IN D1 Rope Ops/Tech
Outline

OVERVIEW

This class is designed to teach students how to affect a rope rescue, given a cache of equipment. The material is based on Indiana Firefighter Rope Rescue certification. You will be expected to read the book prior to class. The classroom session will concentrate on safety and material that cannot be covered on the training ground at the different skill stations. The rest of the information will be covered on the training ground. In essence, we are flipping the classroom to spend more time out in the field and less in front of a projector. You should be prepared to deal with the weather. If you already have the operations certification, you will be allowed to just attend the technician portion. If you can't keep up or need help refreshing, you will be asked to leave. If you want some refresher, you are encouraged to attend the operations portion. There are a lot of technical and dangerous skills that must be covered, so we won't have enough time if we must go back and cover something that was discussed in an earlier class. The operations portion will concentrate on slope evacuations and technician will go on from there.

REFERENCE MATERIAL (taken from State website)

ROPE RESCUE

1. NFPA 1006, 2013 Edition, Standard on Operations and Training for Technical search and Rescue Incidents
2. CMC Rope Rescue Manual 5th Edition (can be provided by district FF training)

PREREQUISISTES FOR IN FF CERTIFICATION (taken from State website)

(If you do not meet prereq's, you will not be able to take State test for certification. You will be allowed to attend class, but will receive a certificate of participation)

Technical Rescuer Awareness

- Hazardous Materials Awareness

Rope Rescuer Operations

- Technical Rescue Awareness

Rope Rescuer Technician

- Rope Rescuer Operations

PPE (to be provided by hosting departments)

Class III harness
Helmet with chinstrap
Long pants and long sleeve shirt
Boots with ankle support
You will be allowed to use your own equipment, but it must be inspected by district instructor.

EQUIPMENT (to be provided by hosting departments)

Rensselaer FD

TRAINING LOCATIONS

All classroom and training facilities will be at the R FD.

CLASS SCHEDULE

September 16, 17, 23, 24, 30 (8:00 am to 5:00 pm)

Lead Instructor
Fabian Martinez Jr
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Lead Evaluator
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1) INTRODUCTIONS (10 min)
    a) Who we are?
    b) Who are you?
    c) Paperwork (JPR's, Applications)
2) Safety Procedures (30 min)
    a) Safety considerations
    b) Fall protection - arrest vs restraint
    c) Edge protection
    d) Critical angles
3) Emergency Procedures – ROCK vs STOP vs FALLING!
4) NIMS (why do we need ICS? What is span of control? Unity of command?)
    a) IC (who has ICS 100, 200, 700, 800, 300, 400? Any others?)
    b) Other Positions ***O1, O22***
        i) Rescue
        ii) Back up
        iii) Edge Master
        iv) Main
        v) Belay
        vi) Haul Team
        vii) Safety
5) Harnesses (30 min) ***O2***
    a) Class I
    b) Class II
    c) Class III
    d) Victim Harness
    e) Check PPE – Helmet, Harness, Gloves, Boots
6) Standards ***O2***
    a) NFPA
    b) OSHA
    c) ANSI
7) Rope, Hardware and Webbing (60 min) ***O3***
    a) Inventory and uses
    b) Types – Static vs Dynamic and construction (kernmantle) (block creel)
    c) Maintenance
    d) Knots, Bends, and Hitches (2 hrs) ***O4***
        i) Inspection – How to?
        ii) Documentation – How to fill out log? (see RRM ropelog.pdf)
        iii) Edge Protection (#1 reason ropes fail)
        iv) Overhand Knot
        v) Half Hitch
        vi) Clove Hitch
        vii) Butterfly Knot
        viii) Bowline
        ix) Figure Eight Family
            (1) Simple
            (2) On a Bite
            (3) Follow Thru
            (4) On a Bend
        x) Double Fisherman's (Barrel) Knot
        xi) Prusik Hitch
        xii) Mariner's Knot (Load Releasing Knot)
        xiii) Water Knot

xiv) Hardware (60 min) Equipment Inventory ***O3***
(1) Inspection – How to?
(2) Carabineers
(3) Screw Links
(4) Pulleys
(5) Ascenders
(6) Swivels
(7) DCDs

9) Anchor Systems (60 min) ***O5, O6, O7***
a) Selecting an Anchor – single vs multiple vs dedicated
b) Anchor straps – no tri loading of carabineers
c) Tensionless Hitch – full strength, at least 4 wraps and diameter 8X rope
d) Wrap Three Pull Two
e) Multiple Anchor Point
i) Load sharing, self-equalizing
(1) With anchor plate
(2) Using just rope

10) Belay systems (90 min) ***O8, O9, O7, 10***
a) Dedicated Anchor
b) Life Line
c) Load Release System
i) CMC Mariner's hitch
ii) Radium release Hitch
d) Fall Arrest/Load Release Device
i) Münter Hitch (discuss only)
ii) Eight Plate (discuss only)
iii) Twin Prusik with prusik minding pulley and load release hitch
iv) Petzl ID *also does load release and lower*
v) 540 *also does load release*
vi) ASAP LOCK *also does load release*

11) Dry Walk Through of DCD's (4 hrs) (All done with feet on the ground) ***O11, O12, O7***
a) Lowering (*using device on self, going down a flight of stairs*)
i) Station 1 - Eight Plate use
ii) Station 2 - Brake Rack Use
iii) Station 3 - Petzl ID

12) Live DCD's from height (5 hours) ***O11, O12, O7***
a) Brake Rack
b) Petzl ID

13) Raising and lowering systems (2 hours) ***O13, O14, O7***
a) Creating MA
b) 4:1 (Block tackle or Piggyback System)
c) RPM
i) 1st on ground using 5 in hose as load
d) Haul Team
e) Safety's
f) After several evolutions show MPD

14) Slope Evacuation (4 hours) ***O18, O19, O20, O7***
a) Raising/lowering for slope evac (sim on stairs)
i) Raise using Z Drag (3:1 MA)
ii) Lower using Eight Plate
iii) Stokes basket for pt packaging

15) Putting Raising and Lowering to use on each other ***O21***
16) Pt. Packaging (120 min) (applying device, then put on rope)
    a) Pt stabilization (medical)
        i) CPR?
        ii) Emesis
        iii) Protect pt
    b) STOKES basket (full frame vs perimeter frame)
        i) Secure Upper Body
        ii) Secure Lower Body
        iii) Secure Entire Body
        iv) Bridle
        v) Haul Line
        vi) Safety Line
    c) SKED (*if there is time)*
        i) OSS
        ii) Vertical
        iii) Horizontal
    d) SpecPak (*if there is time)*
        i) Vertical
        ii) Horizontal
    e) Victim Harness
17) Managing a litter during lowering and raising (90 min) (*simulation)*
    a) Managing Reeve
    b) Managing pt airway
18) Descending a fixed high angle rope (60 min) ***T8***
    a) Eight Plate
    b) Petzl ID
    c) Brake Rack
19) Ascending a fixed high angle rope (2 hrs) ***T7***
    a) RAD
    b) Gibbs/Petzl hand ascenders with webbing
20) Lowering and Raising Each other (90 min)
    a) Brake Rack
    b) Petzl ID
    c) MPD
21) Litter Attendant down a wall (90 min) ***T4***
22) Pick Offs (90 min) ***T3***
    a) Pick off strap
    b) Aztek set of fours
    c) Self vs crew raising/lowering
23) Pick offs and working from heights ***T1, T2, T3***
24) Pick offs using FD aerials for grain bin emergencies
25) High-lines ***T5, T6***
    a) Set up
    b) Concerns – show load cell readings
26) Reeved high-lines
    a) English vs Norwegian vs Simple
27) Litter Attendant on High Lines ***T4***
28) Jammed Systems ***T9***
29) SKATE block (*if there is time)*
30) Passing knots through a rope rescue system (*if there is time*)
31) TEST OUT EVOLUTIONS
32) STATE TEST

OPERATIONS

O1. **Perform scene size up**
O2. **Inspect and Maintain PPE**
O3. **Inspect and Maintain Rescue Equipment**
O4. **Knots, Bends and Hitches**
O5. **Construct a Single Point Anchor**
O6. **Construct a Multiple- Point Anchor**
O7. **Conduct a system safety check**
O8. **Construct a belay system**
O9. **Operate a belay system**
O10. **Belay a falling load**
O11. **Construct a Fixed Rope System**
O12. **Construct a Lowering System**
O13. **Direct a High Angle Lowering System**
O14. **Construct a simple mechanical advantage system**
O15. **Direct a Simple Mechanical Advantage System**
O16. **Construct a compound mechanical advantage system**
O17. **Direct a Compound Mechanical Advantage System**
O18. **Negotiate and edge while attached to a rescue system**
O19. **Direct a low-angle litter lower and raise**
O20. **Operate as a litter tender (Low-Angle)**
O21. **Direct a high-angle litter lower and raise**
O22. **Terminates a rope rescue operation**

TECHNICIANS

T1. **Direct team in removal of a *Stranded* Victim**
T2. **Direct team in removal of *Suspended* Victim**
T3. **Perform a suspended pick off**
T4. **Act as litter tender in High-Angle environment**
T5. **Participate in construction of horizontal system**
T6. **Direct operation of a horizontal rescue system**
T7. **Ascend a fixed rope**
T8. **Descend a fixed rope**
T9. **Escaping a jammed device**

Instructors/Evaluator CODE of CONDUCT

Let's try and not undermined or correct each other in front of the students. If it's a matter of safety, make it safe and bring it to the attention of the other instructors. If there is a difference of opinion or understanding of material, try and explain it without correcting another instructor. Preferably, speak privately to the instructor and state your case. Remember, we are all human and make mistakes and no one wakes up in the morning expecting to do it wrong. If there is an impasse, the tie breaker will be whatever the book says, since that is what they are being tested too. If there still isn't anyway to fix this, simply tell the students the way you do it, without calling out the other instructor.

When teaching certification classes, teach to the book and/or JPR's first! Once that is done, then is the time to pass on your experience. Just remember, they are being tested to the book and/or JPR. Anything you teach that contradicts that will make it hard for the students to pass.

Students CODE OF CONDUCT

Each student will be expected to read the book in order to pass the test. While we will try and get as much information out on the training field, it is difficult to ensure everything in the book gets covered. You must participate in all the skills since you will be evaluated in all of them. If you miss a day, you will have to make it up. Understand that some skills require the entire class to perform, so it may be impossible to make up some missed days.