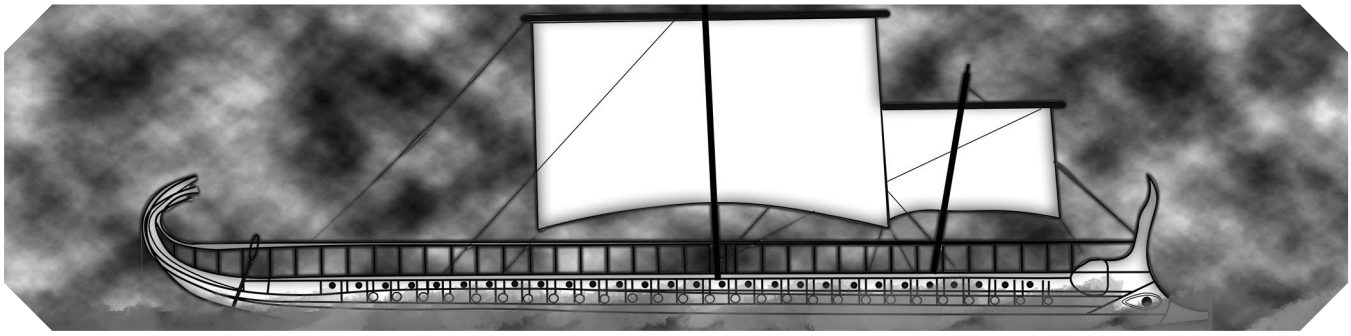
GURPS® Fourth Edition

VEHICLES

WAR GALLEYS™



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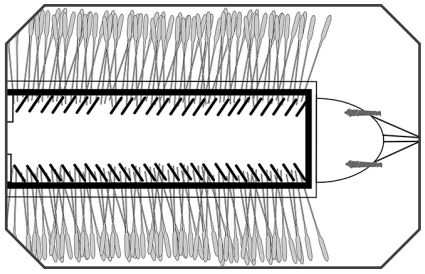

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Introduction

The roar of hundreds of oars striking the water at the same moment accompanied by the smell of sweat, brine, and fear made commerce and war at sea an adventure in an unstable, watery realm. Death from the environment threatened as much as from enemies. People built their first boats and took to the water tens of thousands of years ago. Adventures and wars at sea began not long afterwards.

This supplement focuses on oared warships (*galleys*). These emerged around 1200 B.C. and formed the backbone of naval power into the 16th century A.D. Over the course of 2,700 years, builders added rowers and oars and changed hull configurations, which produced ships in a range of sizes and capabilities.

Cicero said, "The master of the sea must inevitably be master of the empire." Time proved him true. The sleek triremes of classical Athens saved the city from Persian invasion and helped create a maritime empire. The successors of Alexander the Great built enormous galleys, ponderous vessels resembling floating siege towers, carrying dozens of catapults and thousands of soldiers. Maritime power helped Rome conquer the Mediterranean world, though once it had, the government reduced the navy, relying on small, cost-effective liburnians to police its maritime borders and rivers.

Medieval shipwrights built on this classical heritage, producing galleys for war and trade. The Byzantines developed Greek fire and devices to spray it at enemy ships. Later galleys mounted cannon.

Oared warships performed best in calm waters, such as rivers, the Mediterranean Sea, and the interior waterways and coastal seas of China, Korea, and Japan. Galleys reached their greatest sophistication in the Mediterranean and East Asia. This supplement focuses on those regions, but also includes some discussion of Viking longships.

For simplicity, the term *galley* is used herein to refer to these ships, all of which were shallow draft, relied on oars for their primary propulsion, and carried auxiliary sails.

About *GURPS*

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Errata. Everyone makes mistakes, including us – but we do our best to fix our errors. Errata pages for ***GURPS*** releases are available at **sjgames.com/errata/gurps**.

Rules and statistics in this book are specifically for the ***GURPS Basic Set,*** *Fourth Edition.* Page references that begin with B refer to that book, not this one.

Publication History

This is the first edition of ***GURPS Vehicles: War Galleys.*** Some vehicles discussed here are also mentioned in ***GURPS Low-Tech Companion 2: Weapons and Warriors***, the ***GURPS Basic Set,*** or ***GURPS Vehicles: Transports of Fantasy.*** Ship statistics among these vary slightly due to the wide variety of galleys produced over the centuries. Catapults and cannon, which many war galleys employed, are discussed in more detail in ***GURPS Low-Tech.***

About the Authors

Stephen and Carolyn Stein have played ***GURPS*** since the 1980s and are both well-versed in maritime history. Their article on the Pharos Lighthouse appeared in *Pyramid #3/116: Locations.* They contributed articles to issues for the fourth iteration of *Pyramid* magazine and wrote a supplement – ***GURPS Encounters: The Mysterious Airfield*** – for the 2001 ***GURPS*** PDF Challenge Kickstarter campaign. Stephen is an award-winning expert in naval history and the author of numerous articles and several books including *The Sea in World History: Exploration, Travel, and Trade* published by ABC-CLIO, which Booklist called "a spectacular addition to maritime history." Carolyn, a freelance author, writes both fiction and nonfiction.

Passengers

War galleys were not designed to carry passengers. Nonetheless, they could. When fighting close to home and troops were available, galleys commonly took on double their normal troop complement – thus, 24 rather than the usual 12 for a trireme; 80 rather than normal 40 for a quinquereme. This likely represented the maximum number a galley could carry without impairing shiphandling. For simplicity, assume a galley can safely accommodate 20% more people than its stated crew size, or 30% if it is a merchant galley. For each additional 20% (or 30%) increment, a galley suffers a cumulative -1 to Shiphandling rolls. At most, a war galley can carry people equal to double its stated crew size. (A merchant galley, with its large hold, could manage triple.) Given the lack of facilities for food preparation, hygiene, and similar human needs aboard ancient galleys, these would have to be short voyages.

War and Combat

Compared to modern warships, ancient galleys faced serious limitations. They had little cargo space, but their rowers consumed enormous quantities of food and water. This forced them to beach regularly to forage for supplies. Fortunately, tides in the Mediterranean are low compared to the Atlantic, and waters are clear near shore, making approaching land and beaching ships safe. High mountain ranges near coasts provide navigational landmarks.

Battles between galley fleets invariably took place near land. Fleets required a nearby base, a port or stretch of beach from which galleys sailed in the morning and returned at night. Defenders could neutralize enemy fleets by denying them safe beaches and water supplies.

Adventure Seed: Show the Flag

Ancient rulers and nations dispatched their largest warships on state visits to show the flag and overawe their enemies. In 397 B.C., for example, Dionysius of Syracuse, sent his newly launched quinquereme, the first of its class, to collect his fiancée from Locri and cement an alliance with that city-state.

The protagonists find themselves as crew or guests aboard such a ship, perhaps even in command. They are on a delicate but forceful mission of diplomacy. Or perhaps the PCs have done well for themselves and rule a small town or coastal province. In that case, the ship is sent to impress or intimidate them.

Naval Tactics

Galleys in this era fight by ramming (pp. 9-10) or boarding (pp. 10-11) enemy ships. Commanders with greener crews, who would have difficulty executing complex maneuvers, favor boarding enemy ships to capture them in hand-to-hand combat. Experienced sailors prefer to avoid the risks of close combat. Instead, they attempt to disable enemy ships by ramming or with the even more difficult maneuver of sliding along the enemy's hull to shear off oars (see p. 10) or smash their supporting outriggers, rendering the target unmaneuverable and injuring many rowers.

Beginning the Battle

At the start of an engagement, fleets deploy in line abreast and exchanged missile fire as they close. Leather screens (DR 2) give rowers some protection from enemy archery. Rowers on lower decks are protected by the ship's hull and benefit from its DR.

Captains of equivalent-sized ships avoid bow-to-bow ramming. They try to envelop enemy formations, executing what the Greeks called *periplous* (sailing around), to attack ships' vulnerable rears and sides. (Confusingly, Greeks used the same word for navigation manuals.)

Well-trained crews might attempt the *diekplous* (passing through and out). In this maneuver, attacking ships pass through an enemy formation one behind the other, whipped around 180° by reversing the oars of one side, and then ram enemy ships in their sterns. Experienced rowers could turn a trireme 180° in a minute.

Outnumbered squadrons form circles with their sterns in and bows facing out, denying enemies easy targets. Only the best crews and commanders, such as the Athenian admiral Phormio (p. 15), could maintain this formation for long.

Hit Locations

Ramming attacks (pp. 9-10) target a ship's hull. Oar shearing (p. 10) targets the oars. In other cases, the GM may randomly determine hit location on a galley. The chart below is a modified hit location table for galleys and similar ships (see p. B554 for the full table). M indicates masts and rigging. If a galley has stowed its masts (which they generally did before combat), M results hit the deck, damaging the hull and possibly injuring crew. E is exposed crew (such as deckhands, marines, or unprotected rowers), o is oars, and S is a large superstructure (such as a Venetian great galley's aft castle, the central castles common to Asian galleys, or the outriggers of triremes and larger galleys). Lower case s and t represent smaller superstructures and towers, such as the towers on large Hellenistic and Roman galleys and fighting platforms on dromons and Renaissance galleys. If a ship lacks a particular system, apply the hit to the upper tier of rowers. If deliberately targeting an area, apply the penalty in parentheses plus the target vehicle's SM.

When more than four points of damage penetrate a ship, crew members may be hit. Roll on the *Occupant Hit Table* (p. B555). If oars [o] or hull [H] were hit, roll once on the table for each of a galley's rowing tiers – thus, once for a penteconter, twice for ships with two rowing tiers like biremes and quadriremes, and three times for ships with three tiers like triremes, quinqueremes, and larger polyremes.

Maritime Warfare

Whether in Europe or Asia, naval tactics were similar. When rowing into battle, galleys deployed in line abreast, often in two or three lines. Rearward ships maneuvered to plug any gaps that opened in the line and reinforced hard-pressed ships, pulling alongside to transfer troops. Heavier, slower galleys sailed in the center, while faster galleys maneuvered in the wings.

Catapults opened fire at about 300 yards. Ships also exchanged missile fire, which crossbows (introduced in Europe in the 11th century) and later gunpowder weapons made more deadly. Ships then closed to grapple and board. Commanders signaled with sails, flags, cannon, trumpets, and lanterns.

War galley rowers often wore a cuirass and helmet and carried short swords. They lined gunwales with their shields to protect themselves from missiles, grabbing the shields when boarding enemy ships. Helmsmen (often called pilots in this era) wore more armor and were protected by shield bearers. Deckhands and officers often carried bows, later transitioning to crossbows. Catalan crossbowmen of the 15th century carried both heavy and light crossbows and 300 bolts for each. Embarked soldiers wore heavier armor and carried either swords, spears, halberds, or crossbows, slowly transitioning to arquebuses in the 15th and 16th centuries.

As sailing ships grew larger, they towered over galleys. Crossbow-armed defenders in high castles and crow's nests picked off attacking boarders who struggled to clamber up their high hulls. The introduction of cannon in 1500 returned the advantage to galleys, since only galleys mounted heavy cannon until the invention of watertight gunports. When beached, cannon-armed galleys presented substantial defensive firepower.

Combat among fleets of cannon-armed galleys was bloody. In 1571 at the Battle of Lepanto, the era's largest galley engagement, Don Juan of Austria (p. 33) led a Christian force of 80,000 people in 208 galleys and six galleasses (galleys with enlarged fore and aft castles packed with cannon) against an Ottoman fleet of 230 galleys and 70 galiots carrying 90,000 soldiers and sailors commanded by Müezzinzade Ali Pasha. The Christians outmaneuvered the Ottoman fleet, captured 120 galleys, and killed over a third of the Turks, but suffered 10,000 dead themselves.

While outwardly similar, war galleys varied slightly among nations. Spain, France, and the Knights of St. John favored heavy galleys that maximized troop load and firepower. Venice emphasized speed for raiding enemy ports and reinforcing its trading posts and forts. The Ottomans built galleys to maximize transport capacity to support its advancing armies. The GM may wish to make slight modifications to the default galley statistics to account for this, such as increasing the size and firepower of French and Spanish galleys or the troop capacity of Ottoman galleys and reducing their speed to account for added weight.

For additional naval combat options, see pp. 8-11. For weapons from this era, see ***GURPS Low-Tech.***

Greek Fire

Following their defeat in the Battle of the Masts (654), Byzantine inventors and naval officers searched for technological advantages. Experiments with various flammable substances reached fruition in the 670s when Callinicus, a Greek engineer, reportedly developed the formula for what Byzantium's enemies called Greek fire.

The Byzantines first used Greek fire in combat in 678, destroying an Arab fleet and ending its six-year siege of Constantinople. A liquid sprayed through siphons (see ***Low-Tech,*** p. 84), it burned in water and clung to wood, sails, and clothing. Dousing the flames with water was useless, but sand smothered Greek fire. Some sources indicate vinegar also worked. Before battle, Byzantine crews often doused decks and rigging with a mixture of vinegar and alum as fireproofing. Consider treated rope and wood as highly resistant (see *Making Things Burn,* p. B433).

The exact composition of Greek fire remains unknown. Scholars currently believe it was distilled naphtha (derived from petroleum or pitch) thickened with paraffin and wood resins.

Byzantine galleys carried containers of Greek fire, which crews hurled by hand or catapult at enemy ships. In game terms, these function as Molotov cocktails (p. B411). The Byzantines outfitted some galleys with siphons to project Greek fire. Kept in pressurized containers below deck, crews heated the containers and used torches to ignite the liquid, spraying it from a nozzle at the bow to produce 50' flames. Some large galleys carried two additional siphons, which fired to either side.

Byzantium's intelligence and counterintelligence services kept the formula of Greek fire secret for many years. They used it in 717 to destroy another Arab fleet attacking Constantinople, but there are no accounts of Byzantine fleets using it far from home. This, perhaps, indicated siphon-equipped warships remained in home waters to defend the capital.

While Byzantium's enemies employed Greek fire by the ninth century, mastering the secrets of Byzantium's siphons proved difficult. The mysteries of both were lost over time. The Byzantines did not use Greek fire when defending their city from the Fourth Crusade in 1203. Perhaps by then they lacked access to its constituent ingredients.

Adventure Seed: Fire Her Up, Boys!

The party has been hired to find the formula for Greek fire and plans for fire siphons. They must bring back samples of the siphons, containers, and sprayer. Or, perhaps they are hired to sabotage the system so that when sprayed, it discharges backward into the outfitted ship.

Skills

Boating/TL3 (Sailboat) (A) DX-1 [1]-10; Brawling (E) DX [1]-10; Carousing (E) HT [1]-11; Carpentry (E) IQ [1]-10; Climbing (A) DX-1 [1]-10; Crossbow (E) DX [1]- 11; Knife (E) DX [1]-11; Knot-Tying (E) DX [1]-11; Seamanship/TL3 (E) IQ+1 [2]-11; Sewing/TL2 (E) DX [1]-11; Shield (E) DX [1]-11; Shortsword (A) DX-1 [1]-10; Survival (Island/Beach) (A) Per-1 [1]-10; Swimming (E) HT [1]-11.

Lens

Experienced Sailor (+15 points): A sailor with several years of experience, what would later be labeled an able seaman. Add Acute Vision 1 [2]; 2 points to Seamanship; and 1 point to each of Boating, Carousing, Climbing, Crossbow, Knot-Tying, Sewing, Survival, and any other four skills.

Typical Rower

47 points

Venice recruited rowers throughout its mercantile empire, including the Dalmatian coast and Aegean islands. These stats describe a relatively new rower.

ST 12 [20]; **DX** 11 [20]; **IQ** 10 [0]; **HT** 11 [10].
Damage 1d-1/1d+2; BL 29 lbs.; HP 12 [0]; Will 10 [0]; Per 10 [0]; FP 13 [3].
Basic Speed 5.50; Basic Move 5; Dodge 8; Parry 8 (Knife).

Social Background

TL: 3 [0].
CF: Italy [0].
Languages: Italian (Native/None) [-3].

Advantages

Perks: Naval Training [1].

Disadvantages

Duty (Venice; 9 or less) [-5]; Struggling [-10].

Skills

Area Knowledge (City of Venice) (E) IQ [1]-10; Boating/TL2 (Unpowered) (A) DX-1 [1]-10; Brawling (E) DX [1]-11; Carousing (E) HT [1]-11; Knife (E) DX [1]-11; Oarsman/TL3 (E) IQ [1]-10; Seamanship/TL3 (E) IQ [1]-10; Shortsword (A) DX-1 [1]-10; Survival (Island/Beach) (A) Per-1 [1]-9; Thrown Weapon (Spear) (E) DX [1]-11. • *One* of Panhandling (E) IQ [1]-10, or Fishing or Scrounging, both (E) Per [1]-10.

Lenses

Skilled Rower (+10 points): An experienced rower who has served at sea for some time. Add 3 points to Oarsman and 1 to each of Brawling, Carousing, Seamanship, Shortsword, Thrown Weapon (Spear) and any other two skills.

Stroke Oarsman (+20 points): A skilled rower with several years of service who sits in the bench closest to the helmsman and helps coordinate the rowers. Add 7 points to Oarsman; 3 to Seamanship; and 1 to each of Area Knowledge, Brawling, Carousing, Shortsword, Survival, Thrown Weapon (Spear), and any other four skills.

Typical Marine

100 points

Even merchant galleys carried marines and embarked additional soldiers when sailing into dangerous waters. Officers were typically Venetian, but other marines came from throughout Europe.

ST 12 [20]; **DX** 11 [20]; **IQ** 11 [20]; **HT** 12 [20].
Damage 1d-1/1d+2; BL 29 lbs.; HP 12 [0]; Will 11 [0]; Per 11 [0]; FP 12 [0]
Basic Speed 5.75; Basic Move 5; Dodge 8; Parry 8 (Broadsword); Block 9.

Social Background

TL: 3 [0] (before 1500) or 4 (after 1500).
CF: Italy [0].
Languages: Italian (Native/None) [-3].

Advantages

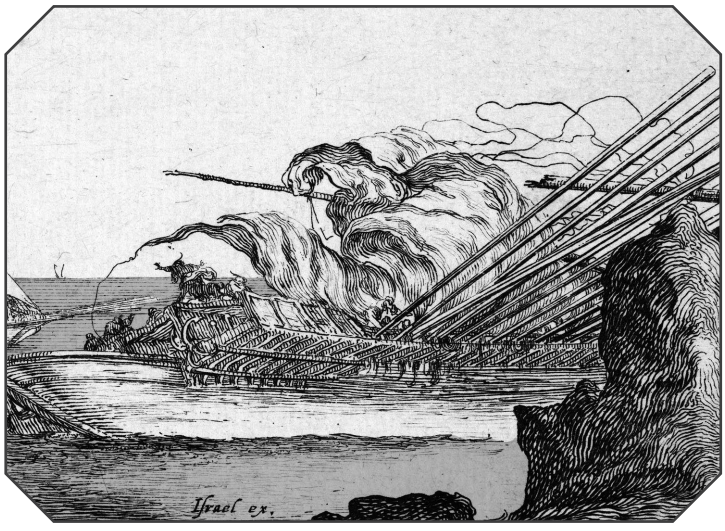
Perks: Naval Training [1].

Disadvantages

Duty (Venice; 9 or less) [-5].

Skills

Broadsword (A) DX+1 [4]-12; Carousing (E) HT [1]-12; First Aid/TL3 (E) IQ [1]-11; Intimidation (A) Will [2]-11; Knife (E) DX [1]-11; Polearm (A) DX+1 [4]-12; Shield (E) DX+2 [4]-13; Soldier/TL3 (A) IQ-1 [2]-11; Spear (A) DX [2]-11; Survival (Island/Beach) (A) Per [2]-11. • *One* of Crossbow (before 1500) or Guns/TL4 (Musket) (after 1500), both (E) DX+2 [4]-13.



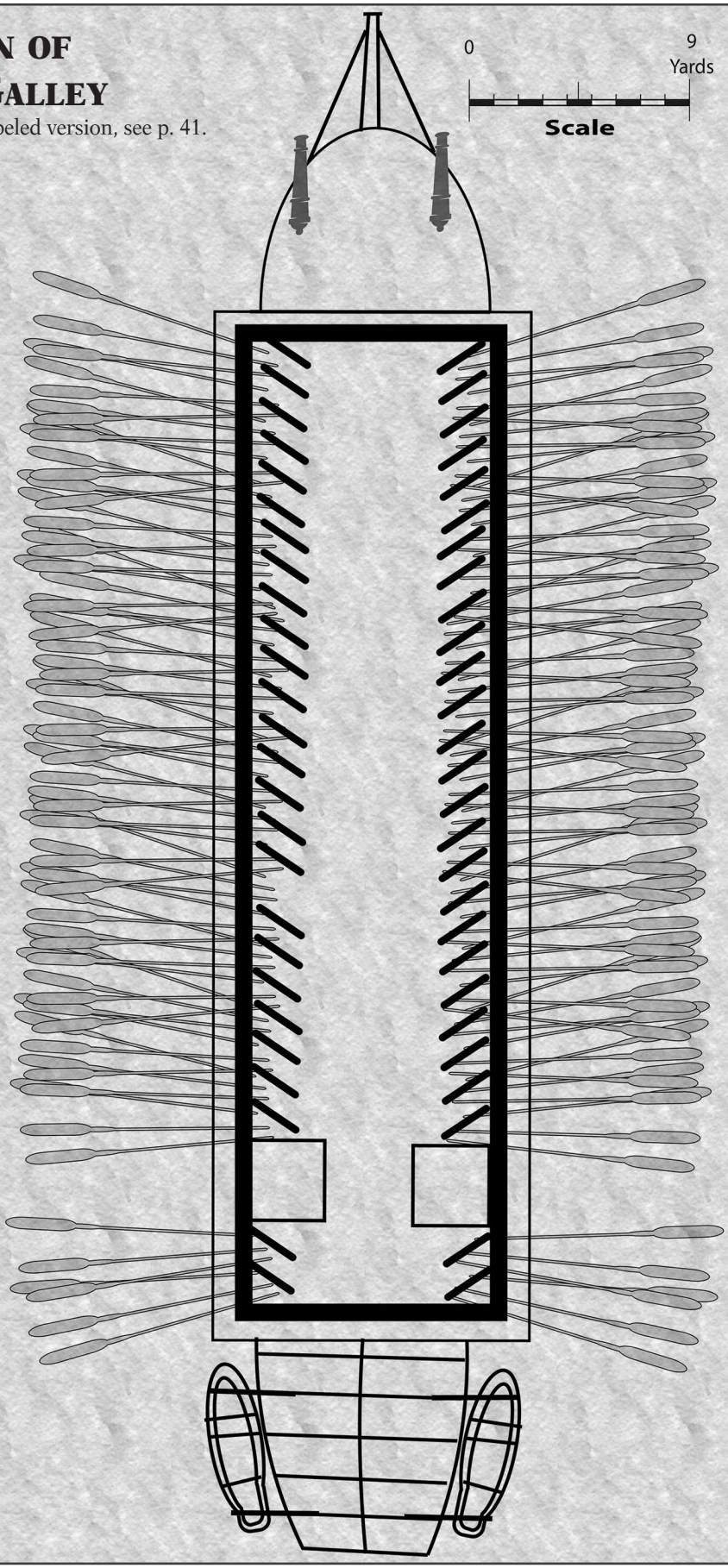
Typical Gunner

76 points

After 1500, war galleys (and trading galleys outfitted for war) mounted at least one cannon in the bow and required a gunner for each cannon. Since they rarely fired more than once in battle, the rest of a gun's crew were detailed from a galley's soldiers.

Deck Plan of a Great Galley

Top view. For a labeled version, see p. 41.



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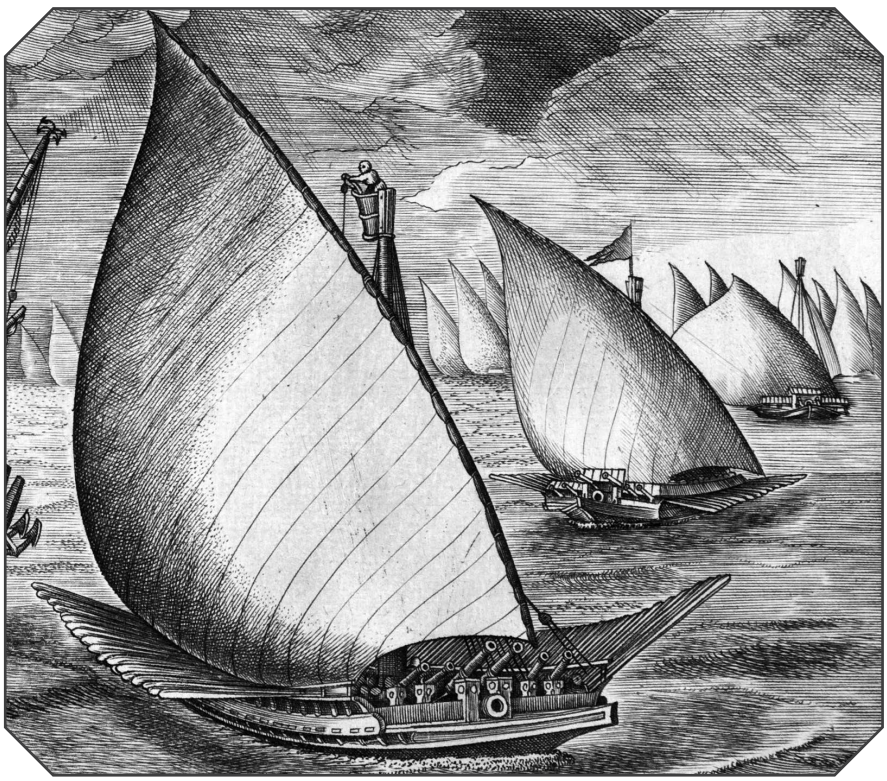

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