Starship – 2500 ton Type-TI/TJ Fontier Transport

General Notes

In Traveller 5 designing equivalent ships to their CT, MT or TNE counterparts becomes impractical for larger hulls. The new system has been designed with consistency in mind which makes some of the older designs questionable. That is not necessarily a bad thing. After all it's just the fact that the old designs were around for more than a quarter of a century and Traveller players are quite used to their stats that might want us to make the old design work in T5.

Rob Eaglestone – Co-Author of T5 and in my view the de-facto shipwright and primary capacity regarding T5 ship design – opened my eyes yesterday, that it might be time to come up with new design aproaches to achieve the same design goals specified when the craft had been orignally specified.

In that regard this 2500ton version of the Frontier Transport tries to implement a new concept. It might become a 2400ton or 2600+ton variant in the process and it will be different from the original in a few aspects.

There are a few common features that both ships share. Both are equipped with identical grapples, fixtures and connections to use and transport Drop Tanks or the Frontier Barge. Both have passive external fixtures to connect a Frontier Barge to the hull. The necessary grapples are part of the barge. Both ships can also use Drop Tanks inside the cargo bay or the Barge to refuel inflight using Fuel Transfer Pumps. The Drop Tanks carried aboard can be used as additional fuel tankage.

As opposed to the Texts all cargo bays aboard are designed to

be used as additional tankage. They are specified as bulk liquid cargo hold to include the pumps, coating and sealing for the storage of hydrogen fuel, they are also accessible as standard cargo bays. Please note that any fuel needs to be treated as unrefined if the cargo bays are not cleaned for fuel usage prior to filling the holds with hydrogen. An optional addition could be flexible tank „bubbles“ inside each hold that are filled with the hydrogen.

Type-TI Frontier Transport

Builder: Bilstein Yards

Disposition: In Service

Frontier Transport (Cost OTU: MCr587.9)

Frontier Transport serve mainly Class-C starport near the fringe of the Imperium. They do not normally carry passengers and are known for their relatively cramped crew living quarters, but out on the frontier crews cannot select from an abundance of ships, so theat is an accepted fact.

Two 120ton Cargo Bays are configured identically to the counterparts of the Type-TJ and can store one 100ton Drop Tank each. 8 Container Handlers are used to set out or take in these Drop Tanks. With this design the ships also support the Type-TJ which needs Drop Tanks to perform the famed Jump-6.

Fuel Transfer Pumps allow using the fuel inside the Drop Tanks carried aboard plus an additional 300 tons of internal cargo bay filled with jump fuel to perform a second Jump-2 without refuelling. Filling another 8 of the 12 internal Cargo bays with even more jump fuel allows for a third Jump-2 without refuelling or making Type-TJ service runs with 2 Jump-2.

Next to that the Type-TI sport a whopping 1140 tons of cargo bay for frontier trading.

Setting out or taking in two drop tanks takes aproximately 2.5 hours plus maneuvering. The tanks are first docked to the outside grapples before taking in. This maneuver takes approximately 30min per Drop Tank.

Overtonnage is only very slight (less than 1% and thus ignored IMTU without reducing agility). According to the rules Agility is -1.

Overtonnage: 14.5 tons

Crew comfort: +2

Passenger demand: -5

Type-TJ Frontier Transport (disguised Imperial Courier)

As a Jump-6 Version is not possible using ACS with out serious overtonnage (more than 50tons), I decided to try my han ds on a special Version. This 2500ton Type-TJ is Jump-6 Capable by using two 100 ton Drop Tanks / Fuel Containers plus most of it’s internal cargo bays filled with jump fuel.

The ship has 2G accelleration, Agility-1, the U4 Jump-Drive is capable of Jump-4 without sacrificing internal cargo space for jump fuel, Jump-5 by filling internal cargo bays with jump fuel but without drop tanks and Jump-6 with two external 100ton Drop Tanks plus filling most of the internal cargo space with jump fuel using collapsible fuel (bubble) tanks. The excess rating of the Jump Drive allows the ship to pull one 1300 ton Barge through a Jump-4 using two external Drop Tanks and all cargo bays filled to the brim (like for a Jump-6 above). This Barge is capable of 1G maneuvering and carrying 10 additional Drop Tanks.

The configuration allows for two filled drop tanks carried aboard, which add to other filled internal cargo bays for a Jump-5 using Fuel transfer Pumps. 40tons of cargo space are

wasted to flexibility but the ship retains its jump 6 capacity en route for one Jump-6. Wilderness refuelling is expected for these ships. The shuttle acts as a fuel shuttle to fill the drop tanks, while the main ship can skim fuel itself.

Performing a Jump-6 requires some infrastructure, as the drop tanks need to be handled and transported. As there are a lot more Type-TI standard Frontier Transport used throughout the Imperium, these are designed to handle and use the same tanks. And in addition to that other Type-TJ can be used as supply vessels by carrying Drop Tanks in external 1300ton Deck Cargo Barges which reduce jump performance but can deliver 8-10 filled droptanks at Jump-3.

ACS Design Notes

Builder: Bilstein Yards

Disposition: In Service

Redesign of the Type-TJ Frontier Transport (disguised J6 Courier).

Design goals:

TL 15

21 crew

10 Turrets plus 3 sandcasters

5 low berth, no passengers

300+ dt cargobay

shutte, air/raft

2G, Jump-6, one month of operation

Conclusion: Classic Traveller/ MegaTraveller design specs are not possible in T5 using a 1800ton, 2000 ton, 2400 ton, 2500

ton or even a 2800ton hull. As there is less space unused on the ship than the cargo specs call for after adding only spec drives and fuel. Conclusion: payload for Jump-6 vessels is very small.

This ship will be re-designed with two 100 ton drop tanks instead and has to use most (4) of it’s 6 Cargo Bays for Jump Fuel to manage one Jump-6, reducing cargo capacity to 2×30 tons plus an additional 70 tons inside the shuttle’s cago bay.

Two of the Cargo Bays are especially designed to handle two loaded Drop Tanks. 8 Container Handlers (96 tons total handling capacity) are designed to move the Tanks out of their ventral Loading Gates to external grapples next to each of these gates. This takes aproximately two and a half hours including securing the drop tanks. During this time the shuttle will usually perform refueling runs to either fill the internal bays or later the externally mounted drop tanks with jump fuel.

Prior to the Jump-6 the Fuel is transferred into the drive and the tanks are dropped. These will be collected later by local capacities or a Type-TI coming by later.

And we are still 46tons overtonnage so Agiity is reduced by -1.

Overtonnage: 46 tons

Crew comfort: +0

Passenger demand: -5

Type-WH 100ton Fuel Container / Drop Tank

Type-TI_DropTank_v2 MCr10.1

Builder: Bilstein Yards

Disposition: In Service

Any Type-TJ Frontier Transport planning to perform a Jump-6 need two of these drop tanks plus 4 of it’s 6 Cargo Bays.

The Standard Type-TI and The Type-TJ in turn are both designed to carry one loaded Drop Tanks in each of two especially configured standard Cargobays (of 120 tons each) aboard.

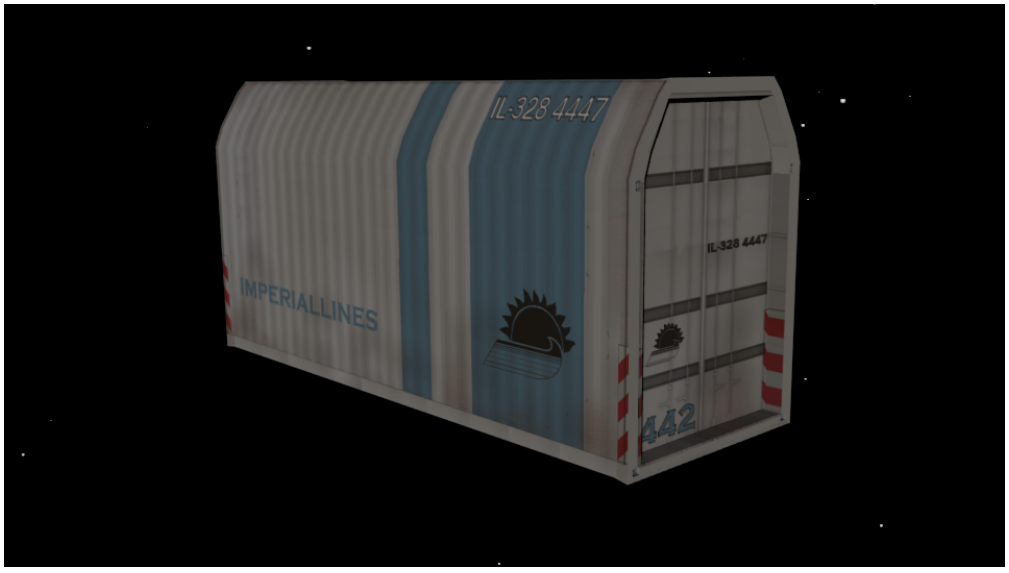
These need to be set out and fitted to the external Grapples of a TJ, which takes aproximately 2.5 hours including securing all necessary connectors for the transfer pumps.

During this time the shuttle will usually make wildernes refueling runs to fil the internal cargobays with additional jump fuel.

Prior to the Jump-6 the fuel is pumped into the Jump-Drive and the tanks released. A Type-TI will later collect the tanks if no local services are available.

Overtonnage: 1.5 tons for design consistency I should up that to 14.5 as with the TI design and invest in crew comfort.

Type-W 1300ton Frontier Barge

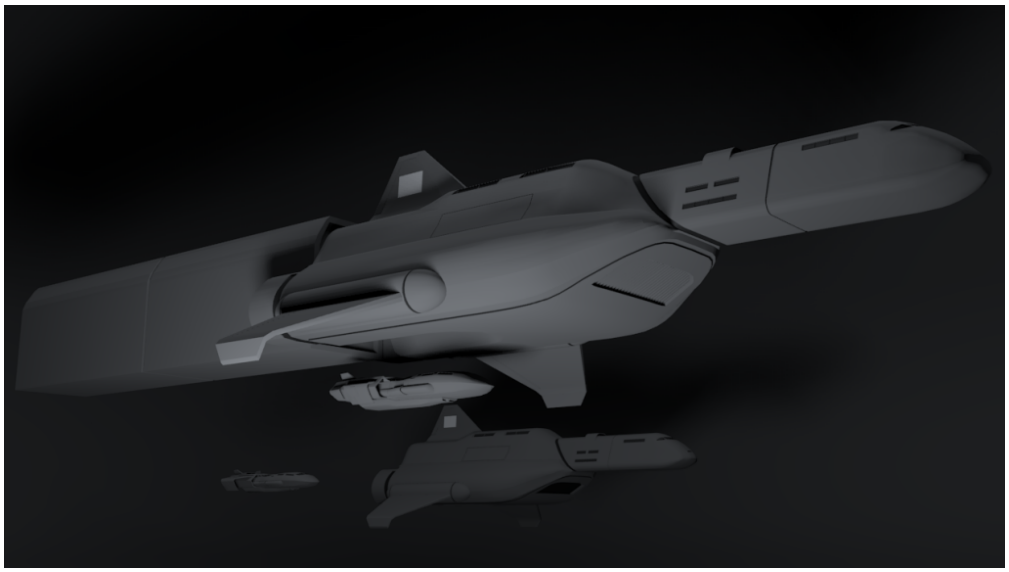


Using a 1300-ton, TL15 hull, the Type-W Frontier Barge Class

Barge mounts maneuver drive-G and power plant-G, giving a performance of 1G acceleration. Fuel tankage supports 0.5 month of operations. Attached to the bridge is a Computer Model/1bis std. There are 0 staterooms, four bunks installed on the bridge and emergency berths for ten. Cargo capacity is 1100 tons. The ship has a streamlined hull. The ship carries 13 Grapple Set Triples. The ship has 4 crew when operated independently and does not have any staterooms as it is not intended for long term operation. The crew is only needed to operate the barge. When coupled to a Type-TJ the barge crew can travel aboard the main ship utilizing it’s low berth‘.

The Barge is equipped with a bridge, powerplant and maneuver drive capable of 1G and 0,5 days of operation. The barge is equipped with the necessary grapples and fuel conectors to couple to a Type-TI/TJ Frontier Transport and also refuel a Frontier Transport.

In all the designs above were missing the appropriate connecting clamps for the barge. 13+ triple pairs of clamps would be necessary to pull the barge. These would add



Barge W-NS10 Type-W Barge MCr269.4

Barge W-NS10 Frontier Barge MCr308.5

Builder: Bilstein Yards

Disposition: In Service

Using a 1300ton hull the Type-W Frontier Barge is used by Imperiallines to transport up to ten loaded Type-WH 100ton Drop Tanks throughout the Imperium.

Overtonnage: 24.5 tons
Crew comfort: -4
Passenger demand: -5

Tons	Component	MCr		Notes
1300	Streamlined Hull	80	S	
39	Landing wheels	58.5		
0	Jump Grid	13		
13	Flotation hull	13		
6.5	Fins	3.2		
0	AV=15. 1 Blast Plate	0		
0	AV=15. 1 Kinetic Plate	0		
0	AV=15. 1 EMP Plate	0		
0	AV=15. 1 Rad Plate	0		
0	Jump Fuel (0 parsec)	0	0	parsec jump, at 0t per parsec
0	Plant Fuel (0 months)	0	0	months
4	PowerPlant-1 (A)	4	P	1
13	Maneuver Drive-1 (G)	26	1	G
14	14x Fuel Transfer Pumps	1.4		#14
0	AR Surf Communicator	1.5		
0	AR Surf Radar	1.5		
0	L Surf Proximeter	0.3		
1	Computer Model/1bis std	3		
1	Life Support Standard	1	10	person-months
1	Emergency Low Berth	0.5	10	individuals

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      4     Standard Bridge                              0.6
 2cc 2op 0ws
      2     4x Spacer Bunks                          0.4    #4
1 crew
     20     10x Cargo Lock                                0
 #10
   1100     Cargo Hold Basic                            0
     96     16x Grapple Set Triple                         96
 #16 up to 105t
     10     Lifeboat                                  4.6
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So here come the YML source files for evaluation: Type-TJ2500, DropTank, Type-TI2500 und the FrontierBarge. All Source Files in one ZIP: FrontierTransportT5, and a PDF with stuff: ACS Archive

Stats and images will follow soon.