Deployments and Operations Working Group
An Information Brief

- Our Customers
- Our Products
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  - Safety Handbook
  - Special Reports
  - Predator Mishap Trends
- Sharing the Data
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Periodic Reports

• NIPR
  - MRAP Mishap Trend Analysis
  - OEF Tactical Vehicle Rollover Trend Analysis

• SIPR
  - OEF Aircraft Lasing Incident Trend Analysis
  - CENTCOM Mishap and Other Deployed Locations Report
MRAP Mishap Trends - Periodic Report

• Provides real time trend tracking for all MRAP mishaps
• Issued monthly, timely, 16 slides
• Over 250 personnel on distribution
• Distribution email includes data set, slide deck, master Safety Messages tracking, and other safety material
• Take-away: The efforts have kept us ahead of the MRAP mishap “bow wave” and provided basis for DOTMLPF improvements.
USFOR-A Tactical Vehicle Rollovers - Monthly Report

- Provides trend tracking USFOR-A (Afghanistan) tactical vehicle rollovers, all Services, all tactical vehicles
- Timely, 12 slides
- Incidents, fatalities, injuries with and by vehicle type, and date timeline
- Take-away: OEF rollovers decreasing
Special Projects

– FOB/Base Camp Safety Handbook
– Lighter-than-Air (Aerostat/PGSS/PTDS) Mishap Trend Analysis
– Stryker Mishaps
– Predator (MQ-1) Mishap Trend Analysis
– Turret Gunner Injury Analysis
– Effects of Heat Stress an Ground Mishaps
FOB/Base Camp Safety Handbook and Briefing

- Provides Safety Handbook and Class for FOB Mayors and Mayors cells
- Data Source: Existing COCOM, DOD, ACE, Service, policies, resources and documents
- Customers: FOB Mayors and Mayors Cells
- Helps fill an information/knowledge gap
- Addresses FOB safety infrastructure standards and design, safety councils, roles and responsibilities, inspections, RAC codes, Fire and Emergency Response

Forward Operating Base (FOB) and Base Camp Safety:
Resources for FOB/Base Camp Mayors, Mayors Cells, and Safety Officers

Version 1.1
5 Apr 2014
POC for this Handbook: alfred.levy.civ@mail.mil
• Review Lighter than Air mishap trends
• Data Source: CENTCOM SIGACTS, DSES
• Timely, 12 slides
• Customers: AOR Safety Pros, CENTCOM, J-39 ROD
• ~ $218.3M in losses, FY05 thru 10 Jun 14
• Take-away: Increase in future fielding of LTAs will need mitigation measures to prevent future losses
Stryker Mishaps FY08 – FY10 – Special Report

• Provides information on Stryker mishap trends
• 13 Slides
• Injury and fatalities, Classes of mishaps, Categories: rollover, traffic, fire, personal injuries, etc and associated injuries and fatalities
• Produced based on demand
• Take-away: Mishaps similar to MRAP
Predator Mishap Trends

- Provides mishap data and trends for UAV/RPA community
- Identifies system failures and phase of flight when mishap occurs
- Provides awareness of cost data on losses
Turret Gunner Injury Analysis – Special Project

- Provided analysis on turret gunner injuries
- Data makes a case for need for maxillo-facial shields and motorized gunner’s harness retractors for tactical vehicle turret gunners
- Take-away: Turret gunners are the most vulnerable to both hostile and non-hostile injuries
Turret Gunner Ricochet Trend- Special Report

- Reviewed turret gunner ricochet incidents to develop TTP
- Data Source: CENTCOM SIGACTS, DSES
- Customers: AOR Safety Pros, Leaders
- Developed Lessons Learned
- Incorporated into CALL MRAP Handbook 11-11, January 2011
- Take-away: Successful mitigation thru awareness and doctrine addition

CALL MRAP Handbook 11-11, January 2011

- Observation. Gunners using their individual weapon (usually an M4 carbine) while in the Objective Gunner Protection Kit (OGPK) have shot and hit elements of the OGPK causing ricochets that have severely wounded themselves and other crew members inside the vehicle.

- Discussion. A phenomenon called “parallax off-set” can allow a gunner to see a target, while the weapon muzzle may still not be clear of the intended target line. Firing from within the OGPK can result in bullets being fired into the inside armor and ballistic shield causing bullets to ricochet about the turret and into the crew compartment.

- Lesson learned. Having a clear line of sight on the target does not ensure the bullet travel path from the barrel is clear.

- Call to action. Improper position: shows muzzles clear of the turret shield and pointing against the top of the turret shield allows for steadier aim.

- Recommendation. Individual weapons should be test fired from the dismounted position (on the ground) or by having another crew member test fire the weapon when gunner dismounting is not feasible. Maintain muzzle awareness at all times.

- Example. When an individual weapon is fired from the turret, gunners should brace the forward edge of the OGPK or as far forward as possible and support the rifle on the OGPK ensuring the barrel extends beyond the edge of the turret shield.

- Ensure weapons are on safe at all times. It is always safer to engage a target.

18 Jul 10, OIF. Turret gunner was at the test fire pit and after firing his M240B, from the M1151, test fired his M4 without the barrel completely being clear of the turret. The round ricocheted off the turret, entering the vehicle striking the gunner’s left arm and right leg. 855 MP Co.

5 Jun 10, OIF. Turret gunner was at the test fire pit and test fired his M4 without the barrel completely being clear of the turret. The round ricocheted off the turret, entering the vehicle striking the gunner’s right leg and the drivers right leg. A Co, 1-30 IN.

19 Jun 09, OIF. While conducting RKG-3 training, SM shot with his M4, the inside of his MRAP turret causing the third round to hit the gunners shield and ricochet inside the turret. SM sustained minor wounds to his left leg. 3-82 FA.

31 May 09, OIF. SM was wounded in the forearm by a round from his own M4 carbine when it discharged against the turret shield of the MRAP. SM was traveling thru the ECP when he grabbed his M4 and the truck hit a bump and the weapon discharged inside the turret. 1-8 CAV.

25 May 09: Soldier was in a test-fire pit, shooting an M249 5.56mm light machine gun (Squad Automatic Weapon) from the turret of a vehicle, without having mounted the weapon in the vehicle. (The weapon reportedly was not authorized for firing from that location.) During the firing, movement of the weapon caused it to no longer clear the vehicle turret. Two of the fired rounds struck the turret, causing one of the rounds to ricochet. The ricochet struck the soldier in the thigh. Soldier was hospitalized for one day, with an additional four lost duty days.
**Effects of Heat Stress on Ground Mishaps – Special Report**

- Reviewed the potential association of the effects of heat stress and dehydration on human performance and the potential increase in ground accidents.
- Significant positive correlation exists that we have more accidents in CENTCOM during hot months due to heat degradation on human performance.
- Take away: Effects of heat may be greater impact on mishaps the heat injuries themselves.

### Mishap Incidence Jan 04 - Dec 08 Findings

- The correlation coefficients showed that there was a positive and significant correlations between higher temperatures and mishap incidence for ground activity.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Correlation</th>
<th>p-value</th>
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</thead>
<tbody>
<tr>
<td>Aviation Activity</td>
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<td>.108</td>
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<tr>
<td>Weapons/Ammo Activity</td>
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<td>.205</td>
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<tr>
<td>Ground Activity</td>
<td>.617</td>
<td>.032*</td>
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Significant correlation = p < 0.05

### Conclusions and Recommendations

**Conclusion:**
- There is a positive correlation between effects of heat stress with mishap incidence from “ground activities” in the CENTCOM theater using SIGACTS report data.
- Initiatives to reduce heat stress and dehydration have the potential to reduce human error related mishaps.

**Recommendations:**
- The principle that heat stress/dehydration can lead to increases in mishaps should be added to DoD Heat Injury Prevention briefings and classes. Mishap outcomes are potentially a bigger risk than the heat injuries themselves.
- Studies needed to determine cumulative effects that degrade human performance; heat, dehydration, altitude and fatigue.
- Assessment and application of cooling technologies may reduce mishaps:
  - Microclimate cooling vests and cooling caps
  - Portable evaporating cooling fans
  - Mist cooling systems
  - Enhanced environmental control units for aircraft and vehicles
  - Forearm immersion in cooled water.
Questions