Naval Surface Warfare Center
Indian Head Explosive Ordnance Disposal Technology Division

Joint Modular Intermodal Container (JMIC)

Delivering Lethality Safely & Seamlessly

~ Presented by Connie Han, Project Manager ~
NSWC IHEODTD Mission

Research, develop, test, evaluate, manufacture, and provide in-service support of energetics and energetic systems; and provide Soldiers, Marines, Sailors and Airmen worldwide with information and technology to detect, locate, access, identify, render safe, recover, exploit and dispose of explosive threats.

ENERGETICS are:

- Explosives,
- Fuels,
- Propellants,
- Pyrotechnics
- Reactive materials &
- Related chemicals
NSWC IHEODTD Organization

CO
Capt. Vincent Martinez

TD
Mr. Ashley Johnson, SES

CNO
(Echl. I)

NAVSEA
(Echl. II)

WFC HQ
(Echl. III)

NSWC IHEODTD
(Echl. IV)

TSD
(Echl. V)

Technical Support Detachment (TSD)
Systems Integration Department

Gun Engineering, Acquisition, Testing and In-Service Support

Naval Guns Division - Major, Medium & Minor Caliber

Aircraft Guns

Conventional Ammunition Division

Naval Ordnance Packaging, Handling, Storage & Transportation (PHST) Division

20mm Rounds

76mm Round

Quad JMI C

Distribution Statement A: Distribution Unlimited
Joint Modular Intermodal Container (JMIC)

NOT JUST A COLLAPSIBLE CONTAINER, IT'S A PACKAGING SYSTEM

Designed to a standard size, capacity, and multiples thereof, with standard interfaces and strength requirements

Distributing Lethality Safely and Seamlessly

Navy-Patented Design
2013 Ameristar Package Winner

Distribution Statement A: Distribution Unlimited
End Users – Navy / USMC / Army

7th Sustainment Brigade in Iraq used JMICs to load of unit gear, mail, medical supplies @ the SSA for Forward Delivery

In-Theater Afghanistan Operations: JMIC used to carry Unit Equipment aboard MV-22 Aircraft

Demonstration in Manila, RP: Water purification system packed in JMIC loaded on a Hyundai minivan

Navy NMC Detachments (CED, CWD and EAD), Ashore Commands and Afloat Commands
JMICs used for on-load/off-loads - eliminate unique hardware, reduced palletizing labor and UNREP operations
Variants (by weight)

**JMICS JCTD Demonstrated JMIC Type I Variant (3000-lb cap.)**
- Tare weight: 327 lbs;
- Max. gross capacity – 3000 lbs
- VERTREP/Helicopter Sling Load (HSL) approved for one JMIC & two side-by-side;
- Met Shipboard Shock (MIL-S-901) Grade B requirement;
- Features: 3:1 collapsibility ratio, ISO 7166 floor track, MHE compatible, Top-lift capable, RFID tag provision, content accessible in stacked configuration; lockable
- Static stack up to 4 JMICs high.

**JMICS 1.5k (1500-lb gross cap.) Variant**
- Tare weight: 192 lbs tare;
- Aluminum Extruded Construction with Composite Sandwich Panel for the floor;
- ISO 7166 track on floor perimeter;
- MIL-STD-3028 Compliant;
- Qualified for all classes of supply;
- 3:1 collapsibility ratio;

**JMICS 3.0k Variant (Improved 3000-lb gross cap. version)**
- 42 Lb Weight Reduction; Tare Weight: 285 lbs;
- DoD JMIC Interface Standard (MIL-STD-3028) Compliant;
- Compatible with TRAM Forklift and MV-22 aircraft rail and roller system;
- Improvements: improved latches on access panels for removability when JMIC is stored back-to-back, less latches, easily removable side panels, latches to secure side panels for safety;
- Reduce sand/stone jamming with the interlocking mechanism at the base;
- Greater stacking flexibility (can be stacked in offset pattern).
Variants (by height)

Collapsible JMIC in accordance with MIL-STD-3028
(DoD JMIC Interface Standard)

Standard Height – 43”

Extended Height – 51”
still collapsible

Development Stage: Half-Height, 21.38”

Development Stage: max. Extended Height – 58”
still collapsible

Footprint (52”L x 44”W) and external features in compliance with MIL-STD-3028
52”L x 44”W x 15.81”H

3 : 1 Ratio
from collapse to erect

52”L x 44”W X 43”H
Features - Flexibility

Container

Internal and External ISO 7166 track

Secures cargo to the deck

Secure JMIC to any transportation platforms with COTS-securing hardware

Pallet
Stack of 4 JMICs high (max) in static condition (shore station, warehouse) or Stack of 2 JMICs high (max) in dynamic environment (commercial/tactical truck, rail, aircraft)

Content accessible in stacked configuration with removal of access panel

Stack of 5 JMICs Collapsed, Stacked and Locked together for retrograde/storage
Features – Maneuverability

Standard Material and Ordnance Handling Equipment

- Forklift
- Pallet truck
- Four-way Access
- Top-lift
Distribution Statement A: Distribution Unlimited

**Operational Capabilities**

**VERTICAL REPLENISHMENT**
*with Mk 105 Hoisting Sling*
*HELICOPTER SLING LIFT with 10K Chain Sling*

**CONNECTED REPLENISHMENT**
*with Mk 99 Sling or newly-approved JMIC Quick Hoisting Beams*

**HIGH-IMPACT SHOCK**
*(MIL-S-901) GRADE B*

**AIRDROP CERTIFICATION:**
*Drop @ 2500 ft. with unguided parachute system is acceptable*
*Additional certifications to be evaluated.*

Package (POP) Certified UN Marking – only allowed when JMIC is used as a consolidator and commodities are packed in its approved container.
Commercial Platforms

Full or Partial load
Required minimum blocking and bracing to fit 16 JMICs in 20’ ISO Container/Rack
Standard lumbers - end cross members to secure JMICs in trailer
Military Platforms

- 7 Ton MTVR and HMMWV
- Aboard T-AKE class ship
- LCAC
- MV-22 Osprey
Reduce labor cost for more efficient storage
Non-Ordnance Configuration

Safe and secure pack loads

Max no. of bottled water in JMIC:
1152 bottles (0.5 liter/bottle)
or 48 packs (24 bottles/pack)

JMIC with Medical Supplies
Current Configuration

48 Wirebound Containers with plywood sheet strapped on MK 3 Pallet (96 M2A1 Ammunition Boxes)

Approved JMIC M2A1 Ammo Boxes Configuration (96 M2A1 Ammunition Boxes)
Ordnance Configuration (cont.)

Safe, Less loads to move

Current Configuration

Approved JMIC Configuration with compatible hazard classification

155 MM AUR Artillery Configuration in JMIC
Contents: 16 Projectiles,
12 Propelling Charges Container
1 M2A1 Box – Primers,
2 M2A1 Boxes – Fuzes
1 empty M2A1 Box to fill the void
Total weight – 2536 lbs
Current Configuration

2 - 1000 Lb MXU-667/B Airfoil Group Unit Load on special size wood pallet
69.75" L x 35.75 W x 46.5" H
Cube = 67 cu. ft., Gross wt. 540 lbs.

Stowage density for 4 Airfoils = 134 cu. ft., Gross wt. 1080 lbs.

Efficient, Easy to store
Legacy Repackaging – Improvement Example

JMIC Configuration

4 - 1000 Lb Airfoil Group Assemblies packaged in foam cushioning in Collapsible JMIC System

Stowage density for 4 Airfoils = 56 cu. ft., Gross wt. 978 lbs.
Security and Modularity

Use anti-pilferage seal to secure the contents and prevent tampering.

- Padlock System
- Standard JMIC
- Rack JMIC

Allows offset stack

- Double-long rack JMIC w/ cradles for bomb load

Allows different variants to stack and interlock together
**JM IC Accessories (existing)**

- **JM IC with Shelving & Bins with Removable Casters**
- **Commercial Initiative JM IC with Pelican Hard Cases**
  - Series of ISP Cases (6) are available for GSA procurement.
  - Cases cube out for 100% interior space utilization without dunnage or securing material

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**Standard corrugated boxes sizes for JM IC**
- 12 X 10-1/8 X 8-1/8
- 24-1/4 X 10-1/8 X 16-3/8
- 24-1/4 X 20-3/8 X 16-

*Distribution Statement A: Distribution Unlimited*
Future JMIC Accessories

Developed designs for Navy / Marines

JMIC Double-Access Door (JDAD)

JMIC, 1.5k, RFP (RFID)

Joining Kit convert to Double-width JMIC

2 STD JMICs
Future JMIC Accessories (cont.)

Drawer System with Castor Wheels

Commercial Initiative EDAK Drawer System (half/full length of JMC)
JMIP performed efficiently during JCTD

JMIC variants lockdown on CROP II with JCRS

Army Platform retrofitted with JCRS was qualified and approved

Navy Patented JCRS Design
JCRS - Future Work

Tactical/Commercial Platforms integrated with JCRS to interface with JMICs/legacy loads

JCRS Insert Assembly can be adapted on Air, Sea and Ground Transportation Platforms

JCRS to lockdown stacked JMIC without chains/straps on new or retrofit existing transportation platforms. Anticipate dual capability to interface chains/straps to accommodate legacy palletized load and JMIC cargo without reconfiguration.
For more information on JMIC or other Naval Surface Warfare Center Indian Head Explosive Ordnance Disposal Technology Division (NSWC IHEODTD) programs, Corporate Communications / Public Affairs at (301) 744-6505, (240) 419-8445 or nswc.iheodtd.pao@navy.mil
BACK-UP SLIDES
Feedback on Benefits, Savings

REDUCES
- Packaging material cost (saving 30%)
- Pallet use from 120 pallets to 31 JMICs in 6 storage locations
- Packaging waste, disposal cost
- Injuries from handling of steel banding
- Labor cost from 1.5 hours to 0.5 hours per person (construction of U/L)
- Personnel from 4-persons crew to 2-persons (construction of U/L)
- Double-handling of commodities

IMPROVES
- Efficiency through standardized packaging
- Inventory velocity through reduced logistics cycle times
- Storage use from 95% to 50% capacity

OPTIMIZES / MAXIMIZES
- Inventory management through standardized packaging
- Product protection during transportation and environment in storage
- Geometric conveyance utilization
  - reduces air pallets built – lessen air sorties (air saving 25% to 50%)
  - reduces ISO built – lessen ground transportation (saving 35%)
How/why did we get this Work/Successes

JMIC – Innovative patented design developed/qualified by PHST based on the capabilities identified by the Joint Intermodal Logistics Working Group (JILWG) and funded by OPLOG (2004).

OSD/Congress approved an accelerated Focused Logistics Joint Capability Technology Demonstration (JCTD) funded by OSD, USTRANSCOM, Navy, and Army (JMIDS, 2006 - 2008, $37M)

Navy JMIC design down-selected from 3 container designs during JCTD.

Successfully demonstrated logistics system improvements. Validated by OPTEVFOUR; 1,300 JMICs and ancillary OHE were fabricated for the JCTD

MIL-STD-3028 - DoD Interface Standard Joint Modular Intermodal Container - from the Standardization Group (approved 6 Jul 2009.)

OPNAVINST 4680.1A (Under the Navy Intermodal Containerization Program) signed off by CNO on 16 March 2011 to recommend JMIC as the standardized container to use for moving supplies through the logistics cycle;

Currently 10000+ JMICs on order/in use by Navy, Army and Marines plus other federal and state agencies (i.e. the Special Operation Groups, FBI and Homeland Security and Police Department – procured from JMIC’s GSA provider).

JMIC – replaces Mk 108 Security Crate use by fleet and shore stations
Navy JMIC Inventory

U.S. Navy Ships:
- USS Abraham Lincoln (CVN 72)
- USS Kearsage (LHD 3)
- USS Nassau (LHA 4)
- USS Iwo Jima (LHD 7)
- USS Bataan (LHD 5)
- USS Somerset (LPD25)
- USS America (LHA 6)
- USS Tripoli (LHA 7)

Military Sealift Command Ships:
- USNS Supply (T-AOE 6)
- USNS Arctic (T-AOE 8)
- USNS Sacagawea (T-AKE 2)
- USNS Robert E. Peary (T-AKE 5)
- USNS Amelia Earhart (T-AKE 6)
- USNS Matthew Perry (T-AKE 9)
- USNS Charles Drew (T-AKE 10)
- USNS Washington Chamber (T-AKE 11)
- USNS William McLean (T-AKE 12)
- USNS Medgar Evers (T-AKE 13)
- USNS Cesar Chavez (T-AKE 14)
- USNS Lewis and Clark (T-AKE 1)

Navy Facilities:

NWC CONUS East Div.
- Sewells Point Norfolk, VA
- Mayport, FL
- Key West, FL
- Earle, NJ

NMC CONUS West Div.
- Seal Beach, CA
- Indian Island, WA
- North Island, CA
- China Lake, CA
- Fallbrook, CA

NMC East Asia Div.
- Pearl Harbor, HI
- Guam
- Sasebo, Japan
- Okinawa, Japan
- Yokosuka, Japan

Other Navy Commands:

NSWC / NAWC
- China Lake, CA
- Indian Head, MD
- Dahlgren, VA

NUWC
- Newports
- Keyport
- TRIDENT Program facilities

NAVSUB Torpedo
- Yorktown, VA
- Point Loma, CA
- Pearl Harbor, HI

NAVSPECWAR
- Amphibious Combat Battalion
Ordnance Configuration (cont.)

Existing Configuration
Required at least 3 people
30 to 45 minutes to build the current load. Partial load is not stackable – inefficient usage of storage space.

JMIC Configuration
Required 2 people
7 minutes to build the JMIC load. Partial load is stackable - better usage of storage space.