

# Defending Civilians against Aerial Bombardment: A Comparative/Transnational History of Japanese, German, and British Home Fronts, 1918-1945

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## Abstract

This essay reveals the vital role of transnational learning in structuring air defense in Japan, Germany, and Britain in World War II, while comparing how each regime shaped the contours of home-front mobilization. In the decades between the two world wars, states increasingly recognized the new threat of aerial bombardment of cities, and they actively investigated other nations' efforts at "civilian defense" and "total war." Learning continued during World War II. In countries experiencing bombing, civil defense programs did more to mobilize daily life than any other wartime imperative. Remarkably, civil defense operations in Imperial Japan, Nazi Germany, and democratic Britain resembled each other—recruiting or conscripting millions of men, women, and youths to serve as neighborhood-based air raid wardens, "fire watchers," first-aid workers, and members of civil defense associations. At the same time, differences in regimes and circumstances affected the degree of compulsion in each case.

**Keywords:** Transnational Learning, Home Fronts, Firebombing, Civil Defense, Neighborhood Associations, Evacuations, Wartime Mobilization of Women and Youth, Forced Labor.

By the final years of World War II, it had become "normal" to destroy whole cities. How this came about is a transnational story, involving the global circulation of ideas of "strategic bombing."<sup>1</sup> Equally transnational was the process by which many nations recognized the imperative to protect cities, factories, and homes from aerial bombardment. "Civilian defense" (or civil defense) emerged as a vital part of the evolving concept of the "home front." Reflecting on the lessons of World War I, strategists around the world insisted that the next war would be won or lost not only on the battlefield, but also at home. Civilians must continue to produce; they must be fed in the face of blockades; they must pay taxes and save for the war effort; and their morale must not collapse. By 1942, one might have traveled from home front to home front—from Nazi Germany and bureaucratic-authoritarian Japan, to Soviet Russia and liberal Britain—and observed common features of wartime life: the ubiquitous air raid wardens, blackouts, evacuations, ration coupons, and unappetizing food substitutes. Despite enormous differences in political structures, everyday life in the world at war became regimented as never before. These commonalities, I argue, were no coincidence. Planners in each belligerent nation had been vigorously investigating others' home-front mobilization policies in the run-up to World War II, as well as during the war itself.

Much of the comparative historiography on the warring states spotlights the phenomenon of "fascism"—notably in Italy, Germany, and

Japan.<sup>2</sup> However, it may be more productive to examine World War II from the transnational-historical perspective of “total war.” This imperative transformed state-society relations in all the belligerents, not simply among the Axis powers. Indeed, the development of civil defense was very much a connected and global history. At the same time, we must be wary of “flattening” the differences in the national cases. This essay will reveal the vital role of transnational learning in structuring civil defense in Japan, Germany and Britain, while also comparing how each political regime shaped the contours of civil defense and home-front mobilization. All three cases may be considered home fronts under stress, where enemy bombers brought the battlefield to the home front. They stood in marked contrast to the American home front, which experienced no aerial bombardment after the opening attack on Pearl Harbor.

#### The Globalization of “Civilian Defense”

The story begins in the waning years of World War I and the interwar era. From Europe to Japan, civil and military officials widely recognized the importance of civilian “morale” in making or breaking a nation’s ability to wage the protracted war of 1914-1918. Imperial Germany lost the war, most experts concluded, when food shortages—exacerbated by the Allied blockade—weakened and demoralized the populace. Mothers, workers, sailors, and soldiers mounted protests that pressed the regime to end the war.<sup>3</sup> The dramatic rise of air power in World War I offered an even more potent means of striking at morale on the home front. The airplane made it possible to fly over the trenches and bomb the enemy’s cities in the hinterland. In 1917 and 1918, German bombers consciously aimed to destroy British civilian morale in raids against London and other cities. The new RAF likewise instructed British crews to bomb “densely populated industrial centres” in Germany to “destroy the morale of the operatives.” Air power did not prove decisive in

World War I. However, visionary postwar strategists around the world soon formulated more expansive doctrines of strategic bombing, postulating that air power by itself might win future wars by attacking the enemy’s cities and factories. The most influential proponent, Italian officer Giulio Douhet, in 1921 proposed the merciless bombing of cities, especially working-class neighborhoods, to terrify workers into fleeing the factories and forcing their leaders to sue for peace. Referring to London and Paris, Douhet prophesied that with “a proportionate number of explosive, incendiary, and poison-gas bombs it would be feasible to destroy completely great centers of population.”<sup>4</sup>

While the prospect of bombing cities fascinated air strategists, it simultaneously spurred nations to devise new ways of defending their homelands during the 1920s and 1930s. Leading the way was the British government, whose influential Sub-Committee on Air Raid Precautions began secretly meeting in 1924. Officials took a dim view of the capacity of civilians to protect themselves from air attacks. They were particularly concerned with preventing “panic,” “chaos,” and “moral collapse,” notably among the working-class population. The Home Office reported on the “loss in morale” that had occurred among London civilians when the Germans bombed the capital in World War I. The Sub-Committee expressed little interest in building air raid shelters or recruiting neighborhood volunteers to be civil defense workers. Discussions focused instead on preventing economically essential people from fleeing bombed cities, while preemptively evacuating women, children, and others who would otherwise become “useless mouths” straining the urban food supply after raids. What British officials feared most was a “considerable unorganised exodus to the open country,” which would likely result in “starvation.”<sup>5</sup>

Accordingly, interwar planners in many nations

initially called their countermeasures “passive” air raid defense to distinguish them from “active” air defense, the latter of which included anti-aircraft guns, fighter planes, and early warning systems. Passive air defense referred to organized evacuations, assisting civilians to seek shelter during raids, and providing housing and food following air attacks. However, by the mid-1930s, several states had embraced the less passive concept of “civilian defense.” They envisioned not simply the protection of civilians, but also the active participation by civilians in their own defense. Millions of ordinary men and women would be recruited to serve as neighborhood-based air raid wardens, auxiliary firefighters, “fire watchers,” first-aid workers, and members of workplace civil defense groups. In the countries facing the imminent threat of aerial bombardment in World War II, civil defense programs did more to mobilize daily life on the home front than any other imperative including food distribution and savings campaigns.

This unprecedented mobilization of civilians was provoked, to a significant degree, by new technologies of destruction across the globe. The specter of gas warfare prompted several European countries and Japan to train civilians in decontamination from the early 1930s.<sup>6</sup> As the major powers ratified the 1925 Geneva Protocol that prohibited chemical and biological weapons, the threat of gas bombs receded. More menacing were new types of incendiary bombs—thermite, phosphorous, and magnesium. These typically small “stick” bombs, weighing from 1 to 2.7 kg (2.2 to 6 lb), could be dropped by the tens of thousands. By the end of World War II, the U.S. Army Air Force’s B-29 Superfortress bombers could each drop 1,520 M-69 napalm bombs.



**Figure 1. In the Reich Air Defense League’s magazine, wartime German women drill in extinguishing British “stick” firebombs by shoveling sand or spraying water.**

Source: “Selbstschutz gegen Terror: Wir bekämpfen britische Brandbomben,” *Die Sirene*, 1943, no. 8 (April): 89.

Already in 1932, Weimar Germany’s Ministry of Interior recognized that, in the event of air raids, professional firefighters could not alone extinguish the myriad firebombs that would fall through the roofs of houses. Officials therefore committed themselves to establishing neighborhood units for “self-protection” (*Selbstschutz*), with each street constituting a *Luftschutzgemeinschaft* (air defense community). Each apartment house in turn would organize a “house fire brigade” (*Hausfeuerwehr*) from among the residents—including some “brave women”—who would be supervised by the street warden (Figure 1).<sup>7</sup> In 1934, Japanese Army researchers similarly concluded that the only effective means of preventing individual firebombs from causing a conflagration was to train every household in methods of spotting falling firebombs and then extinguishing them. In subsequent mass air-raid drills, residents were instructed that they had just five minutes to douse flammable materials around the bomb with water before the flames engulfed the house and the neighborhood (Figure 2).<sup>8</sup> In wartime Britain, too, the government encouraged every home to buy a “stirrup

pump,” a simple bucket of water and hand pump with a 30-foot (9-m) hose whose spray reputedly sped up a firebomb’s combustion from ten minutes to one (Figure 3). As one British manual declared, “fighting fire bombs—and so preventing fires—is essentially a job for the ordinary citizen.”<sup>9</sup>



**Figure 2. A prewar Japanese pamphlet on “household air defense” similarly instructs women in how to extinguish firebombs with buckets of water, sand, and hand pumps.**

Source: Kokubō shisō fukyūkai, *Katei bōkū* (Osaka: Ōsaka kokubō kyōkai, 1937).

Particular developments in each nation also lay behind the rush to civil defense and “self-protection.” In Weimar Germany, civil defense policy developed as a direct response to the perceived injustices of the Versailles settlement. Conservative nationalists in 1927 persuaded the Ministry of Interior to take responsibility for “passive air defense.” As Ministry of Defense officials explained to the cabinet, France at the time possessed more than 500 bombers. Just two squadrons, they noted, could drop more bombs on Germany than in all 800 enemy raids of World War I. Acknowledging that the best defense would be an “active” one, they conceded that the Treaty of Versailles (1919) banned Germany from

maintaining any fighter planes and bombers, and it permitted a mere 135 anti-aircraft guns for coastal defense. Without “violating the international treaties, only passive air defense measures are possible.” By 1932, proponents of civil defense repeatedly reminded the public of the German Volk’s extreme vulnerability, asserting that the country’s many neighbors possessed 10,000 airplanes ready to strike cities in the heart of Germany.<sup>10</sup>



**Figure 3. Commissioned by Britain’s Home Office, these prewar cigarette cards—found in cigarette packs—illustrate methods by which women could neutralize incendiary bombs that crash through the roofs of their homes. The use of stirrup pumps and sand closely resemble German techniques in Figure 1.**

Source: Source: W.D. & H.O. Wills, *Air Raid Precautions: An Album to Contain a Series of Cigarette Cards of National Importance* ([Great Britain]: W.D. & H.O. Wills, 1938), nos. 13-15.

The Japanese state moved even faster to establish a civil defense apparatus. In July 1928, Army and civil authorities held the first mass air drill in the world in Osaka. Two million people—including members of state-organized youth, women’s, and veterans’ associations—took part in a simulated gas attack and city-wide blackout. This exercise

resulted from transnational knowledge, as well as the influence of a recent natural disaster. Japanese Army officers had extensively surveyed European home fronts in World War I, returning with nascent ideas of total war. They were determined to mobilize all civilians in the next war. The Army's leading aviation expert Kusakari Shirō had personally witnessed an early air raid on Paris in 1916.<sup>11</sup> In 1923, the Great Kantō Earthquake destroyed much of Tokyo and Yokohama. Some one hundred thousand people died in the quake and conflagration that followed. Army and civil officials were shocked by the ensuing mass panic. Vigilante groups murdered several thousand Korean migrants and hundreds of Chinese. Wrote General Ugaki Kazushige, the future Army Minister and an influential proponent of total-war thinking, in his diary: "Chills run down my spine when I think that the next time Tokyo suffers a catastrophic fire and tragedy on this scale, it could come at the hands of an enemy air attack." The earthquake enabled Ugaki and other officials to convince the government to begin preparing civilians for air raids on Japan's major cities. Hostilities in Manchuria and North China after 1931 and then all-out war with the Republic of China in 1937 accelerated Japanese efforts. On the eleventh anniversary of the Kantō Earthquake on 1 September 1934, the authorities commenced air-raid drills in the three cities of Tokyo, Yokohama, and Kawasaki involving five million residents.<sup>12</sup>

### Transnational Channels

The German and Japanese experiences highlight the important role of transnational learning in the rapid spread of ideas and practices of civil defense. Beginning in the late 1920s, the German government energetically surveyed air raid defense in Britain, France, Italy, the Soviet Union, Poland, the Scandinavian countries, the United States, and even far-off Japan. As in transnational investigation in general, German advocates

sought not only to learn from others, but also to persuade their own policymakers that Germany lagged behind its potential enemies and needed to catch up quickly. The German Foreign Office mediated this process by requesting reports from its embassies, relying in particular on military attachés. The Nazi takeover in 1933 accelerated German efforts to gather information about civil defense practices around the world. Assuming control over civil defense, the new Air Ministry worked with the Foreign Office to survey the latest developments in an array of countries, including Britain, France, Italy, the Soviet Union, Netherlands, Belgium, Czechoslovakia, Denmark, Japan, and China (under heavy air attack by Japan from 1937). German reports were compiled every few months. During the latter half of the 1930s, Berlin became a Mecca for foreign delegations interested in Germany's much-vaunted air defense system. They typically visited shelters in government buildings, a gas-attack-defense school, and the nationwide Reich Air Defense League (Reichsluftschutzbund or RLB).<sup>13</sup>

Nothing illustrates the circular nature of these transnational exchanges better than the high-level tour of Germany's air defense facilities by Britain's Undersecretary of State for Home Affairs, Geoffrey Lloyd, and his Foreign Intelligence chief in January 1938 (Figure 4). The visit occurred just weeks before Germany's annexation of Austria and a half-year before the Munich Crisis. Although the British government had been the first to explore air raid precautions in 1924, it had been reluctant to take concrete steps out of fears of panicking the people. However, in 1930-1931, the Subcommittee on Air Raid Precautions surveyed programs in several European nations. Officials concluded that the Germans, Soviets, Czechs, and French were far ahead of the British in training civilians for defense against gas attacks, high-explosive bombs, and fires.<sup>14</sup> The British government established its own Air Raid Precautions Department within the Home

Office in 1935. The 1938 visit to Germany by Undersecretary Lloyd culminated a flurry of intelligence-gathering about German civil defense efforts since the previous year. British officials were impressed by the success of the RLB in training millions of German civilians—including 800,000 house wardens—to extinguish house fires, clear attics of flammable materials, and repaint homes with fireproofing paint. They reported on frequent blackout exercises held in towns and cities throughout Germany. Some British officials also observed that German authorities prudently focused their civil defense preparations on extinguishing incendiary bombs rather than neutralizing gas bombs. The Germans reportedly appreciated that their enemies were unlikely to use poison gas extensively, whereas the British government fixated on distributing gas masks to every inhabitant—unnecessarily as it turned out because neither side would drop gas bombs. By the outbreak of war in September 1939, the British government had built a comparable national system of air raid wardens, local fire brigades, and blackout regulations. From 1940, the reorganized Ministry of Home Security devoted considerable resources to gathering intelligence about German civil defense to improve British defenses, but also to enable the RAF to bomb German and other Axis targets more effectively.<sup>15</sup>



**Figure 4. “The German Air Defense Facilities Model.” On the eve of war between Britain and Germany, Geoffrey Lloyd (center), the British Undersecretary of State for Home Affairs, and Major F. L. Fraser (right) inspect German air defense facilities, hosted by Dr. Kurt Knipfer, head of Germany’s Department of Civilian Defense.**

Source: Wochenschau Westdeutsche Illustrierte Zeitung, 30 Jan. 1938, in “Visit to Berlin & Paris with Mr. Geoffrey Lloyd,” 10 March 1938, HO 45/17627, TNA.

Japanese officials and civilian experts likewise

continued to survey other nations' air raid preparations during the 1930s and war years. They paid particular attention to the emerging system in Nazi Germany and the RLB's nationwide organization of civil defense. Several influential delegations of Japanese Army officers and civil officials visited German air defense facilities in the mid-1930s and again in 1940-1941 (after the 1940 signing of the Axis pact). Japanese officials closely modeled their Air Defense Law (1937) after Nazi Germany's Air Defense Law (1935), both of which compelled citizens to participate in civil defense activities. Military and naval attachés in Japanese embassies in Berlin and nearby Switzerland sent detailed reports of the increasingly deadly Allied bombing of Germany from 1943. The firsthand accounts of the firebombing of Hamburg (July-August) and large-scale air raids on Berlin convinced Army authorities, the Home Ministry, and Prime Minister Tōjō Hideki to upgrade Japan's civil defense system in anticipation of American raids on Japanese cities. Japanese urban planners, some of whom had recently visited Germany in the early stages of British bombing, recommended that the regime take extraordinary steps to fireproof Japanese cities, made up largely of wooden structures. Beginning in January 1944, the government ordered the destruction of large numbers of wooden homes and buildings in an effort to create firebreaks against incendiary attacks. Some 55,000 dwellings and buildings were demolished in Tokyo alone from February to July 1944. Officials also emulated the German dispersion of government offices and industries from concentrated urban areas.<sup>16</sup>

At the same time, Japanese air defense authorities kept investigating British civil defense methods even after the two nations were at war with each other. Japan had been officially neutral vis-à-vis the Western Allies until December 1941, enabling Japanese officials in the London embassy to report extensively on British home-front mobilization

and civil defense against German air raids during "the Blitz" (September 1940 to May 1941). Throughout the war, Japanese planners remained keenly interested in British firefighting techniques against incendiary bombs, the use of women in neighborhood civil defense, and the mass evacuation of schoolchildren from London and other vulnerable cities.<sup>17</sup> Japan—like Germany and Britain—continued to adapt its own home-front programs based on the study of allies and enemies alike.

### Compulsion and Organizing Neighborhoods

To a degree seldom appreciated, transnational ideas and practices of civil defense standardized methods of mobilizing civilians in a variety of polities. In 1933, the newly triumphant Nazi Party established the Reich Air Defense League (RLB) under the direction of Hermann Göring and his Air Ministry. The RLB was a nationwide organization that reached down to the neighborhood level, boasting a mass membership of 13 million in 1939 and 22 million in 1943. This vast hierarchical structure, notes Deutlev Peukert, served to increase popular support for the regime, even among those who were not impassioned Nazis, for it offered millions of local people a "virtually inexhaustible supply of insignia, functions and sub-functions."<sup>18</sup> Like many Nazi organizations, the RLB is usually understood as the exceptional creation of a radical regime. Indeed, it exhibited extreme National Socialist features, notably the exclusion of Jews from an otherwise inclusive organization charged with defending every home from firebombs.

Nonetheless, the RLB may also be understood as one of the era's many national mobilization structures that reflected global currents. It absorbed two Weimar-era air defense organizations, which had modeled themselves after state-directed air defense leagues in the Soviet Union (Osoaviakhim, established 1927)

and Poland (League for Air and Gas Defense, established 1929). The Polish league, noted the admiring German proponents in 1931, had garnered one million members, and Osoaviakhim claimed several million.<sup>19</sup> German officials also reported on efforts to organize mass civil defense organizations in Czechoslovakia, Sweden, Denmark, Finland, and Italy.

During the 1930s, mass civil defense organizations would rapidly spread as countries mobilized civilian populations for the coming “total war” that seemed sure to target the cities. Those global models encouraged Japanese officials in the late 1930s to consolidate the existing system of state-sponsored organizations. There were several nationwide organizations, each governed by an individual ministry and reaching down respectively to neighborhood-level youth associations, women’s associations, veterans’ associations, and savings associations. Amid the war with China and growing tensions with the United States and Britain, the Home Ministry unified the state’s various local associations into a single village association (*burakukai*) or, in the cities, block associations (*chōnaikai*). Below the village or block association stood the newly created neighborhood associations (*tonarigumi*), comprised of approximately every ten households. The block associations were clearly inspired by Germany’s street associations led by either the RLB’s street warden or the Nazi Party’s block warden (*Blockwart*), while the neighborhood associations corresponded to German “house” units. Japan’s block and neighborhood associations became the comprehensive units for home-front mobilization after 1940—charged with civil defense, food rationing, collection of national savings, and mutual surveillance. Membership was mandatory. The neighborhood association heads, who doubled as air raid wardens, were usually men initially. Women, however, increasingly headed the neighborhood

associations in fact, and most active members were women.<sup>20</sup> The Americans did not heavily bomb Japanese cities until the last five months of the war in 1945, so the neighborhood associations found themselves drilling for years in the use of buckets and hand pumps against the anticipated incendiary bombs.

We generally associate “administered mass organizations” like the RLB or the Japanese neighborhood associations with authoritarian regimes.<sup>21</sup> In actuality, the prospect of aerial bombardment—plus investigation of foreign models—also prodded European democracies to establish national mobilization systems. In March 1938, the British government’s Committee on Imperial Defence even considered emulating Nazi Germany’s RLB to create its own air defense organization. Britain did not in the end set up a mass organization, nor did the state ever require all residents to join neighborhood civil defense associations as in Germany and Japan. But the Home Office did compel every local authority to establish centrally supervised Air Raid Precautions services, including wardens, decontamination parties, first-aid services, rescue parties, and auxiliary firefighters.<sup>22</sup> As air raids intensified in 1940-1941, greater numbers of men and women in neighborhoods were called upon to serve as civil defense workers in the neighborhoods and workplaces. Preparations for air raids also led in 1938 to the organization of the Women’s Voluntary Service, which eventually enrolled more than one million members. Despite the term “voluntary,” the government ordered the creation of the organization explicitly to work in ARP services, instructing that a branch to be set up in each locale to work under the orders of the local authorities. Similar to German and Japanese associations, the Women’s Voluntary Service focused on recruiting neighborhood “housewives,” rather than younger “mobile women” who would be “called away to the forces or to industry.”<sup>23</sup>



Whether authoritarian or democratic, each state instituted unprecedented levels of compulsion vis-à-vis civilians, although the methods varied. Germany's Air Defense Law of 1935 obligated all German citizens to participate in civil defense activities. As Germany suffered heavier raids, the Air Defense Law underwent "constant radicalization" and the range of penalties grew, notes Dietmar Süß. Residents faced stiff fines or custodial sentences for violating blackout regulations, failing to dispose of flammable waste in houses, or shirking other air raid protection duties. Repeat offenders of the blackout order were sometimes turned over to the Gestapo, and local Nazi Party branches took it upon themselves to patrol neighborhoods for violations and to reprimand and fine offenders.<sup>24</sup>

Inspired by the German law, Japan's Air Defense Law (1937; revised 1941) similarly stipulated an array of fines or imprisonment for those who evaded their responsibilities for civil defense. Few Japanese offenders faced the radical penalties or terror of the Nazi state, however. Rather, it was the job of the neighborhood association head and his deputies to reprimand neighbors for blackout violations or evading civil defense duties. Nonetheless, wartime regulations gave the state powerful legal weapons against those residents who fled their neighborhoods without permission in the face of air raids. The revised Air Defense Law of 1941 obligated civilians to fulfill the "duty to engage in stop-gap firefighting during air attacks." Moreover, if the home minister or his prefectural governors deemed it necessary to air defense, they could prohibit or restrict anyone from leaving the neighborhood. Violators faced up to one year in prison with heavy labor or a maximum fine of 1,000 yen.

But more often, Japanese authorities preferred extralegal sanctions, advising the local block associations to deny food rations to residents

who failed to perform civil defense duties or who ran away. This was a potent threat because Japanese suffered critical food shortages by the time the Americans heavily bombed the home islands in 1945. In one tragic episode in the last days of the war, large numbers of terrified residents of Aomori fled the city after U.S. planes dropped leaflets warning that Aomori might be one of the next bombing targets. The prefectural governor thereupon issued an injunction that "if [residents] do not return to Aomori by 28 July, they will be removed from their block association registers and will no longer receive rationed goods [primarily food]." An official notice in the local newspaper likened fleeing townspeople to military "deserters" who "have left their homes virtually empty" and their city undefended. Many hungry civilians returned to Aomori, just in time to experience the 100-bomber night raid of 28 July that killed 728 people.<sup>25</sup>

Britain, too, employed growing levels of compulsion during the early years when the threat of air raids was greatest. In 1940, courts heard some 300,000 cases of violations of the blackout regulations, and the state sternly enforced other civil defense regulations.<sup>26</sup> Despite a pronounced preference for voluntarism, the British government eventually turned to conscripting men and women for civil defense work. The most pressing need was Fire Guards, the fire watchers whose primary task was to sit on roofs and immediately report to the neighborhood and firefighters where incendiary bombs had fallen. They were also expected to extinguish the bombs whenever possible. The massive firebombing of late 1940 convinced the war cabinet that the number of volunteer fire watchers was insufficient. In early 1941, the government gained the power to compel male British citizens, aged 18-60, to serve as Fire Guards for up to 48 hours per week in their workplaces when not enough volunteers came forward. Another order required all British males, 18-60, to register for

fire prevention duties in residential areas in vulnerable districts. Large numbers were called up to serve. In November, the Ministry of Home Security proposed that every 150 yards of street or every 30 houses be covered by a “stirrup pump team” of at least three Fire Guards. Citing “serious shortages in the number of Fire Guards in the target areas,” the government in August 1942 went well beyond Nazi Germany to extend compulsory enrollment to women aged 20-45, who could be conscripted as fire watchers in workplaces or neighborhoods. Married women living at home were liable for fire prevention duty only in their neighborhoods, while single women could be compelled to serve in any residential area under the local authority.<sup>27</sup> Invoking the transnational language used by the Axis and Allies alike, Home Secretary Herbert Morrison described the call-up of women Fire Guards as “one more sign of our total war effort.”<sup>28</sup>

Moreover, like their Axis counterparts, the called-up British Fire Guards could not decline to serve. As late as October 1943, courts were prosecuting Fire Guards for refusing to perform their duties, sentencing at least one to a three-month prison term.<sup>29</sup> Noting that a small number of bombers “can shower many thousands of small incendiary bombs over a town in the space of a few minutes,” The Fire Guards Handbook in 1941 explained it had become “the duty of all able-bodied men and women to give whatever service they can in the part-time army of millions of citizens trained to deal with fire bombs promptly.”<sup>30</sup> Scholars today roundly condemn the Japanese state for obligating civilians to fight firebombs.<sup>31</sup> Yet ironically, wartime German propaganda said much the same about the British authorities. The “conscription” of English civilians to fight fires “regardless of sex,” thundered one German radio broadcast, demonstrated “the terrible ruthlessness of the British Government which throws defenceless people in the middle of the bombardment.”<sup>32</sup> Informed by transnational learning, compulsory civil

defense programs mobilized millions of British, German, and Japanese men and women in their workplaces and neighborhoods, and in strikingly similar ways.

### Evacuations: Organized and Spontaneous

All three nations wrestled with the problems of evacuating civilians in the face of air raids. The evolving transnational civil defense policies of the 1930s were predicated on keeping most essential personnel in cities under attack. These included not only industrial and public-utility workers, but also hundreds of thousands of ordinary men and women who were expected to protect their homes and neighborhoods from bombardment. Nazi Germany, the Soviet Union, and Japan all attempted to prevent able-bodied civilians from fleeing bombed cities. Yet this policy was hardly the exclusive preserve of authoritarian states. The British government took various measures (largely unsuccessful) to discourage the terrified residents of some smaller cities from “trekking” to the countryside on a nightly basis to escape German air raids. In summer 1941, several thousand inhabitants of the heavily bombed port city of Hull regularly slept in surrounding farms or in government Rest Centres. Officials worried about the lost productivity of sleepy workers. If the government encouraged trekking, declared the Minister of Health, “we shall lose the war.”<sup>33</sup>

The evacuation of Britain’s children was, however, a different matter. Evacuation of nonessential civilians formed a major element in British air raid precautions from the start of the government’s secret deliberations in 1924. Expecting enemy bombers to strike decisively in the first days of World War II, the state began evacuating nearly 1.4 million children and mothers from London and other cities on 1 September 1939, even before declaring war on Germany two days later (826,959 were unaccompanied schoolchildren and 523,670 were mothers and accompanied children). The

results were mixed. Parents often resisted parting with their children; poor working-class children encountered hostility and prejudice from their middle-class hosts in small towns; and in the Phony War of 1939-1940, many families demanded that their children return, only to be in harm's way when the Germans launched the aerial assault on London and other cities in the Blitz from September 1940. Nonetheless, the state subsequently organized other large-scale evacuations of children during periods of intense bombardment.<sup>34</sup>

Nazi leaders were well aware of British evacuations, but during the early years of the war they took a dim view of organized, long-term evacuations of urban children. Before 1943 British bombing was largely ineffective, and Propaganda Minister Joseph Goebbels was reluctant to alarm the German public. Hitler did not authorize any evacuations until late September 1940, six months after the start of British bombing. He did so in the guise of sending children aged 10 to 14 from the vulnerable cities to summer camps and youth hostels for short holidays. Hitler eventually agreed to the evacuation of whole school classes from dangerous areas in February 1943, yet parents could choose not to participate, and the numbers remained small. The devastating British firebombing of Ruhr and Rhineland cities and then Hamburg (July-August 1943) shredded what remained of the organized Nazi evacuation policy. From 1943 to 1945, several million German civilians fled the bombed cities, and not even the Nazi regime could stop the flood. By 1945, Berlin had lost 40 percent of its prewar population, Munich 41 percent, and Hamburg 35 percent. In Cologne, which experienced repeated bombardment, only 20,000 remained of the 770,000 at the start of the war.<sup>35</sup>

In Japan, plans for evacuation of children had to overcome considerable resistance at the top level, succeeding in large part because of transnational learning. In May 1940, the Army

General Staff opposed mass evacuations of most women and children. If in the face of air raids, the people "abandon the cities and run away, the cities will collapse and our national defense will fail."<sup>36</sup> One year later, Army air defense specialist Lt. Col. Nanba Sanjūshi rejected the evacuation of women and children on the grounds of the manpower required to carry it out. Vowing that Japanese would defend bombarded cities "to the death," he quoted approvingly the Soviet authorities' injunction to civilians in the face of the current German onslaught: "If you abandon Moscow, you will not be permitted to return."<sup>37</sup> Prime Minister Tōjō opposed evacuations of children for much of the war, fearing they would weaken the Japanese "family system." He and others also insisted that children should stay in the cities to help extinguish firebombs and assist in other civil defense tasks. On the other hand, many educational officials pressed the government to emulate Britain's program of evacuating children en masse. They were joined by diplomats and an influential former military attaché who had served in the Japanese embassy in London during the Blitz (Figure 5). Other experts surveyed German evacuation programs. In June 1944, anticipating the destructiveness of impending air raids on Japanese cities based on reports from Europe, the government began organizing the evacuation of primary school children (third grade and above) from thirteen cities to the countryside. Officials also learned from the problematic experiences of moving English children into the homes of strangers in the provinces. Instead the Japanese state transferred large numbers of schoolchildren with their classmates and teachers to rural areas where they lived communally. During August 1944, months before significant U.S. bombing, the authorities evacuated some 337,000 schoolchildren with their classes, and another 459,000 were sent to live with relatives.<sup>38</sup>



**Figure 5. “The Lessons of London.” In this 1944 article in the Japanese government’s civil defense magazine, a diplomat previously stationed in the Japanese embassy in London describes what his countrymen might learn from the evacuation of children from British cities at the start of World War II.**

Source: Tobe Toshio, “Rondon no kyōkun,” *Kokumin bōkū* 6, no. 7 (July 1944): 37.

At the same time, the Japanese government attempted to restrict unorganized evacuations, particularly by able-bodied men and women deemed essential to war work and city services. In this endeavor, the state fought a losing battle—hindered by often contradictory policies. In the six major cities and elsewhere, the demolition of hundreds of thousands of homes to create firebreaks in 1944 and 1945 forced droves of the newly homeless to leave the cities. In the horrific firebombing of Tokyo on 9-10 March 1945, B-29s Superfortresses killed some 100,000 residents. The U.S. Army Air Force followed up with repeated raids on the big cities. From June to mid-August, the Americans extended the bombing campaign to 58 small and medium cities throughout Japan. Panicked civilians flooded out of the cities. Civil authorities did little to stop them. On the contrary, officials often abetted the exodus, recognizing that the bombed-out cities no

longer could feed and house their populations. Following the 9-10 March raid, the Tokyo metropolitan government dramatically changed policy, encouraging all nonessential residents to leave. Providing free tickets, the authorities ran many extra trains each day to the countryside. Train cars overflowed with families desperate to escape.<sup>39</sup> Not unlike the German case, some 8.5 million Japanese fled the big cities, mostly in the last five months of the war. The population of Tokyo city dropped 63 percent, and 29 percent of Nagoya’s population evacuated in the short period following two raids in mid-March. Although the authorities had pledged to keep war workers from leaving the cities, a great many in fact fled with their families. The Morale Division of the U.S. Strategic Bombing Survey estimated that of those gainfully employed Japanese who evacuated, fully 37 percent had worked in war industries.<sup>40</sup>

#### Who Cleared the Rubble?

All three nations mobilized neighborhood men, women, and youth for basic civil defense duties as wardens, fire watchers, messengers, and first-aid workers. But when it came to particularly dangerous and physically arduous work, these regimes differed markedly in the use of labor power. In wartime Britain, civil defense efforts relied overwhelmingly on adult male citizens to fight major fires and repair roads, public services, and structures after air raids. The British never mobilized more than a fraction of male workers for military service. Moreover, the cities experienced the worst air attacks in 1940-1941, when military mobilization was still in its early stages. The British civil defense system thus could draw on a large pool of able-bodied men to serve in full-time and part-time firefighting, workplace fire watching, and reconstruction. The government estimated the male workforce (aged 18-64) at 14 million in 1939. As of 1942, only 4 million Britons served in the armed forces and another 1.75 million were in the Home Guard. The

National Fire Service employed some 25,000 women as paid employees, but they comprised less than 10 percent of the NFS' total workforce.<sup>41</sup> In London, many non-British aliens worked to clear debris and demolish damaged structures, yet they earned relatively high wages that also lured young Britons from other war work.<sup>42</sup>

Fighting a multi-front and increasingly desperate land war, Germany faced much greater challenges in maintaining manpower for the most dangerous civil defense jobs. Even as the Allied bombing campaign intensified against the cities in the final months, the Nazi regime rapidly diverted able-bodied men to military service to fight the Allied invading armies. Inaugurated in October 1944, the Volkssturm (the national militia) conscripted several million additional males between the ages of 16 and 60. To fight conflagrations resulting from incendiary raids, the party-state depended on older and older men. The average age of firefighters and rescue workers of the mobile Air Raid Protection Battalions (Luftschutz Abteilungen) rose to 52 by the end of the war.<sup>43</sup> In the neighborhoods and smaller commercial establishments, women were drilled in containing smaller fires. Many became house and block wardens. Nonetheless, British intelligence and German officials reported that women fire guards were easily terrified and generally ineffective in the face of heavy Allied firebombing raids.<sup>44</sup> Ideologically, National Socialism promoted feminine and maternal roles for women and girls, seeking to protect them from backbreaking and dangerous work. Pragmatically, Hitler refrained from saddling women with physically demanding tasks, hoping to avoid a repeat of World War I when hungry and demoralized mothers pressed for an end to the war.<sup>45</sup>

What most distinguished German civil defense from the British and Japanese cases was the Nazi state's massive and racist exploitation of "non-Aryan" labor in the aftermath of air

raids. If one counts civilian laborers, prisoners of war, concentration camp inmates, and Jews, at least 12 million foreign workers were compelled to work as forced or slave laborers in Germany during the war.<sup>46</sup> Organized by Albert Speer, Minister of Armaments and War Production, special battalions of POWs were sent to bombed cities to clear rubble from 1941. The SS also cooperated with Speer to move large numbers of concentration camp inmates and convicts to the cities to clear rubble and repair public services. These prisoners were also compelled to remove unexploded bombs, in Heinrich Himmler's words, so that "courageous firemen" would not have to risk their lives. Many forced laborers died in explosions, or were worked to exhaustion. After the deadly firebombing of Hamburg in summer 1943, concentration camp inmates were ordered into the "dead zones" to remove thousands of corpses when the air defense police refused to do so. Compounding the dangers to the laborers, German officials commonly prepared for these post-raid tasks by housing the inmates in branch camps in the highly vulnerable city centers before the air attacks.<sup>47</sup> Later generations of Germans would commemorate the contributions of German "rubble women" (Trümmerfrauen), who laboriously brought the devastated cities back to life under the Allied occupations. Yet few German women cleared rubble during the war itself, spared the task by the Nazi regime's enslavement of those considered outside the Volksgemeinschaft (national community).

Wartime Japan also contended with the dearth of younger adult males who could fight fires and restore city services after air raids. By the time Japanese cities were heavily bombed in 1945, more than six million men were serving in the army, and millions more were working long hours in war industries or were posted overseas in civilian positions. Yet unlike Nazi Germany, the Japanese state called on women and adolescent boys and girls to shoulder much of the burden for defending their

neighborhoods from incendiary attacks. The regime might have similarly forced foreign laborers to construct firebreaks or remove rubble, but their numbers were far fewer than in Germany. Most were assigned to mining, war industries, and other construction projects. Colonial Koreans constituted a sizable pool of labor in wartime Japan. Companies and the state recruited or conscripted some 724,000 laborers from Korea between 1939 and 1945. Although several thousand Korean laborers worked on the construction of military bunkers and installations in preparation for an Allied invasion, few took part in construction and demolition activities related to the defense of the cities. In the chaos that followed the firebombing of the big cities in March 1945, the authorities lost control of Korean labor conscripts, who like Japanese civilians fled in large numbers.<sup>48</sup>

Rather than rely on foreign or prison labor, Japanese officials assigned the primary responsibility for firefighting, demolition, and repair to their own nationals in the block and neighborhood associations. The state self-consciously built on early modern Japanese traditions of volunteer fire units and mutual neighborly assistance. Resources had been significantly diverted to the military, and urban fire departments did not possess the equipment and mobile units adequate to fight heavy incendiary raids. They also suffered serious manpower shortages as the military conscripted greater numbers of able-bodied men and skilled mechanics. Invariably, the task of fighting fires fell to neighborhoods—that is, to older men, women, and even children in the residential associations. Unlike their Nazi counterparts, Japanese leaders had few inhibitions about mobilizing women for dangerous and heavy labor. A significant proportion of wartime Japan's urban population had grown up in the countryside, where many women and girls were accustomed to the rigors of farm work.<sup>49</sup> Armed with buckets and some hand pumps, large numbers of women in the

neighborhood associations reportedly extinguished smaller fires on the peripheries of American target zones—even if their rudimentary equipment and tactics proved powerless against infernos in the city centers.<sup>50</sup>

We should further note the prominent role of youths and women in demolishing homes and buildings to create firebreaks and evacuation lanes. In 1944 and 1945, both before and after the big incendiary raids, officials repeatedly ordered the demolition of several hundred thousand houses. Much of this work was done by teams of “mobilized students” (*gakuto dōin*). To cope with labor shortages in spring 1944, the state began conscripting boys and girls, aged 14 and older—together with their classmates and teachers—to work in factories or engage in war-related construction projects. The mobilized students commonly dismantled dwellings and shops in the desperate struggle to reduce the flammability of the cities. In addition, armies of women and older men from the residential associations took part in removing debris after raids and the demolition projects. For these seriously malnourished adolescents, demolition work was not only exhausting and dangerous, it could also be deadly. On the morning of 6 August 1945, thousands of mobilized girls and boys were tearing down structures to construct firebreaks in central Hiroshima in anticipation of an imminent incendiary attack. Instead, some 7,000 mobilized students perished in the world's first atomic bombing.<sup>51</sup>

### Conclusions

This essay seeks to interweave transnational and comparative analysis. Nazi Germany's civil defense programs differed from the other two cases in key respects. The radicalism of National Socialism fueled the use of terror against uncooperative citizens, and the Nazi Party often supplanted state offices by arbitrarily punishing those who violated civil defense rules. Above all, the Nazi regime

ruthlessly employed foreign laborers, POWs, and concentration camp inmates to reconstruct bombed cities. In so doing, Nazi leaders managed to cope with the devastating air raids and maintain popular morale by sparing the racially defined “German people” from performing the most dangerous post-raid tasks. Compared to Nazi Germany, British and Japanese civil defense efforts closely resembled each other despite obvious differences in regimes. They mobilized their own citizens for most aspects of air defense, and their centralized systems of firefighters, air raid wardens, and local fire watchers operated within existing state structures without interference from a radical party. Nor were the sanctions for violating civil defense regulations much worse in Imperial Japan than in Britain. Once U.S. aircraft began firebombing Japanese provincial cities and leafleting other cities that they would be next, the undermanned Japanese police quickly lost control over the populace. As officials of the Kenpeitai (military police) and prefectural police acknowledged after the war, they could do little to stop people from reading the dropped leaflets. Nor could Japanese authorities prevent panicked residents from flooding out of the cities.<sup>52</sup>

Yet aside from the extreme reliance on forced labor after air raids, German civil defense operations shared many features with those of Britain and Japan. The evolving transnational construction of the “home front” resulted in a much more connected and common history than scholars generally assume. Most belligerents in World War II embraced the precepts of “total war,” viewing the protection and the mobilization of civilians as vital to the war effort. Moreover, Germany, Japan, and Britain all functioned as home fronts under stress, where the threat of deadly air raids legitimated the unprecedented regimentation of society. The contrast to the American home front is instructive.

Before entering the war in December 1941,

U.S. officials had investigated British civil defense, and they occasionally warned Americans of the threat of German bomber attacks from potential bases in the Atlantic or Caribbean. Yet in the absence of any actual air attack on the mainland of the United States, Americans remained unconvinced of the need to alter their daily lives significantly in wartime. Whereas the Japanese, German, and British states had drilled civilians in air defense for years, the U.S. government only began to establish a nationwide civilian defense network in the latter half of 1941. By the beginning of 1943, as the possibility of air raids receded, the Office of Civilian Defense started winding down air defense operations in most cities. Wartime America’s relaxed approach to enforcing blackouts may stand as its most glaring difference with other nations. In Britain, Japan, and Germany, adherence to blackout regulations was an important measure of solidarity and collective discipline during the war. In American communities, by contrast, residents and businesses only loosely obeyed rules on blackouts and the more limited “dimouts,” frequently complaining about their ill effects on tourism and entertainment. Even at the height of the nation’s vulnerability in early 1942, German U-boats were able to sink many Allied ships off the East Coast, guided by the bright lights of seaside towns and cities, including Manhattan.<sup>53</sup>

Let us return to the home fronts under stress. In so many aspects, what distinguished British, Japanese, and German civil defense systems were not their regimes, but rather differences in the degree and timing of these stresses. Britain suffered heavy bombardment and the threat of a German invasion for only one year in 1940-1941. Toward the end of the war, V-1 flying bombs and V-2 rockets killed many Britons, but did not constitute an existential threat. The German home front, on the other hand, experienced increasingly severe bombing for five years. Japanese leaders, for their part, spent the war preparing their people for Allied

air attacks, which eventually occurred in the concentrated U.S. firebombing of the war's final five months. Even democratic Britain created a comprehensive top-down system of civil defense, employing levels of compulsion that its civilians had never before experienced and which resembled those in Japan and Germany. As the threat of German saturation

bombing diminished after 1941, Britain could afford to reduce the degree of regimentation over civilians while scaling back demands for civil defense workers. Nonetheless, had Britain been compelled to keep fighting for its survival as did Japan and Germany, we may well imagine the British home front fully converging to the Axis home fronts. Such was the transnational logic of total war.

## SPECIAL FEATURE

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## Notes

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<sup>2</sup> In Japanese history, in particular, studies of "fascism" have proliferated recently. E.g., Reto



Hofmann, *The Fascist Effect: Japan and Italy, 1915-1952* (Ithaca: Cornell University Press, 2015).

<sup>3</sup> See Sheldon Garon, “The Home Front and Food Insecurity in Wartime Japan: A Transnational Perspective,” in Hartmut Berghoff, Jan Logemann, and Felix Römer, eds., *The Consumer on the Home Front: Second World War Civilian Consumption in Comparative Perspective* (Oxford: Oxford University Press, 2017), 29-53.

<sup>4</sup> Richard Overy, *The Bombing War: Europe 1939-1945* (London: Allen Lane, 2013), 20-23; Giulio Douhet, *The Command of the Air*, trans. Dino Ferrari (1942; reprint Washington, DC: Office of Air Force History, 1983), 5-10, 20-23, 150, 182, 188, 195-96.

<sup>5</sup> Air Raid Precautions Committee, 10<sup>th</sup> meeting, 1 December 1924, 17<sup>th</sup> meeting, 30 March 1925, and “Air Staff Notes on Enemy Air Attack on Defended Zones in Great Britain,” A.R.P./5, 28 May 1924, Memoranda, Records of the Cabinet Office, Committee of Imperial Defense, CAB 46/1 and 46/3, The National Archives of the UK [hereafter TNA].

<sup>6</sup> Gennifer Weisenfeld, “Gas Mask Parade: Japan’s Anxious Modernism,” *Modernism/modernity* 21, no. 1 (January 2014): 179-99.

<sup>7</sup> Reichsminister der Innern, “Abschnitt VII: Brandschutz,” 19 October 1932, Luftschutz für die Zivilbevölkerung, vol. 5, March 1932- June 1933, R32816, IIF Luft, Politische Archiv, Foreign Office, Germany, Berlin [hereafter PA].

<sup>8</sup> Tsuchida Hiroshige, *Kindai Nihon no “Kokumin bōkū” taisei* (Tokyo: Kanda Gaigo Daigaku shuppankai, 2010), 181-82.

<sup>9</sup> Ministry of Home Security, *Air Raids: What You Must Know, What You Must Do*, rev. ed. (London: H.M. Stationery Office, 1941), 9.

<sup>10</sup> Reich Defense Ministry, “Referentenaufzeichnung des Reichswehrministeriums. Unterlagen über Reichsluftschutz für Reichskabinnettsitzung am 12.9.27”; handbill by Deutsche Luftschutz Verband, sent to the German Foreign Office, 29 October 1932, Luftschutz für die Zivilbevölkerung, vol. 1, April 1927-October 1928, R32812, and vol. 5, March 1932- June 1933, R32816, IIF Luft, PA.

<sup>11</sup> Juergen Paul Melzer, “Assisted Takeoff: Germany and the Ascent of Japan’s Aviation, 1910-1937” (Ph.D. dissertation, Princeton University, 2014), 48. Following East Asian practice, Japanese surnames precede given names in this essay.

<sup>12</sup> 6 September 1923, Ugaki Kazushige, *Ugaki Kazushige nikki*, vol. 3 (Tokyo: Misuzu shobō, 1971), 445-46; J. Charles Schencking, *The Great Kantō Earthquake and the Chimera of National Reconstruction in Japan* (New York: Columbia University Press, 2013), 76-77; Senda Tetsuo, *Bōkū enshūshi* (Tokyo: Bōkū enshūshi hensanjo, 1935), 5, 31.

<sup>13</sup> Reichswirtschaftsministerium Kanzlei [Ronde] to Ministerialrat Wagner [Ministry of Interior], “Der Luftschutzgedanke in Deutschland und im Ausland,” 29 April 1929, Luftschutz für die Zivilbevölkerung, vol. 2, October 1928-June 1929, R32813, IIF Luft; for a periodic Air Ministry “press report” on air raid defense developments in some 20 countries, see Reichsluftfahrtministerium, *Luftschutz-Pressebericht*, no. 17/37 (10 October 1937), in Gas- und Luftschutzfragen in Ausland, 1936-1938, R101487; foreigners’ visits to German facilities are reported in Gas- und Luftschutzfragen in Deutschland, vol. 1, 1937-1938, and vol. 2, 1938-1939, R 101483-84, Pol. I-Luft, PA.

<sup>14</sup> “Interim Report of Air Raids Precautions (Organisation) Sub-Committee,” November 1930, CAB 46/6, TNA.

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- <sup>18</sup> Deutlev J.K. Peukert, *Inside Nazi Germany: Conformity, Opposition, and Racism in Everyday Life*, trans. Richard Deveson (New Haven: Yale University Press, 1982), 73; also, Dietmar Süß, *Death from the Skies: How the British and Germans Survived Bombing in World War II*, trans. Lesley Sharpe and Jeremy Noakes (Oxford: Oxford University Press, 2014), 38-39.
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- <sup>21</sup> Gregory Kasza, *The Conscripted Society: Administered Mass Organizations* (New Haven: Yale University Press, 1995), 18.
- <sup>22</sup> “Air Raid Precautions in Germany and France,” Committee of Imperial Defence for its 316<sup>th</sup> meeting of 31 March 1938, HO 45/17627, TNA.
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- <sup>24</sup> Süß, *Death from the Skies*, 147-49.
- <sup>25</sup> Mizushima Asaho and Ōmae Osamu, *Kenshū bōkūho: Kūshūka de kinjirareta hinan* (Kyoto: Hōritsu bunkasha, 2014), 9-15, 38.
- <sup>26</sup> Süß, *Death from the Skies*, 149-54.
- <sup>27</sup> “Organisation, Training and Administration of the Fire Guard Service,” provisional draft, November 1941, in A.R.P., Fire Guards and Fire Prevention: The Organisation, Training and Administration of the Fire Guard Service, October 1941, HO 186/837; 1<sup>st</sup> meeting, 1 January 1941, War Cabinet, Civil Defence Committee, Minutes, 1941, CAB 73/4; Ministry of Home Security, Women: Compulsory Recruitment as Fire Guards, 1941-1942, HO 186/913, TNA; *The Times* (London), 31 January 1941, p. 2; 5 April 1941, p. 2; 8 August 1941, p. 2; 8 August 1942, p. 2.
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- <sup>32</sup> “British Fire-Fighters Shock Germany: ‘Churchill’s Cannon-Fodder,’” *The Times*, 20 January 1941, p. 2.
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- <sup>35</sup> Overy, *Bombing War*, 419, 440-41, 473-74.
- <sup>36</sup> Bōei Kenshūjo, *Hondo bōkū*, 65.
- <sup>37</sup> Nanba Sanjūshi, “Toshi shishu wa gimu da!” *Kokumin bōkū* 3, no. 10 (November 1941): 25.
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- <sup>39</sup> Karacas, “Tokyo from the Fire,” 101-2.
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- <sup>44</sup> Ministry of Home Security, Intelligence Branch, “Civil Defence in Germany,” 15 August 1941, p. 10, SECURITY Intelligence Reports on Civil Defence in Germany, HO 186/2649; “Report by the Police President and Local Air Protection Leader of Hamburg on the Large Scale Raids on Hamburg in July and August 1943: Experiences,” p. 26, Home Office, Civil Defence Department, Intelligence Branch Publication, 1946, AIR 20/7287, TNA.
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- <sup>49</sup> Irene B. Taeuber, *The Population of Japan* (Princeton: Princeton University Press, 1958), 129-46.
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- <sup>51</sup> Kawaguchi Tomoko, *Tatemono sokai to toshi bōkū* (Kyoto: Kyōto daigaku gakujutsu shuppankai, 2014), 111-17; Karacas, “Tokyo from the Fire,” 71; Hiroshima Peace Media Center, “Hiroshima: 70 Years After the A-bombing: Mobilized Students 3,” See Here

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<sup>52</sup> E.g., "Morale," Interview with Lt. Col. TSUNEYOSHI, Yoshitomo, Kempei-Tai (Military Police), 19 December 1945, pp. 1-2, USSBS Transcripts of Interrogations and Interrogation Reports of Japanese Industrial, Military, and Political Leaders, 1945-46, Entry 43, Records of the U.S. Strategic Bombing Survey, RG 243, National Archives and Records Administration, College Park, MD.

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