Student Workbook

Module - The Mighty Engine

Overview

Goal: Students should be able identify engine types and capabilities upon arrival on scene. Students will also gain an understanding of how to deploy and work with them effectively.

Exercise

Read the following scenarios and choose the type of engine(s) that would be the most effective resource for that scenario. See the engine types at the end of the module for reference.

1) Great Basin Grass Fire
Size: 3,000 AC **Location: Pershing County, NV**
Fuel Type: cured grass **Access: gravel roads**
Water Source: reservoir (30 miles away)
Engine Type (circle best option(s)): 1 / 2 / 3 / 4 / 5 / 6 / 7

Justification:
_____
_____
_____
_____

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2) Structure Protection – Wildland Urban Interface
Size: 700 AC **Location: Larimer County, CO**
Fuel Type: timber, grass **Access: mix of paved county and gravel roads**
Water Source: limited hydrants, stream (6 miles away)
Engine Type (circle best option(s)): 1 / 2 / 3 / 4 / 5 / 6 / 7

Justification:
_____
_____
_____
_____

3) Southeast Area Initial Attack
Size: 1/2 AC **Location: Caldwell County, NC**
Fuel Type: hardwood litter, debris **Access: forest road**
Water Source: standing water nearby
Engine Type (circle best option(s)): 1 / 2 / 3 / 4 / 5 / 6 / 7

Justification:
_____
_____
_____
_____

4) Pacific Northwest Timber Fire
Size: 1 AC **Location: Clallam County, WA**
Fuel Type: timber, grass **Access: windy mountain road**
Water Source: lake, 7 miles away
Engine Type (circle best option(s)): 1 / 2 / 3 / 4 / 5 / 6 / 7

Justification:
_____
_____
_____
_____

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Type 7 Engine
Min. Gallons: 50
Min. Flow: 10 GPM
Min. Pressure: 100 PSI
Min. Personnel: 2

Type 6 Engine
Min. Gallons: 150
Min. Flow: 30 GPM
Min. Pressure: 100 PSI
Min. Personnel: 2

Type 5 Engine
Min. Gallons: 400
Min. Flow: 50 GPM
in. Pressure:100 PSI
Min. Personnel: 2

Type 4 Engine
Min. Gallons: 750
Min. Flow: 50 GPM
Min. Pressure: 100 PSI
Min. Personnel: 2

Type 3 Engine
Min. Gallons: 500
Min. Flow: 150 GPM
in. Pressure:250 PSI
Min. Personnel: 3

Type 2 Engine
Min. Gallons: 400
Min. Flow: 250 GPM
Min. Pressure: 150 PSI
Min. Personnel: 3
Ladders: 48'

Type 1 Engine
Min. Gallons: 500
Min. Flow:1000 GPM
in. Pressure:150 PSI
Min. Personnel: 4
Ladders: 48'
Master Stream: 500 GPM

	Engine Type						
	Structure		Wildland				
Requirements	1	2	3	4	5	6	7
Tank minimum capacity (gal)	300	300	500	750	400	150	50
Pump minimum flow (gpm)	1000	500	150	50	50	50	10
@ rated pressure (psi)	150	150	250	100	100	100	100
Hose 2½"	1200	1000	-	-	-	-	-
1½"	500	500	1000	300	300	300	-
1"	-	-	500	300	300	300	200
Ladders per NFPA 1901	Yes	Yes	-	-	-	-	-
Master stream 500 gpm min.	Yes	-	-	-	-	-	-
Pump and roll	-	-	Yes	Yes	Yes	Yes	Yes
Maximum GVWR (lbs)	-	-	-	-	26,000	19,500	14,000
Personnel (min)	4	3	3	2	2	2	2

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