Risk Assessment Framework
An Comprehensive Approach to Risk
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**Report Documentation Page**

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Standard Form 298 (Rev. 8-98)  
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Purpose: An enterprise-wide risk assessment framework to inform decisions regarding multiple sources of unavoidable risk

Strategic Goals: Assess current military capabilities to execute current operational war plans and support appropriately balancing Air Force capabilities to accomplish future defense strategy

- We need a structured way to make defensible decisions regarding allocation of resources for both current and future budgets
- The Air Force needs to express risk in a language that both DOD leaders and Congress understand
- Risk Assessment Framework should facilitate communication
  - Help think about risk and build assessments
  - Assist presenting risk to decision makers
  - Guide risk discussions within and across disparate functions and scenarios

Four Parts of Risk Assessment Framework

- Clarify comprehensive information in a risk assessment
  - What activity or collection of activities are being assessed?
  - What are the content, setting, conditions, and assessment?
  - What is the assumed risk mitigation actions?

- Standardize presentation of individual risk assessments
  - What is the severity and its likelihood to that activity?
  - What metrics underlie that assessment?

- Aggregate individual risks to assess strategic risk
  - How do risk for various activities combine?
  - How does this combination affect risk mitigation?

- Relate types of risk into an enterprise risk assessment
  - How does force management risk affect operational risk?
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When someone says “this is high risk” what information is implicitly communicated? We identify 11 aspects in 4 groups:

1) The activity or a collection of activities being assessed

2) The context of the assessment
   - Who accomplished or approved the assessment
   - When they completed it
   - The type of risks considered—specifies the assessment scope
   - The analytic rigor of their assessment process

3) Setting of the assessment
   - Scenario and timeframe
   - Assumed environmental conditions (economic, political, war, …)
   - Assumed major choices (acquisitions, divestments, policies, …)
   - Mitigation measures taken to reduce risk

4) Resulting assessment (metric or categorical value)
# Standardized Risk Statement

For (Activity), (Organization) on (Date) assesses (Type of Risk) with (Analytic Rigor) for (Scenario) assuming (Conditions) at (Timeframe) with (Major Choices), and (Mitigation) is (Assessment).

<table>
<thead>
<tr>
<th>Activity or Objective</th>
<th>Assessment Context</th>
<th>Assessment Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACTIVITY or OBJECTIVE</strong></td>
<td><strong>ORG and DATE</strong></td>
<td><strong>TYPE OF RISK</strong></td>
</tr>
<tr>
<td>Force Generation</td>
<td>Air Combat Cmnd</td>
<td>Operational Force Management Etc…</td>
</tr>
<tr>
<td>Rapid Global Mobility</td>
<td>Army Joint Staff</td>
<td>SME based Metrics/ Mitigation</td>
</tr>
<tr>
<td>Homeland Defense</td>
<td>Etc…</td>
<td>Metrics/ Traceable Metrics/ Organizational Enterprise</td>
</tr>
<tr>
<td>Air Superiority</td>
<td>Etc…</td>
<td>Vignette Y Conflict w/ Country X</td>
</tr>
<tr>
<td>Etc…</td>
<td></td>
<td>Operational Plan XVI</td>
</tr>
<tr>
<td>Force Generation</td>
<td>Etc…</td>
<td>Scenario Z Etc…</td>
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<tr>
<td>Rapid Global Mobility</td>
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<td>Homeland Defense</td>
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<tr>
<td>Air Superiority</td>
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<td></td>
</tr>
<tr>
<td>Etc…</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SCENARIO</strong></td>
<td><strong>CONDITIONS</strong></td>
<td><strong>TIMEFRAME</strong></td>
</tr>
<tr>
<td>None</td>
<td>Near</td>
<td>Programme d Force</td>
</tr>
<tr>
<td>War in Scenario A has been initiated</td>
<td>Mid</td>
<td>TOA Force</td>
</tr>
<tr>
<td>A nuclear weapon detonation has occurred</td>
<td>Far</td>
<td>Budgeted Force</td>
</tr>
<tr>
<td>Etc…</td>
<td>FYDP</td>
<td>Etc…</td>
</tr>
<tr>
<td><strong>MAJOR CHOICES</strong></td>
<td><strong>MITIGATION (Specified or AUTHORITY)</strong></td>
<td><strong>ASSESSMENT (metric or categorical value)</strong></td>
</tr>
<tr>
<td>Mitigating weapon effectiveness with capacity</td>
<td>Low/ Green</td>
<td></td>
</tr>
<tr>
<td>Mitigating force structure shortfall with building partner capacity effort</td>
<td>Moderate/ Yellow</td>
<td></td>
</tr>
<tr>
<td>Etc…</td>
<td>Significant/ Orange</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High/ Red</td>
<td></td>
</tr>
</tbody>
</table>
Four Parts of Risk Assessment Framework

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Metric Based Approach
for Performance, Resource, and Schedule Goals/Metrics

- Metrics based assessment measure consequences (or at least planned actions)
  - Performance: effectiveness, mission accomplishment, deploy-to-dwell ratios
  - Resource/Cost: capacity or quantities, manpower, dollars, ...
  - Schedule: time or duration until mission accomplishment, days, ...
- Simplicity: presented expected metric value, rather than probability/severity matrix
- Scalability: defined success and failure points appropriate for assessed activity
- Consistency: categorized the risk assessment according to severity to assessed activity

Improved risk communication and understanding throughout the Air Force
Consistent Criteria Scaled to Assessed Activity

- Provides a structured approach where performance, resource, and schedule metrics for the activities underlie the risk assessment
  - Focused on information leaders need (well defined/defensible assessment)
  - Anchored endpoints (Success/Failure) and defined thresholds provide concise, consistent interpretation of results (and aligns with Joint Staff definitions)
  - Defensibility enhanced by metric endpoints and assessments developed via modeling & simulation, data analysis, wargaming, exercises and SME evaluations

Assessment results are defined by these levels supported by analytics:

LOW
Achievement of goal or activity is highly likely; all vital resource expenditures and schedules should be executed at or near planned levels or timeframes

MODERATE
Achievement of goal or activity is likely; some vital resource expenditures or schedules may have limited (acceptable) deviations from planned levels or timeframes

SIGNIFICANT
Achievement of goal or activity is questionable; some vital resource expenditures or schedules may have substantial deviations from planned levels or timeframe

HIGH
Achievement of goal or activity is highly unlikely; at least one vital resource expenditure or schedule is nearing failure; little margin remains for error in planning or execution

SUCCESS
This point marks zero risk (Achieve goal or activity)

These transitions are flags on the way to a deteriorating situation

Approaching certain failure beyond this transition

FAILURE
This point marks failure to achieve goal/activity
A Basic Example

Scenario: Next Thursday Bob has a 0800 briefing with his boss at the Pentagon. Bob must drop his daughter off at daycare not earlier than 0630 in Stafford.

Objective: Arrive at Pentagon by 0745

Activity: Operate car Thurs without mechanical delay

Activity: Depart daycare in time to arrive at Pentagon

Performance: Situational Awareness
- Able to identify traffic and calculate/display an optimal diversion route not later than 6 miles prior to encountering any backups
- Able to calculate and display optimal diversion routes after encountering backups
- Able to receive some warning of potential traffic backups
- See and avoid without guidance

Resource: Amount of gas in fuel tank
- High: 4 gal
- Moderate: 2 gal
- Low: 2 qt

Resource: Amount of oil in engine
- High: 4.5 qt
- Low: 2 qt

Schedule: Transit time from Stafford to Pentagon
- High: 48 min
- Moderate: 75 min

Assessed at 2.1 gallons (High Risk) based upon the amount of money Bob’s wife has budgeted for gas, the amount currently in his tank and the expected amount of gas to be used prior to Thursday.

Assessed at 4 quarts (Low Risk) based upon the amount of oil currently in his tank and the expected usage prior to Thursday.

Assessed at 58 minutes (Moderate Risk) based upon data analysis showing this to be the median transit time from Stafford to the pentagon on a Thursday.

Bob’s briefing is at High Risk unless he can mitigate it by convincing his wife to increase his gas budget by $4. If gas is mitigated then it would be Moderate Risk.
## Commander Messaging

- Our roles/objectives are ...
- With given resources/timeline our risk is ...
- We may mitigate risk by ...
- To reduce risk further we would need ___ (DOTMLPF) changes or resources

## Decision Maker Interpretation

- Defined success/failure points make sense
- If the risk is realized, we will not be able to ...
- Accepting additional risk would free ___ resources
- We should take action on ___ to reduce the risk of ...
Evaluating an Assessment
Questions Senior Leaders/Decision Makers Should Ask!

- What type of Risk are you describing? (Operational, Force Management, or Institutional)
- What metrics form the basis for this assessment?
  - Are these consequences or performance measures?
  - Which scenarios, timeframes and force structure assumptions did you use?
- What defines success and failure for the assessed activity in the scenario and timeframe?
  - How and why did you determine those success and failure points?
- What is the assessed risk with mitigation in place?
  - How did you determine the values? What is their analytic rigor?
  - What are you doing today or recommend for the future to mitigate this risk?

Shifted in the conversation from the assessor’s qualifications to the expected outcomes of the activity in the assessed scenario!
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The Baseline Framework
(Objectives, Activities, & Goals)

Context or Scenario / Timeframe
- Bounds Threat/Force Structure Options
- Drives Planning

**Objective**
- Objective 1
- Objective 2
- Objective 3

**Objectives** – The desired end states of the planning construct under assessment

**Vital/Key Activities/Tasks**
- Activity 1.1
- Activity 1.2
- Activity 1.3
- Activity 1.4

**Activities** – Those actions that support the planning construct which are vital to achieving one or more objective

**Vital/Key Goals/Metrics**
- Metric 1
- Metric 2
- Metric 3

**Goals/Metrics** - Independent effects-based performance, resource, or schedule metric indicators of the potential success or failure of an activity

- Framework uses a strategy-to-task approach where goals support activities and objectives
- Goals are assessed based on performance, resource, and schedule metrics
- Roll-up to higher levels may change the assessment level
  - Potential reduced if multiple activities rely on common goals/metrics
  - Potential improvement if additional mitigation means are available
- Approach may be applied at various levels of assessment (tactical, operational, strategic)

The Objective/Activity/Goal linkages relate the risk for assessments
Combining Risk Assessments
(Same Activity)

- Different aspects of the same activity
  - The combined consequences form each aspect may be deemed sufficient to justify a worse risk assessment than any of the individual assessments
  - Related, positive correlation (which may be likely) increases the probability of a combination of worse consequences
  - Hence, the combined risk assessment may be worse than the individual risk assessments

- Example: program cost and schedule are positively correlated
  - If the program is behind schedule, usually the program will also be over cost
  - Therefore, combining risks assessments for cost and schedule should indicated increased risk
Combining several risk assessments to a more aggregate activity risk assessment

- Does the scope encompass the entire aggregate activity? If not collectively exhaustive, the additional scope may increase risk
- If not mutually exclusive (individual assessments account for the same consequences), the combined risk may be less
- Are the individual activities’ outcomes positively correlated?
  - If so, the combined consequences or increased probability may make the combined risk assessment to be worse
- Do the underlying activities rely on common mitigation resources?
  - If so, then the combined risk assessment should be worse because the probability of not being able to mitigate more than one bad outcome
- Does the aggregate activity have alternative approach to achieve the objective?
  - Alternative mitigation or approach would reduce the risk
### Risk to Mission

- The ability of the current force to execute strategy successfully within acceptable human, materiel, financial, and strategic costs.*

* [AF Extended to mid and far term for planning assessments to cover Future Challenges.] *

### Risk to Force

- The ability to recruit, train, educate, equip, and retain the All-Volunteer Force, and to sustain its readiness and morale. This includes Institutional challenges of addressing management and business practices to plan for, enable, and support the execution of DoD missions in the near, mid, and far terms. *

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**Note:** *The definitions for how risk should be categorized come from the Risk Assessment Process and Methodology for the 2014 Chairman’s Risk Assessment (CRA) – 4 June 2013.*

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**Air Force risk assessments align with this Joint Staff matrix**
Identifying Linkages
For Military Risk Applications

Military Risk
- CJCS Matrix Construct

Risk to Mission
- Capability
- Capacity
- Future Challenges

Risk to Force
- Personnel
- Equipment
- Training
- Infrastructure
- Munitions
- Institutional

OBJECTIVES
Objective 1
Objective 2
Objective 3

Vital/Key ACTIVITIES/TASKS
Activity 1.1
Activity 1.2
Activity 1.3
Activity 1.4

Vital/Key PREDICTOR METRICS
RSO 1
RSO 2
RSO 3

Objectives – The desired end states of the construct under assessment

Activities – Those actions performed or supported by the construct which are vital to achieving one or more objective

Metrics - Independent measurable effects-based resource, schedule or other/performance (RSO) predictors regarding the success or failure of an activity

Assessments trace bottom-up

Requirements trace top-down

Steady State
- In the Military Risk Application (Risk to Mission and Risk to Force), Air Force elements must assess their ability to meet the timelines and force structure requests inherent to Combatant Command planning or force planning constructs for the future.
- Goals/Metrics should match and inform at the level of assessment. Strategic level assessment should be supported by strategic level metrics (i.e. million ton miles per day is informative at the strategic level while the readiness level of an individual unit is not).
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The Relationship Between Military Risk Types
Risk to Mission and Risk to Force Example

MILITARY RISK

Unless mitigated, lowest risk assessment drives enterprise risk assessment
Air Force Risk Applications

Core Function Support Plan Risk Assessments
- Air Force Major Commands express how they meet Combatant Command Requirements in 2012 and updated in 2013 and 2014
- Laid foundation for strategic integration of long-term priorities

Strategic Master Plan Capability Gap Assessment
- The Air Force is aggregating the core function support plans into core capability risk assessments in 2014

Air Force Requirements Oversight Council (AFROC) Application
- All new requirement validations require two assessments of with and without new requirement
- Improving link between requirement risk assessments and core function risk assessment

Weapons Systems Sustainment Application
- Best application to date; supports informed trades decision making
BENEFITS

- Compares unlike items in simple and flexible framework
- Translates presentation of existing processes rather than changing them
- Allows for quantitative/objective & qualitative/subjective data
- Facilitates communication and discussion to senior leaders
- Supports assessments at multiple organizational levels
- Creates basis for solid analytic support to decision making
- Enables aggregation of risk assessments

Provides:

- Common taxonomy/definitions
- Scaled risk level for each activity based on success/failure
- Standardized Format Risk Statements (similar and complete information)
- Aggregation of risk metrics to the enterprise level
- Critical information to senior leaders necessary for decision making

More analytically rigorous support for defensible decision making