

# SPECIAL MISSIONS



**RAPID RESPONSE  
PROVEN SOLUTIONS**

# Small Arms Surface Platform Integration

## Development of a “Soft” Mount Capable of Supporting the Mk 48 MOD 0/1 Light Weight Machine Gun

**16 May 2012**

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for**

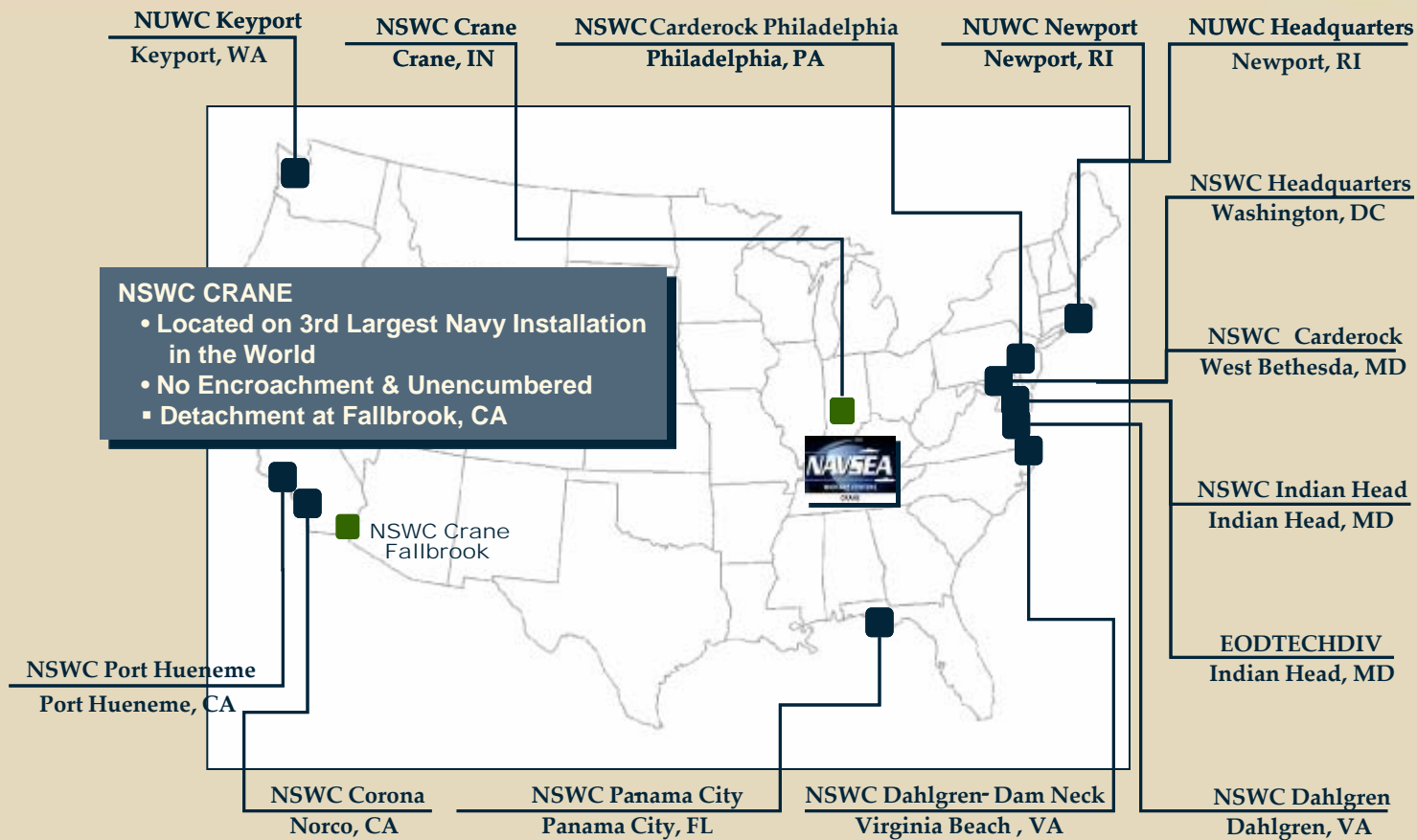
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# NSWC Crane Division



**Stewards of  
14 NAVSEA Technical Capabilities**



**NSWC Crane Mission Focus Areas:**

- Special Missions*
- Strategic Missions*
- Electronic Warfare / Information Operations*

**Four Outputs:**

- Knowledge
- Contracts
- Hardware
- Software



- **Who are we?**
  - We are a team of engineers, logisticians, and technicians with vast crew served weapons and electronics integration experience.
  - We have the capability to support the full life cycle of the systems we deploy.
  - We support multiple platform offices and team with industry partners.
  - We take great pride in providing high quality support to our customers in a timely manner.
- **What do we do?**
  - Design and integrate weapon systems for various combatant craft, vehicles and US Navy warships.
  - Fabricate prototype parts for fit checks and testing.
  - Provide Finite Element Analysis (FEA) modeling for fatigue and crash loads.
  - Procure production hardware through GOV contracts.
  - Receive, inspect, and deploy high quality systems.
  - Provide interim supply support.
  - Provide depot support
  - Capability to support OEM designed weapon systems
  - Provide engineering and logistics support to fielded systems

- **Mk 48 MOD 0 / 1**
  - Light weight 7.62 MM machine gun
  - Gas operated, open bolt
  - Shoulder fired, Hand-held or Bipod fired
  - Replacement for the MK 43 MOD 0 / 1



- **PRO's**
  - Lighter and shorter than the M240 Machine Gun
  - Increased reliability compared to the M60 and Mk 43
- **CON's**
  - No mount currently designed and in service to support the Mk 48 MOD 0 / 1 Light Weight Machine Gun
  - Mk 48 Ammo feed tray is located in a different location than the M240B (commonality).



# Why mount the Mk 48?

- **Better weapon control**
  - Vehicle mounted in the gun turret ring
- **Mission planning flexibility**
  - Carrying a single weapon for multiple missions rather than multiple weapons for multiple missions.





- **Without a recoil reduction (soft mount) design**
  - **Wear and tear**
    - **When the MK48 is hard mounted the recoiling velocities are increased. With the increased velocities comes increased stress on the recoiling components. The end result is lower bolt and slide reliability thresholds.**



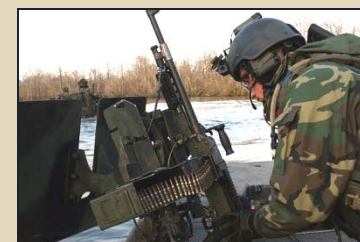


- **Navy Mounts currently in service**
  - **Mk 97 MOD 0 Single M240 Mount**



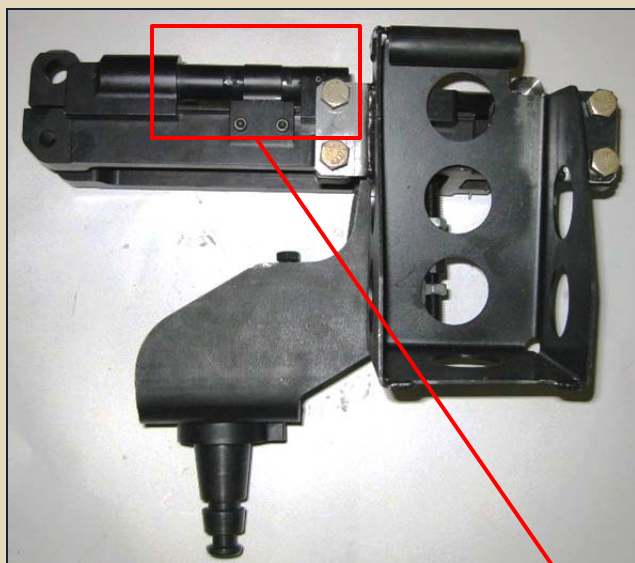
- Mk 48 will pin up in the Mk 97 Mount, but the ammunition tray is not oriented to feed ammunition to the gun.
- The mount has no mechanical buffer and does not provide recoil reduction.

- **Mk 93 MOD 2 / MOD 4 w/M240 Adapter**



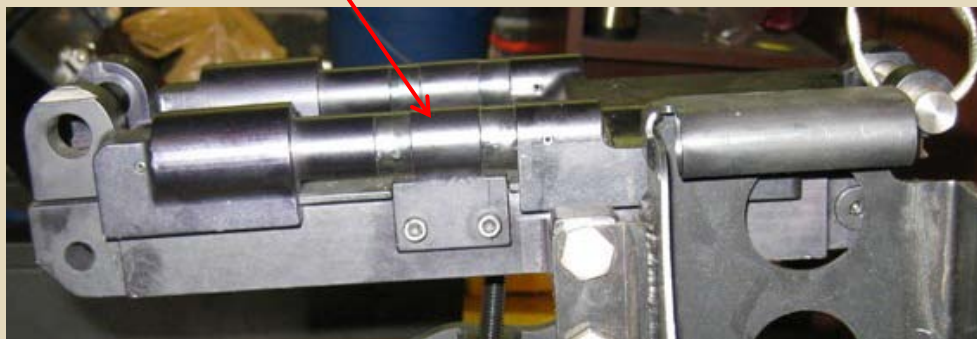
- Mk 48 will pin up in the M240 Adapter, but the ammunition tray is not oriented to feed ammunition to the gun.
- The M240 Adapter connects to the mount hard points and has no mechanical buffer to provide recoil reduction.

- **Simple mechanical buffer**



- **Cradle Assembly**

- Upper and lower cradle assembly utilizes a sliding design that reacts with the recoil/counter recoil movements of the gun to compress the mechanical springs when fired.
- This allows the recoil to be dissipated, preventing potential damage (if hard mounted in an existing M240 Mount) to the Mk 48 slide and bolt while still allowing the operator to maintain control of the gun/mount and have accurate and effective round placement.





## Thank you for your time and attention!



For more information on NSWC Crane, please visit [www.crane.navy.mil](http://www.crane.navy.mil)

Images were downloaded via publically accessible websites