

# FROM WAVES TO WINGS: THE NAVAL INFLUENCES ON GIULIO DOUHET'S AIR THEORY

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## INTRODUCTION

All conduct in warfare is based on the foundation of military doctrine. In all theaters of war, these doctrines direct military strategy, which is described by Lt. Col. David E. Lupton as “a plan used to marshal and direct resources to achieve some objective.”<sup>1</sup> Lt. Col. Dennis Drew argues that doctrine includes the fundamental, environmental, and organizational aspects of warfare and provided a more in-depth explanation of his different categories of doctrine. Fundamental doctrines include beliefs about “the purposes of the military, the nature of war, and the relationship of the military instrument of power to other power instruments.” All the principles of war that apply to military forces are included in this category. Environmental doctrine includes beliefs about “the best way to employ forces in a particular environment (land, sea, or air) ... [and] often includes the word power in its title.” Organizational doctrine “deals with the organization of military forces and defines the missions of various organizations.”<sup>2</sup>

In the early 20<sup>th</sup> century, the air was a new frontier of warfare, only recently

made accessible by technological advancements. Although air power could easily be built upon the existing fundamental doctrines of war, its environmental and organizational doctrines had to be established in a time of little to no experience. Air theorists lacked the thousands of years of development their counterparts in land or sea warfare had. Instead, they had to try to develop an air theory without much experience. Due to technological advancements in the years before, during, and after World War I and the changing of fundamental war doctrines by the experience of World War I, air theorists worked hard to create a consistent and lasting air power doctrine. Giulio Douhet was such a theorist. He is generally considered to be the father of air warfare; he had articulated the case for air supremacy “in its purist, most logical, and most persuasive form.”<sup>3</sup> Many historians and war strategists have hailed Giulio Douhet as a prophet of air warfare who developed his theories through his own imagination; while others have claimed that he used his creative mind to adapt the theories established by other analysts to the new mode of air warfare. Bernard Brodie, an American military strategist known for establishing the basics of nuclear warfare, argued that Douhet,

...has had enormous and enduring influence on air forces generally but

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<sup>1</sup> Lt. Col. David E. Lupton, *On Space Warfare: A Space Power Doctrine*, (Air University Press: Maxwell Air Force Base, Alabama, 1998), 3.

<sup>2</sup> *Ibid.*, 3-4.

<sup>3</sup> Jonathan Haslam “Giulio Douhet and the Politics of Airpower,” *International History Review*, 34:4 (2012): 753-773, DOI: 10.1080/07075332.2012.690193, 765.

especially on that of the United States. That is not to say that Douhet has been widely read among air force officers, but neither has Karl Marx been read by any large portion of those myriads of people of all political persuasions whose thinking has been deeply influenced by his writings.”<sup>4</sup>

All subsequent air theorists, especially in the United States, have been influenced directly or indirectly by Douhet's theories as described in *The Command of the Air*. United States General William “Billy” Mitchell claimed after reading the English translation of *The Command of the Air* that he was “greatly impressed with it.”<sup>5</sup> General Mitchell was a strong advocate of air power within the United States; he is called the “Father of the United States Air Force,” because he “was instrumental in bringing to the forefront the need for air superiority.”<sup>6</sup> General Mitchell would go on to influence the airpower thinking of U.S. World War II Generals Spaatz, Eaker, Cabell, George, LeMay, and Hansell, all of whom strongly denied “any direct influence from Douhet.”<sup>7</sup> However, even if none of these Generals had read Douhet's writings themselves, they were clearly influenced by those who had. For example, General Hansell quoted Don Wilson, the Director of the Department of Air Tactics and Strategy at the Air Corps Tactical School (1936-1940), who quoted Douhet several times when he outlined

strategy that was “imbued with Douhet's ideas.”<sup>8</sup>

The U.S. strategic bombing campaign during World War II was developed from a modification of Douhet's theories to better fit the American regard for pure defensive modes of war. In the years before the war, the Air Corps Tactical School lobbied hard for “unlimited development of long distant heavy bombers to follow the B-17.”<sup>9</sup> When Pearl Harbor was attacked, the Air Plans Division advised the Chief of Staff, “Sea power is no longer reliable as a primary instrument of American Defense. Air power must replace it as the principle means of defense.”<sup>10</sup> Even with Douhet's theories influencing strategy, the Allies' air forces devolved from an independent entity into an adjuvant member of joint operations due to limited funding and inter-service rivalries. During the war, the Allies participated in a costly experiment due to the lack of precedent in air power. Sir John Slessor, Marshal of the Royal Air Force during World War II, argued,

It is astonishing to remember that we had to make our plans for the employment of the striking force and give our advice on their probable strategic effect with virtually no practical experience of what the bomber really could do in modern war... We in plans were too optimistic on many counts – on the ability of the offensive to reduce the enemy air attack at its source; on our ability to bomb unescorted by day or to find and hit targets at night; on the bombing accuracy to be expected; on the efforts of a hit by the small bombs all day and on the numbers required to ensure a hit; and on the results both

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<sup>4</sup> Ibid., 765.

<sup>5</sup> Ibid., 763.

<sup>6</sup> Minnie L. Jones. U.S. Army: William 'Billy' Mitchell -- 'The father of the United States Air Force'. January 28 (2010). Accessed March 17, 2018. [https://www.army.mil/article/33680/william\\_billy\\_mitchell\\_the\\_father\\_of\\_the\\_united\\_states\\_a\\_ir\\_force\\_e](https://www.army.mil/article/33680/william_billy_mitchell_the_father_of_the_united_states_a_ir_force_e)

<sup>7</sup> Haslam “Giulio Douhet and the Politics...,” 763.

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<sup>8</sup> Ibid., 763.

<sup>9</sup> Ibid., 763.

<sup>10</sup> Ibid., 763.

moral and material to be expected from bombing of industrial objectives.<sup>11</sup>

After World War II, Douhet's theories were largely considered invalidated by experience. Many believed that the Allied experience showed that German civilian morale was actually strengthened instead of weakened by air barrage, and Allied bombers were unable to damage the German war economy. However, Douhet's ideas, though known, were never actually applied during World War II. As Jonathan Haslam points out, "Douhet envisaged only a first strike that would shock by surprise as well as massive devastation...[and] destruction of the enemy's economic machine, though a planning priority in [World War II], was repeatedly overridden by other, political considerations."<sup>12</sup>

Moving away from a time where technology prevented Douhet's theories from being actualized, many modern airpower proponents argue that technologies have advanced to a place where it is now possible. The center of this argument is the massive strategic contribution that airpower proved in Operation Desert Storm. On the opening night of hostilities, the American coalition forces launched over 800 sorties<sup>13</sup> to destroy Iraq's command and control facilities in a surprise attack. Its results led to the American Command declaring air superiority just two days after the start of the conflict. Airpower proponents claim that today airpower can shape the environment, deny "an opponent the strategy of his choice," and impose "our strategy and

[capitalize] on Western advantages."<sup>14</sup> With modern technologies making Douhet's theories more of a reality than ever for many, the debate over their validity has reignited. Thus, it is necessary to understand Douhet's influences and origins to truly understand his theory.

To truly understand Douhet's theories in *The Command of the Air*, one must comprehend how he formed his theories. As the capabilities of airpower increased, many military thinkers were trying to figure out its utility based on pre-existing military theories. Douhet followed the method of his contemporary strategists as he tried to formulate an airpower theory. All air theorists gravitated toward naval theory as a model because of the many similarities between the two theaters. In the pre-World War I period, Douhet simply transferred the naval theories of Admiral Alfred Mahan to the theater of air, with the only changes revolving around the obvious differences between the naval and air theaters of war. However, the nature of land and sea warfare had changed dramatically by the end of World War I, further complicating the understanding of this new theater of war. To account for this dramatic change in the nature of warfare, Douhet incorporated the opposing naval theory of the *jeune école* into the framework he had established with the Mahanian naval theories. This combination created the comprehensive air theory that can be seen in his *magnum opus*, *The Command of the Air*.

## CHAPTER ONE: Douhet's Early Career

Giulio Douhet was born in 1869 to a family with a strong nationalist and military tradition. He chose to follow that tradition by entering the Military Academy of Mo-

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<sup>11</sup> Ibid., 764.

<sup>12</sup> Ibid., 764.

<sup>13</sup> The definition of sortie is: an attack made by troops coming out from a position of defense, or an operational flight by a single military aircraft.

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<sup>14</sup> Ibid., 767.

dena from which he graduated as a lieutenant in 1888. He furthered his education at the Turin Polytechnic Institute with an engineering degree as well as the Army's Staff College with a degree in strategy, tactics, and logistics of modern warfare. After he was promoted to the rank of Captain, Douhet was assigned to the army's General Staff in 1900.<sup>15</sup>

During his time on the General Staff, Douhet was involved in discussions to mechanize the Italian army. Douhet believed that since Italy was the weakest of the Great Powers, the key to Italy's economic growth and military strength lay in scientific and technological innovations.<sup>16</sup> From 1901 to 1904 Douhet argued in a series of lectures, *Mechanization from the Point of View of the Military*, for heavy motorized vehicles to be adapted to warfare, particularly for transporting troops from one theatre of war to another. He viewed motorized vehicles as the logical continuation of the strategic revolution brought about by the use of trains for troop transportation in the Franco-Prussian War. However, the other members of the General Staff considered these views unreasonable, causing him to appear as a radical, and creating bitter friction between him and his superiors. With a series of articles on the Russo-Japanese War in 1904-5 he continued to antagonize the Italian military community. This series of 37 articles was published anonymously, signed "Capitano X," and continued to expand upon what the General Staff considered Douhet's unreasonable views.

In 1905, Douhet was appointed commander of a newly created battalion of mechanized elite troops called the *bersaglieri*. That same year, Italy built its

first dirigible (blimp). Douhet was struck by its military potential, and he began burying himself in aeronautical studies.<sup>17</sup> He also began to follow aeronautical events closely.<sup>18</sup> This interest was the logical consequence of his scientific interests and his conviction that Italy needed to be the first to embark on adapting technological advances for military purposes.<sup>19</sup> Douhet explained his interest in aeronautics to War Minister General Paolo Morrone in a letter in August 1916:

Right from the first beginnings of aviation, a happy intuition made me foresee the importance that the new means of war would rapidly assume and as one always enraptured with the novelties of science applied to war, I was impassioned by the study of the new discovery and, forming for myself a secure foundation, I drew from it the logical consequences.<sup>20</sup>

From 1910 on, Douhet published widely on aeronautics in the specialized civilian press, such as the journal *Rivista aeronautica (Aeronautic Review)*. In these journals, there was constant and animated

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<sup>15</sup> Hippler, Thomas. *Bombing the People: Giulio Douhet and the Foundations of Air-Power Strategy, 1884-1939*. (Cambridge University Press, New York, 2013), 29.

<sup>16</sup> *Ibid.*, 30

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<sup>17</sup> Aviation was only beginning to make headway into developing the airplane. In 1905, the Wright brothers were flying the Wright Flyer III with flights lasting for 38 minutes and over 24 miles long. They had tried to sell their invention to both the United States and European countries, but they were turned away. The military usefulness of the airplane was not yet realized. The military's focus for aviation was on dirigibles and balloons.

<sup>18</sup> "Douhet" by Robert S. Dudley, *Air Force Magazine*, April 2011.

<sup>19</sup> Hippler, *Bombing the People*, 31.

<sup>20</sup> (Giulio Douhet and the politics of airpower, p. 756) from G. Douhet, *Scritti Inediti*, ed. A. Monti (Firenze, 1951), 109.

discussion between the Italian airman and his contemporaries from other Italian military institutions. There were no systematic measures taken by the Italian military institutions to assess the use of aircraft after their inclusion in the 1911 war games. Therefore, the discussions were far more fruitful in the specialized civilian press.<sup>21</sup> Through these discussions, Douhet established himself as one of Italy's few aeronautics specialists while his country explored the role aircraft would play in its military.

The Italian army had possessed an "aerostatic" section since 1884; it was created to conduct experiments on the military usage of the new aerial devices such as balloons and dirigibles. In 1911, the aerostatic section became an official institution with its own command structure in the Italian armed forces. Before World War I, the question among military strategists was the "problem of an articulation among the three elements [of warfare]: the land, the sea, and the air."<sup>22</sup> The assumption by all strategists, Douhet included, was that while the "centrality of combat" would be on the ground, domination of the other theaters of war, the sea and the air, would provide "substantial military advantages."<sup>23</sup> However, early theorists argued over which air strategy would best provide this advantage. All military specialists were comparing air warfare to naval warfare to try to settle this contention. Douhet was no exception.

### *Early Naval Influences*

Douhet's early writings established similarities between aerial and naval warfare. Many of these similarities came from Douhet's understanding of Admiral Alfred Mahan's theory of command of the sea as a

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<sup>21</sup> Hippler, *Bombing the People*, 54.

<sup>22</sup> *Ibid.*, 49.

<sup>23</sup> *Ibid.*, 49.

means to securing victory. As the President of the Naval War College in Rhode Island, Mahan first published this theory in 1890, although it was the culmination of an accomplished service career spanning twenty years.<sup>24</sup>

The time of Mahan's publication of *The Influence of Sea Power on History* was a period of global expansionism. Germany, under the guidance of Kaiser William II, was turning towards empire-building and world power. In England, Parliament passed the Naval Defense Act of 1889, adding 70 ships to the Royal Navy over the following four years. The US Congress authorized three new battleships for the U.S. Navy in 1890. National rivalries in the 1890s were centered around commercial and colonial aggrandizement, marked by the downfall of Spain's colonial empire and the increased importance attributed to control of the sea.

To the nations taking part in the period's expansionism, Mahan's book provided authoritative guidance on naval policy. Dr. Allan Westcott, a professor at the Naval Academy in 1920, avowed that naval officers in Great Britain saw the book as "a timely analysis of the means by which she

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<sup>24</sup> Admiral Mahan's reception in Italy at the end of the 19th century was, according to historian Thomas Hippler, like that of a "Copernican Revolution for naval studies." *Ibid.*, 49. In 1856, Alfred Thayer Mahan entered the Naval Academy in Annapolis, Maryland at the age of sixteen. Five years later, Mahan was commissioned as a lieutenant and appointed second second-in in-command of the steam corvette Pocahontas in the Potomac flotilla. All the members of his Naval Academy class received similar advancements in the first year of the Civil War, illustrating the rapid promotion that occurred during that time. Alfred Mahan, *Mahan on Naval Warfare*, ed. Allan Westcott (Boston: Little, Brown and Company, 1999), vii-viii.

had grown in wealth and dominion.”<sup>25</sup> Mahan was not the first to discover this; however, according to Dr. Westcott, he was the first to “give the thesis full expression, to demonstrate it by concrete illustration, and to apply it to modern conditions.”<sup>26</sup> Germany also readily accepted Mahan’s interpretation on the importance of sea power for world empire. Kaiser William II read, annotated, and placed copies of Mahan’s book on board every ship in the German High Seas Fleet. Mahan’s work was also diligently studied by Japanese naval officers before the Russo-Japanese war. In the United States, Dr. Westcott claimed, it was Mahan’s works that provided the “philosophical groundwork and strongest arguments for the American expansionist.”<sup>27</sup>

Mahan theories stemmed from his understanding of the origin of navies and the nature of sea power. The importance of sea power came from the fact that “travel and traffic by water have always been easier and cheaper than by land.”<sup>28</sup> In the 17<sup>th</sup> century, Holland had achieved commercial greatness because of her sea shipping and geographical position. After the War of the Spanish Succession, England was the dominant sea power because of both its great navy and prosperous commerce. A nation’s external trade relied on the sea, requiring secure forts and protection. Mahan avowed that the key to national prosperity was maritime economics. Mahan argued that “the necessity of the navy...springs, therefore, from the existence of peaceful shipping, and disappears with it except in the case of a nation which has aggressive tendencies, and keeps up a navy merely as a branch of military esta-

ishment.”<sup>29</sup> Its ability to defend its own commerce and attack that of the enemy justified a navy’s existence. Naval supremacy was necessary to protect national interests relating to production, shipping, and colonies; thus, it held critical importance in the conflicts between great nations.

Naval and commercial activities were considered by Mahan to be a single entity. This single entity was a “wonder and mysterious power’ that could be ‘seen to be a complex organism, endued [sic] with a life of its own, receiving and imparting countless impulses, moving in a thousand currents which twine in and around one another in infinite flexibility...”<sup>30</sup> Mahan specified that the wealth or greatness of a State could not be attributed to sea power alone; however, sea power was the central link “in the chain of exchange by which wealth accumulates.”<sup>31</sup>

Mahan defined sea power as “not only the military strength afloat, that rules the sea or any part of it by force of arms, but also the peaceful commerce and shipping from which alone a military fleet naturally and healthfully springs, and on which it securely rests.”<sup>32</sup> It therefore was both an appealing political option for some countries and a “self-sustaining system made up of both formal and informal elements.”<sup>33</sup> The extent of a nation’s sea power was affected by six principal conditions: geographical position, physical conformation, extent of territory, population size, national culture, and political structure. Each of these conditions either strengthens or weakens a nation’s sea power.

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<sup>25</sup> Alfred Mahan, *Mahan on Naval Warfare*, ed. Allan Westcott (Boston: Little, Brown and Company, 1999), xv.

<sup>26</sup> *Ibid.*, xv.

<sup>27</sup> *Ibid.*, xviii.

<sup>28</sup> Alfred Mahan, *The Influence of Sea Power upon History 1660 – 1783*. (New York: Dover Publications, Inc., 1987), 25.

<sup>29</sup> *Ibid.*, 26.

<sup>30</sup> Jon Tetsuro Sumida, *Inventing Grand Strategy and Teaching Command: The Classic Works of Alfred Thayer Mahan Reconsidered*. (Baltimore: The Johns Hopkins University Press, 1997), 35.

<sup>31</sup> Mahan, *The Influence of Sea Power*, 226.

<sup>32</sup> *Ibid.*, 28.

<sup>33</sup> Sumida, *Inventing Grand Strategy*, 35.

The first three principle conditions revolve around the physical conditions of a nation; a nation could be geographically positioned to promote the creation of or necessitate the deployment of its naval forces. England's advantage over France and Holland as a sea power resulted from its geographical position; for it was situated so that "neither forced to defend itself by land nor induced to seek extension of its territory by way of the land, [England] has, by the very unity of its aim directed upon the sea, an advantage as compared with a people one of whose boundaries is continental."<sup>34</sup> The physical formation of a nation's seaboard was also important to Mahan; if a country had no harbor along a long seaboard, then the country would have no sea trade of its own, no shipping, and no navy. A multiplicity of deep harbors provided strength and wealth to a country in peace time, but it was a source of weakness in war when not properly defended.<sup>35</sup> When talking about sea power, Mahan asserted that when the physical and geographical conditions are the same, the length of the sea-coast can be a source of strength or weakness depending on whether the population is large or small. Mahan avowed, "a country is in this like a fortress; the garrison must be proportioned to the enceinte."<sup>36</sup>

The last three principle conditions revolve around a nation's political and social characteristics. The consideration of population in affecting sea power is not the whole number of the people who live in the country. Rather, it is the number of the popula-

tion "following the sea, or at least readily available for employment on ship-board and for the creation of naval material, that must be counted."<sup>37</sup> Mahan asserted that national character was also a factor in the development of sea power: "If sea power is really based upon a peaceful and extensive commerce, aptitude for commercial pursuits must be a distinguishing feature of the nations that have at one time or another been great upon the sea."<sup>38</sup> The character of the government is the last factor according to Mahan. It is the government that,

...in full accord with the natural bias of its people...most successfully advance[s] its [sea power's] growth in every respect...[T]he most brilliant successes have followed where there has been intelligent direction by a government fully imbued with the spirit of the people and conscious of its true general bent.<sup>39</sup>

Mahan argued that sea warfare was offensive in nature, although it was defensive in effects. Battle fleets resembled armies in the field which moved against the enemy to protect strongholds. Fortified harbors resembled strongholds like Strasburg whose systematic defense protected the nation. A navy's purpose was to protect a nation's harbors and commerce from attack. However, Mahan asserted that the defensive existed in warfare to allow the offensive to act more freely. To divide the navy among the fortified ports would be to "paralyze its efficiency."<sup>40</sup> The only interest the navy had in ports was when the permanent defensive works of the seaport were effective, and it released the navy

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<sup>34</sup> Mahan, *The Influence of Sea Power*, 29.

<sup>35</sup> Mahan further describes a nation's sea board's physical conformation, "The seaboard of a country is one of its frontiers; and the easier the access offered by the frontier to the region beyond, in this case the sea, the greater will be the tendency of a people toward intercourse with the rest of the world by it." Ibid., 35.

<sup>36</sup> Ibid., 43.

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<sup>37</sup> Ibid., 45.

<sup>38</sup> Ibid., 50.

<sup>39</sup> Ibid., 58.

<sup>40</sup> Alfred Mahan, *Mahan on Naval Warfare*, ed. Allan Westcott (Boston: Little, Brown and Company, 1999), 71.

from its care. This allowed the navy to take part in “its proper sphere” of offensive action.<sup>41</sup> Therefore, effective coastal defense according to Mahan was found in the,

...combination of strong local land defenses and a fleet of warships that was capable either of drawing enemy forces away from shores through offensive action on the high seas or of forcing them to be concentrated against a powerful – if inferior – fleet in being and thus hindering eccentric operations against coastal shipping.<sup>42</sup>

The goal of maritime actions in war, according to Mahan, was to acquire “command of the sea.” He defined this as “the possession of that overbearing power on the sea which drives the enemy’s flag from it, or allows it to appear only as a fugitive; and which, by controlling the great common, closes the highways by which commerce moves to and from the enemy’s shores.”<sup>43</sup> The purpose of command of the sea was to allow free rein for one’s own commerce while preventing the movement of the enemy’s. Mahan argued that the complete prohibition of enemy trade was necessary for sea power to show its full influence on the outcome of the war. This could only be achieved through offensive action by a navy. Because control of the sea was the true end of naval warfare, naval warfare was the active targeting of the enemy’s ships.<sup>44</sup> The

destruction of such a force would leave one or more positions ashore unsupported and thus doomed to fall in due time. Mahan believed that the “destruction of the enemy’s means of fighting, as opposed to the mere frustration of his immediate actions, conferred strategic benefits that more than repaid the greater difficulty of the task.”<sup>45</sup>

One of the main principles of Mahan’s strategic argument was the concentration of forces against a single point. Mahan insisted that wars were won through “the massing of superior forces,” which were then “handled in skillful combination.”<sup>46</sup> He argued that numbers led to victory, and therefore the fleet should never be divided. This sound military principle expounds that “military effort should not be distributed along the whole of an enemy’s position...but that distinctly superior numbers should be concentrated upon a limited portion of it.”<sup>47</sup> Thus, the fundamental flaw of British strategy during the American Revolution was that it tried to exert force everywhere while never attacking allied fleet attachments in concentration. However, in the Trafalgar campaign of 1805, Mahan claimed the British success was due to their fleets continued concentration in European waters, disregarding French feints in other seas. Similarly, if in the Russo-Japanese war Russia had combined its naval divisions

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subordinate to the attack and defense of the posts; if its object is to break up the enemy’s power on the sea, cutting off his communications with the rest of his possessions, drying up the sources of his wealth in his commerce, and making possible a closure of his ports, then the object of attack must be his organized military forces afloat; in short, his navy” Mahan, *The Influence of Sea Power*, 288.

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<sup>41</sup> Ibid., 71.

<sup>42</sup> Jon Tetsuro Sumida, *Inventing Grand Strategy and Teaching Command: The Classic Works of Alfred Thayer Mahan Reconsidered*. (Baltimore: The Johns Hopkins University Press, 1997), 48.

<sup>43</sup> Alfred Mahan, *The Influence of Sea Power upon History 1660 – 1783*. (New York: Dover Publications, Inc., 1987), 138.

<sup>44</sup> Mahan wrote, “if naval warfare is a war of posts, then the action of the fleets must be

<sup>45</sup> Sumida, *Inventing Grand Strategy*, 44.

<sup>46</sup> Ibid., 44.

<sup>47</sup> Alfred Mahan, *Mahan on Naval Warfare*, ed. Allan Westcott (Boston: Little, Brown and Company, 1999), 238.



from Port Arthur, Vladivostok, and the European ports, its navy would have decisively outnumbered that of Japan. It would have forced Japan to consider the Russian navy as a serious threat.

Mahan recognized the strategic benefits of commerce-raiding; however, a strictly commerce-destroying naval war, even for its own special ends, would be “inconclusive, worrying but not deadly; it might almost be said that it causes needless suffering.”<sup>48</sup> In the War of 1812, the United States had participated in a strictly commerce-destroying war because of the inferiority of its navy when compared to that of the British Empire. Aside from the unexpectedness of an attack on British commerce by a distant and possibly undervalued enemy, the efforts of the American privateers did little damage. This was seen in the bearing of the English towards the Americans during peace negotiations; it was not “that of men who felt their country to be threatened by an unbearable evil.”<sup>49</sup> Commerce-destroying was an “important secondary operation of naval war ...but regarded as a primary and fundamental measure, sufficient in itself to crush an enemy, it is probably a delusion.”<sup>50</sup> It was only effective when it was combined with a strong fleet, so that it forced the enemy to combine his forces to fight the fleet, permitting the cruisers to attack the enemy’s trade. According to Mahan, “only by military command of the sea by prolonged control of the strategic centres of commerce, can such an attack be fatal.”<sup>51</sup> An example of this could be found in the American Revolution; the French had large battle-fleets afloat to protect the commerce-destroying privateers. This combination was

what pushed English merchant-ships to seek refuge under foreign flags. Without the large French battle-fleets, the commerce-destroying privateers would have been nothing but an annoyance to the British.

Although Mahan had retired in 1896, he was recalled to serve on the Naval War Board from May 1898 until the close of the war with Spain. The Board practically controlled U.S. naval strategy during the conflict. Although Mahan had not been present for the more important decisions of the board such as the naval blockade of Cuba and the attack on the Spanish squadron at Manila, he approved of them in his writings. Mahan was also chosen as an American delegate to the First Hague Peace Conference. He determined the American delegation’s attitude, strongly opposing any agreement that restricted America’s freedom of action in regard to the Monroe Doctrine and immunity of private property at sea.<sup>52</sup>

After his retirement, Mahan wrote sixteen other historical works and many essays. During this time, he wrote freely and frequently on a variety of subjects from the sizes and speeds of a battleship to America’s colonial expansion and participation in world affairs.<sup>53</sup> Rear Admiral Mahan died on December 1, 1914, just four months after the outbreak of World War I.<sup>54</sup>

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<sup>52</sup> *Ibid.*, xi.

<sup>53</sup> Allen Westcott asserted that, “Up until the late 1880’s Mahan himself had been an anti-imperialist, but was converted to the opposite view by his own studies, which found in world trade, expansion, and sea power the keys to national greatness.” Westcott, ed. *Mahan on Naval Warfare*, xviii.

<sup>54</sup> Allan Westcott suggested that Mahan’s death was hastened “by constant study of the diplomatic and military events of the war, the approach of which he had clearly foreseen, as well as America’s vital interest in the Allied Cause.” He also asserts that World War I’s illustration of the slow constructive pressure of sea power may be used to argue a

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<sup>48</sup> Alfred Mahan, *The Influence of Sea Power upon History 1660 – 1783*. (New York: Dover Publications, Inc., 1987), 136.

<sup>49</sup> *Ibid.*, 137.

<sup>50</sup> *Ibid.*, 539.

<sup>51</sup> *Ibid.*, 539.

The influence of Mahan's work, however, was as strong as ever. His focus on "command of the sea" as the purpose of naval warfare was instrumental in naval policy across the world. In 1910, Douhet used the impetus of Mahan's work to develop the purpose of aircraft's military use. Douhet valued the "command of the air" and developed his understanding of aerial warfare by pursuing similar strategic objectives as Mahan's naval theory.

Before World War I, all Douhet's ideas about air warfare, down to the most technical, stemmed from three principles that mirrored Mahan's doctrine: preferring the airplane over the dirigible, advocating for an Independent Air Force, and condemning the use of strategic bombing (a surprising fact given his later advocacy of it after the war). Douhet followed Mahan in his view that the air fleet's main target in war was the enemy's air fleet; this strategy became known as "war in the air." Except for certain rare cases, Douhet argued against war from the air: that is, the bombing of ground targets from the air or strategic bombing of enemy cities. The command of the air could only be achieved in the air. Therefore, any actions taken against ground targets were a secondary function that could only be carried out after command of the air was achieved. However, even then Douhet did not consider enemy cities to be secondary ground targets. In article "*Le Possibilita dell'aereonavigazione*" (*The Possibilities of Air Navigation*) Douhet wrote in 1910, he argued that:

We must not even consider action against defenseless cities. It would be an act of barbarism that the conscience of all the civilized world

would revolt, and it would cause more damage to those who committed the act than to those who suffered it.<sup>55</sup>

## CHAPTER TWO: Early Aeronautical Debates

Douhet's "*Le Possibilita dell'aereonavigazione*" articles stimulated the first air power debate in Italy. These articles were a criticism of Carlo Montu, an artillery corps officer with a degree in electronics, whose article "*L'aeronautica nella Guerra future*" (*Aeronautics in Future Wars*) concluded that an airplane's use for reconnaissance and liaison missions was limited by its limited capacity to transport weight.<sup>56</sup> Douhet's response began an intellectual rivalry between Douhet and Montu that dominated many of the subsequent Italian air power debates. The basis of the Douhet – Montu debate was an argument about which naval strategies could be transferred to air warfare. Douhet, a follower of Mahan, argued that Mahanian concepts could be directly transferred from the sea to the sky. Montu, however, denied that logic and advocated for the application of the French *jeune école* (Young School) naval school of thought.

The *jeune école* developed in the late 19<sup>th</sup> century from the French navy's position compared to its rivals at the time and the experiences gleaned from the American Civil War and the Franco-Prussian War. Between the 1840s and the 1860s, France and Great Britain were engaged in an almost continuous arms race and naval rivalry. However, France's naval ambitions were crushed when she was defeated by the German states in 1871. France was severely

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vindication of Mahan's theories or to argue the effectiveness of commerce destruction, which ruthlessly applied by Germany nearly won the Central powers the war. *Ibid.*, xx.

<sup>55</sup> Hippler, *Bombing the People*, 38.

<sup>56</sup> Carlo Montu served in the Libyan war of 1911 and World War I. Hippler, *Bombing the People*, 44.

weakened economically and demographically, and it was impossible to continue the arms race with Great Britain in France. Because the German army was now the most immediate threat to France “the time had come for the Navy ‘to sacrifice itself on the altar of the nation.’”<sup>57</sup> Its budget was cut by 25 percent and its size was reduced from 439 vessels to 137. This difficult time, dominated by the recognition that France would remain Great Britain’s naval inferior, was the fundamental starting point of the *jeune école*.

The founder of the *jeune école* was Admiral Hyacinthe-Laurent-Theophile Aube,<sup>58</sup> an avid writer on naval and colonial issues who published regularly on naval strategy. By the mid-1870s, he had outlined the *jeune école*’s fundamental ideas. The *jeune école* was able to reach a wider audience in the 1880s because of the numerous articles by

foreign affairs expert Gabriel Charmes in the early 1880s. Charmes, a writer for the popular newspaper *Journal des débats*, enthusiastically supported Aube’s ideas in his articles. According to the Norwegian Naval Admiral Arne Røksund, Charmes and Aube “developed a unity of views” that was the *jeune école*.<sup>59</sup>

The *jeune école* originated from a military strategy of war that resembled total war and was derived from the experiences of the American Civil War and the Franco-Prussian War. Both conflicts had started as limited wars with limited goals but became more radical as the war progressed.<sup>60</sup> Both wars involved not only soldiers but civilians, and the latter “actively argued for the wars, and...became the backbone of warfare as both men and women worked to supply the armies and as morale depended on public support.”<sup>61</sup> These wars provided the *jeune école* with the lesson that it was best to make “war on the economic resources of the enemy rather than on its armed forces alone” because this warfare was carried straight to the enemy people and would cause them to lose “their zest for war.”<sup>62</sup> Aube exemplified the effect of the Franco-Prussian War on the French idea of the laws of war and how it should be waged in an article written in 1871:

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<sup>57</sup> Arne Røksund: “The Jeune École: The Strategy of the Weak” in Rolf Hobson and Tom Kristiansen (eds.): *Navies in Northern Waters 1721-2000* (London, 2004), ix-x.

<sup>58</sup> Theophile Aube began his naval career on a gunboat in the Philippines (1843-1847). He remained in several colonial posts, after a brief two-year service in the Mediterranean, until 1870 when he participated in the defense of Paris against the Germans. From 1871 to 1875, the navy’s conservative leadership left Aube idle because of his republican views and then had him dismissed from his command of a ship on the Pacific Station. Aube was returned to a more active service once a more liberal administration was in power. One of the many appointments he had before his retirement in 1885 was being a part of the *Conseil des Travaux* and as second in command of the Squadron of Evolutions. He took the office of minister of marine in the cabinet of Louis de Freycinet in 1886. Theodore Ropp, *The Development of a Modern Navy: French Naval Policy 1871-1904*, (Naval Institute Press; Annapolis, 1987), 156.

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<sup>59</sup> Røksund, “The Jeune École,” 1.

<sup>60</sup> At the beginning of the American Civil War, the limited aims were either “the break up or preservation of the United States;” but as the war progressed, the aim radicalized to “the destruction as well as the revolutionizing of the South.” The aims at the beginning of the Franco-Prussian War were either “the prevention or fulfillment of German unification;” but the aims radicalized to the “annexation, if not the total subjugation, of France.” *Ibid.*, 46.

<sup>61</sup> *Ibid.*, 46-47.

<sup>62</sup> *Ibid.*, 47.

...the laws of war...as long as war will weigh upon humanity, this phrase will be nothing but vain words, a fraught expression, an ideal that may be impossible to reach. The Germans have shown us the reality of these laws...war is, as our enemies have convincingly demonstrated to us, the absolute negation of justice, humanity, and civilisation.<sup>63</sup>

War had become irreconcilable with international law. International law was beneficial in peacetime because of its ability to avoid or postpone war; however, once war had broken out, it became useless. Aube argued, "War is the negation of law. It...is the recourse to force – the ruler of the world – of an entire people in the incessant and universal struggle for existence. Everything is therefore not only permissible but legitimate against the enemy."<sup>64</sup> Instead of dictating the means of war, international law "must be subordinated to the demands of war."<sup>65</sup> Because war was the last resort of the legitimate and ultimate right of self-defense, it took precedence over the laws of justice. The *jeune école* believed that "the highest objective of war [is] to do the most possible harm to the enemy," and "since wealth is the sinew of war, everything that strikes the enemy's wealth...becomes not only legitimate but obligatory."<sup>66</sup> Thus, the *jeune école* expected all future wars to follow a certain pattern: "the weakest fleet would rest in its bases and refuse combat...the stronger would be forced to do the same for fear of the torpedo...the only real activity would be commercial warfare...that would be absolutely merciless."<sup>67</sup>

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<sup>63</sup> Ibid., 47.

<sup>64</sup> Røksund, "The *Jeune École*," 29.

<sup>65</sup> Ibid., 29.

<sup>66</sup> Ropp, *The Development of a Modern Navy*, 158.

<sup>67</sup> Ibid., 166.

The *jeune école* recognized that France might have to fight a superior navy, a navy of equal size, or an inferior navy. Great Britain, still considered the main enemy of France, had a superior navy but was economically vulnerable. Although Britain's strength was founded on the support it received from its colonies, the *jeune école* recognized that Britain's economic dependency on its colonies made it vulnerable. Great Britain was connected to the strength of its colonies by its sea lines of communication. These lines were defined as the Achilles' heel of Great Britain, and the *jeune école* argued that an attack on private property destroyed modern, capitalist economies.<sup>68</sup> Therefore, Britain's economy would collapse under aggressive and merciless raids against its seaborne trade. Charmes avowed,

As soon as [England's] factories stop, thousands of workers will be plunged into misery, and terrible economic crises will break out. Little by little, even famine will make itself felt with all its horrors, for the grain of America is no less necessary than the products of India for feeding England.<sup>69</sup>

The objective of the Young School's theory of commercial warfare was to create "an economic panic that would bring about

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<sup>68</sup> Charmes wrote in his article, *La réforme maritime* II, "and as public wealth is nothing more than the accumulation of individual wealth, it is clear that in future wars, in order to stop a country's main commercial flow, in order to snatch from its monopoly, one must hit private property without mercy and seek by a series of individual catastrophes to destroy general prosperity." Røksund, "The *Jeune École*," 8.

<sup>69</sup> Ibid., 9.

social [and political] collapse.”<sup>70</sup> This collapse would be created by the disturbance of the “vulnerable financial system linked to shipping” and by the prevention of “essential commodities for British industry and the population from reaching the ports of Britain.”<sup>71</sup> The *jeune école*’s purpose was not to starve the enemy by obstructing the transportation of the food and raw materials necessary to wage war; rather, the obstruction was the means to achieve economic paralysis and promote social revolution. All the proponents of the Young School used the success of the Confederate commerce-destroyer *Alabama* as evidence for their theory; for they had witnessed “the panic that swept away American shipping, as well as the sufferings of the British cotton workers” during the American Civil War.<sup>72</sup> They claimed that “the threat of commerce-destroying had caused England to give way in the *Alabama [Claims]* arbitration<sup>73</sup> and in the Russian crises of 1878 and 1885.”<sup>74</sup>

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<sup>70</sup> Ropp, *The Development of a Modern Navy*, 162.

<sup>71</sup> Røksund, “The *Jeune École*,” 10.

<sup>72</sup> Ropp, *The Development of a Modern Navy*, 163.

<sup>73</sup> The Alabama Claims were a series of demands for damages sought by the government of the United States from the United Kingdom in 1869, for the attacks upon Union merchant ships by Confederate Navy commerce raiders built in British shipyards during the American Civil War. The claims focused chiefly on the most famous of these raiders, the CSS *Alabama*, which took more than sixty prizes before she was sunk off the French coast in 1864. After international arbitration endorsed the American position in 1872, Britain settled the matter by paying the United States \$15.5 million, ending the dispute and leading to a treaty that restored friendly relations between Britain and the United States.

<sup>74</sup> *Ibid.*, 164. The Russian Crisis of 1878 and 1885 were the aggravation of tensions between Great Britain and Russia. In 1878, it

The *jeune école* argued that the invention of steam and many effective weapons had destroyed Britain’s ability to achieve command of the sea. They claimed the combination of French tactics and strategy with technological advancements had made command of the sea “nothing more than an expression void of any meaning.”<sup>75</sup> An effective naval blockade was difficult to maintain thanks to steam power. Ships could no longer remain at sea for weeks at a time as blockades had been conducted in times of sail power, because steamships needed frequent restocks of coal. The *jeune école* declared that while steam power hindered

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was during the Russo-Turkish War of 1877-78. Russia was gaining considerable influence in the Balkans and Great Britain recognized a threat to her interests. Britain became particularly alarmed with Russian actions in the Eastern Mediterranean which might impede British connections with India. Hostilities were avoided on February 18, 1878 when Russia agreed not to occupy Gallipoli and Britain agreed not to land troops on either side of the straits. The crisis in 1885 is known as the Panjdeh incident. It a diplomatic crisis between Britain and Russia caused by the Russian Empire’s expansion southeast toward Afghanistan and India. After nearly completing their conquest of central Asia the Russians captured an Afghan border fort. Seeing a threat to India, Britain came close to threatening war. Both sides backed down and the matter was settled by diplomacy. The effect was to stop further Russian expansion in Asia, except for the Pamirs, and to define the northwest border of Afghanistan. Further, the *jeune école* leaders had lived through the consequences of the German siege of Paris in 1870-1871 and the suppression of the Paris Commune. Arne Røksund declared, “they had lived through a period of extreme social turmoil, and had been able to study closely some preconditions that could ignite a social revolution.” Røksund, “The *Jeune École*,” 12.

<sup>75</sup> Ropp, *The Development of a Modern Navy*, 166.

the blockader, it would help French cruisers on the high seas and when they acted as blockade-runners. Aube wrote,

...an absolute blockade, effective on all spots of an extensive coast like that of France, will from now on be impossible...cruisers with a higher speed, commanded by captains that are real sailors, can always get through the tightest blockade, and on the high seas challenge any pursuit, that is what the incidents of the latest maritime war have highlights, [this is obvious] without having to go into technical considerations.<sup>76</sup>

A blockade would be made more difficult because of the large number of ports along France's coast. These would force the enemy's fleet to blockade each port individually, dividing his forces, making it easier to fight the enemy and overstretching his resources. Aube's adoption of the German idea of having "multiple mobile defensive forces on land and sea operating from a number of fortified 'garrison' bases" also made it more difficult to maintain a blockade.<sup>77</sup> French equivalents of the German *Ausfallkorvetten*<sup>78</sup> were part of a dispersed fleet that when combined would be superior over any part of the blockading force on the high-seas. Aube declared:

The division of [the enemy's] battleships among a larger number of blockading squadrons will lead

directly...to the weakening of each of these squadrons...Behind the menacing screen of its maritime sharpshooters, our battleships will pass before the blockading squadron that has been pushed back from the coast, and the high seas will be open to them...their junction...mathematically assured. Whether one accepts or rejects our ideas on...high-seas war, reason calls for the multiplication of centers of construction, basing, and departure of the instruments, whatever they may be, of maritime warfare. This warfare will be simultaneously high-seas war, commerce raiding, and coast defense.<sup>79</sup>

The self-propelled torpedo, first widely adopted in the early 1870s, was considered another threat to blockading ships, preventing them from cruising safely along enemy coasts.<sup>80</sup> Arne Røksund summarized the *jeune école's* description of torpedo boat warfare against a blockade:

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<sup>79</sup> Ropp, *The Development of a Modern Navy*, 157.

<sup>80</sup> Since the serious creation of torpedoes and mines during the American Civil War, England and France had continued experimentation on the new naval devices. By 1873, John I. Thornycroft, an English boat builder, built the first torpedo boat for the Norwegian Navy, a "15-knot, 8-ton steam launch equipped with a towing torpedo" (Ibid., 110). By the time Russia had ordered its torpedo boats in 1878 for its war against Turkey, "the fast surface torpedo boat was beginning to look promising" (Ibid., 115). The trials in the 1880s were more successful than those in the 1870s. This made the *jeune école's* tactics more realistic and solidified the torpedo boat as a central element in both the offensive and defensive warfare proposed by the *jeune école*.

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<sup>76</sup> Røksund, "The *Jeune École*," 17.

<sup>77</sup> Ropp, *The Development of a Modern Navy*, 157.

<sup>78</sup> The *Ausfallkorvetten* (sortie corvettes) were designed by the German General Albrecht von Stosch in the early 1870s. They were intended to be used against a superior naval power's blockade. They were tasked with sorting from the many fortified bases to attack blockaders and the breaking up of landing attempts.

The torpedo boats would approach the battleships at the speed of lightning. If the battleships did not detect the torpedo boats at a distance of more than some hundred meters, or even a thousand meters, there would be no hope for the battleship. The battleships would be utterly exposed at night-time, when several torpedo boats in a coordinated attack would easily saturate the battleship's ability to detect the attacking boats and fight back.<sup>81</sup>

Aube's dismissal of international law during war made it easy for him to incorporate the use of torpedo boats into commercial warfare. He argued that a small torpedo boat could not participate in the old practices of maritime war. Doing so would send the torpedo boat to the bottom of the sea and cause nothing but a "momentarily interrupted voyage" for the captain of the attacked vessel.<sup>82</sup> Instead:

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<sup>81</sup> Røksund: "The *Jeune École*," 18.

<sup>82</sup> Aube described the encounter between a chivalrous torpedo boat and a commercial liner, "In the days when...in theory the laws of war were accepted by even the most rebellious spirits...how was maritime war practice?...a captured ship was taken to the nearest port if it was worth it, otherwise the captor took aboard its crew and the prize was sunk. Humanity was saved – and also safe were the laws of war. Tomorrow, war breaks out; an autonomous torpedo boat – two officers, a dozen men – meets one of these liners carrying cargo richer than that of the richest galleons of Spain and a crew and passengers of many hundreds; will the torpedo boat signify to the captain of the liner that it is there, that it is watching him, that it could sink him, and that consequently it makes him prisoner – him, his crew, his passengers – in a word that he has platonically been made a prize should proceed to the nearest French port? To this declaration...the captain of the liner would respond with a well-

the torpedo boat will follow from afar, invisible, the liner it has met; and, once night has fallen, perfectly silently and tranquilly it will send into the abyss liner, cargo, crew passengers; and, his soul not only at rest but fully satisfied, the captain of the torpedo boat will continue his cruise.<sup>83</sup>

The distinction between combatant and non-combatant maritime activity by belligerent nations had been erased by the *jeune école*. It insisted that all steam powered ships had the potential to be a part of the enemy's naval force, especially the large passenger liners. Since these ships were valuable enemy assets, the *jeune école* argued that the private property attacked was just "a naval vessel not yet completed."<sup>84</sup> A private passenger liner could be converted easily into an enemy's naval force. Therefore, privately owned steam powered ships were just as much of a target as an enemy navy's vessels. The *jeune école's* advocacy of the use of torpedoes was further legitimized by their assertion that the belligerent parties could "not be held responsible either for the lives of passengers travelling aboard a liner from one of the belligerent nations or for neutral shipping that did not take adequate precautions."<sup>85</sup>

Italy was considered the weaker navy that France would be most likely to

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aimed shell that would send to the bottom the torpedo boat, its crew, and its chivalrous captain, and tranquilly he [the liner's captain] would continue on his momentarily interrupted voyage." Ropp, *The Development of a Modern Navy*, 165.

<sup>83</sup> Ibid., 165.

<sup>84</sup> Røksund, "The *Jeune École*," 32.

<sup>85</sup> Ibid., 33. The *jeune école* asserted that neutral shipping would be respected, but the responsibility to avoid attacks was placed on the neutral powers.

fight. The mode of commerce-destroying warfare deployed against England would not work against Italy, for it had “no commerce to destroy, blockade of its coasts was impossible, and combined expeditions would be of only local value.”<sup>86</sup> Instead, since command of the sea could no longer protect a nation's coasts or sea trade, naval bombardment would be the primary use means of attack against Italy. Aube avowed, “the master of the sea will turn their powers of attack and destruction...against all the cities of the coast, fortified or not, pacific or warlike; burn them, ruin them, or at least ransom them mercilessly.”<sup>87</sup> The *jeune école* proposed that the real objectives of war against a weaker navy were the open coastal towns that were only defended by the “so-called laws of war” and not the naval means of the enemy. The Young School's theory of bombardment was, as historian Theodore Ropp described, “simply a revival of the old notion of doing a lot of indiscriminate

damage.”<sup>88</sup> However, the Young School modernized the idea with the addition of the notion of “working on the morale of the civilian population.”<sup>89</sup> Therefore, in a fight against Italy or the Triple Alliance, France would commence a ruthless bombardment on Italian coasts “in order to provoke a popular movement that could oblige the defense to capitulate.”<sup>90</sup> The actual destruction created by these bombardments did not matter; Italy's real economic strength, her heavy industry, was located in the northern plains, untouchable by naval means. The real importance, therefore, lay in their morale effects.

Montu directly translated the *jeune école's* naval theory to the air, just as Douhet did for Mahan's. He argued that aerial bombardment, specifically the use of the dirigible against targets on the ground, was the future of air warfare. Montu promoted the concept of war from the air, rather than command of the sky.<sup>91</sup> In his debates with Douhet, Montu supported many concepts that Douhet would argue for after World War I, following the naval theories of the Young School.

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<sup>86</sup> Ropp, *The Development of a Modern Navy*, 158.

<sup>87</sup> *Ibid.*, 158. Charmes was more explicit in his description of naval bombardment as a logical part of commercial warfare in his article *Le réforme de la Marine II*, “...a logical consequence of commerce warfare is attacks on open harbours, undefended cities, and industrial and commercial warehouses that are not fortified...there will be no more reason to respect an ordinary city, and even less a prosperous city, than to respect a commercial fleet. Whether one sets fire to a nation's products on board a vessel or in its docks or warehouses makes no difference. Or rather the second operation would provide material and moral advantages that would be more decisive than the first operation. It is certain that one will force a people to make peace as effectively by depriving it of one of its commercial ports as by depriving it of one of its military ports. Likewise one will just as surely reach the same result by dispersing its merchant navy as blowing up its battle fleet.” Røksund, “The *Jeune École*,” 22.

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<sup>88</sup> Ropp, *The Development of a Modern Navy*, 162.

<sup>89</sup> *Ibid.*, 162.

<sup>90</sup> *Ibid.*, 162.

<sup>91</sup> Carlo Montu wrote in “*L'aeronautica nella Guerra future*” that, “duels between dirigibles are improbable if not impossible, and group battles even more so; just as at sea the torpedo boat seeks out the battleship and not another torpedo boat, so too will dirigibles seek out battleships or fortress and not other dirigibles.” Hippler, *Bombing the People*, 45.



### CHAPTER THREE: World War I and Its Effects

During the Libyan War of 1911-1912, Douhet had a traditional view of aircraft's role, arguing that its most useful purpose was for reconnaissance and that, for that purpose, the diversity of aircraft was a necessity. During the early period of aviation, airplanes were built for specific purposes such as pursuit, reconnaissance, and bombing. After the Libyan War, Douhet had been assigned to write a report on the war's significance for future employment of aircraft. He pounced on the opportunity to convince his superiors that the airplane's potential could alter warfare. However, contrary to Douhet's report, the Italian military ordered ten new dirigibles.

In 1911, the Aviation Battalion was formed after a reorganization of the Italian Air Service, and Douhet was appointed its commander in 1912 on the strength of his reports and his vision for organizing the air force. His traditional understanding of an aircraft's role was changed after he became responsible for developing doctrines for the use of air power in 1913. However, during the military buildup before World War I, the Italian air forces still put their emphasis on dirigibles, while Douhet pushed for the adoption of heavy tri-motored bombing planes. He impatiently struggled to get his plans accepted, grew more at odds with his superiors, and ultimately resigned from the Aviation Battalion. Douhet was transferred to an infantry division in Edolo, near the Austrian border, in early 1915; he was stationed here as divisional chief of staff when Italy joined World War I.

The Italian army had enjoyed some initial success in its first offensive against the Central Powers in the Alps on the Italian-Austrian border. However, the fighting along the Italian front quickly fell into the static trench warfare that charac-

terized the Western Front. Italy suffered losses of about one fourth of her mobilized forces in the first four battles they fought. Douhet became increasingly convinced that air power would revolutionize warfare with its ability to avoid the stagnation of trench warfare.

It was during the second half of 1915 that Douhet became an advocate of strategic air power. Ironically, Douhet's justification for strategic bombing after World War I was conceived through his humanistic and pacifistic idea of international justice, which was, in turn, molded by his experience in World War I.<sup>92</sup> Douhet's service in the Great War altered his understanding of the nature of war (and, consequently, the purpose of an air force) in three distinct ways. The first major change was Douhet's understanding of war itself. He believed that World War I had fundamentally changed the nature of

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<sup>92</sup> Douhet's pacifism is both metaphorical and a part of a particular strand of political thought. In accordance to this political thought, peace "can only be guarded if supra-national institutions are created and invested with the necessary power to coerce trouble-makers on the international scene." In his article '*Incurzione in Utopia*,' published in 1915, Douhet used the term 'justice' in regard to Jurisdiction. In the international realm, a nation should not have the ability to stand up for itself, just as citizens cannot make their own justice within nations. A competent international court would hold the responsibility of international justice, using an international Magna Carta as the basis for decisions on disputed cases. Douhet claimed that should this happen, "...The coexistence of nations would lose its condition as an anarchic relationship and be replaced by civil cohabitation. There would be no more abuse of power or overbearing action, no more brutal use of force to suppress every right; no more war, just occasional brawls between police and wrongdoers." Hippler, *Bombing the People*, 93-94.

war by nationalizing it. Before the Great War, the armies had been the deciding factor of the war. Should an army fall, then that nation lost the war. However, with the nationalization of warfare, the lines between soldier and civilian blurred significantly. The increasing mechanization of the modern military forces had caused a citizen's involvement in the industrial power of the nation to become increasingly important during war. Douhet wrote in the article, *'La grande guerra,'* "Behind each fighting army is an entire people, rich with all the virtues of their race, slowly focusing all their energies on the lines of combat, aware that they are fighting in a struggle to the death, with no quarter, a fight for existence..."<sup>93</sup> By taking an active role in the war, civilians placed themselves in the line of fire. The working and producing civilians were now just as important to the war as the armed forces; they were, as Eric Ludendorff would later claim in his 1935 work *Der Totale Krieg*, an "objective in the activity of war."<sup>94</sup> Douhet concluded from this that war had become total, a fight for the existence of the nation. A nation at war should be considered as a totality, requiring the preparation of the military and of the industry which helps keep the military armed during war.<sup>95</sup>

Because of the nationalization of war, Douhet understood that it was the strength of the nation that was fundamental, and military power was merely a result of this. Military theorists, including Douhet, used the concept of the nation empirically, identifying "entities that go to war in their totality."<sup>96</sup> A nation's strength, he argued,

was measured by two factors: industrial power and political, social, and moral cohesion. At the turn of the century, the idea of common ethnic descent was assimilated into the concept of a nation. Thus, Douhet's concept of a nation was political and nationalistic.<sup>97</sup>

The social cohesion of a country was fundamental to its national identity, and that cohesion was a product of "social discipline." In his article *"Disciplina,"* Douhet defined this as, "the habit of completing all one's duties exactly, conscientiously, not through fear of punishment or hope of reward but through profound conviction of their intrinsic necessity."<sup>98</sup> Social discipline came in many forms, depending on the social system. According to Douhet, good social discipline did not exclude freedom of will, discussion, and evolution; but it also imposed a blind and absolute obedience on the citizens when something was acknowledged as an intrinsically necessary duty. However, Douhet thought that when a citizen's blind and absolute obedience excluded their freedom of will, it was a bad form of discipline. He condemned the German people for not asking why they were fighting during World War I simply because they were used to obedience. Douhet understood this German discipline as purely external and not implying "any real understanding or sense of innate necessity."<sup>99</sup> German soldiers obeyed out of fear of punishment, not an inner conviction in the justice of their mission. However, he also maintained that "no individual liberty ought to be permitted to disturb the liberty of the community."<sup>100</sup>

<sup>93</sup> Ibid., 81.

<sup>94</sup> Ibid., 82.

<sup>95</sup> Douhet's ideas about the nature of war closely resemble those advocated by the German High Command during World War I as expounded by Eric Ludendorff in his 1935 *Der Totale Krieg (The Nation at War)*. Hippler, *Bombing the People*, 82.

<sup>96</sup> Ibid., 86.

<sup>97</sup> However, Douhet, as well as other military theorists, adopted a 'nationalistic' view that became assimilated into the concept of a nation in the nineteenth century. Ibid., 86.

<sup>98</sup> Ibid., 87.

<sup>99</sup> Ibid., 87.

<sup>100</sup> Ibid., 88. Douhet's understanding of social discipline has contradictory elements within it, and it is worth looking in to. However, this

War now involved all of a nation's moral and material forces. Because a nation's strength stemmed from its moral cohesion, Douhet argued that rigorous political measures were needed to maintain morale on the home front: for example, "In times of war, the press must operate completely in service of the war."<sup>101</sup> However, Douhet had also appeared to be in favor of freedom of expression. In 1916, he hated the "impossibility of all public discussion about the way Italy was fighting the war."<sup>102</sup> Douhet argued in '*Le energie del popolo per la resistenza*' that although a government's control of the media could induce tranquility and security in public opinion, it also tended to diminish "awareness of enemy forces, exalting their own ephemeral success and undervaluing the real victories of the adversary."<sup>103</sup> These contradictory assertions about freedom of press and the public opinion show Douhet's uncertainties about the nature of social discipline and, more fundamentally, the conceptualization of the nation.

Douhet vacillated between two concepts of a nation: one where the nation is an "entity whose unity has to be produced and reproduced by governmental action, and one of the nation as a 'civil society' that spontaneously produces consent and social cohesion."<sup>104</sup> National integration, he wrote, was more certainly derived from public discussion and free forms of consent; however, discussion implied difference in opinion, which undermined the national unity needed to succeed in a national war. Thus, Douhet

considered the nation as "simultaneously a source of unity and of social destabilization."<sup>105</sup> This is why he viewed the nation as the principal actor and target in modern war: "an army can be beaten, a capital seized, but a people cannot be destroyed while it still has faith and hope...[This war] will end with exhaustion, tiredness, with the rebellion of the people against a state of prolonged pain and excessive anguish."<sup>106</sup> Douhet argued that a nation's moral resistance must be enhanced by any means, for the objective in modern war was to hold out longer than the enemy. A national, total war would not end until one belligerent admitted defeat. This would not happen if the belligerent nation had faith and hope. Therefore, Douhet argued that the war effort must consist of the breaking down of the faith and hope of the enemy nation. War was something one makes to win, and Douhet had now come to understand that "to win it is necessary to destroy all the moral and material capacity of the adversary to endure."<sup>107</sup>

The nationalization of war had a profound impact on Douhet's concept of the enemy. War was no longer a struggle between equally respectable adversaries; rather, the enemy was reduced to a criminal. War was now only a police action against wrongdoers. This asymmetry between the combatants of war was a moral rather than strategic or tactical one. Thomas Hippler argued that Douhet's understanding of the relationship between combatants of war helped illustrate his implicit concept of justice. In Douhet's contemporary discourses, justice was thought to come from the state, through justice systems, because of its ability to obtain material security. Justice was understood as a human characteristic rather than something containing moral signifi-

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thesis goal is not to understand the nuances and implications of this aspect of Douhet's theory. A simple illustration of his social discipline theory will be sufficient for its purposes.

<sup>101</sup> Ibid., 88.

<sup>102</sup> Ibid., 89.

<sup>103</sup> Ibid., 89.

<sup>104</sup> Ibid., 89.

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<sup>105</sup> Ibid., 89.

<sup>106</sup> Ibid., 89.

<sup>107</sup> Ibid., 111.

cance. It was a matter of jurisdiction, signifying institutional and political frameworks. Douhet paralleled humanity and justice and, as a result, correlated injustice with inhumanity. Therefore, he reduced the enemy, including enemy civilians, to a mere criminal, actively excluded from the equal station of nations, that must be “dealt with by police forces.”<sup>108</sup>

Although Douhet never specifically laid out the consequences of his reasoning, Thomas Hippler asserted that Douhet shared the same vision of the link between the principles of justice and humanity with the Harvard philosopher William Ernest Hocking. Thus, Douhet's understanding of humanity and its relation to war may be understood in more detail by looking at Hocking's writings since Douhet did not specifically talk about the relationship himself. In his 1918 *Morale and Its Enemies*, Hocking argued that, in future wars, the nation and army were more of a mental unit than in any previous war; both the fighters and the population had become a part of what Hocking called the “fighting state of mind.” This creates strong implications about an enemy's humanity; Hocking asserted that humanity is the ability of a human being to commit to and stand for an idea or principle. This view of humanity makes wars into conflicts between men's opposing principles. He wrote, “My enemy is the man who is standing for what I am bound to regard as a bad principle...and to keep that false idea from getting a hold in the world, to exclude that bad principle means, on account of his choice, to exclude *him*.”<sup>109</sup> Thus, Douhet believed that because the enemy held unjust and bad principles, he had to be suppressed.

An enemy's criminalization was amplified by Douhet's understanding of the relationship between all of humankind. Douhet believed that humanity had been, as

Thomas Hippler described, “effectively united by mechanisms of cultural and economic integration, and by the improvement of means of transportation.”<sup>110</sup> He thought the development of aircraft heavily contributed to the world's growing international peace and civilization. Douhet believed that a world-state would soon arise and argued for it in his article ‘*Il perche*’ in the *La gazette del popolo*:

Today, a state should be no more than an organ of the decentralization of humankind. With our ideas that always evoke the past, it is hard to conceive the whole of humanity ruled by a sole and single government, a government that would have nothing more to do than to coordinate the activities of the various peoples in the various regions of the world in favor of the common good. But in reality, that should be the structure of human society, which should essentially tend towards the wellbeing of the individual, absolutely avoiding constraint and depression.<sup>111</sup>

In his article “*Militarismo*,” Douhet argued against the militarism of the Central Powers, equating it with international banditry. He states that “not only should the world rise up in protest but also the population of the country that has created it: no one should be complicit in a criminal act.”<sup>112</sup> Any citizen of an enemy nation who “does not stand up against their own government and its war effort is thus individually guilty.”<sup>113</sup> Thus, Douhet's enlightened universalism led him to criminalize the enemy's civilian population.

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<sup>108</sup> Ibid., 94.

<sup>109</sup> Ibid., 96.

<sup>110</sup> Ibid., 98.

<sup>111</sup> Ibid., 98.

<sup>112</sup> Ibid., 98.

<sup>113</sup> Ibid., 99.

The second major way in which World War I changed Douhet's views of war stemmed from the stagnation of ground warfare during the war. In 1899, a Polish banker and railway financier, Jan Bloch, published an influential study, *Is War Now Impossible?*<sup>114</sup> He argued that classical military maneuvers were now impossible due to increased firepower, and that this would ultimately lead to a stabilization of the front. Increased firepower, he argued, would prolong wars. No longer would wars be decided by victory on the battlefield; rather, they would be decided by economic or political breakdowns of one of the belligerent countries. Douhet likely relied on Jan Bloch's analysis during and especially after World War I.<sup>115</sup> The stabilization along the Western and Italian fronts had proven to Douhet that Jan Bloch's analysis was correct. In September 1916, Douhet wrote "*Sulla condotta della guerra da parte dell'Intesa*" (*On the Conduct of War by the Entente*), in which he claimed "It is useless to hurry. This war...is one of exhaustion, there is no single battle that can bring victory...There are no [separate] battles but one single enormous and continuous battle that involves the entirety of the belligerent nations."<sup>116</sup> To Douhet, the increased firepower had transformed war into one single gigantic battle,

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<sup>114</sup>Ibid., 81.

<sup>115</sup> There is no definite evidence that Douhet had read Jan Bloch; however, it is highly probable that he knew of Bloch's extremely influential theses. Douhet's analysis of both the Russo-Japanese War and World War I held a lot of similarities with Bloch's theses. On August 7, 1914, in his first article in *La gazzetta del popolo*, Douhet argues, "...Scholarly strategy loses every value in this shoving of armed peoples...The game is played out between nations, and a nation isn't beaten until it admits as much...a people cannot be destroyed while it still has faith and hope." Ibid., 81.

<sup>116</sup>Ibid., 107.

bringing an end to the time of the traditional maneuver.

In January 1917, Douhet developed his insistence on the necessity for tactical defensive and strategic offensive, a crucial component of his theory on the use of air power, in his article "*Studio sulla situazione generale della Guerra*" through an emphasis on the traditional concept of victory on the ground.<sup>117</sup> However, it excluded any notion of the traditional maneuver; Douhet did not describe armies trying to outflank each other. He, instead, identified the decisive zone of World War I to be the heart of Germany rather than the Anglo-French and Russian fronts. He argued for the fronts to be abandoned simultaneously by the decisive offensive so that it could target the German homeland. On a tactical level, Douhet described such a decisive attack:

The system of attacking the rear, begun on the Somme, enables the enemy to inflict severe exhaustion on the attacker. As has been observed, this consists of destroying a defensive enemy zone with artillery and then occupying it with infantry, then

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<sup>117</sup> In '*Studio sulla situazione generale della Guerra*,' Douhet wrote, "A decisive offensive cannot be carried out with any likelihood of success unless the necessary overall predominance of forces has been reached; this is demonstrated by all the indecisive or partial offensives that have been carried out, in line with the general economy of the war. As has already been seen, the offensive costs much more than the defensive...In only one case can the offensive definitely cost less than the defensive and that is when the attacker succeeds in obtaining a complete breakthrough of enemy lines and can prevent the enemy from preparing other defensive lines; in this case alone, a decisive victory will be achieved." Ibid., 108.

moving up the artillery to destroy a second defensive zone, and so on.<sup>118</sup>

Ground warfare's stagnation was largely due to the increased mechanization of modern war. This mechanization influenced Douhet to make the distinction between conquest and occupation. In his article "*Offensiva alleata sul fronte occidentale: Manchevolezze ed errori dell'Intesa*" (*The Allied Offensive on the Western Front*), Douhet agreed with French General Petain's assertion of the relationship between man and machine in war. General Petain argued that only artillery could conquer territory, while infantry could only occupy it. Thus, a human being "serves no other purpose [in war] than to confirm the success obtained by machines."<sup>119</sup> This idea became a part of Douhet's theoretical framework; the only change was the replacement of artillery with air power. Douhet's adoption of this can be seen in several memoranda during World War I where he argued for the adoption of heavy bomber aircraft:

Today the heavy aeroplane is a weapon that can carry its offensive hundreds of kilometres behind the lines of the fighting armies in order to reach the most vital, most susceptible and least protected centres of the enemy organization. Given the character of modern war, which draws its most important material strength from the industrial organization of the combatant nations, one may easily deduce what damage might be inflicted on the enemy through a powerful organization of suitable aircraft.<sup>120</sup>

The third and possibly most important change involved the use of aeronautics.

Although militaries around the world had been investigating this field since the introduction of balloons in the late 1800s, Douhet argued World War I caused a whole new field of war to open, the field of air. As the war progressed, the demand for air warfare increased. The use of reconnaissance planes gave rise to the need to be able to shoot down the enemy reconnaissance planes, leading to the first fighter planes. The developments of air warfare, according to Douhet, were "rapid and hectic, not sound and orderly" because they came in response to needs that arose due to the use of airplanes.<sup>121</sup> It was only at the end of the war that some nations began to think that it was both possible and wise to develop an air force that performed independent offensive missions. Douhet argued that this development was important because "The form of any war...depends upon the technical means of war available."<sup>122</sup> The introduction of rapid-fire, small-caliber guns in conjunction with barbed wire greatly influenced the nature of land warfare just as the introduction of the submarine altered the nature of sea warfare.

War's nature changed with the advent of flight. Although World War I was a nationalized war, the nature of land warfare kept only a minority of people involved in the actual fighting. The majority of the people lived and worked in comparative peace and safety, providing the minority fighting with the tools to fight. However, with the rise of aerial warfare, Douhet concluded that now "it is possible to go far behind the fortified lines of defense without first breaking through them."<sup>123</sup> Thanks to the airplane:

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<sup>118</sup> Ibid., 108.

<sup>119</sup> Ibid., 108.

<sup>120</sup> Ibid., 109. This memorandum was drafted on July 3, 1915.

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<sup>121</sup> Giulio Douhet, *The Command of The Air*, trans. Dino Ferrari (Washington, D.C.: Office of Air Force History, 1983), 4.

<sup>122</sup> Ibid., 6.

<sup>123</sup> Ibid., 9.

...the repercussions of war are no longer limited by the furthest artillery range of surface guns, but can be directly felt for hundreds and hundreds of miles over all the lands and seas of the nation at war...the battlefield will be limited only by the boundaries of the nations at war, and all of their citizens will become combatants, since all of them will be exposed to the aerial offensives of the enemy.<sup>124</sup>

These changes significantly altered the form of all future wars.

As World War I continued, Douhet believed that Italian strategy had some serious shortcomings. He concluded that the ground offensive was not winnable, and he tried to persuade certain members of the Italian Parliament of the necessity of change, criticizing the general staff's strategy. Throughout 1916, the stalemate on the front continued; by September 1917, the Italian army had only moved 30 miles into Austria at the expense of nearly a million men's lives.<sup>125</sup> Douhet criticized the general staff for not using aviation effectively.

In the summer of 1916, Douhet bombarded many deputies with memoranda containing his severe critiques of the Italian General Staff and its strategic decisions.<sup>126</sup>

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<sup>124</sup> Ibid., 9-10.

<sup>125</sup> Morrow, Nicholas. *Classics of Strategy and Diplomacy* Giulio Douhet, *The Command of The Air* (1921/1927). September 01 (2015). Accessed March 2017. <http://www.classicsofstrategy.com/2015/09/the-command-of-the-air-by-giulio-douhet-19211927.html>.

<sup>126</sup> This wasn't the first time Douhet had written during the war. In the first eight months of the war, before Italy entered the war, he averaged two journal papers every three days. In March 1915, he was ordered to cease this journalistic activity, two months before Italy entered the war. However, after the war

In a meeting, Cabinet minister Leonida Bissolati asked Douhet to write another memorandum further explaining his criticism of the High Command's strategy and about the necessity of establishing a powerful air force.<sup>127</sup> Douhet gave one memorandum containing highly classified information to Gaetano Mosca, the under-secretary to the Minister of Colonies, to distribute in influential circles in Rome. However, Gaetano Mosca lost the memorandum on a train to Rome, where it was discovered and delivered to military authorities. Douhet was then court-martialed and imprisoned for a year for mishandling classified information.

Douhet was released in October 1917, at the height of the battle of Caporetto, Italy's greatest military debacle of the war. Along the Austro-Italian front, near the town of the battle's namesake, German and Austro-Hungarian forces broke through the Italian lines and routed the Italian forces there. The Italian forces lost 305,000 men

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began, he had started his *Diario critico di guerra* (Critical Diary of the War) and published it after the war. This work contained Douhet's "extreme frustration about the lack of military preparation, about excessive bureaucratization, a general tendency by officers to avoid taking responsibility, and a lack of reflection on the nature of the conflict and the strategic and tactical options that could follow from this analysis" Hippler, *Bombing the People*, 105). He also severely criticizes the general tactical theory adopted by the Italian High Command and General Cadorna, the 'cult of the offensive'. This cult believes that the 'offensive spirit' is 'the very essence of war'. Following this theory, the general Staff believe that victory includes two things: "superiority of firepower and irresistible advance" Ibid., 106.

<sup>127</sup> In one memorandum, drafted on July 3, 1915, he justifies an offensive air force. A section of his argument can be seen on page 37 of this thesis.

(dead, wounded, or captured) and 3,152 artillery pieces in the battle as opposed to the 70,000 dead or wounded men for the Central Powers.<sup>128</sup> An official committee was established to figure out the responsibility for the failure of Caporetto; the final report concluded that some factors criticized by Douhet in his “incriminating” memorandum were the cause of the defeat.<sup>129</sup> He was then release from prison after being incarcerated for a year. In January 1918, Douhet was appointed Central Director of Aviation at the General Air Commissariat, but after six months of struggling to get his views accepted, Douhet resigned from both the post and military service altogether. He worked as a writer and journalist after his resignation.

## CHAPTER FOUR: His Magnum Opus

Douhet published his *magnum opus*, the second edition of *The Command of the Air* in 1927. In his preface, Douhet claimed that in the first edition published in 1921, he had to “emasculate [his] thought, confining [himself] to indispensable fundamentals, and wait for more favorable circumstances before presenting [his] ideas in full.”<sup>130</sup> Thus, this later edition expressed all of his air power theories.

This work contained deviations from his pre-World War I air theory due to his altered understanding of warfare itself. For Douhet, future wars would be nothing like those of the past because of war's nationalization and the addition of air warfare. It is logical that he would look to new theories to match a new world. Before World War I,

Douhet's air theory had been based on the pre-national understanding of war. Using Mahan as his base, Douhet had placed severe moral restrictions on the targeting of anything that wasn't the military means of the enemy which itself had a strict definition to exclude civilians. The *jeune école* held an understanding of war similar to Douhet's after World War I. Both believed war to be a universal struggle between nations that included both soldiers and citizens. The military was no longer the only target because a military defeat did not as easily guarantee victory. Instead, social revolution was the end. However, Douhet did not use the *jeune école's* theories as a complete replacement for Mahanian doctrine as it was intended by its creators. Instead, he combined aspects of both theories to create a comprehensive air theory that worked within the nature of future wars.

War had become a national conflict of opposed wills. The objective was the *Ultima ratio*. It was the act of making the enemy bow to one's will, where national militaries served merely as intermediaries between opposing national wills. War would now be won by destroying the resistance of the enemy, and according to Douhet,

this can be done more easily, faster, more economically, and with less bloodshed by directly attacking that resistance at its weakest point. The more rapid and terrifying the arms are, the faster they will reach vital centers and the more deeply they will affect moral resistance. Hence the more civilized war will become, because damages will be corresponding to the number of people involved. The better arms are able to attack citizens in general, the more private interests are directly hurt, the fewer wars will be, for people will not be able to say any more: ‘Let us all arm

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<sup>128</sup> Tucker, Spencer. *Battles That Changed History: An Encyclopedia of World Conflict*. (Santa Barbara, CA: ABC-CLIO, 2010), 432.

<sup>129</sup> Hippler, *Bombing the People*, 32.

<sup>130</sup> Douhet, *The Command of The Air*, xii.



for war, but you will go and do the fighting.”<sup>131</sup>

In future wars the entire population would assist in some degree with the war effort, implying that both belligerents’ civilian populations would be open to attack. Douhet argued that civilians in war would no longer be in a “vacuum of passivity and resignation.”<sup>132</sup> In World War I, the nationalization of war was exemplified “insomuch as the whole society within the nations at war was devoted to sustaining the war effort.”<sup>133</sup> Some features of pre-national war, such as non-combatant immunity, were only slowly overcome in the war because of the inadequacy of the weaponry. However, with the development of the air arm, Douhet asserted that “armies and navies have lost the ability they once had to protect the nation behind them. The nation now lies open to the enemy aerial attack regardless of the existence and location of its army and navy.”<sup>134</sup>

The rise of air power changed the nature of warfare because all past warfare had been restricted to the surface of the land or sea. Nevertheless, even with the increased mobility now achieved with the air arm, Douhet still insisted on ground occupation as the ultimate decider in war. Victory still largely relied on the occupation of enemy territory. What had changed for Douhet was not the terms of victory but the means to achieve it. In the past, victory was only achieved by land forces assisted by naval forces. However, aviation, he argued, was now a decisive factor in victory, but it was

not the sole factor. Douhet clarifies in his *Recapitulation* when he discusses the role of aviation in the Franco-Moroccan War (or the Zaian War, fought in 1914-1921)<sup>135</sup> and other future wars:

If, as I think, owing to resistance on the ground in the war to come, the Air Force will decide the war, will not the three-armed forces have contributed to the victory? Will not all three of them have been factors in the victory? If one should fail in its mission, could not victory be lost? Only one thing could be said: the Air Force contributed preponderantly to victory.<sup>136</sup>

The air force made it possible to weaken an adversary’s organized forces in their ability to defend the country and allow the breakthrough that ground forces alone could not achieve. However, Douhet asserted that “as a rule the classic field victory is decisive only when warring nations have reached the limit of their endurance and despair of victory. Then success in the field becomes the “flaming seal of victory.”<sup>137</sup> Therefore, Douhet argued that a nation should only resist the enemy on the ground and mass its strength in the air to achieve victory.

The role of air power was embodied in the airplane. Douhet understood the airplane to be “the offensive weapon par excel-

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<sup>131</sup> Giulio Douhet, *Probable Aspects of Future War*, trans. Dino Ferrari (Washington, D.C.: Office of Air Force History, 1983), 196.

<sup>132</sup> Giulio Douhet, *Recapitulation*, trans. Dino Ferrari (Washington, D.C.: Office of Air Force History, 1983), 279

<sup>133</sup> Hippler, *Bombing the People*, 140

<sup>134</sup> Douhet, *Probable Aspects of Future War*, 179.

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<sup>135</sup> The Zaian War was a conflict between the Zaian Confederation of Berber tribes and France in Morocco from 1914 to 1921. After Morocco had become a French protectorate in 1912, Resident-General Louis-Hubert Lyautey tried to expand French influence eastwards towards French Algeria which was opposed by the Zaian. Reconnaissance planes were used to support the troops in the Khénifra campaign.

<sup>136</sup> Douhet, *Recapitulation*, 258.

<sup>137</sup> *Ibid.*, 280.

lence.”<sup>138</sup> It had superior speed and was independent of the surface, avoiding all the limitations that plague surface operations. Land warfare was limited by the configuration of the surface which contains many obstacles that hinder a solid body's movement;

Hence man has had either to move along the lines of least resistance, or by long and arduous labor surmount the obstacles encountered in the more difficult zones. Thus, the surface of the earth gradually became covered with lines of easy transit intersecting at various points, at others separated by zones less easy of access, sometimes impassable.<sup>139</sup>

Sea warfare was not limited by the navigability of its surface because it was equally navigable everywhere; however, it was limited by the coastlines it was bound by. Coastlines precluded freedom of navigation “except between points of contact situated on the same coastline or along arbitrary routes under foreign control, to avoid which long journeys around the coasts themselves must be undertaken.”<sup>140</sup>

The airplane held none of these disadvantages. It was not bound by any surface obstacles because the air was uniform everywhere, and it was not bound to the surface like fleets were to the coast line. Rather, an airplane can go in any direction with an ease equal to and a speed faster than any other means. In *The Command of the Air* Douhet explained that:

A plane based at point A, for example, is a potential threat to all surface points within a circle having A for its center and a radius of hundreds of miles for its field of action. Planes

based anywhere on the surface of this same circle can simultaneously converge on point A. Therefore, an aerial force is a threat to all points within its radius of actions, its units operating from their separate bases and converging in mass for the attack on the designated target faster than any other means so far known.<sup>141</sup>

Douhet did not follow his contemporaries in proclaiming the superiority of the defensive. Instead, Douhet argued that the airplane magnified the offensive's advantages while nullifying those of the defense. The offensive's greatest advantage was the ability to plan operations, to choose the attack point and to shift its fighting forces to their maximum potential. The enemy on the defensive, by contrast, had to stretch his forces thin to cover all points of possible attack along the line of defense. Douhet believed that the airplane could circumvent the lines of defense set up by the enemy; it could “fly in any direction with equal facility and faster than any other means of conveyance.”<sup>142</sup> An airplane is, therefore, “a threat to all points within its radius of action.”<sup>143</sup> Douhet understood the airplane as a weapon adapted specifically for offensive operations. It could strike suddenly, giving the enemy no time to respond with reinforcements.

The airplane's great offensive power created a paradox that Douhet recognized and used in his theory: to protect itself, the airplane needed “a greater striking force for defense than for attack.”<sup>144</sup> To defend a point from aerial attack, Douhet thought it is necessary to match the force of the attacking force. His argument presupposed the idea that a nation did not have the ability to spot

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<sup>138</sup> Douhet, *The Command of The Air*, 15.

<sup>139</sup> *Ibid.*, 8.

<sup>140</sup> *Ibid.*, 8.

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<sup>141</sup> *Ibid.*, 16.

<sup>142</sup> *Ibid.*, 16.

<sup>143</sup> *Ibid.*, 16.

<sup>144</sup> *Ibid.*, 16.

concentration or direction of attack, and, thus, it would have to have the forces necessary to defend all points simultaneously. Thus, a nation that had to defend 20 places of possible attack had to have a force that was 20 times the size of the attacking enemy's force. In *The Command of the Air*, Douhet provided this example:

The enemy has an air force with the offensive capacity of X. Even if its bases are scattered, such a force can easily concentrate its action, gradually or however it sees fit, on any number of objectives within its radius of action. To be exact, let us say that there are twenty of these objectives. In this case, in order to defend ourselves from *what X can do*, we are obliged to station near each of these twenty objectives a defensive force corresponding to force X, in all twenty times as many planes as the enemy has. So that to defend ourselves we would need a minimum aerial force twenty times as large as the attacking force of the enemy.<sup>145</sup>

In World War I, anti-aircraft guns, reconnaissance planes, and pursuit planes were developed as anti-aerial defenses and thought to have the ability to stop an air offensive; however, Douhet asserted that aerial offensives were unstoppable if they were resolutely carried out. He referenced the bombings of the town of Treviso during World War I as evidence. Austro-Hungarian aircraft had dropped approximately 1,500 bombs in about a 1-kilometer area in a total of 32 attacks between April 1916 and the end of October 1918, nearly destroying the town. He asserted that “nothing effective was done by our [Italy's] aerial defense forces to prevent the bombings except to

take note of the places bombed.”<sup>146</sup> Douhet believed that these defensive methods “amounted to nothing but a useless dispersion of enormous quantities of [Italy's] national resources, sometimes wasted on the notion of preventing, not an actual attack, but a possible one!”<sup>147</sup> An attack by an enemy air force can only be prevented, according to Douhet, by destroying the enemy force before it could strike.

Douhet argued that an air arm's ability to defend lay in its attack, just like a cavalry corps. This was an indirect defense because it consisted of “reducing the offensive potentiality of the opponent's air forces by destroying the source of aerial power at its point of origin.”<sup>148</sup> An attack carried out against other airplanes in the sky, or a direct defense, was a hard thing to actualize. The air was everywhere a uniform element. The action of “seeking out the enemy” was a difficult task. Unlike on the ground where the enemy was fixed in one locale, enemy

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<sup>146</sup> Ibid., 23. Douhet further explained the ineffectiveness of aerial defenses, “In spite of the most elaborate system of signals, if our pursuit squadrons were not already in the air when the enemy reached its objective – and obviously they could not remain in the air continuously – they could seldom take off in time to prevent the enemy from dropping his loads of bombs on his chosen targets. There was artillery fire, but it seldom hit the mark; when it did, it scored by chance as a sparrow might be hit by chance with a rifle bullet. Antiaircraft guns, too, went into action, giving chase through streets of towns and cities and through the open country in their effort to hit planes diving here, there, and everywhere at will. They behaved much like a man trying to catch a homing pigeon by following him on a bicycle! In the descending curve of its trajectory, artillery fire was metamorphosed into projectiles falling from above.” Ibid., 17-18.

<sup>147</sup> Ibid., 18.

<sup>148</sup> Ibid., 53.

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<sup>145</sup> Ibid., 16-17.

airplanes were constantly on the move in an element that had no fixed landscape-defining features as the ground did. "Finding the enemy" in the air was only a possibility instead of a probability as it was on the ground. This type of attack appears offensive, but it is actually defensive and thus has all the defensive's disadvantages. Douhet's principle of aerial defense was that it was "easier and more effective to destroy the enemy's aerial power by destroying his nests and eggs on the ground than to hunt his flying birds in the air."<sup>149</sup>

The idea of the offensive defense was derived from Mahan's understanding of the offensive defense of a navy. In the *Influence of Sea Power Upon History*, Mahan makes the distinction between passive defense and active defense. Passive defense is what Douhet advocated the ground forces should do, strengthen themselves and await attack. However, active defense "asserts that safety for one's self, the real object of defensive preparation, is best secured by attacking the enemy."<sup>150</sup> While such actions seemed to belong to offensive war, they did not. They only became offensive when the object of attack moved from the enemy's fleet to the enemy's country.

Any attempt to defend against an enemy's aerial action using other aircraft or anti-aircraft defenses would fail and only benefit the enemy. For such an aerial defense to be effective, Douhet asserted it "must have at its disposal a number of combat planes equal to the number of enemy's combat planes in mass. Otherwise the aerial defense will be overcome and the center destroyed."<sup>151</sup> Douhet avowed that this led to an absurdity. Because of the air arm's offensive nature, to use it defensively created a situation where a nation's aerial forces had to be stronger than those of the

attacker; but such a superior force was forced to be inactive, taking no offensive action, and was thus at the mercy of the enemy's offensives. A nation could only defend itself from an enemy's aerial forces by attacking and destroying those forces. Therefore, a fundamental principle of aerial warfare, according to Douhet, was that a nation had to resign itself "to the offensives the enemy inflicts upon us, while striving to put all our resources to work to inflict even heavier ones upon him."<sup>152</sup> Any resource diverted from this "aim might jeopardize one's chances of conquering the command of the air."<sup>153</sup>

The necessity of securing the command of the air meant introducing a completely separate air arm from the land and sea arms: "an air force should logically be accorded equal importance with the army and navy and bear the same relation to them as they now bear to each other."<sup>154</sup> The independent air arm's mission in war would be to seize the command of the air, which was

<sup>149</sup> Ibid., 53-54.

<sup>150</sup> Mahan, *The Influence of Sea Power*, 87.

<sup>151</sup> Douhet, *The Command of The Air*, 111.

<sup>152</sup> Ibid., 55. In *Probable Aspects of Future War* Douhet defends this position against those who claimed such a stance was inhumane: "When this general principle of war is applied to aerial warfare, it seems inhumane to us because of a traditional notion which must be changed. Everyone says, and is convinced of it, that war is no longer a clash between armies, but is a clash between nations, between whole populations. During the last war this clash took the form of a long process of attrition between armies, and that seemed natural and logical. Because of its direct action, the air arm pits populations, nations directly against nations, and does away with the intervening armor which has kept them apart during past wars. Now it is actually populations and nations which come to blows and seize each other's throats." Douhet, *Probable Aspects of Future War*, 195.

<sup>153</sup> Ibid., 194.

<sup>154</sup> Douhet, *The Command of The Air*, 5.

something the army and navy could not contribute to in any way. Douhet argued:

Besides the solution of the technical problem of aerial means, aerial warfare also involves the solution of a great many problems of preparation, organization, employment, et cetera, of aerial forces; and that calls for the creation, *ex novo*, of a third branch of the art of war, which branch may be accurately defined as the art of aerial warfare...The army and navy must look upon airplanes not as auxiliaries to be put to use in certain circumstances only, but rather as a third brother, younger but no less important, in the great warrior family.<sup>155</sup>

According to Douhet, all forces (land, sea, and aerial) should be directed towards the single end of victory. They must be coordinated and in harmony with each other. “The three forces,” Douhet asserted, “should function as ingredients – or factors – of a single product in which the best results can be obtained only by a proper apportioning of the ingredients used.”<sup>156</sup> However, the resources available to a country for defense are limited. A country must correctly proportion its resources among the three branches to secure an efficient national defense. Improved coordination between the forces would maximize the efficiency of national defense. Douhet therefore advocated the creation of a central authority over all branches of the armed forces and for the proper allocation and subdivision of national defense resources.

The creation of a separate air force was the proper and most efficient placement of aerial resources. Douhet rejected the argument that because the army and navy

had aerial components in their operations an air force should serve merely as an auxiliary for the army and navy. The land forces have naval means of warfare that “help integrate its land operations,” such as the use of water transportation of troops and supplies.<sup>157</sup> Naval forces similarly include means of land warfare that are used “to assist and integrate its naval operations” such as naval infantry (commonly known as marines).<sup>158</sup> Douhet argued that making one type of warfare “dependent on the other would restrict the freedom of action of the one or the other, and thus diminished their total effectiveness.”<sup>159</sup> To divide the air forces between the army and navy because they benefit from air operations would only result in the unhelpful division of air forces; bombing operations against an enemy port or inland city could be conducted by either land-based or ship-based planes. Further, if aerial forces were only auxiliaries of the army or navy, Douhet argued that the aerial forces would not be able to achieve the indispensable mission of winning command of the air.

### *Command of the Air*

Douhet’s idea of the command of the air is the underlying theory from which all his air warfare principles stem. This concept is not the same as supremacy or preponderance of force but, rather, the ability to “prevent the enemy from flying while retaining the ability to fly oneself.”<sup>160</sup> A nation in command of the air can “protect its own territory from enemy aerial attack and even ...put a halt to the enemy’s auxiliary actions in support of his land and sea operations,

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<sup>155</sup> *Ibid.*, 100.

<sup>156</sup> *Ibid.*, 70.

<sup>157</sup> *Ibid.*, 4.

<sup>158</sup> *Ibid.*, 4. Naval infantry are an integral part of a nation’s naval forces which perform operations at sea and on land, including amphibious operations.

<sup>159</sup> *Ibid.*, 5.

<sup>160</sup> *Ibid.*, 24.

leaving [the enemy] powerless to do much of anything."<sup>161</sup> The idea of command of the air replicates Mahan's idea of command of the sea as it is just a direct transfer of the Mahanian theory to air warfare. While some of his views shifted overtime, this theory remained constant throughout Douhet's career. Due to Douhet's ruthless insistence on the importance of crushing the morale of the enemy through bombardment, many thought that his command of the air was related only to Mahan's theory through name alone and resembled more the *jeune école's* commerce-destroying warfare; however, this is incorrect.

The structure of acquiring command and how to conduct commerce-destroying warfare used by Douhet is the basic structure as laid out by Mahan, not the *jeune école*. Mahan established that command of the sea was won when a nation drove the enemy's sea fleet from the seas, there by closing off the sea from the enemy. Mahan stated that it was only with the backing of a strong sea power that commerce destroying could be fatal. Douhet modeled the objective of his Independent Air Force after this for "the surface is defended from the air just as coasts are defended from the sea – by gaining command."<sup>162</sup> The first objective of the Independent Air Force was defeat of the enemy's air force. By forcing the enemy from the skies, the morale attacks conducted by the Independent Air Force could then assure victory. If Douhet had modeled his command theory after the *jeune école*, then the idea of command would not be present at all. The *jeune école's* theory declared that command was no longer required for the defense of one's commerce and coasts. If Douhet's fundamental principle was structured after the *jeune école*, then he would not have used the language of command nor would he

have argued for the attack on the enemy's aerial means.

To achieve command, a nation must have an adequate air force that can conquer the air in war time. Douhet believed that the only force capable of doing this was an Independent Air Force. He used this term to reference the sum of a nation's means of aviation that were not under the influence of the army or navy in any way. Such an air force had to meet two conditions:

- (1) the essential condition – namely *to possess strength enough to conquer the command of the air*; (2) the integral condition – namely, *to keep up that strength after command of the air has been won and exploit it in such a way as to crush the material and moral resistance of the enemy*.<sup>163</sup>

However, it was hard to achieve command of the air by attacking another's air force in the air. The enemy was hard to find in aerial warfare due to the uniformity of the element of air, resembling that of the sea. The sea and air are wide commons "over which men may pass in all directions."<sup>164</sup> Douhet asserted that,

a stronger Independent Air Force which *looked* for battle – that is, looked for the weaker Air Force – would be taking the risk of flying in all directions in vain and exhausting itself without finding its quarry. In other words, it would play into the hands of the weaker enemy. Similarly, if the weaker Independent Air Force went looking for battle, it would play into the hands of the *stronger*, very likely committing suicide...an Air Force must never go

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<sup>161</sup> Ibid., 25.

<sup>162</sup> Ibid., 112.

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<sup>163</sup> Ibid., 103.

<sup>164</sup> Mahan, *The Influence of Sea Power*, 25.

*looking for battle, neither the stronger nor the weaker one.*<sup>165</sup>

He also established that the stronger Independent Air Force must always engage in battle although never searching for it while the weaker one must seek to avoid it. The best way for the weaker air force to avoid battle was to stay on the ground just as a weaker navy would stay in port to avoid battle with a superior navy. Should the enemy remain on the ground, the enemy would never be found in the air. However, the air force could not perform a permanent blockade of the enemy's air force as old ships of the line could to an enemy's navy due to the frequent need of the airplane to land and refuel. Instead, Douhet likely recognized this situation resembled the *jeune école's* understanding of a blockade. If the superior air force would patrol the skies, the weaker air force would use the universality of the air to its advantage and slip through the blockade to attack targets within the enemy's territory. Thus, if aerial war was decided by air battle between the two air forces alone, it could go on for many years, never achieving a conclusive ending.

Therefore, an Independent Air Force must be able to fight in the air and against the enemy on the ground. The stronger force gained more by looking for and defeating the enemy on the ground – than waiting to find the enemy in the skies. It was more advantageous for the weaker force to avoid being found and thus defeated on land or in the skies while attacking the enemy's aerial means. Douhet concluded that “the aerial struggle thus resolves itself into a series of offensive acts against the surface,” with each air force trying to deprive the other of the ability to fly.<sup>166</sup>

To win command in the air, an air force must destroy another air force through

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<sup>165</sup> Douhet, *Recapitulation*, 244-245.

<sup>166</sup> *Ibid.*, 246.

aerial combat, “subjecting the enemy to a more effective fire power than he can employ,”<sup>167</sup> while only bombardment can destroy an enemy's air force on the surface. Douhet argued, therefore, that an Independent Air Force needed to possess both combat and bombardment capabilities. Douhet claimed that authentic aerial warfare could only occur as part of the struggle for control of the skies. Aerial warfare is the deprivation of the enemy from all means of flying by striking the enemy at his operational bases and production centers, wherever the enemy's aerial means are found or produced. This can be done both in the air and on the surface of the enemy's country. If an air force engaged only in aerial combat, which was already an uncertain business due to the properties of the air theater, the enemy would always be able to produce more airplanes. The easiest way to deprive the enemy of all aerial assets was to destroy them by bombardment of airfields and production facilities. Thus, aerial warfare, according to Douhet, consisted of both aerial combat and bombardment.

Douhet argued that aerial warfare would be the most intense and violent aspect of future wars. They would “begin in the air, and...large-scale aerial actions [would] be carried out even before the declaration of war, because everyone [would] be trying to get the advantage of surprise.”<sup>168</sup> All combatants would recognize the need to “inflict the greatest damage in the shortest possible time” upon the enemy and to neutralize his aerial means to prevent retaliation.<sup>169</sup> Douhet argued that an Independent Air Force must be organized so that it can immediately go into action at the beginning of hostilities “otherwise 90 percent of its effectiveness is

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<sup>167</sup> Douhet, *The Command of The Air*, 105.

<sup>168</sup> Douhet, *Probable Aspects of Future War*, 197.

<sup>169</sup> Douhet, *The Command of The Air*, 51.

lost.”<sup>170</sup> According to Douhet, Independent Air Forces will quickly and repeatedly fly against their enemies to condense the effort needed to remove the enemy's aerial means into the shortest space of time. The war will be decided by the air forces that exist when the hostilities begin. Douhet avowed that:

No reliance can be placed on forces to be activated during the war. One who is defeated will not be able to create another aerial force. All available forces must be thrown into the fray at once; every means reserved for some other use will be that much less weight on the scale of destiny. The principle of mass must be implicitly followed.<sup>171</sup>

The principle of mass made it possible for the air force to successfully break through the enemy's aerial opposition. Because an Independent Air Force cannot be held at one base in its entirety, the radius of its action depended upon the shared action radius of all of its units. An attack on any target within that shared radius of action could be prepared and launched in secret, which would not allow the enemy enough time to parry the attack effectively. Rather, the enemy could only oppose the attack with a fraction of his air forces. If the Independent Air Force has an adequate number of bombing units, then the attack could be directed against several targets in the same zone of attack. An Air Force could potentially destroy as many targets as there were bombing units. Douhet explained that, “an Air Force with 50 bombing units, each capable of destroying a surface 500 meters in diameter, could in a single flight completely destroy 50 enemy objectives.”<sup>172</sup> A

strong Independent Air Force could damage an unprepared enemy so much that his forces might collapse in just a few days. Aerial warfare was the primary way to win wars, for it would bring a quick decision to the war.

It is likely that Douhet drew the feasibility and importance of a “sudden paralyzing attack at the beginning of the war” from the *jeune école*.<sup>173</sup> Douhet and the *jeune école* advocated that a single, sudden, moral blow would have a great effect on the outcome of a war. The *jeune école* advocated for such a blow due to their experience as “the victims of one of the most amazing reversals of the European balance of power.”<sup>174</sup> Douhet witnessed the strength of morale during World War I. With the capabilities of the air arm, Douhet inferred that the drawn-out drain of morale by a blockade could be significantly increased and sped up by aerial attacks. In his speculation of a future war, Douhet outlined an Independent Air Force's goal for its first attack:

The plan...was to beat the enemy in the air, meanwhile holding him on land, thereby being able to inflict such severe losses on the enemy country as to make it stop fighting. The Independent Air Force plan of operation envisages a series of offensive actions with the double object of beating the enemy's aerial forces and carrying out offensives over his territory. The first offensive action had to be launched at the very beginning of the war in an effort to catch the enemy's aerial forces in the process of mobilization...and [to]

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<sup>170</sup> Ibid., 56.

<sup>171</sup> Douhet, *Probable Aspects of Future War*, 197.

<sup>172</sup> Douhet, *The Command of The Air*, 50.

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<sup>173</sup> Ropp, *The Development of a Modern Navy*, 163.

<sup>174</sup> Ibid., 163.



give them a sense of their own inferiority.<sup>175</sup>

The military principle of concentration has been held in high regard by all fields of warfare. Both Mahan and the *jeune école* advocated for a concentration of forces, and Douhet used aspects of both for his theory of concentration. Mahan's definition of concentration is "distributing your own force as to be superior to the enemy in one quarter, while in the other you hold him in check long enough to permit your main attack to reach its full result."<sup>176</sup> Douhet uses this idea of concentration to hold on the ground while attacking from the air. He used the *jeune école's* idea of concentration to describe the air fleet in battle. The *jeune école* split the whole of its navy into many stations along the coast. When attacking a portion of a blockade, all of the naval means would leave their ports and concentrate on a portion of the blockade, producing superior numbers on the overstretched blockade. Douhet followed this idea to its logical conclusion for air warfare. The Independent Air Force would not be held at a single air base. Instead, it would be distributed between many airfields throughout the country. When attacking a target, the Independent Air Force would concentrate its forces so that it could use its full force against a target, creating a massive superiority in numbers against defenses. Douhet illustrated how such a concentration by an Independent Air Force would work against the old idea of an air force in his article *The War of 19 -*:

The first wave [of the Independent Air Force] is sighted [by the enemy]; against it a pursuit force is dis-

patched. Either this wave is destroyed, or it is not; in the latter case it would go on to its task. Then the next wave would come into sight. This game would go on for hours. After a certain period of fighting, the pursuit units would have to land because of their limited flying autonomy...but where would they find themselves after being compelled to abandon the fight? How, then, to employ effectively one's own forces? ...All is uncertain, and in the face of so terrible an uncertainty, nothing can be done except hurl one's own forces against the enemy as he comes into view, as long as they last, without being able to follow a definite and coordinated plan. As long as the Independent Air Force attacks as an organic whole, perfectly articulated, the opposing defense will always be shapeless and disorganized.<sup>177</sup>

The secondary objective of aerial forces was the targeting of the material and moral resistance of the enemy. It was also a necessary action of the Independent Air Force. For Douhet, however, bombing performed after the command of the air was achieved did not constitute aerial warfare. Once a nation seized command of the air, then the enemy nation would be deprived of all his aerial means. No aerial warfare could occur. Douhet asserted:

All the actions an Independent Air Force can perform after conquering the command of the air must necessarily be directed against the surface. These actions will play a large, perhaps a decisive, part in deciding the issue of war, but they will never be

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<sup>175</sup> Giulio Douhet, *The Command of The Air: The War of 19-*, trans. Dino Ferrari (Washington, D.C.: Office of Air Force History, 1983), 355.

<sup>176</sup> Westcott, ed. *Mahan on Naval Warfare*, 64.

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<sup>177</sup> Douhet, *The War of 19-*, 359.

accurately classified as actions of aerial warfare.<sup>178</sup>

Due to the nationalization of war, modern wars would henceforth be decided by the breakdown of the morale of the enemy's population. Douhet believed World War I showed this to be true. Like most of his contemporaries, he accepted the German military's "stab in the back" legend of Germany's defeat. The claim was that the Central Powers had won most of the battles, but, once the morale of their people weakened, their armies had surrendered or disbanded. Douhet argued that this national disintegration was brought about only indirectly by what occurred on the front lines. Rather, the British blockade was the cause of the national disintegration of Germany.

In future wars, however, aerial bombardments, compelling hundreds of thousands to evacuate a city, would have a more direct effect on victory.<sup>179</sup> The morale and

material collapse of the enemy would be achieved by aerial bombardment more quickly than through the indirect effect of fighting armies. The air arm directly strikes the enemy's entities that are not as resistant, organized, and disciplined; nor are they able to counter-attack. Douhet described:

A nation which once loses the command of the air and finds itself subjected to incessant aerial attacks aimed directly at its most vital centers and without the possibility of effective retaliation, this nation, whatever its surface forces may be able to do, must arrive at the convictions that all is useless, that all hope is dead. This conviction spells defeat.<sup>180</sup>

Thus, the morale and material effects of an aerial offensive "are greatest when the offensives are concentrated in time and space."<sup>181</sup>

Although the structure of command of the air was the same as Mahan's command of the sea, Douhet incorporated the *jeune école* theories into the types of ground targets for an Independent Air Force. Mahan's targets from blockade or bombardment were controlled by the moral restrictions of pre-national war. He argued "Even in matters where the interest of nations is concerned, the moral element enters; because each generation in its day is the guard-

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<sup>178</sup> Douhet, *The Command of The Air*, 105.

<sup>179</sup> Douhet gives a picture of such a thing in *The Command of the Air*: "For example take the center of a large city and imagine what would happen among the civilian population during a single attack by a single bombing unit...Here is what would be likely to happen to the center of the city within a radius of about 250 meters: within a few minutes some 20 tons of high-explosive, incendiary and gas bombs would rain down...As the hours passed and night advanced, the fires would spread while poison gas paralyzed all life. By the following day the life of the city would be suspended; and if it happened to be a junction on some important artery of communication traffic would be suspended. What could happen to a single city in a single day could also happen to ten, twenty, fifty cities. And since news travels fast...what, I ask you, would be the effect upon civilians of other cities, not yet stricken but equally subject to bombing attacks?...In short, normal life would be impossible in this constant

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nightmare of imminent death and destruction...A complete breakdown of the social structure cannot but take place in a country subjected to this kind of merciless pounding from the air. The time would soon come when, to put an end to horror and suffering, the people themselves, driven by the instinct of self-preservation, would rise up and demand an end to the war – this before their army and navy had time to mobilize at all!" Ibid., 58.

<sup>180</sup> Ibid., 140.

<sup>181</sup> Ibid., 49.

ian of those which shall follow it.”<sup>182</sup> Mahanian targets were commerce vessels under the enemy’s flag and fortified ports. *Jeune école* targets had no such restrictions. Gabriel Charmes, foreign affairs expert in the early 1880s in France, wrote:

It is...clear that the bombardment of forts will be in the future only an accessory operation...We will ravage above all the undefended coasts, the open cities. In a fight against England, instead of stupidly trying to silence the forts of Gibraltar and Malta, we will strike at the heart, that is at the commercial ports, and so complete the ruin of the country begun by cruisers. In a war against Italy, what terrible disasters will inevitably accumulate along this continuous coastline which seems to offer everywhere its admirable cities to the incendiary projectiles of the enemy.<sup>183</sup>

Economic paralysis and social revolution were the objectives of such targeting, not the surrender of the military; and Douhet followed the *jeune école*’s example. He never gave a formula for when certain objectives should be targeted, leaving such a decision to the conditions of the moment such as the circumstances, material, morale, and psychological considerations. Douhet rather argued that “the final decision depends upon the disequilibrium between the damage suffered by the enemy and his powers of recuperating from a blow which must be struck as quickly as possible, lest the enemy strike us first.”<sup>184</sup> After command of the air is acquired, the highest disequilibrium would be accomplished by attacking cities and civilians for the enemy nation could not

respond by attacking your own, and it would be contributing to the breakdown of their resistance.

If an Independent Air Force only met the first condition, Douhet asserted, then it would prevent the enemy from attacking its own territory and subject the enemy’s territory to attack; but it wouldn’t have enough power to crush the enemy’s material and moral resistance. War will not be decided by an Air Force that meets only the first condition; rather, it will be decided by either land or sea. However, if an Air Force met both conditions it would be able to decide “the issue of the war without regard to any other circumstances whatever.”<sup>185</sup> To achieve this is to achieve victory; for once the enemy controls the skies, a nation is subject to whatever terms the enemy imposes. According to Douhet:

The nation dominated in the air must suffer without possibility of effective counteraction the aerial offensives carried by the enemy to its territory – offensives which will increase as the enemy increases his offensive aerial forces. Its army and navy will be powerless against these offensives. Quite apart from material damage, how great must be the moral effects both on the nation enduring this nightmare and on its armed forces, who would be conscious of their impotence to help?<sup>186</sup>

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<sup>182</sup> Westcott, ed. *Mahan on Naval Warfare*, 345.

<sup>183</sup> Ropp, *The Development of a Modern Navy*, 162.

<sup>184</sup> Douhet, *The Command of The Air*, 59.

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<sup>185</sup> *Ibid.*, 98.

<sup>186</sup> Douhet, *Probable Aspects of Future War*, 192 - 193. Douhet provided more detailed examples of what an Independent Air Force would subject an enemy to, “In their turn the [enemy’s] army and navy will see their lines of communication cut and their bases destroyed; the forwarding of supplies from the nation to its armed forces would be cut off completely or made irregular and dangerous. By simply destroying facilitates in

Thus, a nation could win “regardless of any other circumstances whatsoever” because “a country in possession of adequate air forces [to gain control of the air] can crush the material and morale resistance of the enemy;” and the enemy would be powerless to stop them.<sup>187</sup>

### *The Battleplane*

Douhet advocated that such an Independent Air Force should be composed of a combination of “battleplane” (*aereo di battaglia*) units and reconnaissance plane units instead of having many different types of specialized planes with specific jobs. The battleplane would make up the operating mass of the Air Force because it was the only aircraft needed to wage aerial warfare. Douhet's concept of the battleplane came from the conclusion that both bombing and combat aircraft could have the same technical qualities:

All characteristics except armament shall be the same for both combat and bomber planes. The difference between the two types of plane lies in the difference in distribution of weight for armaments in the combat plane and for bomb-load in the bomber. From this fact emerges the concept of a plane suitable for both combat and bombing, which for simplicity I shall call the ‘battleplane.’<sup>188</sup>

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enemy mercantile ports, the dominant Independent Air Force can cut off maritime traffic even if the enemy nation is able to protect its seaways. Then is it not logical to assume that a nation placed in such a position of inferiority would begin to despair of a favorable outcome of the war? And would not that be the beginning of the end?” Ibid., 193.

<sup>187</sup> Douhet, *The Command of The Air*, 96.

<sup>188</sup> Ibid., 116 - 117.

According to Thomas Hippler, Douhet's concept of the “battleplane” (which was added in the second edition of *The Command of the Air* in 1927) was a theoretical innovation that relieved some of the tension between Douhet's concepts of war *in* the air (pursuing command of the air) and war *from* the air (bombing ground targets). It was this concept that allowed him to combine aspects from two opposing views of naval warfare into a comprehensive air theory.

Simplifying the modification of the fleet was a Mahanian concept. Mahan argued “the great end of a war fleet...is not to chase, nor to fly, but to control the seas.”<sup>189</sup> Thus, it was not necessary to have some vessels that specialized in certain characteristics such as speed. A range of speed capabilities within the fleet hindered it. With such a characteristic, parts of the fleet could arrive at a certain point quicker than the enemy and most of its own fleet; but “it is of no use to get there first unless, when the enemy in turn arrives, you also have the most men, – the greater force.”<sup>190</sup> The limitation of ranging speed could hinder the fleet through it moving at the pace of its slowest vessel to keep a concentration of forces. Douhet saw the benefits of such a principle for an area of war (both sea and air) whose means of combat were “reducible to terms of physical weight.”<sup>191</sup> In *Command of the Air*, Douhet discussed the means of combat required for an airplane. An airplane “should possess to the maximum degree compatible with technical exigencies, the following four characteristics: armament, armor protection, speed, and radius of action.”<sup>192</sup> However, due to “the aerodynamic structure of the plane” the maximum of every characteristic cannot be held within one plane simultaneously;

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<sup>189</sup> Westcott, ed. *Mahan on Naval Warfare*, 247.

<sup>190</sup> Ibid., 247.

<sup>191</sup> Douhet, *The Command of The Air*, 114.

<sup>192</sup> Ibid., 114.

rather, each must be “subdivided to harmonize” with each other.<sup>193</sup> This led to the specialization of plane design during Douhet’s time. This specialization split an air force’s resources so that only portions of an air force’s strength would be in action at all times; “First will come an aerial battle to overcome the enemy opposition, then afterward the bombing action against surface objectives. Thus, only combat planes can take part in the first phase of the action and only bombers in the second.”<sup>194</sup>

The battleplane solved this problem because Douhet designed its characteristics to have elasticity; a battleplanes’ construction allowed for characteristics such as radius of action, armor protection, and armament to be altered easily. This allowed the battleplane to be used simultaneously for both combat and bombing missions. Douhet argued:

Since radius of action, armor protection, and armament can be translated into carrying capacity, and since the sum total of the weight of these in a given plane is constant, the weight of any of them may be increased at the expense of any or all of the others... If an Independent Air Force undertook an operation within a short radius of action, obviously it would be more useful to decrease the weight of the fuel load and increase the armament a corresponding amount. Conversely, if the action is far from the bases, it would be more useful to decrease the armor protection and perhaps even the armament. Once the command of the air had been conquered, there would of course no longer be any need for an Independent Air Force to engage in aerial

battle – so there would no longer be any need of heavy armor protection and defensive aerial armament.<sup>195</sup>

Thomas Hippler asserted that “the unification of [Douhet’s] material [in the battleplane] ...simultaneously [unified] the strategic outlook [of his air theory].”<sup>196</sup> Douhet did not have to accept two different kinds of missions (combat for command of the air and bombing). His battleplane concept overcame this separation logically and temporally because it “enables the simultaneous execution of missions *in* the air and missions *from* the air, missions to obtain command of the air and bombing missions against the ground.”<sup>197</sup> Douhet expounded the temporal consequences of the battleplane in *The Command of the Air*:

If the total number of planes in an Independent Air Force is divided between combat and bombing planes, in case of an encounter with an enemy the action will not be simultaneous, but will take place at different times...only combat planes can take part in the first phase of action and only bombers in the second...If the air force were made up entirely of battleplanes, all planes could take part in the engagement, with full freedom of action [*liberta di manovra*].<sup>198</sup>

This would allow the Independent Air Force to “employ all the armament of the planes in aerial battle in the first phase of action, then strike against surface targets in the second phase...utilizing the weight saved in person-

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<sup>193</sup> Ibid., 114.

<sup>194</sup> Ibid., 117.

<sup>195</sup> Ibid., 119.

<sup>196</sup> Hippler, *Bombing the People*, 145.

<sup>197</sup> Ibid., 146.

<sup>198</sup> Ibid., 146.

nel to increase the fire power of the Independent Air Force as a whole."<sup>199</sup>

The battleplane concept logically removed the major distinctions between the missions (war *in* the air and war *from* the air). By removing the hardware distinction between the two missions, both could be carried out with the same type of plane. The battleplane solidified Douhet's claim that both missions were the same because both fulfilled the same end, conquering command of the air. Thomas Hippler argued that Douhet, in 1928, predicted that aerial tactics would consist "of attacking the enemy nation with heavy battleplanes in close formation and employed en masse, in order to provoke a reaction that will result in aerial combat" in his article '*Caccia, combattimento, battaglia*' ('*Pursuit Aircraft, Fighter Aircraft, Battleplanes*').<sup>200</sup> As Douhet explained:

...I do not propose *seeking out* aerial battle because I could not always make the enemy accept it, even if I was faster than him. I simply propose *provoking* the enemy into offering battle using the only sure means at my disposal, which is by *attacking him*, otherwise he will not offer [battle].<sup>201</sup>

<sup>199</sup> Douhet, *The Command of The Air*, 118.

<sup>200</sup> Hippler, *Bombing the People*, 147. In this article, Douhet makes a clear distinction between three different types of military aircraft. The pursuit aircraft (*caccia*, which means 'hunter') were aircraft specifically designed for attacking other aircraft in the air with an emphasis on maneuverability. The fighter aircraft (*combattimento*) were aircraft that put emphasis on fire power. The battleplanes were aircraft that were equally able to perform combat in the air as well as bomb ground targets.

<sup>201</sup> *Ibid.*, 146 - 147. In '*Caccia, combattimento, battaglia*,' Douhet continued, "I do not arm myself with hunting aircraft [*caccia*] because

Douhet argued that heavily armed battleplanes would be able to fire in any direction as they made their way toward ground targets. Such targets would consist of mostly aeronautical infrastructure and aircraft industry, although not be limited to those targets. A battleplane air fleet would weaken the enemy's air capacity through both air combat and bombardment to win command of the air. Once command was achieved, the helpless enemy nation would be subjected to aerial bombardment that would instigate national breakdown. Thus, Douhet's concept of the battleplane made war *in* the air and war *from* the air the same because both would be used simultaneously to achieve command of the air.

For a battleplane to be able to hit its targets, it must have information on them. Douhet argued that an Independent Air Force needed to keep an efficient information service. To maintain such a service, a completely different type of plane from the combat plane was needed: the reconnaissance plane. It would have the maximum level of speed, at least an equal radius of action as the Independent Air Force, and no armament. Douhet argued that reconnaissance units must avoid combat. These planes would instead be used in small scouting operations that would "report enemy moves in order to use the information to avoid contact with the enemy in subsequent operations."<sup>202</sup> According to Douhet, the reconnaissance units would be relatively small in number as compared with the battleplane units. Reconnaissance missions would "be undertaken by individual planes operating singly, or by small groups, to allow for any

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I intend to fight, not hunt or be hunted. I do not arm myself for hunting because I do not intend to limit my field of action and voluntarily remove from my attacks the enemy's most vital objectives. The potential enemy must know that if he can bomb Milan or Rome, I can bomb Paris or Berlin."

<sup>202</sup> Douhet, *The Command of The Air*, 120.

possible loss during operations.”<sup>203</sup> A reconnaissance operation in the air would be similar to a cavalry’s “small, well-mounted patrols who can avoid contact with the enemy and slip behind his rear, then return with the needed information.”<sup>204</sup>

### *Auxiliary and Civil Aviation*

At the time, some of Douhet’s contemporaries advocated for the Independent Air Force to provide auxiliary aviation for the army and navy out of its own budget and resources. Douhet defined auxiliary aviation as any aircraft not designed to acquire the command of the air, but rather “delegated to render designated services to the army or navy and strictly confined to that purpose.”<sup>205</sup> Auxiliary aviation, he claimed, only diverted resources away from the Independent Air Force and interfered with the goal of achieving the command of the air. An Independent Air Force only composed of auxiliary aviation was harmful. To Douhet, auxiliary aviation in an Independent Air Force was worthless because it could not be used until after command of the air was achieved. It only diverted forces away from the essential purpose, which could lead to defeat. It was also superfluous because after command of the air had been acquired, units from the Independent Air Force could be used as auxiliary units. In *The Command of the Air*, Douhet provided an example:

A and B are two nations which have the same amount of resources and the same standards of technical proficiency in their respective air forces. But, while Nation A uses all its resources to build an Independent Air Force capable of striving for conquest of the command of the air,

Nation B divides its resources into two parts, one to create an Independent Air Force, the other to create an auxiliary aviation. Plainly, the Air Force of Nation A will be stronger than that of Nation B. Therefore, in case of war, all other things being equal, Nation A will win the command of the air, and Nation B will be unable to use its auxiliary aviation. In other words, Nation B will be defeated in aerial warfare simply because she diverted part of her resources from an Independent Air Force to establish auxiliary aviation, which became the cause of her defeat and from then on was worthless.<sup>206</sup>

However, Douhet did not advocate for the complete abolition of auxiliary aviation. He condemned the idea that an Independent Air Force’s aerial forces should only consist of auxiliary aviation and that it should have to use its own funds to pay for such means. Douhet considered “aerial means used by the army and navy to facilitate and integrate their own actions in their respective fields, no matter what those actions may be, [as] an integral part of the army and navy and must be considered as such.”<sup>207</sup> If the army or navy wanted to have auxiliary aviation, then the army and navy would have to pay for it themselves. Such aerial means should be considered a part of the army and navy and not as a part of the Independent Air Force as some of his contemporary thinkers had suggested. The budget of an Independent Air Force should only be used for the Independent Air Force.

In contrast to auxiliary aviation, civil aviation was an integral part of Douhet’s air theory. He understood that civil aviation provided a means of transportation that was a permanent feature now; it was the fastest

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<sup>203</sup> Ibid., 121.

<sup>204</sup> Ibid., 121.

<sup>205</sup> Ibid., 99.

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<sup>206</sup> Ibid., 101.

<sup>207</sup> Ibid., 71.

known transportation available and needed no roads. All aerial transportation needed was a point of departure and arrival. Douhet believed that the development of the aerial means of transportation would provide large economic and industrial advantages. This would then lead to the enhancement of the air arm's military value, increasing the advantage of possessing the command of the air during an eventual conflict. Thus, civil aviation was a subject of national concern that should have the "close attention of the government."<sup>208</sup> Because the development of aerial navigation was a national concern, Douhet argued that civil aviation should be run directly by the state or private corporations supervised by the state: "the state should in no case turn over control of aerial navigation to private interests, whose chief concern is bound to be personal gain, to the neglect of the broader, less direct interests of the state, which are far more vital to the nation."<sup>209</sup>

Douhet argued that civil aircraft had to be ready to be converted into means of war when the occasion arose. Douhet argued, "to have at one's disposal a large fleet of air transports is equivalent, in terms of military power, to having a large Independent Air Force always ready to defend one's rights."<sup>210</sup> Douhet's battleplane concept allowed for military aviation to use civilian planes because these aircraft would be outfitted with moderate characteristics such as average speed and radius of action; thus, a commercial plane only had to be fitted with special, but not exceptional, equipment to be utilized by the military. Douhet avowed that military aviation could entrust to civil aviation all activities not strictly military, such as the training of pilots, mechanics, maintenance and repair men. Mechanics must know the motors and how to keep them

running in and out of uniform. By basing military aviation on civil aviation, Douhet argued, an Independent Air Force "would always have at its disposal the latest types of plane; whereas, if it relied entirely upon its own means, it would often find itself armed with antiquated models."<sup>211</sup>

It is likely that Douhet's view on civil aviation arose from a combination of the Mahanian understanding of the English merchant marine and the benefits it provided to England's hold on command of the sea and the nationalization of war. In *The Influence of Sea Power*, Mahan argued that one of the many advantages that England had over France in the struggle for command of the sea was its merchant marine. It provided England with a large reserve of sailors that did not have to be trained on how to man a ship of the line. The nationalization of war required that every aspect of the nation was used to further advance the war effort from the soldier in the field to the farmer. Douhet argued for civil aviation to work much in the same way of the English merchant marine. Pilots would be pulled from civil aviation into the Independent Air Force, requiring little to no training. It would provide a deep reserve for the Independent Air Force and increase its capabilities significantly at the start of the war.

## CONCLUSION

Douhet died in 1930, not long after the publication of his *Command of the Air*.<sup>212</sup> However, his influence lived on in the continuous debate between airpower advocates. As technologies advanced and more experience was gained, the debate evolved to accommodate them. However, all air theorists participating in the ever-evolving

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<sup>208</sup> Ibid., 80.

<sup>209</sup> Ibid., 80.

<sup>210</sup> Ibid., 79.

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<sup>211</sup> Ibid., 84.

<sup>212</sup> Ibid., 33.



debate had to respond to Douhet's ideas, whether to validate them or discredit them.

During the 1930s, *The Command of the Air* was used by airmen all over the world to prove to their respective military leaders the importance of air power and the necessity to create a separate air arm within the armed forces before World War II. In countries such as the United States and the United Kingdom, both of which favored air power's long-range strike capabilities, Douhet's theories gained significant influence.<sup>213</sup> Although there is debate on whether air advocates such as Mitchell and Trenchard had simply followed Douhet's theories or had come up with their own before their introduction to Douhet, both used his *The Command of the Air* to push for an independent air force in their respective countries. In the United States, 100 English translated pages of *The Command of the Air* were placed in the Air Service Officers' School's library in 1923. General Hansell admitted to being infected by his superiors' (Harold [Hal] George and Kenneth Walker), "enthu-

siastic belief in the doctrines of Mitchell, Douhet, and Trenchard" at the Air Corps Tactical School in his memoirs.<sup>214</sup> Alexander de Seversky illustrated Douhet's influence on U.S. air men when he said, "To General 'Billy' Mitchell, and others who shared his comprehension of the military revolution implicit in the airplane...the ideas of the Italian theorist have been as familiar as the ideas of Admiral Mahan are to naval men."<sup>215</sup> Although it is highly imprudent to think that Douhet is the sole influence on Mitchell's thinking, it cannot be denied that Douhet's theories had some if not a high influence on Mitchell.

The validity of Douhet's theories after the experience of World War II is a subject of much debate, and this discussion dominated the air power debate for many years. It was thought by many air theorists and advocates immediately after World War II that Douhet's theories had mostly been proven wrong. To many theorists, experience showed that the impact of indiscriminate bombing was the strengthening of the civilian morale rather than the weakening of it, and it had failed to damage the German war economy. The bomb tonnage used by the Allied powers was significantly greater than the amount that was specified by Douhet, but it had a far smaller effect than what was predicted. Threats to airborne bombers were dismissed by Douhet; however, the USAAF and RAF lost roughly "80,000 air crew members and hundreds of bombers" in operations over Germany.<sup>216</sup> Military Historian J. F. C. Fuller wrote, "As

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<sup>213</sup> In other countries, Douhet's ideas were overshadowed by the dominance of combined arms. In France, Douhet had gained large influence in the early 1930s when Marshal Petain expressed interest in it during the rivalry with Italy. However, his influence had subsided with the sensation. The Soviet Union had close ties with Fascist Italy; and by 1931, Douhet's ideas were regarded by the Soviet military as "too well known to dwell upon." However, the great Terror (1936-39) had destroyed innovation within the Soviet Union, causing Douhet's ideas to gain little traction. Although Nazi Germany had published *The Command of the Air* in 1935, there is no evidence on Douhet's influence in their actions in the Battle of Britain or the invasion of the Soviet Union. In Nazi Germany, their "air power was always subordinate to ground forces." Haslam, "Giulio Douhet and the Politics....," 763.

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<sup>214</sup> Ibid., 763.

<sup>215</sup> Ibid., 762.

<sup>216</sup> Dudney, Robert S. "Douhet." (2011) *Air Force Magazine*, 67. After World War II, the United States Strategic Bombing Survey conducted a study to evaluate the effectiveness of strategic bombing, finding that it had indeed brought the war to a quicker end.

an experiment, the strategic bombing of Germany up to the spring of 1944 was an extravagant failure. Instead of shortening the war, its cost in raw materials and industrial manpower prolonged it.”<sup>217</sup>

However, some theorists thought the experience of World War II did not disprove Douhet. Johnathan Haslam claimed that Fuller had labored under a misconception that focused on the wrong elements of Douhet's theory. Douhet proposed “a first strike that would shock by surprise as well as massive devastation” but none of the combatants in World War II ever attempted such a strike, focusing instead on combined arms.<sup>218</sup> Those who thought Douhet had been validated argued that inter-service rivalries between the three military branches relegated the Allied air force to a position of support for the ground forces. It was not until 1944 that General Ira Eaker, Commander Eighth Air Force, changed the strategic bombing campaign's targets to two key factors of the German war production: the energy sources and transportation. The air objective to stop all rail traffic in Germany was achieved by October 1944. Haslam argued, “destruction of the enemy's economic machine, though a planning priority in the war, was repeatedly overridden by other, political considerations.”<sup>219</sup> Therefore, these theorists argued that the emphasis on joint action diverted the air forces' actions away from following Douhet's theories. Haslam claimed that,

Close attention to the spirit and letter of Douhet's doctrine would also have forestalled the pointless and costly Allied bombardment of German civil-

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<sup>217</sup> Morrow, Nicholas. *Classics of Strategy and Diplomacy Giulio Douhet, The Command of The Air (1921/1927)*. September 01 (2015). Accessed March 2017, 6.

<sup>218</sup> Haslam, “Giulio Douhet and the Politics...,” 764.

<sup>219</sup> *Ibid.*, 764.

ians in the Second World War and those in North Vietnam three decades later. Both campaigns were based on assumptions that Douhet would have adjured, conducted by politicians looking for easy answers and senior servicemen unwilling to question orders, carelessly indifferent to the human sacrifice entailed in the air or on the ground.<sup>220</sup>

Even with most military thinkers holding the belief that World War II had shown Douhet's theories to be false, his reputation flourished with the invention of the atomic bomb. In 1952, the most significant nuclear strategist of the time, Brodie, claimed, “Time has rescued [Douhet] from his first and gravest error – his gross overestimate of physical effects per ton of bomb dropped – by introducing the nuclear bomb, Douhet's thoughts are for any unlimited war more valid today than they were during his lifetime or during World War II.”<sup>221</sup> With nuclear warfare, one bomber carrying one atomic bomb would massively surpass the damage caused by a conventional fleet of bombers. One “Little Boy” atomic bomb 28 inches in diameter and 120 inches long “produced a yield equivalent to approximately 20,000 tons of high explosives.”<sup>222</sup> This capacity for destruction would be available to both sides of a nuclear conflict; and Brodie hypothesized, “based

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<sup>220</sup> *Ibid.*, 769. This is not to suggest that Douhet was not a proponent of civilian bombing. Rather, Haslam is asserting that the Allies would have saved the lives of their own personal and a large part of their financial costs if they had followed Douhet's prescription.

<sup>221</sup> USAF Lt. Col. Barry D Watts, *The Foundations of US Air Doctrine: The Problem of the Friction in War*. Maxwell Air Force Base, Alabama: Air University Press, 1984, 27.

<sup>222</sup> *Ibid.*, 30.

upon present scientific knowledge, ‘devising effective tactical defenses’ against atomic bombing attacks will continue to be a near impossibility.”<sup>223</sup> Thus, the massive destruction physically and to civilian morale produced by an atomic bomb mirrored the destruction and warfare method that was described by Douhet. USAF Lt. Col. Barry D. Watts argued that Brodie’s nuclear warfare conclusions were just Douhet’s aerial warfare theory taken to “their logical conclusion by the awesome destructive power of nuclear weapons.”<sup>224</sup>

In recent years the debate around Douhet’s theories has been significantly revitalized. Contrasting the debate immediately after World War II, it seems to have shifted more in favor of Douhet among air men, causing many people to call him a prophet of air power. The Gulf War of 1991 was the nexus of this change. At the beginning of the war, the U.S. Air Force executed Operation Instant Thunder, a solely air operation directed against key objectives from January 25 to February 24. The director of campaign plans at US Central Command Air Forces in Riyadh, Saudi Arabia, Brigadier General Buster Glosson described the operation:

I think it’s accurate to portray the history of the Air Force as one in which it has always been in support of either the ground forces, the sea forces, or the Marines. With the exception of Libya [Operation El Dorado Canyon, 15 April 1986], there have not been many instances that one can refer to and say this was an air operation. In that context, this was and is an entirely different situation. We’re being asked to meet Presidential established objectives

solely with the use of air power. Now there are a lot of critics that say that it can’t be done. I don’t happen to be one of those individuals...I say that because I’m firmly convinced that the intensity and freedom the President has laid out in guidelines for us in executing this air campaign, permits us to go to the trunk of the tree, or the heart, and we’re not sniping on limbs [sic]. We are absolutely decimating the leadership of Iraq and we are making his capacity to command and control both military and getting information to his civilian populace almost impossible.”<sup>225</sup>

In 1991, General Norman Schwarzkopf had declared air supremacy over Iraq just two days after the start of Operation Instant Thunder.<sup>226</sup> Air Force Chief of Staff General Ronald Fogleman noted “It was not until Desert Storm that we discovered conventional air operations could not only support a ground scheme of maneuver but also directly achieve operational and strategic-level objectives – independent of ground forces or

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<sup>223</sup> Ibid., 29.

<sup>224</sup> Ibid., 35.

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<sup>225</sup> Haslam, “Giulio Douhet and the Politics...,” 766.

<sup>226</sup> Lambeth described the opening of Operation Desert Storm: the opening coalition attacks against Iraq’s command and control facilities and integrated air defenses proved uniformly successful, with some 800 combat sorties launched in the blackness of night in radio silence against Iraq’s most military crucial targets and only one coalition aircraft lost – a U.S. Navy F/A-18, presumably to a lucky infrared missile shot from an Iraqi MiG-25. Over the next three days, the air campaign struck at the entire spectrum of Iraq’s strategic and operational-level assets. Gaining unchallenged control of the air and the freedom to operate with impunity against Iraq’s airfields, fielded ground forces, and other targets of military interest.

even with ground forces in support.”<sup>227</sup> In the aftermath of the Gulf War, “many air power advocates were claiming that the air campaign... proved Douhet... correct.”<sup>228</sup> Some of the more insightful comments that exemplify the shift in the tone of the debate came from Russian defense professionals who closely observed the Desert Storm conflict. Colonel General Anatoly Malyukov remarked:

There was no classical AirLand Battle in Desert Storm. Why? The point is that this war... was obviously conceived from the outset as an air war to wear out the opponent by means of air strikes, disorganize his command systems, destroy his air defenses, and weaken the ground forces' striking power. And these objectives were achieved. Broadly speaking, this is the first time we have seen a war in which aviation took care almost entirely of all the main tasks.<sup>229</sup>

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<sup>227</sup> Ibid., 766. Lambeth acknowledged that, “The ability of allied air assets to establish air dominance so quickly over a well-endowed opponent who knew a fight was coming and then to draw down his army to a point where coalition ground forces could consummate a virtually bloodless win in a mere 100-hr campaign represented an achievement that is guaranteed to keep Desert Storm prominently listed in the roster of air power success stories.”

<sup>228</sup> Dudney, “Douhet,” 67.

<sup>229</sup> Other Russian characterizations of the conflict include those given by Russian Army Major General I. Vorobyev and Soviet Army Major General Vladimir Slipchenko. Major General I. Vorobyev stated, “For the first time in history, we observed a case in which a very large grouping of ground troops (more than a million men) suddenly found itself unable to do its business... This has never been demonstrated so clearly in operation in the past. The fire phase became a prolonged

Those who make the argument for Douhet today mirror the argument made by Brodie in the years after World War II. Fogleman argued, “Our very early airpower visionaries clearly allowed their concepts to race ahead of technology. Therefore, we found ourselves in a position where there were a lot of unfulfilled promises and false expectations relative to what airpower could and could not do.”<sup>230</sup> He believed that technology was finally catching up to the theories. The Summary Report of the Gulf War Air Power Survey (GWAPS) reported that some theorists saw the 1990-1991 Gulf War as

“evidence that technology has finally enabled airmen to fulfill the expectations” of “air proponents such as Giulio Douhet and Billy Mitchell” [who] “described the things that air power could achieve in theory, but until the Gulf War, air forces lacked the ‘tools and systems capable of achieving them’ in practice.”<sup>231</sup>

Many air proponents argued that air power now had the ability to “maintain dominance over the heart of an enemy’s territory, enforce no-fly and no-drive zones, and engage enemy armies effectively from relatively

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strike, as a result of which Iraq’s defense were so shattered that there was no need to execute an assault to break through fortified positions.” Major General Vladimir Slipchenko said, “The Gulf war supports the fact that air strikes can, by themselves, form the basis for victory. In Operation Desert Storm, air power was responsible for victory because air superiority altered the complexion of the war from the very outset.” Lambeth, “The Role of Air Power...,” 120-121.

<sup>230</sup> Haslam, “Giulio Douhet and the Politics...,” 767.

<sup>231</sup> Morrow, “Giulio Douhet, The Command...,” 6.

safe standoff ranges.”<sup>232</sup> It enabled militaries to obtain strategic goals simultaneously instead of through the “classic sequence of methodical plodding from tactical through operational-level to strategic goals at an exorbitant cost in lives, forces, and national treasure.”<sup>233</sup> The creation of stealth weaponry, precision bombs, and space support has added further support to these claims.

Douhet’s defenders would argue that the current debate over the utility of air-power resembles the debate of Douhet’s own time, for they claim the modern air force still seems to be fighting a battle against the other military services for its own importance and independence in warfare to be recognized. After the Gulf War, the top U.S. defense leaders had declared Air Power to be the decisive factor; yet, even with improvements in technology and many years later, many Air Force Officers think it is still struggling to be respected. Fareed Zakaria protested that “‘over the last decade every time the United States has engaged in a strategic bombing campaign, it has achieved its goals.’ Yet, ‘after each war, influential experts and journalists have emphasised that the central lesson of the operation is...airpower alone doesn’t work.’”<sup>234</sup> These theorists avowed that this is partly due to the heavy emphasis on joint action between the air force and the other branches since World War II. Modern U.S. military doctrine is at the point where “warfare is seldom executed solely by one service... although combat may at times seem isolated to a single service, in reality each one must rely upon the other to ensure that the adversary is deterred or defeated, as necessity dic-

tates.”<sup>235</sup> They claim that those who argue against the continued use of Douhet’s theories do so in conjunction with the idea of joint warfare.

Although some airmen assert that technology has now reached a point where Douhet’s theories have become plausible, others still contend that air power does not contribute as significantly as his defenders claim. Benjamin S. Lambeth, who claimed that Douhet’s outdated theories must be put to rest<sup>236</sup>, asserted that,

One cannot draw overarching conclusions about air power that apply uniformly for all occasions; moreover, its contribution to joint operations can, in fact, range from decisive to irrelevant depending on the particular circumstances facing a theater commander.<sup>237</sup>

He seemed to agree with Air Vice Marshal Mason on the idea of a “notional air power pendulum which swings from” clear cut cases such as Desert Storm to more challenging cases such as the scenario of the Bosnian War in 1992–1995.<sup>238</sup> In Desert Storm, the targets were “accessible and sig-

<sup>232</sup> Lambeth, "The Role of Air Power..." 127.

<sup>233</sup> *Ibid.*, 128.

<sup>234</sup> Haslam, "Giulio Douhet and the Politics..." 767.

<sup>235</sup> Hayden, Dr. Dale L. 2014. "The Search for Space Doctrine's War fighting Icon." *Air & Space Journal*, 63.

<sup>236</sup> In his article, "The Role of Air Power Going into the 21<sup>st</sup> Century," he says, "...it is time for airmen to bid farewell to the now outmoded arguments espoused by Douhet and subsequent air power advocates on behalf of urban-industrial bombardment and, instead, to play up the *new* things that modern air and space power can now do." In another place, he states, "Douhet's signature axiom that 'to have command of the air is to have victory'...was false when it was first made in 1921, and it is no less false today."

<sup>237</sup> Lambeth, "The Role of Air Power..." 118-119.

<sup>238</sup> *Ibid.*, 124.

nificant, the desert topography open and unrestricted, the weather generally favorable, bases readily available, and political support both at home and abroad.”<sup>239</sup> In Operation Deliberate Force during the Bosnian War, the “targets were mobile and generally of low value, the topography wooded and mountainous, the weather often forbidding, [and] the political support far more fragile.”<sup>240</sup> Therefore, Lambeth believed it was wrong to argue that air power could be uniformly applied in all occasions.

Lambeth agreed with Douhet's advocates that air power's application in Operation Desert Storm was decisive but only in the narrow application of air power. However, he argued that air power cannot be separated from other combat means as Douhet's advocates propose:

...air power entails a creative harnessing of *all* combat support elements, including space and information warfare adjuncts, that exploit the medium of air and space to visit fire and steel on enemy targets. Recognition and acceptance of the fact that air warfare is an activity in which all services have important roles to play is a necessary first step toward a proper understanding and assimilation of air power's changing role in joint warfare.<sup>241</sup>

He acknowledged recently added “pay-offs” due to the maturation of airpower: the increasing situational awareness of one owns

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<sup>239</sup> Ibid., 125.

<sup>240</sup> Ibid., 125. The Six Day War of 1967, the Yom Kippur War of 1973, and the Bekaa Valley operation of 1982 show a scenario far closer to that of the Desert Model in terms of air power's effectiveness and dominance. However, Somalia and other recent peace-keeping operations were much closer to the Bosnian case.

<sup>241</sup> Ibid., 118.

forces while denying it to the enemy; a general broadening of an air forces ability to do things such as enforce no-fly and no-drive zones and the improved reliability and sustainability of aircraft; and the ability to achieve “situation control from the outset of combat.”<sup>242</sup> However, Lambeth strongly maintained that “These and other payoffs in no way add up to all-purpose substitutes for ground forces,” for all military services combat capabilities have benefited from the “recent improvements in information fusion and precision target attack.”<sup>243</sup> He argued that the idea of air superiority was only a part of air power's uses, and was not a sufficient condition to base the claim of its rise to a predominant force on. Instead, air superiority was just a necessary condition that allowed an air force to participate in its most important combat function for joint warfare, attacking the enemy's war waging means. Lambeth avowed,

Although control of the air is an indispensable precondition for joint-force victory on the ground, air power must also be able to perform the job on the ground faster, better, and less costly in terms of friendly casualties than ground forces if its proponents are to justify their claims to its being the force of first choice. What has lately come to be called “air dominance” will always be important to the success of joint force campaigns. However, it is not now and never was air power's principle stock in trade.<sup>244</sup>

This modern revitalization of the debate about air power, its use, and its place within the pantheon of military forces necessitates an in-depth understanding of Dou-

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<sup>242</sup> Ibid., 128.

<sup>243</sup> Ibid., 128 and 132.

<sup>244</sup> Ibid., 134.

het's theories. This would encourage a more fruitful debate to establish air power in its most successful war-waging capacity, for it is only when Douhet's theories are understood in their entirety that the arguments made by those trying to validate or invalidate him in the modern air power debate can be truly understood.

In addition, Douhet's theories need to be understood to better think about an area of warfare outside of air warfare. As technology has progressed, many are starting to consider space the next addition to the possible theaters of warfare. Space capabilities have been available to the United States since its first spy satellite launch in the 1960s, but the debate over an independent space theater didn't really kickstart until after the Gulf War. General Thomas S. Moorman described how Desert Storm "opened the eyes of senior military leaders. Now, space is like air-conditioning – everyone who needs and wants information from space wonders how we ever got along without it."<sup>245</sup> Since then, an ever-increasing space-systems dependency has become a fact of U.S. military life, most notably through GPS tracking and satellite imaging for unmanned missions and reconnaissance respectively. The possibility of some type of combat within space became more than fiction in April 2010, when the Department of Defense "launched the robotic X-37B spacecraft, just 29 feet long, into orbit for a seven-month mission."<sup>246</sup> This craft was a militarized space drone that had missile evading thrusters and a cargo bay to possibly fulfill air-to-air missions. The success-

ful landing and perfect 15-month flight of the second X-37B prototype in June 2012 "established the validity of 'robotically controlled reusable spacecraft.'"<sup>247</sup>

The potential of space warfare has recently become an even more pertinent issue within the U.S. military due to the actions of its adversaries. China successfully tested an anti-satellite missile in 2007 by shooting down a weather satellite orbiting 500 miles above the earth's surface.<sup>248</sup> Further, in 2013, China launched three satellites. Among them was a Shiyang-7 satellite, which is "equipped with a grappling arm that could pluck satellites directly from their orbit."<sup>249</sup> Russia has also given U.S. military leaders concern for they have deployed satellites called "Kosmos 2499." These satellites are designed to approach and destroy U.S. satellites if necessary. Threats to U.S. satellites is growing to include not only other satellites and missiles but also electronic and cyber-attacks. In response, Elbridge Colby, senior fellow at the Center for a New American Security, argued that "space is becoming a domain like any other – air, sea, land, and electromagnetic – in which the United States will have to compete and fight the ability to access and exploit the domain rather [than] assume safe and uncontested passage within and use of it."<sup>250</sup>

Due to the increased technological capabilities and concerning actions by U.S. adversaries, some within U.S. military

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<sup>245</sup> Whittington, USAF Colonel Chaplain Micheal C. n.d. "A Separate Space Force: An 80-Year-Old Argument." *Air War College Maxwell Paper* 20, 1.

<sup>246</sup> McCoy, Alfred. 2017. "The Pentagon's Next Frontier for War Might be Space and that should scare us." *The Nation*. September 11., 16.

<sup>247</sup> Ibid., 16.

<sup>248</sup> The pentagon accomplished the same feat in 2008 when a SM-3 missile was fired from a Navy cruiser to successful hit an U.S. satellite 150 miles high. Ibid., 16.

<sup>249</sup> Miller, Joshua Rhett. 2016. "The US could be gearing up for potential space wars." *New York Post*. November 29.

<sup>250</sup> Lamothe, Dan. 2016. "Space warfare with Russia and China? Pentagon urged to prepare for it." *The Washington Post*. January 27, 2.

circles are advocating for the creation of a space warfare theory that is separate from those of the other services. Dr. Dale L. Hayden, the deputy director of the Air Force Research Institution (AFRI) at Maxwell AFB, Alabama, argued that doctrine provided “a foundation and guidance regarding how to operate within each separate domain and collectively in the joint environment” to the other military services.<sup>251</sup> The debate over establishing such a theory has been developing since Desert Storm, and it largely resembles the debate regarding air power that occurred in the early 1900s. As such, one faction within the debate continued to follow the connections between air power and space power to try to develop a space theory.<sup>252</sup> These theorists are following the footsteps of the early air theorists, looking for similarities in pre-existing theaters of war and adapting them to the space theater. Howard Kleinberg argued in his article “On War in Space”, “the most prudent approach to this unknown forum is to use deductive methods drawing upon previous experience and resultant theories from which to extrapolate a space warfare theory” because there is a lack of experience from

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<sup>251</sup> Hayden, “The Search for Space...,” 55.

<sup>252</sup> In his book, *On Space Warfare: A Space Power Doctrine*, Lt. Col. David E. Lupton illustrates the four factions participating within the Space Doctrine debate: 1. The Sanctuary School which sees the primary value of space forces as “their capability to ‘see’ within the boundaries of sovereign states;” 2. The Survivability School, which emphasizes “that space systems are inherently less survivable than terrestrial forces,” and thus wars are won or lost in the lower environments; 3. The High-Ground School, which “believes wars will be won or lost in space;” 4. The Control School, which “views space warfare as very similar to air warfare.” Lupton, Lt. Col. David E. 1998. *On Space Warfare: A Space Power Doctrine*. Maxwell Air Force Base, Alabama: Air University Press, 22—23.

which to extract theories of space warfare.<sup>253</sup> After examining the peculiarities of space warfare when compared to other mediums of war, Howard Kleinberg argued that airpower theory should be “the basis from which to derive space warfare theory.”<sup>254</sup>

The situation that space thinkers find themselves in is closely analogous to that of air theorists like Giulio Douhet in the 1910s. With little to no history of warfare within the medium, the best thing these theorists can do is draw from the closest type of established warfare’s doctrine and make changes based on the need of the medium that they are working in. Since “space warfare has more critical aspects in common with aerial warfare than it does with any other medium,” aerial doctrine should be the one space doctrine is derived from. To do so, it is necessary to understand airpower theory in both its principles and mode of creation in more detail. For how airpower theory developed could provide a solid foundation for space theorists in how to adapt other doctrines to their specific medium. Thus, Douhet’s theories must be understood in greater detail, including their origins, to be able to apply his theories to a new theater of warfare.

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<sup>253</sup> Howard Kleinberg (2007) *On War in Space*, *Astropolitics*, 5:1, 7.

<sup>254</sup> *Ibid.*, 14.



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