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# Development of an Alternate M240B Ammunition Container for Coast Guard HH65 Aircraft

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- The current ammo cans for the HH65 are the same cans that the ammunition is shipped in.
- These cans present several issues that decrease the effectiveness of the gunner.
- JSSAP and ARDEC were approached by the Coast Guard to develop an improved system to eliminate the deficiencies.





Old System



New System



## Shipping Container

- Shipping container used as ammo feed system
- No lid – ammunition bounces out of can during flight
- No anti-backup system – ammunition falls back into can during flight and is difficult to find during reload



## Case/Link Collection

- Insufficient capacity
- Difficult to empty

## Ammunition Can Orientation

- Ammunition can is oriented horizontally
- Field of view is blocked - difficult to locate and engage targets
- Field of fire is limited by ammunition can protrusion
- Less room for secondary weapon – sniper rifle or other weapon cannot be effectively deployed beside M240B



- Can Construction/Fit
  - Lightweight
  - Prevent ammunition from bouncing out of can, falling back into can during flight
  - Can must positively lock onto mount
  - Must fit on current cradle
- Can Size
  - Minimize horizontal footprint
  - Can must fit in current ammunition can rack
- Collection system
  - Higher Capacity
  - Easy to empty

**Improved Ammunition Feed System**

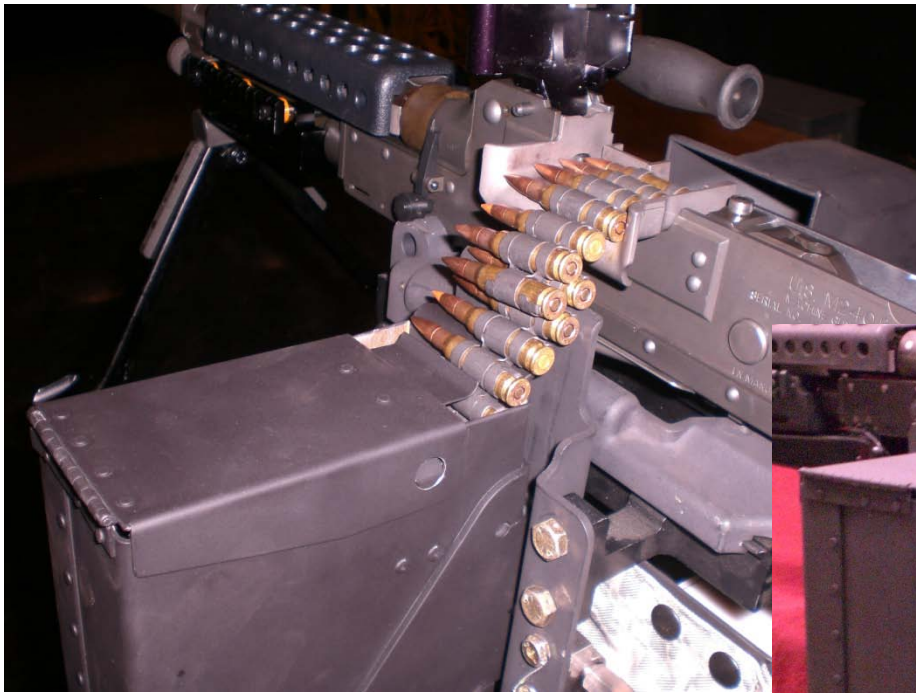
- ✓ Push latches for easy access to load
- ✓ Anti-syphon spring reduces stoppage and prevents ammunition spillage

**Additional Benefits**

- ✓ Improved access within confined space
- ✓ Allows use of M14 and M107 without interference
- ✓ Quick loading process

**Compact Ammunition Container:**

- ✓ 200 Round Capacity
- ✓ Slimmer and lighter design



**Catch bag**

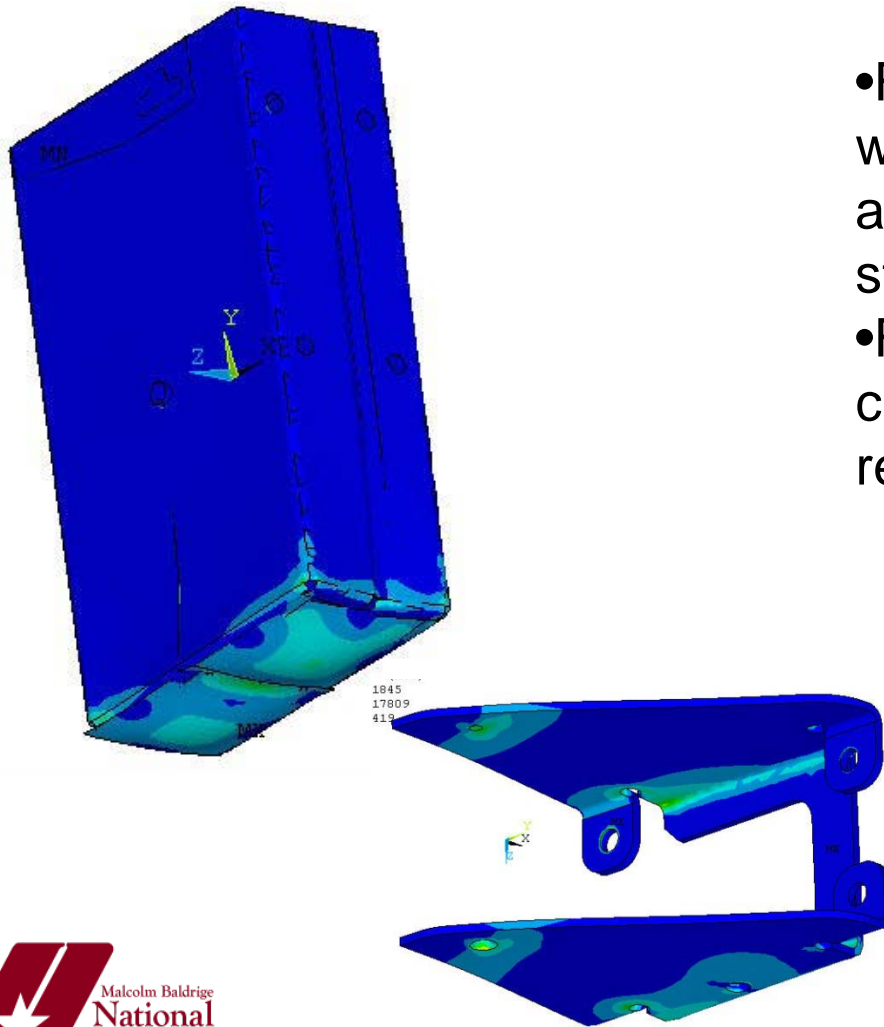
- ✓ Catches over 400 spent cases and links
- ✓ Can be secured in open position to allow overboard discharge
- ✓ Reversible for ease of inboard emptying



**Mounting Hardware Kit**

- ✓ Conversion kit allows integration with current cradle/mount
- ✓ Rounded lip on bracket guides rounds, preventing jams
- ✓ Includes spring plunger to lock can in place during use and vibration





- Finite Element Analysis (FEA) was used to ensure that the cans and mounting brackets were structurally sound
- FEA was used to determine if the cans could meet crash loading requirements
  - 10G in vertical direction
  - 10G in and out of aircraft door
  - 20G in direction of helicopter travel

- Cans/kits were Prototyped
  - Prototyping done at Picatinny's prototyping facility
  - Five (5) cans and five (5) mounting kits
- Independently tested for function at Picatinny's Armament Technology Facility
- Cans were sent to Coast Guard for more extensive testing for function and adherence to requirements
- Coast Guard had positive feedback and ordered 50 more kits for further testing and use in Carribean and Arabian Seas





- Production of alternate ammunition cans is currently in progress
  - CLogic Defense, LLC is the prime contractor
    - Located in Connecticut
    - Passed First Article Test in April
    - Have expertise in sheet metal fabrication
- Fifty (50) kits have been ordered by the Coast Guard
  - Each Kit includes
    - One (1) Mount Kit
    - One (1) Case Collection System
    - Four (4) Ammunition Cans
- Full Delivery is scheduled for mid to late June 2011



- How can this type of design apply to other systems?
  - **Special Missions/Units** – There may be special missions or units in other services that could benefit from lower profile ammo system, secondary weapon system
  - **Other Services** – Army, Navy, Air Force, Marine Corps all use similar aircraft, systems
  - **Foreign Military Sales** – Many other countries have HH65 aircraft – Great Britain, Australia, Netherlands, Japan, Canada, etc.
  - **Additional Applicability** – Alternative aircraft, alternative positions in aircraft, wheeled vehicles





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Photographs of Aircraft and Weapons taken from:

- <http://www.militaryfactory.com>
- <http://www.minihelicopter.net>
- <http://www.sikorsky.com>
- <http://www.boeing.com>

