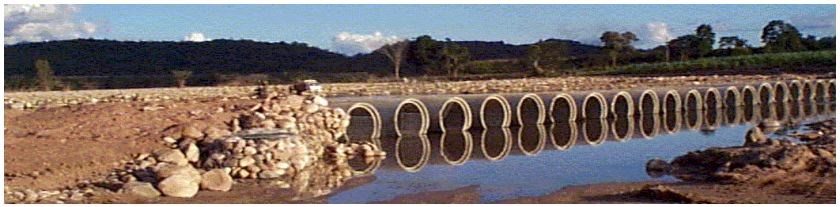
Rapidly Deployable Composite Non- Standard Bridge Manufacturing System

Modular Composite Bridge

Composite Culvert Bridging



OBJECTIVE:

- Develop design, manufacturing, and repair procedures for nonstandard modular composite & culvert bridges.
- Bridge components are manufactured at (or near) conflict location using graphite fibers, resin, and molds
- On-site factory can upgrade or repair bridges
- Educate Engineers on fabrication, and repair procedures

PAYOFF

- **Rapidly-deployable light-weight bridges manufactured anywhere in the world by SeaBees**
- **Overcomes current capability shortfalls**
- **Faster deployments without need for large depots**

TECHNICAL APPROACH:

- Design Modular Composite Bridge System
- Design Culvert Composite Bridging System
- Develop Bridge Manufacturing Methods for Austere Environments
- Investigate Bridge Repairs and Reinforcements
- Develop Engineering Short Course

PERFORMERS: University of California - San Diego,
USMC, USN SeeBees
U.S. Army TACOM

SCHEDULE:

TASKS	FY02	FY03	FY04	FY05
Modular Bridging Design				
Culvert Bridging Design				
Manufacturing Methods				
Bridge Repair & Reinforcements				
Education Program				
TRANSITION(S) TO PM(s)				

TRANSITION: USMC, USN, U.S. Army

Rapidly Deployable Composite Non- Standard Bridge Manufacturing System

- Technical Approach
  - Design Modular and Culvert Composite Bridging
    - Develop Regulations for Composite SeaBee Bridging by adapting Army Code
    - Design four building block modules (deck, joints, piles, and ramps)
    - Develop computer-based design tools to aid on-site SeaBee engineers
  - Study / Select On-Site manufacturing of bridge components
    - Review existing manufacturing methods (RTM, V/RTM, winding), and identify needed technologies
    - Identify best candidate fibers, resins based upon environment, cost, availability.
    - Identify on-site manufacturing plant requirements (power, cost, staff, size, cleanliness)
  - Bridge Repair and Reinforcement Program
    - Review techniques for repairing and upgrading damage bridges
    - Adapt techniques for application in an austere environment
  - Develop education short course for military engineers
    - Cover design/analysis tools, material selection, in-field manufacture and repair
- Business Case
  - Identify best U.S. manufacturer of fibers, resins, tooling, and hardware
- Customers
  - USN SeaBees, U.S. Army TACOM

Top level POA&M