Our armies might advance a mile a day and we blockade the enemy to his knees, or whether he does the same to us.

Admiral David Beatty

January 27, 1917

Imagine this country’s sufferings after four years cattle 32 percent. The weekly per capita consumption of meat reduced from 1,050 grams to 135; the amount of available milk by half. Women’s mortality up 51 percent; that of children under five 50 percent. Tubercular-related deaths up 72 percent; the birthrate down by half. Rickets, influenza, ulceration of the eyes, and hunger edema a common occurrence. Marketing, and hoarding widespread. And 730,000 deaths wartime blockade. This country is not "perfidious Albion," but rather Imperial Germany. The suffering caused was not by unrestricted submarine warfare, but rather by a surface blockade that, in the eyes of Jay Winter, did not fall short of being a war crime. Thus, we may well ask how unrestricted submarine warfare?

The Definition

The concept of "total war" is a vexing one "total" application of all available armed force? Does it require "total" political aims, that is annihilation of the adversary? Does it translate into what John victory? Reference guides offer little assistance. American Joint Chiefs of Staff in Washington, D.C., under "total war" reads: "The term is propagandistic and literary. . . ."
For the purpose of assessing the "process of unrestricted submarine campaign of 1917, Clausewitz in Book Eight, Chapter Two, of (of reference," as a "state of absolute perfection"; a nation or ruler seeking to approach this ideal-type method, Clausewitz stated, needed to wage war "without respite until the enemy succumbed," that is, with all until one side dictated political terms to the other. In tempered by "extraneous matters" such as of man."

Few military leaders read Clausewitz; even Tirpitz, the architect of Germany’s High Sea in the first great naval battle" of a war. In o "absolute" or "total" war. And General Erich Ludendorff, who in 1935 wrote a bestseller entitled War allowed that the very concept simply in the book championed unrestricted sub

The Vision

The first torpedo in the great debate over December 22, 1914. During an interview published by the Berlin representative of United Press, the grand admiral threatened "total" submarine warfare whether Germany truly intended to blockade England and destroy each and every ship of "setting London in flames in a hundred places." Tirpitz even toyed with the idea of "setting London in flames in a hundred places" with an aerial assault, but blockade would be more effective.

A fellow naval officer, Captain Magnus von Levetzow, shortly after the start of the war gained insight into submarine warfare through a strange source: Sir Arthur Conan Doyle. In 1913 the creator of England's Peril, wherein he suggested that Britain, even after capturing the defeated by eight (!) small hostile submarines that starved merchant shipping. Levetzow passed the piece on to Fleet Commander Admiral Reinhard Scheer as well as to Kaiser Wilhelm II, and thereby claimed the title of "midwife" to unrestricted submarine warfare.

In an even more bizarre way, Rear-Admiral Karl wanted Germany to turn to unrestricted submarine warfare. Sitting in a Memorial Day (service at Berlin in 1916, Hollweg experienced a quasi-theological "vision" when reciting the words of "Power and Glory" of the Lord’s Prayer. "The word 'Power' punched deeply us the power for the will to victory, Thou Governor of After the war, Allied leaders in their memoirs of winning the war by way of the U-boats. To and despair that met him when he arrived a winning" the war. "They will win," Admira losses [603,000 tons in March] - and stc solutions to the problem, the first sea lo Indeed, Jellicoe was most pessimistic to submarines. On April 27, he cried out in exa of the submarine threat. "Disaster is cert: disaster and it is useless and dangerous in Admiral Sir David Beatty, was fully convic on and below the seas.
Nor were the sailors alone in their gloom. Prime submarine campaign . . . very nearly achieved the destruction of Britain’s sea power.” And the eminently quotable Winston Churchill confirmed every U-boater’s view of the war. “It was in greatest conflict ever decided at sea.” Terming unrestricted “among the most heart-shaking episodes been within their grasp in the spring of 19 the British islands, but the foundations of began to loom black and imminent.” In short, the Admiralty that Germany had crossed the

The Promise

There can be no question that the promise of “total” war. Success by slide-rule calculation both official and private, on the issue of u analyze the best known and most critical Holtzendorff on December 22, 1916. Therein, the chief of the be forced to sue for peace within five mon months (Holtzendorff). Assuming that Brit Holtzendorff argued that the U-boats cou 500,000 tons per month thereafter as the v 1.2 million tons, of neutral shipping would of German bottoms interned in neutral por 39 percent decline in tonnage available to s London would be "in the grip of that fear Holtzendorff confidently accepted "the cost nor American money could arrive in Europ was seconded by the Army Supreme (Ludendorff), the Navy Office (Admiral E Levetzow).

For, Holtzendorff offered a "new" concept decade had passed since U-1 had gone do warfare at sea, wherein submarines replace whereby ships and cargoes were to b compilations, by both naval and civilian ex political victory. New was the very concep this kind of economic blockade. And nev children in particular were targeted for star The U-war reduced German strategy to one

But how had the admiral arrived at his blue root? And how accurate were they?

Another new element: Holtzendorff had ga experts--the equivalent of a modern-day th the Discontogesellschaft-Magdeburg; the F of the Berliner Tageblatt, Otto Jhlinger; the Professor Bruno Harms of Kiel University. Holtzendorff’s memorandum of December the worlds of finance (Merk, Fink & Co. a Norddeutsche Bank at Hamburg, and Zuck and Foundries at Hrde, Good Hope Found agriculture (Chamber of Agriculture in Anh
from Dirschau). In short, the admiral made his case with section of Germany’s leading financial, commercial, agrarian, and industrial leaders. For the first time in modern German history, a national grand strategy was devised by committee. The statistics that buttressed the official Admiral These included not only the London Times, the Economist, the Spectator, and the parliam Seed & Oil Reporter, the Corn Trade News, the grain experts on the German Frankfurt The various memoranda all agreed, to varying degrees points. First was that the war had to be brought to an end "by the autumn of 1917" as otherwise it would "result in the exhaustion of all the belligerents," which Holtzendorff saw as being "fatal" prediction of victory through the U-boats by August 1, 1917 strategical views.

Second, Holtzendorff and his paladins agr machinery; if it is once thrown into disorder, malfunctions, friction, and breakage will set in motion without end." "Disorder" caused by raw ma a grinding halt within five months of unrest

Third, the German experts agreed that Bri Germany). London lacked the requisite loc and to carry out central directives "is lacking meet such a crisis." In other words, the Brit of "war socialism" and "war economy." S cripple the national war effort and rising laborers.

Fourth, Professor Levy, basing his research Food of 1903-05, convinced the Admiralty important cereal." Holtzendorff and Levy c per week, at present levels of supply and re differently, present provisions and reserves Wheat imports from Canada and the United and would soon fall to half due to a bad Australia, India, and Argentina would double the routes. All this would translate into foo Englishmen" of drastically reduced foodst direct result upon imports."

Fifth, Holtzendorff and Department B1 fo financial burden imposed by increased immediately, Britain’s balance of payment fall with English exports." But even more i Manitoba Nr. 1 Wheat had gone up 258 pe than doubled in price since 1914; barley a stood at twice their peacetime levels; cold s tripled, and herring increased 600 percent in cost.

Sixth, the Germans were mesmerized Scandinavian pit-prop timber (Grubenholz; bread of commercial life." The price of coal best fields lay under German occupation, r its part, drew half of its wood from Scand
sinking rapidly; the price of Scandinavia, Holtzendorff opined, "are poor." In other words, without a steady supply of Scandinavian wood, Britain's coal industry threatened to collapse.

Seventh, and perhaps most critically, the shipping tonnage under a microscope. According to Spee, 90 million tons of merchant shipping; by late 1916 that figure was down to 20 million tons. But closer examination of cargo bottoms in September 1916 showed that the real total was only 900,000 tons of enemy shipping trading with Britain and the 3 million tons of neutral shipping, London could command at best 10.75 million gross tons. This was the prey of the U-boats. For every "grip of fear" would guarantee the success of the U-boat war. Heavy weather, inexperienced merchant captains, the need to travel at the rate of the slowest ships, anticipated congestion in ports would militate against the adoption of convoy. Above all, welcome sight--a target-rich environment--for the U-boats. Eighth, Holtzendorff tied unrestricted submarine power. Since the High Sea Fleet had remained idle for most of the war, the navy's very survival depended on energetic action at sea, and this could only mean the U-boats. The kaiser had given naval building direction in 1897; the Reich's "economic and political future" still depended on submarine warfare. The issue had been debated both inside and outside official chambers since early 1915; Holtzendorff had taken sixteen months to craft his great memorandum of December 22, 1916. Officers, statesmen, politicians, and journalists alike had taken sides with a passion unmatched by any other issue during the war. Rationality had clashed endlessly with irrationality--and led to no conclusion. And the Admiralty Staff's countless memoranda, some leaked to enflame public debate, offered voluminous statistical material to buttress arguments both for and against unrestricted submarine warfare. The formal decision to launch the U-boat offensive was made by the admirals at Pless on January 9, 1917. It is volume stress the "acceleration of time"--that is, that so little time and so little information to make decisions of immense importance in what in fact was a rather short conflict (Hundred Years' War, Thirty Years' War, Seven Years' War).
In the end, the decision of January 9 came as a internal political wrangling. Many of the U-boats' supporters argued that the new technology (submersibles) deserved a chance to prove its worth. Yet others trumpeted the Wunderwaffen, as Vergeltungswaffen, that only the U-boats could win the war. Some doubted that the U-boats could survive another winter, while others simply yearned for a delivery system that would bring the war "home" to "perfidious Albion." Many feared that without the U-boats, Germany could not survive another winter of war. A few touted it as the only realistic option for victory. Yet others trumpeted the slim, cigar-shaped steel Wunderwaffen, as Vergeltungswaffen that would finally bring the war "home" to "perfidious Albion."

Showalter argues in his contribution to this volume, perhaps constituted the "final element" on the road to "total war." A very few among the ruling elite suggested the recourse to unrestricted submarine warfare. The fact remains that, in the final analysis, the ground chosen by the navy: the plethora of expert calculations of British bottoms, coal, and food supplies. Put differently, Holtzendorff laid down its ground rules, defined its battleground. Even the most bitter opponents of the U-boats already in March 1916 tried to lobby against adopting unrestricted submarine warfare. Secretary of the Treasury Karl Helfferich on August 31, October 6, and December 1916 subjected Holtzendorff's memoranda to critical statistical analysis; and even Ludendorff strictly on the basis of Holtzendorff's statistical tabulations.

The Reality

How close did Imperial Germany's unrestricted submarine campaign come to the theoretical "standard" to "judge all wars by"? Quantitatively, the Admiralty Staff's predictions proved extremely accurate. The U-boats for the first four months of the campaign destroyed 1,259,502 tons of shipping, and for the next two months 506,069 tons. Holtzendorff's predictions of December 22, 1916, the American predicted, was slow to develop: a mere 225,000 tons. But Britain had not been "brought to its knees" by August 1, 1917.

What had gone wrong? In order to assess unrestricted submarine warfare's "totalization" that is the theme of this volume, it is necessary not to "deconstruct" Holtzendorff's calculations, but rather on the basis of hard evidence to compare and to contrast the admiral's calculations against actual battlefront effectiveness. Therein, they fall

First, Holtzendorff and his experts failed to foresee the exorbitant lines of credits; can build up an almost limitless debt, as long as it (and its creditors) believe in its future. In the British case, by 1917 this meant almost exclusively credits.

Second, a modern state's "machinery" is not a self-repairing mechanism, not a machine. The British economy had a great deal of elasticity in 1917 and 1918, and it was able to absorb changes in imports and production.
Third, the British national character likewise predicted. Price mechanisms enabled Britain's economy to substitute commodities: London introduced mild forms of rationing, and by adding other types of flour to wheat created a so-called "war bread" that in 1917-8 saved about thirteen weeks' consumption of wheat flour. In a strange turn of events, Britain outdid the Germans when it came to "war socialism" and Olsen first argued, and as several other papers in this volume show), the government created a Ministry of Shipping and a Food Production Department, and appointed a "food controller" who by the end of the war oversaw 90 percent of the nation's imports and bought and sold 85 percent of the country. In an almost obscene fashion, the submarine campaign even given the absence of 13,000 doctors. The mortality rate due to cardiovascular diseases, diarrheal diseases, 1912, 1913, and 1914. The mortality rate due to cardiovascular diseases, diarrheal diseases, and tuberculosis fell in 1916--as did that among women during childbirth and among their offspring. By 1918, per capita caloric intake among civilians was probably higher than it had been in 1914.

Fourth, and most critically of all, Holtzendorff and accurately the bulk of statistical materials on British wheat, grain, and agricultural conditions. For Britain, they assumed that there was no alternative to wheat, thus overlooking other cereal grains almost entirely. Additionally, they failed to recognize that the British planted only 43 acres of (compared to 308 acres in Germany and 468 acres in France). The Admiralty Staff devoted to cultivated crops in 1915 than there had been before 1913. Obviously, cultivation could be increased under a Cultivation of Lands Order in 1917 million acres of grasslands under the plow; planned for 1919. While this reduced meat stocks by 2.3 million tons. Urban "garden allotments" which brought the most inclement harvest levels by 1 million tons, oats by 1.4 million, and wheat by 4.5 million. obtained these results because Britain turned almost 4 million acres of grasslands into grain and vegetable fields in the last two years of the war.

Another cardinal miscalculation by Adm production. By assuming 1916 wheat output appreciate that 1916 was an off-year due to normal annual production in 1913, 1914, and 1915 had been 900 million bushels. The rye harvest steadily increased from 47.4 million bushels in 1916 to 91 million in 1918. American wheat and rye exports in 1917-8 prewar levels. Moreover, the "total war" advocates in Berlin conveniently overlooked that the carryover from the 1915 wheat crop on July 1, 1916 stood at 179 million bushels, and that as late as July 1, 1917, it still measured 55.9 million.

Fifth, the unrestricted U-boat war did not destroy vast and violent labor unrest. To be sure, alcoholic beverages, beer, coffee, sugar, cheese, and butter became more scarce and dear, basic foods were not adversely affected because of generous subsidies. The weekly food bill flour, and milk by British working-class families in 1917-18, had been before 1914; that of bacon, potatoes, and margarine actually increased. Nor did the predicted surplus of unemployed and quite the contrary. With millions of young United Kingdom actually experienced an acute labor shortage. The Food Production Department was hard-pressed to make up for the shortage by recruiting 350,000 boys, women, physically handicapped
men, and prisoners of war for agriculture alone. In short, modern time have no problem absorbing available paying jobs in the industrial and communications sectors. Sixth, Holtzendorff's and Ludendorff's curious British mines failed to hold. Once again, statistics proved whatever case their authors wished them to make. First and foremost, given that coal mining was a crucial war industry, Britain assigned top priority to pit-props, thus guaranteeing their availability. Domestic housing construction was a duration of the war, and the wood thus saved was diverted to mines. Even Britain could conceivably have turned to the forest reserves of the Channel with impunity. The hard reality of the commencement of unrestricted U-boat warfare, Germany had to conclude agreements with the major European neutrals--Denmark, the Netherlands, and the Scandinavian countries--that allowed them to maintain their trade (including wood and food) with Britain.

Seventh, the Germans erred terribly in the Britain. They failed entirely to take into account world tonnage, which was about twice as large. Nor did they anticipate that London could requisition neutral and interned German ships, conscript their crews, and set and enforce uniform insurance rates. Although convoy first of twelve to twenty, thirty to forty vessels protected by an escort screen did not really 1917, once ritualized it actually brought about predictable rhythms of arrivals and departures. Special Transport Workers' Battalions eliminated anticipated congestion in British ports. And with more lengthy sea routes to Australia, India, and South America.

Above all, the nature of merchant cargoes, von Holtzendorff and his civilian experts failed to understand that Britain's daily needs of 15,000 tons of grain could be delivered by a mere four ships. Or that the government would simply give grain cargoes higher priority, thus assuring the national cereals supply.

In fact, as the U-boat historian Bodo Herzog has oats for its race horses! No one in Berlin had dreamed that Britain, basically by adjusting production and consumption at home, would eventually free up 6.7 million tons of shipping--sufficient to transport 1.3 American soldiers to France.

Eighth, the politics of unrestricted submarine peace on August 1, 1917. Nor was General Ludendorff "spared a second battle of the Somme" by the U-boat war. British coal mines did not close due to lack of pit-props. Allied and neutral ships ply the Atlantic: only 393 of the 95,000 ships convoyed across the Atlantic transport was torpedoed en route to France. No major skilled labor developed. No public panic ensued.

Ironically, the Russian Empire collapsed just two submarine campaign on February 1, 1917. Then, as expected, on April 6 the United States entered the war, thereby turning the tide against Germany. By the summer of 1918, half a million American soldiers manned the front lines. They arrived in France at the rate of 10,000 per day. A cargo or transport the eastern seaboard of the United States for France every five hours. Almost "doughboys" escorted to France by the U.S. Navy sailed been interned in American ports and later seized by the American government.

Finally, Germany never managed to mount the internal study by Lieutenant Ulrich-Eberhard Blum of the Submarine Inspectorate at Kiel in May-June 1914 had estimated that at least 222 U-boats would be required for an underwater offensive shipping in the waters surrounding the British Isles, Germany never even remotely figure. For much of 1915, when the clamor for unrestricted submarine
Germany had available in both the Atlantic and the Mediterranean theaters on average 48 boats; and the following year, when public speculation went as high as 300 U-boats, the average monthly total was 58 craft. Most of the Reich’s treasure, labor, and raw materials instead went into army production auspices of the "Hindenburg Program" and the Auxiliary Service Law of 1917, the date on which Holtzendorff’s unrestricted stood at only 111 boats, of which 82 were keeps in mind that at any given time one another one-third were going to or return mere 32 boats were on patrol in the North! to bring Britain "to its knees." Moreover, or Britain’s west coast. In short, there existe structure.

Nor did the U-boat force appreciate significantly debate over unrestricted submarine warfare, the Navy Office tendered U-boat orders without sense or purpose. A mere 29 craft were ordered in 1914; 72 in 1915; 86 in 1916; and 67 in 1917. Not a single U-boat building contract was placed in the critical of the boats ordered in and after May 1916 we

Still, German yards proved unable to meet U-boat production consistently failed to completed on time; 50 were six months bel Boat Office to regulate the purchase, const December 5, 1917--four months after H the "Scheer program" of the autumn of 1918, national placebo, a propaganda effort to s volumes for the "blue-water" mentality of unrestricted submarine campaign, in the great deal of time pondering the construct the war. What in October he termed "ur promotions and battlefleet symmetry.

The Verdict

Was Germany’s unrestricted submarine war the rhetoric was "total," the reality was li civilian experts sought "total" victory over British women and children and worker shipping--merchant as well as war, neutrality flagrantly ignored (indeed, violated) established international law. Put differently, civilian populations were viewed by Berlin as targets on an equal footing with combatants in the field. There can be no question that, as Wolfgang J. Mommsen has argued elsewhere in this volume, the U-war qualitative shift in strategic thought" insofar as it targeted enemy The cold-blooded calculus behind Holtzendorff’s and neutral ships, women and children were line troops. Septic columns of merc Measures of caloric intake by Britain’s women rehabilitated, of shells produced and fired romanticism. No adventure. No individual target--in this case, torpedoes against stee crisp charts of Allied Bomber Command in Defense Robert McNamara during the bot worked in none of the cases cited. War rema
Germany’s unrestricted submarine campaign; Twenty or thirty 500 to 700 ton U-boats on simply were insufficient to do the job. As o conceded: "The U-war was never unrestricted forces. In the end, only death was "total": in 199 U-boats at sea. It remained for an

NOTES


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17 Stenographische Berichte, 260-2.

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19 Bernd Stegemann, Die Deutsche Marinepolitik 1916-191

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21 ibid., 226.

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36 Matthias Erzberger, Erlebnisse im Weltkrieg (Stuttgart a
37 Walter Ghlitz, ed., The Kaiser and His Court: The Diarie
38 See "Der verschBftete U-Bootkrieg," in Max Weber, Gesa
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40 ibid., 321. The chancellor saw the U-boats as Germany's
42 Bodo Herzog, 60 Jahre Deutsche UBoote 1906-1966 (Mu
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44 Mancur Olson, Jr., The Economics of the Wartime Short
45 J. M. Winter, The Great War and the British People (Basi
46 Olson, Economics of the Wartime Shortage, 75, 77, 86, 9
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49 Olson, Economics of the Wartime Shortage, 99.
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53 Stenographische Berichte, 322. Pless conference protoc
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55 ibid., 79; Paul G. Halpern, A Naval History of World Wat
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