



Fire Protection Training

Procedures Handbook 4300

MOBILE EQUIPMENT

TOPIC: Snatch Block Operations

TIME FRAME: 30 Minutes

LEVEL OF INSTRUCTION:

BEHAVIORAL OBJECTIVE:

Condition: A written quiz

Behavior: Student will be able to list the terminology, basic uses and safety concerns associated with a snatch block.

Standard: With a minimum of 70% accuracy

MATERIALS NEEDED:

- Appropriate visual aids
- Audio visual equipment
- Vehicle with a winch
- Tow chain with hooks at each end
- Snatch block
- Solid anchor

REFERENCES: None

PREPARATION: On vehicles equipped with a winch, a snatch block is frequently an integral part of winching operations. Its proper use can increase the efficiency of the winch substantially, decrease the strain on a winching cable and prevent disastrous accidents.



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SNATCH BLOCK OPERATIONS

PRESENTATION	APPLICATION
<p>I. TERMINOLOGY</p> <ul style="list-style-type: none">A. HookB. ClevisC. BodyD. SheaveE. PinF. Cotter KeyG. Lock <p>II. FUNCTIONS</p> <ul style="list-style-type: none">A. To Change Pulling Angle<ul style="list-style-type: none">1. In situations where you are unable to pull in a straight line, a snatch block can be set up to provide a straighter pull2. Do not winch at more than 15 degree angle from center of drumB. To Gain Mechanical Advantage<ul style="list-style-type: none">1. When one snatch block is used (cable doubled)<ul style="list-style-type: none">a. Only half the winch power is neededb. Can pull twice the load at same powerc. Strain on cable halved	<p>Information sheet #1</p> <p>Information sheet #2</p> <p>Information sheet #3</p>



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<ul style="list-style-type: none">d. Speed that object is pulled toward winch is halved <p>2. When two snatch blocks are used, advantages increase three-fold</p> <ul style="list-style-type: none">a. One third the winch power is neededb. Can pull three times the load at same powerc. Strain on cable is one thirdd. Speed that object is moved is one third	
<p>III. SETTING UP FOR SNATCH BLOCK OPERATION</p> <p>A. Wrap Tow Chain Around an Immovable object/anchor</p> <ul style="list-style-type: none">1. Do not use:<ul style="list-style-type: none">a. Telephone polesb. Power polesc. Dead or diseased trees2. If possible, the chain should be wrapped around the circumference of the anchoring object twice3. Do not wrap the wire rope or winch cable directly around the anchoring object4. Position the tow chain as low as possible on the anchoring object to gain leverage and to take advantage of the strongest part of the anchoring object	<p>Information sheets #4 and #5</p>



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<ul style="list-style-type: none">1. A circle which extends<ul style="list-style-type: none">a. From the winch and/or the towed objectb. Outward the length of the extended winch cablec. Immediately behind winched vehicle or object2. Cable failure, while under strain, may cause a violent whipping action across this entire arcC. Do Not Straddle or Step Over Winch Cable During Winching Operations<ul style="list-style-type: none">1. Slack cable may suddenly have a load applied and be drawn tautD. Inspect Snatch Block Components Prior to Use<ul style="list-style-type: none">1. Hook2. Clevis3. Pin4. Cotter key5. LockE. Do Not Exceed Rated Capacity of the Snatch Block or Winch Cable<ul style="list-style-type: none">1. Capacity affected by<ul style="list-style-type: none">a. Weight of loadb. Speed with which load is applied2. A "safe" load may become "unsafe" during the operation i.e., load may bog down in sand or hang up unexpectedly on an obstacle	



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<p>3. Snatch block is designed so that pin fails prior to other components when placed in an overload condition</p> <p>V. MAINTENANCE</p> <p>A. Inspect For Damage</p> <ol style="list-style-type: none">1. Cracks2. Corrosion3. Burrs4. Rust5. Wear6. Heat damage (discoloration)7. Bent or stretched <p>B. Lubricate Moving Parts</p> <p>C. Keep Clean and Rust Free</p> <p>D. Don't Paint Hook</p> <ol style="list-style-type: none">1. In order to see cracks if they start to develop <p>E. Repair or Replace Any Damaged Components</p>	<p>Why would you not paint the hook?</p>



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SNATCH BLOCK OPERATIONS

SUMMARY:

A snatch block is an under-utilized tool which can dramatically increase the pulling capacity of a winch. If used properly it can be of significant benefit. If used improperly the potential for injury is great.

EVALUATION:

A written quiz.

ASSIGNMENT:

To be determined by instructor(s).