SPECIAL OPERATIONS FORCES INDUSTRY CONFERENCE

Accelerating SOF Innovation

Program Executive Office Special Operations Forces Support Activity (PEO SOFSA) Mobile Technology & Repair Complex (MTRC) Information Briefing

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Special Operations Forces Support Activity

Agenda

- Mission
- Program Facts
- Composition
- Capabilities
- Current Status
- Vignettes
- Requesting Capability
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Mission

MTRC provides the capabilities and processes to rapidly modify, repair, and fabricate SOF equipment and facilities, at the point of need, in order to bridge operational gaps and adapt to opposition or environment change.

Program Facts

- Developed in 2009 under SOF AT&L Science & Technology (S&T) Directorate as a capability to fill gaps for deployed Special Operations Forces
- Validated in 2015 as Program of Record thru the Special Operations Command Requirements & Evaluation Board (SOCREB) process
- Resourced with Overseas Contingency Operations (OCO) funding
- PEO SOFSA is Milestone Decision Authority / Program Executive Office
- USSOCOM J4 is the Capability Sponsor

Composition

- **Personnel:** Standard MTRC Team is comprised of a 2-man team consisting of an USG Civilian Engineer and a Contract Technician that provide onsite engineering, innovation, and technical support

- **Equipment**: Standard (2ea) deployable ISU-90 like modules and a mobility platform tailored to specific mission and location -- MTRC team deploys with modular, scalable equipment sets that can meet a variety of expeditionary requirements and tasks

- **Material**: Deploy with initial ‘push package’ of raw material with long-term sustainment via military and commercial re-supply

Capabilities

Specialized skills in the following:

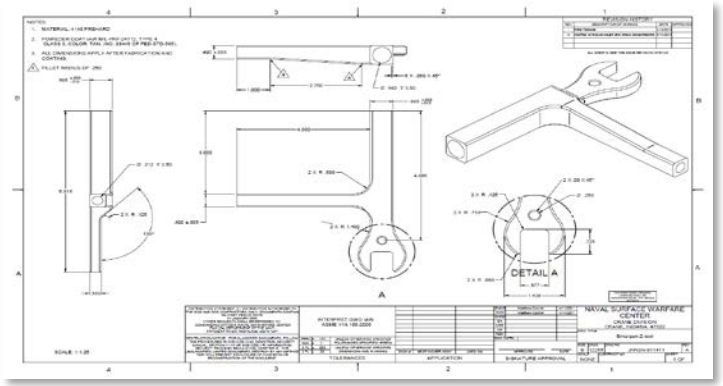
- Engineering (CAD, 3D Printing, Documentation, Risk Management)
- Welding
- Machining
- Advanced Manufacturing
- Carpentry
- Electrical
- Kydex & Sewing
- Platforms / Weapons / C4

Current Status

- 16 Kits in Inventory
- 13 Kits Deployed / Employed
- 3 Kits Available to Support Additional Requirements

Command / Location	Teams	Remarks
SOTF-A	4 Teams / 1 SAC	4 Teams / 1 SAC Distributed - Supported by OPS/LOG Cell
SOCCENT	5 Teams	5 Teams Distributed - Supported by OPS/LOG Cell
SOCAF	3 Teams	3 Teams Distributed - Supported by OPS/LOG Cell
SOFSA / CRANE	3 Kits	1 Kit for Training. 2 Kits Staged for Operational Requirements

Egress Tool

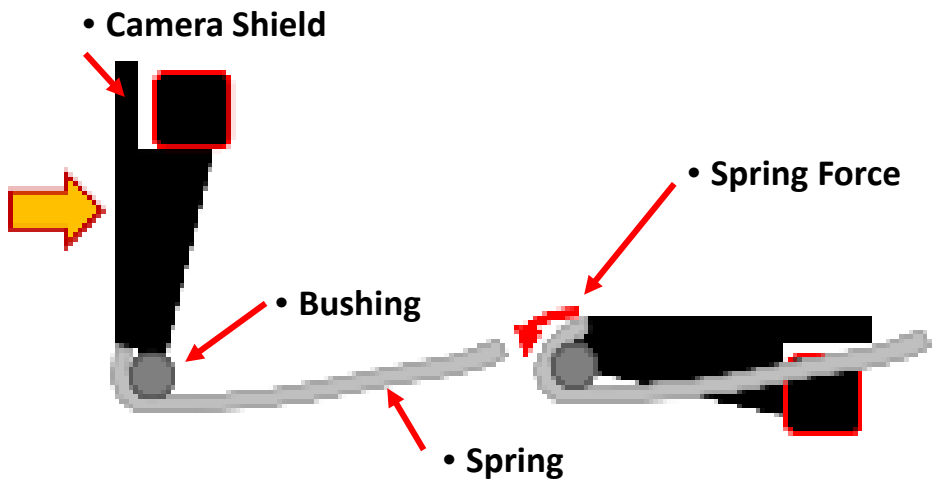


Who: Component
What: Individual carry, common egress tool
Where: OCONUS
When: DEC 2010
Why: Egress tools are commonly blown off vehicles during IED strikes or under the vehicle in a roll over, and the RG-31, RG-33 and MATV all use a different tool.

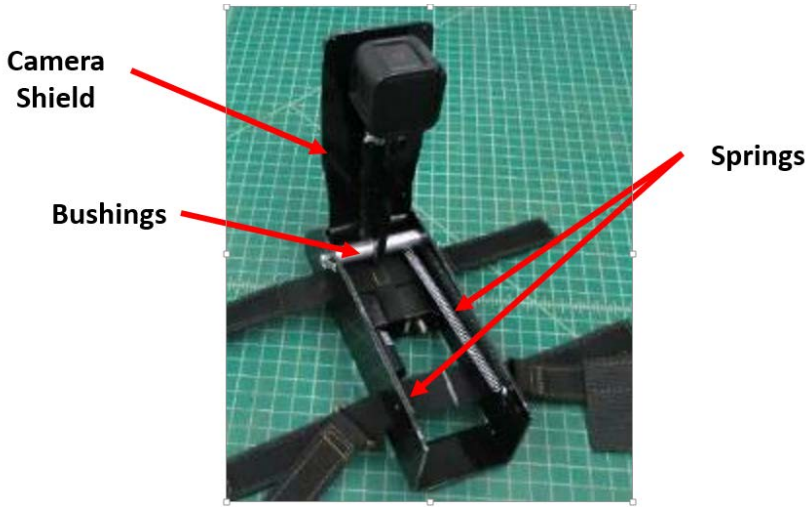
Engineering Method

- **Component requested a lightweight tool that would open all variants of tactical vehicles in use**
- **Tool needed to be large enough to provide leverage to open door latch**
- **Tool needed to be lightweight for individual carry.**
- **Tool had to fit all three combat lock variations**

Dog Camera Harness



- Springs return camera pedestal to upright position if knocked down



Camera held in upright position using springs

Engineering Approach

- Springs are routed around a bushing and attach to the camera shield off-center line
- An off-center line attachment causes the spring to stretch when the camera closes and not just bend
- An object impacting the camera shield will fold the camera down into the housing and stretch the springs
- When the external force is removed, the springs will pull the camera back to the vertical position
- Tested spring attachment points to determine spring constant ‘k’ and adjusted force
- Back end of springs can be detached to prevent fatigue when in storage and maintain spring force

Caliber Spare Barrel Mount

Who: SOF Customer
What: .50 Caliber Spare Barrel Mount
Where: OCONUS
When: FEB 2017
Why: SOF Customer requested MTRC fabricate and install .50Cal barrel mounts on each of their HMMWV in order to ensure spare barrels were close at hand while in the Gun Turret

Barrel mount with mounting brackets

Original Pipe and 2” Angle Iron

Engineering Approach

- Cut out round stock to 19” IOT hold .50 barrel
- MIG welded two 2” angle iron tabs with 5/16” holes to mount to existing bolts on vehicle turret
- Sealed bottom of tube for barrel containment and added 1/8” hole for water drainage
- End product increases troop lethality as this mounts barrel to rear of vehicle turret so operator can quickly and easily swap hot/cold barrels with minimal disengagement time

MFF Navigation Board

Who: SOF Customer

What: MFF Navigation (NAV)Board

Where: OCONUS

When: JAN 2018

Why: SOF Customer requested assistance in creating a navigation board, allowing full visibility and utility during parachute operations. The previous navigation setup was less durable and more cumbersome than the MTRC fabricated MFF navigation board. Without the MTRC MFF NAV Board, the SOF Customer would have continued to use less functional / more breakable equipment for freefall operations.

Top Side of NAV Board

Bottom Side of NAV Board

Mounted NAV Board

Engineering Approach

- **Used .093” Kydex sheet for fabrication**
- **Created basic cutout allowing room for Suunto SK-8 compass and drilled holes to secure compass to nav board with shock cord**
- **Accounted for room behind compass on underside of navigation board to mount Inova Microlight STS for illumination through side-reading window**
- **Applied stick-on hook and molded a bend in vertical face of board to create solid mounting surface between board and plate carrier and create tie-down point**

MRZR-D MK-44 Mini-Gun Mount

Who: TSOC
What: MRZR-D MK-44 Mini-Gun Mount
Where: OCONUS
When: MAR 2018
Why: Personnel requested that a MK-44 Mini-Gun be mounted to MRZR-D platform

Mk 44 Weapon System installed

Stock MRZR-D before modifications

Engineering Approach

- **The mini-gun, ammo can, battery, feed-chute, and power cabling were all securely mounted to the RZR**
- **A roof was also fabricated to provide shade to the operators as well as secure the feed-chute and power cable**
- **All components of this system are removeable and can be transferred to a different RZR**
- **An ATP 5-19 Risk Management Assessment was prepared and delivered**

Requesting MTRC Capability

- **Request MTRC capabilities through operational channels via AMHS message from SOF Organization Operations (J3) to USSOCOM J3 for validation**
- **Upon USSOCOM J3 Validation:**
  - If centrally managed program funds and/or existing capabilities are available, PEO SOFSA coordinates for placement of MTRC capability
  - If program funds are NOT available:
    - PEO SOFSA places requirement on “unfunded” requirements list” and works resourcing strategy with requester
    - Or requesting organization may fund for execution independently
- **Contact the USSOCOM MTRC Program Manager**
    - Mr. Lu Vega, MTRC – USSOCOM Program Manager

      Special Operations Forces Support Activity, Blue Grass Station, KY

      Office: (859) 566-5025; luis.e.vega@sofsa.mil

Road Map

- Leverage USSOCOM J3 prioritization / validation requirements shortfalls until MTRC is able to resource and/or requirements lessen
- Staff USSOCOM Program Directive to formalize J-Codes, Directors, and MTRC Program responsibilities
- Improve database / network for MTRC technical data and previous projects on INTELINK
- Potential ‘OCO to Base’ funding to support non-OCO MTRC requirements
- Finalize Next Gen MTRC: A more scalable / modular capability set that will adapt to Operational Mission Sets