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The Adriatic Naval Squadron (1645-1669): Defense of the Adriatic during the War for Crete

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The main research subjects of this study are: (1) the naval force under the command of the Governor-general of Dalmatia and Albania, in this paper referred to as the Adriatic squadron, and (2) the problems of organization of defense of the Adriatic during the War for Crete (1645-1669). More precisely, this article deals with the operational tasks assigned to the Adriatic squadron during this war, its composition, governance, administration and main logistics problems related to keeping this force operational in an armed conflict lasting for more than 20 years. Furthermore, the essay also addresses the question of the strategic importance of Adriatic for the Venetian Republic in case of war in the Levant, and it argues that the rulers of the Republic were clearly aware of the threat that the loss of control over the sea lanes of communication in the Adriatic would have for the overall Venetian war effort and consequently committed significant naval forces to the Adriatic theater of operations.

Keywords: Republic of Venice, War for Crete, Ottoman Empire, New Military History, Adriatic, Naval warfare, Early Modern Period, Galleys, Barche Armate, Fuste, Galeotte.

1. Introduction: The Adriatic Naval Squadron

The war for Crete (1645-1669) in general, and military operations in Adriatic during this conflict in particular, have so far been the subject of numerous studies.¹

¹ Gligor Stanojević, “Dalmacija u doba kandijskog rata,” *Vesnik vojnog muzeja* 5, num. 2. (1958): pp. 93-182.; Radovan Samardžić, “Kandijski rat (1645-1669) in *Istorija Srpskog Naroda*, vol. 3. num. 1. ed.

However, due to the nature of warfare in the Adriatic battlefield with the predominance of land operations, existing studies have mainly concentrated on the aspects of land warfare: sieges, course of the campaigns, political context in which operations took place etc. As a result, the naval aspect of this conflict in the Adriatic region has been left somewhat underrepresented and understudied.² It may be that no dramatic naval engagements, such as those fought in the Dardanelles during 1654-1657, took place in the Adriatic during this war. Still, securing the sea lanes of communication in the Adriatic was the mandatory precondition for Venice to be able to wage war in the Levant at all. As this paper will show, the Republic, aware of this strategic threat, committed significant naval forces (though not as many as its governor-generals in Zadar wished) to the Adriatic theater of operations. This naval force, in this essay referred to as the "Adriatic squadron", its operational tasks, composition, governance, organization and logistics are the main research subjects of this study.

The origins of this naval force date back to year 1301, when the first permanent fleet charged with protection of the Adriatic against pirates and invasions of hostile fleets was organized by Venice. This force, known under the name of "fleet of the Adriatic", consisted mainly of galleys and its main bases of operations were Venice and Corfu.³ By contrast, its seventeenth-century counterpart (referred to

Radovan Samardžić, pp. 336-424. (Beograd: Srpska književna zadruga, 1993); Tea Mayhew, *Dalmatia between Ottoman and Venetian Rule. Contado di Zara 1645-1718*. (Rome: Viella, 2008) pp. 29-48.; Marko Jačov, *Le guerre Veneto-Turche del XVII secolo in Dalmatia*, Atti e memorie della Societa' Dalmata di storia patria 20 (1991), pp. 9-145; Giuseppe Praga, *History of Dalmatia*, (Pisa: Giardini, 1993) pp. 188-192; Karlo Kosor "Drniška Krajina za turskog vladanja," u *Povijest Drniške Krajine*. ed. Ante Čavka, pp. 103-179 (Split, 1995). For general literature on the war for Crete see: Kenneth M. Setton, *Venice, Austria, and the Turks in the Seventeenth Century*. (Philadelphia: American Philosophical Society, 1991) pp. 104-243; Ekkehard Eickhoff, *Vendig. Wien und die Osmanen. Umbruch in Sudosteuropa 1645-1700* (Munchen: Verlag Georg D. W. Callwey, 1970) pp. 17-176, 228-264.

² In addition to a few smaller studies dealing with the problems of piracy in the Adriatic during the war for Crete, the only notable exceptions to this statement are 1937 studies by the Italian historian Feruccio Sassi and a recent study by Josip Vrandečić. Sassi was the first to point out the role the navy played in the success of the Venetian arms in this theater of operations. Vrandečić positioned warfare in the Dalmatian battlefield in a wider early modern European military context by linking it to the well-known concept of Military Revolution and emphasizing the use of combined arms (naval and land forces) in the Venetian military operations. Feruccio Sassi, "Le Campagne di Dalmazia durante la Guerra di Candia (1645-1648)" *Archivio Veneto* 20 (1937): pp. 211-250. (henceforth: *Sassi 1*); Feruccio Sassi, "Le Campagne di Dalmazia durante la Guerra di Candia (1645-1648)" *Archivio Veneto* 21 (1937): pp. 60-100.; Josip Vrandečić, *Borba za Jadran u ranom novom vijeku: Mletačko-osmanski ratovi u venecijanskoj nuncijaturi 1524-1797 [Fighting for the Adriatic in the Early Modern Period: Venetian-Ottoman wars in the records of the Venetian Nuntio Archival Documents]*, (Split: Filozofski fakultet u Splitu, 2013) (henceforth: *Borba za Jadran*)

³ For more on the organization of this first permanent fleet operating in the Adriatic see: Rothy Gertwagen, "The Island of Corfu in Venetian Policy in the Fourteenth and Early Fifteenth Centuries,"

in this article as the Adriatic squadron) had as its main naval base the Dalmatian town of Zadar and was composed mainly of smaller warships: *barche armate*, *galeotte* and *fuste*. The Republic of Venice had not established elaborate institutional infrastructure for this force, in the form of its own admiralty, separate treasury, command structure, as was for example the case with the famous Spanish Armada of Flanders.⁴ Still, the Adriatic squadron was a real and independent naval force with its separate command structure (at least in war time), operational tasks, and supportive infrastructure in the form of two arsenals: the main one at Zadar (*Zara*)⁵ and a smaller auxiliary one at the island of Hvar (*Lessina*). As such, the Adriatic squadron is best described as a semi-permanent fleet of state-owned, state-administered warships, serving in the Adriatic under the command of Governor-general of Dalmatia and Albania in Zadar.

Before proceeding further, one more caveat is called for. Venetian light galleys (*galee sottile*) and galleasses rank among the most famous topics of naval history in general. It is practically impossible to find a study of the early modern naval warfare without a section dedicated to these ships. Moreover, narrower studies of Venetian history have assigned the galleys and the command of the sea one of the central places in the success story of this city-state. All in all, it can safely be said that both the Venetian merchant and the war fleet alike represent well researched subjects with a considerable number of studies covering a wide range of topics related to these ships: their use, arming of their crews, construction and administrative problems. Due to these reasons and in order to avoid repeating topics well covered by the existing studies, in this article the space dedicated to the Venetian galleys in the service in Adriatic is intentionally limited and emphasis has been put on other, smaller vessels of the Adriatic naval squadron so far less researched, namely armed boats (*barche armate*), *fuste*, *galeotte* and *brigantini*. This decision can be further justified by the nature of the naval warfare in the Adriatic and the tasks put before this squadron by the Venetian high command.

International Journal of Maritime History 19, num. 1 (2007): pp. 181-210; Beatriz Doumerc, "La difesa dell'impero," in *Storia di Venezia. Vol. 3*. Gioralmo Arnaldi, Alberto Tenenti and Giorgio Cracco eds. pp. 240, 244, 246. (Roma, 1997); Irene B. Katele, "Piracy and the Venetian State: The Dilemma of Maritime Defence in the Fourteenth Century," *Speculum* LXIII (1988): pp. 867-871.

⁴ Robert A. Stradling, *Armada of Flanders: Spanish Maritime Policy and European War, 1568-1668* (Cambridge: Cambridge University Press, 1992), especially pp. 176-203.

⁵ For more on Zadar arsenal see: Michela dal Borgo and Guglielmo Zanelli, *Zara. Una fortezza, un porto, un arsenale (secoli XV-XVIII)*, (Roma: Viella, 2008)

2. Organization of Defense of the Adriatic Prior to the War for Crete

... the importance of preserving this province [Dalmatia], which can be considered the maritime suburb of Venice, is well known to common wisdom;

(Governor-general Girolamo Foscarini, April 1653)⁶

Devo dire anco, che la detta prouincia situata nel stato bislungo della Serenità Vostra, da braccio e mano, e unisce nella communicatione il regno di Candia et isole del Leuante, con la città dominante Istria e stati di terraferma. Riceue in se medesima et assicura con la multiplicita de porta la nauigatione in uniuersale, e par che la natura l'habbi leuato alle riuè del regno di Napoli e luochi della Marca, per moltiplicarli a fregio di quella prouincia, e senza i medesimi impraticabile sarebe certo il Golfo ne i rigori del uerno.

(Governor-general Giovanni Battista Grimani, August 1644)⁷

The dominion over the Adriatic Sea was a foundation on which the prosperity and existence of the Most Serene Republic rested. "First and last, Venice depended on the Adriatic,"⁸ wrote Frederic Chapin Lane, simply and accurately summarizing the connection between Venice and the Adriatic. Furthermore, lordship over the Adriatic was not merely a basis for Venetian economic dominance in the region, but also a premise deeply rooted in the political culture of the Venetian ruling elite. Venice considered the Adriatic Gulf as its sovereign territory and claimed the exclusive right to maintain armed vessels in it.⁹ These were not just empty symbolic statements; in order to defend its dominion of the Adriatic and eradicate piracy, the Republic was ready to go as far as to risk a war with the much more powerful states. For example, in 1615, frustrated by the inability and lack of interest of the Habsburg court in Vienna to restrain the actions of its privateers (*uskoks*) operating from the port of Senj (*Segna*), the Republic not only attacked and sealed off the port, but also invaded the Habsburg possession in Istria, provoking a full scale war with both Austrian and Spanish branch of the Habsburgs.¹⁰ Similarly, though it is often assumed that the Repub-

⁶ ... *alla sapienza publica è sufficientemente nota l'importanza dell' conservazione di questa Prouintia, che dalla parte di Mare, si può chiamar li Borghi di Venetia*. Archivio di Stato di Venezia (henceforth ASVe), Senato, Deliberazioni, Provveditori da Terra e da Mar (henceforth PTM). b(usta). 472. num. (ber) 99. (Zara, 18. Aprile 1652.) [Translation by the author]

⁷ Grga Novak, *Mletačka uputstva i izvještaji [Venetian Commissions and Reports]*, vol. 8, (Zagreb: HAZU, 1977) p. 181. (henceforth *Mletačka uputstva*)

⁸ Frederic C. Lane, *Venice: A Maritime Republic* (Baltimore: John Hopkins University Press, 1973) p. 407.

⁹ For more on ideological foundations see: Filippo de Vivo "Historical Justifications of Venetian Power in the Adriatic," *Journal of the History of Ideas* 64 (2003), pp. 159-76.; Compare also: Roberto Cessi, *La Repubblica di Venezia e il problema Adriatico* (Napoli: Edizioni scientifiche italiane, 1953)

¹⁰ For more on Uskok or Gradisca War see: John R. Hale and Mallett E. Michael, *The Military Organization of a Renaissance State. Venice c.1400-1617*. (Cambridge: Cambridge University Press, 1984)

lic was more lenient in its conduct toward the Sublime Porte, some actions could not be tolerated. For example, in 1638, when a corsair fleet consisting of 16 galleys from Algeria and Tunis retreated to the Ottoman port of Vlorë (*Valona*) after its raids in Adriatic, the Venetian Senate ordered the most radical step. A Venetian fleet forced its way into the port, attacked the corsair ships and bombarded the town forts, risking the wrath of the Porte.¹¹

However, these two episodes were rather extraordinary. From the conclusion of the peace with the Ottoman Empire in 1573, the Republic enjoyed a long period of peace during which the main threat to the Venetian dominion over Adriatic came not from other states but from a far lower profile enemy: pirates.¹² From the last decades of the sixteenth century, pirate activity was on the rise all over the Mediterranean and the Adriatic was no exception. During the sixteenth century, the Ottoman ports of Ulcinj (*Dolcigno*), Herceg-Novi (*Castelnuovo*) and the island of St. Maura (*Leucas* in the Ionian Sea) developed into thriving corsair bases which constantly threatened navigation in the Adriatic. Similarly, as previously mentioned, the Habsburg port of Senj in the northern Adriatic developed into a major base of Christian privateers, the so-called *uskoks*. Nominally in the service of the Austrian Habsburgs, *uskoks* very quickly became the most severe threat to the security of shipping in the Adriatic. Under the pretext of a holy war, these Christian privateers not only attacked Ottoman targets in the coastal hinterland, but also indiscriminately raided shipping all over the Adriatic.¹³ Activity of the *uskoks* more than anything else was a constant source of tensions between the Republic and the Ottoman and Habsburg empires, culminating in the previously mentioned, short but rather destructive “Uskok/Gradisca War” (1615-1618).

In the years after the end of Cyprus war (1570-1573), in order to secure the safety of navigation, Venice divided the Adriatic Sea into three operational zones

pp. 241-247; Miroslav Bertosa, *Istra: Doba Venecije (XVI.-XVIII. stoljeće)* (Pula: Zavičajna naklada “Žakan Juri”, 1995) pp. 290-413.

¹¹ Kenneth M. Setton, *Venice, Austria, and the Turks in the seventeenth century*, pp. 108-109; Ekkehard Eickhoff, *Vendig, Wien und die Osmanen*, p. 20-1.

¹² Alberto Tenenti, *Piracy and the Decline of Venice 1580-1615* (London: Longmans, Green and Co. Ltd, 1967) pp. 3-86;

¹³ Existing literature on the *uskoks* is immense and beyond the scope of this paper. The most complete study on this topic in English is Catherine W. Bracewell, *The Uskoks of Senj: Piracy, Banditry, and Holy War in the Sixteenth-Century Adriatic* (Ithaca, 1992). For a detailed study of the uskok raiding activities situated in the context of political events of sixteenth century, see: Gligor Stanojević, *Senjski uskoci (The Uskoks of Senj)* (Beograd, 1973). For a concise overview concerning the official attitude of the Porte toward Venetian dominion over the Adriatic and the problem of piracy see: Maria Pia Pedani, “Ottoman Merchants in the Adriatic. Trade and Smuggling,” *Acta Histriae* 16, num. 1-2. (2008): pp. 156-162.

and assigned one squadron of light galleys to each of them. Policing the very top of the Gulf, the area between Venice and Istria, was the task of Captain against the *Uskoks* (*Capitano Contra Uschochi*) in command of the smallest of the three squadrons, consisting of two light galleys and three smaller warships (*fuste* or *barche armate* – see below). Patrolling of the northern Adriatic, roughly the area between Ancona and the delta of the River Po and from Zadar to Rijeka (*Fiume*) was duty of four galleys under the command of the Governor of the Condemned (*Governatore dei Condannati*), while Captain of the Gulf (*Capitano del Golfo*) and his seven galleys, stationed at Corfu, were charged with the protection of shipping in the rest of the Adriatic.¹⁴

This organizational structure, however, was subject to change as circumstances demanded. As the *uskok* threat increased in the late 1580s, in order to better coordinate Venetian efforts in suppressing *uskok* activities, the office of Governor of the Gulf (*Provveditor in Golfo Contra Usocchi* or *Provveditor general da mar in Golfo*) was introduced, and the three above mentioned naval commanders were put under his command.¹⁵ Likewise, as the *uskok* raids receded after the Peace of Madrid (1618), the system was further adjusted. The domain of responsibility of *Capitano del Golfo* did not change much, as the Senate transferred to him the command of the majority of light galleys serving in the Adriatic. By contrast, the offices of *Capitano Contra Uschochi* and Governor of the Gulf were abandoned, while that of Governor of the Condemned was left without any specific sea area assigned to him for patrolling. Instead, the task of maintaining security of the shipping through the central Adriatic was transferred to the Governor-general of Dalmatia and Albania (*Provveditore Generala di Dalmazia et Albania*). Introduced for the first time in 1511, the office of Governor-general of the dual province of Dalmatia and Albania was made permanent as late as 1597, with the term lasting for two years. The Governor-general was the highest representative of the Republic in the region and acted as the head of both civil and military administration, in command of all land and naval forces of the republic stationed in Dalmatia and Venetian Albania.¹⁶ The process of reorgan-

¹⁴ Alberto Tenenti, *Piracy and the Decline of Venice*, pp. 120-121.; Michael Knapton, "Između Vladarice i njezina posjeda [Between Ruler and its dominion]," In Gaetano Cozzi, Michael Knapton and Giovanni Scarabello eds. *Povijest Venecije vol. 2. [History of Venice vol. 2]* (Zagreb: Anti-Barbarus, 2007) p. 369.

¹⁵ For example see the reports (*relazioni*) dating from 1593 and 1598 submitted upon their return from the service as governors in the gulf by Almore Tiepolo and Zuanne Bembo. Grga Novak, *Mletačka uputstva* 5, pp. 45-61, 239-260.;

¹⁶ For more on the office of Governor-general of Dalmatia and Albania see: Maja Novak, "Kada i kako je došlo do formiranja službe generalnog providura Dalmacije i Albanije [When and how, it came to

ization of zones of competencies in the Adriatic had begun in 1599 with the appointment of Nicolò Donado, acting Governor of the Gulf, as the Governor-general of Dalmatia and Albania with the title of *Provveditor general in Golfo con autorità et titolo anco del Provveditor General in Dalmatia*.¹⁷

Though the Captain of the Gulf stationed at Corfu was nominally charged with the duty of keeping navigation through the Adriatic safe, in practice, the Governor-general of Dalmatia and Albania became the republic's sole official responsible for the prevention of contraband and securing navigation through northern and central Adriatic, while the southern part of the gulf remained the responsibility of the *Capitano del Golfo*. The Governor-general of Dalmatia and Albania had under his command a small naval squadron whose core consisted of 20-30 smaller warships, so called *barche armate*, each (nominally) manned with a 50 man crew of Croatian or Albanian marine infantry (*militie oltramarine*). The crews of these warships were paid directly by the provincial treasury in Zadar and were administered by two governors, one for each of the nationalities (i.e. Croats and Albanians).¹⁸ Additionally, the Republic kept in the Adriatic a few light galleys which were at the disposal of governor-generals, and were paid either by the central treasury in Venice or directly by the provincial treasury in Zadar, depending on the circumstances. These were the naval forces the Republic had at its disposal in Adriatic when the news of the Ottoman landing on the island of Crete reached Dalmatia in summer of 1645.

3. The Adriatic Naval Squadron (1645-1669): operational duties, deployment, structure and composition

Ne per miglior partito, o propria contraposizione saprei dire se non che la difesa per mio riuerente parere consisterà sempre nel mantenimento di ben munita armata. Questa sola potrà souenirla, questa soccorrerla questa conseruarla, sarà essa l'unico rimedio d'ogn' inuasion, la mano che le porgerà ogni aiuto, anzi che

the formation of the service of Governor-general of Dalmatia and Albania,” *Radovi Instituta JAZU u Zadru* 15 (1968): pp. 91-112; Maja Novak, “Zadar glavni grad mletačke Dalmacije i Albanije [Zadar Capitol of Dalmatia and Venetian Albania,]” *Radovi Instituta JAZU u Zadru* 11-12 (1965): pp. 187-201.; Tea Mayhew, *Dalmatia between Ottoman and Venetian Rule*, pp. 150-156. Compare also: Ivan Pederin, *Mletačka uprava, privreda i politika u Dalmaciji (1409. - 1797.) [Venetian administration, economic policy and politics in Dalmatia (1409-1797)]* (Dubrovnik: Časopis ‘Dubrovnik’, 1990) pp. 105-6.; Concerning the formation of the Venetian administrative context, also see: Filippo M. Paladini, *Un Caos che Spaventa*, pp. 13-24.; Giuseppe Praga, *History of Dalmatia*, pp. 180-1.

¹⁷ Grga Novak, *Mletačka uputstva* 5, pp. 278-299.

¹⁸ In 1630s the Republic kept 29 *barche armate* in Adriatic, whose crews consisted of 1120 marine infantry, while in 1644 only 19 *barche armate* and 805 men were at the disposal of Governor-general. Grga Novak, *Mletačka uputstva* 7, p. 52-3, 214.

l'armata da mar e quella che sempre sarà il fondamento delle riputazioni delle forze di Vostra Serenita, sopra la quale anco ne' più placidi, et quieti tempi dourebbe starsi con pontualita uigorosissima.

(Governor-general Antonia Civran, 1632)¹⁹

No other factor can contribute to the safety of these towns, as much as the protection of some warship accompanied by galleys, with them it is possible to accommodate bringing of the help [to the spot] where the most vigorous attacks are undertaken.

(Governor-general Antonio Bernardo, October 1656)²⁰

Since the Middle Ages, navigational routes through the Adriatic had not changed much, with ships traveling the East-West direction (and *vice versa*) favoring the route along the Eastern Adriatic coast. This preference was due to Adriatic sea currents, disposition of the local winds, and the existence of a multitude of islands that provided excellent landmarks for coastal navigation and refuge havens in case of shipwreck. Secondly, because of the still predominant use of light galleys as main fighting ships in the Mediterranean and their need to regularly replenish water supplies for their crews,²¹ the Dalmatian coast, with its high density of good anchorages and numerous water sources, suited the navigational needs of this type of a vessel perfectly.²² Light galleys leaving from Venice for the Levant would usually first make a call in an Istrian port (most often Koper), then proceed through the gulf of Kvarner, and arrive at Zadar. From here on, the route would take them to the island of Hvar and then either in the direction of Ragusa or Kotor, or the ship would simply head directly for the next major Venetian naval base, the island of Corfu. In case of a war in the Levant, the control of these sea routes was of outmost importance for the Venetian war effort. As Jan Glete pointed out, "Warfare at sea is essentially a contest about the maritime lines of communication."²³ Or, to put it simply, the loss of control or

¹⁹ Grga Novak, *Mletačka uputstva* 7, p. 48.

²⁰ *Niuna cosa potria riuscir di più sicura salute di esse Piazze, quanto il calore di qualche Vascello da guerra, e di Galere ancora, con quali si potesse accomodare à porgere gl' aiuti, dovesi facessero più gagliardi gl' attacchi.* ASVe, PTM. b. 480. num. 54. (Trau, 16. Ottobre 1656) [Translation by author]

²¹ Due to the extreme physical effort to which galley rowers were subjected, especially during warm Mediterranean summers, water supply was critical for the survival of the crew. Furthermore, long and slim design of war galleys left little room for cargo storage, large part of which had to be filled with ammunition and war materials as well. Therefore, it was an absolute necessity for a galley to anchor frequently, in intervals no longer than two weeks, at places where water supplies could be replenished. John F. Guilmartin, *Galleons and Galleys* (London: Cassell & Co, 2002) p. 120.

²² For more on sailing routes through the Adriatic see: Mithad Kozličić, "Adriatic Sea Routes from the Antiquity to the Early Modern Age," *Histria Antiqua* 21 (2012): pp. 13-20.

²³ Jan Glete, *Warfare at Sea, 1500-1650. Maritime Conflicts and the Transformation of Europe* (London: Routledge, 2000) p. 1.

even disruption of maritime lines of communication through the Adriatic would have undermined the Republic's ability to supply its armies and fleets in the Levant, and consequently its ability to wage war at all.

Therefore, as far as the Venetian Senate was concerned, when the new war with the Ottoman Empire began in 1645, ships of the Adriatic squadron were expected to fulfill two important tasks. The first task was securing the sea lanes of communication in the Adriatic from the attacks of Ottoman corsairs. The second, equally important task was providing support to the Venetian land forces, especially in defense of strategically important Dalmatian coastal towns. During the war, their tasks consisted of a wide range of duties: from rushing-in emergency deliveries of supplies and reinforcements to the endangered towns during Ottoman attacks, to providing additional firepower to the Venetian regular and irregular forces fighting along the coast, either in small skirmishes or during major offensive operations.

Tactical deployment of the Adriatic squadron did not change much during the entire war and was above all determined by the operational tasks sketched above. Starting from 1646, at the beginning of a campaign season in early spring, the Adriatic squadron would split into several smaller task forces, each consisting of 4-8 vessels, and would deploy to the guard posts along the coast. The areas of deployment of these task forces were the following: 1) the north littoral, stretching from Novigrad (*Novegradi*) via the Island of Pag (*Pago*) to the southern border of the Zadar district, 2) Šibenik (*Sibenico*) and its littoral 3) the coastal area between Trogir (*Trau*), Split (*Spalato*) and Omiš (*Omissa*), 4) the waters of the islands of Hvar and Korčula (*Curzolla*) 5) the Bay of Kotor and 6) task force under the command of a (extraordinary) governor of the Gulf, (discussed below) with no specific post but charged with cruising the Adriatic in search for Ottoman corsairs. The actual number of ships deployed at each particular post changed from year to year, and depended, above all, on estimation of the level of danger of an Ottoman attack. For example, during the years 1653-1656, when Split figured as the most threatened target, up to 20 armed vessels were positioned in its waters.²⁴ Similarly, in 1657 before and during the siege of Kotor, the Republic deployed the major part of the Adriatic squadron (six galleys, three sail gunships and about 20 smaller armed boats) in that area.²⁵

²⁴ ASVe, PTM. b. 474. num. 16. (Spalato, 4 Marzo 1653) attachment: *Notta di Militie che sono in Spalato, Clissa, et Almissa con le Barc' Armate*.

²⁵ ASVe, Senato Dispacci, PTM. b. 481, num. 118. (Zara, 14. Agosto 1657); num. 127. (Cattaro, 11. Settembre 1657)

3. 1. *Armed Boats (barche armate) and Brigantini*

The operational requirements of the Adriatic squadron's duties also dictated its composition. Table 1 below shows the numbers of particular types of ships serving in the Adriatic squadron during this war. As it may be seen, the core of the squadron consisted of a small group of light galleys (usually 3-5, though in special occasions their number could rise up to 10-12 galleys), yet the bulk of the Republic's naval forces in the Adriatic consisted of smaller warships: *fuste*, *galeotte*, *barche armate* and *brigantini*. Such composition was the direct result of the need to provide armed vessels for each of the many guard posts along the coast. All these vessels belong to the category of small, oar propelled warships, armed with varied number of guns and heavy firearms. *Brigantini* and armed boats (*barche armate*) were the smallest, and consisted of a single deck with between 10 to 12 benches (one oar per each) and one sail. Each vessel carried crew of one company of Croatian or Albanian marine infantry (known in Venetian sources as *fanti oltramarini*)²⁶ with strength of up to 50 men, and was usually armed with two heavy muskets (*moschetti da braga*), two nine pounder *periere*²⁷ and one three pounder *falconeto*.²⁸ *Fuste* and *galeotte* represented smaller versions of the galleys (with a *galeotta* being slightly bigger than a *fusta*), with 14-18 benches and a single triangular sail. Armament of these ships varied, but usually consisted of six *periere* of different calibers (mainly 9 and 12 pounders) and six heavy muskets. Their crews were larger than those of armed boats or *brigantini*, numbering between 60 to 100 men and thus requiring two full companies of marine infantry to arm them.²⁹

²⁶ For more on the structure and organization of Venetian land forces in the mid-seventeenth century and their division into various "national" (overseas – *oltramarini*, transalpine – *oltramontani*) troop types see: Sergio Perini, "Le milizie della terraferma veneta verso la metà del Seicento," *Studi Veneziani* 29. (1995): pp. 193-210.; Domagoj Madunić, *Defensiones Dalmatiae*, pp. 142-155.; Tea Mayhew, "Mletački vojnik na istočnoj obali Jadrana za kandijskog rata [Venetian soldier on the Easter Adriatic Coast during Candian War]" In *Spomenica prof. dr. sc. Josipa Adamčeka [Memorial for prof. Josip Adamček]*, Drago Roksandić and Damir Agičić, eds. pp 243-262. (Zagreb: FF Press, 2009); Lovorka Čoralić, "U okrilju Privredre – Mletačka Republika i hrvatski Jadran [Under the auspices of Serenisima – Venetian Republic and the Croatian Adriatic]" *Povijesni Prilozi* 37 (2009): p. 16.

²⁷ *Periere* were gunpowder weapons of a smaller caliber loaded with replaceable gunpowder cartridges, commonly used to arm *fregates*, *fuste* and *galeotte*. See: Marco Morin, "Artiglierie navali in ambito veneziano: tipologie e tecniche di realizzazione," *Quaderni di oplologia* 23, (2006): pp. 3–28. For more on the historical development of these weapons see: Kelly DeVries and Robert D. Smith, "Removable Powder Chambers in Early Gunpowder Weapons," In *Gunpowder, Explosives, and the State. A Technological History*. ed. Brenda Buchanan (Aldershot: Ashgate, 2005) pp. 251-265.

²⁸ Alberto Tenenti, *Piracy and the Decline of Venice*, pp. 152-3. The armaments quoted above were issued to the *brigantino* of *governatore Fivi* in March 1646. ASVe, Senato Mar, R-104, f. 35R, *A di 2 Marzo 1646*.

²⁹ Alberto Tenenti, *Piracy and the Decline of Venice*, pp. 154; For the armaments of these see: ASVe, PTM. b. 489, num. 34. (Spalato, 22. Ottobre 1662) attachment: *Nota da nuovi arsili di galeotte con gli*

Once it became clear that a war with the Ottoman Empire was imminent, the Adriatic naval squadron went through rapid expansion similar to that of the Republic's land forces in the region.³⁰ In March 1646, the Senate informed Governor-general Lunardo Foscolo that 12 hulls of armed boats were ready to be sent to Dalmatia, while at the same time, the magistrates of the Arsenal have been ordered to prepare further 20, all destined for service in the Adriatic.³¹ A few months later, in December 1646, another ten armed boats were dispatched to Dalmatia.³² Besides sending such bulk reinforcements of hulls, the Adriatic squadron was also gradually strengthened by issuing armed boats to individual captains who were commissioned by the Senate with recruiting new extraordinary companies of *oltramaringi*, destined for service in the Adriatic.³³ With these reinforcements, by 1647 the number of *brigantini* and armed boats in Adriatic squadron rose from 20 to more than 40 vessels. As it can be seen from Table 1, between 1646 and 1660 the number of these smaller warships serving in the Adriatic squadron was maintained at around 40-50 vessels.

Table 1. Composition of the Adriatic Naval squadron (1646-1669).

Date	Galleys	Armed boats	Fuste / Galeotte	Sail war-ships	Note	Source
1646. June	7	30		0		Sassi I. pp. 239-240.
1647. October - February				3		SRR-19, f. 40v; SMR-105, f. 267r-v;
1648. December-1649. February	12	45	0	0		PTM-467-519; Galleys: PTM-468-552;
1649. March	10					PTM-468-565;
1650. March		31	0	0	(1)	PTM-470-687;
1650. September	3					PTM-470-755;
1651. June	5			0		PTM-471-34;

armizzi et armi che occorrono; Compare also John Guilmartin F., *Galleons and Gallyes*, (London: Cassel & Co, 2002) pp. 113-4.

³⁰ For growth of the Venetian land forces in Dalmatia see: *Sassi 1*, pp. 230, 242-4.; Domagoj Madunić, *Defensiones Dalmatiae: Governance and Logistics of the Venetian Defensive System in Dalmatia During the War for Crete (1645 – 1669)*, Doctoral dissertation, Central European University, Budapest, 2012. pp. 247-258.

³¹ ASVe, Senato Rettori, R-17, f. 59v-60r, *Adi 16. Marzo 1646*.

³² ASVe, Senato Mar, R-104, f. 324, *Adi 24 Dicembre 1646*.

³³ Such was for example case with Captain Marco Sodorovich in March 1646. ASVe, Senato Mar, R-104, f. 34v, *Adi 2. Marzo 1646*; See also: ASVe, Senato Mar, R-104, f. 277v-278r, *Adi 2 Novembre 1646*.

Date	Galleys	Armed boats	Fuste / Galeotte	Sail war-ships	Note	Source
1652. April	3	40	1	0	(1)	PTM-472-99-Nota delli pagamenti;
1652. July	4			1		PTM-473-115;
1653. December	5	40	1	0	(1)	PTM-475-97; (Galleys: November)
1654. October	5	39	0	0	(1)	PTM-476-165; PTM-476-159;
1655. February		49	0	0		PTM-477-6;
1656. July-August	6	35	3	1		PTM-479-19; PTM-480-21-22;
1657. January	6	35	4	1		PTM-480-80;
1657. May	9			3	(2)	PTM-481-100;PTM-481-118;
1658. July-November	7	41	0	4	(4)	PTM-483-193; PTM-484-222; SRR-33-56;
1659. July	7					PTM-485-257;
1660. March	6	?	?	0		PTM-487-3;
1661. June	5	?	5	0		PTM-487-18;
1661. September		?	8	0		PTM-488-91;
1662. June-October		5	18	0	(3)	PTM-489-5;PTM-489-34;
1663. March-September	5			3	(5)	PTM-490-60;PTM-491-95;
1664. September		6	15	0		PTM-492-176;
1665. January-Feb.	6		15	0		PTM-493-8;PTM-493-20;
1665. December	6		25	0		PTM-495-111; PTM-495-112;
1666. June	6		25	0		PTM-496-163;
1668. January	7	0	21	0		PTM-498-35;PTM-498-39;

(1) Does not include ships at guard duty in the Bay of Kotor.

(2) Arrival of seasonal reinforcements of 3 galleys from Corfu.

(3) Four of 18 *fuste* and *galeotte* were *galeotte grande*.

(4) The number of *fuste* or *galeotte* among these 41 armed boats cannot be established.

(5) One of the sail ships is a Venetian *galeazza*

3. 2. *Small Galleys (galeotte) and Fuste*

From 1656 the composition of the Adriatic force began to change and over the years armed boats and *brigantini* were completely replaced by their larger counterparts: *fuste* and *galeotte* (see Table 1 above). This change was in the first place a result of a shift in the nature of warfare in the Adriatic. Although successful Venetian land offensives in 1647 and 1648 and destruction of all major Ottoman strongholds south of Dinaric mountains somewhat decreased the direct danger to Dalmatian coastal towns, starting from 1654 a growing number of Ottoman corsairs that begun operating in the Adriatic posed a new threat to Venetian shipping. Small and agile, armed boats and *brigantini* well suited the needs of the first several years of the war when the navy was used mainly as the support for the operations of the Venetian land forces. Yet, the change of the Venetian strategy in this battlefield from active offense to passive defense, combined with increased activity of the Ottoman corsairs in the Adriatic, shifted the focus of duties of the Adriatic squadron. Its main priority became securing navigation through the Gulf. Armed boats, smaller than Ottoman *fuste*, were not well suited for the task of persecuting these ships. Although 2-3 armed boats could easily overcome one Ottoman *fusta*, the smaller number of rowers made these Venetian warships much slower than the Ottoman vessels and thus usually unable to catch them.

The larger Venetian galleys, when fully manned, were, in terms of speed and combat strength, far superior to Ottoman *fuste*, yet, these warships were rather cumbersome tools for pursuing Ottoman corsairs. This was in the first place due to the fact that the galleys required very large crews, and chronic problem of manning enough sailors for its warships, which had troubled Venetian navy in previous decades, was only amplified during wartime and in the end caused reduced maneuverability of these vessels.³⁴ Finally, due to the needs of naval operations in the Levant, the number of galleys in the Adriatic was always limited and they had to be supported with smaller warships, in this case armed boats, which only slowed them down. All these problems were presented to the Senate in June 1660 by Governor-general Andrea Corner. As the solution to the problem, he advised replacement of the worn out armed boats with *galeotte*, the number of which at that moment was already slowly rising (see Table 1).³⁵ *Gale-*

³⁴ See: Alberto Tenenti, *Piracy and the Decline of Venice*, pp. 112-116; For a more detailed coverage of problems of manning Venetian war galleys see: Luca Lo Basso, *Uomini da remo. Galee e galeotti del Mediterraneo in età moderna*, (Milano: Selene Edizioni, 2004) pp. 35-175.;

³⁵ ASVe, PTM. 487, num. 31. (Sebenico, 27. Luglio 1660); num. 33 (Sebenico, 13. Agosto 1660); num. 61. (Zara, 6. Gennaro 1660 m.v.)

otte were perfectly suited to the task of persecuting Ottoman *fuste*: slightly larger, they could match *fuste* both in speed and in strength. Thus a task force of *galeotte* could either operate independently or as a support of the galleys without significantly slowing them down. Over the years and following the advice of Governor-general Corner, the Republic reconfigured the Adriatic squadron. At the end of the war, in addition to seven galleys, 21 Venetian *fuste/galeotte* served in the Adriatic.

1. 3. Galleasses (Galeazze) and Sail warships

The last time that Venice had been fully mobilized for a naval engagement before this war was in 1619, and at the time its war fleet consisted of one or two *galleasses*, some 50 galleys, and several dozens of sail gunships hired from northerners.³⁶ Such composition of the Republic's navy was the consequence of a global shift in naval warfare. The shift was marked by the rise of gun-carrying sail ships (caravels, bretons, galleons). These ships had steadily gained dominance over oar-propelled galleys and by the second half of the seventeenth century had evolved into a completely new model of a specialized warship, the so-called *ship-of-the-line*.³⁷ When the War for Crete broke out in 1645, the age of galleys and galleons was effectively at its end, yet both of these types still made the backbone of the Venetian navy fighting in the Levant. In 1646, as part of the preparations for naval operations in the Levant and in addition to the extensive program of arming the galleys stored in the Arsenal, the Republic again engaged in the project of massive hiring of galleons and merchantmen armed with guns, mainly Dutch and English captains. In spite of their cost,³⁸ these vessels, armed with 20-40 guns each, fully demonstrated their usefulness as early as May 1649, when the Venetian fleet consisting of only 19 sail warships defeated the much larger Ottoman force of 11 sail warships, 10 *galleasses* and 72 galleys. Throughout the entire first phase of the war, until the fourth battle of

³⁶ Galleass or *galeazza* was an attempt in early modern shipbuilding to keep the maneuverability and independence of galleys and combine it with the firepower of sail ships. For more on 17th ct. Venetian *galeazze* see: Frederick C. Lane, *Venice. A Maritime Republic*. p. 374; John F. Guilmartin, *Gunpowder and Galleys, Changing Technology and Mediterranean Warfare at Sea in the 16th Century* (London: Conway Maritime Press, 2003) pp. 245-7, 258-9.; Alberto Tenenti, *Piracy and the Decline of Venice*, pp. 132-134.

³⁷ For a detailed survey of this trend see: John F. Guilmartin, *Gunpowder and Galleys*, pp. 269-289. See also: John F. Guilmartin, *Galleons and Galleys*, pp. 206-213.

³⁸ Monthly cost to hire one galleon armed with 20-30 guns amounted on the average from 1,800 to 2,100 *ducats*, resulting in the yearly cost of some 21,000 – 25,000 *ducats*. For example see: ASVe, Senato Mar, R-107, fols. 40v-42v; R-112, fols. 40v-42v, 50v-52v, 53r, 54r, 59v-61v, 114r-116r, 151r-156v, 158r-159v; ASVe, Senato Mar, R-121, fols. 29v-32v, 34r-37r, Adi 1 Marzo 1657.

the Dardanelles (1657), between 20 and 30 of these ships served in the Venetian fleet in the Levant. Still, a few galleons and armed merchantmen were also deployed in the Adriatic.³⁹

In contrast to the Aegean Sea where these ships were used chiefly in naval engagements against Ottoman vessels, in the Adriatic theater of operations these ships mainly supported the Venetian land force defending Dalmatian coastal towns. The Republic put its trust in these floating gun platforms and their firepower to guard the entries into the bays of Dalmatian towns and to prevent the Ottomans from closing these entries and cutting off besieged towns by placing gun batteries along the shore.⁴⁰ The first two of such warships (one armed merchantmen and one galleon) were hired in haste and dispatched to Dalmatia in September 1647, during the dramatic days of the siege of Šibenik.⁴¹ Even though these ships arrived too late to participate in the town defense, they made an impression on Governor-general Foscolo who requested them for the planned, but never realized, expedition to Albania in winter 1647-1648. Nevertheless, although the Senate approved this request, in January 1648, when it became clear that the entire operation was compromised, in order to cut the expenses these ships were recalled without seeing any action.⁴² The next time sail gunships were employed in the Adriatic was in 1657. Alarmed by the news of massive Ottoman preparations that were steadily reaching Zadar, in 1656 Governor-general Antonio Zen included four "ships of war," armed with cannons in the list of required reinforcements necessary for the defense of the province.⁴³ The first galleon arrived as early as June 1656, followed by two more in May 1657.⁴⁴

³⁹ For the participation of foreign sail warships in the Venetian navy, so called *Armata grossa* see: Guido Candiani, *I vascelli della Serenissima: guerra, politica e costruzioni navali a Venezia in età moderna, 1650-1720* (Venezia: Istituto veneto di scienze, lettere ed arti, 2009) pp. 22-64.; Guido Candiani, Guido Ercole, *Vascelli e fregate della Serenissima. Navi di linea della Marina veneziana 1652-1797*. (Gruppo Modellistico Trentino, 2011) pp. 14-24.

⁴⁰ For a very good description of this defensive doctrine, and discussion of the problems of defending Dalmatian towns and keeping the sea access to the besieged town open, see the letter of Governor-general Antonio Bernardo entirely dedicated to this topic. ASVe, PTM. b. 481. num. 69. (Sebenico, 10. Dicembre 1656)

⁴¹ Contract of hire of two armed merchantmen Sant' Angelo and galleon Cornaro, for 1,200 and 1,900 *ducats* respectively. ASVe, Senato Mar, R-105, f. 267r-v, *Adi 2 Settembre 1647*

⁴² ASVe, PTM. b. 465. num. 324. (Di Galea, Sebenico, 3, Ottobre 1647); ASVe, Senato Rettori, R-105, fols. 81r, 92v; The only benefit of the service of these two ships in Dalmatia, was that Foscolo used the guns from one of those to arm the new fortifications erected in Trogir. ASVe, PTM. b. 465. num. 360. (Zara, 6. Gennaio 1647. m.v.)

⁴³ ASVe, PTM. b. 479. num. 101. (Zara, 18 Marzo 1656)

⁴⁴ ASVe, PTM. b. 480. num. 20. (Sebenico à 9 luglio 1656); PTM. b. 481. num. 118. (Zara, 14. Agosto 1657)

This time the reinforcements arrived on time and Governor-general Bernardo made a good use of them during the defense of Kotor that year.

Influenced by this positive experience, for the next campaign (1658) the Senate destined four such vessels for the defense of Dalmatia.⁴⁵ Yet meanwhile the Ottoman attention had turned towards the north and Transylvania, so these ships saw no action in 1658. It seems that the threat of years 1656-7 left a lasting mark on the Venetian command, because until the end of the war news of Ottoman preparations for an attack on Kotor were cautiously matched by a dispatch of sail propelled warships to the Adriatic, as was for example done in 1663 when two galleons were sent for guard duty in the Bay of Kotor.⁴⁶ All in all, the service record of this type of warships in the Adriatic remained meager, especially in regard to their high cost, and could be considered to be far from satisfactory for the Republic policymakers. Yet the service record of the Venetian light galleys deployed in the Gulf was rather different.

3. 4. *Light Galleys (galee sottile)*

Long, slim and fast, light galleys (*galee sottile*) for centuries represented the main naval weapon of the Republic. Much has been said about tactical characteristics of these oar-propelled vessels and their suitability to the conditions of service in the Mediterranean Sea. In short, armed with up to five guns at a bow, one of which was a heavy 50 pounder, the main siege weapon of the era, due to its ability to use oars and position itself into a favorable firing position, light galleys proved to be excellent tools for support of land operations, either by firing precise salvos at shore fortifications or at enemy troops. Additionally, their maneuverability made galleys well suited for landing of assault parties and finally, last but not least, their large crews were convertible and if circumstances demanded could also be used on land.⁴⁷ Venetian military commanders used all these features of galleys. Venetian navy, light galleys particularly, provided crucial firepower support both during offensive operations (Skradin and Novigrad in 1647 for example) and during defense of besieged towns (like Split and Kotor in 1657). Yet, the full extent of galleys' usability against shore targets was best seen in the Venetian attack on Ulcinj in March 1663. The naval squadron whose

⁴⁵ ASVe, Senato Rettori, R-33, f. 56r, *Adi 28. Marzo 1658*.

⁴⁶ Since it quickly became clear that there was no prospect of an Ottoman attack that year, these two ships were discharged from duty even before the end of the campaign season at the end of July. ASVe, PTM. b. 491, num. 95. (Spalato, 3. Settembre 1663)

⁴⁷ John F. Guilmartin, *Gunpowder and Galleys*, p. 75-96.; John F. Guilmartin, *Gunpowder and Galleys. Changing Technology and Mediterranean Warfare in the 16th century*. (London: Conway Maritime Press, 2003) pp. 209- 268.

core consisted of three galleys and one *galeazza*, after blockading the port of Ulcinj and disabling the defending artillery, continuously bombarded the port for almost 24 hours, destroying six Ottoman *fuste* captured in the port and the arsenal full of naval stores as well.⁴⁸ Galley crews also participated in the attack on Knin and were even employed as additional workforce on Dalmatian fortifications, as was the case in 1656.⁴⁹

It may be the truth that the second half of the seventeenth century marked the coming of the age of sail and rise to dominance of the sail warships armed with platforms full of guns. Still, galleys represented excellent policing vessels, well suited to patrolling duties. As numerous examples testify, one-on-one, Ottoman *fuste* stood no chance when faced with this formidable enemy. Very often, Ottoman *fuste* did not operate as an organized group, but cruised the Adriatic individually in order to cover as large an area as possible. Yet, by doing so they risked an encounter with a Venetian galley, as indeed happened on several occasions, sometimes even providing the opportunity for a single galley to hunt for multiple enemies overcoming them one by one. In April 1661 within only a few days the galley *Brazzana* captured two *fuste* from Ulcinj after which the entire Ottoman force left the Adriatic.⁵⁰

Furthermore, though a Venetian war galley was no match for a seventeenth-century purpose-built sail warship armed with 40-60 guns, it had no problems overpowering an armed merchantmen carrying more than double of its fire-power (10-20 guns). An encounter in the northern Adriatic in December 1655 provides a good contribution for the ongoing debate concerning the shift in naval warfare. Upon receiving the news that an unknown armed ship had been spotted, galley *Arbessana* went to search for it and soon found the offending vessel. The captain of the ship, which turned out to be an armed merchantmen (carrying 13 guns) in the Service of the Knights of Malta, mistook the Venetian galley for an Ottoman *fusta* and gave the order for sails to be raised. The Venetian commander (correctly) interpreted this gesture as a hostile action. After skillfully using its superior maneuverability to position his galley, the Venetian commander ordered three shots to be fired. The first shot, consisting of a heavy cannonball aimed to damage and slow down the enemy ship, was followed by the second shot made of chain-linked cannonballs, which tore down the main mast. Finally the third shot consisted of a canister, which incapacitated the majority of the crew on the deck.

⁴⁸ ASVe, PTM. b. 490. num. 67. (Zara, 11. Aprile 1663)

⁴⁹ ASVe, PTM. b. 480. PTM. b. 480. num. 46. Spalato, 3. Ottobre 1656); num. 55. (Trau, 30. Ottobre 1656); num. 64. (Sebenico, 21. Novembre 1656)

⁵⁰ ASVe, PTM. b. 488. num. 71. (Spalato, 9 Aprile 1661)

After this, the thoroughly devastated merchantmen signaled that it was ready to surrender, thus bringing this encounter to a quick end.⁵¹

The problem with light galleys was that they were in high demand also in other battlefields. The Senate almost always gave the priority to the Aegean battlefields, where the Republic deployed the majority of its naval forces. The number of galleys in the Adriatic ranged from as low as one to as much as twelve, depending on the circumstances. Most governor-generals estimated the minimal “sensible” number of galleys necessary to maintain the Adriatic at three. According to the prevailing doctrine, one galley accompanied by about dozen armed boats was always to be held in the Bay of Kotor, one was to be positioned in the center of the province, in the waters between Split and Trogir, and one galley was to be stationed at Zadar, to serve as the strategic reserve at the disposal of Governor-general.⁵² In reality, the number of galleys serving in the Adriatic was rather fluid (see Table 1). Though the number of light galleys serving was usually kept at the bare minimum, when some major military engagement was expected in Dalmatia the Republic was ready to commit a larger number of galleys to this theater of operations. For the expedition to Albania in 1649, of which the Senate had high expectations, the task force of no less than 12 galleys was assembled. Similarly, when a major Ottoman offensive was expected in Dalmatia in 1657, the Republic deployed nine galleys in the Adriatic. However, on average between three and six galleys were usually available for duty in the Adriatic.

In addition to the strictly combat duties mentioned above, galleys were also employed for a wide range of other tasks that could take them away from their regular services. Most commonly, a galley was dispatched from Dalmatia to Venice to collect provisions of specie needed for payment of the Republic’s forces in the province. Galleys were also often used as transport ships to transfer troops from Dalmatia to Corfu or Ionian Islands. Galleys destined for voyage to Corfu could be expected to return within sensible time, but those sent further were usually ordered to remain with the main fleet in the Levant, and were thus lost for governor-generals in Zadar. For the Venetian Republic, the galley was not just a warship but also a symbol of the state power. As such, galleys, including those serving in the Adriatic, were also used for a multitude of ceremonial duties. Every arrival of a Republic’s magistrate- not just of governor-generals - in the province represented a public event and part of the standard decorum was for them to arrive into the place of service aboard a Republic’s galleys. And, whenever possible, an

⁵¹ ASVe, PTM. b 480. num. 59. (Trau, 15. Novembre 1656) attachment: report from the hearing of the merchantmen captain.

⁵² For example see: ASVe, PTM. b. 472. num. 10. (Zara, 30. Giugno 1652)

additional effort was put into maintaining this protocol. For example, in March 1651, during the stay of Governor-general Foscarini in Trogir, the new extraordinary governor of Trogir and Split also arrived into the area aboard a sail ship. This moved Governor-general Foscarini, in order to “upkeep the dignity of this service in the town so close to the enemy,” to relinquish his own galley to the extraordinary governor for his ceremonial entry into Split.⁵³

Such non-combat official duties could also take galleys away from Dalmatian waters. For example, whenever a galley for transfer of governors to Corfu or “Three Islands” was not available in Venice, one of the galleys from Dalmatia would be recalled and assigned to this task. Such tasks usually occupied the galley for one or two months, depending primarily on the pace of preparations for the departure of a designated magistrate from Venice.⁵⁴ Equally, a departing Governor-general and his staff would also return to Venice the same way as they had arrived - aboard a galley.⁵⁵ Among other “ceremonial” duties that resulted in removal of a galley from its standard duties in the Adriatic for a long period of time, was the task of transporting the Republic’s envoys to Istanbul. Moreover, although the return of a Governor-general to Venice provided an opportunity to send some of the weakest vessels to be refitted there, this important duty could sometimes take away some of the best galleys from the Adriatic squadron too.⁵⁶ All in all, it was not uncommon that, because of these secondary duties, the number of the galleys in service in the Adriatic would even fall to one, to the great annoyance of the governor-generals.⁵⁷ Probably the most dramatic example in this regard are the events from April 1667, when in the days immediately after the terrible earthquake that devastated Ragusa and Kotor the Governor-general Catherino Cornaro did not have a single galley at his disposal in Zadar.⁵⁸

The crew of a fully armed Venetian galley consisted of ca 290 men, some 200 of whom were oarsmen, 48 armed soldiers of marine infantry, while the rest were

⁵³ ASVe, PTM. b. 471. num. 12. (Trau, 24. Marzo 1651)

⁵⁴ In 1661, for example, galley *Magna* was recalled to Venice to serve for the transport of the Governor-general of “The Three Islands.” ASVe, PTM. b. 488, num. 91. (Spalato, 12. Settembre 1661)

⁵⁵ Occasionally and to the great frustration of a current Governor-general, this service could take two galleys away from Dalmatia. This happened in February 1652 and 1660, when Governor-generals Girolamo Foscarini and Antonio Bernardo left Dalmatia for Venice. ASVe, PTM. b. 474. num. 15. (Di Spalato, 22. Febraro 1652 m.v.); PTM. b. 487. num. 3. (Zara, 22. Marzo 1660)

⁵⁶ Such was the case with galley *Cornera* in October 1652, which was charged with the duty of transport of extraordinary Ambassador Capello to Istanbul. ASVe, Senato Rettori, R-26, f. 180v, *Adi 5 Ottobre 1652*; ASVe, PTM. b. 473, num. 143, (Zara, 21 Ottobre 1652)

⁵⁷ For example see: ASVe, PTM. 472, num. 110 (Zara, 30. Giugno 1652.)

⁵⁸ ASVe, PTM. b. 497. num. 209. (Zara, 5. Aprile 1667.), num. 210. (Zara, 12. Aprile 1667.); Grga Novak, “Mletački izvori o potresu u Dubrovniku i Kotoru 6. travnja god. 1667 [Venetian sources concerning the earthquake in Ragusa and Kotor],” *Starine* 55 (1972): p. 8.

various specialists: gunners, carpenters, a surgeon, an oar master, wood workers etc. (for a detailed structure of the Venetian light galley crew in this period see Appendix 1). For the crews of merchantmen or smaller Ottoman *fusta*, the prospect of being boarded by some 250 men was a sufficient reason to give up the fight and try to find salvation either in outright surrender or attempt to escape by jumping into sea. However, these large crews, which represented one of the main advantages of galleys, were also their major drawback. When the strength of a galley crew would fall below a certain number, a galley would become unable to move and thus would practically be rendered useless.

Galleys were extremely sensitive to outbreaks of epidemics among their crews, especially among the rowers, who due to the very harsh conditions of their service (exposure to heat during summer and cold winds and rain in fall and winter), combined with malnutrition, were very susceptible to various diseases. The following examples provide good illustration of the effects the epidemic outbreaks could have had on galley crews. In June 1653, immediately upon the arrival of galley *Trona* in Zadar, its captain and 40 rowers were so sick that they needed to be admitted into hospital. The galley was anchored in the port until they were cured.⁵⁹ Even more striking was the case of galley *Civrana*, which in December 1655 arrived in Zadar after a long and hard winter voyage. Upon docking, 48 of its rowers, who had fallen sick during this single voyage, were immediately dispatched to hospital. Moreover, since the galley had already lost 55 crewmen during the previous campaign season (the overwhelming majority of them rowers), its crew was reduced to barely 99 men or 40% of its full strength, making the galley completely incapable of sea service.⁶⁰ Probably one of the most dramatic example dates from the campaign season of 1658. At the beginning of the year the Republic had dispatched four newly armed galleys to the Adriatic, yet as early as August the state of these galleys was deplorable. A total of 168 crew members were dead and further 113 were hospitalized, bringing total losses to 281 men, or almost 25% of the crews, lost during a single campaign season.⁶¹

Though this last example may seem rather extreme, it was not that extraordinary. The Table 2 below contains data compiled from several muster records of galleys serving in the Adriatic. It shows that the galley crews were, on average, at 75-83% of their full strength. An extensive loss suffered during a single season, such as

⁵⁹ ASVe, PTM. b. 474. num. 44. (Di Zara, 1. Giugno 1653);

⁶⁰ ASVe, PTM. b. 478. num. 80. (Zara, 7. Dicembre 1655)

⁶¹ ASVe, PTM. b. 483. num. (num. 207. Spalato, 25 Agosto 1658) attachment: *Nota delli morti et infermi delle Galere*.

those during 1658, could partially be attributed to a more demanding campaign, but probably even more to malnutrition, inexperience and maladjustment of the newly formed crews to the conditions of life aboard the war galley. In 1658, Governor-general Antonio Bernardo offered to the Senate the following explanation for the deplorable state of the above mentioned galley crews:

Ne da altro è dervivata la loro caduta, se non per la mutatione, dalla vita de comodi (secondo le conditioni di ogni uno) à quella delle pene di una Galera; venendo sotto clima più caldo, non usi al tormento del remo, ne del mare; A che si [12] aggiunge l'afflittione dell' animo, che li prostituisce di abandonarli disperatamente, come persi.⁶²

Several cases show that after initial losses, the core of veteran crew members adjusted to conditions of the sea service would form and the crew strength would stabilize. Moreover, galley crews recruited solely from Venetian subjects from the *Terraferma* compared to those armed with population from Dalmatian islands provide arguments in favor of the hypothesis that inexperience and maladjustment to the conditions of the sea service could have dire consequences to the state of a galley crew. Galley *Bergamesca*, armed with a crew from inland Bergamo who had had little or no experience in the sea service, by May 1647 had lost a majority of its crew and was docked in the Zadar harbor.⁶³ By contrast, two Dalmatian galleys, *Brazzana* and *Arbessana*, armed in 1646 (named after the island communities of Brač and Rab responsible for manning these galleys),⁶⁴ remained in service for the entire duration of the war and gave a very good account of their service. Never during the war there was recorded a sharp decrease in the strength of the crews of these two galleys, manned with islanders well accustomed to the conditions and hardships of sea service.⁶⁵ Even though, when in 1653 galley *Brazzana* was rearmed (because its worn out hull was no longer seaworthy), it lacked 118 crew members, this, however, was a consequence of almost seven years of uninterrupted service. Moreover, since the galley served so close to its home, many of the missing crewmen should be considered as fugitives who simply had enough of the war and went home.

⁶² Ibid.

⁶³ ASVe, PTM. b. 464. num. 248. (Di Galera Almissa, 27. Maggio 1647); num. 278. (Zara, 27. Luglio 1647.)

⁶⁴ ASVe, ASVe, Senato Rettori, R-17, f. 51v-52r, *Adi 2 Marzo 1646*; Senato Mar, R-104, fols. 74v-75r. *A di 6 Aprile 1646*.

⁶⁵ See: ASVe, PTM. b. 473. num. 119. (Zara, 25 Luglio 1652); ASVe, PTM. b. 474. num. 30. (Di Zara, 24. Aprile 1653)

Table 2. Strength and structure of the Adriatic squadron galley crews.⁶⁶

	1646. February		1649. May		1659. July		1660. March		1668. February	
	Num.	%	Num.	%	Num.	%	Num.	%	Num.	%
Galleys at muster	6		8		6		3		3	
Nominal crew strength	1748	100	2328	100	1746	100	874	100	873	100
Total crew present	1324	75.74	1902	81,70	1460	83.62	663	75.86	-	-
Total crew missing	424	24.26	426	18,30	286	16.38	211	24.14	-	-
Galoetti nominal strength	1200	100	-	-	1200	100	600	100	600	100
Galeotti present	928	77.33	-	-	1145	95.42	529	88.17	539	89.83
Galeotti missing	278	23.17	-	-	55	4.58	71	11.83	61	10.17
Structure of the galeotti										
Freemen (<i>zontavoli</i>)	883	95.15	-	-	671	58.60	398	75.24	224	41.56
Convicts (<i>condenati</i>)	5	0.54	-	-	448	39.13	123	23.25	285	52.88
Others	40	4.31	-	-	0	0	6	1.13	5	0.93
Ottoman prisoners (<i>Turchi</i>)	0	0	-	-	26	2.27	2	0.38	58	10.76

Dalmatia was one of the traditional recruiting grounds for Venetian galleys and this war was no exception to this practice. Though the number of armed provincial galleys during this war was only two, the level of mobilization of local population for galley service was extremely high. During the War for Crete galley service was not limited to only one or two campaigns, as in the days of the War of Cyprus (1570-1573) when no fewer than eight Dalmatian galleys were armed,⁶⁷ but spanned over two and a half decades, resulting in a continuous drain on local populations. Over the years, the task of maintaining two provincial galleys (*Brazzana* and *Arbessana*) well armed with crews began to represent

⁶⁶ The number of galleys recorded in this table does not represent the total number of galleys serving in the Adriatic, only the number of those present at musters. Data taken from the following galley musters: ASVe, PTM. b. 464. num. 216. (Zara, 11. Marzo 1647); ASVe, PTM. b. 468, num. 565. (Zara, 10. Maggio 1649); ASVe, PTM. b. 485, num. 257 (Spalato, 28. Luglio 1659); ASVe, PTM. b. 487. num. 3. (Zara, 22. Marzo 1660); ASVe, PTM. b. 498. num. 35. (Zara, 5 Febrero 1667. m.v.)

⁶⁷ For more see: Grga Novak ed. *Lepantska bitka: udio hrvatskih pomoraca u Lepantskoj bitki 1571. godine [Battle of Lepanto: participation of Croatian mariners in the battle of Lepanto]* (Zadar: Jugoslavenska akademija znanosti i umjetnosti. Institut u Zadru, 1974) pp. 261-2.

too heavy a burden for these two island communities. Consequently, the Republic was forced to expand the obligation to provide men for galley crews also to the islands of Korčula and Hvar.⁶⁸ Furthermore, in 1647, the Republic planned to put into service also a galley of the town of Šibenik, yet imminent Ottoman danger and the need to defend the town put this project temporarily on hold.⁶⁹ However, after the plague heavily decimated the town and its countryside the plan was completely discarded.

In addition to the two Dalmatian galleys that for the entire duration of the war served almost exclusively in the Adriatic, hundreds of Dalmatians also ended up serving aboard galleys in the Levant. The seat of the Venetian administration in Dalmatia, the town of Zadar, and the islands of its littoral were burdened with one of the heaviest duties: to provide rowers for the galley of Captain-general of the sea. During the first few years, levying of men for this duty went without any serious problems. Every few years, when a new Governor-general set forth toward the Levant, some 100 or 150 men would be levied for his galleys in Zadar. However, since those who left for the Levant almost never returned, the first difficulties in finding men for this service began to appear by 1650.⁷⁰ When the next order to gather 150 men for this duty arrived in Zadar in July 1651, Governor-general Girolamo Foscarini informed the Senate that he was approached by representatives of the community of the Zadar islands. They inquired if it would be possible for them to replace those selected for galley service with Ottoman prisoners or slaves bought from the Morlacchi. After pondering the issue for some time, Foscarini decreed that only freemen could serve aboard the galley of captain-general; however, prisoners could be used to staff other galleys with the substituted freemen transferred to the galley of the captain-general.⁷¹ How effective was this policy is unknown, yet by 1655, when the next contingent of 150 rowers was requested, Governor-general Zen informed the Senate that the manpower pool of the islands was almost completely exhausted. Zen wrote to his superiors that the situation was such that at the first rumor of this order, the remaining men eligible for service were ready to either hide or flee, some even to the Ottoman lands.⁷²

⁶⁸ In 1650 obligations of these communities were formalized. and in order to To avoid misuses of local galley commanders, the recruitment of galley reinforcements was allowed only with an explicit order of the Senate. ASVe, Senato Mar, R-110, f. 175r-176r, *Adi 18 Giugno, e 13 Luglio 1650*,

⁶⁹ Governor-general Foscolo informed the Senate concerning the difficulty to execute this order in the following letter: ASVe, PTM. b. 464. num. 229. (Zara, 9. Aprile 1647)

⁷⁰ In March 1650, Governor-general Foscolo informed the Senate about the difficulties in gathering the reinforcement of 100 rowers for the galley of the Captain-General of the Sea. ASVe, PTM. b. 470. num. 688. (Zara, 18. Marzo 1650)

⁷¹ ASVe, PTM. b. 471. num. 48. (Zara, 10. Agosto 1651)

⁷² ASVe, PTM.b 477, num. 21. (Spalato, 22. Marzo, 1655)

However, the Senate continued to draw on this resource and in March 1657 even planned to arm an entire new galley with crewmen from Zadar and its district. Governor-general Bernardo informed the Senate of the strong opposition of the local population to this initiative: since up to that time, some 500 men had left for the Levant and only a few had returned.⁷³ In spite of Governor-general Bernardo's doubts, the Senate decided to press forward with this plan. Over the following months, Bernardo managed to conscript prospective members of the crew for the new galley, but only after conceding to the demands of the local population that the galley was to serve only in the Adriatic. This new levy had completely exhausted the provincial resources and when in October 1657 a new order for the conscription of 150 rowers came to Zadar, Bernardo was forced to send armed boats to collect the prospective conscripts. Yet the boats returned with only four men because the rest had fled at the first sight of Venetian vessels.⁷⁴ The next attempt to gather reinforcements for the crew of the Captain-general in March 1658 also yielded similar result; at the first news of the arrival of Venetian ships sent to collect conscripts for galleys, the remaining inhabitants of the islands and the Zadar countryside took cover and the prescribed quotas of the crewmen simply could not be gathered.⁷⁵

The statement that the galley service was extremely unpopular, at this point at least, needs no further support. As told above, due to the high casualty rates over the years it had become more and more difficult to find those willing to serve aboard the Republic's galleys, not only in Dalmatia but also on the *Ter-raferma*. This resulted in a fundamental change in the structure of the galley crews, which can be noted in the sample data collected in the Table 2 above. While convicts made less than 1% of the crews of the six galleys presented at the muster in March 1646, their number steadily rose so that at the muster of the six galleys held in July 1659 they constituted almost 40% of the crews. In order to compensate for the lack of its own manpower, the Republic resorted to manning the galleys with convicts, even before this war.⁷⁶ In that regard, the data from the Table 2 can be interpreted as a sure indicator of how the war gave additional impetus to this trend that had been on the rise for some time.⁷⁷

⁷³ ASVe, PTM. b. 481. num. 87. (Zara, 4 Marzo 1657)

⁷⁴ ASVe, PTM. b. 482. n. 140. (Lesina, 16. Novembre 1657)

⁷⁵ ASVe, PTM. b. 482. num. 158. (Zara, 15. Febraro 1657 mv)

⁷⁶ Alberto Tenenti, *Piracy and the Decline of Venice*, pp. 112-113.

⁷⁷ Compare: Luca lo Basso, "Il Mestiere del Remo nell' Armata Sottile Veneziana: Coscrizione, Debito, Pena e Schiavitù (Secc. CVI-XVIII)," *Studi Veneziani* 48, (2004): pp.113-115.

3. 5. *Expansion of the Command Hierarchy*

By July 1647 (see Table 1) the Republic had concentrated in the Adriatic a respectable naval force consisting of seven galleys and more than 30 *barche armate*, with a clear tendency to increase its strength even more. However, existing peace-time command hierarchy was inadequate for efficient running of this enlarged naval force, especially in the circumstances of major armed conflict. Aware of this shortcoming, in July 1646 the Senate appointed the governor of Pula in Istria, Gabriel Zorzi, as the Extraordinary governor of the Gulf (*Provveditore Estraordinario in Golfo*), charging him with the command of all galleys and armed boats serving in the Adriatic. Additionally, Governor in the gulf was also granted a seat on war councils (so called *consulta*), yet in this, like in all other affairs, he was to be subordinated to the Governor-general in Zadar.⁷⁸ By introducing this new post of the operative commander through which Governor-general in Zadar could direct and coordinate actions of the fleet with the operations of the Venetian land forces, the Senate both greatly increased command and control over its forces in the region, and significantly eased the burden of directing the Republic's war effort in this battlefield for governor-generals.

As in the case of other extraordinary offices introduced in the course of this war (for example *Commissario in Provintia*), this office was not occupied for the entire duration of the conflict. Between 1650 and 1654, when the shift of the Republic's strategic focus to the Levant directed majority of its forces to the Eastern Mediterranean battlefields, the post was left vacant. However, increased Ottoman corsair activity in the Adriatic prompted the Senate to renew this command post. Accordingly, in April 1654, Alvise Civrano was elected as the Extraordinary governor in the Gulf with the main task of persecution of Ottoman corsairs and keeping the Adriatic safe for navigation.⁷⁹ Until the end of the war this post was occupied and governors of the Gulf cruised the southern Adriatic area between Ancona, Kotor and Ulcinj in search for Ottoman corsairs. In that period, governors of the Gulf had under their command a separate squadron numbering 1-2 galleys accompanied by several smaller vessels, *fuste*, *galeotte* or armed boats.⁸⁰ The base of operations of this squadron were the islands of Korčula and Hvar, the shipyard and arsenal of which provided necessary supportive infrastructure for this force.

⁷⁸ ASVe, Senato Rettori, R-17, f. 171v-172v, *Adi 19. Luglio 1646*; Compare also *Sassi I.*, p. 239.

⁷⁹ ASVe, Senato Rettori, R-28, f. 67v, *Adi 15. Aprile 1654*; f. 76r-v, *Adi 23. Aprile 1654*; ASVe, PTM. b. 475. num. 122. (*Zara, 27. Aprile 1654*); PTM. b. 476. num. 136. (*Zara, 14. Giugno 1654*)

⁸⁰ ASVe, PTM. b. 475. num. 122. (*Zara, 27. Aprile 1654*)

Introduction of the Extraordinary governor in the Gulf, was not the only change in the command structure introduced during this war. As was mentioned previously, all smaller warships were manned by the companies of Croatian and Albanian infantry, which represented the spine of the Republic's naval forces in the Adriatic. The nominal strength of a company of Croatian or Albanian⁸¹ infantry was 50 men, including its command core consisting of a captain, an ensign and a sergeant.⁸² As such, it was sufficient to arm all types of smaller warships, except larger *galeotte* (small galleys) or *fuste* which required two such companies. Unlike the rest of the Venetian land forces, companies of Croatian and Albanian infantry were not organized in larger military formations (regiments) but functioned as independent or "stand-alone" units; meaning, that their captains were subordinated directly to the Venetian commander/magistrate charged with the command of military forces in the place of their service.

Obviously, commanding and coordinating the actions of several dozen "stand-alone" companies and ships would be highly impractical, especially during wartime. In order to address this issue even before the war, a special command post above the level of captain, with the title of *governatore di Militie Albanese* or *Croate* was established in this branch of the Venetian military. This "ethnic" title denoted a commander in charge of several companies of marine infantry serving aboard the armed boats. Often these companies were recruited by the commander himself. In addition to social prestige, and military rank, this title usually (but not always) brought also a small stipend, ranging from 6-12 *ducats*, depending on the merit and status of the particular individual.⁸³

Even so, the rise of the number of companies of Croats and Albanians serving aboard armed boats to more than 50 during 1646-7, underlined the need for more efficient coordination of their actions. This operational requirement consequently led to the creation of a new command post above the level of *governatore*. In July 1648, the Senate sent to Dalmatia an experienced and proven commander, *Cavaliere* Niccolo Delimarcovich (Nikola Delimarković), with the title of Colonel of the

⁸¹ Albanians and Montenegrins (both were recorded in the Venetian sources under the same name that is Albanians) in the Venetian military service have been extensively researched. In addition to the previously listed studies, see also: Lovorka Čoralić, 'Benemerita nazione': albanski vojnici i časnici u Zadru (XVI.-XVIII. st.) ['Benemerita nazione': Albanian Soldiers and Officers in Zadar], *Zbornik Odsjeka za povijesne znanosti Zavoda za povijesne i društvene znanosti HAZU* 27, (2009): pp. 121-164.

⁸² ASVe, PTM. b. 500. num. 122. (Zara, 30. Settembre 1668) attachment dated: *Adi* 30. Settembre 1668.

⁸³ For example see the decrees granting the title of *governatore*: ASVe, Senato Mar, R-104, f. 242v, *Adi* 15 Settembre 1646.; R-106, f. 80v, *Adi* 2. Marzo 1648.; R-113, f. 53v-54r, *Adi* 13. Marzo 1652.; R-113, f. 102v-103r, *Adi* 19. Aprile 1652.;

Croatian nation (*Collonelo della natione Crovata*) and assigned to him a yearly stipend of 500 *ducats*. Although his title referred to him as the colonel of Croats only, Delimarcovich was in charge of all companies of armed boats, Croat or Albanian.⁸⁴ After Delimarcovich had been killed in combat in July 1653, he was succeeded by Vuco Cernizza (Vuk Črnica-Orlandić), whose title was adjusted (to reflect his actual authority) to that of *collonelo delli Nationi Crovata, et Albanese*.⁸⁵ The arrival of colonel Delimarcovich, coincided with the introduction of the office of sergeant-major of the armed boats, a post to which Governor-general Foscolo appointed colonel's nephew, captain Zorzi Delimarcovich.⁸⁶ With the introduction of these two posts, the Republic finished organizing companies of the armed boats serving in the Adriatic into a single corps resembling a regiment.

4. Maintaining and Supplying Adriatic Squadron

Every year, the Republic's warships serving in Adriatic required dozens of smaller repairs, seasonal maintenance works, replacement of broken or used parts etc., and the main facility that kept this fleet operational was the arsenal in Zadar. The arsenals of the *Stato da Mar* were specialized depots of naval stores, weapons, ammunition, and various spare parts. Their role was to support the operations of the Venetian navy by providing ships in transit with facilities for limited repair-work and replenishing consumed materials (ropes, oars, hardware, wood) and ammunition (cannon balls, gunpowder). As such, arsenals were essential for the Republic's ability to project its naval power. Venice organized an unbroken chain of such facilities through its maritime possessions, stretching from Zadar and Hvar to Corfu, and ending with two arsenals on Crete, at *Candia* and *Canea*.⁸⁷

⁸⁴ ASVe, Senato Rettori, R-20, f. 188v-189r, *Adi* 25. *Luglio* 1648.

⁸⁵ ASVe, PTM. b.474, num. 53. (*Di Zara*, 17. *Giugno* 1653); ASVe, PTM. b. 475. num. 118. (*Zara*, 14. *Aprile* 1654); See also appointment of Marco Cernizza, brother of Vuco, as his successor at this post: ASVe, PTM. b. 489. num. 20. (*Spalato*, 28. *Agosto* 1662); For more on the well-known person of Vuco Cernizza (Vuk Črnica-Orlandić) Conte di Montenegro see: Gligor Stanojević, "Crna Gora u doba kandiskog rata (1645-1669) [Montenegro in the Age of the War for Crete (1645-1669)]," *Istorijski glasnik* 1-2 (1953):, pp. 25-29.; Gligor Stanojević, *Jugoslavenske zemlje*, pp. 208.-209.; Dragoje Živković, *Istorija crnogorskog naroda [History of the Montenegro People]*, vol. 2. (Cetinje, 1992) pp. 25.-29.; Lovorka Čoralić and Savo Marković, *Crmnčani u mletačkim dokumentima XVII st. [Family Cernica in Venetian Documents]* (Bar: MVPprint, 2004) pp. 79-92.

⁸⁶ The appointment took a place upon the Colonel's arrival in Dalmatia in July 1648, yet two years later the Senate had still not confirmed it, so Colonel, through the mediation of Governor-general Foscolo, sent a petition to the Senate. ASVe, PTM. b. 470, num. 726. (*Zara*, 25. *Luglio* 1650)

⁸⁷ For more on the development of colonial arsenals and their role in Venetian defensive policy see: Ruthy Gertwagen, "The Venetian Colonies in the Ionian and Aegean Seas in Venetian defense Policy in the Fifteenth Century" *Journal of Mediterranean Studies* 12, num. 2. (2002): pp. 164-171.

Even though it is true that “the importance of a particular city of *Stato da Mar* was clearly marked by presence or lack of the arsenal,”⁸⁸ arsenals were not of uniform size, nor did they provide the same set of services. Among the arsenals of *Stato da Mar*, those at Crete were the largest and were also capable of constructing new galleys and *fuste*, thus resembling the most the famous Venetian arsenal. The arsenal’s scope was in accordance with the role these ports at Crete played as the bases of the Republic’s main fleet during its operations in Eastern Mediterranean.⁸⁹ Similarly, the size of the Zadar arsenal at the other end of the chain reflected the role Zadar played in Venice’s overall naval strategy. Zadar was not the main naval base of the Republic in the Adriatic, this was the role of Venice. Instead, since Zadar served as an operational base of a much smaller fleet, the Adriatic squadron, its facilities were scaled to match the needs (refitting, minor repairs, yearly maintenance) of this fleet, in addition to its main function as the service facility for the Republic’s ships in transit to and from the Levant.⁹⁰ The same was the case with the arsenal at Hvar, the smallest of the Adriatic arsenals. The island of Hvar was a major transit port and shelter for ships sailing along the Venice-Levant course; consequently its Arsenal served as a naval depot where ships in transit could be refitted and their stores replenished.

For the entire duration of the war, from early spring till the late fall, ships of the Adriatic squadrons were in constant service at sea, either searching for Ottoman corsairs or guarding posts exposed to Ottoman attacks. Like any other tool or instrument that is in continuous use, Venetian warships were prone to deterioration and breakage and consequently in need of repair and maintenance. Since the Republic had at its disposal facilities of the Zadar arsenal, the majority of necessary repairs were undertaken there. When, due to prolonged use, some vessel was beyond repair, it was disarmed, either in Zadar with its usable parts stored in the local arsenal, or sent to Venice for the same purpose. At the same time the Senate would order the magistrates of the Arsenal in Venice to transport a replacement vessel to Dalmatia.

The replacements for galleys and armed boats were sent from Venice as ship hulls provisioned with all necessary equipment and seaworthy, but still not fully assem-

⁸⁸ Michela Dal Borgo and Guglielmo Zanelli, *Zara. Una fortezza, un porto, un arsenale (secoli XV-XVIII)*. (Roma: Viella, 2008) p. 38.

⁸⁹ Elisabetta Molteni, *La scienza del fortificare*, pp. 212.

⁹⁰ For more on the development and expansion of the arsenal in Zadar during the period of Venetian rule see: Michela Dal Borgo and Guglielmo Zanelli, *Zara. Una fortezza, un porto, un arsenale*, pp. 39-47.; Antonija Mlikota, “Arsenal u Zadru – Povijest, funkcija i revitalizacija [Arsenal in Zadar – History, Function and its Revitalization],” *Radovi Zavoda za povijesne znanosti HAZU u Zadru* 52, (2010): pp. 205-230.

bled. Once the hull reached Zadar, it would be assembled there and the old crew would take the ship over. Such hulls were in the case of galleys called *arsili*, and in the case of armed boats *corpi*. During the transport, hulls were operated by skeleton crews and whenever possible the Republic grouped such vessels before dispatching them to Dalmatia or to the Levant. For example, in July 1652, one galley *arsilo* and six *corpi di barche armate* were sent as a group to Dalmatia. To increase the security of this transport, the Senate also allocated one company of marine infantry aboard these vessels.⁹¹ Similarly, in 1659 six *corpi* of armed vessels were ordered to be shipped to Dalmatia.⁹² The extent of dilapidation, to which patrolling the Adriatic in search of Ottoman corsairs could reduce the Venetian naval forces, is aptly illustrated in a letter from Governor-general Girolamo Contarini from October 1662. Contarini informed the Senate that almost one half of small galleys or *fuste* under his command were unusable and that a shipment of 14 *corpi of galleotte* is necessary in order to replace worn out vessels.⁹³

In order to keep Zadar arsenal operational and able to perform its functions, it was necessary to keep it well provided with sufficient quantities of naval stores and materials for ship construction. At the time, the manufacturing capacities of the province were practically non-existent, so all necessary material had to be shipped from Venice each year. As inventory lists show, keeping the naval force of 3-6 galleys and of some 30-40 smaller vessels operational (*galleotte, fuste, barche armate*) required every year some five metric tons of tar, 50,000 nails of various sizes, alongside with 3-5 galley sails, 20-25 sails for smaller vessels, 1-3 galley masts, 20-25 masts for *barche armate*, 50 oars for galleys and 400-500 oars for *barche armate* and dozens of other ship parts.⁹⁴ Another important item that also regularly found its place on lists of demands for equipment and armaments sent from Dalmatia were artillery pieces, needed to replace worn out and useless ship guns and cannons. For example, in 1656 Governor-general Antonio Zen asked the Senate for prompt shipment of 15 *periere* necessary to rearm armed boats.⁹⁵ It is not possible to estimate the yearly value of these shipments, yet the available data

⁹¹ ASVe, Senato Rettori, R-26, f. 123r, *Adi 24 Luglio 1652*; ASVe, Senato Rettori, R-26, f. 133v, *Adi 9 Agosto 1652*.

⁹² ASVe, Senato Rettori, R-34, f. 111v-112r, *Adi 31 Maggio 1659*.

⁹³ ASVe, PTM. b. 489, num. 34. (Spalato, 22. Ottobre 1662) attachment: *Nota da nuovi arsili di galleotte con gli armizzi et armi che occorano*.

⁹⁴ For example, the inventory lists with the requested materials and the needs of the Zadar arsenal can be found in: ASVe, PTM. b. 473. num. 113. (Zara, 4 Luglio 1652) attachment: *Nota di bisogni di Arsenal di Zara*; PTM. b. 475. num. 103. (Zara, 20. Genaro 1653. mv.) attachment: *Notta delle robbe che furono ricercate in Publico per bisogno di questo Arsenal et prima*; PTM. b. 479, num. 107. (Zara, 23 Aprile 1656) attachment: *Nota de remi da Galea, Barc' armate, et altro per Arsenal di Zara*.

⁹⁵ ASVe, PTM. 479. num. 98. (Zara, 14. Marzo 1656)

allow an estimate concerning the value of particular items. For example: the 500 oars needed every year totaled 3,000 *lire* (c.a 480 *ducats*, six *lire* each), the mast for the galley was priced at 90 *ducats*, while that of the armed boat at 11 *ducats*.⁹⁶

However, as far as ship crews were concerned, the most important provision was woolen cloth (*rassa*) used for manufacturing the canvas (*tenda*) used by crews for protection from adverse weather in fall and winter, and hot sun in summer. Lack of these, especially during fall and winter months, was a constant source of suffering for ship crews and frustration for governor-generals. The latter attributed high losses among crews of the galleys and other armed vessels (see previous section) mainly to this defect. The following paragraph illustrates a theme commonly found in letters of governor-generals:

Also, the provision of canvases is necessary for the preservation of poor crews [of the galleys], and the men of armed boats; the sooner these arrive, the more appropriate and profitable it will be, since without them [the crews] cannot resist these winds and rain, and [will] succumb to miseries [of the service] and lose their lives.⁹⁷

Be that as it may, because of conditions of sea service, ships required replacement of their *tende* every year. Table 3 below contains an account compiled in September 1654, concerning the requirements of *rassa* (wool cloth) needed to manufacture *tende* for the Republic's warships serving in the gulf at that time. Unfortunately for the ship crews, the problem of replacing worn out canvases for the Republic's warships was not properly solved until the end of the war. If anything, as the years passed, the situation only worsened.

Table 3. Account of the yearly needs of *rassa* for ship *tende*, from September 1654.⁹⁸

Type of the ship	Brazza of wool cloth needed per ship	Number of ships in service	Total amount of brazza of wool cloth needed:
Armed boats (<i>barche armate</i>)	195	36	7.020
<i>Brigantino</i>	150	5	750
Post office <i>Caichio</i>	130	3	390
Light galley (<i>Galera sotile</i>)	850	5	4.250
Yearly requirements of wool cloth (<i>rassa</i>) for manufacture of <i>tende</i> :			12.410

⁹⁶ DAZ, Atti di Provveditori Generali, Lunardo Foscolo vol. 16, fols. 213r, 217r.

⁹⁷ *Anco per la preservatione delle povere ciurme, et gente di Barc' armate neccessaria è la proviggione di Tendi, che quanto prima capitaranno, tanto piu riusciranno proprie, et profittevoli, mentre all' ingiurie di venti, et piogge di questa maniera resister non possono, et ceder convengono à pattimenti con la perdita della vita.* ASVe, PTM. b. 465, num. 329. (Zara, 13, Ottobre 1647)

⁹⁸ Wool cloth (*rassa*) was measured in *brazza*, a Venetian measure used for cloth, equivalent in length to 0.606 m. ASVe, PTM. b. 476. num. 159. (Zara, 16. Settembre 1654) attachment: *Nota de bisogni del Monitioner de Zara*; See also: ASVe, PTM. b. 465. num. 335. (Zara, 27. Ottobre 1647)

The last measure aiming to somehow remedy the constant shortage of canvas for armed boats, *fuste* and small galleys was introduced in December 1665. It clearly shows how exhausted by the prolonged war the Republic had become. In 1665, a total of 25 small galleys served in the Adriatic and by winter season each of them required new canvas. In order to provide new canvases for these ships, 5,000 *brazza* of *rassa* was needed (200 *brazza* per vessel), yet the Senate ordered provision of only 900 to be sent to Dalmatia, of which just 600 *brazza* reached Zadar. In such circumstances Governor-general Catherino Cornaro, was forced to introduce one rather unpopular measure. *Tende* of the light galleys, which had priority over all other ships, were regularly replaced each year, and it was customary that their *sopracomitti* were allowed to keep old used *tende* for themselves in order to sell them and compensate at least for part of the large debts they were owed on the account of their salaries. Yet, the Governor-general Cornaro was forced to abolish this practice and to decree that all old, replaced light galleys *tende* were to be deposited in the arsenal and used as material for manufacturing new *tende* for *galeotte*. According to Cornaro's calculation four smaller *tende* for *galeotte* could be made from one light galley *tende*.⁹⁹ Though in this way replacement *tende* for a dozen smaller warships were secured, the success of this measure remained limited and the pleas for *rassa* continued to arrive in Venice from Dalmatia until the end of the war.

5. Conclusion

In the end, it can be argued that the performance of the Adriatic squadron during this war was satisfactory. Though the Ottoman corsairs in the Adriatic did manage to capture considerable number of prizes, for the entire duration of this conflict the squadron maintained firm control over maritime lanes of communication through the Adriatic. It secured a constant flow of men, equipment and supplies to the Levant. Additionally, unchallenged control of the sea and the efficient cooperation of the Republic's naval and land forces was one of the key factors that contributed to the success of the Venetian arms in this battlefield. It gave the Republic's land forces a tactical and strategical edge that greatly compensated for their numerical inferiority. Without the ability to bring reinforcements and supplies to Dalmatian towns threatened by an Ottoman attack (Šibenik in 1647 and Split and Kotor in 1657) quickly and without obstructions, the Republic would hardly be able to defend its Adriatic possessions.

⁹⁹ ASVe. PTM. b. 495. num. 112. (Zara, 15. Decembre 1665)

Very often just the appearance of the Venetian fleet coming to the aid of a threatened post was sufficient to break the moral of the Ottoman attackers and send them on retreat. Aware of this, Venetian commanders bringing reinforcements to besieged coastal towns always turned to the same trick and entered the port with great pomp: with unfurled banners, sounds of instruments and firing of the cannons. All of these were intended to create the impression that much greater reinforcements than the actual ones were arriving. This tactic was applied with the same successful results by Governor-generals Lunardo Foscolo in 1647 (during the siege of Šibenik)¹⁰⁰ and by Antonio Bernardo in 1657 during the attack on Split.¹⁰¹ Equally important was the support of the Venetian fleet, in the form of additional firepower, to the operations of the Republic's land forces. For example, during Venetian attacks on Skradin or Novigrad in 1647, gun fire from Venetian ships was instrumental in breaking the Ottoman defenses.¹⁰² Also, during the siege of Kotor salvoes from Venetian ships frustrated the Ottoman assaults on the town walls.¹⁰³ In addition to these major operations, one must also not forget the participation of smaller vessels of the Adriatic squadron, armed boats, small galleys and *fuste* in countless skirmishes fought along the coast between the Ottoman raiders and Dalmatian village militias or Morlacchi irregulars. And for the latter the fire support of these Venetian warships often proved to be crucial for successful defense of their homes.

In times of war Ottoman *fuste* operating from their bases in the Adriatic and Ionian Seas could seriously threaten the transfer of goods, troops and munitions to the Levant. Still, as the events from the years of the War for Crete demonstrated, they lacked the power to put a stop to it or more permanently interrupt it. Lack of capacity of the northern Ottoman harbors (Ulcinj and Bar) to host medium or large size fleets rendered these front-line bases into a minor threat. This threat was successfully checked by a task force consisting of one or two

¹⁰⁰ Franjo Difnik, *Povijest kandijskog rata u Dalmaciji [History of the War for Crete in Dalmatia]*, (Split: Književni krug, 1986) pp. 155-158.; Marko Jačov, *Le guerre Veneto-Turche*, pp. 52-61; Gligor Stanojević, *Dalmacija u doba kandijskog rata*, pp. 111-113.; Ferruccio Sassi, "Le campagne di Dalmazia durante la guerra di Candia," *Archivio Veneto* 21 (1937): pp. 78-83.; Josip Vrandečić, *Borba za Jadran*, pp. 74-6; compare also Foscolo's reports: ASVe, PTM. b. 465. num. 317. (Di Galea Sebenico, 16. Settembre 1647)

¹⁰¹ ASVe, PTM. b. 481. num. 104. (Spalato, 20. Giugno 1657); Also on the attack on Split see: Grga Novak, *Povijest Splita [History of Split]*, vol. 2, (Split: Čakavski sabor, 1961) pp. 1093-1106.; Josip Posedel, "Opsada Splita 1657. godine prema djelu Nicolinija [Siege of Split according to the work of Niccolini]," *Kulturna baština: časopis za pitanja prošlosti splitskog područja* 14 (1983): pp. 92-101.

¹⁰² For more on these military operations and the role that the navy played in them see: Franjo Difnik, *Povijest kandijskog rata u Dalmaciji*, pp. 126-7, 134-6.; Josip Vrandečić, *Borba za Jadran*, pp. 66-7, 70-1, 74, 76.

¹⁰³ Gligor Stanojević, *Jugoslovenske zemlje*. pp. 250-251.; Franjo Difnik, *Povijest kandijskog rata u Dalmaciji*, pp. 250-1.

galleys and several smaller warships patrolling the waters of the northern Albanian coast under the command of Extraordinary governor of the Gulf. Similarly, the port of Herceg-Novi, due to its position in the bay of Kotor, was also rather easily neutralized by Venetian blockading force of no more than few *barche armate*. Without help from the main Ottoman fleet or squadrons from the Barbary Coast, these front-line Ottoman bases were too weak to threaten the Venetian dominion of the Gulf. Their activity was successfully suppressed by the limited forces allotted to this battlefield by the Venetian high command.

In addition to these front-line bases, the Ottomans also had at their disposal two other respectable naval bases in the Adriatic: ports of Vlorë and Durrës, both capable of providing a shelter for large size fleets. However, in this war the Ottomans failed to utilize the strategic potential of these ports as they never dispatched a squadron of Imperial navy to either of these harbors. The only time when the Porte arranged for deployment of substantial naval forces in the Adriatic occurred in 1657, yet neither one of these ports was given a role in the Ottoman plans for that campaign. According to the reports received in May 1657 by Antonio Bernardo, Governor-general in Dalmatia and Albania, from his confidants and spies, the fleet of the beys of Tunis, consisting of 14 galley and 18 large ships of war, was ordered to sail to the Adriatic. This fleet was not heading for some Albanian port, but instead for the independent and neutral port of Dubrovnik (*Ragusa*), the sole port in the middle Adriatic that was capable of hosting fleets of significant size that was not in the Venetian hands. The Porte planned to use Ragusa as its main base of operations for the coming campaign season and combined land and sea attacks on Split in Dalmatia and/or Kotor in Venetian Albania. Fortunately for both Adriatic republics, an unexpected storm stranded this fleet on the coast of Sicily and thus it never made it to Ragusa, its *rendezvous* point with the army of the pasha of Bosnia.¹⁰⁴

The main strategic problem the Republic faced in the Adriatic was not a lack of good port-towns but rather the fact that there were too many of them along the vital line of communication towards the Levant. The capture of any Dalmatian town by the Ottomans and establishment of a major hostile naval base in the middle of the Adriatic would create a new source of threat to the Republic's control of maritime lines of communication. Such a threat would have had to be matched by deployment of additional naval forces in the Adriatic, forces that would thus not been available for the Aegean theater of operations. Grave consequences for

¹⁰⁴ ASVe, PTM. b. 481. num. 97. (Zara, 8 Maggio 1657); As late as June, Bosnian Pasha was still waiting to hear news and confirmations concerning arrival of this fleet: ASVe, PTM. b. 481. num. 101. (Budua, 9. Giugno 1657)

the Republic's ability to wage war overseas which would have resulted from the loss of the Dalmatian coast and/or loss of control over Adriatic were rather accurately summarized by Gaetano Cozzi, who stated that without Dalmatia "*Venezia sarebbe stata soffocata nella sua laguna, e sarebbero rimasti bloccati i suoi traffici e le sue comunicazioni, e impedito l'invio di qualsi voglia soccorso a Candia, così come alle altre isole che il Turco si fosse deciso a conquistare.*"¹⁰⁵ However, this worst case scenario never materialized, and, as argued in this study, in no small measure due to the performance of the Adriatic squadron.

¹⁰⁵ Gaetano Cozzi, "Venezia nell' XVI e XVII. secoli" in Gaetano Cozzi, Michael Knapton and Giovanni Scarabello eds. *La Repubblica di Venezia nell'età moderna: dal 1517 alla fine della Repubblica* (Unione Tipografico-Editrice Torinese, 1992) p. 119.

	Galea N.H. Signore Antonio Michiel ernatore		Galea N.H. S.re Franc.o Querini Gov.r		Galea Bergamesca D.no Andrea Martinoni		Galea Brazzana D.no Zorzi Mladineo		Galea Arbesana D.no Marin Bizza		Galea Arbesana D.no Marin Bizza		Total Missing		
	P	M	T	P	M	T	P	M	T	P	M	T	P	M	T
Scalco	1		1	0	1	1	1	1	1	1	1	1	1		1
Cuogo	1		1	1		1	0	1	1	1	1	1	1		1
Canaver	0		0	1		1	0	1	1	1	1	1	1		1
(Due) Fanti del Piccol	2		2	2		2	1	1	2	2	2	2	2		1
(Quattro) sotto capi	4		4	3	1	4	4	1	3	4	3	1	4		5
Marangon	1		1	0	1	1	0	1	1	1	1	1	1		3
Marango-netto	0		0	0	1	1	0	1	1	1	1	1	1		2
Calafatin	1		1	1	0	1	1	1	1	1	1	1	1		1
Calafao	0		0	0	1	1	0	1	1	0	1	1	1		4
Remer	0		0	0	1	1	0	1	1	1	1	1	1		2
Remeretto	0		0	0	1	1	0	1	1	0	1	1	1		3
Fante del Comito	1		1	0	1	1	0	1	1	1	1	0	1		3
Compagni	9	3	12	8	4	12	8	10	2	12	10	2	12	12	15
Scapoli	36	12	48	28	20	48	28	36	12	48	43	5	48	32	85
Galeotti	161		161	137	63	200	121	162	38	200	130	70	200	172	278
Della visentinain Deppo	40		40	0		0	0	0		0	0		0	0	0
Agurin	1		1	0		0	0	0		0	0		0	0	0
Condenati	5		5	0		0	0	0		0	0		0	0	0
	280	18	293	192	99	192	180	226	65	291	207	84	291	244	291

Legend: P – present at muster, M – missing at muster, T – total number (P+M) (ASVe, PTM. b. 464. num. 216. Zara, 11. Marzo 1647)

„Jadranska eskadra” (1645-1669): obrana Jadrana u vrijeme Kandijskog rata

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Sažetak

Glavni predmeti istraživanja ove studije su: (1) pomorske snage pod zapovjedništvom generalnih providura Dalmacije i Albanije, u ovom eseju nazvane ‘Jadranska eskadra’, te (2) problemi organizacije obrane Jadrana u doba Kandijskog rata (1645-1669). Preciznije rečeno, istraživačka pitanja koja tvore tematsku osnovicu ovog članka su: ustroj, sastav i operativni zadaci stavljeni pred Jadransku eskadru u vrijeme Kandijskog rata, potom, problemi zapovijedanja i vojne administracije specifični za ovu postrojbu te konačno logistički izazovi održavanja Jadranske eskadre operativnom tijekom skoro 25-godišnjeg sukoba. U svijetlu izloženih podataka o angažmanu pomorskih snaga Venecije u ovom ratištu članak se također dotiče i pitanja strateške važnosti kontrole pomorskih komunikacija kroz Jadran za Mletačku Republiku, kao nužnog preduvjeta za vođenje vojnih operacija na Levantu.

Ključne riječi: Venecija, Kandijski rat, Osmansko Carstvo, vojna povijest, Jadran, pomorsko ratovanje, rani novi vijek, galije, fuste, galijice.