

NAVAL WARFARE ON TÉKUMEL

A PRIMER



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A non-canon essay inspired by Professor M.A.R. Barker's world of Tékumel

NON-CANON TÉKUMELANI STUDIES

OCCASIONAL PAPERS 1

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1 INTRODUCTION

...and thus it was I finally found myself on a small cargo vessel in heavy seas bound for Ke'er. I had heard something of the rapacity of the pirates of the Pentriúrtra Deeps; imagine then my apprehension when I learned our crew included no fighting men but only sailors with bows upon their backs! Imagine my consternation when the captain answered my concerns with a shrug! Imagine my dismay when, a day short of Ke'er, we were set upon by half a dozen shiploads of bloodthirsty clanless men!

But noble reader, you can hardly imagine my surprise at the ensuing battle. For hours and hours we bobbed in seas the height of our masts, rarely seeing more than one or two of our foe at a time, our steersman somehow conspiring to ensure the brigands never closed on us. When they did approach it seemed the pirates were always wallowing in a trough while we rode the crest, our sailor-bowmen always ready to pepper their decks with well-placed arrows.

Again and again we rode the swell, firing upon this enemy ship and then that, until by mid-afternoon, I came to realize we had changed course and were now plunging westward, away from Ke'er! When I protested to the captain, he declared that the pirates had given up their chase hours ago and it was now we who were pursuing them. Ngá! Outnumbered we were, but outnumbered as the hunter by Khéshchal-birds, and revelling in the sport!

At length, assisted by yet another purse of silver, I prevailed upon the captain to abandon his chase and we made Ke'er not long after nightfall. That night I rested in the clanhouse of Black Tiu (where I could claim some distant clan connections) and reflected on the day's events. What had seemed to me a day of narrow good fortune and random floundering amid the swell was clearly nothing of the kind. Somehow the captain and his crew always knew the whereabouts of every enemy ship and the precise instant to loose their arrows to greatest effect. What I had witnessed was the extraordinary skill of men attuned to the sea, guiding ship and arrow against a largely unseen enemy amid the greatest turmoil of wind and wave. I do not know how these stocky little men would fare against our own great Tsolyáni fleets in Msúmtel Bay. Likely they would be caught and holed by the Qél and crushed under the mighty Mrishurén. But on their own storm-tossed northern seas these Yán Koryáni mariners are truly masters of the waves and there, I doubt even the combined fleets of Tsolyánu and Salarvyá could prevail against them!

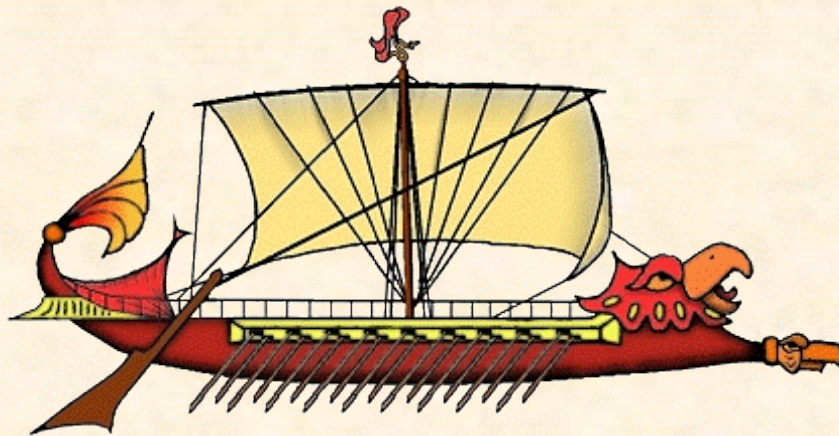
*extract from the memoirs of Shargún
hiTsámren of the Clan of Green Malachite,
onetime traveller and sometime trader
among the northern tribes¹*

It is true that every day of Shargún's life was for him a wondrous and profoundly moving experience (on noticing the "remarkable" curliness of Jannuyáni *hmá*-wool he was moved to write three whole scrolls on the subject). It is also true that towards the end of his life, his quirky admiration for all things "northern" was open and unrestrained. Perhaps he exaggerates the dangers of this encounter and the skill of his Yán Koryáni companions.



Nevertheless, the above account does serve to introduce and illustrate two important aspects of Tekumeláni naval warfare.

The first is its essentially petty character. On Tékumel, battles at sea tend to involve relatively small numbers of ships, and almost all are "civilian" battles between traders and outlaws, rather than true "naval" engagements. I suppose we could say the same about fighting on land, where most combat consists of street fights, brawls and acts of brigandage rather than truly military battles. Yet even if we compare only true military actions there is clearly a difference. Naval warfare lacks the ritualistic nature of *Qadárni*, though it may have the formal pitched battles of the *Qadárdáli*. None of the modern empires (and few ancient ones) have ever regarded the navy as their principal instrument of military power. Yet as I hope will be made clear, naval warfare is an interesting and important subject, albeit slighted somewhat in past writings on Tékumel.² Nevertheless, I will not deny that for most nations the navy is an auxiliary arm, like say the sappers: indispensable, and even noble, but always somehow ancillary.



The bireme *A'atlánish*, a vessel serving in the Mu'ugalavyáni Legion I of the Sea, "Tide of Death." The zoomorphic forecastle in the form of a raptorial bird is of molded *chlén*-hide panels. The simple effigy of Cha'ach'í which tips the ram is of bronze.

The second aspect particularly highlighted in Shargún's memoirs is the particular skill of the Yán Koryáni in what might be termed "naval archery," a skill which, whatever Shargún's personal bias, is widely acknowledged among mariners. This skill, along with the tactical strengths and weaknesses of the other four great empires, will come more sharply into focus below.

2 THE HISTORY OF NAVAL WARFARE ON TÉKUMEL

Before considering the modern practice of naval warfare it may be instructive to review what little is known about its history.

EARLY WARS WITH THE HLÚSS

Of the ships which plied the oceans before the Time of Darkness nothing is known. Any history of naval warfare must perforce begin with the empire of Llyán and the earliest surviving records. Unfortunately, evidence from this period is sparse and fragmentary. There are occasional references to ships, fishing, or ocean-going trade. Vague references to struggles with the Hlúss may perhaps imply battles at sea, but in truth there is no evidence that the Llyáni ever mounted expeditions against Hlúss strongholds, or that they ever engaged Hlúss nest-ships at sea. All we know is that they did repel Hlúss invasions, perhaps doing battle onshore.³

Similarly, there is little direct evidence for naval warfare among the Three States of the Triangle, a polity even more poorly-documented than the Empire of Llyán. Given the location of their capitals in the south-central plains of Tsolyánu, great maritime endeavours would appear unlikely. And yet their eventual conquerers, the Dragon Warriors of Nlúss, asserted that the Three States were noteworthy for their far-flung maritime trading connections. Moreover, they averred that the Three States were at one point allied with the Shén in a series of wars against the Hlúss.⁴

Fortunately, the Shén records appear to be more informative on this point. These records confirm an early alliance of the Shén with a confederation of human states (the argument identifying these as the Three States is extraordinarily complex but compelling, and involves a correlation of pottery styles, Shén oral history, weather-records, and the ancient incubation almanacs of Shényu). More to the point, Shén records provide definitive, though not detailed, accounts of these wars with the Hlúss. According to the Shén scholar Gák S'i-Chrí, currently residing in Chame'él, records preserved in the council library at Yró in Mmátugual describe no less than five ship-borne expeditions mounted by the Shén and the human "neutral egg-groups" (i.e. the Three States) against Hlússuyal. These involved both Shén and human ships, probably cargo vessels employed as troop transports; they represent the earliest recorded military use of ships, and the earliest record of humans undertaking an invasion by sea. The causes which led to this unprecedented undertaking are quite unclear. Clearly the Hlúss threat had become intolerable for some reason, but why? Unfortunately for us, as far as the Shén record-keepers were concerned, war with the Hlúss was hardly an event which needed explanation.



As for the outcome, it appears that the first four expeditions were not only audacious, but remarkably successful, surprising the Hlúss utterly and laying waste to countless nest-cities on Hlússuyal. The fifth, however, was a disaster for the allies. The records imply that this time, Hlúss nest-ships met the allied armada at sea and sank many of the transports before they could reach land. We are all deeply indebted to Gák S'i-Chrí, for his scholarship has revealed a momentous episode in the history of mankind. Here for the first time our forefathers joined with their scaled allies to teach the Hlúss that the highways of the sea were not theirs alone to patrol. And our ancestors learned, to their cost, that if they too wished to patrol those highways, they must be prepared to do battle on them as well.

At the time, neither side was able to use these lessons to advantage; both were exhausted by the Hlúss Wars. There are no records of Hlúss raids on human lands for some two millennia thereafter (and even today, the Hlúss population may be only a fraction of the horde which so threatened Llyán and the Three States), while almost immediately after the fifth expedition, the (doubtless much-weakened) Three States fell to the Dragon Warriors.

The Dragon Warriors were themselves neither traders nor seafarers and neither they nor their successors seem to have been much inclined toward naval enterprises.⁵ But after the initial bloody centuries of conquest, ocean-going trade began to thrive once more; in fact with the Hlúss finally pent up to brood on Hlússuyal this was probably a time of *explosive* growth in maritime trade. It may be no coincidence that at this time we first begin to see numerous references to piracy and brigandage on the high seas, a problem which only grew worse with the decay of the Dragon-Warriors' short-lived empire. Over the next two millennia or so, the numerous petty wars and endemic piracy must have led to countless small sea-battles, but no descriptions survive and there is no evidence for major naval actions or new developments in naval warfare.

THE FISHERMAN KINGS

This changed with the rise of the dynasty of Gámulu, and his descendents, the so-called "Fisherman Kings" of what is now western Salarvyá.⁶ Here, for the first time, we see the rise of a truly maritime empire. The conquests of the Fisherman Kings in Háida Pakála, the islands off Msúmtel Bay, and central Salarvyá were accomplished primarily through seaborne invasions. But the innovation that really distinguished the Fisherman Kings was their development of a fleet of swift black galleys, probably comparable to the modern *Sriugánta*, to accompany the invasion fleets. These galleys were fast, of course. History is clear on this point. But more than that, the rowing galleries were crewed not by slaves but by free men - or more properly "vassals" - men trained and armed to fight. The reasons for this development of dedicated fighting ships are not difficult to understand. Although the states opposed to the Fisherman Kings did not possess fleets of warships, all were areas that had been notable havens for pirates. Indeed, it may have been the threat of piracy which drew the attentions of the Fisherman Kings to these areas in the first place. While the armies of



these polities, the successor states of the Dragon Warriors, could offer little resistance to a large invading force, their pirate allies posed a serious threat: they could harry a fleet at sea as the Hlúss had done to the Shén and human fleets millennia before. While the pirates provided a formidable shield for local rulers, for their part, the littoral principalities offered the pirates safe haven. Doubtless these were mutually beneficial and profitable alliances. But they were alliances the Fisherman Kings were determined to break.

A brief description of Hó Etéhlту's campaign against the Lords of Thayúri Isle serves to illustrate how the new black galleys performed. Daíche Melíggte, a scribe who accompanied the expedition, records that the King mustered his fleet of sailing ships and galleys and sailed from Chame'él immediately following the monsoons. He proceeded without haste to Pétris Layóda on Gánga Isle, which he had taken the previous year. Here he paused for a week to take on food and water. This gave the Lords of Thayúri ample warning of his intentions, and time to prepare. By the time Hó Etéhlту sailed from Pétris Layóda, an irregular privateer force of assorted allies and subjects of the Lords of Thayúri had assembled to meet him. Hó Etéhlту rounded the eastern end of Burrú and on the morning of the third day out of Gánga, his scout ships sighted the Thayúri brigand fleet assembled in a line off the north coast of Burrú. The brigand alliance was aware that Hó Etéhlту's transports were full of fighting men, but knew these must be too crowded below decks to fight effectively at sea. They had therefore gathered many archers on the decks of their sailing ships. These were to pepper the fat, slow transports with flaming arrows, then fire volley after volley to keep Hó Etéhlту's men below deck until the fires had spread. However, before the brigands could get within bowshot of the transports, the black galleys sped out from concealment in the center of the convoy, grappled and boarded the pirate ships, and overwhelmed the astonished archers.

Two days later, the Lords of Thayúri rejoiced to see the fleet of their allies approaching Telégga harbour (present-day Tléku), festooned with grisly trophies of war. The Lords and their retainers assembled on the waterfront to celebrate their victory, but their joy turned to dismay as the pirate ships sailed into port and one by one smashed gracefully into the quays, scores of pirate heads swinging from the yardarms like bloody lanterns, the eyeless corpses of the steersmen lashed to the rudders. And upon each prow the flayed remains of a pirate-prince, grinning figureheads now, on the ships which had once held the Fisherman Kings at bay. In time, Hó Etéhlту himself arrived to receive the trembling obeisances of the Lords of Thayúri, which by all accounts he accepted with a casual grace, his eyes doubtless already turned toward the next season's conquests.

The Fisherman Kings were the first humans to operate a true navy, composed of both transport ships to take warriors to distant shores, and galleys armed for battle on the sea itself. Though their territorial conquests extended no further than the islands off Msúmtel Bay, their navy dominated the oceans, and ocean-going trade, from Peléis to Tsámra. Gradually, the new ideas spread along the shores of what is now Mu'ugalavyá, Livyánu, and Tsolyánu. To the north, the island city-states of Yán Kór began to build true warships at



about this time, although this may have been an independent development, and the Sea-Kings of Ke'ér quickly acquired a reputation for skilled seamanship rivalling that of the Fisherman Kings themselves.⁷

THE FIRST IMPERIUM

Further developments came with the First Imperium, when Nayári, and then the Bednálljan kings of Jakálla extended their rule over what is now Tsolyánu, Salarvyá, Mu'ugalavyá and Yán Kor. Although Nayári herself made little use of naval power in her initial conquests, her descendents were quick to adapt the expertise of newly-conquered peoples to construct and man a permanent navy in the grand tradition of Hó Etéhtu. The combination of diverse elements led to a flurry of new developments: new ships of unprecedented size were built, the ancestors of the modern *Qél* and *Zírnel*, and, for the first time, the new larger ships were mounted with great ballistae, catapults, and other engines of war.⁸

It seems the early Bednálljan kings were particularly anxious to use these new tools against the still-independent states of what is now Livyánu. However, this brought them into conflict with the Shén, who aspired to maritime power of their own. The wars between the Bednálljans and the Shén were brief, but bloody, and most of the decisive battles were fought at sea.⁹ These wars served as the crucible within which the raw ore of the nascent Bednálljan fleets was refined into a sleek, well-honed weapon. Equally significant was the ensuing peace, during which the Bednálljans actively sought to cultivate the non-human races. The result certainly transformed warfare on land, as Shén, Ahoggyá and Hláka began to enter human legions. For naval warfare, the most significant impact was the discovery that the Swamp Folk of southern Mu'ugalavyá were particularly skilled at operating fast, manoeuvrable galleys to ram and sink enemy ships. This style of naval combat, which relies on speed and manoeuvre to use the ship itself as a weapon rather than merely a fighting platform, is still their forte. It is still known today as fighting “Hegléthi-style,” or “Mu'ugalavyáni-style.”¹⁰

ÉNGSVAN HLA GÁNGA

The Engsvanyáli period saw relatively little new development. Still larger warships were constructed, vessels comparable to the modern *Mrisburén* and even larger. These leviathans were largely useless in battle, but they were impressive and one such ship successfully - if inadvertently - engaged two small Hlúss nest-ships off Ssámris during the reign of Dhárumesh Mssá II.¹¹ By and large, though, aside from the endless routine of patrolling the sea lanes against pirates, the fleets of the Priestkings saw little action. But if naval warfare did not evolve under the Priestkings, it was nevertheless codified and formalized. Engsvanyáli admirals endlessly debated the relative merits of the ram, the catapult and the fighting man at sea, and argued over the appropriate countermeasures. Two surviving manuals from this period, by Khuoláz of Laigás (*Gifts to the Lost One of the Sea*) and Mshúruish “The Killer of *Akbó*” (*The Seventeen Scrolls of Mshúruish*), are still studied today, though largely via more recent translations and commentaries such as Kétu hiVridáme’s *Musings on the Gifts to the Sea* (in Tsolyáni).¹²



The cataclysmic end of the Engsvanyáli empire wrought many abrupt changes. Few of the petty states of the Time of No Kings could or did maintain navies as such, though most sponsored or tolerated privateers. As in the waning years of the Dragon Warriors, long-distance maritime trade became risky, and piracy endemic.

This dark age lasted some 6,000-10,000 years, until the Era of Consolidation again saw the emergence of great empires in the lands once governed by the Priestkings: these include the Second Imperium in Tsolyánu, and elsewhere the coalescence of the empires of Livyánu, Mu'ugalavyá, and Salarvyá. With the new empires came new navies modelled on those of their ancient Engsvanyáli forebears. As coastal waters grew more secure, piracy waned (though it has never disappeared completely) and ocean-going trade flourished.¹³ Of course, smaller states isolated on the peripheries of the great protected trading spheres were excluded from these new opportunities. In Háida Pakála and Tsolei in particular, piracy was, and remains, a persistent problem.

THE SECOND IMPERIUM AND RECENT HISTORY

The modern imperial fleets of Tsolyánu, Mu'ugalavyá, Livyánu, Salarvyá, and most recently, Yán Kór, although modelled on the great fleets of the Priestkings, retain some regional distinctions.¹⁴ All maintain fleets of diverse vessel types, and all are highly trained, and skilled in techniques of manoeuver, naval artillery, and shipboard combat and missile fire.

However, the Mu'ugalavyáni retain a particular skill in fighting “Mu'ugalavyáni-style,” with fast, manoeuverable ships equipped with the ram. Though their fleet includes large, heavy ships, some laden with engines of war and others with marines, the Mu'ugalavyáni fleet employs a relatively high proportion of *Sriigánta* (see below) and “stripped-down” *Qél*-class warships as ships of the line.

On the other hand, the Tsolyáni, arguably the least “maritime-oriented” of the great empires, rely more on the use of marines and shipboard melee combat. Tsolyánu maintains some *Sriigánta*-class ships for coastal patrols but relatively heavy *Qél* and even *Zirunel*-class ships with accommodation for large marine contingents form the backbone of their fleet.

The Salarvyáni, long plagued by Pakalayáni pirates, have maintained their Bednálljan-era expertise in the construction and use of shipboard artillery, as a means of battling raiders at a distance before they can close with merchant vessels and perhaps endanger valuable cargoes in close combat. The Salarvyáni operate some *Sriigánta*-class vessels and smaller, to pursue and harry, but like the Tsolyáni, most Salarvyáni warships are of conventional size - *Qél*-class and larger, and some of the larger capital ships are abristle with ballistae and catapults.

The Livyáni employ a different tactic. Several unique and secret magical procedures surviving from the Time of No Kings may be employed aboard ship (group magic as



normally practised in terrestrial warfare is far too risky at sea), and Livyáni fleets may contain one or more magic contingents specially trained in the arcane arts of marine sorcery. Livyáni fleets in general resemble Mu'ugalavyáni or Tsolyáni fleets in composition but like the Salarvyáni, will often include one or more capital ships. In the case of the Livyáni, these will be of *Cháosaż* class or larger, with special decks configured for group ritual magic.

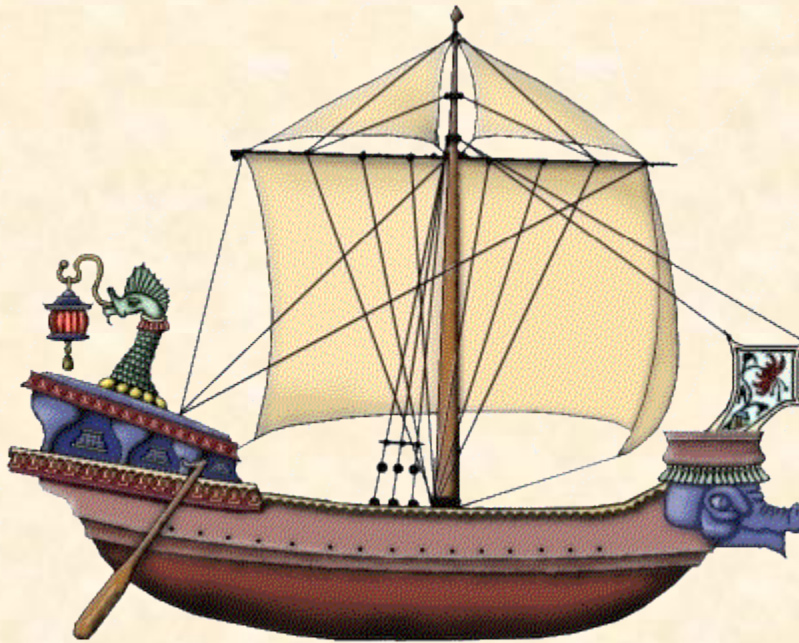
As a unified polity, Yán Kór is of course a recent addition to the ranks of the great powers, and her “navy” still consists of separate flotillas corresponding to the fleets of her once-independent city states (though under Baron Áld, the ships of Yán Kór City, Chudrák and Ítl have now been combined to form a single fleet, The *Gurék* of the Mariners of Hekuúma).¹⁵ These fleets, including the largest, that of the Sea-Kings of Ke'ér, have traditionally served to protect shipping against pirates from rival city-states, and from the Ghatóni and Pijenáni (and to undertake a little piracy of their own). On the Pentrúrtra Deeps, galleys are of little use (although the fleet of the city of Aqésha is made up of galleys) and boarding tactics, ramming attacks, and heavy artillery are often impractical. Many Yán Koryáni naval vessels are therefore sailed craft, with or without ancillary oars, and these rely on light missile fire (bows, crossbows and light gunwale-mounted ballistae) for both attack and defense.

The smaller nations may be characterized briefly. The Ghatóni, like the Yán Koryáni, primarily use sailed vessels, and rely on small missile weapons in both defense and offense. The Pijenáni use similar tactics, but ply the Tutaíta Shallows in galleys. The fleets of Lake Parunál, including those of Saá Allaquí, Jánnu, Péncha Nagál, Chayákku, and the Yán Koryáni cities of Báni and Ngakú, likewise favour small missile tactics. The galleys of these little fleets are generally small, of *Séscha* class, but are remarkably sleek and elegant vessels nonetheless.¹⁶ The Háida Pakalayáni, rapacious pirates and even more rapacious merchants, make extensive use of galleys in their own waters, though only sailing ships commonly make the crossing north to the Salarvyáni coast. Like the Tsolyáni, and indeed like most pirates, they prefer to attack by means of boarding parties, though unlike the Tsolyáni they do not employ the *Ngrútha* (see below). This is true as well of the Tsoléi'i pirate fleets. In the Nyémesel Isles, the priests of Mrettén have, with Salarvyáni assistance, constructed a fleet of small galleys to repel Háida Pakalayáni raiders.¹⁷ However, the traditional vessel in the Isles is actually the large war-canoë (i.e. it is paddled, not rowed, and the warriors themselves do the paddling). These canoes are still in use, and there are recorded instances of Nyémeseli canoes swarming Pakalayáni ships at anchor, the warriors scrambling up the hull to board. However, these canoes are not normally fighting craft as such, merely the means by which the soldiers of the priestly class travel between islands in the archipelago. Among the non-human races, the Shén are the most active in maritime affairs. They operate a wide range of galley-type vessels and in warfare employ the full range of attack modes. In this respect, they are jacks of all trades though masters of none. The Hlúss, similarly, employ all available tactics, including magic, though with greater skill. The Ahoggyá are ferocious in defense but have little taste for naval warfare and generally try to avoid fighting at sea.

3 SHIPS AND FLEETS OF THE FIVE EMPIRES

VESSEL TYPES

The major classes of naval vessel and merchantman are well-described in canon sources, from which the following brief summary is taken.¹⁸ The common sailed merchantmen are the single-masted *Hrú* and the two-masted *Tnék*. Larger varieties are also found, and some merchantmen, particularly in Livyánu, are powered by both sails and oars. Specialized naval transport ships (e.g. troop transports) do not exist, and commercial vessels, sometimes with a little added armament, are generally impressed into service for this role. True naval vessels include the *Séscha* (comparable to the ancient Greek *pentekonter*), the *Sriigánta* (a bireme), the *Qél* (a trireme) and the *Zírunel* (a quinquireme); larger vessel types include the Tsolyáni *Mrishburén*, and its counterparts the Livyáni *Cháosaç* and the Mu'ugalavyáni *Nu'utlá*. Non-humans employ ocean-going vessels as well. The Shén *Gsá-Hr* (a merchant bireme) is widely seen in the ports of many lands, and the Shén also use naval vessels of all classes, especially the *Gè-Gsé*, a trireme. The Hlúss nest-ships, powered by other-planar magic, are of a different order altogether. The Swamp Folk of the lower Putuhénu River are skilled mariners, and quintessential masters of naval warfare “Mu'ugalavyáni-style” (about which more below), but build no ships of their own.



The *Duaítla*, a little square-rigged *Hrú* from the island of Vrá, displays an emblem-glyph of the Clan of the Red Flower on her prow. In times of war, commercial vessels such as this *Hrú*, along with the larger *Tnékya*, may be pressed into Imperial service as troop transports and supply ships.

TEKUMELÁNI NAVAL ARCHITECTURE

The Five Empires and the peripheral states are home to a bewildering variety of local and regional boat-building traditions.¹⁹ The shipwright clans in each port build in time-honoured fashion, and innovations from elsewhere spread slowly, if at all. Thus, when it comes to rigging, both lateen and square-rigged vessels are seen, depending on local preference, and among the square-rigged ships, battened sails²⁰ are favoured in some regions. For steering, steering oars mounted on one or both stern quarters are traditional in many ports, though others are known for the use of a central rudder hinged to the sternpost. Hulls likewise may be clinker-built or carvel-built, although the former is perhaps more common.

In comparison with their earthly counterparts, Tekumeláni ships in general have a distinctively “top-heavy” quality, with elaborate figureheads, heavy-looking, ornate forecastles and towering sterncastles. In part this reflects the common Tekumeláni love of display; it is simply inconceivable that ships not proudly proclaim their clan, temple, and imperial affiliations! And yet, although Tekumeláni ships thus have a rather ungainly appearance, these elaborate superstructures are not impractical. They are composed primarily of molded chlén-hide panels which are relatively light, may easily be repaired or replaced if damaged, and provide a modicum of protection from missile weapons. Perhaps most importantly for military vessels, they are also relatively fireproof.

Contracts for construction of naval vessels are generally parceled out among the various local shipwright clans. Thus, except in the smallest fleets, such as those on Lake Parunál and those of the individual city-states of Yán Kór, there is little standardization. This gives the fleets of the Five Empires a rather heterogeneous quality, which makes it difficult to characterize naval architecture except in the most general terms.

Trading vessels are usually sail-powered roundships, but the military vessels of the Five Empires, and the minor powers, except on the northern oceans, as noted above, primarily consist of oared galleys. Some regional variations may be outlined briefly.

On the Deeps of Chanayága, the fleets of the great empires are composed primarily of galleys broadly comparable in performance and construction to the galleys of the ancient Mediterranean on Earth: the pentekonter, bireme, trireme, and quinquireme, although some vessels are constructed more like the later Venetian galleys. The largest classes of naval ship may include large oared polyremes, some of double-hulled construction with a broad deck to support the commander’s entourage or even a magic contingent. However, a many of the largest capital ships have multiple masts and rely more on sail than oars, thus resembling enormous junks or caravels. These leviathans are relatively few in number. The fleets of Tsolyánu, Mu’ugalavyá, Salarvyá and Livyánu employ more-or-less the same classes of vessels, with some regional variation. The Mu’ugalavyáni, for example, distinguish between



light and heavy triremes, building more of the former, while the Tsolyáni and Salarvyáni make no terminological distinction (and employ more of the “heavy” threes). The Mu’ugalavyáni also make greater use of light biremes on saltwater. In contrast, Tsolyánu, Salarvyá and Livyánu more commonly employ these as river galleys; as for the pentekonter class, a few in all fleets are employed as coastal patrol vessels and runabouts, but the majority are constructed for use on inland waterways and do not perform well in salt water.

Vessel Class	Tsolyánu	Mu’ugalavyá	Salarvyá	Livyánu	Yán Kór
Capital Ship	Mrishurén	Nu’utlá	Merísh	Cháosaz	
Quadrireme/Quinquireme	Zírunel	Sa’arana	Chrénggu	Záoneb	
Trireme	Qél	Khi’íla/Thakhi’íla	Hekkél	Qílineb	Kél
Bireme/Large Longship	Srügánta	Ssarínga	Tseríngga	Zrigánaz	Surgén/Surgánta
Pentekonter/Small Longship	Séscha	Séscha’a	Shchésh	Sisáz	Séscha/Sezhák
Sailed Warship					Grékhñ
Merchantman (small)	Hrú	Hrúra	Héru	Hléraz	Chéru
Merchantman (large)	Tnék	Dnéka’a	Tsa’áng	Durunéb	Tnékka

The Classes of Military (and Select Civilian) Vessels in the Fleets of the Five Empires²¹

The capital ships represent a particularly diverse class. Few of these leviathans exist, usually only one command ship per fleet, and each is more-or-less unique. Broadly, the Livyáni *Cháosaz* is most commonly constructed as a catamaran-hulled polyreme, its two hulls joined by a broad deck which serves as a platform for command personnel and a contingent of sorcerers. The Mu’ugalavyáni *Nu’utlá* and the Salarvyáni *Merísh*, on the other hand, are usually many-masted sailing vessels, with towering sterncastles and forecastles and opulent apartments for high-status officers. The Tsolyáni have experimented with both forms when constructing their *Mrishurén*.

To the north, on the Pentrúrta Deeps, boat-building traditions differ somewhat from those of the southern oceans. The large quadriremes, quinquiremes, and capital ships are not used.

Three indigenous types of warcraft are found among the city-states of north-coastal Yán Kór (such as Mákhis, Ke’ér, Vrídu, Vánu and Dháru). The smallest is the *Sezhák*, a small, open oared-and-sailed vessel not unlike the southern *Séscha*, but often smaller, lighter, and more manoeuvrable, since it is double-ended, with a symmetrical bow and stern (thus, not equipped with a ram), and generally sports more powerful sailing rig. Somewhat larger is the *Surgén*, a vessel comparable in size and capacity to the *Sriigánta* of the southern oceans, although it is actually a larger version of the *Sezhák*, and therefore a monoreme, not a true bireme at all. The largest of the indigenous Pentrúrtra warship designs is the *Grékhñ*, a large fully-decked sailing vessel, occasionally with auxiliary oars, comparable to the southern *Tnék*



but configured specifically as a warship. The *Grékhb* is immediately recognizable by the rows of hinged, elaborately-molded *chlén*-hide pavises arranged along its gunwales; these may be erected to protect the ship's archers in battle. The value of the *Grékhb* lies in its capacity to comfortably accommodate relatively large numbers of sailors and fighters. The *Grékhb* thus combines some qualities of both fighting ship and troop transport. It can ride out storms, it does not have to coast, nor must it moor close to land each night, and it is therefore ideal for both long-distance patrols and mass movements of troops along the forbidding coastlines of the northern oceans.

This is not to say that only indigenous "northern" vessel classes are found in the northern oceans. At the southern reaches of the Pentúrta Deep, in the Tutáita Shallows, most of the southern city-states of Yán Kór (e.g. Yán Kór, Chudrák, Ítl, Aqésha and Vorúak) employ a mixture of indigenous and imported designs. Here, true southern-style galleys are indeed found, and the *Sésba*, *Surgánta* and *Kél* of these city-states are indistinguishable from the *Séscha*, *Sriigánta* and *Qél* of the southern oceans. Similar galleys are found in Pijéna as well, while the ships of Ghatón, on the other hand, belong to the northern Yán Koryáni boat-building tradition.

Southern-style galleys predominate as well in the waters of Lake Parunál, although the larger vessel classes are not found here. The fleets of Chayákk, Saá Allaquí, Péncha Nagál, Jánnu, and Mihállu are composed solely of *Sésba*-class ships. The lake-fleets of Saá Allaquí and Yán Kór also include a few larger *Surgánta*-class ships, while the fleet of the Yán Koryáni city-state of Ngakú intimidates its rivals with an imposing *Kél*.

SIZE AND ORGANIZATION OF THE FLEETS OF THE FIVE EMPIRES

INTRODUCTION

Among the five empires there is some common ground when it comes to the basics of naval organization. Rank structures (and the numbers of persons at each rank) diverge from the structures found in land-based legions, since the basic command units (ships and marine contingents) may differ somewhat from those found in land-based warfare; naval units come in packages at times larger and at times smaller than those of land-based legions, and these are not necessarily an easy fit with administrative structures that are ultimately derived from terrestrial armies. It may be appropriate to review the elements that the fleets of the five empires have in common before we turn to consider their differences.

Administration and Organization

All of the Five Empires maintain large standing navies which include both fleets of river galleys built and maintained to operate on inland waterways, and large saltwater fleets. For the most part, these large fleets, particularly those based in maritime waters, are concentrated



in a few relatively large ports; examples include the extensive Livyáni fleet based at Heméktu, and the vast Mu'ugalavyáni fleet at Khéiris. Commonly, these fleets are large enough to require their own naval yards, separate from the civilian ports; Tsolyáni examples include the naval port of Girés, outside Penóm, and the Músa Jakálla facility at Jakálla. Smaller outports are employed as way-stations along patrol circuits, but it is rare for nations to disperse their fleets and permanently station squadrons or flotillas in smaller outports.

Administration for these fleets more-or-less follows the legion structure also found in terrestrial forces. Among most nations, naval legions are characterized as “marines,” except in Mu'ugalavyá, where the administrative legions are legions of “sailors.” Broadly-speaking, the “legion” is the administrative structure for a “fleet,” which is the naval force associated with a particular major port.

Most nations attempt to organize their naval command structures in accordance with those of terrestrial legions, although the fit is never perfect. All nations attempt to distinguish between the command of ships, and the command of fighting forces aboard ships, although they do so in different ways, described below. Even when systems of rank closely resemble those of land-based legions, the number of officers at each rank is quite different from that found on land.

All nations share a division of vessel commands into ship commanders, flotilla or squadron commanders, and fleet commanders.

Each individual vessel must have a commander (i.e. a sea-captain). On inland waterways, it is not unusual for vessels to operate alone. However at sea, individual ships rarely operate wholly independently, except occasionally in a reconnaissance role.²² Routine circuit-patrols are normally conducted by groups of vessels travelling in pairs, or, more commonly, in small squadrons of a half a dozen or more ships. On those rare occasions when “great fleets” deploy, reconnaissance is normally performed by screens of small vessels thrown out to the fore and flanks of the main force. Although widely-dispersed, these scout ships are nevertheless normally expected to remain in sight of their neighbours. Reconnaissance will include both a visual survey of conditions, and also the questioning of local inhabitants and fishermen or merchantmen encountered at sea.

Each small group of vessels will also have its own commander (i.e. a “commodore”); each of these squadrons or flotillas may comprise a relatively independent patrol group (in which case it may include ships of different classes), or a particular formation of vessels within a larger fleet (in which case it will often consist of vessels of a single class). Flotillas are normally ad hoc, temporary groupings of ships, but in all navies, the rank of Commodore is a permanent rank; in other words, even temporary task groups will normally be commanded by a ranking commodore, rather than by an acting commander selected from a pool of “captains.”

Fleets may vary widely in size, but they will be larger than flotillas or squadrons. Like flotillas, they may be temporary task forces, but commonly the largest fleet (a “great fleet”) will correspond to a “legion,” and will constitute all of the seaworthy vessels based at a particular naval port. The navies of the Five Empires all recognize a rank of “admiral,” which will normally be the commander of a fleet. All of the empires further distinguish a higher rank of “great admiral” or “legion commander” who holds authority over an entire legion or “great fleet.” This rank is normally a purely administrative one, and “great admirals” rarely command their forces at sea.

We may note briefly that command at sea involves communications methods that are common to the Five Empires. Magical communications are rarely available, and *Hláka* will not serve at sea, so all communications methods are necessarily short-range. A variety of methods may be used, including horns (at night, in fog, and in flat calm) but normally, and particularly in battle, the commonest method is to use banners of signal flags hoisted by means of kites. These signal flags are rather like *méshqu*-plaques, although greatly-simplified in both design and colour.²³ The officers who operate these signal kites are esteemed *aides-de-camp* to their *Changkérdnyal*.²⁴



Stylized depiction of a Tsolyáni *Gūdruhlássatokoi* (roughly, “Kite-Signaller”) bravely keeping the signals flying as his (or her) ship goes down. Illuminated detail from a naval dispatch. Original Ms. in the Imperial Chancery, Avanthár.

Ship-building and Maintenance

In all of the Five Empires, ship-building, as well as the maintenance and refit of commissioned vessels, is undertaken by the local shipwright clans, under contract to, and under varying degrees of supervision by, imperial bureaucracies. Sadly, corruption in the ship-building industries, and, even more so in the maintenance of the imperial fleets, is endemic. Only a fraction of the nominal strength of each navy is actually seaworthy at any given time.

Provisioning and Supply

Provisioning and supply in the navies of the Five Empires is similarly-based on the ubiquitous clan system. While in barracks, as with the terrestrial armies, each legion contracts with local clans for the delivery of food, drink, and other supplies (everything from rope and sailcloth to lamp-oil and arms, and much more besides). Similar standing orders are in place with local clans in the coastal and riverine outports along the routine patrol circuits.

For travel over long distances or beyond territorial waters, supply becomes more complicated. It is not that preservable foodstuffs are not readily available,²⁵ the problem is that the galleys of the imperial fleets have very little cargo capacity relative to the size of their crews. This is one of the principal reasons these vessels rarely travel far from land. Fresh water is a particular problem, since it is required daily and in large quantities, yet is both heavy and bulky to transport. Any sea-travel beyond established supply networks requires that crews land often to secure fresh water and forage for food. In fact, when a large fleet is on the move, one of the most important roles of its far-flung scout-ships is to identify fresh water sources and procure food along the route.²⁶ Large fleets are hungry, thirsty beasts, and it is not unusual for the provisioning mission to take precedence over locating the enemy.

Yet despite their common features, the Five Empires treat the organization of sea-based fighting forces in quite different ways, in some cases reflecting very different naval doctrines and philosophies. Thus, the size and distribution of the fleets (their TO&E) are highly idiosyncratic, as are the efficacies of their refit/maintenance structures, and the ways that they approach the problem of rank and command. Thus when it comes to organization, we must consider each Empire separately and in turn.

TSOLYÁNU

Fleet Size and Distribution

Tsolyánu is the nation for which we have the most complete information on the size and deployment of the imperial fleets. We are told that Tsolyánu has two legions of marines, and a “relatively small” navy consisting of 500 ships distributed between Penóm and Jakálla, along with 200-300 or so on the southern islands.²⁷ At 700-800 ships, this would actually seem to be quite a large navy, but there is reason to believe that this strength is nominal, and that much of the fleet is not actually seaworthy at any given time. It seems more likely that the effective strength of the Tsolyáni navy is approximately 450-460 ships of all classes.²⁸

Once we have established the total strength for the Tsolyáni navy, it is a relatively simple matter to infer the distribution of the fleets. One fleet, manned by the Flotilla of Hagárr of



Paránta, is based at Penóm. The other, larger fleet, is administered by the Squadrons of Tlanéno the Steersman, based at Jakálla. This latter fleet, which recruits from both the south coast and the southern islands, also includes the ships based on the southern islands. The distribution of Tsolyáni naval vessels by class is indicated in the following table.

Vessel Class	Penóm	Jakálla	Vrá	Pétris Layóda	Tléku	Lnóris	Total
Mrishurén	1	1					2
Zírunel	20	17	4	4			45
Qél	60	35	15	15	5	5	135
Srügánta	40	30	6	2	8	4	90
Séscha	75	85	8	1	9	2	180
Total	196	168	33	22	22	11	452

The Distribution of Naval Vessels by Class among the Ports of Tsolyánu²⁹

Administration and Command

Tsolyáni naval doctrine holds that ships are not imperial arms as such, but are simply a mode of transportation for fighting men. Administratively, they may be equated with the *chlén*-carts and drovers found in the supply columns of terrestrial forces. Naval administration, command and system of ranks are all based on the marine legion structure. There are two Tsolyáni marine legions which oversee the fleets: the Flotilla of Hagárr of Paránta at Penóm, the bulwark against the Mu’ugalavyáni threat, and the Squadrons of Tlanéno the Steersman, which is based at Jakálla but also has local depots in the larger ports of the southern islands.

The system of naval ranks in both legions corresponds fairly closely to that found in Tsolyáni terrestrial legions, although the numbers of rank-holders at each level are quite different. The principal difference is that the two marine legions recognize three ship-command ranks (*Chlamberéksa*, *Chlamkási*, and *Chlamolkár*) not found in terrestrial legions. The Tsolyáni thus distinguish the command of marine contingents (fighting men) from the command of ships. These “ship-captain” ranks (identifiable by the prefix *chlám*-) are held by ranking marines,³⁰ although the vessels and crews they command are not actually considered part of the legion; sailors, master-seamen and overseers thus hold no military rank, while the men who man the oars of the galleys are generally slaves. The “ship-captain” ranks are supported by one or more mates of marine rank where possible, but sometimes the mates are civilian sailors.

<i>Changadésba</i> ³¹	Enlisted Soldier (Marine)
<i>Tirrikámu</i>	Commander of marines aboard a <i>Séscha</i> , <i>Sriigánta</i> , or some <i>Qél</i>
<i>Heréksa</i>	Commander of marines aboard a <i>Zírnel</i> or some <i>Qél</i>
<i>Kási</i>	Commander of marines aboard a <i>Mrishurén</i>
<i>Chlamheréksa</i>	Commander (of a smaller ship)
<i>Chlamkási</i>	Captain (of a <i>Zírnel</i> or <i>Mrishurén</i>)
<i>Chlamolkár</i>	Commodore
<i>Dritlán</i>	General Staff Officer
<i>Changkérdu</i>	Admiral
<i>Changkértudáli</i>	Great Admiral, Legion Commander

Table of Tsolyáni Marine (Naval) Ranks³¹

As on land, most day-to-day procurement is handled by the legion, contracting with local clans. Major procurement, however, including ship-building and major refit, is undertaken by a bewildering array of other agencies. In some cases, vessels and their rowers may be purchased from shipwright clans, and their crews hired, directly by the Imperial Palace of Ever-Glorious War. But for the most part, ships are sponsored and outfitted by clans (especially the large mercantile clans but also some of the aristocratic clans), or by temples. Maintenance of the fleet is also conducted by shipwright clans, but naval vessels sponsored by clans or temples may often languish awaiting repair, while even once it begins, the refit process is often slow and lackadaisical.³² The whole system is quite corrupt and inefficient, and as a result, some 40% of the Tsolyáni fleet is not seaworthy at any one time. Some of the ships in refit might be brought back into service in an emergency, but many wait for repair so long that they will likely never sail again.³³

MU'UGALAVYÁ

Fleet Size and Distribution

If the Tsolyáni naval strength is the best-documented, the size of the Mu'ugalavyáni fleets is perhaps the least well-known. Mu'ugalavyá has no legions of marines, but it does have three legions of “sailors,” totaling some 11,000 men; thus there are almost as many Mu'ugalavyáni sailors as there are Tsolyáni marines. What this means in terms of the size of the Mu'ugalavyáni fleets is unclear, but we may estimate the total size of the Mu'ugalavyáni navy at approximately 540-560 ships of all classes.³⁴

Having established the total strength for the Mu'ugalavyáni navy, we must turn to the relatively complicated matter of plotting the likely distribution of the fleets. These deployments are summarized in the following table.³⁵

Vessel Class	Khéiris	Ssámris	Ssa'átis	Chi'i Mu'úgha	Tlálu	Kúrdis	Total
Nu'utlá	1	1					2
Sa'arana	25	15					40
Khi'íla/Thakhi'íla	110	70	10	10	5		205
Ssarínga	40	30	30	20	15	15	150
Séssha'a	30	25	30	20	25	15	145
Total	206	141	70	50	45	30	542

The Distribution of Naval Vessels by Class among the Ports of Mu'ugalavyá

Administration and Command

Mu'ugalavyáni naval doctrine is in many respects the exact opposite of that found among the Tsolyáni. Ships are considered the principal weapons of the navy, and the organizational structure is based on legions of “sailors,” rather than marines. There are three of these legions of sailors: Legion I of the Sea “Tide of Death” administered by the Second Palace, Legion II of the Sea “Blood-Sail” administered by the Third Palace, and Legion III of the Sea “Spear-Prow” administered by the First Palace. Marines, although often present on Mu'ugalavyáni ships, are almost incidental, and detachments are simply seconded from nearby terrestrial medium infantry and archer legions as needed for each naval mission or patrol.³⁶ These infantry are commanded by their regular commanders, but are invariably subordinate to the captains, who belong to the legions of sailors.

Mu'ugalavyáni naval doctrine also holds that a man without hope makes a poor oarsman, and that therefore, slaves should not man the sweeps. However, this makes it rather difficult to fill the benches. Thus, the Mu'ugalavyáni have evolved two rather unusual expedients for manning their underdecks: the “underdeck sailor,” and the “today-slave” (also known as the “half-slave”).³⁷ The standard ranks of Mu'ugalavyáni Sailor Legions are presented in the following table.

<i>Khamisha'adish</i>	(lit. “today-slave”)	Galley Slave
<i>Sha'antbeyólish</i>	(lit. “sea-apprentice”)	Underdeck seaman
<i>Laz'a'atesh</i>	(lit. “sailor”)	Topside seaman
<i>Laz'a'aghmarish</i>	(lit. “able sailor”)	Master seaman ³⁸
<i>Sha'avothe'ish</i>	(lit. “Sea-Master”)	Overseer ³⁹
<i>Shamdíbkétdle'esh</i>	(lit. “Sea-commander of 100”)	Mate ⁴⁰
<i>Shamkárish</i>	(lit. “sea-captain”)	Commander (of a smaller vessel)
<i>Sha'amkétlish</i>	(lit. “Sea-commander of 500”)	Captain (of a large vessel)
<i>Shamkárdle'esh</i>	(lit. “Great Sea-Captain”)	Commodore
<i>Hakke'ishba'amish</i>	(lit. “Sea-General”)	Admiral ⁴¹
<i>Dü'ímúnish</i>	(Prince of a Palace)	Legion Commander ⁴²

Table of Mu'ugalavyáni Naval Ranks⁴³



As in Tsolyánu and the others of the Five Empires, day-to-day procurement is handled by the (sailor) legion, contracting with local clans. Major procurement is the province of the Palace that administers each legion. In contrast with the Tsolyáni, however, the notoriously officious Mu'ugalavyáni bureaucracy, with its reputation for diligent oversight, ensures that maintenance of the fleet is relatively efficient. Approximately three-quarters of the ships in the fleet are seaworthy at any given time.

SALARVYÁ

Fleet Size and Distribution

We have information on the strength of the marine contingents in three Salarvyáni legions: the *Nchésh* of the Sea-Grey Wave in the *Tséblqu* of the Ebon Palace under the Chruggilléshmu family of Tsatsayágga, the *Nchésh* of Sóngyal Isle in the *Tséblqu* of the Mórmoron Plain under the Hrúchcháqsa of Chame'él, and the *Nchésh* of the Ruby Pommel in the *Tséblqu* of the Inlaid Blade of Burrúsha, under the Shiggashko'ónmu family of Jaekánta.⁴⁴ The total strength of these legions amounts to some 11,000 men, suggesting that the Salarvyáni navy may be approximately 70% as large as that of Tsolyánu. However, there is reason to believe that these three contingents do not reflect the entirety of the Salarvyáni fleet.⁴⁵ Unfortunately, we have no firm basis for estimating the true total size or composition of any other potential Salarvyáni naval forces. The following table indicates the likely distribution of ships only in those three Salarvyáni ports for we can make reasonable inferences.

Vessel Class	Tsatsayágga	Chame'él	Jaekánta	Total
Merísh	1	1	1	3
Chrénggu	10	10	10	30
Hekkél	40	30	30	100
Tseríngga	20	10	20	50
Shchésh	50	25	40	115
Total	121	76	101	297

The Distribution of Naval Vessels by Class among the Ports of Salarvyá⁴⁶

Administration and Command

The Salarvyáni social structure is, of course, feudal. The lords of coastal towns control their own fleets to protect their local trade, but these are also part of their liege-lord's fleets. Thus it can be difficult to distinguish which vessels in a family's fleet are directly administered by



the family, and which are the ships of their vassals, available in times of need. Perhaps this is part of why it is so difficult to determine the strength of the Salarvyáni navy: it is difficult to inventory their ships without double-counting. As noted (see endnote 45), it seems likely that our canon sources omit a fairly large portion of the Salarvyáni fleets, mostly pertaining to the central coast and some inland waterways, numbering perhaps 150-200 vessels.

The naval units we have evidence for are those belonging to three of the seven “great” feudal families of Salarvyá: the Chruggilléshmu family of Tsatsayágga, the Hrúchcháqsa family of Chame’él, and the Shiggashko’ónmu family of Jaekánta. Their fleets are organized in the same way as their terrestrial forces, as elements in mixed-force *nchéshyal*. We may infer that at least within these forces, the naval ranks correspond to the standard military ranks found within all Salarvyáni legions. In fact, I propose that in the Salarvyáni system, the same rank terms can refer both to the commanders of marine contingents and to the commanders of entire vessels, depending on the size of each ship and of its marine contingent. I propose that, as among the Tsolyáni, Salarvyáni sailors do not hold formal military ranks. The Salarvyáni naval ranking system is indicated in the following tables.

<i>Bakkárzh</i>	Enlisted Marine
<i>Olmég</i>	Commander of marines aboard a <i>Shchésh</i> or <i>Tseringga</i> , or sergeant under a <i>Grumég</i>
<i>Grumég</i>	Commander of marines aboard a <i>Hekkél</i> or <i>Chrénggu</i> , or sergeant under a <i>Qüméché</i>
<i>Qüméché</i>	Ship’s-Captain, or commander of marines aboard a <i>Merish</i>
<i>Achmég</i>	Captain of a <i>Merish</i> , or flotilla/squadron commander
<i>Kekkérja</i>	Fleet commander, Admiral
<i>Sreddéq</i>	<i>Nchésh</i> commander or his designate

Table of Salarvyáni Naval Ranks⁴⁷

Vessel Class	Ship's Captain	Marine Commander	Marine Subordinate Officer(s)
Merish	Achmég	Qüméché	Grumég, Olmég
Hekkél/Chrénggu	Qüméché	Grumég	Olmég
Shchésh/Tseringga	Qüméché	Olmég	n/a

Table of Salarvyáni Naval Ranks, illustrating how the same Salarvyáni ranks may refer to ships’ captains, marine commanders, or subalterns, depending on the vessel class.

The remaining naval units that we postulate may exist are not documented in the canon army list,⁴⁸ and it seems likely that their administration and command are quite different from that found in most Salarvyáni *Tséblqu* (and indeed, this may explain why they are not included in the published army list). If the very existence of these smaller fleets is uncertain, then obviously their administration and command are even more so. However, we may speculate. Some of these forces may have religious affiliations (e.g. on Lake Mrissútl, or Tsa’avtúlgú), and may be organized and administered as a naval version of “temple guards,”

possibly with a priestly ranking system. Others, serving as the local forces of lesser feudal lords, may have no formal military organization at all, and may simply be privateers.

In Salarvyá, as in all of the Five Empires, procurement and supply for the fleets is secured through arrangements with local clans. However, Salarvyá differs in that the actual legion (*nchésb*) has no official role in procurement. Rather, this is controlled by the *Tséblqu* (in effect, by the household of each great feudal family), through a combination of clan contracts, business arrangements, and feudal obligations. If anything, this procurement “system” is even more corrupt and inefficient than that of Tsolyánu, and commonly the *nchésb* commanders must resort to more informal (or even coercive) arrangements to make up for the many delays and shortfalls in supply.⁴⁹

LIVYÁNU

Fleet Size and Distribution

For Livyánu, as for Salarvyá, we have evidence for three legions of marines. In this case, these are the *Llïneb* of the Lost One of the Sea based in Laigás, the *Llïneb* of the Shallows of Ngíu, based at Heméktu, and the *Llïneb* of the Sword of Ndárka, based at Sra’ón. In all, these total some 12,000 marines, suggesting that the Livyáni navy may be equivalent to 75% the strength of the Tsolyáni.⁵⁰ Given the relative strengths of the Livyáni and Tsolyáni forces overall, this is not implausible. However, as with Salarvyá, we are left with the suspicion that we only have a partial list of Livyáni naval forces.⁵¹ Unfortunately, there is no firm basis for estimating the size or deployment of any “missing” or “secret” Livyáni fleets, so the following table lists only the Prefectures for which we have documentation, with the understanding that this may be incomplete.

Vessel Class	Heméktu	Sra’ón	Laigás	Total
Cháosaz	1	1	1	3
Záoneb	15	10	10	35
Qílineb	35	30	20	85
Zrigánaz	30	20	10	60
Sisáz	40	40	25	105
Total	121	101	66	288

The Distribution of Naval Vessels by Class among the Ports of Livyánu⁵²



Administration and Command

It is likely that, as with all else in Livyánu, the fleets, as well as all procurement and supply functions, are commanded and controlled by the secretive temples of the Shadow Gods. The Livyáni marine contingents that we are aware of are organized in three *Llïneb*, one based at Heméktu, one at Laigás, and one at Sra’ón.

We may infer that at least within these forces, the naval ranks correspond to the standard military ranks found within every Livyáni *Llïneb*. I propose that as in the Salarvyáni system, the same rank terms can refer both to the commanders of marine contingents and to the commanders of entire vessels, depending on the size of each ship and of its marine contingent. The most notable characteristic of the Livyáni system is the lack of a formal distinction between the ranks of “commodore” and “admiral.”⁵³ I propose that, as among the Tsolyáni, Livyáni sailors do not hold formal military ranks. The Livyáni naval ranking system is indicated in the following table.

<i>Srész</i>	Enlisted Marine
<i>Ni’úsz</i>	Marine commander of 25 (e.g. aboard a <i>Sisász</i> or <i>Zrigánasz</i>)
<i>Eshu’úsz</i>	Marine Commander of 100 (aboard a <i>Qilíneb</i> or <i>Záoneb</i>) or Captain of <i>Sisász</i> or <i>Zrigánasz</i>
<i>Úosz</i>	Ship’s Captain of a <i>Qilíneb</i> , <i>Záoneb</i> or <i>Chásasz</i>
<i>Khúasz</i>	Fleet, Flotilla or Squadron Commander (broadly, any commander of multiple vessels)
<i>Qaqgodász</i>	<i>Llïneb</i> commander

Table of Livyáni Naval Ranks⁵⁴

Any other “secret” Livyáni fleets, if they exist, may have very different organization and rank structure.

YÁN KÓR

Fleet Size and Distribution

For Yán Kór, we have evidence for one legion of marines, the *Gurék* of the Mariners of Hekuúma. The strength of this *Gurék* is an impressive 8,000 marines, but this corresponds to about 50% the marine strength of Tsolyánu. Does this represent the total marine strength of Yán Kór? As with Salarvyá, when we consider the military strength of Yán Kór overall, and the length of its coastline, this seems like a gross under-estimate. Moreover, the sources appear to exclude many cities which we know are, or were until recently, independent coastal city-states. Instead, it seems clear that the naval strength we have documented for Yán Kór is incomplete. In contrast with Salarvyá and Livyánu, however, we can assume that each formerly-independent Yán Koryáni city-state has a fleet, and it is therefore possible to extrapolate from what we know to arrive at estimates for the strengths of these fleets. The strength and composition of these fleets are summarized in the following tables.⁵⁵



Vessel Class	Yán Kór	Chudrák	Ítl	Aqésha	Vorúak	Mákhis	Ke'ér	Vrídu	Vánu	Dháru	Total
Grékhn	5	20	10			10	15	10	5	15	90
Kél	15		5	3	1						24
Surgánta/Surgén	45	15	30	10	5	5	10	5	5	10	140
Séssha/Sezhák	65	30	35	15	5	10	20	15	10	20	225
Total	130	55	80	28	11	25	45	30	20	45	469

The Distribution of Naval Vessels by Class among the Salt-Water Ports of Yán Kór⁵⁶

Vessel Class	Báni	Ngakú	Total
Grékhn			0
Kél		1	1
Surgánta	5	5	10
Séssha	15	30	45
Total	20	36	56

The Distribution of Naval Vessels by Class among the Fresh-Water (Lake Parunál) Ports of Yán Kór

Administration and Command

Yán Kór, a nation of recently-independent city-states, actually has many different systems of naval administration and command. Nevertheless, we may recognize three main types of organizational structure.

First, and most commonly, there are the fleets from most of the once-independent city-states of the north coast of Yán Kór (both east and west of, but now excluding, the Hekuúma Peninsula). Each of these city-states has their own unique local system of organization. In some cities, the fleets are composed of many small, independent flotillas, each commanded by a particular fishing or mercantile clan; in others, the clan fleets are consolidated and controlled by a clan council or clan-master appointed by the clan matriarchs. For reasons of space, these organizational structures, which are both complex and diverse, cannot be described in detail here. However, we can generalize about the command structures. Among these Yán Koryáni city-states, naval command and ranking systems broadly resemble the Mu'ugalavyáni system; command of ships and sailors is



ordered in a manner not unlike the command structure of civilian craft. Any marines are detached from a local *Gurék* of the regular land forces⁵⁷ and use the regular military structure, but overall command is under the ship's captain. For the long-boats often there are no attached marines at all, and the sailors and the rowers do the fighting, under the command of the ship's captain.

Second, there are the small fleets of the city-states of Lake Parunál. These fleets are composed of small vessels, sponsored and commanded by each city's syndicate of fishing clans. Organizationally, the Lake Parunál fleets of Yán Kór Par are similar to those of the north coast in that no formal organization of marines is found, and attached marines are often seconded from a regular city *Gurék*.

Finally, there are the fleets of the city-states of the Hekuúma Peninsula: Yán Kór City, Chudrák and Ítl. Here, the Baron has merged the original city fleets and re-organized them, after the Tsolyáni fashion, into a single marine legion, the *Gurék* of the Mariners of Hekuúma. Within this *Gurék*, naval organization resembles the Tsolyáni model, with command in the hands of marines organized in standard military ranks. The lower command ranks command marine contingents, the higher ranks command ships, flotillas or fleets. The lack of very large ships in the Yán Koryáni fleets means that the command structure is somewhat simpler than the Tsolyáni model. As in Tsolyánu, sailors do not hold military rank. The naval ranking system within the *Gurék* of the Mariners of Hekuúma is given in the following table.

<i>Átl</i>	enlisted marine
<i>Uténg</i>	sergeant of large marine contingent or commander of small contingent
<i>Nüümü</i>	commander of large marine contingent
<i>Shuggetl</i>	ship's captain
<i>Ghü'á'á</i>	flotilla or squadron commander
<i>Kérbh</i>	fleet commander
<i>Ochür</i>	<i>Gurék</i> commander

Table of Yán Koryáni Naval Ranks⁵⁸

It is likely that as the fleets of the former Yán Koryáni city-states become increasingly redundant and decline in strength (see below), the Baron will extend these reforms to additional cities and consolidate their fleets into national (or at least regional) marine *Guréks*.

Procurement and supply for the various Yán Koryáni fleets varies from city to city according to their organizational structures, and may be administered by a *Gurék* (as on the Hekuúma Peninsula), by a clan, or by a syndicate of maritime clans. The same is true for maintenance and refit. Interestingly, the Yán Koryáni fleets have the lowest percentages of seaworthy vessels among all of the five empires. This is not because of corruption or inefficiency; on the contrary, until recently the Yán Koryáni city-states were the most diligent and effective in maintaining their fleets. Rather, recent political developments have made these fleets rather redundant. Historically, the fleets of the once-independent Yán Koryáni city-states had

evolved primarily to compete with one another. However, since the unification under Baron Áld, conflict between the cities has been suppressed, and their combined fleets vastly exceed the strength required to make Yán Kór the premier naval power on the Pentúrta Deeps. As a result, little new naval construction is now being undertaken in any of these cities and ships in need of refit are simply being left to rot. The Yán Koryáni fleets are now declining rapidly through more-or-less deliberate attrition and neglect.

SMALLER STATES

There are smaller states on the peripheries of the Five Empires that maintain navies of some sort or other. Unfortunately, there is very little information available on their strengths or organizations, and we are left to make brief inferences and suppositions, or comparisons with their better-known neighbours.

On Lake Parunál, Yán Kór is not the only, or even necessarily the principal, naval power. The cities and towns of Chayákkú, Saá Allaqí, Péncha Nagál, Jánnu, and Mihállu also maintain fleets of small (primarily *Séscha*-class) vessels. We may infer that the organization of these little fleets resembles that of the Yán Koryáni cities of Báni and Ngakú: that they are sponsored and maintained by syndicates of fishing clans, primarily to protect fishing grounds and fishing fleets, and that there are no formal marine “legions.”

On the Pentúrtra Deeps, Yán Kór is certainly the premier naval power and the Mu’ugalavyáni have a presence as well, but Ghatón, Pijéna, and the Lorún also maintain small fleets. We may infer that the Lorún fleets, such as they are, are composed of small vessels comparable to the Yán Koryáni *Sezhák*; however, they are likely not dedicated military vessels as such, but rather civilian fishing and trading craft equipped for defense and capable of raiding or other military action as well. The Ghatóni towns operate small fleets comparable in type, organization, and perhaps in strength, to those of Vrídu, Vánu, and Dháru on the north coast of Yán Kór. The Pijenáni fleets, which rarely venture far from the Tutaíta Shallows, are composed primarily of true galleys rowed by slaves. The strength and organization of these “fleets” is uncertain.

Turning to the Deeps of Chanayága and the southern oceans, the fleets of Tsoléi, Shényu and the other Shén states, Hlússuyal, Nyémesel, and Háida Pakála are extraordinarily diverse and quite poorly-documented. The general composition of these fleets has been discussed briefly above, but their strengths, deployments and organizations are not well understood.

Particularly mysterious is the strength and organization of the Hlúss fleets; Hlúss hive-ships outside their own waters are normally encountered as single vessels or in very small groups. It is rare that humans venture into Hlúss waters, and even more rare that they survive to report whatever they may learn there. Consequently, it is not clear whether Hlúss “fleets” as such even exist, or whether instead each hive is an independent collective entity.

4 MODERN NAVAL WARFARE

As has been noted, the “classic” manuals of naval warfare, the *Gifts to the Lost One of the Sea* by Khuoláz of Laigás and *The Seventeen Scrolls of Mshúruish* both date from the Engsvanyáli period. Although both are widely-read and widely-cited to this day, many more recent commentaries and treatises are available, and these more recent works better describe naval warfare as it is practiced in the era of the Five Empires. The following section is largely derived from one of these, the *Musings on the Gifts to the Sea* by Kétu hiVridáme, by far the best-known primer on naval warfare in Tsolyánu.

It should be noted that there are in fact many different editions of Kétu’s work. The original scrolls were composed by a noble *Aridáni* of the Clan of Sea Blue who served as *Chlamolkár* in the fleet at the time of the war of 2,020 A.S. and who was present at both the First and Second battles of Penóm. Kétu submitted a treatise on naval warfare to Avanthár as part of her memoirs at the end of her career. This work was ostensibly a commentary on Khuoláz of Laigás, but was in fact neither a commentary nor a manual, but instead a lengthy and bitter polemic on the sorry state of Tsolyáni naval capabilities in comparison with those of Mu’ugalavyá.⁵⁹ This embarrassing document was quietly shelved and forgotten at the time, and remained so for two centuries, until the reign of Arshú’u “The Ever-Splendid.” At this time, for reasons which remain obscure, it appears to have been “rediscovered,” and apparently studied with care, since the recommendations Kétu made two centuries earlier were suddenly implemented by the Chancery, in a program of sweeping naval reforms which included the professionalization of the fleet, and the disgrace of the Red Sky Clan.⁶⁰

Kétu’s treatise is most commonly available today in a number of more recent editions. These vary in character and quality, but in general, later editors have excised the more incendiary (and by now rather dated) polemic passages and elaborated on the technical aspects of the work. It is these later editions that have transformed Kétu’s original treatise from an historical curiosity into a true naval manual. The most widely-read is an edition prepared by an anonymous writer during the reign of the Emperor Mursún Dlekkúminè “The Weak,” and it is this work which forms the basis of the following discussion on modern naval warfare. The manual begins by describing vessel tactics then moves on to a discussion of fleet formations and manoeuvres, and a similar structure will be followed here. However, it may be worthwhile to digress briefly, and first discuss a topic of great concern to Kétu but rarely addressed in later editions: the grand strategy of naval action in the Five Empires.

GRAND STRATEGY

The tasks to which an entire imperial fleet may be set are highly contingent on imperial geopolitics, and thus rather beyond the scope of this essay. Briefly, though, we may note that Mshúruish distinguishes four main classes of strategic fleet action.

The first is piracy and counter-piracy (Kéttu terms these “Biting of the *Chri*” and the “Swatting of the *Chri*,” respectively). Although an entire fleet may be charged with eliminating an enemy’s sea-going trade through piracy, or with defending one’s own sea lanes, actual piracy and counter-piracy actions are not normally undertaken by whole fleets, but rather by individual vessels or small independent flotillas.

The second class of strategic action includes seaborne invasions. Escorting or repelling invaders (Kéttu rather neatly calls both “the *Rényu* among the *Hmá*,” the “*Rényu*” in question being either protective of the flock, or if feral, a predator), is certainly a task undertaken by large fleets operating under unified command in support of grand armies. Convoy escort or interdiction might also be included in this class of strategic action.

The third class of strategic naval activity is the blockade/counter-blockade (Khuoláz’s “Mesh of *Vráoz*”). Again, either is a task which requires fleets to operate *en masse*.

Finally, the fourth class of action is the task of destroying an enemy’s fleet in a grand naval *Chanqadárdali* (“sea battle,” analogous to the *Qadárdali* on land; Mshúruish rather wryly refers to the *chanqadár* as “The Clash of Oars”). “Pure” fleet encounters, in the absence of blockade, invasion, or other strategic objective, are rather rare, and furthermore, will only normally occur when both sides sense an overwhelming advantage (a highly unlikely occurrence in itself). However, the Mu’ugalavyáni and Livyáni fleets have occasionally faced off in this way, usually when one or both sides seek control of the sea lanes for some future endeavour (and for both nations, control of trade may be sufficient reason in itself).

In modern times, at least since the Mu’ugalavyáni assault on Penóm in the War of 2,020 A.S. (a great success as a naval operation but ultimately indecisive on land)⁶¹ most nations have set their fleets rather modest strategic goals, primarily the patrol and control of sea lanes within their territorial waters. The Tsolyáni in particular have surprisingly limited maritime ambitions, and see naval action merely as an extension (indeed, a rather uncertain and distasteful extension) of “proper” land-based warfare. Their fleets are certainly available and willing to undertake grand strategic operations, but Avanthár seemingly prefers to regard its navy as a passive, defensive instrument, to be used sparingly and reactively, if at all. Even in time of war, the Tsolyáni fleet is generally sent out one flotilla at a time to patrol the coast, not in bold, risky offensives at sea. Others of the Five Empires are generally bolder, not merely regarding the sea as an element in the control of land, but rather pursuing the control of sea lanes as an important goal in its own right. Thus, the Salarvyáni and the Princes of



Háida Pakála battle for control of the intervening straits in naval battles ranging from the very small to the very grand (although these have the character of naval warfare between nations, the context is more akin to the squabbles between bandit princes!).

Further north, the Livyáni and the Mu'ugalavyáni frequently war over the control of the gulf north of Ssámris Isle (again, most battles are small but some have been of epic proportions). Ultimately, the struggle is over control of the great inshore “highway” arching around the continent from Shényu all the way to Salarvyá. The specific points of contention are twofold. The Livyáni resent the fact that the fast, agile *Hegléthi* merchantmen are the predominant carriers in the long-haul trade all along this route (including the Livyáni, Tsolyáni and Salarvyáni sections as well). On the other hand, the Mu'ugalavyáni are disadvantaged by the fact that Livyáni (and even Mu'ugalavyáni) ships have a habit of cutting across the gulf directly from Laigás and Point Dásht to the Chákan coast. They thereby bypass Mu'ugalavyáni coastal waters entirely, denying the *Dü'ümünish* of the Second Palace his tolls and duties. The Mu'ugalavyáni have consequently taken to maintaining an almost constant fleet presence (essentially a toll-station) in the waters southeast of Point Dásht, and while Ssa'átis claims this is a benevolent effort to protect shipping from the depredations of the Hlúss, it is a provocation the Livyáni can hardly ignore.

Elsewhere, a similar situation obtains in the Gulf of Teriyál, where the Shén states battle with each other and with the Livyáni and Tsolé'i for control of coastal trade and access to the southern continent. Similar tensions erupt occasionally on the Pentrúrtra Deeps and the Tutaíta Shallows, although on a more modest scale, and in these waters, where the grand tradition of the Sea-Kings of Ke'ér still lives on, Yán Koryáni hegemony is not really seriously challenged.

VESSEL TACTICS

Most naval engagements consist of an individual combat between two opposing vessels. Even large fleet actions often ultimately resolve into a series of individual “duels” between ships. Consequently, the Engsvanyáli tacticians (and those that have followed in their spreading wakes!) devoted much time to the technology and tactics of the ship vs. ship encounter. Mshúruish suggested that these may be divided into two types: tactics aimed at destroying or disabling ships, and those aimed at weakening their crews. In general, those who seek loot and intact prizes will concentrate their efforts on defeating the crews. Large vessels confronted by smaller, more manoeuvrable foes will often be obliged to do the same, though destroying the enemy vessel would be more decisive if it were possible. On the other hand, smaller vessels, and those facing ships armed with large contingents of marines, will generally prefer to target the enemy ship itself.

Perhaps a more useful distinction is offered by Khuoláz of Laigás. His discussion divides naval tactics according to the offensive technology employed. The five categories of tactical options may be summarized⁶² as: Manoeuvre, Missile, Melee, Machines, and Magic.⁶³



Technological constraints generally ensure that individual vessels are to some degree “specialists,” equipped to fight in one principal way, perhaps with some limited secondary capability. For instance, a vessel outfitted for speed and manoeuverability to attack with the ram may have a small contingent of archers on board but likely not a heavy artillery piece, a large company of marines, or a magic contingent. Conversely, a ship armed with any of these latter may also have a ram but it may lack the manoeuverability to bring it to bear on most lighter, more agile craft.

With the exception of magic, which is a rather special case, these tactical classes, or modes of attack, are known and practiced throughout the Five Empires, but each of the great powers is known for a particular expertise in, or affinity for, one of these forms of naval combat. A discussion of individual tactics within each class follows below.

MANOEUEVER

“Manoeuver” subsumes the classical “Mu’ugalavyáni-style” naval tactics, in which the ship itself is the principal offensive weapon, used to disable or destroy another vessel. As its name indicates, this is the particular forte of the Mu’ugalavyáni, and especially of the Swamp Folk, the *Hegléthyal*. The Mu’ugalavyáni themselves consider this the only truly “noble” style of naval combat, and performed by skilled practitioners, it probably is the most elegant, a graceful circling dance of warships with some of the character of a duel between swordsmen. One manoeuver attack, the front-pass, may be used if the desire is to take prizes, but in general, manoeuver tactics are not well-suited to pursuit and capture, and pirate vessels usually resort to other tactical options. Kéttu hiVridáme lists three major types of manoeuver attack.

The Thrust of Cha’ach’í

The Thrust of Cha’ach’í is the flank-pass, in which the enemy vessel is approached from the flank and rammed, at or below the waterline, causing the ship to take on water and eventually sink. The ram can be quite effective, even when employed by smaller ships against larger vessels, and most military ships in most nations are provided with rams. Success depends not only on penetrating the opponent’s hull, but also on disengaging and reversing immediately afterward; otherwise, the attacker risks going down with its victim, or perhaps being boarded by the enemy’s marines. Reversing is a tricky manoeuver in which all rowers step over their oars in unison and pull in the opposite direction. This is easier to achieve in smaller vessels than in larger ones, and is a procedure in which Mu’ugalavyáni crews are especially well-trained. The tactic is named after an obscure local deity of the lower Putuhénu. The beaked visage of Cha’ach’í, who combines elements of Kténgish (Chiténg), Hréla (Hriháyal), and Hrsh(!), often tips the rams of Mu’ugalavyáni ships.



The Harvest of Salt-Grass

This is the front-pass, in which the enemy craft is approached from the front. The objective is to ship oars at the last minute and then slide past the opponent at very close quarters, shearing off his oars on one side (and causing terrible casualties below decks). The tactic is named for the way the peasants of the Flats of Tsechélnu scythe salt-grass for fodder at harvest time. This is another tactic best undertaken by smaller craft with highly-trained crews, and one at which the Mu'ugalavyáni excel. Certain ships, particularly in Tsolyánu, occasionally mount great scythe blades on their hulls to achieve a similar effect, but there is no evidence these are more efficacious than the traditional method, and as often as not, the massive blades are merely a liability.

The Dance of the Haqél

This is a bold tactic in which the opponent is rammed from the front, prow to prow. The objective is to crush the bow, bend the keel, and cause the opponent's hull planking to spring apart. This is not a common tactic, since there is considerable risk to both ships. However, a larger vessel may employ it against a much smaller adversary, particularly as a defense against an opponent who is attempting to "harvest the salt-grass."

MISSILES

We may infer that the use of ships as firing platforms for archers and other missile-men is a very ancient form of naval combat, as it requires neither particular innovations in naval technology, nor particular skill in naval manoeuver. Naval combat as "archery duel," in which opposing vessels present their broadsides at an appropriate distance and loose volleys until one or other withdraws, is still the approach employed by smaller nations with newer or less proficient naval forces, such as the lands bordering Lake Parunál. Of the larger empires, the one most renowned for its skills in naval archery is Yán Kor. On the stormy Pentrúrtra Deeps, where manoeuver, melee, and artillery fire are often difficult and at times impossible, small missile weapons are always a feasible option. Yán Koryáni warships are almost always equipped with sizeable contingents of archers, and in foul weather conditions that would confound the more sophisticated mariners of Mu'ugalavyá, Yán Koryáni tactics are likely to prevail. Parenthetically, it may be noted that oared galleys in general are prone to swamping in the turbulent waters of the north, and the fleets of the Pentrúrtra Deeps tend to contain a higher proportion of sailed vessels and very small oared craft, and fewer of the large classes of galley found in southern seas. Again we turn to Kétu hiVridáme for a listing of missile tactics.



Teeth of the Ghár

This refers to the use of various very short-range missile weapons, such as javelins, throwing clubs, blowguns, darts (and, very rarely, bolas), immediately before closing for combat. This is not exactly a distinct tactic, although Kétu hiVridáme classes it as such. It is perhaps more appropriate to consider it the first stage in melee combat, occurring during grappling, but before boarding. In a similar vein, it may be employed by an attacker immediately after the “Thrust of Cha’ach’í,” to deter possible boarding during those tense moments when the rowers are trying to disengage the ram from the opponent’s hull.

The Rains of Penóm

In naming this tactic, hiVridáme betrays her southern Tsolyáni origins.⁶⁴ This tactic refers to the use of long-range personal missile weapons such as bows and crossbows,⁶⁵ firing in volleys on an opposing warship. Aside from certain smaller nations, and the Yán Koryáni as noted above, the great empires do not often employ this as a stand-alone tactic, but rather as a secondary offensive or defensive accompaniment to a manoeuvre engagement or a boarding attempt. However, in larger fleet actions, both the Livyáni and the Salarvyáni have deployed shiploads of archers in echelon in long firing lanes to bring enfilade fire to bear on any attacker trying to reach the capital ships deployed behind. As will become clear below, both of these nations make particular use of heavy capital ships, and devote considerable care to arranging smaller ships in defensive screens around them.

Squall over Vridu

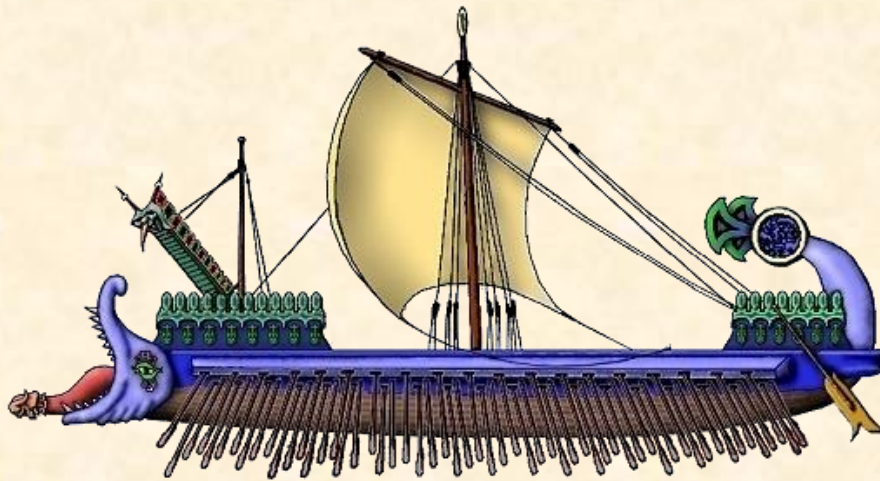
This refers to the art of missile fire in rough seas, and in defining this tactic, Kétu acknowledges the Yán Koryáni mastery of this technique. Kétu does not exactly discuss the tactic as such, or the methods (which actually owe as much to skill in manoeuvre as to skill in missile fire), but takes the opportunity to expound on the remarkable abilities of the Yán Koryáni crews. Her text is full of admiration for their proficiency, though the entire section is clearly based directly on the travelogues of Shargún híTsámren, rather than on first-hand observation. We may infer that the mariners of such cities as Vridu, Mákhis, and Chudrák have probably practised these arts for centuries, though it is only with Shargún’s accounts that their skills have come to the attention of others in more distant lands, and only with the consolidation under Baron Áld have Yán Koryáni military capabilities suddenly become a matter for intense study.

MELEE

“Melee” subsumes those tactics which rely on boarding an enemy warship and resolving the issue in hand-to-hand combat. This approach, in which naval combat is essentially reduced to a “land-battle at sea,” is the approach most favoured by the Tsolyáni, who are notorious for crowding large contingents of marines aboard every naval vessel. A Tsolyáni warship with few or no marines aboard⁶⁶ is only half-jokingly referred to as a “*Hrú* without sails” by the old salts of Jakálla. Conversely, a Tsolyáni warship with a full complement of marines is called a “*Ngrútha*” in Jakállan slang.⁶⁷ The reasons will become clear below. None of the authorities discuss actual hand-to-hand combat at length, beyond offering some advice on training (to be done at sea as much as possible), objectives (sparing sailors and oarsmen and concentrating on defeating armed resistance), and weapons (one-handed thrusting and slashing weapons are to be preferred, polearms avoided). Instead, they focus on the boarding procedures, by far the trickiest part of the operation. Kéttu hiVridáme offers four approaches, three ultimately derived from Khuoláz, and the fourth from Mshúruish.

*Kis*⁶⁸ of the *Ngrútha*

This refers to the use of a heavy boarding ramp swung and dropped over the opponent’s gunwales. This ramp is held fast by a sharp, heavy spike on the underside which drives into the enemy’s decking rather like the proboscis of the *Ngrútha* penetrates the body of its prey. The ramp (itself referred to as a *Ngrútha*) thus prevents the opponent from withdrawing, while it allows a boarding party to swarm across quite rapidly. This device, analogous to the *corvus* of ancient Rome, is difficult to deploy if the enemy vessel is significantly larger or smaller than one’s own.



A Tsolyáni *Qél*, the splendid *Changkérdudalisàsakoi Búrrute hiVekkúma*, named for an admiral of the early Second Imperium. The blue-painted hull and the Seal on the sternpost identify her as a vessel of the Imperial fleet. Other features, such as the grim green-faced demons, and the “Eye of the Emerald Lady” on the prow, proclaim as well the patronage of the Temple of Dlamélish in Jakálla. The spiked end of the *Ngrútha* is, naturally, in the form of a *Ngrútha*.

Embrace⁶⁹ of the Ngrútha

This refers to the use of grapples to hold the enemy close, as do the suckers of the *Ngrútha*, allowing marines to board over the gunwales or by means of the ramp. This approach too, is most useful against warships of comparable size to the attacking vessel. The “embrace” and the “kiss” are often employed simultaneously.

The Cave of Spiders

In this approach, the boarding party swings aboard the enemy warship by means of lines suspended from the mast, arm, and rigging. This may be accomplished with or without first grappling the opponent. Such attackers are particularly vulnerable during the boarding process and this is not usually an attack method of choice. However, it can be employed to board much smaller ships or much larger ones, and therefore is sometimes the only available means of assault. Note that if grapples are *not* used prior to boarding, the attackers must swiftly gain control of the rudder(s), sails, or rowing decks to avoid being isolated from their own ship. Of these, the rudder is the only really practical objective, and subsequent combat normally converges on the sterncastle.

The Kiss of Flamesong⁷⁰

This refers to the practice in which marines board an enemy for the sole purpose of firing the opponent before quickly retreating back to their own ship. This may be done to a commercial craft for a number of (generally punitive) reasons, but in naval warfare it is most commonly undertaken when a vessel with few marines (and presumably no other tactical options) must engage an enemy who has a much larger force. There are considerable risks involved, and not only from the stronger enemy marines. The small force may successfully start an uncontrollable fire, but if the *Ngrútha* or grapples cannot be quickly disengaged, then both ships may burn. This can be avoided if boarding is achieved by the “Cave of Spiders” method, but if this is done, the boarding party is essentially on a suicide mission. Although generally regarded as a last, desperate measure by an outmatched warship, the “Kiss of Flamesong” has been used in a few instances with great audacity by Salarvyáni and Mu’ugalavyáni crews against astonished Tsolyáni captains.

We may note that any grappling attacks may include the use of ballistae to fire the grapples, particularly against an enemy that is fast or prefers to stand off (like many Mu’ugalavyáni captains). Defensive measures commonly employed include the use of shears and axes to detach grappling hooks.



MACHINES

Shipboard artillery may include a variety of types of ballistae and onagers, though not usually trebuchets. Although all major nations use naval artillery to a greater or lesser degree, it is the Salarvyáni who, since the time of the Bednálljan Kings, are best-known for their expertise in its application. Salarvyáni crews are of course adept in the use of artillery, but perhaps more importantly, Salarvyáni shipwrights are skilled in the mounting of the engines and in the design of ships capable of withstanding the stresses they generate in the decking and structure of an artillery-equipped vessel. Salarvyáni naval design reaches its highest point⁷¹ in the great four-masted capital ships they build, bristling with ballistae and several onagers of various sizes. It is possible that this tradition of Salarvyáni naval artillery has its origins early in the First Imperium, during the wars against the Shén, but it has certainly been honed in subsequent battles with the pirates of Háida Pakála. It is true that most of these confrontations involve smaller, more conventional warships, but when one of the great families of Salarvyá stirs to mobilize the long-range firepower of its capital ships, the Háida Pakalayáni princes may have little effective answer. We may note four main artillery tactics, all named and discussed by Kétu hiVridáme, whose treatment is, of course, based on the Engsvanyáli manuals.

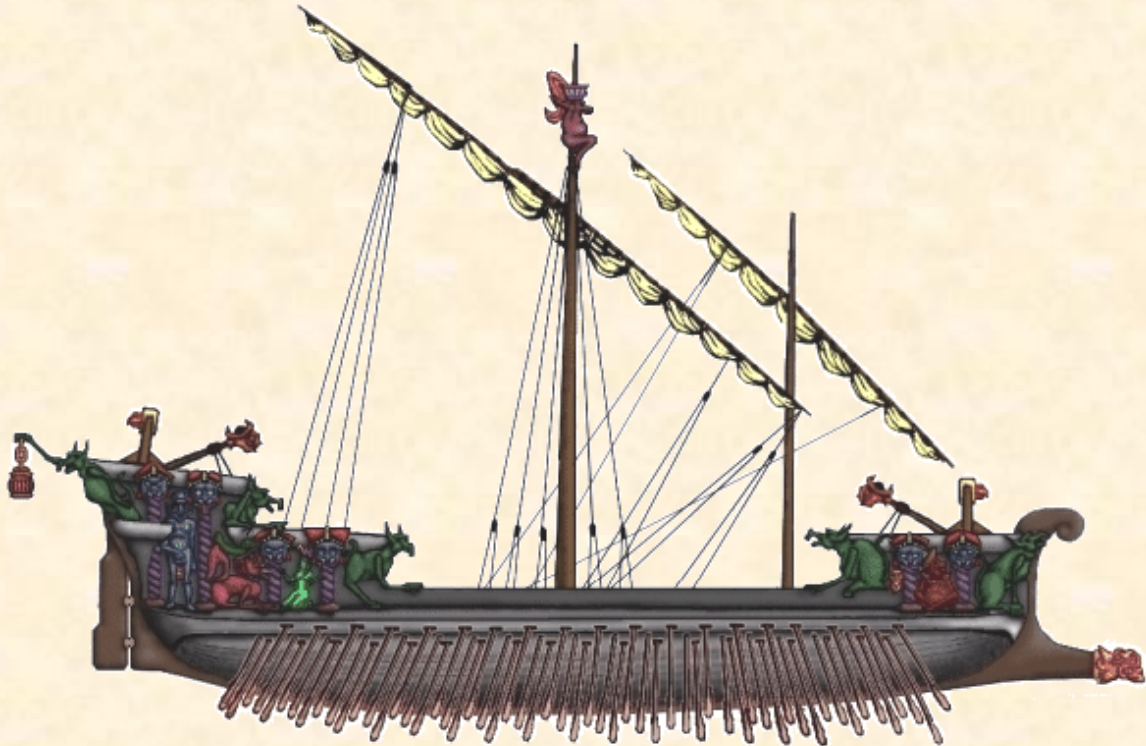
The Flock of Vringálu

I was not aware that *Vringálu* flew in flocks, but the name certainly conjures a terrifying image. This refers to a barrage of ballista bolts discharged at an enemy warship. Naval ballistae come in two forms: a small gunwale-mounted variety operated by a crew of two, and a larger type mounted on deck, sterncastle or forecastle and manned by three or four artillerymen. Both are primarily anti-personnel weapons, though they can do some incidental damage to a vessel. Rarely, ballista bolts are tipped with oil-soaked cloth and ignited before firing. This is not common, though, since such missiles are rarely successful at starting fires. Mshúruish classifies fire-tipped bolts as a separate tactic, and refers to a ship prepared to use them as a “*Nest of Alásh*.”

Tsántsa’s Pan-Bread

This refers to a heavy catapult stone hurled at an enemy ship. The name comes from the Kaiján comic folktale featuring Tsántsa, the good-hearted but inept clan-girl, and the disasters that befall her clanhouse kitchen. Incidentally, this story is a favourite as well in Salarvyá, where it is known as “The Tale of Tsheshmuringgi’s Extraordinary Bun.” The heavy missile is intended to penetrate the enemy’s deck, causing great damage in the rowing gallery, and ideally, to hole the hull and sink the target. The onagers used to hurl these missiles must be carefully mounted on modified deck structures, or else the kick of the onager may cause

as much damage on its own ship as the stone will on the target. Aiming and firing is also difficult at sea, even for a well-trained crew. Moreover, if multiple onagers are mounted, as on some of the larger ships, it may be necessary to fire them in a particular sequence. However, if the ship is sound, the proper precautions are taken, and the firing is not rushed, then the shipboard onager may be a virtual “weapon without answer.”



The Salarvyáni trireme *Tushchmenggétsu*, a vessel in the fleet of the Hruchcháqsha Family of Chame’él. Heavy-set and broad of beam like a Salarvyáni noble, covered with sculpted images like the walls of her home port, she carries heavy onagers fore and aft as her principal armament.

Tsántsa’s Collapsing Loom

Once again Kéttu hiVridáme references the hapless clan-girl of Kaiján folktales in renaming Khuoláz’s naval tactics. In this case, the term refers to the use of onagers to hurl gigantic “bolas” or spinning bars capped at each end with stone weights. A successful hit can foul rigging, destroy sails, and in some cases, snap the mast. Alternatively, if the target is a galley, a hit on the hull can smash oars on the affected side. In some cases, a pair of onagers may be employed, each hurling one of the linked weights. Unfortunately, this is an extraordinarily dangerous tactic, it being very difficult to avoid disabling one’s own ship instead. Few captains will even attempt it, and only the Salarvyáni have refined the mounting, loading and

firing procedures enough to claim even a modicum of success. Beware, even to the specialist, the behaviour of these missiles can be unpredictable. This tactic is not for the faint-hearted.

Tsántsa's Fritters

Here, the reader will recognize yet another Kaiján folktale reference.⁷² “Tsántsa’s Fritters” refers to oil-filled clay pots lit and hurled at enemy vessels to set them alight. Great care is needed to avoid starting a fire around the onager itself, but this is a fairly standard form of artillery attack, employed by the Salarvyáni of course, but by most other nations to some degree.

MAGIC

Neither Khuoláz nor Mshúruish discuss “naval magic” at length. Mshúruish baldly states that group magic of the sort employed in land battles is impossible aboard ship, while Khuoláz adds only that individual spell-casters may contribute to the fray when ships close for combat, but that they add no new dimension to naval tactics in general. In the Engsvanyáli period, magic played no notable role in naval warfare whatsoever. It is not difficult to understand why. Naval engagements extend across distances equal to, or greater than, even the most epic of land battles. Spell-casting to the desired ranges and effects would similarly require assembling contingents to perform group magic. Yet even the largest warship is an awkward and unstable platform for the delicate ritual dance which is group magic.

It was not until the Time of No Kings that the Temple of the Horned One of Secrets at Laigás took the first tentative steps which would eventually allow the use of group magic at sea. Perhaps they hoped to counter the growing power of the Mu’ugalavyáni fleets, perhaps their research had wholly unrelated goals, perhaps the breakthrough came by accident. Regardless, the mages of Laigás began to develop a series of group rituals that could be performed by relatively few sorcerers, in relatively confined spaces, and with relatively wide tolerances (i.e. the rituals could be completed successfully - or at least without disaster - even if the contingent were jarred momentarily by the waves). Eventually, it seems, certain other Livyáni Temples succeeded in either stealing or duplicating this research, although the secrets are still not widely known even in Livyánu. Consequently, the precise nature of these innovations is not clear, and the Livyáni themselves are naturally secretive on this point. A later anonymous editor of Kéttu’s work, from whose writings this discussion is drawn, bases his conclusions on the accounts of three men who claimed to have witnessed Livyáni sorcery at sea and one who provided certain remarkable snippets of historical and theoretical knowledge (this last informant vanished not long after the editor spoke with him, and neither his fate nor even his identity were ever established). For the rest he relies on inference and conjecture. *Caveat lector!*⁷³

The editor begins by describing Livyáni magical “deployments” and follows this with a summary of the apparent repertoire of Livyáni naval sorceries. To begin with the deployments, three types of naval sorcery are listed, all named for the distinctive sounds which reportedly emanate from any warship using group magic. These sounds are variously described as a “crackling electric buzz,” a “mechanical hum,” a “strangely phasing hiss,” or a “rhythmic twanging thrum” which can be felt in the bones. It is said they rather resemble the sounds of a Hlúss nest-ship; we may surmise that the crew of such a ship must work in a state of constant nervous agitation, and surely must have difficulty manoeuvring or fighting effectively while the rituals are in progress.

The Hornet's Nest

It is thought that group magic in the Livyáni fleet most commonly takes the form of a small contingent operating from a warship of average or above-average size (i.e. *Qél* or *Zirunel* class). When more than one vessel in a flotilla carries such a contingent, the separate contingents normally work independently of each other.

The Plangent Chorale

In some instances, such as a major fleet action, the Livyáni may deploy a large vessel of, say, *Cháosaz* class, on which the deck is built up, widened, and wholly-devoted to the rituals of a very large magic contingent. This makes possible a slightly larger repertoire of spells, as well as greater range and effect. This capital ship is by all accounts deployed well behind the ships of the line, protected by a screen of small galleys.

The Susurrus of Destruction

Also known to Tsolyáni informants as “*The Shattering Chord of Qame’él*,”⁷⁴ or more laconically, “*The Drone of Drá*,” this appears to represent a recent development in Livyáni sorcery, thought to be the closely-guarded secret of the Temple of the Lost One of the Sea in Laigás. The term refers to the coordination of many small magic contingents aboard scattered, separate warships, linking to form one single unified (albeit physically dispersed) magical contingent of great size and power. In truth, the very existence of this innovation cannot be confirmed conclusively, and even if true, the repertoire of spells must surely be limited. It is possible their range and effect are also little greater than can be achieved by the *Plangent Chorale*. However, if the priests of the Lost One of the Sea have indeed developed this art, it may eventually transform the practice of group magic even on land.



Spell Repertoire

The actual repertoire of Livyáni naval magic is rather difficult to assess. Informants claim to have witnessed the following spells in actual use:

- Summon/Dispel Fog (and/or Vapour of Death);
- Summon/Dispel *Akbó*;
- Summon/Dispel Wind;
- Summon/Dispel Waves; and
- Slow/Haste

Of course, the sceptic may counter that these are as likely to have been natural phenomena as the result of magical invocations. Based on one key informant, we may further propose that the following spells may be inferred:

- Doomkill;
- Sundry Illusions;
- Invulnerability (both to spells and to missiles);
- Strengthening of Mighty Timbers (a defensive spell cast on the hulls of ships);⁷⁵ and
- Quenching of Fire

Such spells are well within the capabilities of individual sorcerers, let alone large contingents. Beyond this, little more can be said with the information at hand.

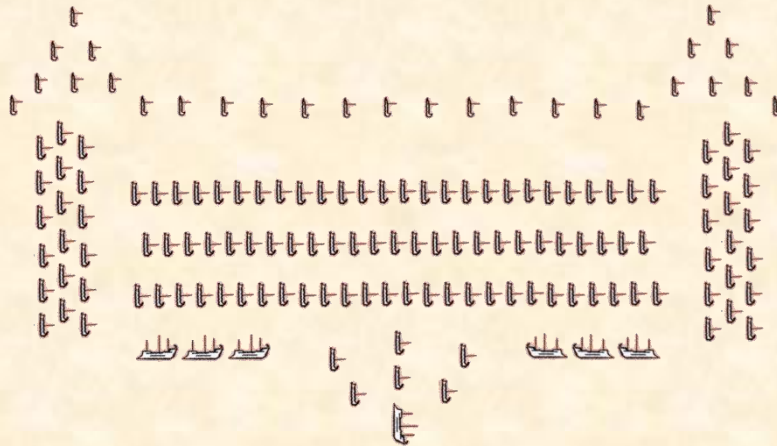
FLEET DEPLOYMENTS AND EVOLUTIONS

The above-mentioned Engsvanyáli manuals discuss naval tactics at length.⁷⁶

Briefly, Khuoláz of Laigás distinguishes six basic fleet dispositions: column, line, concave crescent, convex crescent, scissors, and wedge. He places particular emphasis on deploying fleets in depth, in a series of “waves.” Keeping portions of the fleet in reserve is of critical importance, whether deployed in defense or offense. This is a matter on which all ancient authorities agree, since ships making contact with the enemy will invariably turn, exposing vulnerable flanks that may be exploited by any ships held in reserve.

Within these basic dispositions, Khuoláz proposes arranging vessels in a fleet in the same ways cohorts are deployed on a terrestrial battlefield. Often this means placing the capital ships in the center and the lighter, swifter galleys on the flanks, or “anchoring” the flanks near islands, peninsulas, or shoals. Mshúruish takes this approach even further, adopting

wholesale the terrestrial formations of Bednálljan strategist Ssamirén of Khéiris with only minor changes to their names, and substituting “ship” for “cohort” where necessary. Even the “warhammer” units are there, no doubt inspired by the historical example of Hó Etéhltu. In general, the fleet deployments described in the original Engsvanyáli sources appear to be abstract, over-elaborate, impractical, and unwieldy. Perhaps this is because neither writer (and indeed few admirals from the entire Engsvanyáli period) appears ever to have commanded an entire fleet in battle.



The “Akhó at the Gates of Tsámra” formation, as described in the Engsvanyáli manual *The Seventeen Scrolls of Mshúruish*. In this battle formation, two columns of triremes flank a triple-line phalanx of quinquiremes, all fronted by a screen of biremes. Two “warhammer units” of heavy polyremes are deployed behind the central phalanx, and to the rear, another polyreme, the admiral’s command ship occupies the “Eye of the Akhó” position, screened by three files of defensive “tentacles.” Surely, this fanciful and unwieldy fleet formation was never actually employed in battle. It is clearly derived from the well-known Bednálljan terrestrial military formation “The Oncoming Wings of the Hereafter.”⁷⁷

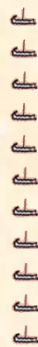
Turning to the more recent manuals, Kéttu proposes a much simpler classification of fleet deployments, reflecting her considerable practical experience. This scheme consists of four types of “flotilla” or squadron deployments.⁷⁸ These formations may comprise complete battle arrays for small flotillas, or, as squadrons, may be combined in various ways to form larger fleet deployments⁷⁹ for major naval actions. Kéttu concludes by discussing a number of “evolutions” (essentially, formation changes). Kéttu’s scheme may be summarized as follows.

FLOTILLA AND SQUADRON FORMATIONS

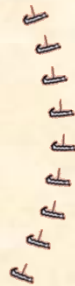
Kéttu describes four principal categories of formation adopted by independent flotillas or by squadrons within larger fleets: the Wave formations; the Mighty Wind formations, the Reef formations, and the *Akbó* formations.

Wave Formations

The Wave formations consist simply of any group of vessels arranged in line abreast. The precise deployment may be straight or curved, as best suits local conditions. Vessels may form line abreast in open water (the “Inexorable Wave”), or with one flank anchored to terrain (the “Tethered Wave,” or “Riffle,”), or with both flanks anchored (the “Tidal Bore” formation). Wave formations can be notoriously difficult to maintain in adverse wind or wave conditions.



The Inexorable Wave,
straight and curved



The Tethered Wave



The Tidal Bore

Variations on the Wave Formation

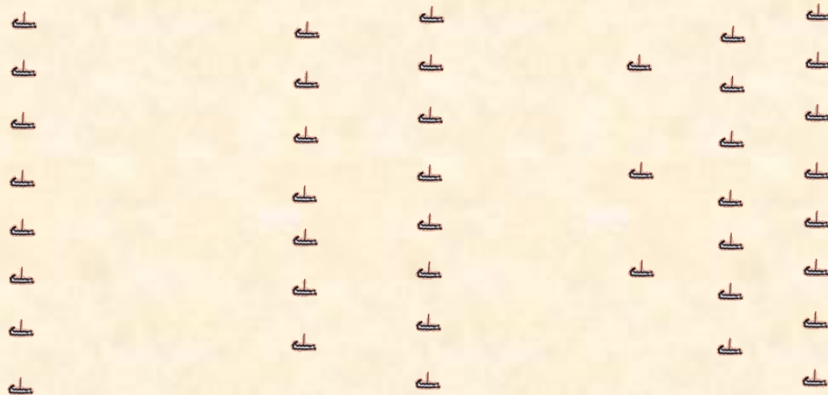
Wave formations are perhaps the commonest form of battle array, particularly among nations that favour attacks to the fore, using the ram or the boarding ramp (i.e. Mu’ugalavyá and Tsolyánu). The Mu’ugalavyáni often prefer loose or open waves of widely-spaced ships, seeking to “Harvest the Salt Grass,” passing through the enemy line then turning for a devastating “Thrust of Cha’ach’?” from the rear. In contrast, the Tsolyáni favour tighter waves of closely-packed vessels, sometimes deploying their ships gunwale-to-gunwale to ensure that the issue is resolved by means of shipboard melee.





Wave attacks: classical Mu'ugalavyáni (left) and Tsolyáni (right)

All tacticians agree that wave attacks, once developed, are vulnerable to counter-attack from the rear. Consequently, it is essential, whether in attack or in defense, to maintain a reserve, and therefore to deploy in multiple waves whenever possible.⁸⁰



Examples of Single, Double, and Triple Wave Formations



Example of a single wave attacking a double wave; the attacking wave is vulnerable to attack from the rear by the second defensive wave.



Example of a double wave attack on a double wave defense in open order.

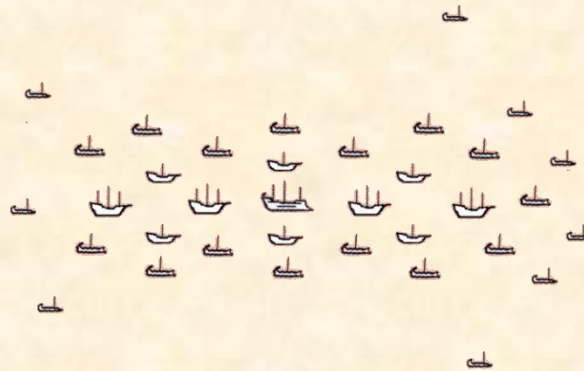
The Mighty Wind Formations

The Mighty Wind formations consist of any flotilla or squadron formation in which ships are arrayed in column, or line astern. As with the Waves, the Wind formations may take the form of single files, double files or triple files. As a battle formation, the Mighty Wind is most commonly employed to attack on a narrow front with the goal of deeply penetrating or outflanking the enemy Waves, often with little or no combat engagement. Wind formations are particularly favoured by the Mu'ugalavyáni.



Examples of single, double, and triple Mighty Wind Formations

However, Mighty Wind formations are most commonly employed not in battle, but, in the form of convoy columns, during travel. The specific deployment of ships in convoy will vary according to numbers and circumstances, but ideally will include fast scouting vessels screening the convoy to the front, flanks, and rear.



Example of a convoy column composed of a mix of warships and transports. The lighter vessels to the front, rear, and front-flanks would actually be deployed a considerable distance from the main convoy.

Reef Formations

The Reef formations⁸¹ are those in which vessels are deployed in a wedge. The half-wedge (essentially a column or line of ships in echelon) is also classified as a Reef formation. Kétu defines three variants on the Reef: the Pitiless Reef (a solid wedge), the Hidden Shoal (a hollow wedge), and the Jagged Reef (the half-wedge, or column in echelon).

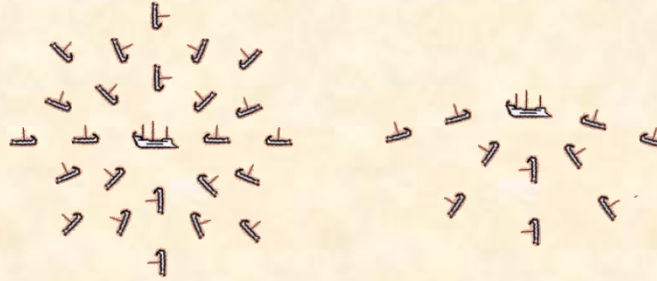


Examples of the Pitiless Reef, Hidden Shoal, and Jagged Reef Formations

Reef formations are employed by the fleets of all nations, but are particularly favoured by those who rely on broadside firepower: most notably, the Salarvyáni and the Yán Koryáni. The Mu'ugalavyáni often employ the Jagged Reef formation on the flanks of their larger fleet deployments.⁸²

Akbó Formations

The *Akbó* is a quintessential defensive formation. In its full-blown form, it is an unbroken defensive ring of ships, the naval equivalent of the “Bracelet of Kurusénla” formation occasionally adopted by terrestrial legions when outnumbered and surrounded by a numerically-superior foe.⁸³ The slowest vessels, generally including the flagship, occupy the center, referred to as the “Eye of the *Akbó*” position. These are surrounded by one or more rings of faster vessels, the “Tentacles,” which can rapidly dart out and withdraw in a series of jabbing attacks, or alternatively, can bring stinging missile attacks to bear on any enemy ships attempting to penetrate the formation.



Examples of the Greater *Akhó* and Lesser *Akhó* Formations

The full defensive circle (or “Greater *Akhó*”) has only rarely been employed in battle, as a “last-stand” formation by an outnumbered force in open water. More common is a partial ring. This, the “Lesser *Akhó*” Formation”⁸⁴ is actually a very common defensive stance for the flagship in a larger fleet, the escort of “Tentacles” also serving as the fleet reserve. It is employed by most nations, although the Mu’ugalavyáni have never been known to use it.

FLEET FORMATIONS

While small flotillas may normally adopt a single formation, larger fleets in battle will customarily divide into smaller units according to vessel class, each squadron deploying in a separate formation as appropriate to the overall battle plan. Large fleets in combat will therefore form battle arrays composed of some combination of two or more unit formations. These battle arrays are the naval equivalent of the terrestrial “army formations.”⁸⁵ We may note that the fleet formations actually known to have been used in historical naval battles have never been as complex as the formations found among terrestrial armies, and have certainly been much simpler than the fanciful recommendations we might encounter in the old Engsvanyáli manuals. Nevertheless, there are innumerable possible combinations and permutations, and many are historically-documented.⁸⁶ It must suffice here to list a few combinations identified by Kétu as particularly commonplace or characteristic among the Five Empires.

The Relentless Tempest

The “Relentless Tempest” fleet formations include all those battle arrays that combine Wind and Wave unit formations. Tempest formations are particularly characteristic of the Mu’ugalavyáni, whose fleets deploy almost exclusively in “Wind” and “Wave” combinations. In fact, the Mu’ugalavyáni classify no less than thirty-five variations of Tempest formation, and all are historically-documented. For their part, the Tsolyáni distinguish only two varieties of Tempest formation. One is the “On-Rushing Monsoon,” a Wave formation with a central “Wind”, and the other the “Stormy Seas” (*Zhusfenichányukh*), a Wave formation flanked by two powerful “Winds.”



Examples of the “On-Rushing Monsoon” Formation (left) and the “Stormy Seas” Formation (right)

The Lurker in the Deeps

The “Lurker in the Deeps” broadly subsumes all fleet formations in which the flagship and the reserves deploy in an *Akbó* formation behind a front line. Among the Tsolyáni, it is common to assemble the *Akbó* behind a Wave formation, and indeed this is the classic “Lurker in the Deeps.” The Salarvyáni and the Livyáni also favour fleet formations fronting an *Akbó*, but among those nations, the front line is more likely to assume the “Tumult of Devastation” formation (see below).



Example of a classic Tsolyáni “Lurker in the Deeps” Formation.

The Adamant Promontory

“Adamant Promontory” Formations describe those battle array in which “Reef” units, deployed in echelon in the “Jagged Reef” formation, flank the main line. Unusually, the Jagged Reef may flank a central Wind, in which case this may be referred to as the “Wind-Whistling Heights” formation.⁸⁷ More commonly, Jagged Reef formations will flank central Waves, a deployment referred to as the “Tumult of Devastation.” Deployment in echelon is particularly associated with the Salarvyáni, Livyáni and Yán Koryáni, but it should be noted that the Mu’galavyáni also often employ the “Tumult of Devastation.”



Examples of the “Tumult of Devastation” Formation (left) and the “Wind-Whistling Heights” Formation (right)

The Alhajjár and Sarír

The “Alhajjár and Sarír” Formation is named for two prominent headlands that jut forth from the coast of Shényu, south of Livyánu. As a fleet battle array, this refers to a particular combination of “Waves” and “Reefs” in which a Wave formation supports a front line composed of a series of “Hidden Shoal” formations. Fleet formations of this sort have been employed by all of the Five Empires at one time or another. They are particularly associated with the Salarvyáni and Livyáni, who often also deploy an *Akbó* to the rear.



Example of the “Alhajjár and Sarír” Formation

However, this formation is also characteristic of the fleets of the Tutaíta Shallows, including Pijéna and the city-states of southern Yán Kór. There are several historically-documented instances of significant naval actions involving galley fleets in these waters. In all cases, these battles followed a rather stereotypical pattern in which both opposing fleets adopted the “Alhajjár and Sarír” Formation and then attacked, with the “points” of the reefs interdigitating with those of the enemy. These have not been battles of tactical flair, but rather have ultimately been decided as archery duels fought broadside to broadside with the reserve Waves advancing as needed to fill gaps in the line. Kéttu describes these as “Gnashing Jaws of Death” Battles.



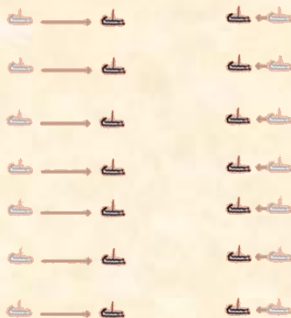
A typical Pijenáni and southern Yán Koryáni “Gnashing Jaws of Death” battle

EVOLUTIONS

A substantial portion of the original *Musings* by Kétu is devoted to a consideration of what she terms “evolutions:” the manoeuvres units must perform in order to change positions, facings and formations. She divides these into two classes. The “Minor Evolutions are those which vessels in a unit may complete more-or-less independently. The “Major Evolutions” are manoeuvres that vessels must coordinate with others in order to complete them rapidly and without disorder.⁸⁸

The Minor Evolutions

These include a number of simple manoeuvres which may be completed by a unit of more-or-less independently-acting vessels, generally from a stationary position. The simplest of all are the “Rising Tide” and the “Receding Tide:” simply a forward or reverse movement of ships in a Wave formation, a change of position with no change in formation or facing.



The “Tide” evolutions: Rising Tide (left), and Receding Tide (right)

Another set of minor evolutions is the “Changing Currents,” in which a Wave or Wind formation of vessels changes formation and facing but not position, simply by keeping the oars on one side feathered and pivoting in place. In this evolution, a unit of ships may change from Wave to Wind or vice versa (with a change of facing) when each vessel executes a 90° pivot. Alternatively, with a lesser pivot of, say, 45°, a Wave or Wind unit may change formation to a line of ships in echelon, the “Jagged Reef.”

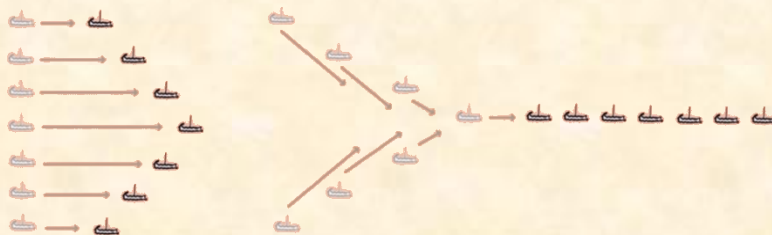


Examples of “Changing Current” evolutions: from “Wave” to “Jagged Reef” (top), and from “Wave to Wind” (bottom)

The Major Evolutions

The manoeuvres that Kéttu describes as the “Major Evolutions” subsume a number of formation changes that require vessels in a unit to act effectively in concert. There is historical documentation for all of the nations of the Five Empires employing all of these manoeuvres at one time or another, but it is the Mu’ugalavyáni, and the *Hegléthi* in particular, who are famous for their skills in executing them in a rapid and orderly manner with the desired facings and spacings on completion. The most important “Major Evolutions” may be summarized as follows.

“Breaking the Wave,” one of the simpler of the major evolutions, is essentially a staggered forward advance, executing a formation change from Wave to Reef formations. The evolution may be led from the center to change from Wave to Hidden Shoal, or it may be led from one flank to develop the Jagged Reef formation. “Breaking the Wave” is a formation change in its own right, but it is also the first stage in the formation change from Wave to Wind: after “Breaking the Wave,” ships then fall into file behind the lead vessel (the “Salt Spray” evolution) to assume a Wind formation. “Breaking the Wave” is a major evolution commonly employed by all maritime nations.



Example of “Breaking the Wave” from the center to form the “Hidden Shoal” (left), then executing the “Salt Spray” to change to a “Wind” formation

Significantly more complex are the “Fountain” evolutions, whereby a unit of ships advancing in a Wind formation change formation to form a Wave. These evolutions are the particular forte of the Mu’ugalavyáni, who employ them frequently in offense. There are two varieties of the “Fountain” evolution. First is the “Ascending Fountain” (or “Sea-Spout”), whereby an advancing unit in Wind formation redeploys to a forward-facing Wave. This is normally employed after breaking through an enemy line to engage additional enemy vessels deployed far to the rear in reserve. In the second, or “Cascading Fountain,” an advancing Wind arcs and wheels to form a backward-facing Wave. This is normally employed after a deep penetration, to engage front-line enemy ships from the rear.

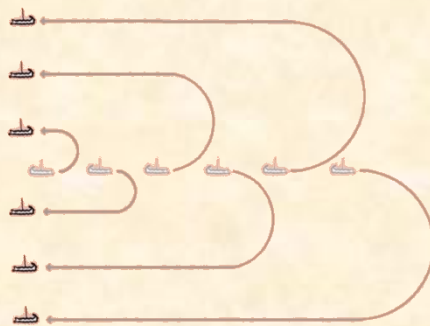


The “Ascending Fountain,” or “Sea-Spout” evolution



The “Cascading Fountain” evolution

There are many ways to execute either of the “Fountain” evolutions. Broadly-speaking, the simpler methods, which can be undertaken by less well-trained units, take more time to complete, and leave the unit disordered for longer. The Mu’ugalavyáni are masters at completing “Fountain” evolutions rapidly and in good order.⁸⁹



Example of a more complex “Cascading Fountain” evolution which requires considerable training and experience to complete effectively

The last of the common major evolutions is the “Vortex,” whereby a unit of vessels adopts the *Akbó* formation. In the “Vortex,” a unit of ships first assumes a “Wind” formation, then follows the lead vessel in an arc to form a defensive ring. Once the ring is complete, each

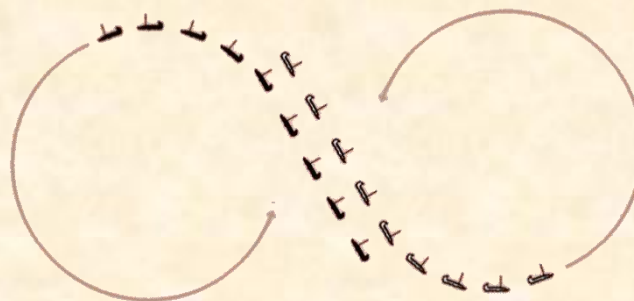
ship pivots in place to face outward. Generally, the flagship and/or other ships destined to occupy the “Eye of the *Akbó*” will either be encircled by the vortex, or will lead (or follow) the evolution and then move to the center.



The “Vortex” evolution

As with the “Fountain” evolutions, there are innumerable ways to change from one formation into the *Akbó*. The “Vortex” is perhaps the commonest, used in particular when units are forming a “Lurker in the Deep” formation prior to the start of the battle. However, vessels performing the “Vortex” evolution are vulnerable to ramming attacks, so it is often inappropriate for units already engaged with the enemy or under threat of imminent attack. In this instance, when beleaguered units attempt to form a defensive *Akbó* in the midst of an engagement, the “evolution” involved may amount to little more than a chaotic jostling for position.⁹⁰

We may close this discussion by noting an unusual variant on the Vortex first described by Kétu in her original *Musings on the Gifts to the Sea*. This, the “Parunál Vortex,” is not exactly an evolution, nor a formation, but rather a stereotypical form of naval battle associated with the smaller nations of Lake Parunál. Among these nations, as noted above, naval “battles” generally take the form of prolonged archery duels. These battles have assumed a conventionalized (some might say ritualized) character, in which the opposing “fleets” line up in single file, pass each other while exchanging missile fire, then circle back to repeat the attack until one side or the other has had enough. The effect is of two continuous Vortex-like evolutions.⁹¹



The “Parunál Vortex”

5 TWO HISTORICAL NAVAL ENGAGEMENTS

It may be instructive to conclude this treatise with a brief discussion of selected recent historical naval engagements, so as to illustrate some of the principles outlined in previous sections.

Unfortunately, and rather surprisingly, this task is more difficult than might be expected, particularly if we are to rely on recent Tsolyáni sources. The problem, oddly enough (and surely unintended), lies in Kétu hiVridáme's innovative scheme of naming fleet formations and evolutions after natural marine phenomena. By late in the reign of Arshú'u the Ever-Splendid, when Kétu's work achieved wide currency, it had become fashionable in the Tsolyáni marine legions to report their battle arrays and indeed the course of whole naval battles, in the form of abstract nature-poems, describing the interplay of wind, wave, rocks, and of course the mighty *Akbó*. This fashion continues to this day.⁹² As a result, Tsolyáni naval dispatches and after-action accounts are often so stylized that it can be very difficult to determine the actual course of events during any recent Tsolyáni naval engagements.

In order to avoid this problem, I have opted to focus on two naval battles for which we do have relatively clear descriptions. Interestingly, both occurred in the context of amphibious invasions,⁹³ and in both cases, tide and other weather conditions were instrumental in determining the outcomes.

The first is the First Battle of Penóm, arguably one of the most important naval battles of our era. Kétu hiVridáme was a participant in this battle. In her *Musings on the Gifts to the Sea*, which predates the current vogue for poetic battle accounts, she provides us with a description that, although composed in verse, does not suffer from the abstract quality of later Tsolyáni writings on the subject.

The second is a much smaller but nonetheless interesting naval action which occurred between Salarvyáni forces and Pakalayáni pirates near Keruná in Háida Pakála, in 2,293 A.S. For this, we have relatively reliable Pakalayáni accounts.⁹⁴

THE FIRST BATTLE OF PENÓM, 2,019 A.S.

The war of 2,020 A.S. included two naval engagements before the city of Penóm in southern Tsolyánu. The First Battle of Penóm occurred when a Mu'ugalavyáni invasion force arrived to invest Penóm in 2,019 A.S. The Second Battle of Penóm took place in the following year, when a Tsolyáni force from Jakálla landed and ultimately relieved the Penóm garrison.



PROLOGUE

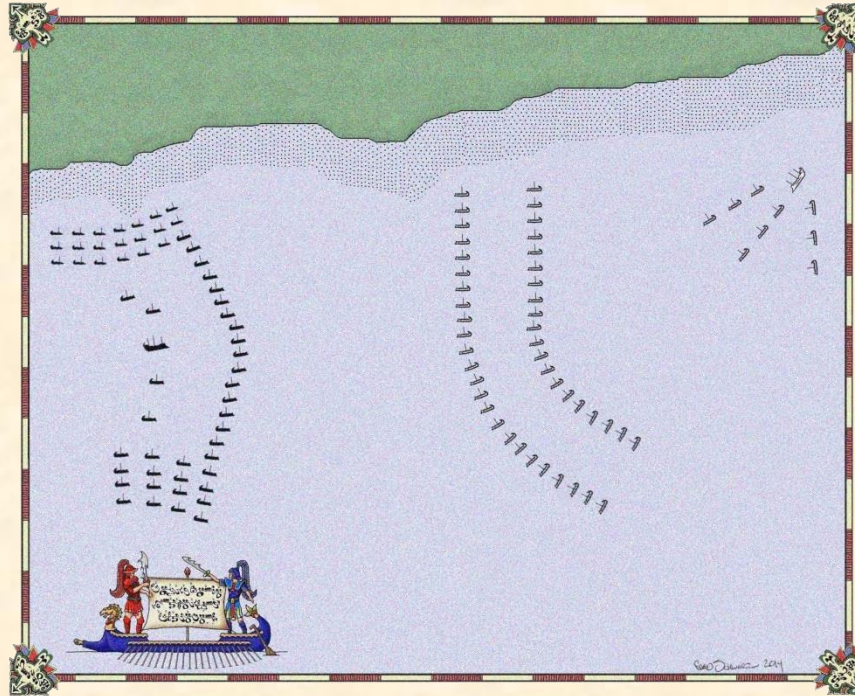
First Penóm was fought in the context of a much broader, two-pronged Mu'ugalavyáni land assault on western Tsolyánu through the Chákas beginning late in 2,018 A.S. In conjunction with this, the Red Hats undertook a bold southern offensive aimed at taking the city of Penóm by sea.⁹⁵ This southern offensive began in the spring of 2,019 A.S. with a Mu'ugalavyáni seaborne invasion of Ssámris Isle.⁹⁶ The Tsolyáni appear to have believed that Ssámris was the final objective of this attack, but in fact, it was only intended to serve as a staging area. After four weeks spent on refit and resupply, the Mu'ugalavyáni fleet set forth again on the last day of the month of Langála, making use of the weakening monsoon winds to sail east-northeast to the coast of Pán Cháka. Soon after this large force had made landfall in the eastern lee of Ngéshtu Head, Tsolyáni patrols reported that it was preparing to coast in a southeasterly direction along the Flats of Tsechélnu, clearly heading for Penóm. On the orders of the Governor, Kalikté hiSsánmirin, the Tsolyáni fleet was hastily assembled and put to sea, the two forces making contact on the morning of the second day out of Penóm, approximately 50 *Tsán* west of the entrance to Bamésa Bay.⁹⁷ The day dawned with a rising tide, mild westerly breezes and a gentle lop inshore (but a moderate to heavy swell offshore): conditions quite suitable for battle. In terms of warships, the two fleets were almost equally-matched.

THE BATTLE

Once the Mu'ugalavyáni fleet was sighted, the Tsolyáni admiral Hagárr deployed his ships in a rather conventional defensive formation, the “Lurker in the Deeps.” The main defensive formation was a double Tethered Wave, or “Riffle.” The inshore flank was tethered, more or less, to the shoreline, although the extensive shallows meant that the ships on the inshore flank could not manoeuvre too close to shore. The offshore flank, approaching the choppiest waters offshore, was slightly refused, obviously in anticipation of a Mu'ugalavyáni attack on this flank. To the rear, the flagship and a flotilla of *Qél*, deployed in a “Lesser *Akbó*” formation, formed a small strategic reserve, again in anticipation of a Mu'ugalavyáni attack on the offshore flank.

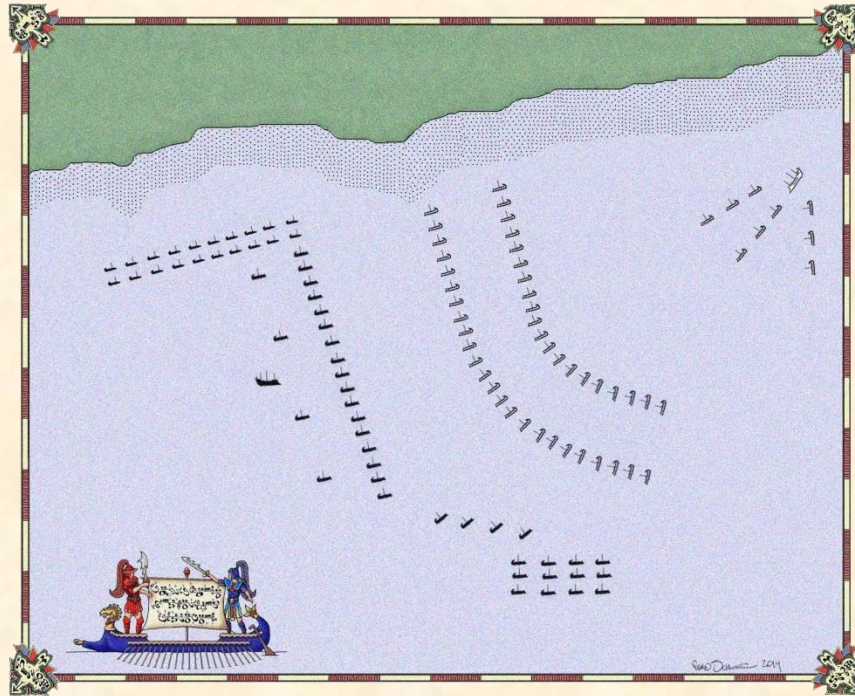
For his part, the Mu'ugalavyáni admiral, a wily and experienced *Hegléthi* named Tu'utmélish,⁹⁸ appears to have devised his strategy of attack well in advance, likely anticipating the Tsolyáni defensive formation. By the time the two fleets made contact, Admiral Tu'utmélish had already left his troop transports far behind, with a light defensive screen of *Sésba'a* (*Séscha*-class) ships. As the fleets approached, his warships, in the van, were already shaking out from their convoy columns and forming a bold weak-center “Stormy Seas” attack formation. The Mu'ugalavyáni center consisted of a single-line Inexorable Wave composed of their heaviest galleys, with the flagship (a *Nu'utlá*) and a small number of *Sa'arana* (quinquiremes and quadriremes) forming a loose reserve. The offshore flank consisted of a quadruple-file Mighty Wind formation of triremes, while the lighter biremes in the fleet (vessels of *Ssarínga*-class) were concentrated in another Wind formation, initially of

three files, on the inshore flank. The opening dispositions of the two fleets are indicated in Map 1 below.



The First Battle of Penóm Map 1: Opening Dispositions of the Fleets

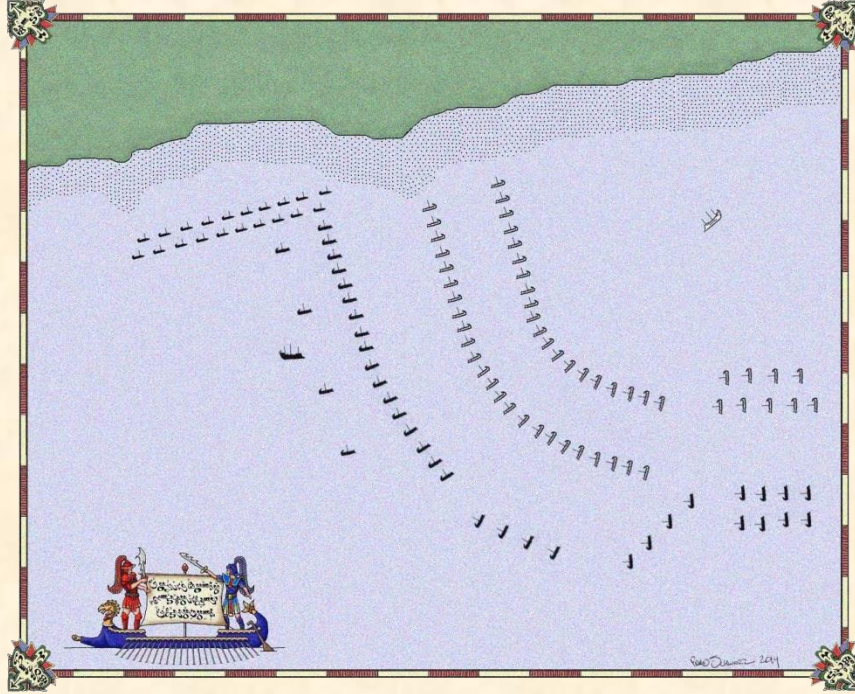
As the fleets closed, the Tsolyáni gradually advanced and adjusted their line. In part this was doubtless because it was easier to maintain their formation while advancing into the wind than to maintain a coherent formation while static. However, it was also in part due to the effect of the rising tide, which was slowly inundating the flats and creating an opening on their inshore flank. Rather than close this by dressing their line, which may have led to some disorder, the Tsolyáni chose to advance toward a sandy spit that, at least temporarily, secured their onshore flank. Meanwhile, the Mu'ugalavyáni gradually developed their attack offshore. The inshore file of the Mu'ugalavyáni offshore Wind detached to hold the Tsolyáni flank, while the remaining three Mu'ugalavyáni files battled through the choppy offshore waters in an effort to turn the refused Tsolyáni offshore flank. Through superior seamanship the Mu'ugalavyáni triremes were able to make steady progress, but the attack proceeded in slow motion, allowing the Tsolyáni to gauge their response. Meanwhile, as they advanced, the biremes of the Mu'ugalavyáni inshore flank adjusted their formation from three files to two; the Tsolyáni naturally assumed that this was to lessen the risk of the Mu'ugalavyáni inshore flank becoming enmired on the flats. The status of the opposing fleets as the Mu'ugalavyáni and Tsolyáni fleets closed is indicated in Map 2 below.



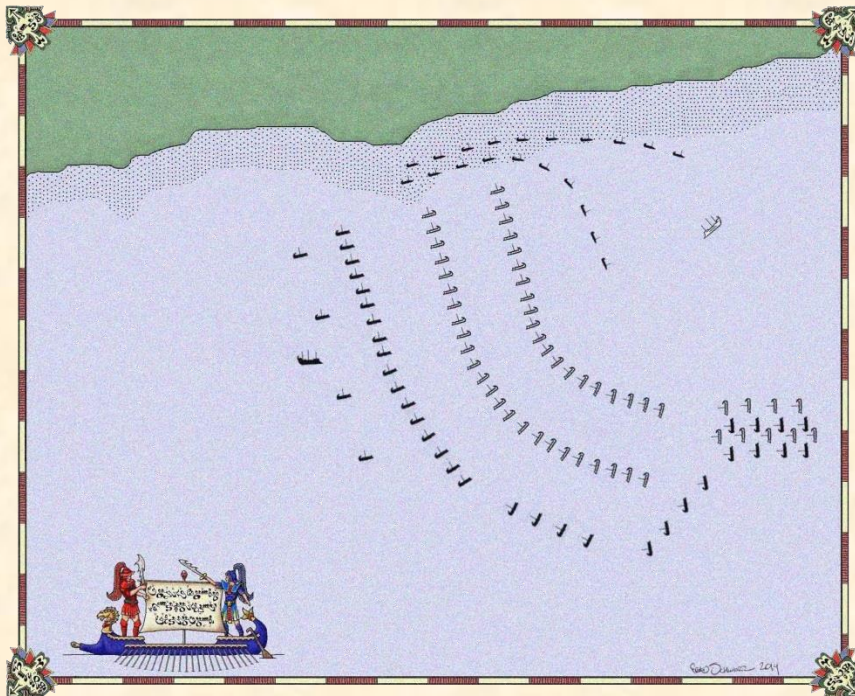
The First Battle of Penóm Map 2: The Mu'ugalavyáni Develop their Attack on the Offshore Flank

In time, it was evident that despite the rough seas offshore, the Mu'ugalavyáni would indeed be able to turn the Tsolyáni flank. The Mu'ugalavyáni detached yet another file to hold the offshore flank of the Tsolyáni main line, and the two remaining files pivoted (the “Changing Current” evolution) to form a double-line “Breaking Surf” Formation that, although somewhat understrength, posed a serious threat to the Tsolyáni rear. Admiral Hagárr thus decided to commit his reserves, the “tentacles” of his *Akbó*, to meet this threat (see Map 3 below).

At this point, the battle began in earnest as the Mu'ugalavyáni offshore flank engaged the Tsolyáni reserves. However, it now became apparent that the strong Mu'ugalavyáni offshore flank attack was only a feint. On the inshore flank, the other Mu'ugalavyáni “Mighty Wind” of biremes advanced at speed, taking advantage of the shallow draft of their smaller vessels, and also the gradually rising tide, to traverse the shallow flats that had been impassable to the heavier Tsolyáni ships. Once the Tsolyáni flank was turned, the starboard file executed a “Cascading Fountain” evolution and formed into an “Inexorable Wave” to attack the rear of the Tsolyáni main line, while the portside file continued in a deeper penetration to menace the Hagárr’s flagship. The situation at this stage of the battle is indicated in Map 4.

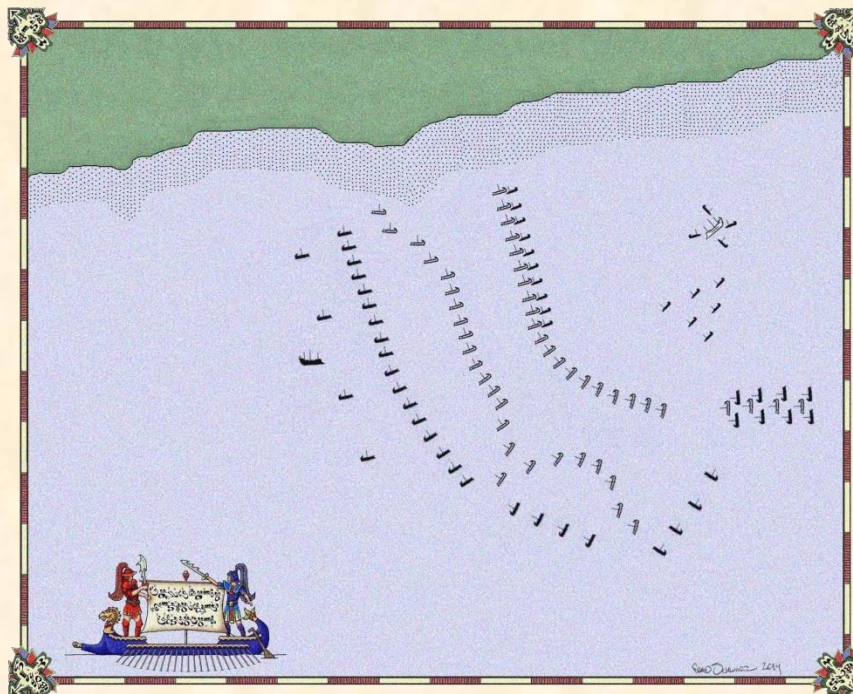


The First Battle of Penóm Map 3: The Tsolyáni Commit their Reserves



The First Battle of Penóm Map 4: The Attack by the Mu'ugalavyáni Inshore Flank

At this point, the Tsolyáni position deteriorated rapidly. The Mu'ugalavyáni were inflicting heavy losses on the offshore flank, while their inshore "Wind" attack was even more successful. One detachment of biremes executed a "Vortex" around the Tsolyáni flagship, not to form an *Akbó* but instead to surround the larger vessel and begin a series of ramming attacks. Meanwhile, the remainder engaged the rear of the Tsolyáni second "Wave" with the "Harvest of Salt Grass" and the "Thrust of Cha'ach'i." Elements of the Tsolyáni front "Wave" hastily "Broke the Wave," attempting to exploit the gaps in the Mu'ugalavyáni line with a series of "Hidden Shoal" attacks; in a few heroic isolated engagements, the Tsolyáni did manage to destroy a number of Mu'ugalavyáni vessels, but these uncoordinated attacks were unable to penetrate the line in force. The situation at this stage of the battle is shown in Map 5 below. Any hope of a break out and an attack on the Mu'ugalavyáni transports far to the rear was lost when Admiral Hagárr issued a distress signal from his now-stricken *Mrishurén*. At this point, the Tsolyáni were forced to fight to their rear in an effort to extricate their commander from his sinking flagship. The remainder of the Tsolyáni fleet was substantially lost in this effort, although the crew of the *Mrishurén* was rescued, and the few surviving *Qél* managed to hoist sail and beat a hasty retreat back to Penóm.



The First Battle of Penóm Map 5: The Tsolyáni in Disorder

AFTERMATH

Four days later, Admiral Tu'utmélish successfully landed the Mu'ugalavyáni invasion force near the entrance of Bamésa Bay, and the siege of Penóm commenced. The landing was unopposed. After the First Battle of Penóm, the Tsolyáni western fleet was a spent force, and although there were some minor skirmishes in Bamésa Bay,⁹⁹ there was no major naval action during the months that Penóm was besieged. While the First Battle of Penóm was a decisive Mu'ugalavyáni victory, the siege that followed was hard-fought, and ultimately failed. The Mu'ugalavyáni took most of the city, but the Tsolyáni garrison held out in the Governor's citadel until the following year, when a relieving force arrived by sea from Jakálla.¹⁰⁰ The Mu'ugalavyáni besieging force embarked and departed shortly before the city was relieved, and the Tsolyáni pursued. The Mu'ugalavyáni rearguard flotilla fought the Tsolyáni vanguard at the Second (naval) Battle of Penóm,¹⁰¹ holding just long enough to allow the Mu'ugalavyáni fleet to withdraw in good order.

NAVAL ACTION AT KERUNÁ, 2,293 A.S.

We are fortunate to have detailed accounts of a relatively small naval action which was fought between Salarvyáni and Háida Pakalayáni flotillas on the outer approaches to the Pakalayáni city of Keruná in 2,293 A.S.

PROLOGUE

Piracy is endemic along much of the south coast of Salarvyá, and along the wide "strait" that connects the Deeps of Chanayága with the Great Mretténko'u Deep, the most notorious and incorrigible pirates are those of the Pakalayáni "Five Ports:" Keruná, Gorulú, Oldún, Nsí and Pakála.¹⁰² Pakalayáni pirate raids are not normally mounted directly from their home ports, which are too far distant (and separated by a difficult strait crossing) from the coastal Salarvyáni shipping lanes. Rather, Pakalayáni brigands customarily establish bases on the wilder stretches of the coast of Salarvyá, often on small islands, from which they prey on Salarvyáni commercial shipping for a year or two (or sometimes longer) before returning to Háida Pakála with their loot. Encounters between Pakalayáni pirates and Salarvyáni ships thus normally occur in Salarvyáni waters.

Often, the prizes taken by the Pakalayáni carry bulk cargoes of a mundane nature. However, in the winter of 2,292 A.S. a flotilla of pirates from the Pakalayáni city of Keruná happened upon a most unusual catch: an opulent galley conveying thirteen priestesses, along with a rich cargo of coin and religious artifacts from the treasury of the Temple of Shiringgáyi in Chame'él. Word of this outrage gradually spread across western Salarvyá, and eventually reached the ears of one Khukhtésh Nggurrétchu, a vassal of the Hrúchcháqsha family of Chame'él, who had but recently succeeded his clan-uncle to become lord of Dmór on Gunúrum Isle. Deducing the likely route of the Pakalayáni ships, Lord Khukhtésh hastily



assembled the small Gunúrum fleet and made for nearby Dlantlá in hopes of intercepting them. Unfortunately for Lord Khukhtésh, the Pakalayáni base near the town of Be'ésa was all but abandoned, the Pakalayáni having set sail for Keruná several weeks previously. After torturing and impaling every Pakalayáni he could find, the ambitious young Lord Khukhtésh immediately set sail for Chame'él with a bold and risky proposal to present to his liege-lord Shchéggish Hrüchcháqsha.¹⁰³ What Lord Khukhtésh proposed was to lead a Salarvyáni army to the very gates of Keruná and to make an example of them: to besiege the city, retrieve the priestesses (and the treasure), raze Keruná to the ground, and put an end to the depredations of the Pakalayáni once and for all. Clearly impressed by his young vassal, Lord Shchéggish readily agreed,¹⁰⁴ granting him a *Nchésh* of Hrüchcháqsha troops, along with the ships needed to carry them.

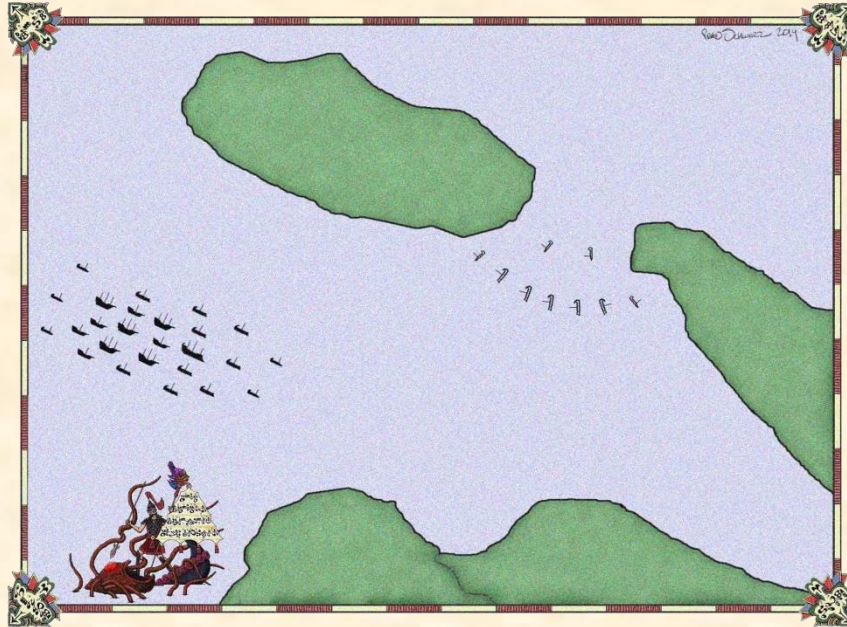
By the onset of the reverse monsoon in the autumn of 2,293 A.S.¹⁰⁵ the preparations were complete, and Lord Khukhtésh's convoy of transports and warships set sail from Gunúrum, stopping at Dlantlá for provisions, and crossing the Strait in fair winds. Lacking a Pakalayáni pilot, and somewhat at the mercy of the ocean currents and prevailing winds, Khukhtésh made landfall along the Flats of Gyógma, some distance west of Keruná. Thence they began to coast eastward along the noxious swamps and mangroves of Gyógma toward the deep embayment called "Jrékka Sound" and the approaches to Keruná city.

For their part, the petty princes and the *Hín* ("king") of Keruná were surely alarmed when their *Aboggyá* subjects reported the arrival of a Salarvyáni fleet in Pakalayáni waters. Few Pakalayáni ships could be mustered to counter this threat, as most were far to the north, raiding along the coast of Salarvyá. Nevertheless, the princes of Keruná assembled what ships they could and dispatched them to meet the Salarvyáni invasion force. The two fleets made contact a little after dawn, in a light northerly breeze with the tide high and falling, amongst the islands at the entrance to Jrékka Sound. The Salarvyáni fleet was by far the larger of the two, in part because of the number of transports in the convoy, but even numbering warships alone, the Pakalayáni pirates were clearly outnumbered.

THE BATTLE

The Salarvyáni fleet was rounding the headland, preparing to enter Jrékka Sound, when they sighted the Pakalayáni force. The motley little flotilla of Keruná was deployed to the north in a "Tidal Bore" formation,¹⁰⁶ a double-line Wave spanning a tickle¹⁰⁷ and anchored between two islands: Jrékka Island to the west, and the larger Nijái Island to the east. The Salarvyáni were still in a "Wind" formation (column of convoy) at this point. The opening dispositions of the two fleets at first contact are indicated in Map 1 below.

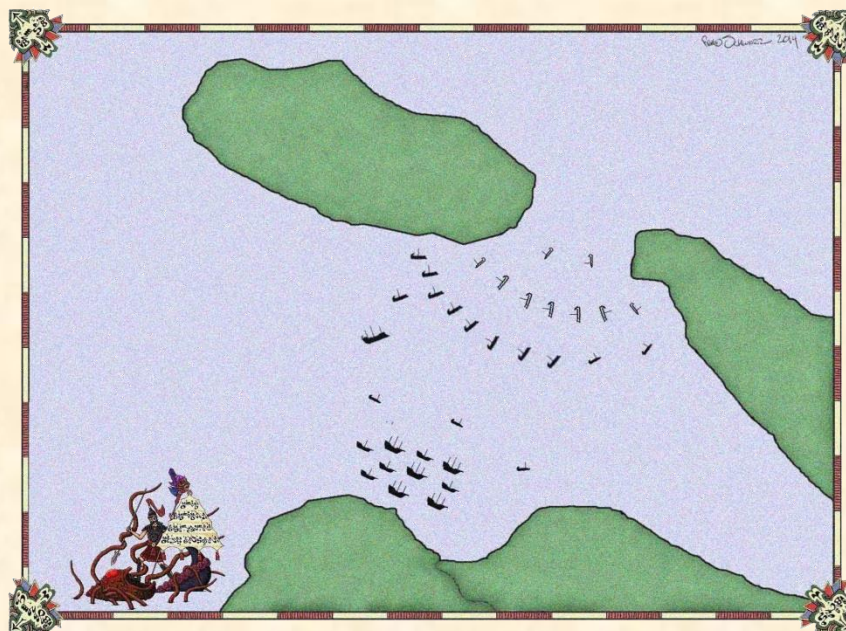




Naval Action at Keruná Map 1: The Opening Dispositions of the Fleets

Although the deployment of the pirate flotilla did not actually block passage to Keruná, Khukhtésh was well aware that he could not simply hope to bypass the Pakalayáni without risking a close attack on the flanks of his convoy or worse, a pirate force that might harry the rear of the convoy all the way down the sound to Keruná. Consequently, he chose to engage, hoping to eliminate the threat entirely.¹⁰⁸

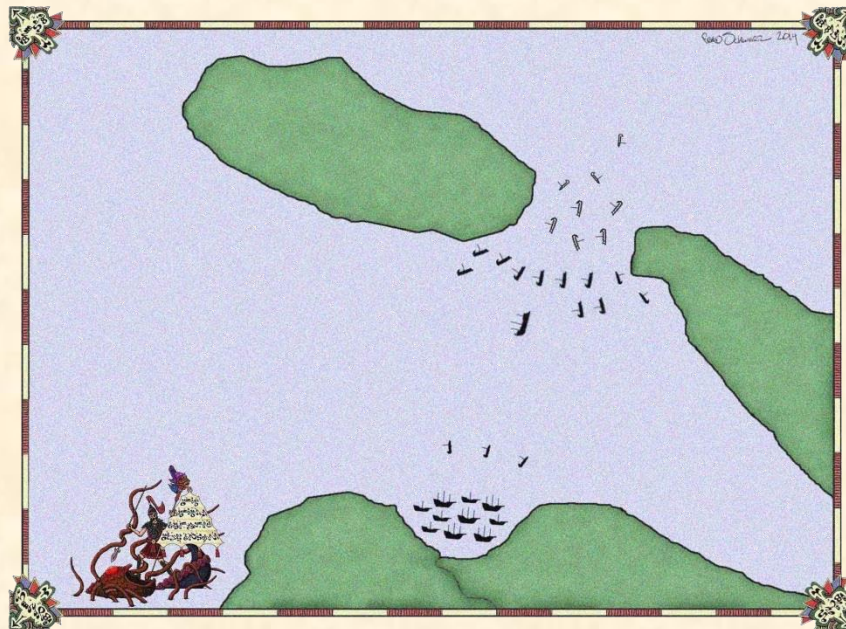
Initially, Lord Khukhtésh ordered his transports, with a light escort, to anchor in a small cove on the southern shore of the sound until the outcome was decided. Thereupon, the bulk of his warships pivoted to form a single-line Wave facing the smaller Pakalayáni force. The Salarvyáni formation was essentially a reflection of their opponents' deployment: a "Tidal Bore" formation, with both flanks anchored by terrain. Once within range, the Salarvyáni began their attack with a barrage of fire from ballistae and onagers, in order to soften up the Pakalayáni defense, and perhaps to create some openings in the pirates' front-line "Wave." Map 2 below indicates the deployment of forces at this stage of the battle. The transports, escorted by three biremes, are just entering the cove, while the warships have nearly completed their "Wave" formation. At this point, the Salarvyáni artillery has just begun to open fire.



Naval Action at Keruná Map 2: The Salarvyáni Attack

For a time, the battle settled into an artillery duel, the Salarvyáni firing at will with heavy machines (the “Tsántsa’s Pan-Bread” attack), and the pirates answering as best they could with their light gunwale-mounted ballistae (the “Flock of Vringálu” tactic). In this exchange, the Salarvyáni naturally had the advantage, and Lord Khukhtésh had grounds to be well pleased with his situation, particularly when one of his triremes managed to hole and sink a Pakalayáni bireme with a single shot. He must, however, have been startled by the suddenness with which the Pakalayáni formation appeared to collapse, for not long after, the pirate fleet abruptly withdrew to the north, at extraordinary speed, and in considerable disorder.

Not wishing to lose the initiative, Lord Khukhtésh signaled his warships to advance at maximum speed into and through the tickle to pursue and destroy the disordered pirate fleet. The situation at this stage of the battle is indicated in Map 3. The Pakalayáni are backing water swiftly toward the north, and the Salarvyáni warships are crowding into the tickle in pursuit. Meanwhile, to the south, the Salarvyáni transports and their escort have anchored in the cove in a defensive “Lesser *Akbō*” formation.



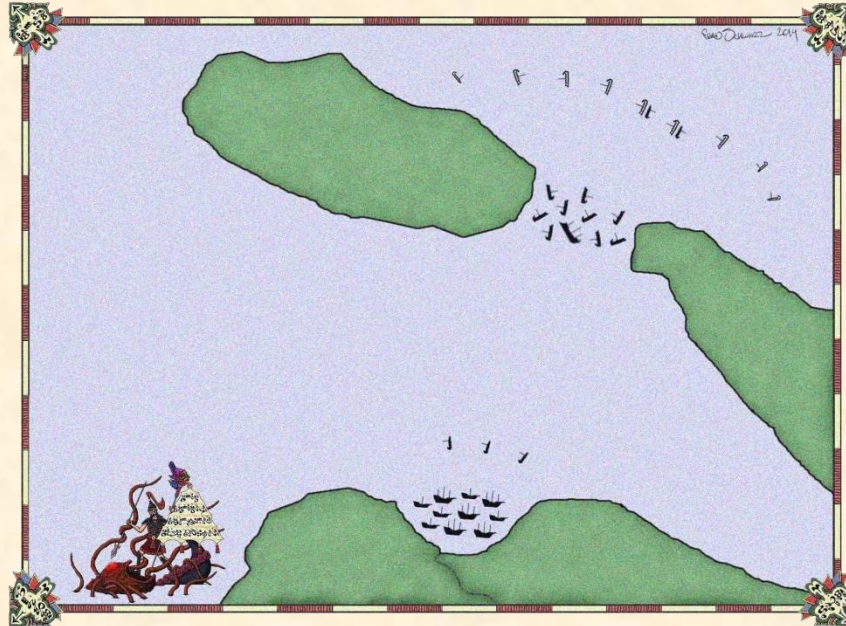
Naval Action at Keruná Map 3: The Pakalayáni Withdraw

Soon enough, but rather too late, Lord Khukhtésh discovered the true nature of the Pakalayáni battle plan: the captains of Keruná had in fact laid a rather devious trap for Salarvyáni.

Making passage as he was in unfamiliar waters, Lord Khukhtésh was unaware of the speed, strength and magnitude of the tides in Jrékka Sound, particularly in the tickles and channels between the principal islands. The Pakalayáni had quite deliberately planned their deployment in the tickle the previous night, fully aware that at some point in the battle, the falling tide, racing through the tickle, would suck their fleet out to sea. The pirates were surely planning that the Salarvyáni could not resist advancing to pursue, and that they too would be sucked into the tickle; however, the rapid tide that would pull the Pakalayáni out to sea would, in a matter of minutes, expose shoal water between the islands and cause the heavy Salarvyáni warships to become grounded.

It was a bold plan, a variant of the classic “feigned retreat,” and one predicated on perfect timing and good fortune, but in the event, that is exactly what happened. The heavy Salarvyáni galleys advanced at speed until the tide caught them and sucked them further into the tickle to become shoaled on the rocks and boulders within the channel. Only the two lightest Salarvyáni biremes escaped this fate, swept onward amongst the Pakalayáni ships in the open water of the bay. Isolated and outnumbered, both of these ships were eventually overwhelmed and captured by the pirates of Keruná. Meanwhile, the Pakalayáni slowly

reformed, adopting another, more open, “Tidal Bore” formation north of their previous position. The situation of the unfortunate Salarvyáni at this stage of the battle is shown in Map 4.



Naval Action at Keruná Map 4: The Salarvyáni Become Shoaled

The Salarvyáni position was not immediately hopeless, but neither was it rosy, with no option but to hold out until the next high tide would raise their fleet from the shoals. Fortunately for Lord Khukhtésh, his stranded vessels were still able to fire their artillery, and he ordered a prolonged, defensive fire aimed at keeping the Pakalayáni at bay until his ships were freed. For their part, the pirates bided their time, maintained their formation, and did not move off to attack the transports anchored along the shore. When, after many long hours, the tide began to turn again, the Pakalayáni fired their two captured prizes and let the current carry them into the tickle amongst the Salarvyáni ships, setting several of them alight.

Eventually, Khukhtésh was able to extricate a number of his triremes intact.¹⁰⁹ However, his remaining warships were clearly not adequate to defend the fleet for the remainder of the expedition. Reluctantly, he decided he must abandon the whole enterprise and return home.

AFTERMATH

Lord Khukhtésh's journey home was an adventure in its own right, and not a happy one. The currents and the winds denied him direct passage across the strait to Dlantlá, and instead his little fleet was forced to track eastward along the Háida Pakalayáni coast, beset in turn by the fleets of Keruná, Gorulú, Oldún, and Nsí, until he reached the Great Mretténko'u Deep, and finally crossed on the current sweeping northward from the Shoals of the Akhó. By the time Lord Khukhtésh reached the safety of Peléis on the coast of Salaryyá, his "fleet" had been reduced to a single battered sailing ship. Needless to say, Lord Khukhtésh's venture failed to bring him the prestige he sought.



6 CONCLUDING REMARKS

I must confess that I find it challenging to bring together the diverse threads of this monograph and neatly tie them together in a unifying concluding statement. Perhaps, if there is a central thesis to the work at all, it is simply this: that there is more to Tekumeláni naval warfare (and indeed, maritime matters in general) than the written legacy of Professor Barker provides.

At the time of this writing (January 2016), it is just over forty years since the Professor first presented Tekumel to the public in the form of the roleplaying game *Empire of the Petal Throne* in 1975. In the following years, additional works full of Tekumeláni flavour, such as the *Book of Ebon Bindings* (Barker 1978b) and the *Tekumel Sourcebook* (Barker 1983) contributed greatly to making Tekumel not only one of the first published settings for roleplaying games, but one of the richest and most magnificent. Rich and magnificent, but not, of course, complete.

And how could it be? The Professor himself made it clear that there were many aspects of his setting that he would not elaborate because he did not have the time, or because he felt he was unqualified (or simply uninterested). He was prepared to leave many things to others. As he declared in the introduction to the *Sourcebook*: “You have bought MY Tekumel. Now make it YOUR Tekumel.”¹¹⁰ The gaps are acknowledged, and we are invited to fill them for ourselves. Especially now that the Professor himself has passed away, we have little choice but to carry on with “our” Tekumel(s).

And that is precisely what I attempt in this essay, for one very specific aspect of the Tekumel setting.

Looking back, I realize that as of 2016, it is also more than fifteen years since I began work on this little monograph. It has been a long and rather fitful process, but I hope the result includes some of the richness, and at least a little of the flavour of the setting. Rich and flavourful I hope, but not, of course, complete.

So what are the principal gaps that remain to be filled?

Starting with the gaps within this essay, I must allow that I made it a priority to finish this in 2015, the year of the fortieth anniversary of the publication of *Empire of the Petal Throne*. Obviously, I did not quite succeed, but as a result of the attempt, there are a few elements I had intended to include but decided to drop, in the interest of completion. There aren't actually very many of these: one or two pieces of artwork that I feel would add to the whole; and also a few more historic battle accounts. The section I most wish I had had time to add is an account of the Second Battle of Penóm in 2,020 A.S. It is possible that I will find time

to add the missing pieces, in which case I will release a second edition of this essay. However, I do have another Tékumel study I am anxious to return to, and it is quite possible that this present edition will be the first and last. It is also possible (nay likely!) that this essay contains errors that will be brought to my attention in the coming months and years. Again, if there is time, I will respond with a second edition, but then again, I may not.

There are also gaps that will never be addressed in this work: naval warfare beyond the Five Empires, for example, or a deeper exploration of the non-human fleets of Tékumel. These are potentially vast subjects that I must leave for others to elaborate upon, if they wish. Perhaps there is information in the Professor's archives that will one day make these tasks easier. Another gap concerns the intimate relationship between naval warfare and maritime commerce and industry. I would very much like to develop this theme and examine the interplay between ocean-going trade, piracy, and the fishery in the Five Empires. However, these subjects warrant another monograph of their own. I hope that I will be the one to write it, some day.

Third, there are gaps in the availability of resources with which to game naval warfare on Tékumel. From the outset, I envisioned this study as an aid to naval wargaming, but it is not, nor is it intended to be, a set of naval wargame rules. At present we lack a set of Tékumel naval wargaming rules; any set of ancient/renaissance naval rules could be modified and pressed into service, but a set specifically for the Tékumel setting would be preferable. It is my understanding that fortunately, a set of Tékumel naval rules may be in development at this time. We also lack the ships with which to game these battles in miniature. Again, ancient/renaissance vessels could be employed, but ships with more Tekumeláni flavour would be preferable. At present, hobbyists are on their own in this regard.

In closing, I would like to acknowledge the support for this project expressed by the visitors to my blog. In particular, I would like to thank the three individuals who have read and commented enthusiastically on earlier drafts of this essay. These include, John Till, developer of the FATE of Tékumel game system. Another is Jeff Berry, the ever-knowledgeable host of *Chirine's Workbench* and author of the upcoming *To Serve the Petal Throne*. The third is Kim Kuroda, whose *Butrús Gazetteer*, a truly inspiring work, has set an extraordinarily high standard for Tékumel fan-non-fiction: a standard the rest of us can only hope to approach.

ENDNOTES

It is hoped that fans and players of M.A.R. Barker's magnificent world of Tékumel may find it useful to adapt or adopt the material herein for their own uses, but it must be stressed again that this essay is not "canonical" Tékumel, nor is it intended to be. For instance, as a matter of personal preference, no account is taken here of any canon events post-dating the reign of the 61st Seal Emperor Hirkáne "The Stone Upon Which the Universe Rests." Nor can the author claim to have consulted all available canon source materials.

Broadly-speaking, the canon sources pay little attention to nautical matters in the Five Empires; Maritime trade and naval warfare are generally covered sparsely, or only with passing reference. This leaves great scope for non-canon writing and speculation to fill the gaps, as I have tried to do in this essay. The following endnotes are intended in part to assist the reader in distinguishing the non-canon fancies which form the bulk of this essay from the canon "facts" upon which they are constructed.

- ¹ Shargún and his account are non-canon, as is the Clan of Black Tíu. The Clan of Green Malachite is canon however (see Barker 1983: 46), as are most of the toponyms which appear in this essay.
- ² Here canon fact may be somewhat elusive, and the distinction between canon and non-canon somewhat ambiguous, one of opinion and impression more than fact. Earlier source materials (e.g. Barker 1975) stress the difficulties of maritime travel on Tékumel and downplay the significance of ocean-going trade. Naval warfare is often equated with amphibious invasion and its significance similarly, though more subtly, downplayed because of these same difficulties (e.g. Barker Blue Room post 1040: <http://tekumel.com/downloads/blueroomarchive/brvol35.txt>). Yet at other times, it is indicated that these difficulties have been overstated and that maritime trade (though perhaps not naval warfare as such) is in fact much more important than previously implied (e.g. Barker Blue Room Post 172: <http://tekumel.com/downloads/blueroomarchive/brvol06.txt>). Furthermore, the Sourcebook (Barker 1983) strongly implies that certain of the Five Empires (other than Tsolyánu) have quite active maritime interests. I have chosen to reconcile these conflicting views by adopting the most "optimistic" end of this spectrum of views, particularly as it applies outside of Tsolyánu. I thus see the "pessimistic" view of ocean-going trade and warfare as reflecting a uniquely Tsolyáni-centric "landlubberly" worldview.
- ³ The Llyáni Empire, the sparseness of its surviving records, and "hints of wars with the Hlúss" are of course all canon facts (Barker 1983).
- ⁴ The Three States of the Triangle are canon of course (Barker 1983), as is the existence of Shén records of their alliance with the Shén in a series of wars against the Hlúss. From the latter, the "far-flung maritime connections" of the Three States may be inferred, though actual canon references are lacking. All further details regarding the Shén records, the alliance, and the conduct of the Hlúss wars are non-canon.
- ⁵ The Dragon Warriors are canon (Barker 1983), but all references here to ocean-going trade, piracy, and naval warfare are non-canon inference.
- ⁶ The Fisherman Kings, beginning with Hó Etéhtlu, the 12th son of Gámulu, are canon historical figures (Barker 1983), and their navy of small, fast galleys, the "black ships," marks the first canon reference to naval warfare in Tekumeláni history. That Hó Etéhtlu used this fleet to capture Thayúri is canon fact as well, though the additional details provided here are not.
- ⁷ As far as I am aware, the origins of the Sea-Kings of Ke'ér have not been described, or even mentioned, in any canon sources.

- ⁸ There is no canon support for my suggestion that *Qél-* and *Zirunel*-class ships, or naval artillery, were first developed during the First Imperium.
- ⁹ The brief war between the Bednálljan Kings and the Shén is a matter of canon fact (Barker 1983). That the battles were fought primarily at sea is a non-canon inference.
- ¹⁰ It is indisputable that the First Imperium marks the time when non-humans in general first began serving in human legions in significant numbers (Barker 1983: 8-9). That this included the Swamp Folk as well is not specifically indicated in canon history but may be inferred. The skill of the Swamp Folk as mariners is canon, as is the fact that they serve with distinction in the Mu'ugalavyáni fleets today. What this means specifically, in terms of a distinctive, so-called *Hegléthi* style of naval combat, is wholly my own non-canon contribution; in fact, Professor Barker has denied that there is any distinctive *Hegléthi* fighting style at all (Barker's post in the Yahoo Tsolyani Language Group: <https://groups.yahoo.com/neo/groups/tsolyani/conversations/messages/110>), although he may have been referring to hand-to-hand combat.
- ¹¹ The Priestking Dhárumesh Mssá II is a canon historical figure (Barker 1996: 17); any naval action taken against the Hlúss during his reign is a non-canon addition on my part. The notion that naval warfare saw little new development during this period but was formalized and codified is also non-canon; it is based partly on my impressions of an Engsvanyáli love of formality and codification, and partly on the fact that the best-known manuals of naval warfare date from this period.
- ¹² Khuoláz and Mshúruish and their respective manuals are mentioned in the Sourcebook (Barker 1983: 81). Kéttu hiVridáme and her more recent commentaries are my own non-canon addition.
- ¹³ The growth of piracy (and/or privateering) during the Time of No Kings, and its subsequent decline in the Second Imperium, are non-canonical inferences from the historical record.
- ¹⁴ Here we reach a central tenet of this essay. I argue that there are essentially five major modes of naval combat (manoeuvre, melee, missiles, machines, and magic), and that each of the Five Empires has a particular traditional strength in one of those modes. This is nowhere indicated in canon sources, it is simply a thesis I propose. The particular national strengths described in these paragraphs, however, are at least partly derived from national characteristics described in canon sources. The most obvious is that the Livyáni strength should be in the use of magic in naval warfare. The particular Livyáni skills in sorcery are widely attested in canon sources, and this includes military magic (e.g. Sutherland 1977), so it seems utterly natural to extend this to include naval warfare. As for Mu'ugalavyá, it is often stressed that their *Hegléthyal* are especially skilled mariners, and that their skills are valued in the Mu'ugalavyáni naval fleets. It is also noteworthy that the Mu'ugalavyáni are alone among the Five Empires in listing legions of "sailors" in their orders of battle (Barker 1977b). Again it seems natural to infer that the Mu'ugalavyáni should be particularly strong in manoeuvre modes of naval combat. The Tsolyáni strength in melee combat at sea is less firmly based, but implicit in numerous canon sources. It appears that Tsolyánu maintains a relatively "small navy" (Barker 1981) and in fact, we could go further and say Tsolyánu technically has no navy at all. Their fleets, including the Squadrons of Tlanéno the Steersman and the Flotilla of Hagárr of Paránta, appear in the Tsolyáni orders of battle as legions of "marines" (Barker 1977b); apparently their ships are incidental to the marines they carry. Add to this the "pessimistic" view of nautical matters discussed in endnote 2 above, interpreted as part of a peculiarly Tsolyáni terrestrial worldview, and it seems appropriate to conclude that the Tsolyáni, like the Romans of ancient earth, being weak in naval combat *per se*, prefer to transform sea-battles into "land battles at sea" by the use of marines. On northern oceans, it is not difficult to imagine that tactics requiring the use of large galleys (and stable fighting platforms) are problematic, so the Yán Koryáni are inferred to rely on small-arms missile fire, as are most of the other smaller, less-developed naval powers, such as those bordering Lake Parunál. This leaves the Salarvyáni, who are granted expertise in naval artillery more or less by default.
- ¹⁵ The *Gurék* of the Mariners of Hekuúma is a canon Yán Koryáni unit of marines (Barker 1977b). That it is composed of the combined fleets of Yán Kór City, Chudrák and Ítl, and that it was recently created by Baron Áld, are my non-canon suggestions.
- ¹⁶ The same (non-canon) comment could be made of the freshwater fleets of the Five Empires as well. Compared with their often-larger sea-going cousins, the river galleys of Tsolyánu, Mu'ugalavyá, Salarvyá and Livyánu are particularly sleek, graceful, and beautiful vessels.
- ¹⁷ The recent employment of small galleys in the Nyémesel Isles against Pakalayáni raiders is canon (Barker 1983: 83). The idea that in this matter the priests of Mrettén have received Salarvyáni assistance is a reasonable conclusion but not

attested in canon sources. The assertion that the traditional watercraft in the archipelago is the war-canoe is wholly my invention but apparently consistent with canon (Jeff Berry pers. comm.).

- ¹⁸ For example, Barker 1975: 64, and Barker 1983: 64, 83. Everything in this paragraph is canon except for my suggestion that specialized naval transport ships do not exist.
- ¹⁹ The diversity of Tekumeláni ships is suggested in canon sources (e.g. Barker 1983: 64), though elsewhere, strong regional preferences are indicated for military vessels, such as the normal preference for lateen-rigged sails on the smaller galleys except in Livyánu (Barker 1983: 83). It is also indicated that the majority of Tsolyánu and Mu'ugalavyáni ships are clinker-built (Barker Blue Room post 226: <http://tekumel.com/downloads/blueroomarchive/brvol08.txt>) However, I have opted to stress the diversity. The remainder of this section on naval architecture is non-canon except where indicated.
- ²⁰ Sails with battens (horizontal “ribs” which allow the sails to be reefed almost like a Venetian blind) were commonly associated with Chinese junks on Earth. Several of the ships shown on the box cover of the original Empire of the Petal Throne game (Barker 1975) clearly have battened sails. This delightful illustration, which happens to show a number of ships moored at Béy Sü on the Mssúma River, particularly inspired me to stress diversity when characterizing Tekumeláni naval architecture.
- ²¹ The Tsolyáni terms, as well as *Nu'utlá* and *Cháosaž*, are from well-known canon sources. The remainder are non-canon additions. Certain classes do not exist in all fleets. Many of these terms are clearly cognates, suggesting common Engsvanyáli (or Khíshan) origins. Of interest are the Mu'ugalavyáni terms *Kbí'íla* and *Tbakbí'íla*, for light and heavy triremes, respectively. Also noteworthy is the pair of related Yán Koryáni terms “*Sésba*” and “*Sežhák*.” The former refers to the indigenous open longship of the northern oceans and is derived from the common Engsvanyáli term for a small aphract oared vessel. The latter term refers specifically to the “southern” small galley type, and is a loan-word derived from the Tsolyáni. The same observation may be made about “*Surgén*” and “*Surgánta*.” Merchant triremes on the southern oceans are generally referred to by the same term as their military equivalents (*Qél*, *Hekké*, etc.). Finally, we may note that the common term for a small merchant roundship (“*Hrí*” in Tsolyáni) appears to be named after Héru, a city in Salaryá. Presumably this vessel class was once particularly associated with this ancient port.
- ²² Since *Hláka* will not serve at sea, reconnaissance in all of the Imperial fleets is normally undertaken by ships, often of the smaller size-classes.
- ²³ These signal flags are ideographic rather than phonetic. They cannot be used to “spell” words, although sequences of pennants may be used to “write” complex commands or information. For example, a sequence of three pennants might be used to express “starboard flank squadron” + “hidden shoal formation” + “immediately,” while another sequence expresses “30 [enemy] ships” + “ten *tsán*” + “north.” Individual pennants may express advice or warnings, e.g. “shoal water here,” or “fresh water found,” or “disease on board,” or may identify the intended recipient of the message. Moreover, there is no international “language” of signal flags. Regrettably, even such universal warnings as “plague-ship” or “mayday” have no fixed symbols within the signal-flag system. In fact, even within fleets, the meanings of signal flags are not permanently fixed, but rather, change from month to month or from one expedition to the next. At regular intervals, or in advance of a mission, the admiral or commodore and his flagship kite-flier will determine the pennant values and circulate the information among the vessels under command. This is largely done for security reasons, and as might be imagined, the Livyáni are particularly secretive about the true meanings of their signal flags. It should be noted that none of this information on kite signaling is derived from any canon source.
- ²⁴ The “Kite Commander” is usually a junior officer of high status, serving this role as part of his or her rise through the ranks to command. The marine who actually flies the kite is more often an older person, a junior officer of lower status but with long experience. For this individual, the rank of kite-operator is likely the pinnacle of his career, the highest rank he can expect to achieve in service, but it comes with some prestige and a rather significant stipend. Usually he is also the serving trumpeter. The following (non-canon) Tsolyáni terms may be of interest:

<i>Güdrublássatokoi</i>	kite-flier	(lit. “He who flies the silk”).
<i>Güdrublássuharètokoi</i>	kite-flying-commander	(lit. “Commander of the silken bird”)
<i>Güdrublássukéb</i>	signaling kite	(lit. “Silken Bird,” a common Tsolyáni term for kites in general)
<i>Khéshchal</i>	signaling kite	a colloquial Jakállan term for the signaling kite, named for its billowing streamer of signaling flags, not unlike the tail-plumage of the <i>Khéshchal</i> -bird.



- ²⁵ Provisioning at sea invariably relies on preserved foodstuffs. Root crops are vulnerable to rot, but most cereals are suitable, being both dry and light. *Dná* is employed in a variety of forms, including raw flour, dried noodles, and hard-baked flatbreads. Reconstituting these into edible food items naturally requires both fresh water and heat. *Yáfa* is also dry and light, and in some districts, is an important ship-board grain, although it may only be carried in limited quantities; if it does get wet, *Yáfa* will expand significantly, and can cause the hull planking to separate at the seams. For protein, beans and pulses are common, as are various types of *charchi* or jerked meat, along with green-cured fish and fermented fish pastes. Dry-salted split fish (i.e. the *bacalao* of Earth), which is light and easily de-salted, is a staple of shipboard provisioning.
- ²⁶ In truth, it is almost impossible for a large fleet to live entirely “off the land.” For this reason, a large fleet will almost invariably be accompanied by slow, bulky merchant craft laden with supplies. Even small squadrons on patrol may include one roundship to carry provisions.
- ²⁷ For approximate Tsolyáni nominal fleet sizes, see Barker 1981: 81-82. For the marine strengths of each vessel class, see Barker 1975: 64 and Barker 1983: 83.
- ²⁸ The calculus here is perhaps rather obscure. We know the strengths of the two Tsolyáni marine legions, and we know the approximate number of marines assigned to each class of vessel (except for the *Mrisburén* for which we must guess a complement of approximately 200 marines). Based on these numbers, if we were to assume that the “average” Tsolyáni naval vessel is a *séscha* (the smallest class) with perhaps 20 marines on board, then the fleet would total approximately 690 ships. This is close to the estimate of 700-800 for the entire fleet (although it is still short), but since the *séscha* is the smallest class, the only way to reach this strength would be to conclude that *all* Tsolyáni naval vessels are *seschayál*, and that the larger vessel classes do not exist. This is not plausible and conflicts with other sources. We are left with the inescapable conclusion that the Tsolyáni fleet is smaller than the sources indicate. Two questions naturally follow: how much smaller? And how do we explain the discrepancy?

Let us address the first question first. If we assume instead that the average Tsolyáni vessel is a *sriigánta* (the second-smallest class), then the total Tsolyáni navy achieves a strength of approximately 460 vessels. If, on the other hand, we assume that the median (and perhaps modal) vessel class is the *Qél*, and that 1/3 of the marine strength is assigned to *Qéhyal*, with another 1/3 assigned to the larger *zirunehyál*, and the final 1/3 to smaller *seschayál* and *sriigántayal*, then we again reach a Tsolyáni naval strength of approximately 460 ships. I prefer to believe that this correspondence is not coincidence, and that the effective strength of the Tsolyáni navy is close to this value.

How do we explain the discrepancy in our sources? As we have seen, one source indicates a navy of 700-800 ships, while the documented strength of the marine legions could not possibly man a fleet this size, and indicates a much smaller effective strength. I choose to explain this by suggesting that the larger figure is a nominal strength, but that a large percentage of the fleet is beached for refit (or is simply rotting into oblivion) and is not seaworthy at any given time. My proposed effective strength of ± 460 ships would have us to believe that some 40% of the fleet is unserviceable at any given time. This sounds like a rather poor level of maintenance of the fleet, and I suspect there is some truth to this. My impression (which I unfortunately cannot presently support with references at this time) is that some historic navies on Earth, such as the late-medieval/early-modern Ottoman fleet, periodically had equally dismal maintenance records.

- ²⁹ Having established the approximate frequencies of each vessel class in the Tsolyáni navy, it is fairly easy to infer their distribution. We know that the larger of the two marine legions, the Squadrons of Tlanéno the Steersman, represents 57% of the Tsolyáni marine strength (Barker 1977b). This portion of the fleet includes ships stationed both at Jakálla itself, and in the ports of the southern islands. The remainder comprise the ships of the Flotilla of Hagárr of Paránta at Penóm. A large percentage of the ships in both fleets are apparently committed to the inland waterways (Barker 1981: 83; this is also indicated in Barker’s post in the Yahoo Tsolyani Language Group: <https://groups.yahoo.com/neo/groups/tsolyani/conversations/messages/110>) and these presumably will be dominated by smaller *seschayal* and *sriigántayal*. The ships stationed on the southern islands will obviously be composed entirely of ocean-going craft. It should be noted that the figures given for each port are approximate; the precise numbers will likely change often from season to season and year to year. I assume there is only one seaworthy *mrisburén* in a legion at any one time, these leviathans serving as flagships.
- ³⁰ Barker 1981:82. Note, however, that in introducing these *chlám*-ranks, I choose to depart explicitly from canon fact. Barker indicates that the Tsolyáni term for a ship’s captain is simply *kásikoi*, the same as the terrestrial military rank of “captain.” (Barker Blue Room Post 1040: <http://tekumel.com/downloads/blueroomarchive/brvol35.txt>).



- ³¹ Note that the Tsolyáni term *champárkoi* is a generic term for “marine.” It is not a rank as such, and it is my (non-canon) assertion that an enlisted marine is a *changadésba*, not a *champár*. The *Cblám*-ranks are true formal ranks, unlike “kite-flier,” which is strictly-speaking a title rather than a rank. *Drillán* is a purely administrative rank, not found serving in fleets at sea.
- ³² The uncharitable reader might conclude that dawdling shipwright clans deliberately draw out and over-bill for refit services, knowing that vessels will eventually become permanently unserviceable, and that unserviceable vessels inevitably mean the promise of a ship-building contract. The uncharitable reader is usually correct. Nothing in this paragraph, incidentally, is based directly on canon sources, although the well-known corruption scandal involving the Red Sky Clan during the reign of Arshú'u the Ever-Splendid (Barker 1981: 82) is certainly suggestive.
- ³³ For example, the Squadrons of Tlanéno the Steersman at Jakállá supposedly boast three mighty *mrishurén*-class ships. However, one is simply a hulk, rotting like the skeletal carcass of some enormous sea-creature on the mud-flats outside of the harbour; it is more a hazard to navigation than a naval asset. A second swings in splendid decay, afloat but rudderless, at its mooring in Músa Jakállá harbour; it is nominally the flagship of the fleet, but it is now only used for ceremonial functions. Only the third *mrishurén* in the fleet is actually seaworthy.
- ³⁴ The problem is not simply that we have less information on the Mu'ugalavyáni navy, but rather that the information we do have is simply not comparable. It is difficult to compare the Mu'ugalavyáni apples with the Tsolyáni oranges. Apparently, the Mu'ugalavyáni recognize no legions of marines as such; presumably, the marines on Mu'ugalavyáni ships are drawn from terrestrial legions. Instead, we know that the Mu'ugalavyáni Order of Battle (Barker 1977b) includes three legions of sailors totaling approximately 11,000 men. Unfortunately, we have no idea how many ships require 11,000 sailors, although these numbers could potentially represent a navy twice as large as that of Tsolyánu. Even I think this seems excessive. We possess only two other pieces of information which might be suggestive. First, we know that overall, the Mu'ugalavyáni armed forces are about 75% the size of the Tsolyáni forces. Second, we know that the Tsolyáni navy is characterized as “relatively small.” If the Tsolyáni navy can be described as “small,” then presumably the fleets of the Mu'ugalavyáni, their principal military rivals, are either absolutely or relatively larger. I propose that the nominal strength of the Mu'ugalavyáni navy is about 700-800 ships, therefore equal to (but proportionally larger than) the Tsolyáni, but that the more efficient Mu'ugalavyáni maintenance bureaucracy ensures that 75% of this fleet is seaworthy at any given time. This gives us an effective strength for the Mu'ugalavyáni navy of about 540-560 ships, absolutely larger than the effective strength of the Tsolyáni fleet.
- ³⁵ The disposition of the Mu'ugalavyáni fleets is rather tricky. We know that the Mu'ugalavyáni Order of Battle (Barker 1977b) includes three legions of sailors: Legion I of the Sea “Tide of Death” (5,000 sailors), Legion II of the Sea “Blood-Sail” (3,000 sailors), and Legion III of the Sea “Spear-Prow” (3,000 sailors). Almost uniquely among the Mu'ugalavyáni legions, we are not given the Palace affiliation for any of these legions. As a result, it is difficult to determine where these sailors are based. However, we can draw some reasonable inferences. Mu'ugalavyá possesses only one major saltwater port, at Khéiris, so it is reasonable to conclude that the largest, Legion I, belongs to the Second Palace, and is based there; although the bulk of this fleet is composed of ocean-going vessels, some are presumably river craft patrolling the lower Putuhénu and the Púru ab Sharár Swamps. The Third Palace also possesses some coastline on the Deeps of Chanayága, and Legion II can presumably be assigned to this Palace. The Third Palace does lack a major seaport, but we do know that the Mu'ugalavyáni have occupied Ssámris Isle for several centuries, and this occupation only makes strategic sense if this island serves as a naval base. I propose that a large part of Legion II is based on Ssámris, with the remainder serving as a freshwater fleet, operating primarily out of Ssa'átis. I further propose that Legion III is assigned to the First Palace. For the most part, this is a freshwater fleet, based at Kúrdis and Chi'í Mu'úgha, but we often forget that the First Palace of Mu'ugalavyá does include some coastline along the Pentrúrtra Deeps, so Legion II therefore also includes several ocean-going squadrons based at Tlálu. The Fourth Palace does not possess a legion of sailors.
- ³⁶ One interesting, important, and utterly non-canon result of this structure is that although Mu'ugalavyá possesses no marine legions as such, almost all Mu'ugalavyáni medium infantry legions, and many of the archers, include large cadres of men who have experience serving at sea.
- ³⁷ The “today-slaves” are legally slaves, but are individuals the Palace has purchased and deemed suitable for the galleys. They serve a fixed term of “today-slavery,” and after satisfactory completion of their service they are released back to their clans as free men. Although arrangements resembling indentured servitude are found on Tékumel, these are normally embedded within the clan structure. The “today-slavery” of the Mu'ugalavyáni fleet is quite a unique institution, not otherwise encountered in Mu'ugalavyá, or in any other of the Five Empires.

The Mu'ugalavyáni also believe that good topside sailors are bred below decks, and thus the other way they fill the benches is with apprentice sailors. New recruits are required to man the sweeps, at least during their training period, and often for rather longer. So-called "free-boats" manned by apprentice seamen comprise much of the freshwater fleets that patrol the Putuhénu River. Naturally, high-status recruits often manage to evade this particular phase of their service.

³⁸ "Master seaman" includes not only skilled mariners, but also rowing-deck drummers, steersman, etc.

³⁹ "Overseer" includes the supervisors of rowing decks, as well as the supervisor of each topside mast, etc.

⁴⁰ The term *Shandibkétdle'esh* is derived from the well-known Mu'ugalavyáni terrestrial military rank, and is equivalent to "commander of 100." Similarly, the term *Sba'amkétlish*, also derived from a Mu'ugalavyáni terrestrial military rank, is equivalent to "commander of 500."

⁴¹ The term *Hakkúsha'amish* is derived from a terrestrial Mu'ugalavyáni military rank, literally "Sea-General."

⁴² The *Dü'ümünish*, or Legion Commander, is an entirely administrative rank not normally found in forces at sea. The Mu'ugalavyáni administrative hierarchy in the legions of sailors includes the same ranks as those found aboard ship, although their functions are quite different.

⁴³ Neither the structure nor the names for these ranks are directly-derived from canon sources. Certain terms, where noted, are related to terrestrial Mu'ugalavyáni ranks (Barker 1983: 79). As for the others, students of the Tsolyáni language may observe that some of the stems, although invented, do have cognates in the published Tsolyáni vocabularies (Barker 1978a; see also the collection of nautical terms in Barker's post in the Yahoo Tsolyani Language Group: <https://groups.yahoo.com/neo/groups/tsolyani/conversations/messages/110>). Fighting men present on a ship will belong to one of the terrestrial legions, with the ranks that are standard for Mu'ugalavyáni land forces (*Asúmiş*, *Purélis*, *Balkétlish*, and *Dibkétlish*; no ranks higher than *Dibkétlish* are found in the fighting contingents aboard Mu'ugalavyáni vessels).

⁴⁴ Barker 1977b.

⁴⁵ The argument here is straightforward, if somewhat conjectural. The total Salarvyáni military strength amounts to about 85% of that of Tsolyánu. I find it difficult to believe that the Salarvyáni navy is only 70% the Tsolyáni strength, or approximately 325 ships. In fact, given the extraordinarily long coastline of Salarvyá, and the many coastal and riverine cities that do not seem to be accounted for (particularly on the lengthy coastline between Tsatsayágga and Jaekánta), I strongly suspect that the Salarvyáni navy is absolutely stronger than that of Tsolyánu, and that a significant portion of the Salarvyáni naval force is underreported in our principal source (Barker 1977b). How then can I explain this underreporting? We do know that Salarvyá has a feudal structure, and that the great feudal families hold monopolies over various endeavours; for example, the Chruggilléshmu of Tsatsayágga holds a monopoly over maritime travel and trade along the Salarvyáni coast (Barker 1983: 66). However, we also know that their lesser vassals also hold more local monopolies. This must be true of naval matters as well, since, despite the supposed Chruggilléshmu maritime monopoly, the Hrüchcháqsa family of Chame'él also maintains a naval force, as does the Shiggashko'ónmu family of Jaekánta. I propose that there are other, lesser vassal families that maintain small local naval forces, and likely as well, that at least small freshwater Temple fleets are found in such sacred places as Lake Mrissútl and Tsa'avtúlgú. The strength of these small, local forces is a mystery. I can guess that there may be some 150-200 ships in these other Salarvyáni fleets, but this is only a guess.

⁴⁶ The strength and composition of these forces is calculated in the same way as was done for Tsolyánu above, assuming the same estimates for the number of marines per vessel, and the same relative frequencies of each vessel class. With these estimates, the total strengths given for each city's marine contingent gives us the approximate composition of each fleet.

⁴⁷ This ranking system is utterly canonical, in the sense that the rank terms are directly derived from those given for Salarvyáni terrestrial forces (Barker 1983: 79). The extrapolation of these terms to naval forces, and the adaptations in their meaning, are non-canon conjecture.

⁴⁸ And therefore, nothing in this paragraph may be considered canon truth.

⁴⁹ These suppositions regarding Salarvyáni military procurement are my own conjecture.



⁵⁰ see Barker 1977b.

⁵¹ In particular, it is surprising that the Prefectures of Kakársh, and Núfersh appear to lack any naval forces, and it is astounding that there is no fleet, even a small flotilla, listed for Tsámra itself. This may be a result of the notorious Livyáni penchant for secrecy, but whatever the reason, I speculate that there are an additional 50-100 ships, otherwise unattested in the sources, at least in the three above-named Prefectures, although in truth the size of any “secret” Livyáni fleets remains a mystery.

⁵² The strength and composition of these forces is calculated in the same way as was done for Tsolyánu and the Salarvyáni, assuming the same estimates for the number of marines per vessel, and the same relative frequencies of each vessel class. With these estimates, the total strengths given for each city’s marine contingent gives us the approximate composition of each fleet.

⁵³ This supposition is my own conjecture.

⁵⁴ This ranking system is canonical and the rank terms are directly derived from those given for Livyáni terrestrial forces (Barker 1983: 79). The extrapolation of these terms to naval forces reflects my own non-canon interpretation.

⁵⁵ The strength and composition of these forces is calculated in the same way as was done for Tsolyánu above, assuming the same estimates for the number of marines per vessel, and the same relative frequencies of each vessel class. It is also assumed that the *Gurík* of the Mariners of Hekuúma comprises the marine strength of the combined fleets of Yán Kór, Chudrák, and Ítl (see endnote 15 above). From this, the marine strength for each remaining city-state is estimated in proportion to its population and implied maritime power. It should be noted that these estimates are momentary; it is believed that the fleets of most of the Yán Koryáni city-states are shrinking almost annually.

⁵⁶ In the southern Yán Koryáni cities around the Tutáita Shallows (e.g. Aqéssha, Vorúak, and to some extent Yán Kór and Ítl), many of the smaller ships are true galleys (i.e. *Sezhák* or *Surgánta*), while in the ports of the north coast, they are indigenous blue-water vessels (*Séssha* or *Surgén*).

⁵⁷ As with the Mu’ugalavyáni, most Yán Koryáni medium infantry and archers have some experience fighting at sea.

⁵⁸ This ranking system is canonical and the rank terms are directly derived from those given for Yán Koryáni terrestrial forces (Barker 1983: 79).

⁵⁹ Kéttu was clearly deeply affected by the Tsolyáni naval defeats at the hands of the Mu’ugalavyáni in the war of 2,020 A.S. She argued that the Tsolyáni clan-based navy, although composed of valiant and reasonably competent mariners, was poorly-led, insufficiently trained to coordinate their efforts at a fleet level, and utterly outclassed by the Mu’ugalavyáni when it came to elaborate manoeuvres.

⁶⁰ The naval reforms which took place in the reign of the Emperor Arshú’u are canon fact (Barker 1981: 82). The posthumous role of Kéttu in these reforms is not.

⁶¹ The Mu’ugalavyáni assault on Penóm in 2,019-2,020 A.S. is of course a canon historical fact. Otherwise, this entire section on grand strategy should be considered non-canon, particularly since it takes no account of any canon events post-dating the death of Hirkáne, the 61st Seal Emperor.

⁶² Alliteratively, if a little awkwardly!

⁶³ Magic, still very much an emergent field in naval warfare, was actually given little consideration in Khuoláz’s text or in Kéttu hiVridáme’s original treatise, although later editors sometimes present what little is known outside of Livyáni.

⁶⁴ Kéttu was from Jakállá, and many allusions and metaphors in her work are recognizably Kaiján. Her long service in Penóm is occasionally reflected in references of Tsechélnuyani and Ngálari origin.

⁶⁵ According to Kéttu, slings are not appropriate for naval use.

⁶⁶ Apparently, they do exist! Occasionally, at least.



- ⁶⁷ This term is gaining acceptance as common slang for any T'solyáni warship, even among those who serve in the fleet.
- ⁶⁸ I am euphemizing here. "Kiss" is not exactly the word employed by either Khuoláz or Kétu, both of whom use a coarser term.
- ⁶⁹ No euphemizing here!
- ⁷⁰ In this instance, "kiss" *is* the original term.
- ⁷¹ Or at least, its most extreme point.
- ⁷² There is obviously a pattern here. Kétu clearly had a passion for Kaiján comic stories. And perhaps, because these tales are ultimately of Salarvyáni origin, this was her peculiar homage to Salarvyáni expertise in naval artillery.
- ⁷³ Tékumelophiles will likely find the notion of "innovation on Tékumel" rather incongruous, and may be uncomfortable with the notion that Livyáni innovations in naval magic might actually occur in historical time. I must admit, I am just such a Tékumelophile. I am not entirely comfortable with this idea myself, but I figure, we have to give the Livyáni something! And magical innovation is the obvious something. There are those who claim to see into the future (beyond the reign of Hirkáne) and who assert that Livyánu will be invaded by the Mu'ugalavyáni in the 2,360s. These prescient individuals may take comfort in the idea that for such a thing to occur, the Mu'ugalavyáni must therefore have successfully countered Livyáni magical prowess, and that, following invasion (and, according to some seers, plague), any Livyáni moves toward innovation would surely be permanently quashed.
- ⁷⁴ "*The Shattering Chord of Qame'el*" sounds a little discordant. Perhaps "*Hymn unto the Waves*" would be a more appropriate name!
- ⁷⁵ Defensive magic for ships' hulls, analogous to the defensive spells cast on land fortifications, appear to be employed by all nations. See Barker Blue Room post 226: <http://tekumel.com/downloads/blueroomarchive/brvol08.txt>.
- ⁷⁶ As noted previously, Khuoláz and Mshúruish and their respective manuals are mentioned in the Sourcebook (Barker 1983), and Tekumeláni military formations on land are described in detail in canon sources (Barker 1977a). Otherwise, the information on fleet deployments given here is plausible and consistent with canon sources but not strictly canonical.
- ⁷⁷ see Barker 1977a.
- ⁷⁸ These flotilla or squadron deployments essentially correspond to the "Unit Formations" of the early terrestrial tactical manuals (see Barker 1977a).
- ⁷⁹ The larger fleet deployments likewise correspond to the "Army Formations" of the early terrestrial tactical manuals (see Barker 1977a).
- ⁸⁰ Kétu classifies multiple lines as a separate variant of the Wave, which she terms the "Breaking Surf Formation."
- ⁸¹ In the original Engsvanyáli manuals, these are referred to as "Pyramid Formations." In the treatise of Mshúruish, the formation we know as the "Pitiless Reef" is named the "Necropolis of Foes;" the "Hidden Shoal" formation is the "Pyramid of Light," and the "Jagged Reef" is the "Ascending Steps to Glory."
- ⁸² The Reef formations are also employed by all nations as a temporary phase in the formation change from Wave to Wind (see the section on "Evolutions" below).
- ⁸³ See Barker 1977a.
- ⁸⁴ Known in Salarvyá as the "Mournful Eye of the Goddess" Formation.
- ⁸⁵ *sensu* Barker 1977a.



- ⁸⁶ Arguably, one of the failings of the Engsvanyáli tacticians was their insistence on classifying all possible combinations of unit formations in a fleet, regardless of whether or not these combinations were practical, or had ever been employed in combat.
- ⁸⁷ The name for this formation is rather loosely translated here from the original Tsolyáni term *Tlofërahäissómyal* (roughly “mountains full of holes”).
- ⁸⁸ There is a substantial body of Mu’ugalavyáni literature discussing the manoeuvring of flotillas, squadrons, and larger fleets (most of these works are difficult to acquire outside of Mu’ugalavyá), but it is a subject little considered in the ancient Engsvanyáli or later Tsolyáni manuals. The motive of Kétu hiVridáme in introducing the topic to a Tsolyáni audience is fairly obvious. It was her contention that Tsolyáni crews were reasonably competent at handling their own vessels, and were therefore capable of what she termed the “Minor Evolutions,” but that the naval doctrine of the day placed little emphasis on training in larger fleet-level manoeuvres. As a result, the Tsolyáni fleets had difficulty performing more complex coordinated manoeuvres (the “Major Evolutions”) and were hopelessly out-classed by the Mu’ugalavyáni in larger naval actions. Some later editions of her work retain some of this discussion, although in a greatly-condensed and less argumentative form.
- ⁸⁹ I am led to believe that some Mu’ugalavyáni tacticians recognize more than two dozen variations on the “Fountain” evolutions, and that their saltwater fleets practice all of these variations on a regular basis!
- ⁹⁰ In at least two historical instances, when engaged with superior Mu’ugalavyáni forces, Tsolyáni flotillas have successfully formed an *Akbó* by herding their most vulnerable vessels (the “Eye”) between two opposite-facing Waves. The flanking ships in each Wave have then retreated and pivoted to close the defensive perimeter. The result is more of a defensive square than a classic circular *Akbó*, but it serves the same purpose. One later editor of Kétu’s work refers to this evolution, and the square formation alike, as the “Stalwart Pier.”
- ⁹¹ Kétu, a devout follower of Hnálla, occasionally refers to this manoeuver by another name, using a term we might translate as “Symbol-of-the-Lord-of-Radiance War.”
- ⁹² What began as fashionable has become essential. Tsolyáni naval commanders are judged not merely (or even primarily) by the results they achieve but by the poetic aptness and elegance of their dispatches to Avanthár. Commanders with ambition must perforce retain esteemed poets on their staffs to ensure that their reports to the Emperor will be of a high enough literary quality to be taken seriously.
- ⁹³ As has been noted earlier, Professor Barker seems to have felt that naval warfare and amphibious invasion were more-or-less the same thing.
- ⁹⁴ Of course, some might argue that the words “reliable” and “Pakalayáni” should not occur in the same sentence.
- ⁹⁵ This war, including the seaborne attack on Penóm, is described in outline in canon sources (Barker 1983: 81, 83). The details are my own non-canon additions.
- ⁹⁶ Indeed, the Mu’ugalavyáni continue to hold Ssámris down to the present day (see Barker Blue Room post 226: <http://tekumel.com/downloads/bluroomarchive/brvol08.txt>).
- ⁹⁷ The decision to intercept the Mu’ugalavyáni invasion fleet here was apparently rather controversial. The Governor ordered the Tsolyáni fleet to form a “Tidal Bore” formation just inside the entrance to Bamésa Bay, where both flanks could be anchored to the shore. However, the admiral of the Penóm fleet, an elder of the Red Sky Clan, a man named (in accordance with tradition) Hagárr, argued against this plan on two grounds. First, that Bamésa Bay was simply too broad to defend with the ships available, and second, that the fleet would be too close to the city, and that the Mu’ugalavyáni could simply disembark at the entrance to the bay without needing to engage the Tsolyáni fleet at all. Instead, Hagárr argued that the Tsolyáni must attack the Mu’ugalavyáni fleet as far from the city as possible. Subsequent events might appear to have vindicated the Governor, although even Kétu concedes that Hagárr was correct to deploy further west.
- ⁹⁸ Like many of the Swamp Folk, the Admiral adopted a Mu’ugalavyáni name when in human company. His actual given *Hegléthi* name is not recorded. It should be noted that the Mu’ugalavyáni command for this operation was split. While at

sea, the entire force was under the command of Admiral Tu'utmélish. Once the force disembarked, overall command was assumed by a general of terrestrial forces.

⁹⁹When the Mu'ugalavyáni brought up artillery on a series of barges to bring the harbour defenses under fire, the Tsolyáni responded with a series of bold night-time raids using small *Séschayal* from the river squadrons. The Tsolyáni succeeded in firing several of the artillery platforms, an important factor in prolonging the siege.

¹⁰⁰The relief of Penóm is referenced in the Sourcebook (Barker 1983: 83).

¹⁰¹Second Penóm, a Mu'ugalavyáni delaying action fought between the Tsolyáni van and the Mu'ugalavyáni rearguard, ended with a tactical Mu'ugalavyáni victory in the context of an overall strategic defeat, in that the Mu'ugalavyáni rearguard succeeded in covering the retreat of their convoys. But what makes Second Penóm an interesting action in its own right is that, because of circumstances, the opposing fleets fought quite contrary to national stereotypes: the Tsolyáni attempting a manoeuvre attack with light, fast ships against a Mu'ugalavyáni force composed of slower, troop-laden galleys. Unfortunately, time constraints prevent a fuller discussion of this unusual battle here.

¹⁰²In southern Tsolyánu, these are sometimes referred to as the *Tlokorüsjrékkasaváलयal*, the “Five Hated, Contemptible Pirate Cities,” or more simply as the *Tlosaváलयal*, the “Five Hated Cities.” As a measure of the degree to which “Pakalayáni” is synonymous with “pirate,” we may note that the Tsolyáni word for “pirate” (*Jrékka*) is in fact a Hijajái word of Háida Pakálan origin (see Barker’s post in the Tsolyáni Language Yahoo group: <https://groups.yahoo.com/neo/groups/tsolyani/conversations/messages/110>).

¹⁰³The motives of Lord Khukhtésh Nggurrétchu, first in haring off so quickly after the pirates, and second, in making his proposal to Lord Shchéggish Hrúchcháqsha, are not difficult to imagine. He was relatively young and new to the lordship of Gunúrum, and his position cannot have been secure. Doubtless he desperately needed some grand military success, both to enhance his prestige among his peers, and to curry favour with the Hrúchcháqsha family.

¹⁰⁴Lord Shchéggish’s prestige was also at stake, after all; moreover, it appears that the temple of Shiringgáyi had joined Lord Khukhtésh in pressing for decisive action.

¹⁰⁵Ocean currents and winds do not rigidly dictate the course of sea travel, but their influence is significant, particularly when crossing wide stretches of open ocean. Space considerations prevent a detailed discussion of the influence of gyres and winds on ocean travel among the Five Empires, but briefly, Lord Khukhtésh made his crossing when and where he did for good reason. The clockwise gyre around the Deeps of Chanayága flows south-southwesterly between western Salarvyá and Háida Pakála. In the monsoon season, the prevailing winds are contrary, blowing northerly or northeasterly, but during the reverse monsoon the winds and the currents both flow south-southwesterly, aiding rapid passage. In short, western Salarvyá during the reverse monsoon is both the time and the place to attempt the fastest possible crossing to Háida Pakála. Conversely, the northern crossing is best made during the monsoon season, and further east, taking advantage of the northward flow of the gyre in the Great Mretténko’u Deep, between eastern Háida Pakála, and Peléis in central Salarvyá.

¹⁰⁶A rather aptly-named choice, as it turned out.

¹⁰⁷For those unfamiliar with the term, a “tickle” is a narrow and often shallow channel or stretch of water between two islands or between an island and a mainland.

¹⁰⁸It is likely that Lord Khukhtésh did not realize that the little Pakalayáni fleet arrayed against him represented the entirety of Keruná’s available naval forces. Had he known, he may have simply chosen to pin the Pakalayáni force with his warships, and sent his transports on to Keruná with no escort.

¹⁰⁹But not his flagship, which had begun taking on water after its long sojourn on the rocks.

¹¹⁰Barker 1983: 2.

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