Appendix C
Data for Systems, Units, and Vignettes

This appendix specifies the data and data sources for the close support systems, the military units, and the combat vignettes simulated in this analysis.

Escort of a Humanitarian Convoy
Location: Unspecified.
Terrain: Rolling hills; moderate foliage; extensive road network.
Weather: Good.
Time Frame: Present.
Unit Type:
  - BLUE/GREEN — Supply convoy (30 trucks) escorted by 10 HMMWVs armed with .50 caliber machine guns.
  - RED — Ambush patrol (long range) consisting of 24 personnel armed with medium-range anti-tank guided missiles and rocket-propelled grenades.
Mission/Posture:
  - BLUE/GREEN — Conduct humanitarian aid convoy operations.
  - RED — Prevent delivery of humanitarian aid; harass coalition forces.
Objective:
  - BLUE/GREEN — Maximize supplies delivered.
  - RED — Destroy supplies prior to delivery.
Data Sources: All data for close support systems examined in this vignette were provided in the JANUS Standard Data Base.
Defense of an Allied Enclave

Location: Unspecified.
Terrain: Urban environment surrounded by rough, cross-compartmented, moderately foliated terrain.
Weather: Good.
Time Frame: Present.
Unit Type:

BLUE/GREEN — One GREEN battalion of light, irregular infantry including 4 HMMWV-TOW IIB, 6 HMMWV-Scouts with .50 cal. MGs, 20 medium MGs, 30 Dragon launchers, and 30 light, anti-tank weapons (LAWs).

RED — Three battalions of tank-heavy mechanized forces including 50 T-72 main battle tanks (MBTs) and 40 BMP-2 infantry fighting vehicles (IFVs).

Mission/Posture:

BLUE/GREEN — Prepared defense.

RED — Deliberate attack.

Objective:

BLUE/GREEN — Defend city; maximize survivability; destroy RED force to the degree necessary to defeat the attack.

RED — Defeat BLUE/GREEN forces in detail.

Data Sources: All data for close support systems examined in this vignette were provided in the JANUS Standard Data Base with the following exceptions:
Sensor Fused Weapon — Official U.S. Air Force sources based on “Chicken Little” test results and modified by manufacturer data.
Internally generated RAND estimates based on SFW data.
Small Unit Infantry Assault

Location: Unspecified.

Terrain: Complex terrain amid open, flat area surrounded by hills with moderate foliage.

Weather: Poor.

Time Frame: Present.

Unit Type:

BLUE — Task-organized Special Operations Force team; 12 assault and 40 support and security.

RED — Security guard detail; guard force — 32 light infantry; Immediate Reaction Force (IRM) — 36 light infantry; Quick Reaction Force (QRF) — 120 light infantry, five T-72 main battle tanks (MBTs), 15 armored personnel carriers (APCs).

Mission/Posture:

BLUE — Special item recovery.

RED — Compound defense.

Objective:

BLUE — Penetrate key building with sufficient survivability to secure special item.

RED — Prevent compound penetration.

Data Sources: All data for close support systems examined in this vignette were provided in the JANUS Standard Data Base with the following exceptions:
Man-portable EFOG-M — Internally generated RAND estimate based on EFOG-M data.
EFOG-M — MICOM/EFOG-M Program Office.
Small Unit Infantry Patrol

Location: Unspecified.
Weather: Good.
Time Frame: Present.

Unit Type:

BLUE — Platoon-size light infantry patrol: 25 riflemen, 5 grenadiers, 5 Javelin gunners, 5 medium machine gunners.

RED — An ambush force of 51 irregular infantrymen with individual and crew-served automatic weapons.

Mission/Posture:

BLUE — Forced march to base of operations after day-long patrol.

RED — Prepared ambush of BLUE patrol.

Objective:

BLUE — Maximize survivability of patrol.

RED — Maximize BLUE attrition.

Data Sources: All data for close support systems examined in this vignette were provided in the JANUS Standard Data Base with the following exception(s):

Mission flight profile for AC-130 gunship — Special Operations Command (SOCOM) J-6.
Laser-guided 105-mm high explosive projectile — SOCOM J-6.
**Light Force Hasty Defense**

**Location:** Latin America.

**Terrain:** Mixed topography ranging from heavily foliated, steep hills to large open plains with an extensive road network.

**Weather:** Good—90 percent day (better than 90 percent of all days in the region in one year).

**Time Frame:** Present.

**Unit Type:**
- **BLUE**—Remnants of 82nd Airborne Division Ready Brigade (DRB): approximately two battalions.
- **RED**—Two Soviet-style regiments: one tank and one motorized.

**Mission/Posture:**
- **BLUE**—Hasty defense.
- **RED**—Hasty attack.

**Objective:**
- **BLUE**—Retain control of combat airstrip and nearby town until relieved by heavy forces.
- **RED**—Seize control of combat airstrip by defeating BLUE in detail.

**Data Sources:** All data for close support systems examined in this vignette were provided in the JANUS Standard Data Base with the following exceptions:
- Damocles—M-STAR Database.
- SADARM—M-STAR Database verified by manufacturer’s program personnel.
- Sensor Fused Weapon—Official U.S. Air Force sources based on “Chicken Little” test results and modified by manufacturer data.
**Light Force Prepared Defense**

**Location:** Southwest Asia (SWA).

**Terrain:** Open desert characterized by long lines of sight, dry stream and river beds. Area also contains a critical road network.

**Weather:** Good – 90 percent day (better than 90 percent of all days in the region in one year).

**Time Frame:** Present.

**Unit Type:**

**BLUE** – The 82nd Airborne Division Ready Brigade (DRB) equipped with 58 HMMWV-TOW IIB, 54 Javelins, 14 Armored Gun Systems (AGSs), and 5 AH-64D Apaches.

**RED** – Two tank and one motorized Republican Guard (Soviet-style) regiments that include approximately 12 battalions, 311 T-72S main battle tanks (MBTs), 200 BMP-2 armored fighting vehicles (AFVs).

**Mission/Posture:**

**BLUE** – Prepared defense.

**RED** – Deliberate attack.

**Objective:**

**BLUE** – Retain control of critical road network until relieved by heavy forces.

**RED** – Seize control of critical road network to be used as MSR by defeating BLUE force in detail on high ground providing over-watch for a critical intersection.

**Data Sources:** All data for close support systems examined in this vignette were provided in the JANUS Standard Data Base with the following exceptions:

Damocles – M-STAR Database.

SADARM – M-STAR Database verified by manufacturer’s program personnel.
Armored Force Meeting Engagement

Location: Eastern Poland.

Terrain: Rolling hills with moderate foliage that is suited to armor operations.

Weather: Good – 90 percent day (better than 90 percent of all days in the region in one year).

Time Frame: Present.

Unit Type:

BLUE—Heavy brigade with attached division cavalry. Force consists of 108 M-1A1 main battle tanks (MBTs), 138 infantry fighting vehicles (IFVs), 24 improved TOW vehicles (ITVs), 14 cavalry fighting vehicles (CFVs), 6 AH-64D Apaches, 24 FiSTVs.

RED—One Soviet-style mechanized regiment that includes 120 T-72S main battle tanks (MBTs), 58 BMP-2 armored fighting vehicles (AFVs), 10 BTR-60P armored personnel carriers (APCs), 6 HIND-E armored helicopters, 6 HAVOC attack helicopters, 24 SA-15/2S-6 air defense vehicles.

Mission/Posture:

BLUE—Movement-to-contact transitioning into a hasty attack.

RED—Movement-to-contact transitioning into a hasty defense.

Objective:

BLUE—Destroy RED incursion force prior to arrival of RED reinforcing heavy division.

RED—Withstand BLUE attack until reinforcing heavy division arrives.

Data Sources: All data for close support systems examined in this vignette were provided in the JANUS Standard Data Base with the following exceptions:

Damocles—M-STAR Database.

SADARM—M-STAR Database verified by manufacturer’s program personnel.

EFOG-M—MICOM/EFOG-M Program Office.