

Integrated Cargo Handling System



WIP: This article is a work in progress and is not yet approved for usage in the RP.

The Integrated Cargo Handling System (ICHS) is a consistent, modular system introduced in [YE 36](#) by [Star Army Logistics](#) to streamline cargo warehousing and transport in any size or configuration of storage facility.

About the ICHS

Equipment storage happens in thousands of facilities across the Empire. These locations have been built at different times by different people and have even been repurposed from their original functions. The end result is a mishmash of different systems and setups that require costly manual adjustments or at the least close supervision in order to co-function. The ICHS is intended to provide a cohesive standard that, in conjunction with the [Materiel Tracking System](#), can provide highly automated inventory control and item handling that allow seamless transfer between sites, ships, and users.

Standards

Recognizing that most infrastructure can be adapted or produce on site, ICHS primarily lays down protocols for the setup of warehousing areas.

Shelving

All shelving must adhere the following standards:

- Minimum height off ground: .2 meters
- Minimum shelf volume: 5.1 meter width x 2.6 depth x 2.5 height (Allows for storage of [Standard Starship Cargo Containers](#) - Medium)
- Minimum distance between top usable shelf and overhead: 8 meters (Allows for SSCC-Medium storage with room for overhead cargo arm or crane track carrying SSCC-Huge)
- Minimum aisle distance between shelving rows: 6 meters (Allows for SSCC-Medium rotation in aisle)

Shelving must be manufactured from materials with sufficient strength to allow a weight of 8000 kg to be stored on each shelving segment between vertical support struts. The exact material is at the discretion of the unit performing initial construction. So long as the strength minimums are met, flexibility is allowed to accommodate the utilization of locally available material.

Layout

Warehouses conforming to the ICHS standard are laid out with four separate areas. The exact size and relative positioning is not fixed, allowing the standard to be employed in different sorts of existing facilities.

Control

The smallest but most essential area is the operations control center. This area houses the [MTS server](#) and local warehousing control systems. This allows central observation and coordination of all activities by supervising Logistics personnel.

Shelving

Shelving is given its own independent area. It has the highest traffic density of any part of the warehouse and as such should be marked with high-visibility warnings to prevent personnel from accidentally being injured by moving cargo.

Marshaling Ground

This area is for SSCCs of greater than Medium size, other non-containerized large items, and cargo of any size that does not need to be readily accessible. Only containerized cargo may be stacked and all items must be placed so as to leave at least 6 meter overhead and aisle clearance.

Inventory Control

Manual inventory inspection and manipulation by logistics personnel occurs here. This area is usually located nearest to the entrance as that allows for efficiency of inspection on arrival and final packaging and confirmation upon departure of any cargo. [MTS Labelers](#) are also provided here to handle new acquisitions or damaged labels on arriving or departing cargo. There must be 10 meters of overhead clearance and clearly delineated hazard markings on the deck to ensure minimal risk of harm to personnel.

Components

Aside from locally acquired or produced materials for the shelving, warehouse facilities, and physical cargo handling systems, the ICHS incorporates two main component lines to optimize handling for automation.

Materiel Tracking System

The physical MTS subsystems are an integral part of the ICHS warehouse. The labeler and scanners make inventory receiving and confirmation very easy to automate, but the server is what massively increases the efficiency of the entire cargo handling process. The server maintains local data on all items in inventory, including their identities, locations, handling and maintenance instructions, and transshipment orders. When incorporated into the local ICHS control scheme, this data is used to autonomously route and control the movement of cargo on the warehouse floor.

Ke-J3-1a Remote Load Handling Device

The workhorse of the ICHS warehouse, the [RLHD](#) provides the primary lifting and maneuvering of cargo.

Operations

An active ICHS warehouse looks almost alien in its flurry of precise, quick movements, executed perfectly and optimally. Upon the arrival of an item, it is inspected personally by Logistics personnel in Inventory Control and scanned into the local MTS database. If the item lacks a label, it is flagged and relabeled. Once verified, the items are packaged by personnel on the basis of priority, transshipment orders, and other metadata associated with the tracking code.

The packages, whether in SSCCs or other forms, are handed off to RLHDs, which proceed to deposit the container either on a shelf or in the Marshaling Ground, depending on size. Containers are stacked based on priority and movement forecast, to optimize efficiency and eliminate unnecessary restacking and respotting if at all possible.

Containers are left to sit in their allocated positions, occasionally verified by RLHDs assigned to inventory checks or even more rarely by personnel performing a manual inventory audit. Once the shipment date arrives or a requisition order arrives, RLHDs recover the containers and deliver them to Inventory Control. There, individual item codes are again manually confirmed by personnel before being directly cleared or repackaged for departure.

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