Distant Worlds 2 – Importing Ship Models

Importing a ship model into Distant Worlds 2 involves three main steps:

1. Import the model into Stride game studio
2. Set up the ShipHull data using the DW2 Data Editor
3. Test the model in-game

To complete the import process you will need the following prerequisites installed:

- Stride (https://www.stride3d.net/download/)
    - By default Stride will install version 4+, but be sure to also install version 3.1.0.1 (at the left side of the Stride studio main screen)
- DW2 Data Editor modding tool
- DistantWorlds2

In addition you will need the following:

- A Stride content project that builds to bundle files. This will contain the models and textures
- **ShipHulls.xml** data file (default copy is found in the data subfolder of the Distant Worlds 2 installation)

Step 1: Import the model into Stride

1. Export the 3D model from the modelling application as an FBX file
    a. Ensure that you export with Y as 'up'
    b. You can test that the model has exported correctly by viewing the FBX file in a 3rd party model viewer like Open 3D Model Viewer (http://www.open3mod.com/)
2. Export textures as PNG or TGA files
3. Copy the FBX file and textures to the appropriate subfolder of the Resources folder in the content project
    a. Thus for Haakonish ships this folder path would be:
    [Content Project]\Resources\Ships\Haakonish
4. Open the content project in Stride game studio
5. Import the FBX file and texture files placed into the Resources folder (in step 3 above) into **Ships\Haakonish** folder inside the Stride project (or the appropriate subfolder for the alien race)
    a. Ship models and textures should be named appropriately as outlined in the document "Distant Worlds 2 - Making Ship Models" (page 10)
    b. Ensure that you also import the model skeleton with all submeshes
        i. Under the Nodes section, ensure that all nodes are selected, otherwise meshes will be merged
    c. Set up a material that uses the textures properly, with correct diffuse, normal, glossiness, metalness, emissive and occlusion maps
    d. Assign the material to the model
6. Be sure to include all new content in the build (right-click asset and select 'Include in build as root asset')
7. Save the content project
8. Build the content project (F6) to generate the bundle files

Step 2: Setup ShipHull data

1. Launch the DW2 Data Editor modding tool
2. Click the 'Edit ShipHulls' button
3. Load the current **ShipHulls.xml** file using the Load button on the toolbar at the top of the screen
4. Add a new ShipHull record using the 'Add Item' button on the toolbar
5. Set the ShipHullId value to the next available number (i.e. one greater than previous record)
6. Set the rest of the data for the new Ship Hull. The critical values for testing are:
    a. Name
    b. RaceId (Haakonish=3)
    c. Role (e.g. Destroyer)
    d. ModelName – set this to the path of the model inside the content project, e.g. **Ships/Haakonish/destroyer**
7. Add Component Bays to the Ship Hull by clicking the 'Add ComponentBays' button. For each component bay you must set the following values:
    a. ComponentBayId: set this to the next available sequential number. These values should start at zero and must be unique
    b. MaximumComponentSize
    c. Type
    d. MeshName: if this is an external component (i.e. Type is not General) then name which mesh this component bay relates to
    e. RotationHalfArcRange: if the component bay is for weapons, leaving this value as zero means that the weapon bay will use the default firing arc range of 180 degrees (i.e. a perfect hemisphere). To specify a different firing arc, set this value in radians (e.g. 1.91 radians = 110 degrees, thus a 220 degree firing arc range)
8. Optionally add running lights to the ShipHull by clicking the 'Add RunningLights' button
    a. Each running light must specify the MeshName that indicates the light position in the model
    b. For more information see the document "Distant Worlds 2 - Making Ship Models" (section "Other Model Features" on page 9)
9. Optionally add Modules to the ShipHull by clicking the 'Add Modules' button
    a. Each module must specify the MeshName that indicates the position and axis of rotation
    b. For more information see the document "Distant Worlds 2 - Making Ship Models" (section "Module meshes" on page 8)
10. Save the entire **ShipHulls.xml** file (including the new Ship Hull record) by clicking the 'Save XML File' button on the toolbar at the top of the screen

Step 3: Test the model in-game

1. Copy the recently-built Stride content into the game data folder
    a. Copy all **[Content Project].bundle** files (but NOT any **default*.bundle** files) from:
    [Content Project]\Bin\Windows\Debug\data\db\bundles\
    to…
    [DW2 root folder]\data\db\bundles\
2. Copy the updated ShipHulls.xml file to data folder of game
    a. [DW2 root folder]\data\
3. Launch Distant Worlds 2
4. Open the Designs List screen
5. Click the 'Add New' button at the bottom of the screen
6. The new ShipHull should be available in the list in the Select Ship Hull screen that follows. Select the new ShipHull as the basis of a new ship design
7. In the Ship Design screen you should see the following:
    a. ship model at screen center
    b. component bays at bottom-left of the screen
8. The model and component bays should match what you built into the model and ShipHull data