OT&E

Scope/Cost Process

Economics of T&E Conference  3 Nov 99

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Overview

- New Way of Thinking about OT&E
  - Increase emphasis on “Mission”
    (impacts on battlefield operations)
  - Bounds of OT&E - What should they be?
  - What perspective: System - Operator - CINC
  - Value of OT&E Information

- Scope / Cost Process
- TRAC2ES Example
Two Primary OT&E Customers

Increase value of OT&E Information to Battlefield Operations

- Potential Force Employment/CONOPS Issues
- Operational Impacts:
  - Battlefield Operations
  - Operational Units
  - Hands-On Operator

AFOTEC Initiative

OT&E

Warfighter

Acquisition

OT&E Information to support Acquisition Decision Makers

- Operational Effectiveness/Suitability
- ORD
- TEMP COIs

Dictated by 5000.2
History for Mission-Level OT&E

- August 89 - Lt Gen Glenn Kent (USAF, Ret) “Strategy-to-Task”
- Late 80s/Early 90s - DOT&E emphasizes Mission-Level
- December 91 - AF/CV stated that AFOTEC needed to provide the “Mission-Level” answer
- Jan 92 - AF/TE - Must provide Mission-Level answer
- Summer/Fall 92 - AFOTEC/CC (Gen Anderson) briefed AF/CV and MAJCOM CC’s on AFOTEC’s Mission-Level approach
- Executive Council Sessions and the AFOTEC 97 Offsite dedicated to Mission-Level Evaluation
- AFOTEC organized to implement 1 Oct 98

MGen Cliver’s Approach...
Support the Warfighter...
Operationally Test the System,
Evaluate at the Mission Level
"Mission"

Late 80s
Early 90s

DOT&E
“Mission” Emphasis for OT&E

What is “Mission”?  

“Mission” of the DoD

How to focus on “Mission” for OT&E Purposes?

STT
STRATEGY-TO-TASK

“Mission” of the Individual Soldier
“Mission” for OT&E

“System” for OT&E

Theater Operations

MAJCOM Mission Perspectives
- MAJCOM Mission Planning
- MAJCOM Mission Analysis
- MAJCOM Mission Statement

MAJCOM Mission Areas & Mission Tasks

MAJCOM Ops Requirements Document
(Operational & Support Characteristics of the System)

STT

Nat’l Security Obj
Nat’l Military Obj
Regional Ops Obj

Operational Tasks

Battlefield Operations

Organize, Train, Equip

Operational Task

Army

Acq

Linkage

ORD

MAJCOM Mission Area Planning

MAJCOM Mission Area Analysis

MAJCOM Mission Statement
Strategy-to-Task

1992 AFOTEC Policy - Mission/Task Level OT&E

Focus of OT&E

National Security Strategy

National Military Strategy

Regional Military Strategy

National Military Strategy

Air Refuel (KC-10)

Weapons (F-15E, F-4G, F-15C)

Real Time C2 (AWACS)

Supply (ATC, ATOC)

Navigation Support (GPS)

Mission Tasks

Battlefield Operations

Operational Objective

OPS TASK

Execution Elements

Destroy a Command and Control Bunker

Navigation Support (GPS)

Generate Sorties (Maint)

Provide Intel (Intelligence)

C2 (ATOC)

ATC (ATC)

Fuel (MSN Tape, Diagnostics, WPNS)

Provide Intel (Intelligence)

C2 (ATOC)

Atack Iraqi Political/Military Leadership and C2

WPN

ECM

FUEL

MSN TAPE

DIAGNOSTICS

WPNS

Force Protect (F-15C)

Suppress Defenses (F-4G)

Delivers Weapons (F-15E)

Survivability

Correct Target

Mission Reliability

Weapon Impact Locations

Availability

Deployability

Supportability

MOEs

MOPs

CND Rate

% Fault Det

Availability

Mean Down Time

MoEs

MOPs

FALSE ALARM RATE

RELIABILITY

CEP

LETHALITY REDUCT

MOEs

Capacity

Reliability

Mission

Support

CND RATE

% FAULT DET

Availability

Mean Down Time

MOPs

functions/characteristics

Support Elements

Executive Elements

Execution Elements

Destroy a Command and Control Bunker

Force Protect (F-15C)

Suppress Defenses (F-4G)

Delivers Weapons (F-15E)

Navigation Support (GPS)

Provide Intel (Intelligence)

C2 (ATOC)

ATC (ATC)

Fuel (MSN Tape, Diagnostics, WPNS)

Generate Sorties (Maint)

Survivability

Correct Target

Mission Reliability

Weapon Impact Locations

Availability

Deployability

Supportability

MOEs

MOPs

Capacity

Reliability

Mission

Support

CND RATE

% FAULT DET

Availability

Mean Down Time

MOPs
Strategy-to-Task Development

What’s Used?

Military Capabilities

UJTL/AFTL

DOCTRINE

HOW

DRAWING MAP, Field Experts, ...

CONOPS

WHAT

WHO

OTHER

Strategy-to-Task
Broader Perspective for OT&E
Increasing the Value of OT&E Information

System -- System Integration -- Force Employment
(SYSTEM CONOPS) (OPLANs)

Testing
Traditional OT&E

Understanding
Mission Impacts

- Think Hard
- Interviews
- Research
- FX/CPX
- Training
- M&S

System

C2
Intel
Sortie Gen
Def Suppress
Deploy
Sustain
Def Suppress
Sortie Gen
Force Prot
Threat
C2
Testing

Understand Mission Impacts
AFOTEC Scope/Cost Process

AFOTEC Scope/Cost Team
(XO, CN, AS, Dets/ETs, TS, RM, XP, DP, User-Warfighter)

- Standardized approach
- Corporate allocation of resources based on Value of OT&E information
TRAC\textsuperscript{2}ES Example

TRANS.COM Regulating And Command & Control Evacuation System (TRAC\textsuperscript{2}ES)
AFOTEC Scope/Cost Process

AFOTEC Scope/Cost Team
(XO, CN, AS, Dets/ETs, TS, RM, XP, DP, User-Warfighter)

- Understand Battlefield Operations
- System Introduction
- Risk/Impact Analysis
- OT&E Focus
- Options + Cost
- Tasking CC/CV

- Standardized approach
- Corporate allocation of resources
  - based on
- Value of OT&E information
System Introduction

MNS
ORD
(RCM)
TEMP
(COIs)
TPWG

System Introduction

Knowledge of System Under Test
Mission Need Statement

- Geographic CINCs, CJTFs, or their medical support -- insufficient data to support medical regulating and medical evacuation decision making
  - Insufficient interoperability (integration of medical regulation and aeromedical evacuation)
  - Limited electronic data collection (integrated patient movement solution)

- Current systems (DMRIS & APES) cannot fully support medical operations
  - Manual inputs
  - Separate command and management structures
  - Limited flexibility

- Inadequate comm support - (Comm Support is a key mission need)

- No deliberate planning capability
The TRAC²ES IOC System

- Global Transportation Network
- Composite Health Care System
- Portable Personal Information Carrier
- Theater Army Medical Mgmt Info System
- Defense Med Logistics Std Support
- Noncombatant Evacuation Operations Track System
- Joint Personnel Asset Visibility
- Patient Account reporting Real-Time Tracking System
- TMIP - also provides deployed assets for theater operations
### Requirements Correlation Matrix

**16 Requirements**

<table>
<thead>
<tr>
<th><strong>RCM Parameter</strong></th>
<th><strong>Threshold Criteria</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>★ Plan Patient Move’t</td>
<td>400 patients - 30 min <em>(Peacetime + one SSC)</em></td>
</tr>
<tr>
<td>★ Patient ITV</td>
<td>Last reported positions &amp; itinerary <em>(10 min/95%)</em></td>
</tr>
<tr>
<td>★ Decentralized Planning</td>
<td>Support intra/inter theater planning</td>
</tr>
<tr>
<td>★ Deliberate Planning</td>
<td>Support forecasting &amp; what-if analysis with notional data</td>
</tr>
<tr>
<td>★ Reasonableness of LBP</td>
<td>70% rating of effectiveness for meeting user reqts</td>
</tr>
<tr>
<td>★ LBP Dissemination</td>
<td>Capability to transmit within 10 min 90% of time from PMRC to originating &amp; destination MTFs</td>
</tr>
<tr>
<td>★ Asset Status</td>
<td>95% data availability in 15 min, 90% of time</td>
</tr>
<tr>
<td>★ Data Qualification</td>
<td>95% confirmed <em>(field definitions - size, type, values, character...)</em></td>
</tr>
<tr>
<td>★ Audit and Trend Analysis</td>
<td>Ability for manual audits &amp; trend analysis</td>
</tr>
<tr>
<td>★ Global Visibility</td>
<td>Integration of global theater plans</td>
</tr>
<tr>
<td>★ Forecasting</td>
<td>Identify potential resource shortfalls <em>(1-7 days in future)</em></td>
</tr>
<tr>
<td>★ Total Patient Asset Vis</td>
<td>10 min 90% of time</td>
</tr>
<tr>
<td>★ PMRC Availability</td>
<td>Unscheduled downtime &lt; 10 hours/30 days 95% of time</td>
</tr>
<tr>
<td>★ Achieved Data Retrieval</td>
<td>Within 3 hours 90% of time</td>
</tr>
<tr>
<td>★ On-Line Data Storage</td>
<td>30 Days</td>
</tr>
<tr>
<td>★ Archival Data Storage</td>
<td>5 Years</td>
</tr>
</tbody>
</table>

★ Key Parameter
AFOTEC Scope/Cost Process

AFOTEC Scope/Cost Team
(XO, CN, AS, Dets/ETs, TS, RM, XP, DP, User-Warfighter)

- Standardized approach
- Corporate allocation of resources
  - based on
- Value of OT&E information
Understand Battlefield Operations

System Intro
UJTL
Joint Doctrine
CONOPs
SMEs

Understand Battlefield Operations

Knowledge of Operation Tasks
STT Dendritic
Attributes of Elements in Dendritic
Mission-Level Starting Point

Health Services

Patient Care

Dental

Blood Mgmt

Patient Movement

Aeromedical Evacuation

TRAC²ES

Land

Sea
Fundamentals of Patient Movement
Joint Pub 4-02.2

PATIENT MOVEMENT MISSION -
- Minimize the effects of wounds, injuries and disease on unit effectiveness by
- Rapid evacuation of injured personnel

Proactive Patient Movement Program
Phased health care system (echelons of care)

Movement Requirements
TRAC²ES

Locations/capabilities for medical care
Patient Movement - Major Theater of War

(Re: Joint Pub 4-02.2 - Joint Tactics Techniques and Procedures for Patient Movement in Joint Operations)

Evacuation Time Periods
- Urgent: 2 hours
- Priority: 4 hours
- Routine: 24 hours

Theater Evacuation Policy
- 15 Days
- 7 Days

Deployed TPMRC/JPMRC (MTFs thru TMIP)
Efficiency of Global Aeromedical Evacuation

- Ref Lt Gen Roadman’s APICS Presentation, April 95
  - AE system came under regular criticism for inefficiency
    - Operated below load capacity and clinical potential
    - No incentive for cost-effective use by referring providers
    - Command structures fragmented
    - Lack of accountability by those requesting AE
    - Disconnects between patient scheduling and transportation processes

- TRAC2ES Mission Statement -- “Combine transportation, logistics, and clinical decision elements into a seamless patient movement infosphere capable of visualizing, assessing, and prioritizing patient movement requirements, assigning proper resources, and distributing relevant data to efficiently deliver patients”.

- ORD: “… ensure the efficient operation of a system for global patient movement.”
Key Areas

- **Joint Doctrine** - *Rapid evacuation of injured personnel*

- **ORD** - *... ensure the efficient operation of a system for global patient movement*
Patient Movement Mission
- Constraints -

Key Physical Constraints

- MTF Beds
- ASF Beds
- Airlift
- PMI

Rapid Evacuation of Injured Personnel
Theater CINC & TRANSCOM

Information Constraints
(TRAC²ES Will Influence Effective Use of Physical Assets)

Focus of OT&E Evaluation

Patient Input (Theater Demand)

Patient Output
Understand Patient Movement Operations

Military Capabilities

UJTL

SN 1.2.8 Provide Global Patient Movement AE
SN 4.2.3 Provide defense-wide health service
ST 4.2.2.2 Coord patient evac from AOR
OP 4.4.3.2 Manage flow of casualties in theater of ops

WHAT

Joint Doctrine

JT Pubs
3-0: Doct for JT Ops
3-07 Other than War
4-02 Health Svc
4-02.1 Health Svc Log Supt
4-02.2 Patient Mvmt

HOW

CONOPS

• CINC OPLANS (Not Reviewed)
• Annex Q to AMC Omnibus OPLAN-Medical Svc
• TRANSCOM TRAC2ES

OTHER

• Interview Experts
• TRANSCOM Process Map
• Telephone Interviews
• Investigated Exercises

Who

Operational Objective
Provide patient movement to support an MTW

Operational Task
Move individual patients to meet medical needs

Execution Elements

- Medical Treatment
- Transport Patient
- Execution C2

Support Elements

- Global/Theater C2
- Generate Sorties
- Comm
- PMI Support
- Patient/Resource Status
- Deploy
- Sustain

25
**Patient Movement**

**Mission Decomposition - Rapid Evacuation of Patients out of Theater**

**Operational Objective**

Provide patient movement to support an MTW

**Operational Task**

Move individual patients to meet medical needs

**Execution Elements**

- Medical Treatment
- Transport Patient
- Execution C2

**Support Elements**

- Global/Theater C2
- Generate Lift Acft
- Comm
- PMI Support
- Patient/Resource Status
- Deploy
- Sustain
- Training

**Have patient movement demand requirements been met?**

- Battlefield medical casualty rate vs theater exit rate
- Battlefield medical casualty rate vs move to theater staging locations (Theater CINC)
- Theater exit rate (TRANSCOM)
- Percent of patients moved within theater policy guidelines

**How well are patients handled medically?**

- Percent of patients moved within requirements established by treating facilities
- Time from decision to move to out of Theater
Operational Mission Decomposition
(Objective -- Provide patient movement to support an MTW)

Operational Task -- Move individual patients to meet medical needs

- Medical Treatment
  - Medical
  - Admin
  - Management
  - Logistics (PMI...)
  - Receive
    - Patient
    - Diagnostics
    - Treatment
    - Assessment
    - Move Patients
      - Mission
      - Prep
      - Execute
      - SIC Planning
      - Post-Worker Repatriation

- Transport Patient
  - Flight Plan
    - Execute
    - Patient Movement

- Theater and Global C2
  - Global C2 (MCC)
  - Theater C2 (JFC)
  - JFC

- Execution C2
  - Flight Operations
    - Patient Movement
    - Flight Operations
    - Flight Operations

- Generate Sorties
  - General Support
    - Initial
    - Planned
    - Controlled
  - Aircraft
    - NIPRNET
    - SIPRNET

- Establish Comm
  - Patient Movement
    - Flight Operations
    - Flight Operations
    - Flight Operations

- PMI Support
  - PMI Support
    - PMI Support
    - PMI Support
    - PMI Support

- Deploy
  - Sustain
  - Training

- Patient/Resource Status
  - Patient
  - PMI
  - PMI
  - PMI
  - PMI

- Operational Task
  - Move individual patients to meet medical needs

- Medical Treatment
  - Transportation
    - Patient Movement
    - Flight Operations
    - Flight Operations
    - Flight Operations
Medical Treatment
Mission Decomposition

Are PMRs being submitted in a timely manner?
How good a job is being done to support ITV/resource statusing?
How efficiently are comm resources being utilized?

- Percent of patients awaiting PMRs
- Time delays for resource status updates
- Time delays for patient ITV updates

Medical Echelons
1: Emergency/Life Saving
2: Basic Resuscitation & Stabilization
3: Restore Functional Health
4: Definitive Care
5: Convalescence/ Restore/Rehabilitate

Receive Patient
Diagnostics
Treatment
Assessment
Prepare PMR
Transport to Staging

Medical
Admin
Management
Logistics (PMI ...)

- Medical time delays for patient ITV/resource update
- Admin time delays to update resource status
- Admin time to transmit PMR
- Admin time delays for patient ITV updates
- No. of PMRs not transmitted due to comm
- Time delays for patient ITV updates
- Time from decision to patient move
- Time to complete PMR
- Percent of patients awaiting PMR
- Time delays for patient ITV updates
AFOTEC Scope/Cost Process

AFOTEC Scope/Cost Team
(XO, CN, AS, Dets/ETs, TS, RM, XP, DP, User-Warfighter)

- Standardized approach
- Corporate allocation of resources
  - based on
- Value of OT&E information
Risk / Impact Analysis

Knowledge of SUT
STT Dendritic *(element attributes)*
System-to-Element
Element-to-System
Element-to-Mission

Risk / Impact Analysis

Mission Essential Elements
Medical Treatment
Impact Analysis

Are PMRs being submitted in a timely manner?
How good a job is being done to support ITV/resource statusing?
How efficiently are comm resources being utilized?

- Percent of patients awaiting PMRs
- Time to deal with inputs & outputs from TRAC²ES
- Who is coming & condition
- Movement - Where (treatment), When, Handling
- Manning, Training, Equipping, Sustainment
- MTF inputs for patient tracking
- MTF inputs for PMI tracking
- Loading on TRAC²ES
- Resource status input
- Delays in moving patients (not related to TRAC²ES)
- Lack of beds/capabilities to treat
- Time delays for resource status updates
- Time delays for patient ITV updates
AFOTEC Scope/Cost Process

AFOTEC Scope/Cost Team
(XO, CN, AS, Dets/ETs, TS, RM, XP, DP, User-Warfighter)

Understand Battlefield Operations
System Introduction
Risk/Impact Analysis
OT&E Focus
Options + Cost
Tasking CC/CV

- Standardized approach
- Corporate allocation of resources
  
  *based on*
  
  Value of OT&E information
OT&E Focus

Knowledge of SUT (attributes)
Knowledge of Mission (attributes)
Knowledge of Impacts (Mission Essential Elements)

OT&E Focus

ID Evaluation Areas

Cause & Effect Analysis

Evaluation Structure for OT&E
Issues
- AE system came under regular criticism for inefficiency
- Operated below load capacity and clinical potential
- No incentive for cost-effective use by referring providers
- Command structures fragmented
- Lack of accountability by those requesting AE
- Disconnects between patient scheduling and transportation processes

[Ref Lt Gen Roadman’s APICS Presentation, April 95]
Rapid Evacuation of Patients out of Theater

Evaluation Areas for Patient Movement

Issues
- AE system came under regular criticism for inefficiency
- Operated below load capacity and clinical potential
- No incentive for cost-effective use by referring providers
- Command structures fragmented
- Lack of accountability by those requesting AE
- Disconnects between patient scheduling and transportation processes

[Ref Lt Gen Roadman’s APICS Presentation, April 95]
Not Getting Patients out of Theater Quickly Enough

Notional Patient Movement Example

**Theater Exit Rate**
2000/day

**Staging Area Arrival Rate**
2500/day

**Battlefield Medical Casualty Rate**
3000/day

**Possible Solutions:**
- More beds & MTFs in theater
- Move patients out of theater more quickly

**Additional Patients in Theater**
- 1 Day - 500
- 1 Week - 3,500
- 1 Month - 15,000
(7 Support Personnel/patient = 105,000 additional in 1 month)

**Note:** Casualty rates shown are for illustration purposes only
Rapid Evacuation from Theater
Cause-Effect Analysis - Major Conflict w/Heavy Casualties

**C² - Decision Making**
- Problems in development of PM plans
  - Inaccurate/incomplete picture of med capabil &/or bed availability
  - Inaccurate/incomplete picture of patient demand
  - Inaccurate/incomplete picture of airlift availability

**Situational Awareness**
- Poor situational awareness for PM plans
  - Admin procedures insufficient
  - Failure to report or delays in reporting
  - Problems in sustaining operations (RAM)

**Physical Constraints**
- Delays due to system interoperability problems
- Delays due to system loading
- Insufficient comm

**Responsiveness**
- Slow responsiveness in developing PM plans
  - Delays in estab TPMRC & other C² elements for deployed ops
  - Planning process too complicated to support timely develop of PM plans
  - Inaccurate/incomplete picture of med capabil &/or bed availability

**Info Constraints**
- Delayed response in providing Alft to Meet Demand for PM out of theater
  - Limited assets to support PM (ACFT, MTF, ASF beds, PMI)

**T/F Patients bottle-necks within theater slow move’t to staging areas that will take patients out of theater**
- Delays due to system operation
- Insufficient comm
- TRAC2ES operating procedures too complicated

** planner fail/delays in reporting**
- Planning process too complicated to support timely develop of PM plans
- Delays due to system operation
- Insufficient comm
- TRAC2ES operating procedures too complicated
**Situational Awareness Evaluation Structure**

**Major Conflict w/Heavy Casualties**

- Battlefield medical casualty rate vs theater exit rate
- Battlefield medical casualty rate vs movement to theater staging locations (Theater CINC)
- Theater exit rate (TRANSCOM)

- Percent of patient movement plans delayed due to inaccurate or incomplete information (Medical capability and/or bed availability, patient demand, and airlift availability)

**Describes availability of physical constraints**

- Difference between reported and actual asset availability

- Time delays for medical capability and/or bed status updates
- Time delays for patient PMR/ITV updates
- Time delays for airlift status updates

- Time delays (functional element) due to:
  - Admin procedures
  - Interoperability
  - System loading
  - Comm
  - Availability
AFOTEC Scope/Cost Process

AFOTEC Scope/Cost Team
(XO, CN, AS, Dets/ETs, TS, RM, XP, DP, User-Warfighter)

- Standardized approach
- Corporate allocation of resources
  based on
- Value of OT&E information
OT&E Scope/Cost Process

CTE Focus

Evaluation Area

Rapid Evacuation from Theater

Hybrid Sim

Limitations

M&S

Limitations

Test Priorities:

Test Priorities:

Options and Cost

Ops Scenario

Field Test

Limitations

Limitations

Limitations
Test Execution
Field Test - Theater Operations - MTW

Roving Sands-00

Template Considerations:
- TRAC^2ES/TMIP
- External Data Sources
  - GTN
  - TAMMIS
  - ...
- Physical Assets
  - Airlift (AE)
  - MTF (Incl host country & ships)
  - ASF
  - PMI (Cells)
- AE Cmd & Control
  - GPMRC
  - JPMRC/TPMRC
  - AECC
  - ...
- AOC
  - Planning
  - Execution
  - ...
- Comm
- Allied Operations

Elements of Operations:
- Battlefield Casualties
  - RTD
  - Evacuated
- Deployed Ops/Setup
- Pre-Exercise Training
- Background Loading
  - Comm
  - TRAC^2ES (Global)
- Information Warfare(?)
- Security

Rapid evacuation of injured personnel
Potential Limitations
Field Test - Mission Level - MTW

Potential Limitations of Roving Sands

- Theater Exit Rate
- Status updates from outside of theater - Airlift and MTFs
- TRANSCOM interface for PM planning
- Comm loading
- TRAC2ES system loading
- TRAC2ES beyond IOC interoperability
- Effect of situational awareness variations on PM planning

Note: Potential limitations will be addressed during additional field exercises, command post exercises, CTF/OFT, and/or peacetime operations.
TRAC²ES Evaluation Summary

- **Patient Movement Issues**
  - Rapid Evacuation from Theater
  - Efficient Global Operations

- **Execution & Support Elements Supported by Unit Tasks/Subtasks**
  - Medical Treatment
  - Transport
  - Execution C2
  - Global/Theater C2
  - Generate Sorties
  - Comm
  - PMI Support
  - Resource Status
  - Deploy
  - Sustain
  - Train

- **TRAC²ES Functional Characteristics**

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**Military Operations**

- Peace
- SSC
- MTW

**OT&E**

- Patient Movement Mission
- Unit Operations

**evaluation**

**ORD/RCM**

**DT&E and CTF**

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43
Summary

- Increased Emphasis on “Mission”
  
  *(Impacts on Operations)*

- Maintain traditional Role - Operator/System OT&E

- Focus on Value of OT&E information
  - Warfighter
  - Acquisition
OT&E Scope/Cost Process

**Evaluation**
- Understand Battlefield Ops
- Risk/Impact Analysis

**Ops Environment**
- Operational System
  - Real World

**System**
- Evaluation Area
  - Rapid Evacuation from Theater

**Scope**
- OT&E Focus
  - Significant Real World Issues

**领域**
- Eval Structure
  - Field Test
  - Hybrid
  - M&S
  - Limitations

**Test World**
- Test Templates
- System as Tested
- Data Collection Costs
- Resources

**Options**
- Fielded System
  - Ops Template
  - Ord
  - COIs
  - Acquisition Process

**Ops Scenario**
- Fielded System
Risk/Impact Analysis

- **Start:** Ops Task & Execution/Support Elements
- **Methodology:** Three perspectives for risk/impact analysis
  - System (TRAC²ES) impact on the Element
  - Element impacts on system (TRAC²ES)
    (System dependence on the Element)
  - Element impacts on mission (Patient Movement)
- **Output:** Mission Essential Elements - Focus of evaluation
OT&E Scope/Cost Process

Battlefield Ops

WHAT

UJTL/AFTI

DOCTRINE

WHO

CONOPS

OTHER

EXECUTION ELEMENTS

NATIONAL SECURITY STRATEGY

NATIONAL MILITARY STRATEGY

REGIONAL MILITARY STRATEGY

OPERATIONAL OBJECTIVE

System

Risk/Impact

Establish Comm

TRACES on OTE

• Comm loading
• Additional comm requirements

OTE on TRACES

• Comm limitations (slow, interrupt, degrade)

OTE on Mission

• Impacts on all phases of patient movement
  (may slow or stop the process)

OT&E Focus

Evaluation Area

1

Rapid Evacuation from Theater
Major Conflict w/Heavy Casualties

Evaluation Area

2

Efficiency of Global Aeromedical Evacuation

48
Strategy-to-Task

Background: 1992 AFOTEC Policy - Mission/Task Level OT&E

NATIONAL SECURITY STRATEGY
NATIONAL MILITARY STRATEGY
REGIONAL MILITARY STRATEGY

OPERATIONAL OBJECTIVE

ATTACK IRAQI POLITICAL/MILITARY LEADERSHIP AND C2

OPERATIONAL OBJECTIVE

OPS TASK

DESTROY A COMMAND AND CONTROL BUNKER

EXECUTION ELEMENTS
- DELIVERS WEAPONS (F-15E)
- SUPPRESS DEFENSES (F-4G)
- FORCE PROTECT (F-15C)
- REAL TIME C2 (AWACS)
- AIR REFUEL (KC-10)

FUNCTIONS/CHARACTERISTICS
- NAV
- COMM
- WPN
- ECM
- FUEL
- MSN TAPE
- DIAGNOSTICS
- WPNS

SUPPORT ELEMENTS
- GENERATE SORTIES (MAINT)
- PROVIDE INTEL (INTEL)
- C2 (ATOC)
- ATC (ATC)
- NAVIGATION SUPPORT (GPS)

MOEs
- SURVIVABILITY
- CORRECT TARGET
- MISSION RELIABILITY
- WEAPON IMPACT
- LOCATIONS

MOPs
- FALSE ALARM RATE
- RELIABILITY
- CEP
- LETHALITY REDUCT

MOEs
- AVAILABILITY
- DEPLOYABILITY
- SUPPORTABILITY

MOPs
- CND RATE
- % FAULT DET
- AVAILABILITY
- MEAN DOWN TIME

FOCUS OF OT&E