



# Fire Protection Training

Procedures Handbook 4300

MOBILE EQUIPMENT

**TOPIC/EQUIPMENT:** Adjust S-Cam Air Brakes - Type 30/30 Prop or Engine With Assistant

**CATEGORY:** Performance Examination

**POINTS POSSIBLE:** 100

**TIME ALLOWED:** 1 Minute 20 Seconds

**BEHAVIORAL OBJECTIVE:**

*Condition:* An engine and assistant with an S-Cam Type 30/30 air brake system chocked or on jack stand, or an S-Cam air brake adjustment prop, an air supply, a helmet and goggles, a  $\frac{9}{16}$ " box end wrench, a ruler, a marking device and a creeper

*Behavior:* The student will properly adjust an S-Cam Type 30/30 air brakes system

*Standard:* With a minimum of 70% accuracy, within 1 minute and 20 seconds according to the job breakdown

- MATERIALS NEEDED:**
- One (1) Brake Prop or engine with S-Cam Air Brakes type 30/30
  - One (1) Score sheet per student
  - One (1) Stop watch
  - One (1)  $\frac{9}{16}$ " Box End wrench
  - One (1) Ruler
  - One (1) Marking device
  - One (1) Compressed air supply (if prop is used)
  - One (1) Compressed air hose (if prop is used)
  - One (1) Assistant (if engine is used)
  - One (1) Helmet (if engine is used)
  - One (1) Pair of safety goggles (if engine is used)
  - Two (2) Chock blocks (if engine is used)
  - One (1) Creeper

4313.13.1



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MOBILE EQUIPMENT

## ***PROCEDURES:***

The examination will begin when the student either verbally or by conduct performs any step of the examination. The examination will end when the student either verbally or by conduct indicates the examination has been completed.

## ***SCORING:***

Points will be deducted for each step omitted, performed improperly, or performed out of sequence. Lettered procedures may be performed in any sequence within the numbered step without a loss of points. If proper adjustment has not been achieved the student will have to return to step 5. Additional points will be deducted for any repeated steps performed improperly.

## ***SPECIAL NOTES:***

Before the evolution begins the student will be allowed to ask any clarifying questions and inspect the equipment. Once the examination begins the evaluator shall not answer any questions or intercede in any way, unless safety violations occur that would injure personnel or damage equipment.

## **SPECIAL INSTRUCTIONS:**

1. Proper adjustment is light drag of the brake shoe on the drum.
2. If engine and assistant is used, assistant is available by verbal command to apply and release spring brake.
3. If engine is used without an assistant, use the proper performance exam.
4. Throw greater than 1 ½' or less than ¾' is out of service by CDF Standard.
5. If proper adjustment has not been achieved after step 9, the student will have to return to step 5. Points can be deducted more than once if steps 5 through 9 are done improperly or out of sequence. Each time a student improperly performs the same step, add a circle to the right of the points column to indicate additional points to be deducted.

## **BEFORE STUDENT ENTERS THE EXAMINATION SITE**

1. Hook up prop to air, or start engine and build up maximum air pressure.

4313.13.1



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2. Evaluator to adjust prop or engine in order to determine proper slack adjustment travel of brake.
3. Adjust prop or brake so slack adjuster travel is greater than 1 ½.
4. Clean all chalk marks off push rod.
5. Leave prop or engine with spring brake applied.
6. If engine is used, position vehicle and chock according to CDF policy, or place on jack stands.

## **AFTER STUDENT ENTERS THE EXAMINATION SITE:**

1. Student will don helmet and goggles if engine is used.
2. Point out all tools and equipment to be utilized in exam.

4313.13.1

# Score Sheet

ADJUST (S-CAM) AIR BRAKE - TYPE 30/30 PROP  
- ENGINE WITH ASSISTANT

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TEST # \_\_\_\_\_ RETEST # \_\_\_\_\_ UNIT # \_\_\_\_\_

STUDENT'S NAME \_\_\_\_\_

EVALUATOR'S NAME \_\_\_\_\_

## START TIME

	<u>POINTS</u>
1. Release spring brake	<u>10</u>
2. Mark push rod for measurement	<u>10</u>
3. Apply the spring brake	<u>10</u>
4. Measure the push rod travel	<u>10</u>
5. Release spring brake	<u>10</u>
6. Push wrench down and depress slack adjuster locking ring sleeve to release adjusting nut	<u>10</u>
7. Turn adjusting nut in the direction to shorten push rod throw until nut no longer turns or the shoes are making contact with the drum	<u>10</u>
8. Turn adjusting nut in opposite direction $\frac{1}{4}$ turn or until the shoe is slightly rubbing on the drum	<u>10</u>
9. Remove the $\frac{9}{16}$ " box end wrench and allow the locking sleeve to extend. If the locking sleeve remains depressed, turn adjusting nut back and forth slightly until locking sleeve extends fully	<u>10</u>
10. Apply spring brake and remeasure the push rod throw (throw must be less than $1 \frac{1}{2}$ and greater than $\frac{3}{4}$ )	<u>10</u>

4313.13.1

