HIGH EXPECTATIONS

Captain Ethan Johnson, 13/B

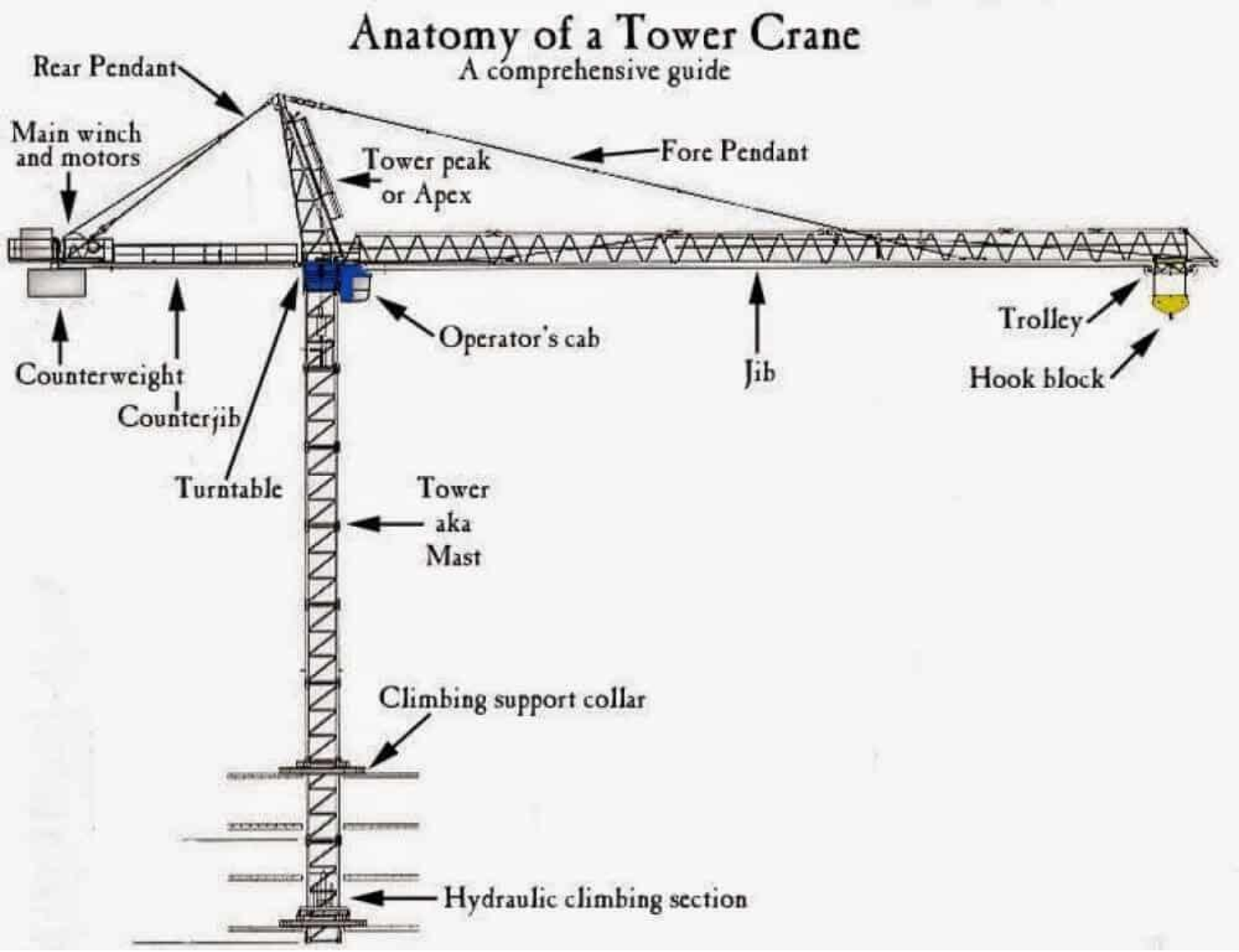
On July 26, 2023 units from FDNY encountered a construction tower crane on fire. The resulting heat from the flames caused the cables holding 16 tons of concrete to weaken and give way and as a result the jib and the load fell, damaging a nearby building and injuring 12 people including 3 firefighters. Preliminary reports indicate that a hydraulic leak from the engine (a diesel engine) compartment onto a heated metal plate started the fire on the machine deck of the 180 foot tower crane. While we do not serve a large metropolitan area like New York City, we are subject to the exact same scenario. At any given time, there are numerous construction cranes in operation within Baltimore County. At present, there are several tower cranes in operation in the Towson and Cockeysville areas. Preparing for these High Risk, Low Frequency events is integral to our role as emergency responders and stewards of public safety.

According to OSHA, there are <u>seven major causes</u> of crane emergencies:

- *Boom/Jib contact with energized power lines (nearly 45% of cases)*
- *Under the hook lifting device failure*
- *Overturned cranes*
- *Boom/Jib collapse*
- *Crushing by counter weight*
- *Outrigger use, falls, and rigging failures*

Here are some <u>operational points</u> to consider when responding to incidents involving tower cranes:

- **Establish** and **control** the collapse zone. The zone should be clearly defined, quickly evacuated, and protected.
- The **collapse zone** should be at least *<u>two times greater</u>* than the length of the jib portion of the tower crane and *<u>one- and one-half times greater</u>* than the boom of a tracked or wheeled crane. People inside the collapse zone should be evacuated if there is a possibility of failure of any part of an elevated crane/structure.
- **Communication** with the worksite foreman and/or crane operator is essential. All tower crane operators are equipped with radios. Establish contact and try to obtain additional information.
- **Position apparatus** well outside the collapse zone and direct arriving units to stage in a tactically advantageous location.
- **Control electrical power** to the crane if necessary. Many tower cranes are powered by electric motors supplied by the electrical grid or a diesel generator (approx. 800 amps). The main power switch is typically located at the base of the crane and can usually be accessed easily to de-energize the motor.
- **Counterweights** on tower cranes are usually made of concrete and weigh hundreds of tons. The counterweights are located on the counter jib directly behind the machine deck or operator location. Any large body of fire on the elevated machine deck can cause the exposed concrete to spall and potentially fall if loosened from their casing.
- Ensure **proper PPE** is being worn at all times – head/eye protection. Beware of falling debris throughout the incident.
- Consider the use of **elevated hose streams**, i.e. aerial ladders, roofs of adjacent buildings, parking garages, etc.
- R**equest the USAR Team**. USAR has specialized equipment and training to assist with high-angle incidents.



Check out the footage from FDNY's Drone Unit here.