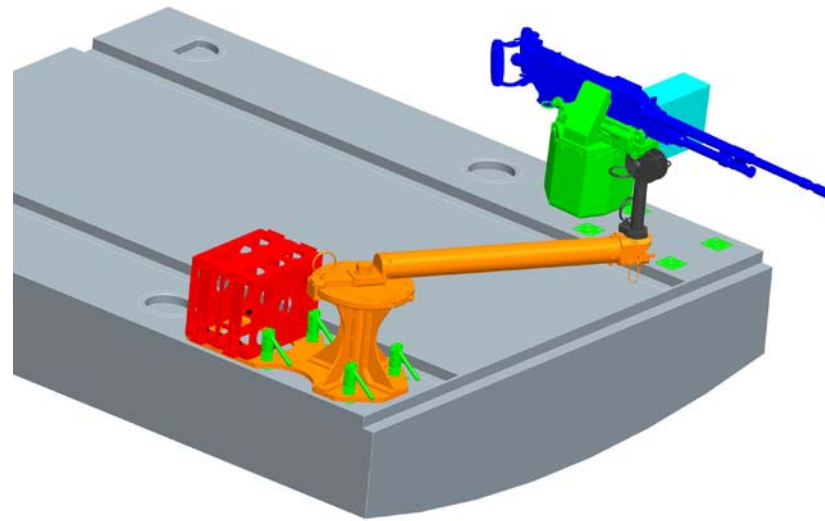


V-22 Ramp Mounted Weapon Systems



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May 2010

Unclassified

Task Description/Timeline



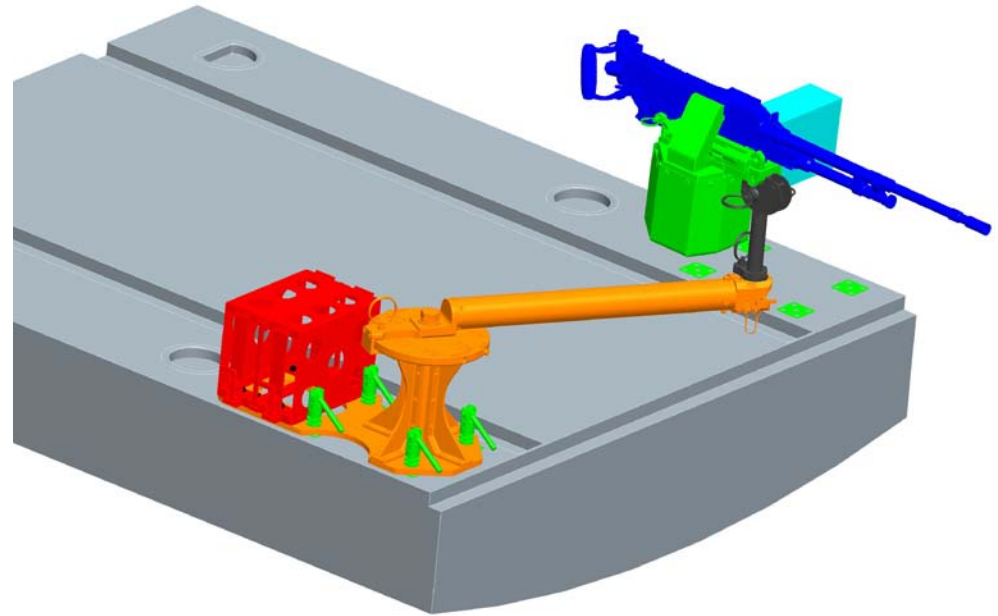
- 2005 – NSWC Crane tasked by NAVAIR to develop an M240 Ramp Mounted Weapon System.
- 2006 – Started fielding M240 Ramp Mounted Weapon Systems for Marines & Air Force.
- 2008 – Tasked to integrate GAU-16/18 (.50 Cal) system on Ramp.
- 2009 – Started fielding .50 Cal Ramp Systems.
- 2010 – Continue to field .50 Cal/M240 Ramp Mounted Weapon Systems.

NSWC Crane M240 Ramp Mount



Current Design:

- Shows installed on Port side of Ramp
- Always fired with ramp level.



M240D Weapon



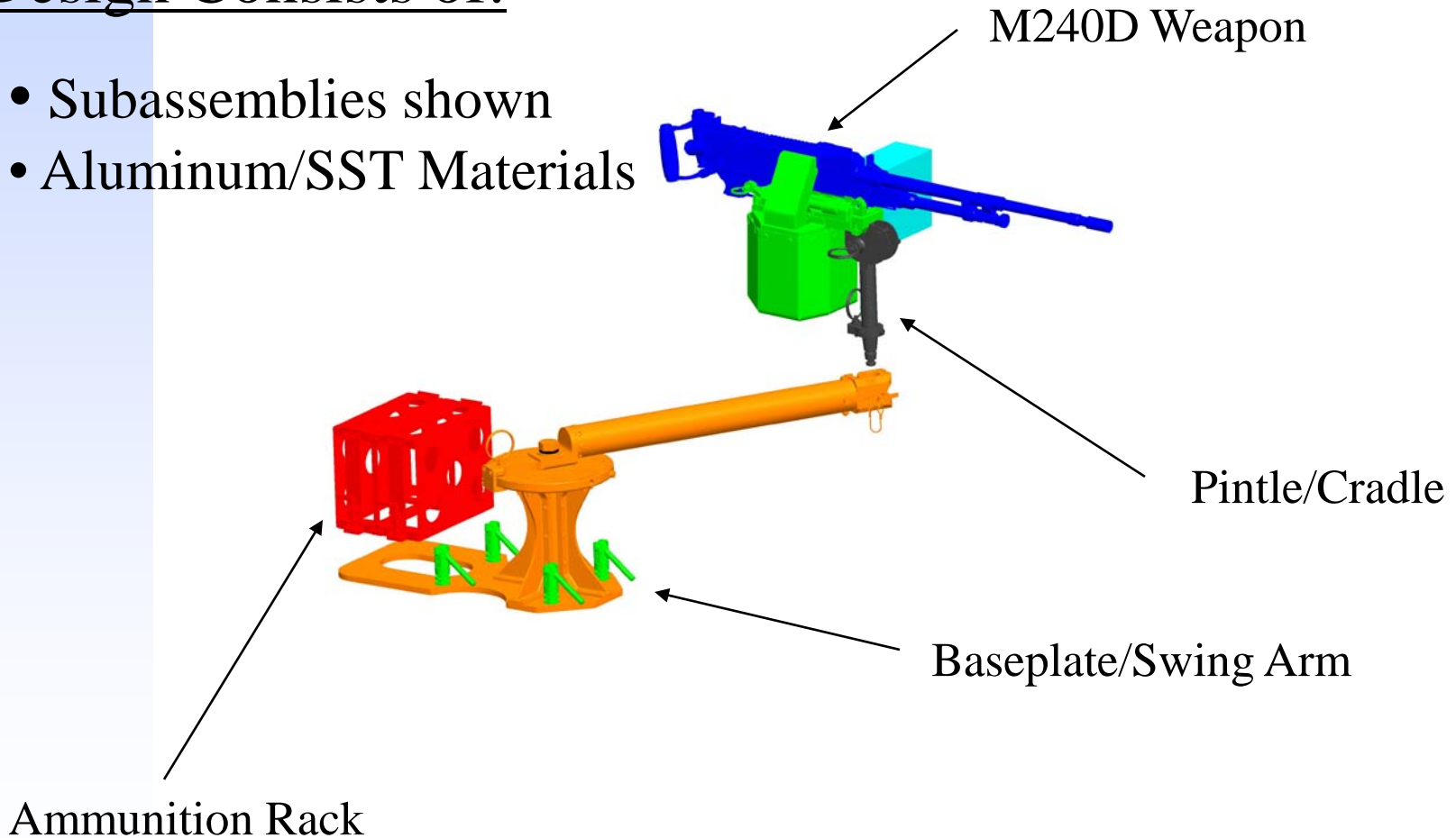
- FN-designed
- Weight: 26 lbs.
- Length: 49 inches
- Gas-recoil operated system (non-electric)
- Cyclic Firing rate: 650 – 950 rpm
- 7.62 mm ammo (standard ammo)
- Maximum effective range: 1,200 meters

NSWC Crane M240 Ramp Mount



Design Consists of:

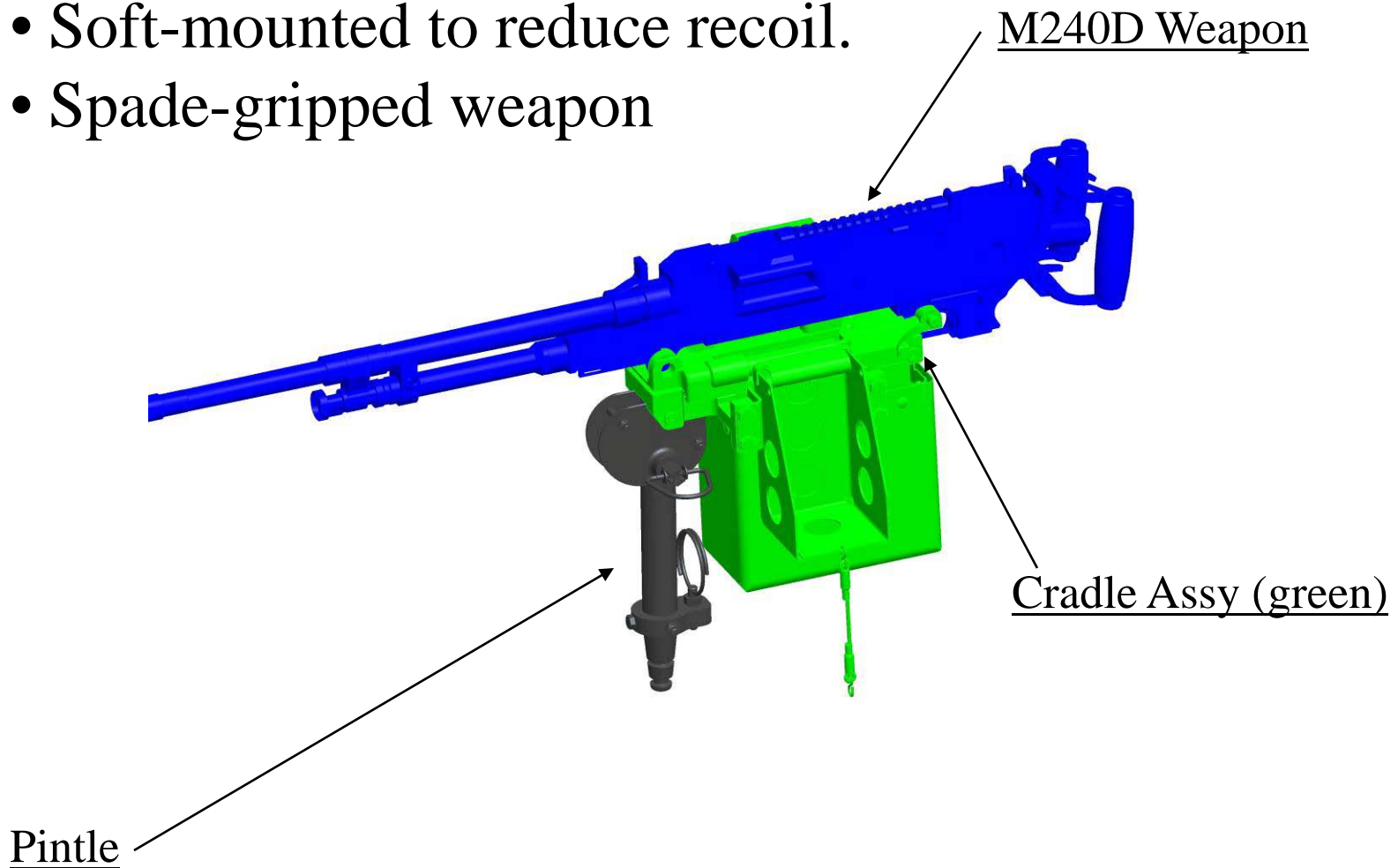
- Subassemblies shown
- Aluminum/SST Materials



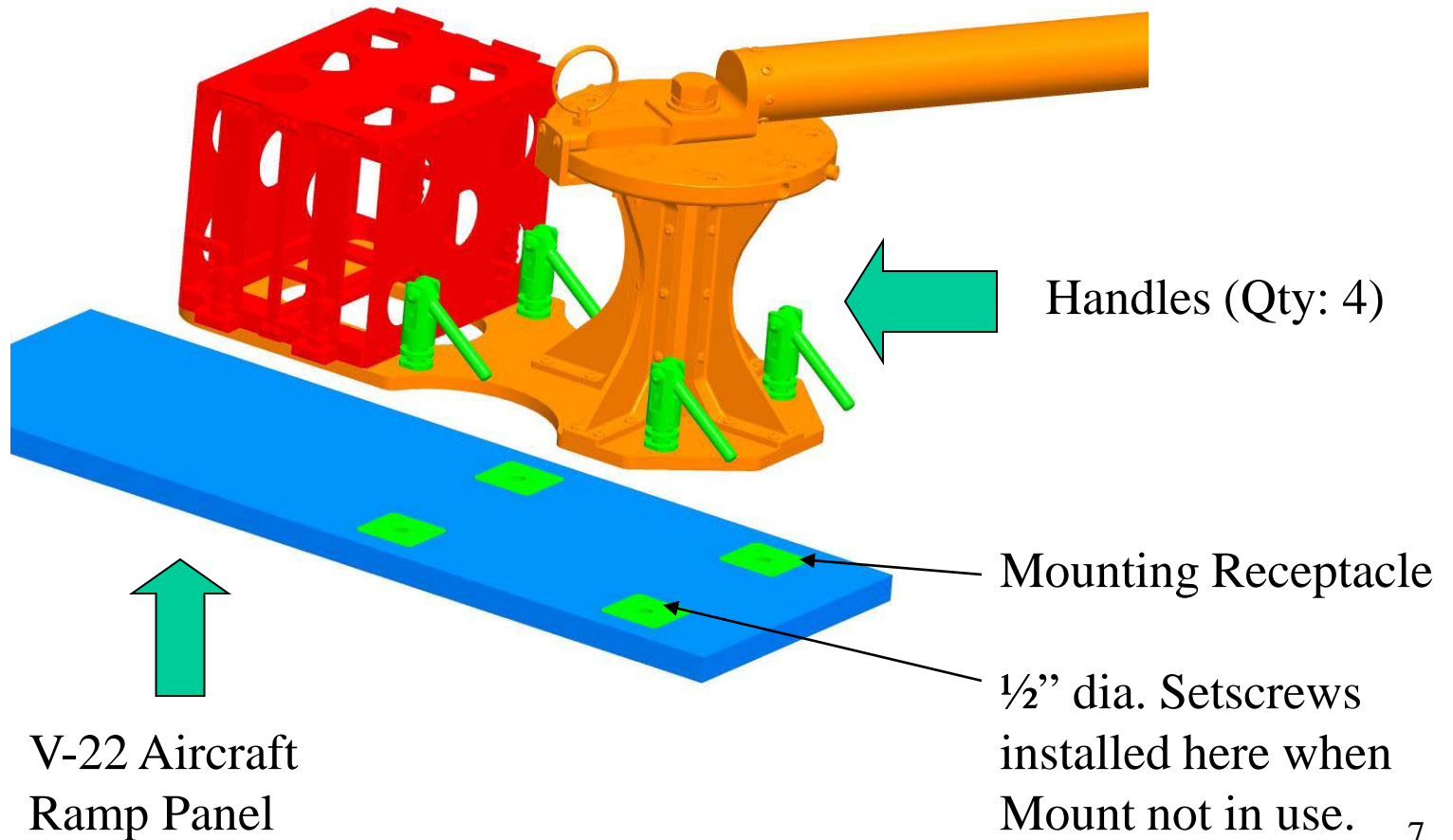
Pintle/Cradle Assembly



- Soft-mounted to reduce recoil.
- Spade-gripped weapon



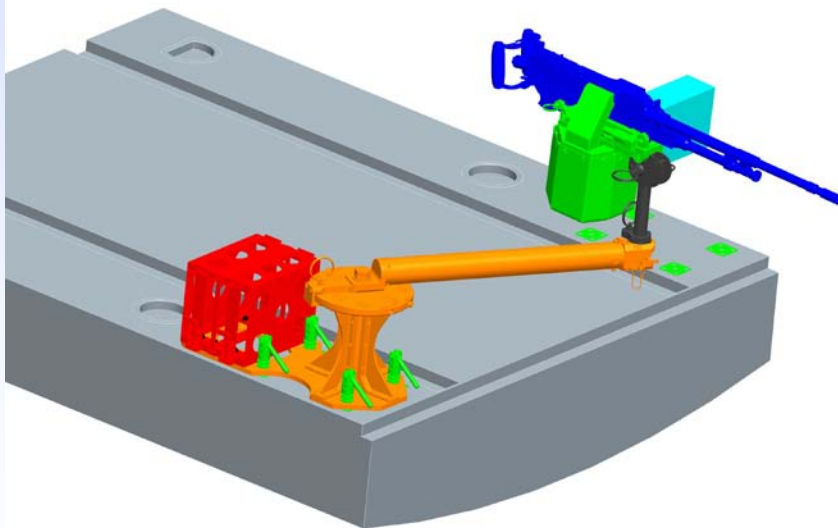
Quick-Disconnect Handles



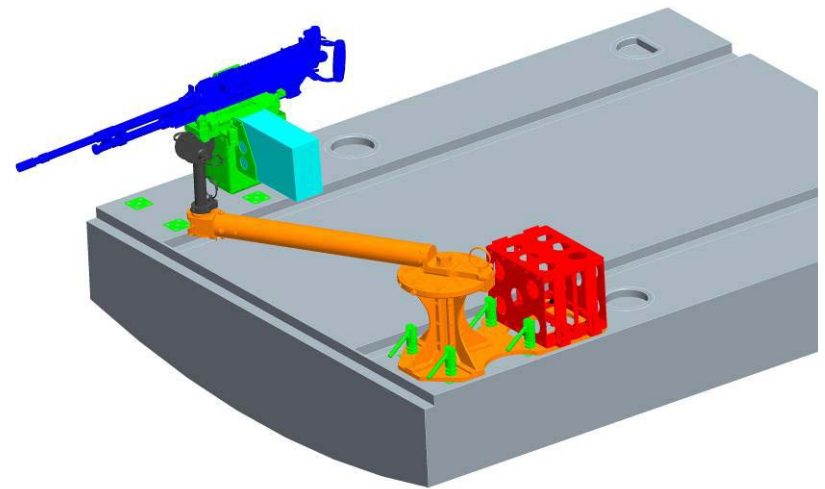
Port/Starboard Installation



- Ramp Mount can be installed on either the Port or Starboard side.

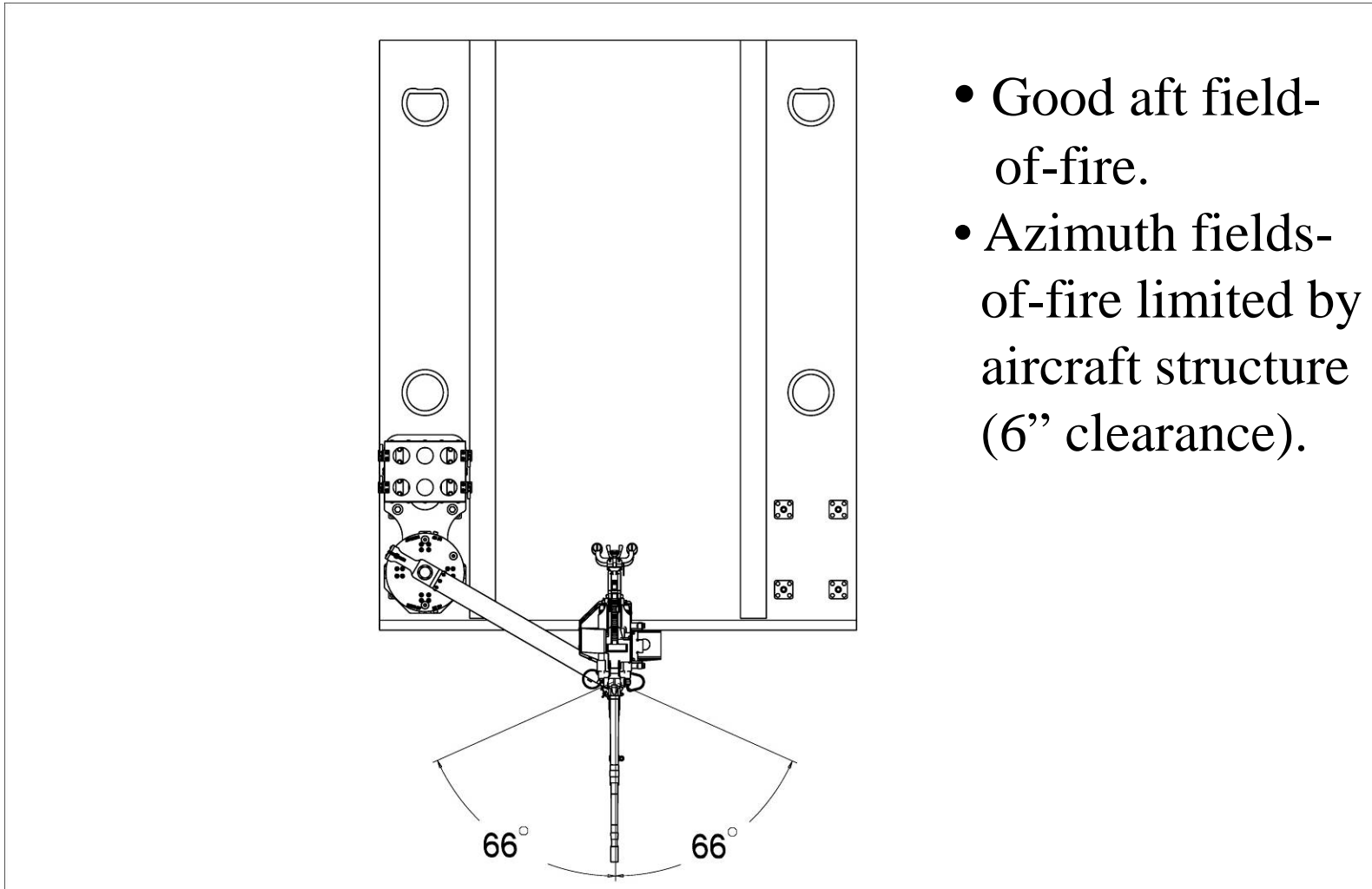


Port Side

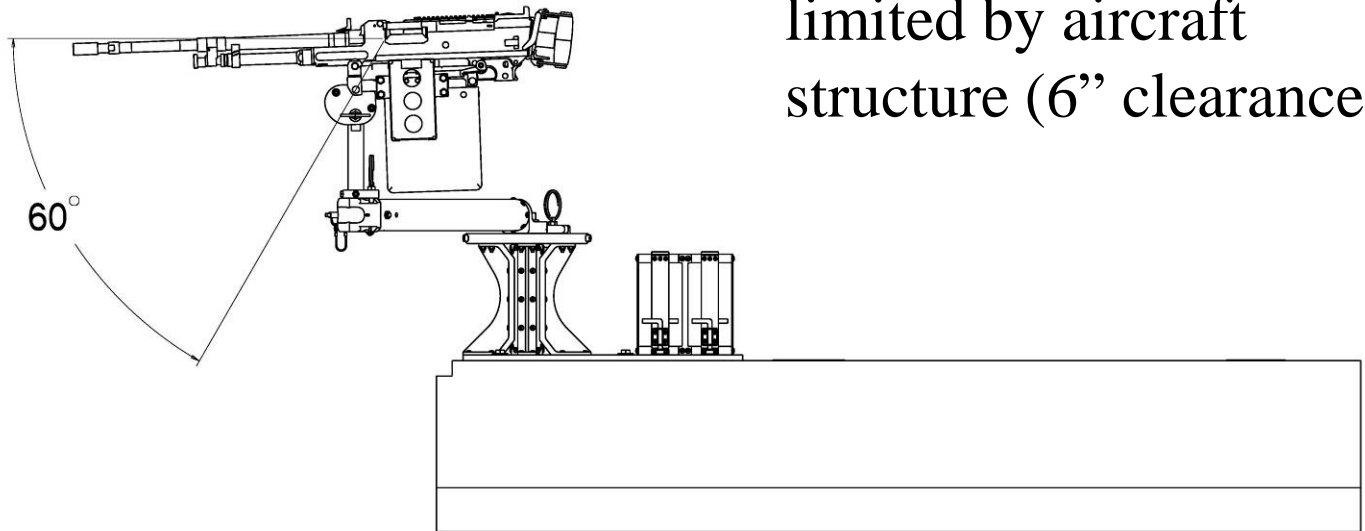


Starboard Side

Azimuth Angles



Depression Angle

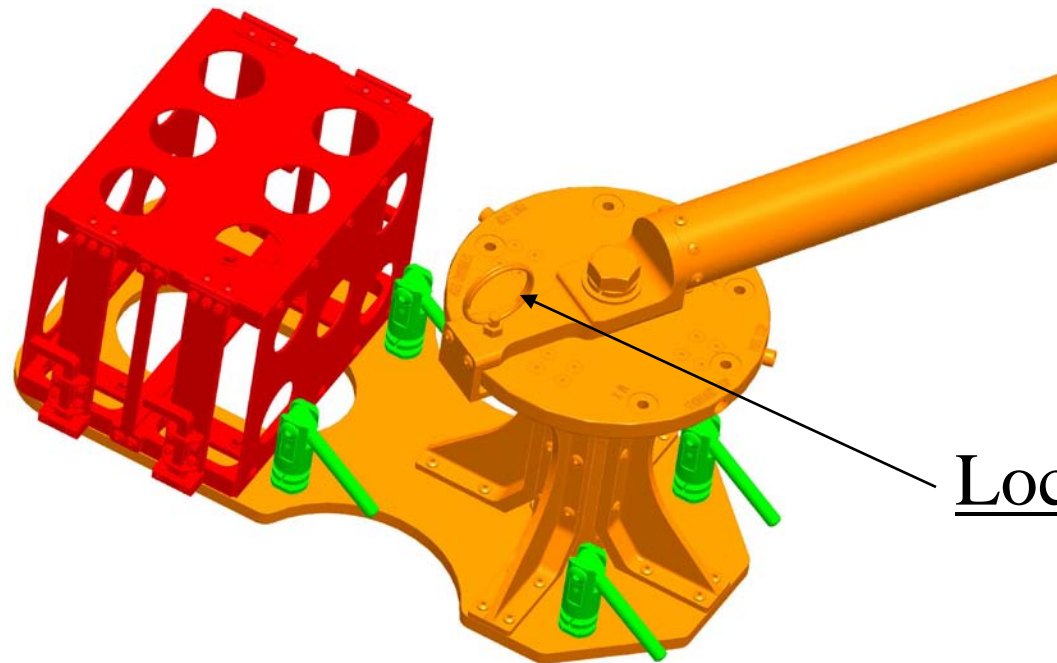


- Significant Depression
- Elevation field-of-fire limited by aircraft structure (6" clearance).

Swing Arm Lock-in Pin



- Lock-in pin used to rotate Swing Arm
 - firing position
 - inboard stow position

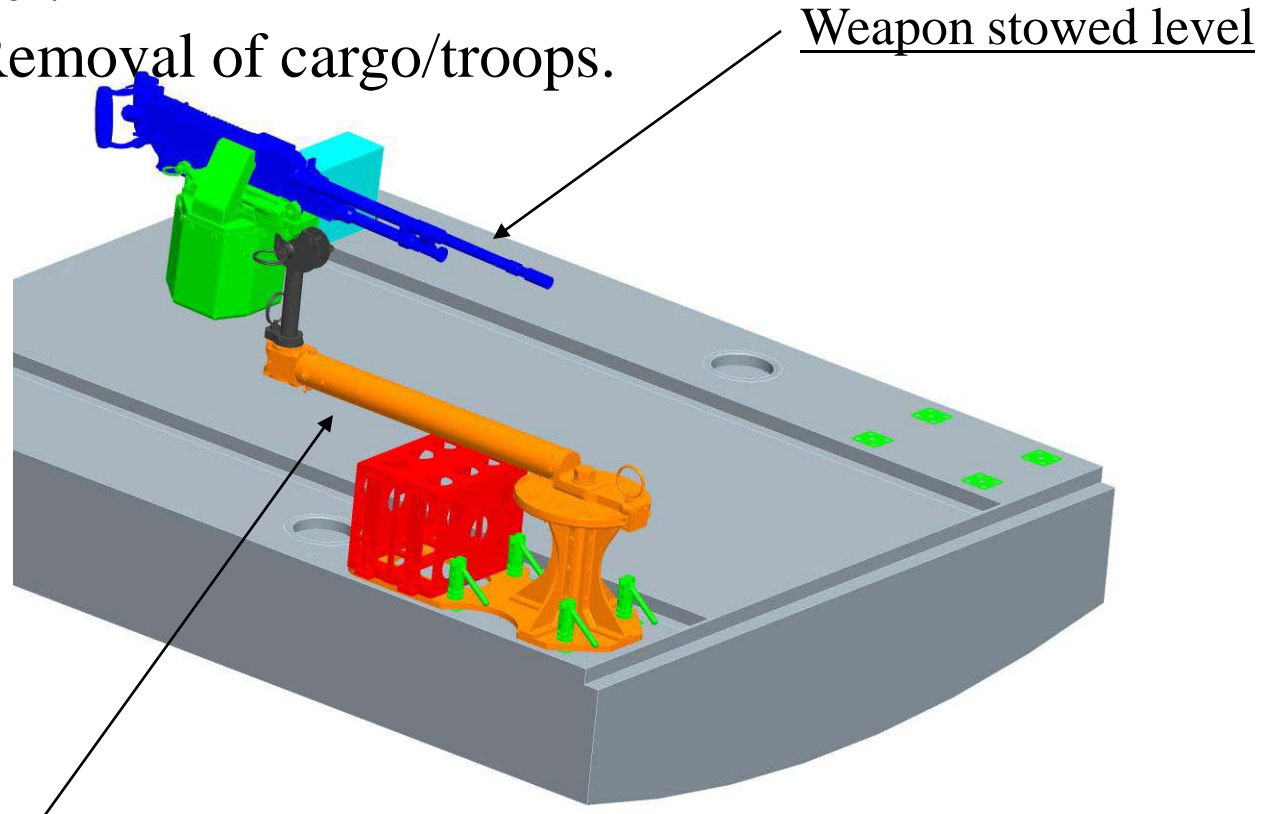


Lock-in Pin

Inboard Stow – Port Side

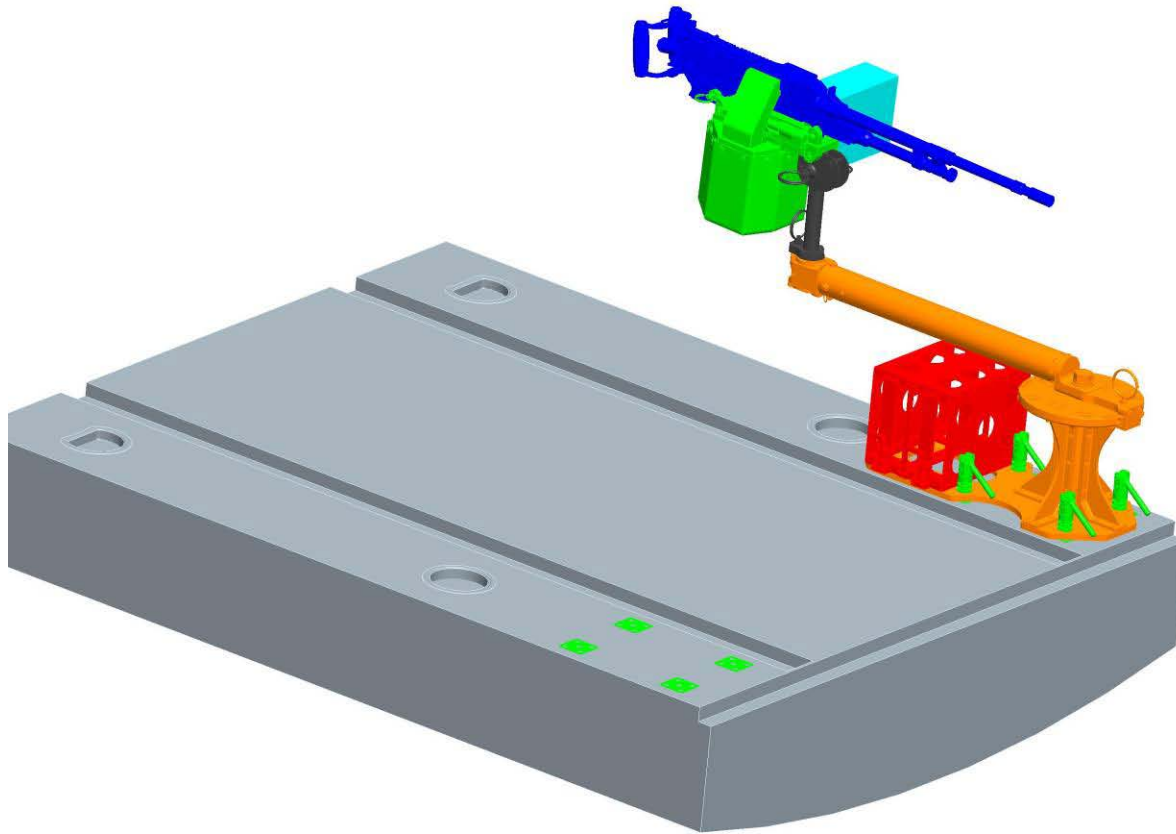


- Allows ingress/egress of personnel.
- Loading/Removal of cargo/troops.



Swing Arm rotated inboard

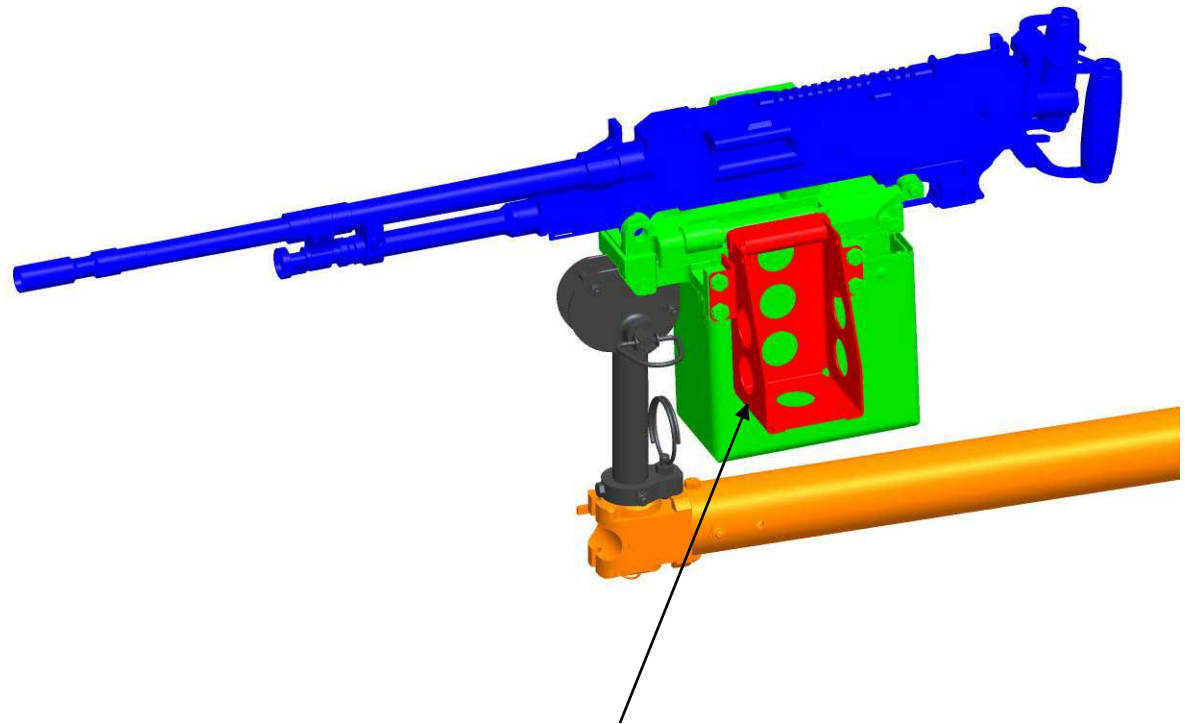
Inboard Stow – Starboard Side



Ammunition Tray on Mount



- Holds 1 standard can of 7.62 mm ammo
- 200 rounds
- Used on UH-1N, -H46, & H60

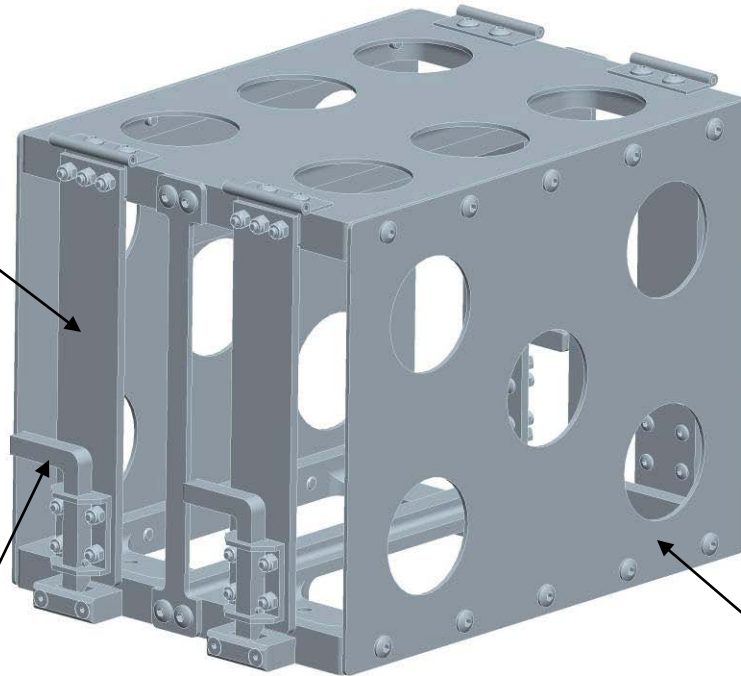


Ammunition tray

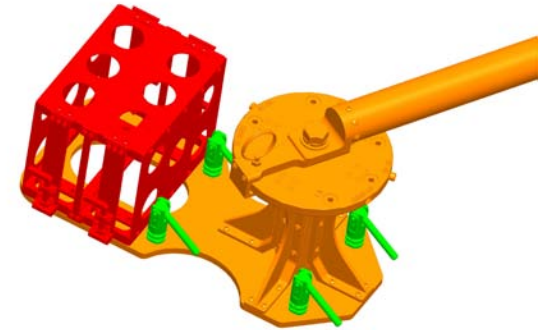
Ammunition Rack



Hinged latch plate
that swings up



Spring-loaded latches

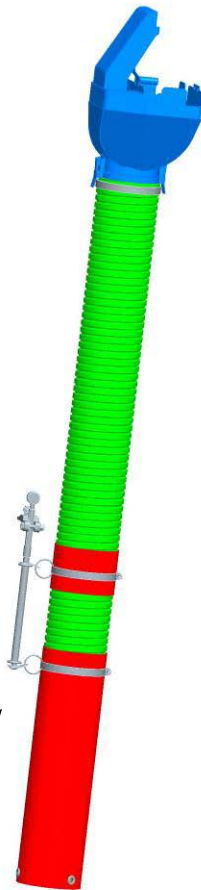


Ammo Rack holds two cans
of ammo (400 rnds)

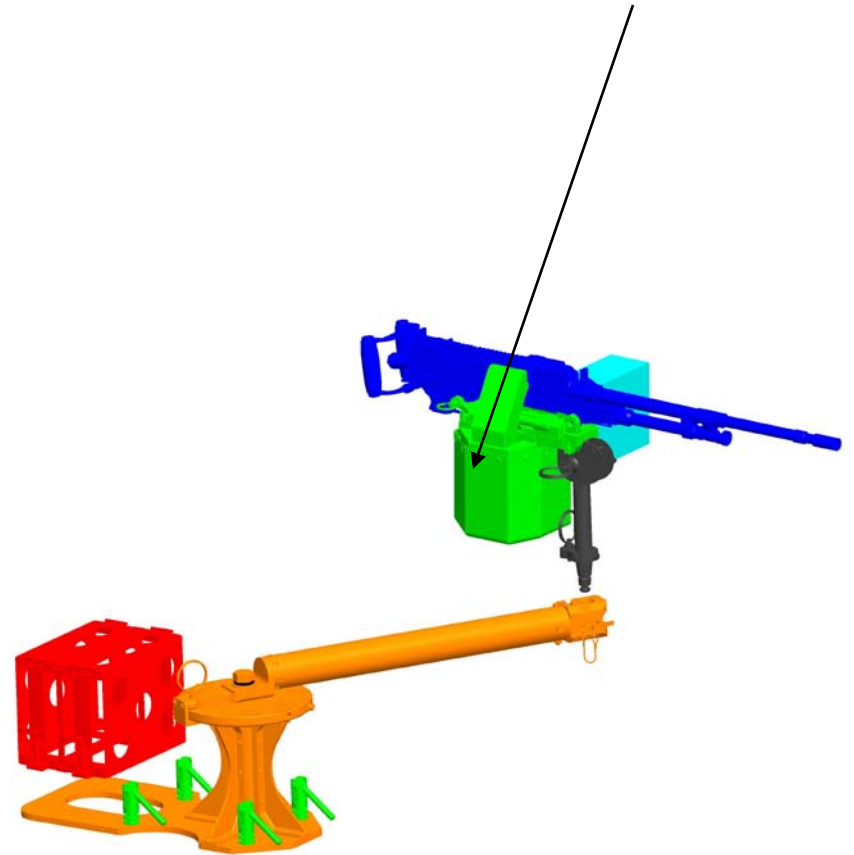
Brass/Link Ejection Systems



Brass/Link Catch Bag



Ejection Chute System



Picture of Ejection Chute System

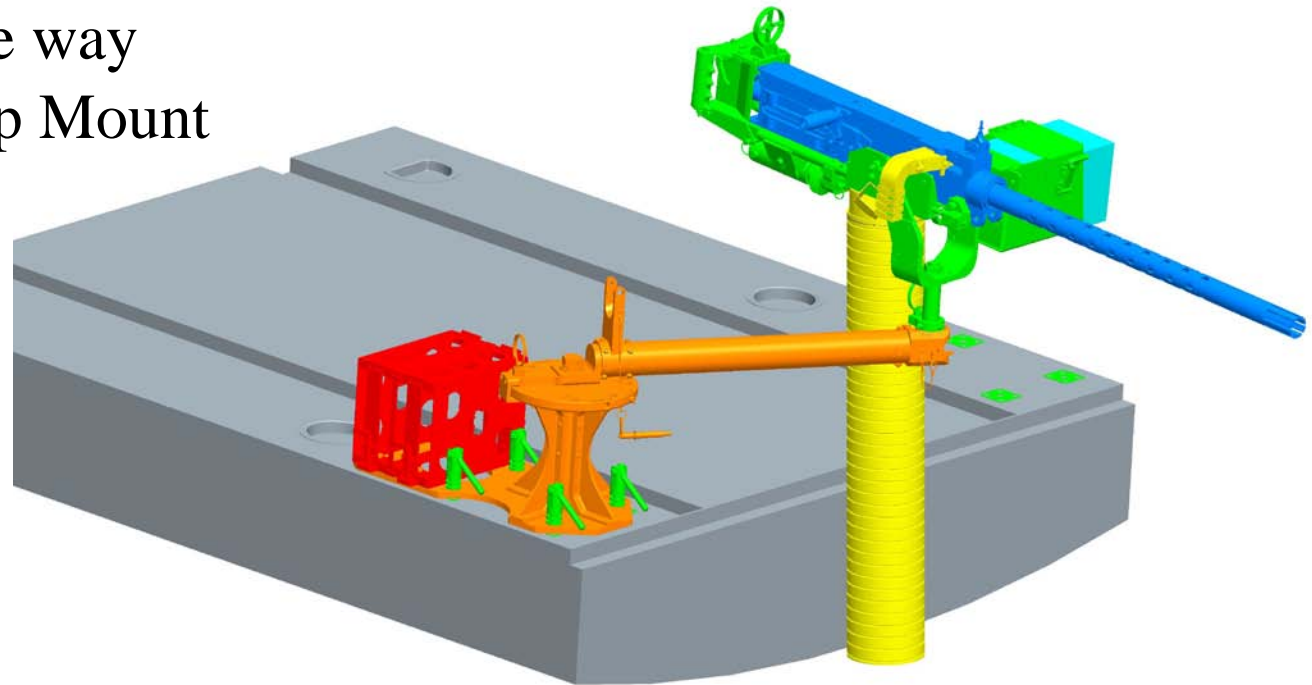


NSWC Crane .50 Cal Ramp Mount



Current Design:

- Attaches same way as M240 Ramp Mount



GAU-16/GAU-18 Weapon

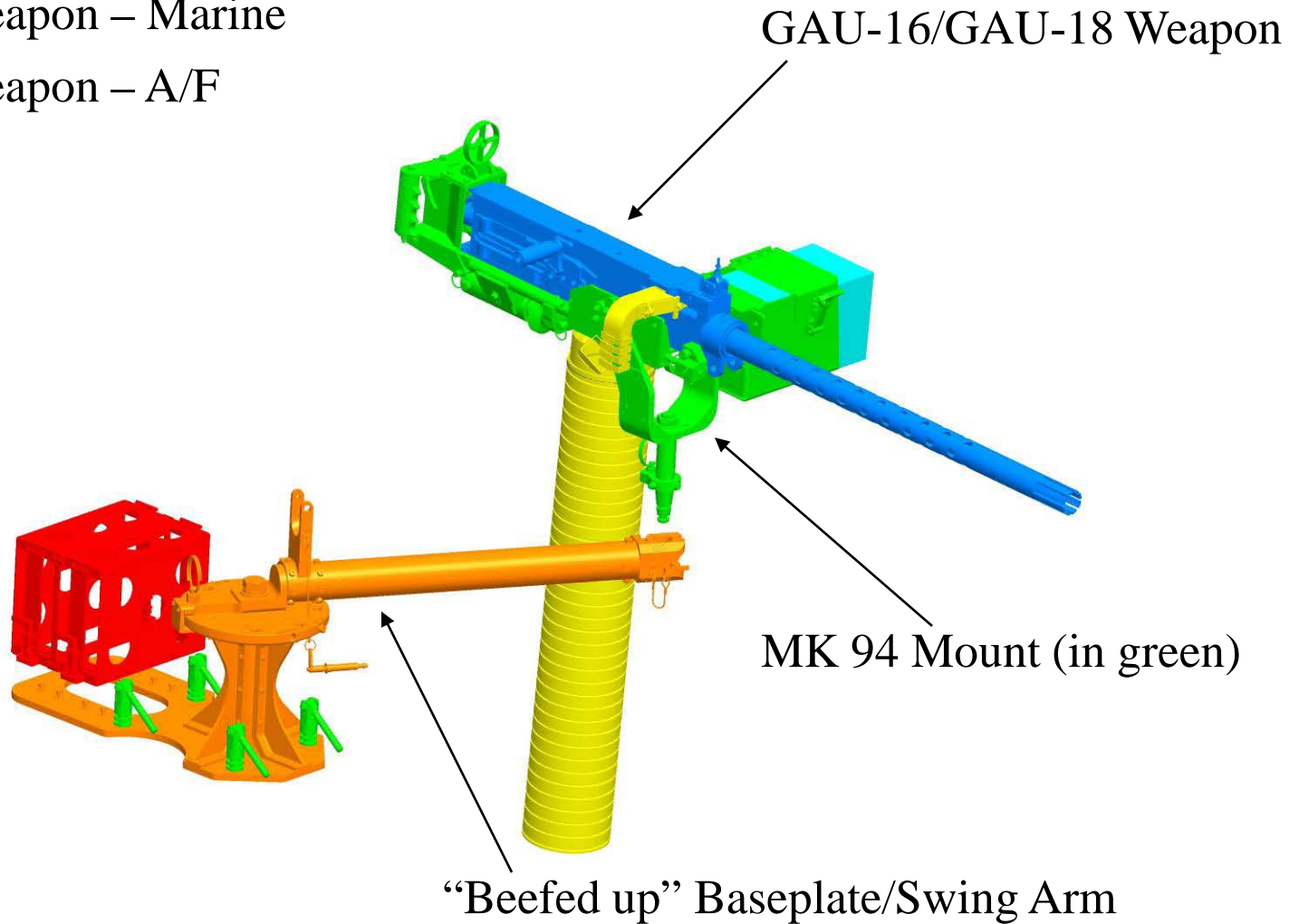


- Weight: 65 lbs.
- Length: 56 inches
- Gas-recoil operated system (non-electric)
- Cyclic Firing rate: 750 – 850 rpm
- .50 cal ammo (standard ammo)
- Maximum effective range: 2,000 yards

NSWC Crane .50 Cal Ramp Mount



- GAU-16 Weapon – Marine
- GAU-18 Weapon – A/F

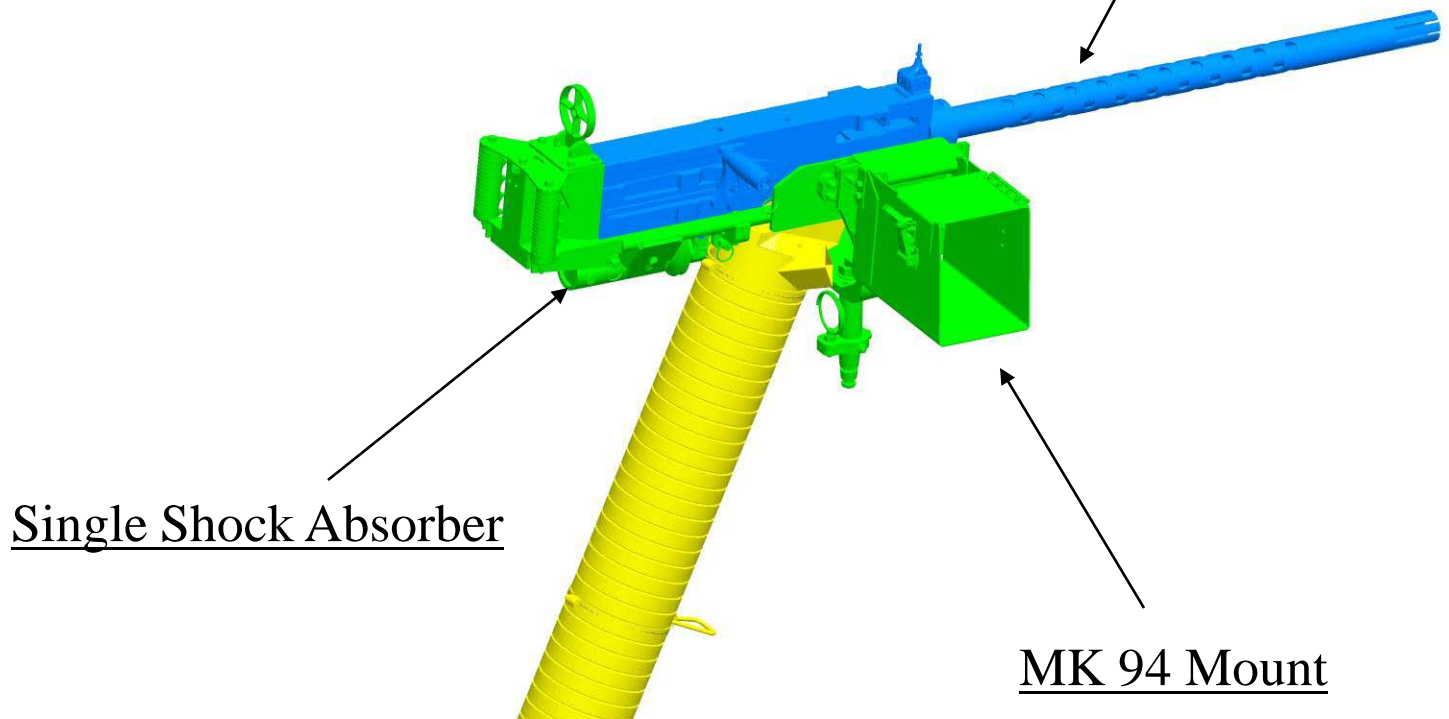


MK 94 Mount



- Soft-mounted to reduce recoil.
- Trigger Housing rotates down
- Used on H60 aircraft

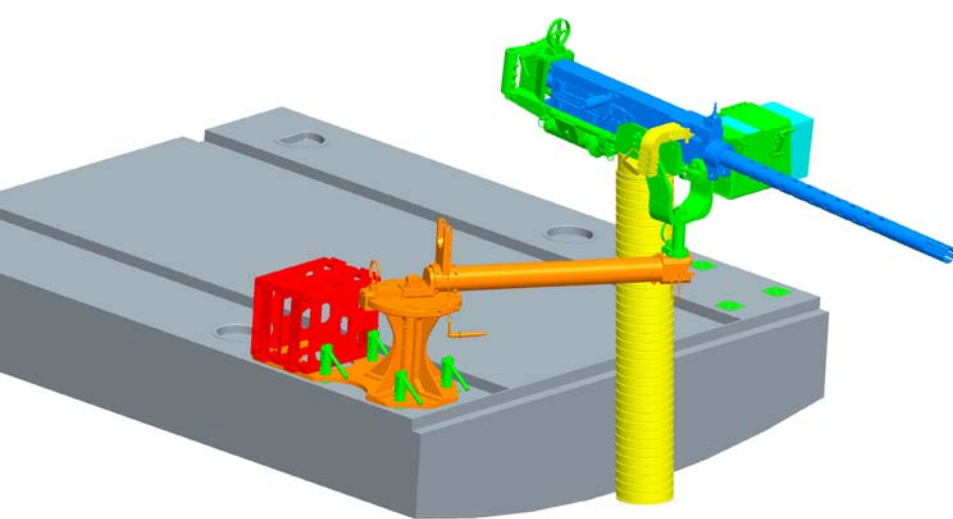
GAU-16/GAU-18 Weapon



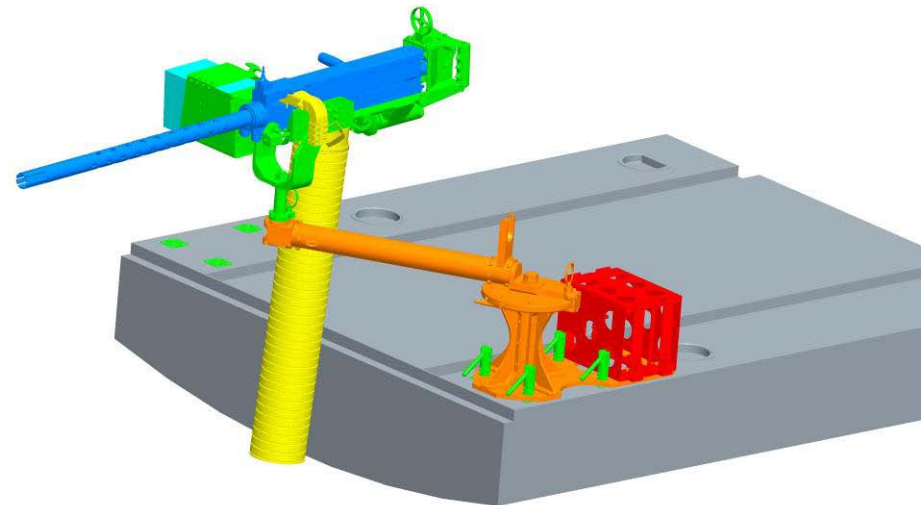
Port/Starboard Installation



- .50 Cal Ramp Mount can be installed on either the Port or Starboard side.

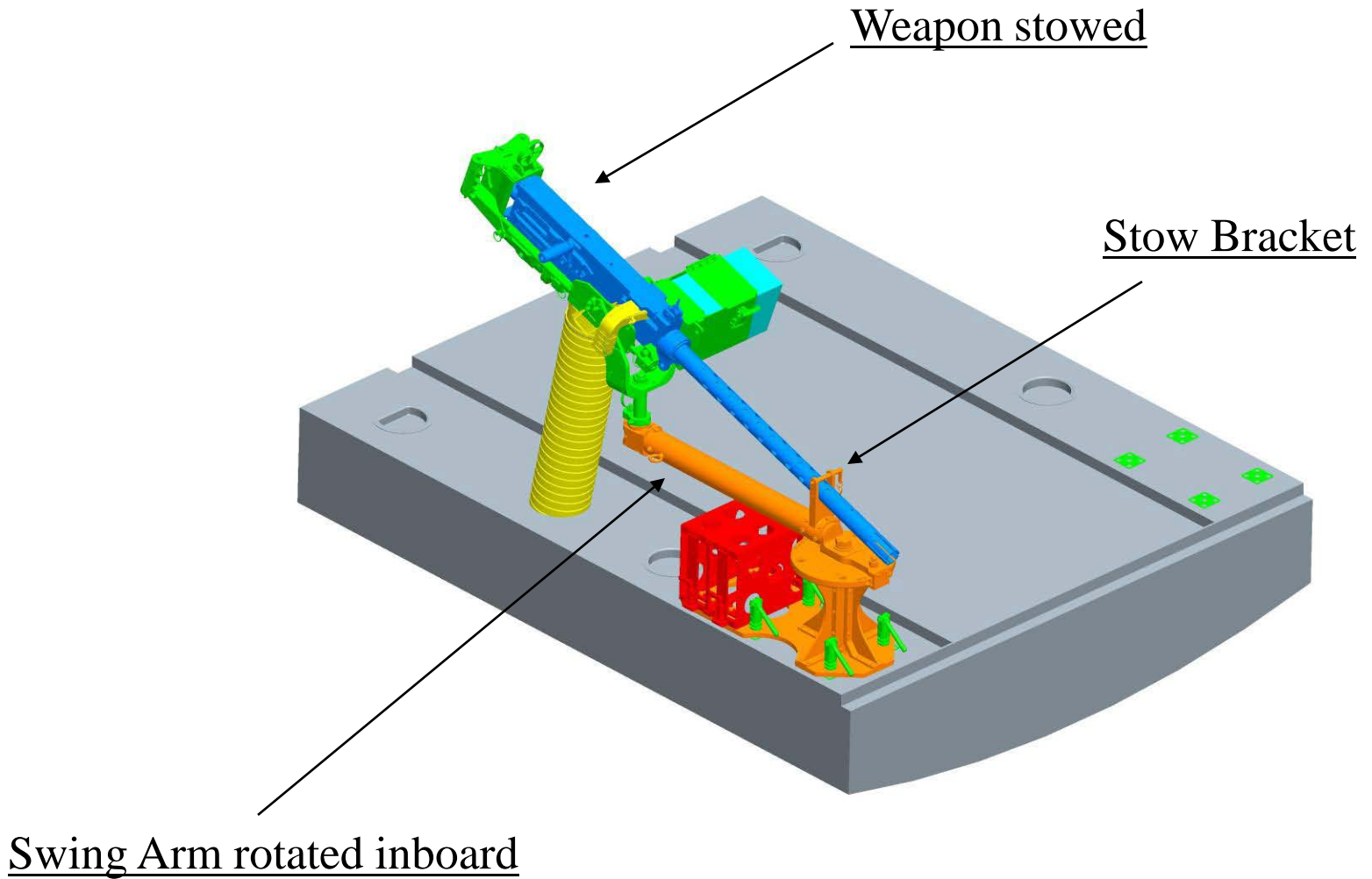


Port Side



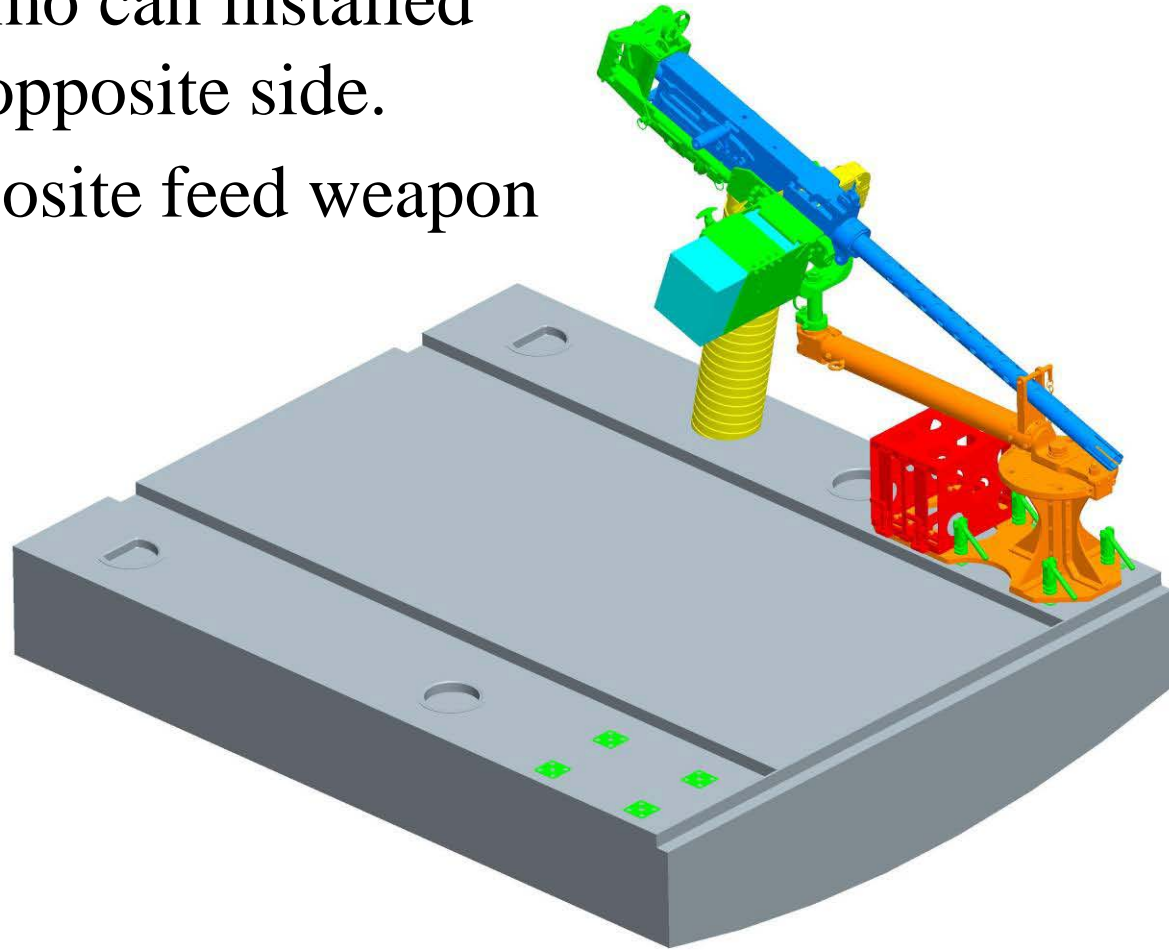
Starboard Side

Inboard Stow – Port Side



Inboard Stow – Starboard Side

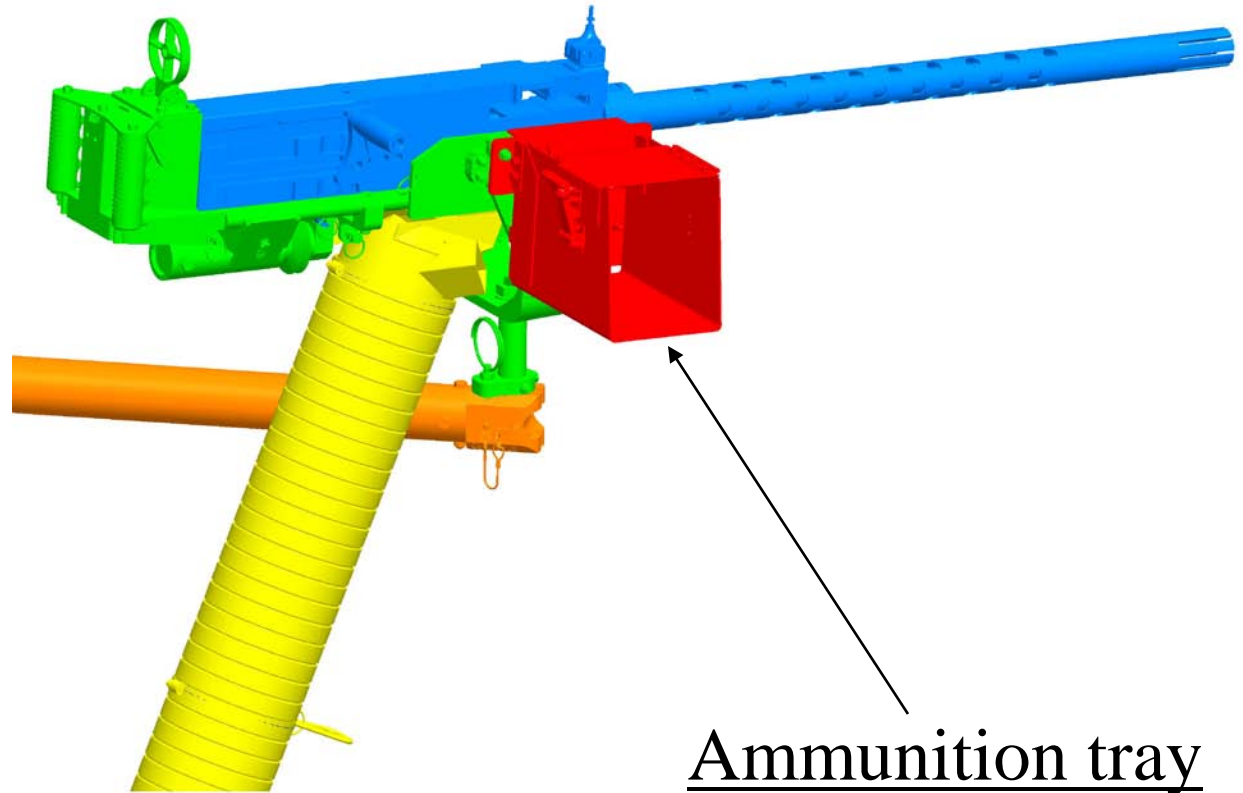
- Ammo can installed on opposite side.
- Opposite feed weapon



Ammunition Tray on Mount



- Holds 1 can of standard .50 cal ammo
- 100 rounds

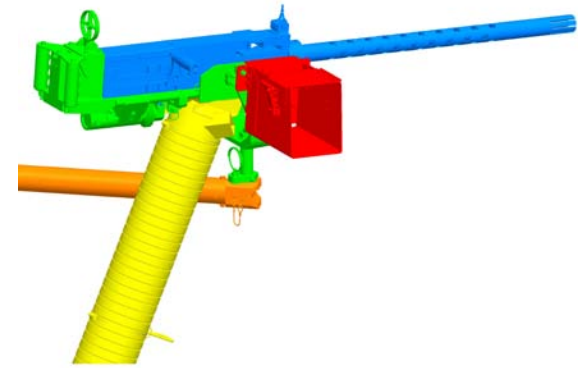
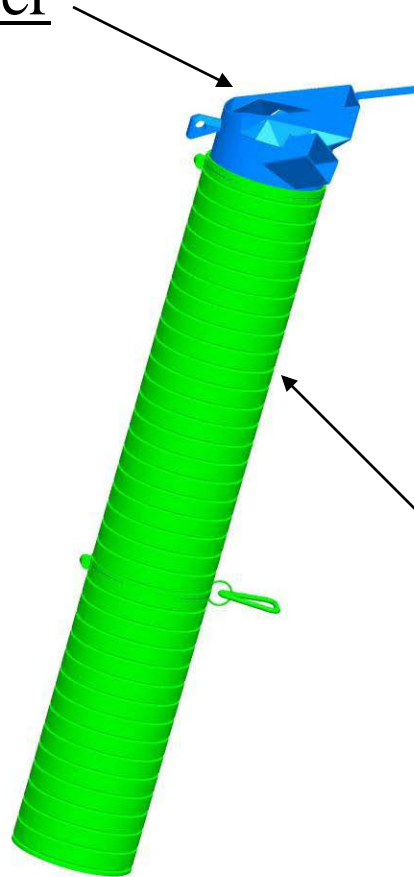


Ammunition tray

Ejection Chute Assy



Metal hopper



6" Flexible hose

Weights of Ramp Mount System



	<u>M240</u>	<u>.50 Cal</u>
- Weapon:	26 lbs.	65 lbs
- Ammo (400 rnds):	34 lbs.	128 lbs.
- Mount/Swing Arm:	<u>70 lbs.</u>	<u>99 lbs.</u>
Total Weight:	130 lbs.	292 lbs.

Future Deliveries of Ramp Mount Systems



- Thru 2020 – in conjunction with deliveries of production aircraft.

Point of Contact Information



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