.	6/1/2022 3:29 PM
22	1)Must have passed the "James Brunson Tests". 2)Must be comfortable giving sizeup and fire reports. 3)Must demonstrate awareness of current fire behavior, and make good decisions independently on suppression tactics and implementing those tactics. 4) Must have gone to multiple night fires.	6/1/2022 2:48 PM

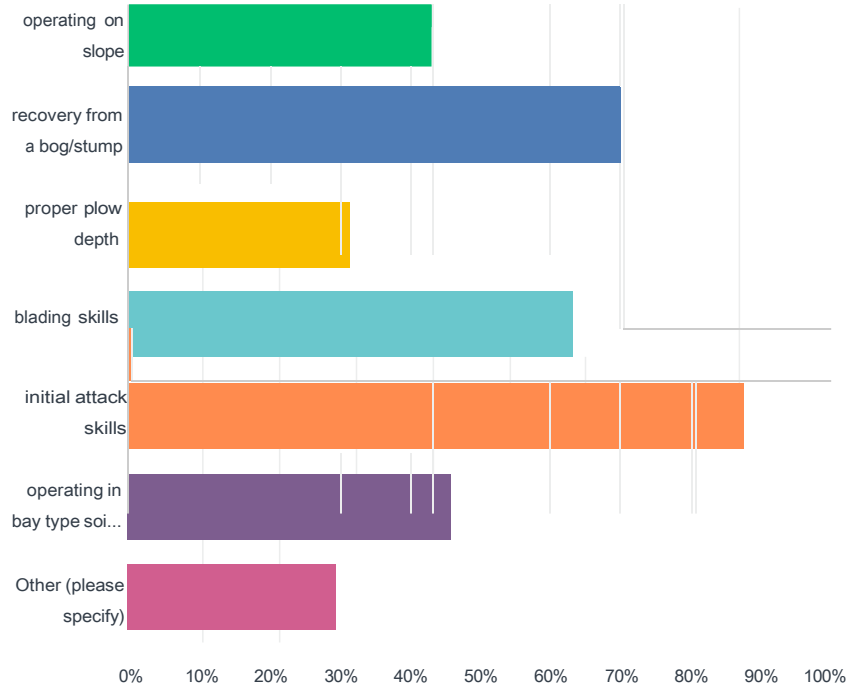
## Q4 How are you currently training a new employee to be proficient with their equipment?

Answered: 22 Skipped: 2

#	RESPONSES	DATE
1	Working with veteran operators and FMO on firebreak plowing and control burns.	6/30/2022 8:57 AM
2	LETTING THEM PLOW AS MANY BREAKS AS POSSIBLE WITH AN EXPERIENCED OPERATORS AND GOING TO EVERY CONTROLLED BURN TO ASSIST	6/27/2022 10:27 AM
3	I have not had a new employee.	6/17/2022 9:49 AM
4	Firebreaks and Prescribed burning. If they are "new," they do a majority of the firebreaks in the sector, usually under guidance of the supervisor or another experienced Technician. Newer Technicians are at every prescribed burn(on their duty days) until they are signed off, and they are accompanied by an experienced Technician.	6/17/2022 8:46 AM
5	starting with the basics of dozer operation on flat ground, getting familiar with the machine operation, then having the operator follow experienced operators around in the woods, lead the experienced operator through the woods, working through things bogged tractor, flipped plow, steep terrain.	6/17/2022 8:05 AM
6	Teach them proper fundamentals and watch for proper technique	6/16/2022 1:01 PM
7	Assigning them to a seasoned tractor operator, and completing in the field training on wildfires, firebreak construction, and exercise time.	6/16/2022 12:16 PM
8	giving them opportunity to cross train with other equipment and operators	6/15/2022 9:33 PM
9	Firebreaks and prescribe burning	6/15/2022 6:46 PM
10	Have not had a new employee in last 5 years	6/15/2022 4:10 PM
11	Constant service work with experienced tech as well as one on one time with FMO	6/15/2022 11:50 AM
12	Put them with a seasoned veteran and make sure that they get plenty of seat time.	6/15/2022 11:46 AM
13	Basically give them equipment and tell them to go run it at the residence. Also, make them do a lot of the firebreak request.	6/15/2022 11:22 AM
14	New operators are currently being dispatched to as many fires as possible. This gives them a range of fire sizes and intensities. It also allows new operators to work under the supervision of more than one senior operator or FMO, which I believe gives them a broader knowledge base to build their skills from.	6/15/2022 10:59 AM
15	Fire breaks and running old lines to just freshen up on WMA	6/9/2022 12:48 PM
16	utilizing all available opportunities (fb, rx, exercise, fire,) & exposure to current wardens. Talk through the correct & incorrect process the new operator(s) actions	6/8/2022 1:39 PM
17	Exercising their equipment every week and spending time with them on prescribed burns and fire break plowing	6/3/2022 4:26 PM
18	They go to fire with another operator first as a tag along, and then transition into primary unit. I observe services work, and follow up with experienced operators about employees performance.	6/2/2022 11:21 AM
19	Trying to get them as much seat time as possible.	6/2/2022 10:31 AM
20	Seat time, seat time, and more seat time. I try to use them on all firebreak and rx request. Put them with a veteran FT for more of the operational aspects, the do's and don'ts.	6/2/2022 6:17 AM
21	Myself or the other operators give advice on our past experiences, on the job training ,and keep their equipment inspected and ready to go.	6/1/2022 3:29 PM
22	Send them to as many firebreaks, controlled burns, and wildfires as possible. Pair them with multiple more experienced techs. Offer as many training opportunities as possible.	

## Q5 What aspects of tractor plow operation training would be the most beneficial for an employee with 0-3 year's experience?

Answered: 24 Skipped: 0



ANSWER CHOICES	RESPONSES	
operating on slope	45.83%	11
recovery from a bog/stump	70.83%	17
proper plow depth	29.17%	7
blading skills	62.50%	15
initial attack skills	87.50%	21
operating in bay type soils with root mat	45.83%	11
Other (please specify)	29.17%	7

#	OTHER (PLEASE SPECIFY)	DATE
1	All of the above? If I had to pick one it would be basic initial attack and when to call for additional help.	6/17/2022 8:05 AM
2	Fire activity	6/16/2022 1:01 PM
3	Pulling out equipment, proper attachment points.	6/15/2022 11:22 AM
4	I feel that new operator training should initially be focused on the most predominant terrain and skills needed in the area where they are most likely to respond	6/15/2022 10:59 AM
5	Using tree root to go through river swamp	6/9/2022 12:48 PM
6	Experience in all these categories	6/3/2022 4:26 PM
7	Equipment Inspection overview and maintenance procedures	6/2/2022 11:21 AM

## Q6 What other issues do you face training new dozer operators?

Answered: 19 Skipped: 5

#	RESPONSES	DATE
1	Low fire occurrence, having enough fires for them to go to	6/30/2022 8:57 AM
2	AVAILABILITY OF EXPERIENCED OPERATORS TO HELP MENTOR DURING EXTENDED PERIODS OF FIRE	6/27/2022 10:27 AM
3	I have not had to train any new operators. But, i would say just spending time on the equipment to be familiar with it.	6/17/2022 9:49 AM
4	Opportunity and time, we don't always have the extra time to give them without having the pressure to do other things at the same time.	6/17/2022 8:05 AM
5	Sometimes lack of actual fire	6/16/2022 1:01 PM
6	Lack or unwillingness to train a new operator by seasoned operators.	6/16/2022 12:16 PM
7	not being able to actually be in the tractor with them	6/15/2022 9:33 PM
8	According to the year, dry or wet will determine the number of actual fires they go to.	6/15/2022 4:10 PM
9	Few other than not enough techs.	6/15/2022 11:50 AM
10	Getting them to understand the importance of knowing ecru aspect of their dozer and the limitations	6/15/2022 11:46 AM
11	I would say time management. We have to many FMO's how don't spend the proper amount of time with the forest tech 1.	6/15/2022 11:22 AM
12	Few opportunities to effectively train outside of live fire situations. No structured operator training available	6/15/2022 10:59 AM
13	General mechanic	6/9/2022 12:48 PM
14	limited opportunity due to scheduling/fire occurrence	6/8/2022 1:39 PM
15	Learning how to feel the machine	6/3/2022 4:26 PM
16	Having them time on other equipment to cross train is sometimes difficult	6/2/2022 11:21 AM
17	New operators are not staying. They are seeking better employment.	6/2/2022 10:31 AM
18	As an FMO, I myself have never officially been trained on a dozer. I teach them what I think I know. We basically give them a set of keys and say good luck.	6/2/2022 6:17 AM
19	My biggest issue is the operator getting CDL and having wildfires or control burns for them learn the on job training of course the weather has lot to do with it.	6/1/2022 3:29 PM



**Q7 Would it be more beneficial to have a longer block of training such as a weeklong class in one area or split it up over one to two months in two-to-three-day classes in different regions? Please explain your answer.**

Answered: 23 Skipped: 1

#	RESPONSES	DATE
1	BOTH. Have an initial weeklong class for basics. After that have 2-3 day classes in each region for a variety of terrain and challenges.	6/30/2022 8:57 AM
2	ONE LONG PERIOD DURING THEIR TRAINING ESPECIALLY FOCUSED ON THEIR REGION	6/27/2022 10:27 AM
3	Weeklong class that way they can actually have time on the equipment.	6/17/2022 9:49 AM
4	Different regions would be best, operators can learn on varying terrain.	6/17/2022 8:46 AM
5	I would love to see this come about in either fashion, I see it as beneficial to the operator, the FMO/Forester, and the agency.	6/17/2022 8:05 AM
6	No It is a real world application	6/16/2022 1:01 PM
7	Long block, get in the class, get the hands on experience, and get the class over with. Don't draw it out and restrict the technician schedules longer than necessary.	6/16/2022 12:16 PM
8	2-3 day, week long usually has too much filler and not enough meat	6/15/2022 9:33 PM
9	Split up. they would get to see different environments to hone their skills	6/15/2022 6:46 PM
10	Split it up where you are not rushed to get all the info covered. Hands on training is the best for this. I think they should go to all 3 regions for training. They are all different locals.	6/15/2022 4:10 PM
11	2-3 days hands on preferred.	6/15/2022 11:50 AM
12	2 to 3 day in different revving. You won't have to put them up for overnight stay. They can train in the environment that will be working in and they can be taught a little bit then train on it for a few weeks before being taught more. T that way is not crammed in and forgot.	6/15/2022 11:46 AM
13	Yes, this would be great to show the operator how something is supposed to be done. However there needs to be continued training so they do not forget.	6/15/2022 11:22 AM
14	I feel that a 2 to 3 day class structured specifically for different regions would be very beneficial. Ex: 2 to 3 days for bay specific training, 2 to 3 days for mountain specific training. This would allow them to focus on one specific set of challenges at a time rather than having multiple, very different, things thrown at them at once	6/15/2022 10:59 AM
15	Split different ares. Can't see it all in one place	6/9/2022 12:48 PM
16	weeklong for the 1st week followed by 2-3 days in respected region	6/8/2022 1:39 PM
17	Yes to help get more familiar with our needs of a dozer operator	6/3/2022 4:26 PM
18	I would do blocks of time so they can go back and practice skills and then come back and build on that training	6/2/2022 11:21 AM
19	Two to three days classes in the regions would be better. They would not have to travel as far and they would see more of there local terrain.	6/2/2022 10:31 AM
20	It doesn't matter as long as it's done. There again, we teach them how to ID a tree, how to measure tree's, land nav and so on. But we throw them a set of keys to a \$200,000 piece of equipment and say good luck.	6/2/2022 6:17 AM
21	Split it up 2 to 3 day classes in different regions so they could get training in different soils and slopes and timber types	6/1/2022 3:29 PM

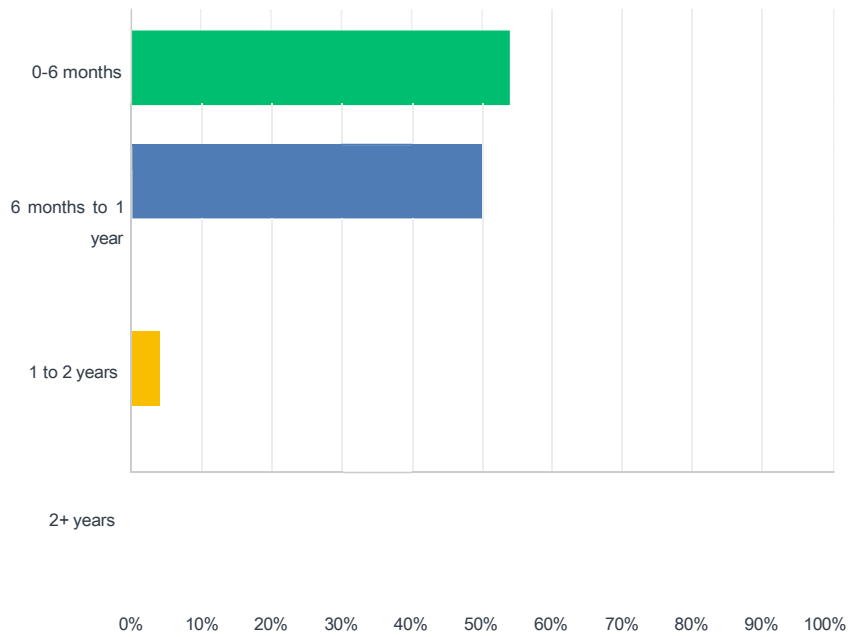
22	Splitting it up into shorter classes would be my first pick. Keeping the training in shorter blocks you could concentrate on fewer skills at a time, and give them time to go home and practice the skills. I would think it would also keep them excited and motivated to learn the next block of skills.	6/1/2022 2:48 PM
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23	Weeklong class. Get them in and trained then send them back to see how much information was retained, or what skills still need work.	6/1/2022 1:38 PM
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## Q8 How soon should a new hire be required to attend this training?

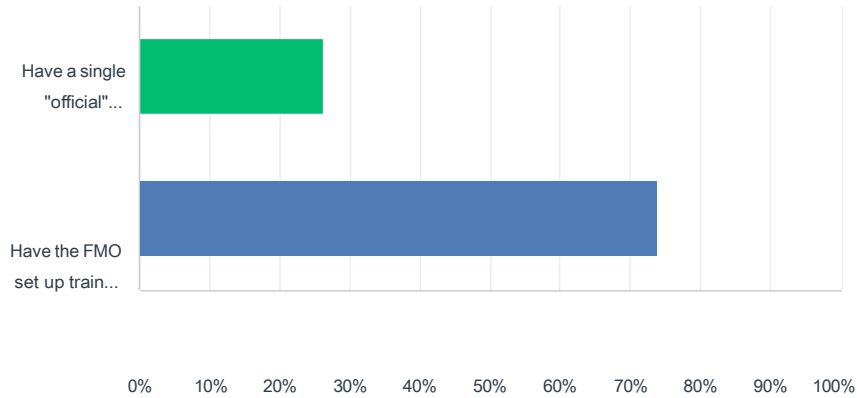
Answered: 24 Skipped: 0



ANSWER CHOICES	RESPONSES	
0-6 months	54.17%	13
6 months to 1 year	50.00%	12
1 to 2 years	4.17%	1
2+ years	0.00%	0
Total Respondents: 24		

## Q9 Some sectors have an "unofficial" mentor that trains a new hire. What is your preferred method?

Answered: 19 Skipped: 5

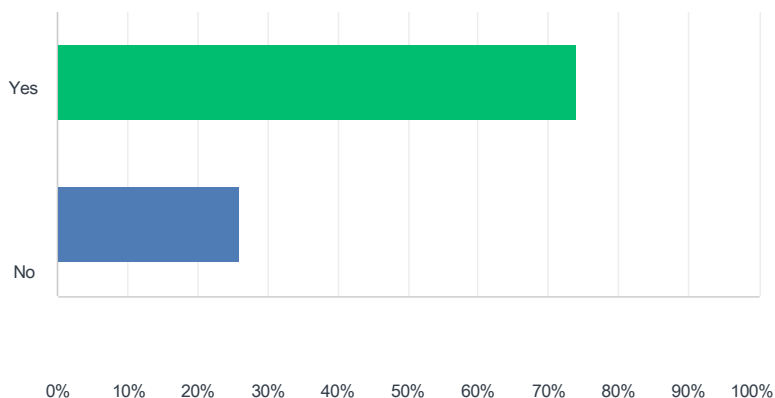


ANSWER CHOICES	RESPONSES	
Have a single "official" mentor responsible for the new hire's dozer training.	26.32%	5
Have the FMO set up training with experienced operators with no actual mentor.	73.68%	14
TOTAL		19

#	OR PROVIDE ANOTHER OPTION	DATE
1	Combination of Both	6/30/2022 8:57 AM
2	We do a little bit of both. Usually the new Tech is mentored by the closest experienced Tech, while they still receive guidance from other Techs when they see them.	6/17/2022 8:46 AM
3	I don't have one set Mentor because I feel it is important to get as much knowledge from everyone and thus build out a round experience because it's different from one area of the sector to the other.	6/17/2022 8:05 AM
4	everybody fights fire different. let them see how more than one person does it. then they could chose what way suits them	6/15/2022 9:33 PM
5	I would think you could do both options.	6/15/2022 4:10 PM
6	actually both. However, the fmo needs the experience to pass along	6/8/2022 1:39 PM
7	Have all the experienced operators to share their experiences with the new hire	6/3/2022 4:26 PM
8	Develop an official course and let it replace a nonsense Forestry Tech class.	6/2/2022 6:17 AM
9	I generally like to keep them with one main mentor, but also pair them with other operators so that they get to get on more fires sooner.	6/1/2022 2:48 PM

## Q10 Would you be able to serve as or provide an instructor for a section of the training?

Answered: 23 Skipped: 1



ANSWER CHOICES	RESPONSES
	73.91% 17
	26.09% 6

TOTAL	23
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FEEL FREE TO PROVIDE A NAME AND WHAT ASPECT OF DOZER OPERATION THAT YOU/THEY COULD TEACH.	DATE
Lowell Parnell, Scott Ulmer, Pete Stuckey	6/30/2022 8:57 AM
Wade Truesdale - Initial Attack Methods, Recovery/Flipping Plows	6/17/2022 8:46 AM
Colton Webb, I don't mind filling in anywhere I can be useful.	6/17/2022 8:05 AM
any area that i am needed. i was a plow operator for 17 years	6/15/2022 9:33 PM
Nelson Wilson. Ability and limitations of equipment along with any other topics you want to have direct experienced input from.	6/15/2022 11:50 AM
Any	6/15/2022 11:46 AM
I am not or have not operated a tractor plow unit on a fire.	6/15/2022 11:22 AM
Operating in bays Basic tactics	6/15/2022 10:59 AM
Steve Jordan. Bay stuff	6/9/2022 12:48 PM
all (piedmont)	6/8/2022 1:39 PM
I've got over 23 yrs of operating experience in all terrains,slopes and soils	6/3/2022 4:26 PM
Shawn Feldner, any portion that I feel proficient in.	6/2/2022 6:17 AM
Ron Clark, Initial Attack	6/1/2022 3:29 PM

## Q11 Are there any other considerations that have not been mentioned in the above questions for a new dozer operator training course?

Answered: 12 Skipped: 12

#	RESPONSES	DATE
1	CDL takes so long that it can affect when they would be able to attend training or begin fighting fires	6/30/2022 8:57 AM
2	One thing I would like covered in future hands-on training is a discussion about refusing a risk, An how to correctly do so.	6/17/2022 8:05 AM
3	Before we start training new operators, older operators should get a refresher. That way they could help teach or mentor the new operator in the field once they get out of training. We haven't offered a tradition training course in some time, so older operators have learned where they could and when the could. Each operator does not do things the same way. One standard method should be taught and known to all operators. Even if they choose not use the standard in the field.	6/16/2022 12:16 PM
4	I think they should spend a week in each region of training. You could time it to help with control burns or wildfires also. It would be costly but they would get the feel of the whole state.	6/15/2022 4:10 PM
5	As before safety of personnel and equipment is a paramount concern. Too much broken items from "damn the torpedoes " attitudes. Fix or weed them out early.	6/15/2022 11:50 AM
6	Not that I can think of	6/15/2022 11:46 AM
7	None that I can think of at the moment, but I'm sure there is.	6/15/2022 11:22 AM
8	Operator safety most definitely needs to be included. Not just use of safety equipment but general safety on a fire scene	6/15/2022 10:59 AM
9	No	6/9/2022 12:48 PM
10	there is a difference between an instructor & a teacher if the warden does not learn...	6/8/2022 1:39 PM
11	Having a set standard o. Equipment when purchasing	6/3/2022 4:26 PM
12	We need classes of safety of chains, winches, cables, snatch blocks and recovery points.	6/2/2022 11:21 AM

## **Appendix C**

### **Upstate Dozer Training AAR Summary**

#### **1. What went well and worked during this training?**

- Good to have an experienced operator to show that something was possible and as help pulling a dozer that was in trouble.
- Having a mechanic on site.
- Having a good cadre and experienced operators. Even though there were times during the training that seemed intimidating, we knew that we were in good hands with the supervisors we had.
- Small group allowed for better flow and completion of the various training exercises.
- Enjoyed being taken out your comfort zone.
- Liked Night OPS.
- Liked the Swamper work.
- Liked that night operations were secret.

#### **2. What needs improving and/or deleted?**

- Have two stations running at the same time to allow for a smaller class size at each station and allow more time individually. Then the students would switch in the afternoon.
- I think each operator needs their own tractor. That would give each operator more seat time during the training.
- With 5 or 6 people to a class splitting into two different groups to do the different scenarios to further reduce the amount of stop and go between exercises. (One group does mountain training while the other does stump and bog training to allow for more time with each).
- Keep class at 4 or 8 students.
- More one on one time.
- Have a good water bar built for the students to see at the start of the BMP section.

#### **3. What needs to be added?**

- As more days are adding, separate them by location and date. This will give the students time to digest what they have learned and not get overwhelmed.
- Have students arrive around lunch instead of supper the first day. This would allow time for a good briefing (go over CTR's and Shift Tickets). Students could take some time to get to know each other and look over each other's equipment.

- I would add one more day to the training. Maybe arrive early around lunch time Sunday and stay till Wednesday around lunch. This would give the operator time to get familiar with operating tractors that they have never been on.
- How to find unloading spot.
- Arrival, think we should bump the time back to 1100-1200, to allow time for the operators to have a briefing to discuss the activities of the training and also the proper way to refuse a risk due to safety concern, and also sometime to become familiar with different pieces of equipment, about 45mins to run each of the different machines.
- I'd really like to add a short list IMT exercise to this, where we do incident check-in, CRT, Shift tickets, and Demob, if the training stays smaller we could coordinate with the region office staff to help handle a check-in and demob scenario? And a LOGS person handling the food and basecamp stuff. IT would have helped me in LOGS if I was able to learn the ropes gently rather than on a large-scale incident.
- COMMO plan: tac channels for the instructors to work with each student if need be one on one probably should be laid out ahead of the exercise, and also in the event of an emergency discuss the process of calling CODE RED.

#### **4. How were the logistics (food and housing)?**

- Need to have LOGS involved so the IC does not have to leave to get food.
- Have the agency support by providing food in locations where restaurants are not available.
- We should grill out one night.
- Add salad to pizza.
- Logs: provided class size doesn't change it would be ideal to have someone to solely handle the meals, drinks, snacks, coffee onsite basecamp.

#### **5. How was the time frame allowed for the training?**

- The time frame worked well. I feel like we weren't rushed through any one part of the training.
- Adding an additional 15mins to each of the scenario schedules (?)

#### **6. Open questions/comments.**

- Do we want to include tactics or make the training strictly operations of the dozer?
- Observe work/rest guidelines on allowing students to drive home after demobilization.
- I think this training would work well in different parts of the state. Maybe our next training could be near the coast.



- I might would do the training at a different time of the year. Maybe during late fall when it's a little cooler outside.
- I felt it was conducted safely but would like to discuss some safety ideas with the cadre for future classes. Possibly using flagging to mark off areas during operation.

## **Black River Unit Dozer Training AAR Summary**

### **1. What went well and worked during this training?**

- Hands on training and strong safety protocol with a safety message at the start and it being reinforced throughout the exercise
- Everyone was engaged in a positive way.
- Cadre were operators who could also explain things in a way that the students understood.
- Briefing was well done.

### **2. What needs improving and/or deleted?**

- Maybe have a “lifeguard” with a vest, a radio, and a whistle at each station
- Setting expectations for everyone in attendance on who talks with the students at what times. This did seem to correct itself as the day went along, but at the beginning too many people were giving directions.
- I hope this becomes regular training for new employees.
- I would have liked more time with the plowing and blading. Basically, more time working on putting in lines.

### **3. What needs to be added?**

- Work with the forester, mechanics, and FMOs to make sure they know the same skills
- Have the training in the spring following fire season or in early fall
- Adding a full course with students getting exposure to all areas of the state
- AAR’s after each section are usual. Informal conversations worked better in this case.
- A mechanic needs to be on site.

### **4. How were the logistics (food and housing)?**

- All were good. Medical was properly addressed which was good.
- Great. However, the agency needs to fully support this training by paying for food, drinks, and hotels and not make the cadre pay.
- The different stations were well spaced out and the tents and coolers were awesome.
- It was nice to eat on location and get right back to work.

### **5. How was the time frame allowed for the training?**

- A few stations were cut a little (short) but looked good overall. It will be important for each student to work both as an operator and a swamper.
- I think the class should be made into at least a two-day class to offer more time at each station.

- Very relaxed and positive learning environment. Very productive day in the woods.
- I would love to see this extended to a two-to-three day training session.

**6. Open questions/comments.**

- I see several classes that build on each other. A beginner, a first and second advanced class, a mountain class, and a bay class.
- I believe the final structure needs to be one section in the morning and one in the afternoon.
- It is a very good start towards building a statewide dozer training program.
- Looking forward to more in the field training.