

WARP FACTORS & SPACE MOVEMENT

Starship movement is needed in Prime Directive to get the characters from one place to another (usually from where they are to where the planned adventure takes place). This is a factor of how far you need to travel (including any detours to avoid enemy territory, ongoing wars, active piracy zones, or whatever), what kind of ship you have (cargo and merchant ships cannot go as fast as warships), and whether it is using its normal cruising speed (which has the most economical fuel consumption) or its faster “dash” speed (which burns fuel and spare parts like crazy). The following chart provides the relevant data:

Drive Type	Warp Factor	Parsecs Per Month	Parsecs Per Day
Freighters	4.5	149	4.97
NT Warp	5.5	272	9.07
Aux Warp	5.5	272	9.07
ET Warp	6	353	11.77
Std Warp	7	561	18.70
Fast Warp	7.25	623	20.77
Aux Dash	8.5	1004	108.41
Std Dash	9.25	13,088	436.27
Fast Dash	9.5+	14,094	469.80

Freighters includes standard commercial ships not intended for combat. They have no “dash speed.”

NT Warp is Non-Tactical Warp, the earliest form of warp drive, e.g., used by Romulan “sublight” ships.

Aux Warp is used by naval auxiliaries, basically freighter hulls with military-grade engines. Some civilian-owned ships have this type of engine.

ET Warp is Early Tactical Warp, used around Y100-Y125 by the first ships built “from the keel up” for warp.

Std Warp is Standard Warp, the military grade engines seen on most starships. Note that a few “civilian” ships have this type of engine.

Fast Warp is used only by Fast Cruisers, Light Dreadnoughts, Federation Express high-speed transports, and the later X-ships.

Dash speed (shown for auxiliary, standard, and fast ships) is explained below. Early and Non-Tactical Warp ships cannot use Dash movement. Note that auxiliary ships cannot “dash” more than 1,004 parsecs in a 30-day period as their engines cannot take the heat.

Warp Factors are one term in a complex equation defining speed, but are the most easily grasped term in common speech. For movement in *GPD*, however, calculations are done in parsecs (a measure of distance rather than speed).

Calculating Movement

You are playing *GURPS Prime Directive* and you need to get your ship from where it is to where you want to be. This is a relatively simple procedure. First, find the origin and destination on the map. For simplicity, just count the hexes (each is 500 parsecs across). See the optional rule below for more complex calculations.

Determine whether your ship will use normal cruising speed or (if it can) dash speed. Get the relevant number from the chart, and divide it into the distance.

For example, you need to get from Earth (hex 2908) to Orion (hex 2812) in order to foil a plot to secretly build a new pirate starship. This is a distance of 5 hexes or 2,500 parsecs. You are flying in a Free Trader with military auxiliary engines (9 parsecs per day). Divide 9 into 2,500 and it will take you 277 days to reach there. Or perhaps you are in a Prime Trader with standard starship engines (18 parsecs per day). This will take you only 134 days. Even this is still too slow; the pirates must be stopped! Dash speed for your standard engines is 436 parsecs per day, so you will need only a little under six days to get there, but this will burn a lot of fuel and spare parts (5% of the cost of your ship!). But you’re on government *per diem*, so go right ahead.

Having foiled the pirates, you now need to go from Earth to the Klingon Capital (hex 1411) in the company of a special ambassador. This is a distance of 15 hexes (7,500 parsecs) and travel at dash speeds will take ($7,500 \div 436 =$) 17 days plus a few hours. The only problem here is that you will need to stop and refuel twice in this trip (as dash speed is limited to 3,000 parsecs without more fuel) and each refueling will take half a day (plus time for side trips, adventures, bar fights, etc.). Figure 20 days and you’d be about right. You can get fuel at the Federation base in 2308 and (since you have been invited) can buy fuel at the Klingon base at 1809. You could also get fuel from the neutral planet in 1910. (Yes, we know that the new show said four days, but that was contradictory to all previous data and we ignored it.)

Dash Speed

The concept of “Dash Speed” is one that is important to understand. Dash Speed is used only when the ship has a clear path, a known and well-marked destination, and a serious need to be somewhere else in a major hurry. It is much faster than normal cruising speed, but the penalties are severe (and most of them do not show up in game terms, causing players to believe, incorrectly, that “Dash Speed” is free and the most common way of moving around). Dash speed means, literally, driving the ship to its maximum speed, going “hell for leather” or “riding with wild abandon.” The distortion of space needed for this speed is so severe that navigation is difficult (requiring outside help) and the ship is nearly blind and defenseless (meaning that Dash Speed is rarely used to get *into* trouble). The engines will be strained (causing a serious maintenance cost and shortening the time to the next dockyard overhaul) and tremendous quantities of fuel are used.

Dash Speed is often used for emergency strategic re-deployments; Fleet headquarters really needs more ships in the other part of the Federation (or Empire, or whatever) *and really needs them to be there right now*. (Sometimes this would happen in peacetime, when a special ship or team of experts is needed to deal with an immediate crisis.) There must be a navigational beacon at the destination (of the kind only provided by major industrial plan-

ets, starbases, and other major bases; minor colonies do not have this capability). Fortunately, such redeployment is made along a network of bases, which provide the fuel, quick maintenance overhauls, and navigation beacons needed for Dash Speed. Warships can conduct extended strategic movement only if they make a half-day “pit stop” at a base every 3,000 parsecs (or whatever the normal six-month movement distance is). This type of movement is known as “Strategic Movement” in the strategic game system *Federation & Empire*; such redeployment is also just about the only time that Dash Speed is used for extended periods. For this type of movement, the GM will assess the characters a cost equal to 10% of the cost of the ship for each month of such movement.

Dash Speed is used for shorter periods in an operational context. This could be broken into three types of operational maneuver.

The movement of reserve ships to a critical sector is controlled by bases with powerful scanners to guide their movement, and a wartime fleet of 200 ships would be able to maneuver no more than a dozen ships by this method in any six-month period. This would be limited to a maximum of 3,000 parsecs for normal warships (basically, six months of movement in a single week). In peacetime, this might be used to get a special ship, team, or supplies to a critical planet. Civilian ships could in theory use this for some reason important to their adventure or enterprise. The GM will assess the characters a cost equal to 5% of the cost of the ship for conducting this maneuver.

The movement of warships to intercept enemy forces or to respond to a crisis often uses Dash Speed, but this is limited to 500 parsecs (1,000 parsecs if the maneuver is guided by the powerful sensors of a base or scout-ship). This type of maneuver can also be used to retreat from the immediate area of a battle or threat (up to 500 parsecs). The GM will assess the characters a cost equal to 3% of the cost of the ship for conducting this maneuver.

Warships which have been damaged in battle or which are trying to escape from an area where the enemy has overwhelming force might use retrograde movement. This allows warships to move up to 3,000 parsecs (basically, a distance equal to their normal operational movement) but only out of combat or danger and only when moving to a major base or industrial planet or a specialized fleet repair facility. In peacetime, characters might use this type of movement if they are trying to rush a wounded person to a specialized medical facility, or to return key items (evidence, artifacts, witnesses, whatever) to a major headquarters. The GM will assess the characters a cost equal to 5% of the cost of the ship for conducting this maneuver.

In all cases, the GM may decide to waive the cost if the characters are using a government ship for the convenience and business of the government in question, or if the government has some reason to reimburse them for the cost. If a ship is hired to carry something somewhere, and the people doing the hiring want delivery right away, the characters need to be sure to make them pay the cost. If you are a Star Fleet crisis team and Star Fleet Headquarters wants you on Rigel-IV, then Star Fleet can (and

will) pay for it. If you are the only engineer who knows how to fix an old Mark-II reactor and somebody wants it fixed, they can pay to get you there. In some cases, however, when a team is conducting a mission within a defined budget, the GM may decide that even though the cost doesn't come out of the characters' personal funds, it does come out of their operating budget, and using Dash Speed may mean that they don't have money they will later wish they had saved.

Precise Distance

There are two methods for improving accuracy in distance calculations; either or both may be used.

In one case, do not count hexes but measure the distance from the center of the starting hex to the center of the destination hex with a ruler (or marks on a slip of paper) and then transfer this to a straight row of hexes and determine the equivalent number of hexes (including fractions). By this method, the distance from Earth to Orion is about 4.6 hexes (2,300 parsecs) and from Earth to Klin-shai is 13.7 hexes (6,850 parsecs).

The second method is to assume that the origin and destination are not in the center of the hex. The GM might want to define the precise point in space for each planet (as a distance from each hex side) or you could simply calculate the nominal distance and roll 2d6 on this chart:

Die Roll	Modify Distance By
2	-400 parsecs
3	-300 parsecs
4	-200 parsecs
5	-100 parsecs
6	-50 Parsecs
7	0
8	+50 parsecs
9	+100 parsecs
10	+200 parsecs
11	+300 parsecs
12	+400 parsecs



GMs might want to keep a record of such distances for future use, or assume that temporary local conditions along the route mean that every trip between two points takes a slightly different route and a slightly different distance.

Future **GURPS Prime Directive** products will include means by which skilled engineers could gain slight speed increases and by which skilled navigators might effectively reduce the distance between two points.

Interstellar Communications

Subspace radio will allow two-way communications without time-lag anywhere in the same hex. After that point, assume a time-lag of one quarter-hour per hex. And by all means, if the pace of the adventure means that the team should not be able to talk to base so easily, all kinds of ion storms can cause havoc with communications. Messages might have to be rerouted through bases not in a direct path to the characters.