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# Trade & Transportation on Pern

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To the dragon-riding folk of a Weyr, traveling across Pern is as easy as going *between*. However, the majority of the common folk of Pern, born and living out their lives on the large or small hold, have never traveled more than two or three days away from their home. Even many craft people seldom leave their crafthall or posted hold, once they've been assigned one by their Mastercraftsman. Travel without a dragon on Pern is hard work: not only do you have poor roads, bad weather, and the threat of meeting with raiders or dishonest holdless (not to mention the terrible threat of Threadfall), you have the basic, simple fact that Pern is a low-tech society. All travel and transportation is done by foot, by horse, by wagon, or by boat. And for the common folk of Pern that means that it can take days, weeks, or even months to reach wherever it is that you want to go. Add to this the economic necessity that fields and livestock can't remain unattended for more than a few days; a good Lord Holder won't want to allow his populace the freedom to travel great distances, since time on the road is lost labor time and neglected homes, fields, and livestock.

Cargo and tithes make up for the majority of materials transported on Pern. As a rule, raw materials are provided by the holds to the crafthalls, where these resources are turned into textiles, processed goods, and luxury items -- which are, in turn, traded back to the holds in exchange for more raw materials. This trading circle is broken by the fact that both crafts and holds are required to tithe resources, processed goods, and luxury items to the Weyrs, for which they see no tangible return. Trade cargoes and tithes can consist of an infinite variety of items. While the trade of fresh meat and vegetables is mainly to local markets, raw grains as well as preserved fruits, vegetables, meats, salt, and spices are extremely important commodities in the trade of goods across Pern. Often livestock is transported long distances as well, only to be slaughtered for meat and hide once they have reached their final destination. Processed items such as textiles, furniture, jewelry, household goods, and other luxuries are another important staple of trade as well. More rare cargo would include passengers and information. Passengers -- be they a child being sent from a hold to a crafthall for his apprenticeship, a journeyman of a craft traveling to his new posting, or a grandmother going up to the Big Hold to help her expectant daughter, can be found making use of any sort of transportation within their financial and environmental reach. The transportation of information is more difficult. Urgent communications can be sent by harper drums, as the Harperhall has relay systems which stretch across both continents respectively. However,

crafthall secrets may be deemed too confidential, or personal communications too trivial, to warrant the drum relay. In these cases, those who can afford it send a courier to carry their messages, while more mundane mail may simply be handed over to a trusted ship captain or caravan leader, who promises (for a fee) to ensure that the letters are delivered.

On the Southern Continent, the first settlements were often confined to along navigable waterways, and practically all early travel was by boat. This was due to the difficulty of overland travel across the wild, lush Southern jungles and forest lands. Gradually, however, inland trails were established between the Lord Holderships and their support holds, so that by the end of the first century of resettlement, a primitive network of roads connected all of the major Holdings to one another as well as to the Kadanzer Weyr. These dirt roads were made by simply cutting away all trees and brush from the trail. However, many such roads become almost impassable during wet and muddy weather, and there was no shelter from Thread (which was, of course, never expected to return to Pern).

In the following decades, many of the roadways established on the Southern Continent have been improved upon so that they are passable all year around. By common agreement among the Lord Holders, the right of use of the roadway belongs to all, while the maintenance of that roadway is the responsibility of the inhabitants of the district through which the road runs. This means that each individual holder, no matter the size of his holding, is responsible for the quality and safety of the roadways through their lands. However, in many holds, the Lord Holder himself has taken complete control over roadway upkeep, in order to ensure a constant standard of road quality (and thus ensure the timely passage of cargo across these roads).

The average roadway on the Southern Continent is similar to the Roman roads of early Europe, in that they are built of large rocks set in mortar, surmounted by a layer of fitted stone blocks. A more modern system of road building has recently begun to become vogue in many of the larger, wealthy holds. This system involves digging a trench and installing a foundation of heavy rock, which is then raised in the center to facilitate drainage. This pavement is then surfaced with a 6-inch layer of compacted broken stone. In either case, the building and maintenance of miles of such roadways are costly, and in many areas, holders have set up toll systems at bridges or similar points in order to help cover the cost and manpower of road upkeep.

Even despite a healthy network of roadways between the major holds, overland travel on Pern is slow and very time consuming. A typical wagon caravan will travel about 10 miles a day in good weather; an individual on horseback may do twice that. And wagons or pack beasts can only handle a limited weight of materials.

The drayage of freight across Pern requires either pack animals or wagons. In the case of pack animals, panniers are harnessed onto the beasts of burden (horses, oxen or llamas), and the animals are then typically led by halter leads in a single file; larger tithe caravans may extend for almost a

mile, although caravans of this size are increasingly rare as roadways continue to improve in quality. The types of wagons used on Pern vary in design from small, light two-wheel, single-horse carts a small cotholder might use to carry his harvest to the market, to the heavy, tough, canvas-covered Conestoga-type wagons which are pulled by a team of six oxen, used by many holdless trader caravans. Many cargo or tithe caravans use a wagon design similar to the Prairie Schooner, which carried pioneers across the western frontiers of the United States of America. This wagon is built like a common farm wagon (a buckboard), with a canvas top supported by horseshoe-shaped wooden arches which extends down both sides of the wagon. This leaves oval-shaped openings in the front and rear of the wagon to allow for the circulation of fresh air in the central area where passengers or goods are carried. In addition, holdless caravans will also use a wagon design similar to the coach, which not only carries their cargo but can substitute for a comfortable (if tiny) home when camp is struck each night. These coaches are basically a four-wheeled, horse-drawn carriage, with the heavy wagon body suspended on springs and equipped with side doors and front and rear seats. A roof forms part of the supporting body of the coach, and there's even an elevated seat for the driver at the front of the vehicle. Due to the return of Thread, the holdless trader caravans need to carefully plan their route in order to have caves or other Thread-safe shelter during 'Fall as their wagons and caravans are not Thread-proof. This, of course, slows down transportation time further, and results in higher prices.

A healthy part of all of the Southern Continent's transportation needs are supplied by shipping along inland waterways: rivers, canals, and lakes. This type of shipping employs smaller, lighter vessels than the masted sea-going craft, although in some cases, ocean-going ships can safely navigate some of the Southern riverways. Waterway transportation is desirable where possible as A) it is often a faster and safer means of getting goods to market than a lengthy, raider-fraught overland trip; and B) many of the earliest settled Southern holds were founded alongside navigable waterways, meaning that the market infrastructure to handle cargo and supplies shipped by waterway are immediately available and cost-effective to employ.

Most of these waterways are traveled by cargo barges, which are often powered by polers or hauled to and from dock by draft animals moving along the shoreline. Natural riverways are preferred where possible, but in areas where a river course is found to be unnavigable, side canals running parallel to the river are dug so that traffic can bypass the impassable sections. The sides of canals are often faced with masonry to prevent bank erosion from natural means or from the wash from passing water traffic.

Unlike roads, canals cannot be constructed to conform to environmental irregularities, but must consist of one or more straight, level stretches (or reaches). Where a canal must consist of more than one reach, vessels are transferred from one level to the next by means of a lock (a walled section of the channel, closed by water gates at both ends, in

which the water level can be raised or lowered by means of valves or sluiceways to match the level in the upper or lower reach, as desired), or an incline (a paved or railed ramp over which vessels are hauled up or down by dray beasts). Locks have some strong disadvantages: they are expensive to construct, maintain, and operate; when traffic through a waterway is heavy, the supply of water for the highest reach is difficult to maintain; and finally, a lockful of water is lost from the upper reach in each locking operation. However, locks are considered state of the art by the holders, and waterways with lock systems are treasured as a status symbol among the Southern Lord Holders. In turn, inclines are less expensive to operate and maintain, but are manpower intensive, and are far more likely to cause damage to either the vessel being towed, or the on-board cargo. Locks generally have a lock-master living immediately beside the lock, who operates the mechanism for bargemen, and charges a toll for the service. The lockmaster generally runs his own small hold as well.

Shipping on Pern also consists of the coastal and trans-ocean drayage of cargoes. Cargo and passenger traffic between the Northern and Southern Continent are dependent upon the ocean-going ships: except in the direst of emergencies, the Weyrs do not offer their services as a ferry for cargoes for holders or crafters, even those of great rank. Of course, a Mastercraftsman or Lord Holder might pay for the privilege -- but the Weyrs will charge him dearly. A Lord Holder or Mastercraftsman has the right to request transportation for himself for very important events such as Lord Holder Conclaves, but any attempt to abuse this privilege is firmly dealt with by the Weyrs.

Shipbuilding on Pern is a highly developed art, and most ocean-going ships range in design and style from the caravel (the same sort of ship sailed by Christopher Columbus in 1492), to the full-rigged clipper (the sharp-bowed ships which preceded the steamship in the late 1800s). The caravel is rigged with a square-sailed foremast and from two to three lateen sails, and has a cargo capacity of approximately 110 tons, while the sleek, slender, and fast clipper ship can be built to carry as many of 450 tons of freight. These ships both travel between the continents as well as carry their cargoes along the coasts -- many captains and crews earn their livelihoods by carrying passengers and goods between Southern ports, making faster time than most overland routes. Most of this traffic is between nearby ports, but some of the largest ships ply the "backside route" west from Kadanzer's territory to the far Eastern reaches of Landing territory. This route is useless for transporting perishable goods, but low-bulk, high-value cargo such as smithcraft products, gemstones, and wines can be quite profitable to transport that way.