

# JTLS-2018-13691 Add A General Ship Icon

Donna S. Womble, Ellen F Roland

## 1.0 Summary of Model Change Request

When a ship is detected at the limited information levels of Localization or Classification, the WHIP symbol displayed for the Naval Unit provides too much information to the user. A symbol other than the database parameter SUP GRAPHICS SYMBOL should be used until the intelligence collection capability has more detailed information collected on the ship.

## 2.0 Design Summary

Much information about ships may be inferred from their authoritative unit icon. Every ship is derived from a Ship Unit Prototype (SUP). Each SUP has an attribute for the unit symbol. This SUP-based symbol represents the truthful properties of a ship built from that SUP. When a Foreign ship is seen, but is not fully identified, then the true and full properties of that ship should not be exposed by its symbol on the WHIP.

A new global variable will be added to the JTLS-GO database to represent the icon for unidentified ships. This variable shall reference an existing symbol in the scenario database. When a ship is detected at the limited level of Localization or Classification, then the ship will be displayed on the WHIP using this symbol. When more detailed Recognition or Identification information is collected, then the symbol will change to the symbol specified by the database parameter SUP GRAPHICS SYMBOL.

The new global variable will be called the "GENERAL SHIP ICON". When a ship is detected at the limited levels of Localization and Classification, then this ship unit be displayed on the WHIP using the GENERAL SHIP ICON Using this new icon will prevent the release of too much information during the early detection phases of ships.

## 3.0 Detailed Design

When unidentified Foreign ships are seen at the lowest levels of detection, their unit symbols reveal too much information about the ship. A general icon, containing only basic unit information is needed to represent these ships.

### 3.1 Current Capabilities

In JTLS-GO there are four levels of detection of Foreign objects. Stepping through the levels represents an improving perception of the intelligence view. The titles of the four detection phases, in order of lowest to highest fidelity are: Localization, Classification, Recognition, and Identification. The level of detail available to the detecting side is determined by using the current phase of detection and the duration of observation of that object.

In JTLS-GO version 5.0.10 and older versions, when a Foreign Ship was detected, the model assigned an authoritative unit symbol to the ship. This applied to all detection levels, including those at the lower realms of Localization and Classification. The model assigned the truthful symbol for the ship as given by its Ship Unit Prototype. When viewing an unidentified ship on the WHIP, the displayed symbol (icon) revealed more details about the ship than should have been available for that level of detection.

For ships detected at the levels of Localization and Classification, this assignment of an overly accurate symbol provided too much information to the detecting side. The icons derived from the Ship Unit Prototype include information on the ship class, the unit size, the hull specifics, and more. This kind of visible detail should not be known until detection of the ship passes through the recognition phase.

As a temporary correction for this problem, the model was changed. For a Ship detected at the levels of Localization and Classification, it is now assigned a General Unit Icon. This was not a perfect solution. In most databases, this is a blank rectangle. It resembles a ground unit more than appearing to be an unrecognized ship. Providing a better solution to this problem is the goal of this design.

### 3.2 Specific Improvement

For unidentified ships, a better symbol shall be displayed by adding a new global variable. This variable will be added to the JTLS-GO database structure. It will be analogous to the global variable holding the “General Unit Icon”. It will be called the “General Ship Icon”. This variable references an existing Symbol in the database. It is a required variable, and must be present in every JTLS-GO scenario going forward from this major release.

The new “General Ship Icon” should point to an existing symbol which is appropriate for naval vessels. The database builder controls which symbol is referenced by this global variable.

A new symbol, made explicitly for this purpose, has been added to the full default set of symbols delivered with JTLS. The user can either create their own new symbol or alter their existing scenarios to use the new default symbol delivered with JTLS 5.1.

## 4.0 Data Changes

The following global variable will be added to the database to support this design.

### ICON.GENERAL.SHIP.SYMBOL

- Dimension: Variable
- Mode: Text
- Unit of Measure: N/A
- Range: Must be a reference to the name of one of the graphics symbols
- Definition: The symbol that should be used to display an unidentified ship. The icon will be color-coded to represent the perceived side of the unidentified ship, but the symbol shape will be determined by the symbol assigned to this attribute.
- Relationships: Any valid symbol may be chosen, but it is recommended that the icon have an appearance which is similar to the standard shape and style of symbols used for ships.
- Conversion: During the automatic conversion process from a previous database format to the JTLS 5.1 format, the data value held in the existing GENERAL UNIT ICON parameter will be copied into the GENERAL SHIP ICON parameter. In all likelihood this will be a ground based rectangular symbol. From a user perspective, it will make more sense if this database parameter is changed to hold a more suitable naval icon. The Blank Naval icon, which is a blank circle, has been created and delivered as part of the JTLS 5.1 delivery.

## 5.0 Order Changes

The Set Naval General Parameters order will be modified. A new field, ICON GENERAL SHIP SYMBOL will be added to the main panel. During model execution, this field will be used to assign a symbol to unidentified ships. If a non-existent symbol is submitted, the order will be rejected with a player message.

## 6.0 JODA Changes

No JODA Data System parameter, structure, or protocol changes are required to implement this design.

## 7.0 Test Plan

As with all tests, the model should be started, game speed should be set to a positive number and a checkpoint should be taken after the clock has moved forward a few seconds. This allows the tester to quickly bring up the system for some of these tests.

### 7.1 Test Basic Capability

**Purpose:** The purpose of this test is to insure that the new GENERAL SHIP ICON is used for Localization and Classification levels of intelligence and the SUP GRAPHIC SYMBOL is used when Recognition and Identification levels of intelligence have been obtained for a ship.

**Step 1:** Select a scenario that has a "Blank" symbol and that this "Blank" symbol has been assigned to the new database parameter GENERAL SHIP ICON.

**Step 2:** Select a ship that uses a SUP with a very unique SUP GRAPHICS SYMBOL.

**Step 3:** Select two Surface Search Sensors, ST1, ST2. Using Controller orders, make ST1 a localization only sensor, make ST2 a Classification Sensor. Make note of the minimum altitude for recognition and identification.

**Step 4:** Fly a RECCE mission, with only ST1 on board. Fly the mission above the recognition altitude over several opposing force ships.

**Expected Results:** When the ships are detected, it should show the new GENERAL SHIP ICON.

**Step 5:** Fly a RECCE mission, with only ST2 on board. Fly the mission above the recognition altitude over several other opposing force ships.

**Expected Results:** When the ships are detected, the names of the ships should have the classification assigned name but the new GENERAL SHIP ICON

**Step 6:** Take a stop checkpoint.

**Step 7:** Restart from the stop checkpoint.

**Expected Results:** The ship icons should not change as a result of this stop and restart procedure.

**Step 8:** Fly the ST2 RECCE mission below the Recognition Altitude but above the Identification Altitude over the detected ships.

**Expected Results:** The icon should change from the GENERAL SHIP ICON to the SUP GRAPHICS SYMBOL. The name of the ship should also change, indicating the ship's assigned prototype.

Step 9: Fly the same RECCE mission below the Identification Altitude but outside of the Identification Distance of the detected ships.

**Expected Results:** No changes should be displayed in the WHIP.

Step 10: Fly the same RECCE mission below the Identification Altitude but inside of the Identification Distance of the detected ships.

**Expected Results:** The symbol of the ships should not change, but the name of the ships should be the real name of the ship.

## 7.2 Insure that the General Unit Icon Still Works As Expected

**Purpose:** The purpose of this test is to insure that the existing General Unit Icon still works as it did before we added the new General Ship Icon.

Step 1: Create two DSAs over land where there are opposing land forces. The two DSAs should not overlap.

Step 2: Select two DSA Capable sensors, DST1 and DST2. Make DST1 a localization only sensor and make DST2 a Classification Sensor. Make note of the minimum altitude for recognition and identification.

Step 3: Fly a RECCE mission that only has Sensor DST1 and is assigned to one of the DSAs. Fly the mission above DST1's Recognition Altitude.

**Expected Results:** It should detect the land units and display the detected units using the GENERAL UNIT ICON.

Step 4: Fly a second RECCE mission that uses DST2 and is assigned to the other DSA. It too should be flown above DST2's Recognition Altitude.

**Expected Results:** It should detect the land units and display the detected units using the GENERAL UNIT ICON.

Step 5: Have this same RECCE mission fly back over DSA at an altitude below DST2's Recognition Altitude.

**Expected Results:** The land unit icons should change from the GENERAL LAND ICON and display the detected unit's TUP GRAPHICS SYMBOL.

Step 6: Have this same RECCE mission fly back over DSA at an altitude below DST2's Identification Altitude but outside of DST2's Identification Distance.

**Expected Results:** The last time of detection should update, but the symbol and the unit name should not change.

Step 7: Have this same RECCE mission fly back over DSA at an altitude below DST2's Identification Altitude but inside of DST2's Identification Distance.

**Expected Results:** The last time of detection should update, and the unit name should change.

### 7.3 Test Changing GENERAL SHIP ICON During Game Execution

**Purpose:** The purpose of this test is to insure the Controller can change the GENERAL SHIP ICON during game execution.

Step 1: Restart from the beginning checkpoint.

Step 2: have the controller change the GENERAL SHIP ICON and the GENERAL UNIT ICON.

Step 3: Repeat [Test 7.1](#), Step 5.

**Expected Results:** The newly set GENERAL SHIP ICON should be displayed for the detected ships.

Step 4: Have the controller again change the GENERAL SHIP ICON.

Step 5: Repeat [Test 7.1](#), Step 8.

**Expected Results:** The ship names should change and so should the ship icon. It should display the new set GENERAL SHIP ICON specified in Step 4.

Step 6: Repeat [Test 7.2](#), Step 4.

**Expected Results:** The newly set GENERAL UNIT ICON should be displayed for the detected units.

Step 7: Have the controller again change the GENERAL UNIT ICON.

Step 8: Repeat [Test 7.2](#), Step 5.

**Expected Results:** The unit names should change and so should the unit icon. It should display the new set GENERAL UNIT ICON specified in Step 8.