Explosives Storage and Emergency Preparedness

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What’s the bottom line?

Explosives are critical to getting resources needed for our infrastructure. Explosives are transported and stored across Washington every day.

This means that the explosives we use are:

- Critical infrastructure
- Exposed to the same hazards we are
- Need planning to survive
  - Fires
  - Floods
  - Earthquakes
How much is there in the state?

At least **6.5 million** pounds are used annually in Washington for:
- Quarrying
- Mining
- Avalanche control
- Police public safety
- Utility emplacement
- Seismic studies
- Production of:
  - Airbags
  - Aviation safety devices

= almost 12 million pounds
So why do we use them?

- **Speed, safety and economy**

Getting resources *without explosives* cost several times as much for both time and money:

Example: Breaking 10,000 tons of rock

- A small quarry shot may take 1-3 days of drilling/loading and use 10,000lbs of explosives.
- Using a hydraulic breaker hammer excavator for the same amount could take weeks and the machine costs at least 3x as much for the smallest size (machines much more, low estimate)

Bremanger, Norway
68 tons explosives, 454 holes
385m long, 20m high
Produced 360,205 tons of rock
Where is it concentrated?

Near population centers, but in places with space

Why?
Balancing Safety and Security -

Far enough away from people to be safe if there is a problem, close enough for the owners to keep an eye on it.
Is this a problem?

Yes and No.
Generally incidents are rare thanks to safety regulation. Consequences can be catastrophic when they occur.

Nationally the trend for loss is growing – is this due to natural disasters?

WA Incidences
• 2016- 0
• 2017- 0
• 2018- 1 fire, 2 break ins

Source: United States Bomb Data Center (USBDC) Explosive Incident Report (EIR) 2018
Case Study- Boyd’s Fire 2018

Who- Private Storage licensee
What- Magazines engulfed in wildfire
Where- Kettle Falls, WA
When- August 11, 2018
How much- 600 lbs high explosives
Case Study- Boyd’s Fire 2018

Why (is this important)?
- The magazines were engulfed in the first day or so
- No detonation
- No firefighters hurt

How?
- Magazine construction standards (WAC 296-52 Part E)
- Entry route marking warned responders (WAC 296-52-69060(4))
The real question - Are we just lucky?

Yes and No

- Yes
  - No coordination
  - Count on private licensee to notify
  - What about evacuees?

- No
  - Codes are based on experience
  - Fire/theft are primary causes for loss, so we engineer to protect from those hazards
  - Most licensees are VERY compliant
What is our best way forward?

**Change code:**
- From user reported to local fire authority; to
- Central reporting to all affected authorities

**Partner with agencies to use information better:**
- Ensure fire response knows no-go areas
- Evacuation
  - Planning
    - Preset inspected areas (required by code)
    - Notification drills
    - Create safe routes
  - Execution
    - Notification redundancy
    - Secure sites
    - Return to normalcy
What is the goal?
Questions?