State of the Warrior
- ISR/ RPA/ Cyber Ops

ANG RSV Conference
July 2015

James McEachen, Col, IA ANG, FS, MC
ANG Assistant to the 25th AF/SG
“The next war may be fought by airplanes with no men in them at all... Take everything you’ve learned about aviation in war, throw it out of the window, and let’s go to work on tomorrow’s aviation.”

Information in War .....A Revolution

AFDD 2-0: Global Integrated ISR Ops; June 2012
Total flexibility...Any Time, Any Target
The Real-World Value of ISR, RPA and Cyber Ops

By Jeff Schogol, Staff writer

Air Force Short on Drones

By Richard Sisk | Monday, April 20, 2015 | Posted in Air

AirForcetimes

2:02 p.m. EDT May 20, 2015

NGA creates

To help combat the unprecedented online threat, their partners the

“This has the potential to Integrated Working humanitarian assistance

NGA’s role in the Ebola disaster support, including and Typhoon Haiyan in 2012

The massive Sony exhibit space is seen at the International Consumer Electronics show (CES) in Las Vegas, Nevada January 6, 2015.
“enhancing critical tactical and national relationships”

As of 1 October 2014
• 1 NAF
• 239 Total Activated Units
• 71 Worldwide Locations
25th Air Force

ACC
Agency
Headquarters AFB, TX

25th AF

9th Recon Wing
Beale AFB, CA

55th Wing
Offutt AFB, NE

70th ISR Wing
Ft Meade, MD

480th ISR Wing
Langley AFB, VA

361st ISR Group
Hurlbert Field, FL

AFTC
Langley AFB, VA

AFTAC
Patrick AFB, FL

HAF / A2

NASIC
Wright-Patt AFB, OH

Reassigned ACC Unit

Redesignated as a Wing

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The “Disciplines” of ISR

**GEOINT**
- Imagery & geospatial analysis
- Imagery Intelligence (IMINT)
- Full motion video (FMV)

**SIGINT**
- Communications Intelligence (COMINT)
- Electronic Intelligence (ELINT)
- Foreign Instrumentation (FISINT)
- Cyberspace data

**MASINT**
- Monitors adversary technical developments & deployments
- Wavelength
- Particulate
- Hydromagnetic
- Effluent collection

**HUMINT**
- Uses people to reveal adversary intentions, strategy & capabilities
- Dedicated collectors
- Special Operations
- Defections
- Spies

**OSINT**
- Collected from overt, publicly open sources
- Web groups
- Media, Airshows, Academia
- Rapidly acquire data
- Protection of sensitive sources

**S & TI**
- Study of foreign technology
- Understand adversary capabilities
- Builds countermeasures
- Developing new weapons
Distributed Common Ground System (DCGS)
Distributed Common Ground System (DCGS) Weapons System

- DCGS Operational Crew Size
  - 37 for RQ-4 missions
  - 7 for MQ-1/MQ-9/MC-12 missions

- Sample 480th ISRW Daily Ops Tempo:
  - ~ 70 ISR sorties supported
  - ~580 hours of motion imagery reviewed
  - ~2000 still images exploited
  - High volume report production
Putting the Pieces Together

24th Air Force

25th Air Force

Space Command

Cyber Ops

DCGS

Targeting

MQ-9

MQ-1

U2

RQ-4

EC-135

F15

F16

F22

B1

E-8

E-3

A10

F15
The New Front Line in a Cyber-Linked Battlefield

- ALL DIME-C Impact
- ALL in High Demand
- ALL Require TS/SCI
- ALL Shiftwork-centric
- ALL 24/7 ops
- ALL with Similar Medic Challenges
Expanding Nature of ISR

• Underpins every military mission the United States undertakes
  — Focused, integrated ISR enables mission execution

“Hunters rather than Gatherers” — Intelligence can no longer be passive

ISR demand continues to grow exponentially!

4,300% increase in overall ISR hours flown since ’01!
% of Personnel With High Levels of Exhaustion or Clinical Distress

Occupational health screenings from 2011-2014 by Dr. Wayne Chappelle et al, USAF School of Aerospace Medicine

UNCLASSIFIED
AFRL-SA-WP-TR-2012-0010
Main Sources of Occupational Stress and Symptoms of Burnout, Clinical Distress, and Post-Traumatic Stress Among Distributed Common Ground System Intelligence Exploitation Operators (2011 USAFSAM Survey Results)

Lillian Prince, M.S.S.I.
SpecPro Technical Services, LLC, San Antonio, TX
Wayne Chappelle, Psy.D., ABPP
Kurt McDonald, Col, USAF, MC, FS
U.S. Air Force School of Aerospace Medicine, Neuropsychiatry Branch, Wright-Patterson AFB, OH
Tanya Goodman, M.S.
Neuro/Behavioral Solutions, LLC, San Antonio, TX

September 2012

AFRL-SA-WP-TR-2014-0007
Occupational Health Screenings of U.S. Air Force Remotely Piloted Aircraft (Drone) Operators

Wayne Chappelle, Psy.D., ABPP
Julie Szwarczuk, Ph.D.
Tanya Goodman, M.S.
Derek Cooper, M.A.
Lillian Prince, M.S.S.I.
William Thompson, M.A.

U.S. Air Force School of Aerospace Medicine, Neuropsychiatry Branch, Wright-Patterson AFB, OH, Neuro/Behavioral Solutions, San Antonio, TX, Texas Research and Analytical Solutions, Menchville, Alabama

AFRL-FA-WP-TR-2013-10027
Psychological Attributes Critical to the Performance of MQ-9 Predator and MQ-9 Reaper U.S. Air Force Sensor Operators

Wayne Chappelle, Psy.D., ABPP
Kent McDonald, Col, USAF, MC, FS
Raymond E. King, Lt Col, USAF, MC

June 2013
# 2010 – 2015 SOURCES OF STRESS

<table>
<thead>
<tr>
<th>USAF RPA/ISR/Cyber Ops Warriors</th>
<th>Control Group (Support/Logistics) Group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RPA Operators</strong></td>
<td><strong>DCGS Operators</strong></td>
</tr>
<tr>
<td>Long hours/Low Manning</td>
<td>Long hours/Low Manning</td>
</tr>
<tr>
<td>e.g., working 50+ hours per week to sustain time suspense missions</td>
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</tr>
<tr>
<td><strong>Rotating Shift Work</strong></td>
<td><strong>Rotating Shift work</strong></td>
</tr>
<tr>
<td>e.g., rotating every 30 days between days, swing, and night shifts to sustain 24/7 operations</td>
<td>e.g., frequent shift rotations to sustain 24/7 operations with time suspense missions</td>
</tr>
<tr>
<td><strong>Deployed in-Garrison Status</strong></td>
<td><strong>Deployed in-Garrison Status</strong></td>
</tr>
<tr>
<td>e.g., daily balance of war fighter role with domestic life, access to base resources, juggling family/personal relationships</td>
<td>e.g., daily balance of intelligence role with domestic life, access to base resources, juggling family/personal relationships</td>
</tr>
<tr>
<td><strong>Fitness</strong></td>
<td><strong>Leadership/Organizational Issues</strong></td>
</tr>
<tr>
<td>e.g., accessing training and organizational activities leading to on-time promotion</td>
<td>e.g., leaders not communicating requirements</td>
</tr>
</tbody>
</table>
Medical/ Behavioral Concerns

- DCGS (and RPA) operators have
  - High caffeinated beverage use
  - Increased alcohol use
  - Increased musculoskeletal injury/pain
  - Increased sleep problems, and emotional distress created or made worse by their occupational environment
  - Increased mental healthcare utilization and OTC medication usage

Occupational Health Screenings of the Virtual Warrior: Distributed Common Ground System Intelligence Operators Compared with Non-Combatant Support Personnel
Wayne Chappelle, Psy.D., ABPP2; Lillian Prince, M.S.1; Tanya Goodman, M.S.3; William Thompson, M.A.3; Sara Cowper, M.A.3; Bobbie Ray-Sannerud, Psy.D.3
1U.S. Air Force School of Aerospace Medicine, Neuropsychiatry Branch, Wright-Patterson AFB, OH; 2Prince-Research Solutions, AL; 3Neurostat Analytical Solutions, San Antonio, TX February 2014
Medical/ Behavioral Concerns

• Chronic Shift work
  • Increased risk of CVD, diabetes, depression

• Sequela of chronic fatigue

• Ergonomic concerns

• Less access to health care due to shift hours
Care for the
ISR/RPA/Cyber Ops Warrior
25th AF - Who We Are

Enlisted: 20,325
Officer: 3,185
Civilian: 2,813
Total: 26,323

Active Force: 26,323
Guard: 3,829
Reserve: 2,000
Total: 32,000+

77% Enlisted
12% Officer
11% Civilian

77% Active Force
9% Guard
3% Reserve
AFDD 2-0: Global ISR Presence
Isolating Barriers

• Chronic Shift Work & Long Work Hours

54% reported difficulties commuting to/from work due to sleepiness
4.5.3. Maximum Mission Duty Period (MDP). Maximum MDP is 12 hours for mission crewmembers. If official post-mission duties are anticipated to exceed 2 hours, commanders should consider reducing the MDP to ensure the safe completion of those duties.

4.5.3.1. Crew Rest. Mission crew require at least 12 continuous hours of restful activities (including an opportunity for at least 8 hours of uninterrupted rest) during the 12 hours immediately prior to the MDP. To ensure individual accountability and mission reliability, crewmembers should be officially notified prior to entering a crew rest period. A crew rest period cannot begin until after the completion of official duties. Exceptions to the 12-Hour Minimum Crew Rest Period for continuous operations when basic mission crews MDPs are greater than 12 but less than 14 hours, subsequent crew rest may be reduced proportionally to a minimum of 10 hours in order to maintain a 24-hour work/rest schedule, allowing opportunity for a minimum of eight (8) hours uninterrupted rest.
Isolating Barriers

• Geographic & Temporal Proximity to Support Services/Resources

• Commute Time
• Social
• Medical
• Spiritual
• Food
• Exercise
Isolating Barriers

• High-level Security Clearance
Medical/ Behavioral Concerns

• Bad people do bad things
  • Often bear witness to difficult/challenging/horrific events but may be powerless to intervene

• The juxtaposition of life at war and life home can be difficult
Forging a Resilient Warrior
Support of the Non-Aviator Operator

- Address Manpower & Shiftwork Optimization
- ISR OME & Resiliency Team Direct Engagement
- 25th SG Initiatives & Interventions
  - Operator & Medic training
Fatigue Countermeasures in Aviation

John A. Caldwell, Melissa M. Mallis, J. Lynn Caldwell, Michel A. Paul, James C. Miller, and David F. Neri
for the Aerospace Medical Association Fatigue Countermeasures Subcommittee of the Aerospace Human Factors Committee


d. In-Flight Rostering
e. Cockpit Lighting

Position Statement on the Use of In-Flight Countermeasures

IV. Pre-/Post-flight Countermeasures and Strategies
RPA/ISR Shiftwork Optimization Strategies

- Predictability
- Control
- Choice
- Length of Shift

- Environmental Quality/ Ergonomics
- Physical movement/ conditioning
- Other Considerations
  - Energy Supplements
  - Alcohol Usage
An Embedded Solution

- We have known since 1918 when the first Flight Surgeons were embedded into flying units that an embedded approach is effective.
The 25th AF/SG Active Duty Model

- Embedded **Operational Medical Element (OME)** with **Human Performance Optimization (HPO) Team** being established at multiple AD bases across the 25th AF
  - 53 LINE-funded positions for medics
  - Converted positions include TS/SCI clearances
  - Expected full program roll out in 2016

- Embedded OME/ HPO team provides:
  - Proactive response
  - Structured link to “population at risk”
  - Operator advocates
  - Direct action network (e.g. helping expedite process for RTD)
  - ISR/CC advisory service
REMOTE WARRIOR STRESS RESULTS
(Vs. IN-GARRISON USAF CONTROL GROUPS)

Enhancing Resiliency in a Setting of Chronic Fatigue

Predator/Reaper Operators

- 2010 RPA: 28% Exhaustion, 18% Clinical Distress
- 2012 RPA: 20% Exhaustion, 11% Clinical Distress

DCGS Operators

- 2011 DCGS: 24% Exhaustion, 16% Clinical Distress
- 2013 DCGS: 26% Exhaustion, 14% Clinical Distress

Improvement:
- 2012-13 AF CONTROL GROUPS (Support/Logistics)
  - Exhaustion: 10 - 11%
  - Clinical Distress: 8 - 10%

Guarding America - Defending Freedom
UNCLASSIFIED
The 25th AF/SG Active Duty Model

"The stress is there, the work is there, the Airmen are there, and now we have the SG there...and the team is much stronger and more combat effective”

– Col Jeff Kruse, 480 ISRW/CC
TFF/CAF Transition to Operational ISR Mission Support
(Health/Human Performance Optimization)

CJCS Initiative

Social
- Behavioral
  - Task cohesion
    - Social support
    - Social cohesion
  - Risk mitigation
    - Coping
    - Awareness
    - Stress management
    - Decision making
- Physical
  - Endurance
  - Mobility
- Psychological
  - Mental health
    - Cognitive capacity
    - Coping skills
  - Sleep
  - Nutrition
  - Mindset
- Environmental
  - Climate
  - Noise
  - Air quality

Total Force Fitness

Medical
- Nutritional
  - Food quality
  - Supplementation
  - Food choices
  - Nutrient requirements
- Psychological
  - Mindset
  - Diet
  - Nourishment
  - Stress management
  - Coping
- Physical
  - Endurance
  - Mobility
- Spiritual
  - Ethical leadership
  - Accommodate diversity

Human Performance Optimization
Foundational Development And Sustainment
Resiliency

OME Engagements w/AM or FM for future incorporation into the AFMH
We have begun either embedding or dedicating medics to directly support missions such as special operations, remotely piloted aircraft, intel, or other high stress career fields, which have had a clearly positive impact on those Airmen, their mission effectiveness, and their families. The Human Performance Concept of Operations, which we published last year, is the foundation of Air Force Medical Home, and sets a course to make this a sustained effort.

Thomas W. Travis
Lieutenant General, USAF, MC, CFS
Surgeon General
April 2015
ANG Support Initiatives for Total Force Missions

• Total Force Resiliency Support Team with Direct Operator Access
  • CORE - Medic/ DPH/ Chaplain
  • Exploring provisions for Full-time Provider
  • Seeking TS clearance approval/funding

• Same AD Operational Support Focus:
  • Proactive response
  • Structured link to “population at risk”
  • Operator advocates
  • Direct action network (e.g. helping expedite process for RTD)
  • ISR/CC advisory service
ANG Total Force Support Considerations

• **Purpose** (T32 – ‘OARIT’)
  • Care linked to T32 services

• **De Minimis**
  • Ensure no significant impact to on-going T32 mission
  • Limited Total Force support without proportionality

• **Proportionality**
  • T10 4N allows alignment with Wing Total Force proportionality
Scalable Resource Support Initiatives for ANG Total Force Missions

Local (GMU) Initiatives
- AD Agreements (TFI/TFE)
- Local Line-funded medic support
- Alternate Provider Schedules

Total Force Resiliency Support
- Providers
- DPH
- Chaplain
- Family Advocacy
- Safety

Reach-Back Support

ANG/SG Future Initiatives
- FT Mid-Level support
- Increased TS Access
- Training
25th AF - SG Office Organization

SG
Col Paul Young
Surgeon

AFR (IMA)
Col Julie Clements
MSC

SNCO
MSgt Tonie Ruffino

AFRC Liaisons/Assts
Col Bill Blanchette
Col Randy Dell
Col Gina Woodard
Col Mickra Hamilton
Col Denise Thompson

“Borrowed Help and Mercenaries”
MTF Leadership Staff Briefings:
- Langley
- Wright Patterson
- Ft Meade (Kimbrough)
- Patrick
- Beale
- WHASC
- Ramstein
- Lakenheath
- Randolph (w/WHASC)
- Maxwell
- Nellis
- Ft Gordon (Eisenhower)
- Shaw
- Data-Masked x 2 w/Sister Services
- Hickam & Elmendorf
- Osan & Follow-ups (TBD)

FOAs/MAJCOM engagements:
- NATO STO & RAMS
- NASIC Town Halls
- Pre-POM WG – DHHQ
- MAJCOM/SGPs (FOMCB)
- AMWG – International
- DHHQ/SG3P – Staff, DHA
- AFMOA
- AMP 101 Course
- USAFSAM
- USAFSAM RAMs
- USAFSAM SGP Courses
- Air Univ.-AWC medics
- AFPC (TBD)
- AETC
- ISR Agency HQ
- MTF SLW (75 MDG CCs)
Training Initiatives

- **DCGS Operator Resiliency Training**
  - Focused on new DCGS Airmen
  - Total Force effort being developed as a 25th AF/SG initiative for inclusion in basic intel curriculum

- **ISR Medic Training**
  - AMP-linked introductory efforts
  - 25th AF/SG seasoning courses

- **Total Force RPA/ISR/Cyber ‘Best Practices’ forum**
  - DPH and Medics supporting Total Force Missions
  - Initiative focused on ‘best practices’ and available resources to mentor/support crews
Summary

• Addressing Manpower & Shiftwork concerns will pay dividends in operator health
• Embedded Resiliency Teams are showing positive results in improving operator resiliency
  • TS access with direct interaction
  • Holistic team approach
• Operator-focused training initiatives being forged
Questions?

Col James McEachen
ANG Assistant to the 25th AF/SG

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