

FTTS REQUIREMENTS OVERVIEW

***FTTS INDUSTRY DAY
3 December 2002***

**COLONEL MICHAEL J. TOAL
DIRECTOR, COMBAT DEVELOPMENTS
FOR TRANSPORTATION
toalm@lee.army.mil**

E Pluribus Unum



Truck Facts



The first motor truck was built in 1896 by Gottlieb Daimler

Pre-WWI the Army's opinion was that wheeled motor vehicles had their place but nothing could or would replace the horse.

227,000 + trucks were produced by more than 290 manufacturers for the Army in WWI

In 1924, horses outnumbered trucks in the US by more than 3 million

Today there are over 240,00 trucks in service

" We must not be misled to our own detriment to assume that the untried machine can displace the proved and tried horse"

Major General John K. Herr, 1938

Global Threats

**Afghanistan and
Future Actions ???**

System	Paradigm
Cold War:	Built around Mass "The Big eat the small"
Globalization:	Built around Speed "The Fast eat the slow"

Cold War

1947-1991

Vietnam War

1965-1973

Korean War

1950-1953

1939-1945

Desert Storm

1995 - 1996

1999

Joint Endeavor

Noble Anvil

SEP 11
2001

*"Defending our Nation
against its enemies is the first
and fundamental commitment
of the Federal Government."*

The National Security Strategy of the United States of America
September 2002

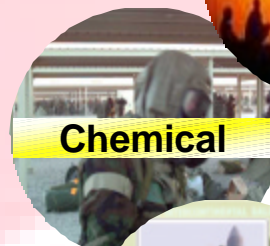
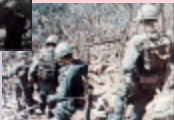
Asynchronous

Chemical

Biological

Nuclear

Conventional





Distribution Based Logistics



CURRENT COMMERCIAL PRACTICES

- INTEGRATED SUPPLY CHAIN MANAGEMENT
- VENDOR-MANAGED INVENTORIES
- AUTOMATIC IDENTIFICATION
- DIRECT VENDOR DELIVERY
- LOAD OPTIMIZATION
- SMART SIMPLE DESIGN
- THIRD PARTY LOGISTICS
- INTERMODAL
- INFORMATION MANAGEMENT
- DISTRIBUTION BASED

**Leverage
Commercial
Best
Business
Practices**

STATED MILITARY OBJECTIVES

- VELOCITY MANAGEMENT
- VALUE CHAIN
- INTEGRATED INFORMATION SYSTEM
- MONITOR / MANAGE UNIT READINESS
- REAL TIME DISTRIBUTION & ASSET MANAGEMENT
- DYNAMIC MATERIEL FLOWS
- TWO-WAY INFORMATION FLOW
- ANTICIPATORY LOGISTICS



RIGHT SUPPLIES TO THE RIGHT LOCATION AT THE RIGHT TIME

Support Starts Here!

Maneuver Sustainment Concept



Distribution Examples

- Internal sustainment delivers to the warfighter's sustainment section (1&2)
- Precision Aerial Resupply (3)
- External sustainment unit delivers to the warfighter's sustainment section (4)
- External sustainment unit meets with internal warfighter and sustainment sections (5)
- Combinations of the above

Support Starts Here!



Overarching Need

FORCE
OPERATING
CAPABILITIES
TP 525-66

UA O&O
TP 525-3-90

DISTRIBUTION
CONCEPT
TP 525-4-01

MANEUVER
SUSTAINMENT
TP 525-4

- Self-Sustainable for 3 days High Optempo / 7 days Low Optempo without mission failure
- Operate within 1000 k x 1000 k Operational Area (Traverse 750 k without refuel)
- Operate over unsecured Lines of Communication (routes)
- Provide direct resupply to the warfighter / Informational command and control and support
- Operate at same speeds over same terrain as the warfighter
- Close a Brigade size element within 96 hours
- Self Protect / NBC Survivable

FUTURE TACTICAL
TRUCK SYSTEM -
MANEUVER
SUSTAINMENT
VEHICLE
ORD

FUTURE TACTICAL
TRUCK SYSTEM -
UTILITY
VEHICLE
ORD

DOCTRINE REQUIRES FTTS

Support Starts Here!



Requirements Agility

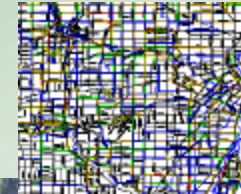
% of Terrain Crossed Over Time

Primary 33% / Secondary 33% / Cross Country 34%

Fording Capability

48" (T) / 60" (O) without kit (MSV)

40" (T) / 60" (O) without kits (UV)



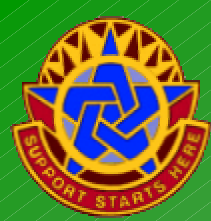
Operational Environmental Range

All Environment Capable in Ambient Air Temperatures -
25°F to 120°F & -50°F to 120°F with a kit (T)



**MAINTAIN PACE WITH THE WARFIGHTER /
OPERATE WITHIN SAME ENVIRONMENT**

Support Starts Here!



Requirements Deployability

Air – all without waiver

C-130 - 6 ST load and not exceeding 16 ST allowable cabin load (MSV);

Three in a C-130 (UV)

C-17 - Four with payload / Two with payload and trailer with payload (MSV)

C-5 - Eight with payload / Four with payload and trailer with payload (MSV)

CH-47/UH-60/CH-53/MV-22 Externally Air Transportable (UV)

Rail

Meet all rail diagrams worldwide



Ship

Roll-on/Roll-off with payload and trailer with payload

Land

By trailer with load without over-weight/over dimension permits

CLOSE THE BRIGADE WITHIN 96 HOURS

Support Starts Here!



Requirements Sustainability

Diagnostics / Prognostics

Prognostic Capability: Detect 45% System Abort (Mission Critical) failures at 90% accuracy rate

Diagnostic Capability: Have 95% truck subsystems covered with sensors with detection error rate less than 3 %

Reliability

Mean Miles Between Operational Mission Failure (MMBOMF) of not less than 5,500 miles of operation

Two-level Maintenance

60% field maintenance actions done by Operator

Maintenance Ratio = For every 100 operating hours, no more than 2.5 maintenance hours (.025)

CONSISTENT RELIABILITY

Support Starts Here!



Requirements Survivability



NBC

Protect crew in NBC environment for 6 hours (T) / 12 hours (O)

Armor

Operable against 7.62 mm AP Ball /Survivable against 14.5 mm AP ball ammo (T)

Operate over a 12 pound mine blast (T) / Survivable over a double stacked 18 pound mine blast (O)

Armor mountable in 15 minutes (T) /dismountable in 30 minutes (T) by no more than 2 soldiers (T) integrated armor (O)

PROTECT THE SOLDIER

Support Starts Here!



Requirements Versatility



Smart Distribution

Seamless Distribution Pipeline w/o use of MHE:

- Integrated LHS System
- Inter-modal Modular Platform System
- Vehicle Alignment System
- Smart Tie-Down
- Configured Load Building Software
- Robotic Trailer

On Board Generation

Power: $\pm 60\text{kW}$ - $\pm 200\text{kW}$ (MSV); $\pm 5\text{ kW}$ - $\pm 30\text{kW}$ (UV)

Water generation

On Board Systems

>10 common tools on board (T) / Zero (O)

REDUCE HANDLING TIME AND LOGISTICS FOOTPRINT

Support Starts Here!



Requirements Responsiveness

Range

600 Miles (T) / 900 Miles (O)

C4I

Integrated C4I space and power claims / Integrate with the warfighter's information system / Real Time Visibility

***OPERATE OVER EXTENDED DISTANCES
MAINTAIN COMMUNICATION WITH THE WARFIGHTER***

Support Starts Here!



Requirements Lethality



Self Defense

**Mount MK-19, M2, SAW, M240 (T) / Objective Crew Served
Weapon (O)**

Aerial Support

Unmanned Aerial System (UV and MSV)

ENSURE DECISIVE VICTORY

Support Starts Here!



Industry Participation



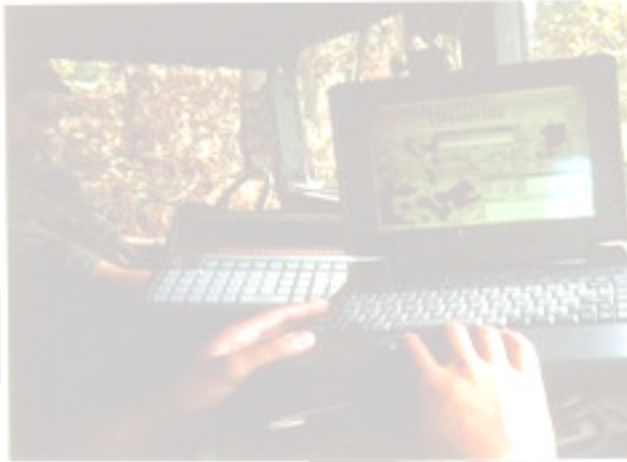
- ✓ **Need Industry's comments on Emerging Desired Capabilities for both the FTTS-MSV and the FTTS-UV**
- ✓ **Collect comments by 3 January 2003**
- ✓ **Collect comments via downloadable comment matrix at www.cascom.army.mil/transportation/FTTS**
- ✓ **Send Comment Matrix via email to jay.abernathy@us.army.mil and include in the subject line "FTTS EDC comments"**

***REMINDER: REVIEW OF UPDATED
DOCUMENT AT MONTEREY***



Comment Matrix

<u>EDC</u> <u>PAGE #</u>	<u>EDC</u> <u>Line #</u>	<u>Recommended</u> <u>Change</u>	<u>Reason for Change</u>	<u>Impact of not</u> <u>Changing the</u> <u>Requirement</u>	<u>Comment</u> <u>POC</u>



QUESTIONS ???



Support Starts Here!