

Dear PEHF members,

The attached essay represents Chapter 3 of a project I embarked on in summer 2022, exploring the political/economic/cultural roles and significance of spare parts during World War II and the Cold War, 1940-1980s, contrasting policies and practices in capitalist and socialist states and among developing post-colonial nations. This research flows out of my recent monographs on socialist business practice in the People's Republic of China and Hungary (Palgrave, 2019, 2022, 2023), in which persistent shortages of spare parts undermined attempts to build socialism, both in agriculture and industry. Nothing planners could do resolved these crippling deficiencies. Under capitalism, spare parts were configured differently, but remained a source of frustration and conflict across the postwar decades. I attach a draft Table of Contents to give you a sense of the project's structure. Your comments and suggestions will be much appreciated.

All best, Phil Scranton

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War Horsepower: Managing Military Trucks under Capitalism and Communism, 1941-1955

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“The failure of the War Assets Administration to release the parts which would have permitted regular automobile dealers to handle this sale [of 2.5 ton Studebaker trucks] is an important mystery... It is all the more evident that coordination and intelligent planning are vitally needed when we note last week that final inventory records of surplus truck replacement parts have just been finished... totaling over \$174,000,000... Anyone who has had to deal with any of the five different War Surplus set-ups we have had during the last 16 months knows the incredible confusion and Alice in Blunderland atmosphere that surrounds all war surplus dealings.” Arthur Price, New York City wholesaler, before a U.S. Senate Special Committee Investigating the National Defense Program, 3 June 1946.¹

“A Soviet motor vehicle spare parts plant was observed on 26 June 1949 at 1-5 Ostendstrasse (Berlin). Production of this plant: engine blocks and gears for Studebaker vehicles and spare parts for [other] motor vehicles delivered to the SU by the USA under Lend-Lease... Monthly output: About 100 Studebaker engines... According to information obtained in January 1949, two hundred Soviet soldiers were employed as foremen and supervisors; the German personnel numbered about 2,500.” CIA Information Report, 1949²

On March 31, 1946, *The New York Times* reported that Gimbel Brothers had undertaken to sell “six hundred Studebaker two and a half ton trucks, originally made for the Army,” the first occasion in memory that “any department store” offered such goods. An accompanying display ad announced that they were brand new “1943 models with complete cab and chassis, but no body,” trucks familiar to soldiers as 6x6s – six-wheel drive beasts with 162” wheelbases weighing four tons empty.³ With the war concluded successfully for the Allies, American forces held vast stockpiles of armaments, equipment, and supplies (food, clothing, spare parts) suddenly

¹ U. S. Senate, Hearings, *Investigation of the National Defense Program*, Part 33, Washington, D.C.: GPO, 1946, 17152 (Proquest Congressional HRG-1946-ndp-0001). \$174 million in 1946 dollars would be just over \$5 billion in 2023 dollars.

² CIA Information Report, “Motor Vehicle Spare Parts Plant,” 18 August 1949 (CIA-RDP82-00457R003300220004-4). The plant also made parts for Dodge, Ford, and Chevrolet trucks.

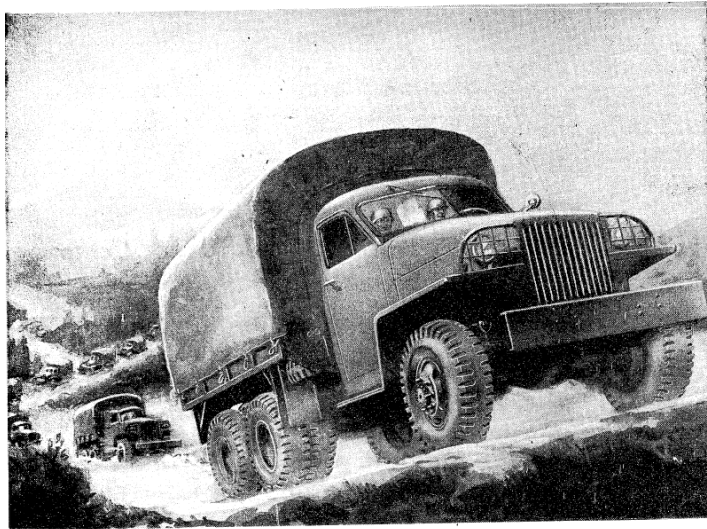
³ *New York Times*, 31 March 1946, 27. Buyers could outfit them with bodies to carry cargo, livestock, or liquids.

transformed from assets into burdens. As well, units' and depots' storage facilities held masses of used, borderline-obsolete aircraft, tanks, and trucks, few of which had potential for

4 Street & Broadway, New York 1, N. Y.

GIMBELS HAS 600 BRAND NEW STUDEBAKER 2½ TON HEAVY DUTY TRUCKS

MADE FOR THE
U. S. ARMY



This is the STUDEBAKER 2½ ton truck as used in actual combat conditions

Read the Specifications!

Extra Equipment, NO Extra Charge!

\$2900

TRUCK CAB AND CHASSIS

DELIVERED NEW YORK CITY

**'966.66 DOWN
UP TO 18 MONTHS TO PAY**
(Plus Service Charge)

**PROMPT DELIVERY—
IN ONE TO FIVE WEEKS**

"When can we buy a new TRUCK?" — all business has been asking. "Now — 600 of them!" says GIMBELS, "and a world famous mighty military Studebaker — brand new!" The stand-up stamina of these rugged Studebaker trucks is world famed. In almost every theatre of the war, from Africa to China, from England to India, from the Alcan Highway to the Russian front, many thousands of these mighty multiple-drive heavy duty Studebakers wrote brilliant new pages of transport history.

Gimbels makes new retail history by offering 600 of these new Studebakers on sale tomorrow morning at 9:30 A.M. These are **not salvage** — they are brand new — purchased from War Assets Corporation — just being assembled now, and driven to New York in a road-test-delivery of 796 miles. They will serve any number of purposes, as they have so faithfully proved during the war. Remember, this 2½ ton truck has a G.V.W. (Gross Vehicle Weight) of 12,000 lbs. — the heaviest ever for a 2½ ton truck.

Figure 1: Gimbel Brothers' Display Ad, New York Times, 31 March 1946, 48.

conversion to civilian use. Storage had become "a regular octopus"; keeping 8,000 tons of material on Army posts and another 27,000 tons "in commercial warehouses" cost the War Department a hefty \$415,000/month. *In toto*, an estimated \$30 billion in war surplus needed to

find either markets and users or scrapyards and recyclers.⁴ Overseas bases had comparably huge accumulations; a Senator who had visited sites in multiple nations noted that “the people who were holding the material were sick and disgusted with their jobs, and they said they hadn’t the room to store the stuff... and as a result good material is going to waste out in the open.”⁵

Gimbels’ 600 Studebaker 6x6s were but the tip of a worldwide iceberg.

Meanwhile, the Soviet Union had celebrated Victory Day in Moscow with a memorable



⁴ WWII-era prices should be multiplied by 17 to assess them in 2023 dollars, Thus the storage charge would run \$7 million per month and the \$30 billion war surplus for disposal would sum to roughly \$510 billion in current dollars. See <https://www.dollartimes.com/inflation/inflation.php?amount=1&year=1944> for a calculator.

⁵ Senate Hearings, *Investigation*, Part 33, 16852, 16913-14

Figure 2. Studebaker US6's, modified for Katyusha rocket launching, in Soviet Victory Day Parade, Red Square , Moscow, 24 June 1945 (Courtesy of Wikimedia Commons, by way of mil.ru, минобороны.рф).

parade featuring rank after rank of “Studebakers,” as the sturdy American trucks had become known. In addition to cargo transport, 20,000 of them had carried Katyusha rocket batteries, reportedly terrifying German troops.⁶ Overall, the US shipped 443,000 trucks, 3,000 trailers and 34,000 motorcycles to the USSR (1941-45) under the Lend-Lease Program, valued at roughly \$1.1 billion, a fifth of all transfers to the Soviets. Of these 201,000 were “deuce and a halves,” the 2.5 ton cargo workhorses for combat support and troop movement, 80 percent being Studebaker US6s, in both six-wheel and four-wheel drive versions.⁷ At the war’s end, President Truman cancelled pending Russian shipments, “a serious diplomatic blunder,”⁸ one of whose consequences was stranding 600 US6s in Terre Haute, IN, to be sold in New York rather than delivered to Moscow. During wartime, the USSR had mobilized over 160,000 “Studebakers,” while warehousing tons of crated spare parts. Given their stellar track record, the Soviets determined to preserve the surviving US6s for postwar military and economic tasks. With the Cold War warming, no further parts would be forthcoming. As available replacement stocks could stretch only so far, repurposing a Berlin auto factory for copying and reproducing US6 components made conservative sense.

⁶ <https://ik-ptz.ru/en/exam-tests---2014-for-physics/obem-postavok-po-lend-lizu-lend-liz-istoriya-amerikanskoi-voennoi.html> (accessed 2 October 2023), 4. They were known as “Stalin’s Organs” for the shrieking noises the rockets emitted on launch.

⁷ Office of the Chief of Military History, *Statistics: Lend-Lease*, 15 December 1952, CARL Digital Archives, Ft. Leavenworth, KS (N-16436.32-3), 14, 15, 25-27.

⁸ George C. Herring, Jr., “Lend-Lease to Russia and the Origins of the Cold War, 1944-1945,” *Journal of American History* 56(1969): 93-114 (Quote from 108.); Senate Hearings, *Investigation*, Part 33, 17132.

What these opening vignettes suggest is that American capitalism's technical efficiency in generating war materiel also facilitated systematic waste at the war's end (\$174 million in surplus truck parts alone), whereas Communist Russia's contemporary poverty-amid-destruction conditioned waves of adaptation and improvisation that undergirded a Stalinist sustainability in trucking through the mid-1950s. The rest of this essay will be devoted both to reviewing wartime military truck management and to exploring that contrast and its implications.

Context: Trucks and Tactics

"This is not a war of ammunition, tanks, guns and trucks alone. It is as much a war of replenishing spare parts to keep them in combat as it is a war of major equipment... The gasket that leaks, the fan belt that breaks, the nut that is lost... will delay GI Joe on the road to Berlin just as much as if he didn't have a vehicle in which to start." Ernie Pyle, war correspondent⁹

"The Soviet Union began World War II critically short of rail and motor transport. Although they were producing essential munitions and supplies, they suffered severe distribution problems... By 1943, however, shipments of locomotives, rail cars and thousands of Studebaker trucks from the United States began to turn the logistical tide. As the resources became available the Soviets mechanized not only their maneuver forces, but their sustainment effort as well. This reorganization 'enabled their mobile forces to travel at least one hundred miles without replenishment.' These accompanying supply columns permitted the deep attacks that shattered and encircled the retreating Germans." James Castle, Major, USQMC¹⁰

Anglo-American and Soviet military forces faced a common challenge in 1942 – displacing German and Italian armies from territory seized in the war's first phases, including much of Western Europe and vast swathes of the western USSR, after June 1941. However, British and U.S. invasions of North Africa rolled forward by funneling thousands of new tanks and trucks through seagoing and land-based supply corridors. Meanwhile the Russians had

⁹ Quoted in Ordnance Department, "Wheels of Victory: The Story of Industry-Ordnance Accomplishments in the Tank and Automotive Field," November 1945, 12.

¹⁰ Major James Castle, "The Flying Column: A Concept for Tactical Nonlinear Sustainment," School of Advanced Military Studies, Ft. Leavenworth, KS, 1990, 15-16.

absorbed crippling losses of troops, resources, transport facilities, and vehicles (combat and non-combat) in months of retreat and slaughter. The abundance and profusion of American materiel would contrast sharply with Soviet austerity and shortages. US logistics specialists soon struggled with bottlenecks in packing, shipping and delivering millions of tons of food, fuel, equipment, guns and spare parts across multiple oceans. By contrast, Soviet generals struggled with allocating inadequate resources and insufficient weaponry across immense landscapes. Thus the Red Army crafted a pragmatic approach, featuring improvisation, deception and surprise, “with its soldiers accessing the resources of the landscape through which they marched, carrying the bare minimum of weapons, equipment and stores and tailoring their operations to the possible.”¹¹

Early in 1943, before U.S. Lend-Lease flows soared, Major Kolosov, a Soviet anti-tank regimental commander in the Ukraine, sketched in his diary the Red Army’s perilous situation:

February 20: We arrived here from Khar’kov with very little fighting. However, we are in no condition to go farther. Out of twenty trucks we have only three left, and of these only one can move on its own power and carry a load. The staff of the regiment doesn’t know where the [AT] batteries are. All the trucks of the 3rd Battery are out of commission... The 4th Battery is also without trucks but they have taken oxen from the inhabitants and thus organized transport. Of course, we are not suffering alone. The brigade headquarters hasn’t a single truck; the staff officers are going around the villages and taking horses...¹²

¹¹ H.G.W. Davie, “The Logistics of Combined Operations – The Rear: High Mobility Through Limited Means,” *Journal of Slavic Military Studies* 33(2020): 580-607, quote from 607. David Glantz, the preeminent US historian of Soviet warfighting, noted that the Red Army undertook “strategic deception on a scale hitherto unknown.” (Lt. Col. David Glantz, “Conclusions,” [Second] Art of War Symposium, Transcript of Proceedings, Army War College, August 1985, 549.)

¹² CIA Information Report, “The Diary of a Soviet Officer, June 1941 to May 1945,” 4 December 1950 (CIA-RDP80-00926A002800020001-0), 30. This is a remarkably vivid and harsh document, 151 pages in the translated transcript, which appears not to have been cited before.

Two months later, with Studebaker US6s, Dodge 6x4s and Willys Jeeps arriving, attitudes and prospects shifted dramatically:

April 20: There is a feeling of celebration... because of the arrival of American Studebaker and Willys. I am learning to drive a Willys. That is not an automobile but a mechanical marvel! With it you can keep up with any tank. In fact off the roads, it can beat a tank, especially on steep slopes. Now there will be three artillery regiments in the brigade instead of one. All of them have received American equipment for traction.

July 5: I saw great excitement in Army headquarters. It seems that the Germans have gone over to the offensive. I hurry to my regiment. Will I find it intact? My one hope is the Studebakers; thanks to them we can maneuver our guns and men.

January 20, '44: We have received 27 fine new Dodges and 9 cripples [overhauled Soviet trucks]. One cripple didn't even get to the regiment; its clutch was burnt out. Three of the cripples were not suitable for towing the guns; they were only two-wheel drive. Nevertheless, we are happy, especially the brigade CO. He called in one at a time the drivers... and personally read [them] the instructions on the care of the foreign trucks.

February 1: We have suffered the greatest loss of the whole war! We have lost 17 Dodges. I say nothing about the losses of guns and men; these latter are less terrible than the loss of the foreign trucks.¹³

Without trucks to tow its Panzer destroyers, Kosolov's anti-tank regiment was useless, immobile.

With them, he could maneuver to ambush German armor, quickly shift hundreds of infantrymen toward advantageous positions, and reach back to depots to refresh ammunition, fuel and food supplies.¹⁴ Largely unheralded, abused by Americans and cherished by the Russians, "millions of

¹³ Ibid., 38, 43, 62. Soviet officers' indifference to loss of life has been widely noted, but here appears in high relief when contrasted, even hyperbolically, with destroyed trucks.

¹⁴ H. G. W. Davie, "Logistics of the Combined Arms Army – Motor Transport," *Journal of Slavic Military Studies* 31(2018): 474-501. Within the rear echelon, two-wheel drive Fords regularly transported goods and soldiers, but for reaching the front ("the last 25 km") four and six-wheel drive trucks were preferred. US6s could carry four metric tons of cargo (or people) on roads, but under three tons going cross-country. (479-80)

hard-working military trucks... bore the brunt of the task of supply distribution in the field” worldwide.¹⁵

As Nazi forces drove deep into the USSR, Soviet military strategy shifted rapidly from the offensive-centered operations advocated during the 1930s toward integrated defensive maneuvers designed to preserve the nation’s agro-industrial heartlands from invasion. Germany’s rapid advances in summer 1941 eradicated earlier doctrines, compelling disciplined implementation of defensive principles. Those first months were “marked by the near destruction of the Soviet prewar army; severe alterations of the Soviet force structure to accommodate the demands of war; and serious testing of Soviet prewar operational concepts, which had proven difficult, if not impossible to implement.”¹⁶ The key to stabilizing battle lines, in advance of counterattacks, proved to be “strict centralization of command and control at the highest level.” Stalin and his Supreme High Command (STAVKA) assumed this role, providing the necessary *coordination* of field operations and strategic reserves which “compensated for a host of obvious Soviet weaknesses.”¹⁷

Crucial to successful resistance and recovery was mobilizing and maintaining the Red Army’s “Rear” – a sprawling network of hierarchically-organized transport and supply units sustaining strategic plan execution. Provisioning Soviet fronts depended both on vehicular and animal power, unlike America’s wholly-motorized transport corps. Each Army included three to

¹⁵ Harry C. Thompson and Lida Mayo, *The Ordnance Department: Procurement and Supply*, Washington, D.C.: Department of the Army, 1960, 265.

¹⁶ Col. David M. Glantz, “The Nature and Contemporary Implications of Soviet Military Strategy in the Second World War,” paper presented at the US Army War College Symposium on Strategy, February 1990, 7.

¹⁷ *Ibid.*, 7, 9-10.

five companies of “185 horse-drawn wagons” for hauling troops and materiel within and among rear bases and depots. In summer 1943, for example, the 54,000-man 7th Guards Army rostered nearly 6,000 horses, each budgeted for six kg of oats (18 metric tons) *daily*, together with 2,900 vehicles, chiefly trucks. The 7th Guards had authorization for over 4,500 vehicles, but its fleet actually held under 3,000, just 70 percent of which were “serviceable.” When deployments commenced for attacks, all operable trucks hauled supplies toward the front, leaving animal power to handle rear echelon tasks, including moving support facilities forward as Soviet forces advanced. “The constraints imposed... by horse-drawn unit transport, shortage of motor transport and reliance on railways to provide operational mobility” (1941-43) receded in the war’s final phase,¹⁸ once increased Lend-Lease transport and extensive programs for improving Russia’s dreadful roads eased supply delays. That the USSR’s “relatively undeveloped” rail network was disrupted or destroyed in the west “completely altered all the former notions about motor transport as a means of carrying freight.” Thus in September 1941 the State Committee of Defense created a military road-building administration with 30+ units, employing ca. 25,000 laborers whose service “was placed on the same footing as service in the military.” Each unit controlled about 40 trucks by 1944, both Soviet ZILs and Studebakers, building and maintaining thousands of kilometers of dirt, gravel, cinder, log and asphalt tracks while improvising equipment for snow removal.¹⁹ As H. G. W. Davie concluded: “Ultimately, the three tyrannies

¹⁸ Davie, “The Logistics of Combined Operations – The Rear,” 587, 589, 596, 597. It should be remembered, however, that “the steady Soviet advance westward which accelerated in 1944 placed a huge strain on the logistical infrastructure of the Red Army and on the Soviet economic base as well... In fact it remained the principal controlling factor on how far that advance could go.” Glantz, “Conclusions,” [Second] Art of War Symposium, 559. For vivid detail on Rear operations and the division of labor among trucks and horses, see CIA Information Report, “Transportation, Supply and Repair Activities of the Soviet Army under Combat Conditions,” 27 May 1954 (CIA-RDP82-00047R000400450007-0).

¹⁹ CIA Information Report, “The Rapidity and Methods of Military Road Construction in the Soviet Army During the War Period, 1941-1945,” 15 February 1954 (CIA-RDP80-00809A000500390199-7). Most Soviet-made trucks were ZILs, assembled at a massive plant in Moscow, some 44 buildings enclosed by an 11 km wall four meters high.

of distance, demand and weight were overcome [by a] tightly-controlled system, successfully mixing horse-drawn, motor and rail transport.”²⁰

Trucks and Tactics: The American Way

Fabricating military trucks was a key function of Stalinist central planning, whereas private enterprise long had undergirded the US Army’s transport system. From the 1910s through the late 1930s, its Quartermaster Corps purchased commercial trucks and autos from the Big Three (GM, Ford, Chrysler) and smaller specialists like Reo, Mack, Yellow, White, or International Harvester. Procurement regulations “forbade the QMC to issue detailed engineering specifications for trucks,” confining tenders to “general matters such as carrying capacity, speed or weight.” Contracts went to the “lowest responsible bidder”; over time multiple firms each won contracts and thus the Army regularly “add[ed] new makes and models to its heterogeneous collection of trucks left over from World War I.” Hence maintenance and spare parts management became “continuously more complicated.” Battling continued for decades between watchdogs and systematizers. The former sought to use the market to prevent collusion, fraud, and price-gouging by suppliers; buying “off the shelf” vehicles was also thrifty because such contracts didn’t demand “costly, time-consuming retooling... to meet special military requirements.” The latter argued that standardization would assure “ease of maintenance in the field,” particularly in a war emergency, and that contracts should be negotiated or allocated to firms best situated to achieve mass production economies. The market advocates prevailed; but by 1935, the consequent “polyglot fleet [had] 360 models of vehicles... involv[ing] nearly a

See CIA Information Report, “ZIL Automobile Plant in Moscow,” 10 April 1959, 2 (CIA-RDP80T00246A047900510001-4).

²⁰ Davie, “The Logistics of Combined Operations – The Rear,” 607.

million items of spare parts which neither the War Department nor any other authority can control.”²¹ Relying on market relations saved funds and did obstruct favoritism, but the downstream implications were dire. Vehicles far too often became “deadlined” (inoperable for 30+ days) due to failures to supply (or identify²²) components needing replacement.

Once combat in Europe commenced, the US Army committed three planning errors that would have embarrassed any Soviet commissar. First the top brass failed to anticipate the requirement for large-scale manufacturing of “special components needed for tactical vehicles.” Second, they grossly underestimated the demand for heavy trucks (4 and 7.5 tonners), essential for long-distance supply movements – for pulling tankers loaded with fuel or towing heavy artillery. And third, they did not prepare for concurrent production of trucks and spare parts, giving priority to shipping “complete units” – a political decision which set up a maintenance firestorm. On the first issue, the bar against the military creating engineering specifications fell once administrators recognized that trucks for war must have “all-wheel drive” so as to cross swamps, deserts, or mud flats and traverse roads barely worth the name. Such vehicles “required three important components not used to any great extent in commercial trucks – constant velocity joints, transfer cases, and bogie rear axles – and they used two to three times as many driving axles.” US producers had quite limited capacity for all three in 1939. Hence the War Department soon allocated millions for machinery and tools at Ford, Dodge, and Chevrolet, plus Timken-

²¹ *Ordnance: Procurement and Supply*, 267-69. Reportedly, a Reichswehr officer studied the standardization program in 1932 and promoted its adoption to the incoming Nazi regime. Thus “German industry in the 1930s was permitted to produce only those types of trucks that were approved for military use.” (269)

²² Identification was a major hurdle, because vehicle manufacturers individually created ID codes for each part, supposedly stamped into metal or imprinted in rubber. Identical parts from different firms had different numbers, not shared IDs, and thus mechanics could not know whether a substitution could be made. In wartime, standardization of this information (nomenclature) proved as much a challenge as standardization of parts across firms/models.

Detroit and Fuller (skilled axle-builders), boosting output capability a hundredfold by mid-1942.²³

Next, although QMC officers judged that in Europe “the Army might find itself operating a long-distance trucking service over improved roads,” none of the “using” departments agreed, remaining uninterested “in such trucks in 1940-41... This failure... later proved to be one of the most costly mistakes of the prewar and early war years.” Once the error became apparent, targets soared for “heavy-heavy” trucks (over three tons), but production could not be accelerated, given commitments in place for materials and machinery dedicated to “light-heavies” (the backbone 2.5 ton vehicles). “Of the many reasons for the lag in production, most were beyond the control of the QMC. Requirements kept rising with every new estimate of Army needs; priorities for trucks remained low [compared with weapons]; productive capacity for certain items was limited; and labor unrest slowed production in some plants.” By late 1945, US builders had shipped 812,000 “light-heavies” but only 154,000 “heavy-heavies.” One grinding consequence was that thousands of European Theater GMC CCKW 2.5 tonners, known as “Jimmies,” had to operate 24/7 in supplying the eastward thrusts of George Patton’s 3rd Army (the famed Red Ball Express). Not as rugged as had been expected, they wore out at an alarming rate. Neither French nor Belgian railways could offer an alternative transport mode, an unanticipated consequence of resolute Army Air Forces’ bombing to hinder German withdrawals.²⁴

²³ *Ordnance: Procurement and Supply*, 270, 273-74; https://en.wikipedia.org/wiki/Constant-velocity_joint; https://en.wikipedia.org/wiki/Transfer_case; <https://en.wikipedia.org/wiki/Bogie> (all accessed 9 October 2023). As *O:P&S* explained: “The constant velocity joint was a device that permitted use of a driving and steering front axle. Intricate in design, its manufacture called for many complicated machining operations and the use of large forgings made to exact specifications. In 1939, only two firms... produced [them] and both had small capacity.” (273)

²⁴ https://en.wikipedia.org/wiki/GMC_CCKW_2%C2%BD-ton_6%C3%976_truck (accessed 10 October 2023); *Ordnance: Procurement and Supply*, 273-75, 279-82, 289-96.

Broken-down Jimmies on the road to Berlin exemplified the third planning failure – the perennial inadequacy of spare parts distribution. Early in 1944, Ordnance Lt. General Levin Campbell grumbled: “It is the rarest thing I ever hear that there is a shortage of machine gun parts or artillery parts. On the other hand, there is hardly a day, hardly an hour, that I don’t hear about a shortage of automotive parts.” Why? Operationally, “trucks were called upon to perform their strenuous missions day after day, often working around the clock, and in all kinds of weather. While rifles, guns, and howitzers were fired only for short periods in training or in combat, motor vehicles were always in demand.” Organizationally, the QMC had been slow to shift from peacetime routines (buying commercial parts from wholesalers) to appreciating the scale and rigors of truck operations in war. Nor did the QMC duplicate Ordnance practices, which required that a year’s worth of anticipated spares be shipped alongside completed tanks or weapons. QMC policies led to chaos.

All during the years before World War II, the QMC made no provision for purchasing spare parts along with vehicles... Its financial resources [were] too slender to purchase stock of about half a million different parts. [Next,] the QMC did not undertake systematic procurement of first year spares concurrently with procurement of vehicles until the Lend-Lease Act came into the picture in 1941 and did not get the system into good working order until after Pearl Harbor... Meanwhile [its] Motor Transport Service had procured some 300,000 vehicles without spares, except for small depot stocks, and friendly nations had procured for their own use another 300,000 – also without first year spares.²⁵

Such trucks and cars put to work at home or abroad were ticking bombs, awaiting the failure of just one crucial component. “[T]he whole vehicle may be immobilized for lack of that one part, whether it be a simple item like a cracked spark plug or something more intricate like a burned-out bearing.” Worse, Ordnance contracts mandating provision of spares with new

²⁵ *Ordnance: Procurement and Supply*, 301-02, 307-08.

weapons were not being fulfilled. In January 1941, Field Service General John Crain reported that arsenals (and contractors), “because of the pressure to meet production goals, [were] giving priority to complete items and neglecting parts.” Some orders had languished for over a year. As a result, “large numbers of tanks were deadlined for lack of parts.” After Pearl Harbor, the pressure for mass delivery of *every* major item became overwhelming and “the task of bringing parts production abreast of vehicle production became even more difficult.” In early 1942, “high-ranking officials kept almost daily tab on the output of tanks, guns and ammunition and constantly exhorted Ordnance to speed production.”²⁶ Deficiencies in spares thus propagated across models and nations, generating a persistent pattern of cannibalization (or scavenging, salvage, reclamation) by military mechanics desperate for replacements.

Their efforts were usually handled through “regular salvage procedures” involving QMC inspectors assessing a “pretty well beaten up” truck as to whether it was worth repairing or “ready for the boneyard.” If the latter, stripping reusable or fixable components commenced. Informal and illegal appropriations also multiplied, replicating soldiers’ World War I reactions to parts famines – stealing from other units who left trucks or jeeps unattended or unguarded, in rear and combat zones alike.²⁷ A New Guinea motor pool private reported (1944):

One of the things that causes wry grins here is the order [from the brass] about leaving keys in all vehicles. The affinity between stray soldiers and parked jeeps is amazing. Leave your key in, as per order, and the next day your jeep, with altered [IDs] adorns a motor pool thirty miles away. I know of one that ran out of gas and was left without key, rotor, distributor housing and coil wire – still it was gone two hours later!

²⁶ Ibid., 300, 304-05.

²⁷ Major A. A. Kleiber, “Reclamation!” *Army Motors* 2(1941): 254-55. For WWI, see “The Old Timer’s War Experiences,” *Army Motors* 1(1940): 182-86. Kleiber argued that it was increasingly important to reclaim and rebuild parts: “Any squarehead can be a parts changer, but it takes a wise guy to fix a part so that it can be used a second and a third time.” (255)

Parts shortages, which continued through 1944, despite tremendous (and at last prioritized) catch-up efforts, compelled improvisation in the field. The New Guinea report continued:

Hereabouts, maintenance is a very rough and ready sort of thing. When a [jeep] needs a new windshield, you chisel some Plexiglas from Technical Supply (maybe) and make one. Tops generally began life as tents or tarps. Not to mention the vast number of jeeps with neither top nor windshield... We have a miscellaneous collection of rolling stock... and we have had to adapt most every type of part for some use for which it was not intended. Whenever a device is needed (such as power-driven winches on bomb service trucks), we simply make it. The only question the inspector asks is, "Does it work?"²⁸

Motor pool officer Lt. Harry Stumpf wrote *Army Motors* about similarly-creative salvaging in North Africa, based on appropriating parts from downed Nazi aircraft:

Whether you know it or not, spark plugs are scarce on this side of the pond, but our mechanics have just tapped a new source – the motors of wrecked ME-109s. The plugs are the exact size and the spark gap is the same. We've installed quite a few and no trouble so far... Needless to state, the trucks we put them in are 6x6 GMCs. They work like charms here – the best all around trucks in the world.²⁹

At the 1944 overseas supply peak, Ordnance shipped "spare parts to the using arms and lend-lease countries [at] more than one hundred million pieces per month." (!!) Even so, shortages persisted, as needed parts arrived in the wrong places at wrong times, were damaged or lost in transit, or were simply unavailable, having been manufactured in insufficient quantities.³⁰

Two additional problems hampered American military trucking, one administrative – a US Army structural reorganization well into the war – and the other human – undertrained,

²⁸ Pfc. H.R. M, "Letter From New Guinea," *Army Motors* 5(1944): 129-30.

²⁹ Lt. Harry Stumpf to Editor, "Contributions," *Army Motors* 4(1943):244.

³⁰ *Ordnance: Procurement and Supply*, 301. Ordnance General Walter Boatwright confirmed this scale of operations at a fall 1944 Congressional hearing: "On parts we are doing a business of 100,000,000 parts supplied monthly on 2,000,000 parts orders handled each month." See U. S. Congress, "Hearing before a Sub-Committee of the Special Committee to Investigate the National Defense Program," Detroit, 13 November 1944, 10 (Proquest Congressional, HRG-1944-NDP-0033).

reckless truck drivers. For reasons long disputed, the War Department shifted the Army's Motor Transport Service from QMC to Ordnance in August 1942. This reallocated "a staggering maintenance task," as more than a million vehicles, comprised of "thirty-seven different makes of cars and trucks and over three hundred different models," shifted to new managers. The number of individual items flowing through supply lines ballooned to 330,000. Though many experienced QMC personnel followed their vehicles into Ordnance, their stewardship was suspect. A 1941 report to the Chief of Staff had revealed the "bad condition" of both trucks and shops. A spot check in five divisions

showed that 47 percent of the vehicles were improperly lubricated, 50 percent had distributors loose or dirty and points badly burned, 49 percent had loose steering gear housings, 53 percent had underinflated tires, 23 percent had improper wheel alignment, 36 percent had dry batteries, and 37 percent had tires that were badly worn, cupped and improperly mounted.

Few QMC officers had had "adequate mechanical training or background in automotive shop work and parts supply"; after all the Corps' principal jobs were to secure and deliver food, clothing, and non-combat materiel. Ordnance rapidly instituted remedial measures for shop work, including promotion of preventive maintenance.³¹

However, the problem of drivers treating trucks badly eluded solution. "Driver maintenance was universally bad." In 1943, an Inspector General's survey group

reported from North Africa that Ordnance officers were unanimous in declaring that basically the American soldier was extremely wasteful and undisciplined where maintenance was concerned. If an American driver had trouble with his carburetor he immediately demanded a new one, even though the only trouble was the malfunction of

³¹ "The Ordnance Task and Its Management, 1 July 1940-31 August 1945," History Section, Special Planning Branch, Office of the Chief of Ordnance, 31 December 1945, 68 (CARL Digital Library, N-16718.1); *Ordnance: Procurement and Supply*, 450-51.

one small part. Vehicles left along the road unguarded were cannibalized by almost every passer-by.

Direct abuse compounded poor maintenance. Although American soldiers seemed to possess “more mechanical aptitude than the soldiers of any other army,” on the road they were stunningly irresponsible. “Overloaded vehicles were driven recklessly at excessive speeds over good roads and bad, with the result that tires, brakes, motors, clutches and transmissions wore out at an alarming rate... Many soldier-drivers appeared to consider their position behind the wheel as an opportunity to demonstrate both their courage and their powers of destruction.”³² A Bill Mauldin cartoon, from the service’s official history, aptly captured the wreckage that ensued, viewed from an Ordnance salvage yard behind the front.

³² *Ordnance: Procurement and Supply*, 454-55.



Figure 3: Bill Mauldin cartoon, *Stars and Stripes* (Mediterranean Edition), November 1, 1944.

Capitalist Trucks for Communist Troops

In the two war years preceding Pearl Harbor, the US Army undertook an unprecedented campaign to vastly increase its motor vehicle fleets. This surge brought the advent of the Bantam Car Company's $\frac{1}{4}$ ton, 4x4 General Purpose truck, "better known as the jeep" [i.e., GP]. After testing and design changes, Ordnance entrusted this "purely military vehicle" to

Willys-Overland and Ford for mass production.³³ In parallel, the QMC expanded cargo-carrying capabilities by contracting with Yellow Truck and Coach, a GM subsidiary, for several thousand heavy-duty 2.5 ton 6x6s, which became “the most widely used truck[s] in the Army.” Demand soared; by late 1941 Yellow could not keep up, so the Corps “turned to the Studebaker Company to augment the supply.” The first plan was simply to fully duplicate what became known as the GMC CCKW, but copying the GM engine meant delays for tool acquisition and installation. Hence the Army authorized Studebaker to adopt a six-cylinder JDX power plant already being manufactured by Hercules Motors (Canton, OH). Choosing this “conservative... and highly-reliable engine” was fortuitous. Given its low compression ratio, “it could use 68 octane gasoline,” which turned out to be perfect for Soviet conditions, where low octane gas was the principal grade available. (Careful Soviet commentators noted that the Studers “were less sensitive to the quality of gasoline.”)³⁴ GMC engines demanded better fuel, usually 80 octane or above. “No serious difficulties developed on this score because the Studebakers were shipped to lend-lease countries – chiefly to the Soviet Union... and the Yellow models were issued to the US Army.”³⁵ At least initially, US6s cost appreciably more than GMCs, averaging \$2750-\$3000

³³ Ibid., 276-79. All three firms had created prototypes for this vehicle; Bantam’s was judged the best, but this small western Pennsylvania firm had nowhere near the capacity to build them by the hundreds of thousands, so was “frozen out” of the main production contracts.

³⁴ https://en.wikipedia.org/wiki/Studebaker_US6_2%C2%BD-ton_6%C3%976_truck (accessed 13 September 2023); <https://ik-ptz.ru/en/exam-tests---2014-for-physics/obem-postavok-po-lend-lizu-lend-liz-istoriya-amerikanskoi-voennoi.html> (accessed 2 October 2023). Responding to a recent online query, oil industry veteran Jim van Train confirmed that: “The Hercules engine was a low-compression 320 cubic inch engine producing only 86 horsepower. It was designed to burn 72 octane gasoline, a very low grade that isn’t sold any more. A very low octane design requirement helps an engine tolerate substandard fuels.” See <https://www.quora.com/How-did-the-Hercules-engine-in-WWII-Studebaker-trucks-work-to-be-able-to-burn-either-gasoline-or-diesel-fuel> (accessed 12 October 2023).

³⁵ *Ordnance: Procurement and Supply*, 275. This is not wholly accurate as the Army retained several thousand US6s for use in very demanding tasks, such as constructing the Alcan highway from northwest British Columbia through wilderness to Delta Junction, Alaska, some 1700 tough miles. See David Doyle, *The Studebaker US6, Including Reo Production*, Branchville, NJ: Portrayal Press, 2021, 362-395.

(without vs. with front-end winch) for Studebakers vs. \$2200-\$2400 (respectively) for CCKWs in December 1941. With series production, expenses might have fallen, but materials cost inflation would undermine such gains.³⁶

As each US6 came off Studebaker's South Bend, IN assembly line, it underwent inspections and tests, then mechanics disassembled it for overseas shipment. Three large wooden crates held the makings of two trucks: a pair of engine-mounted chassis, plus components in one box, two cabs and fenders in a second, with axles, tires and accessories in the third. This maneuver saved cargo space, a vital asset in massive goods transit; but just as important, it reduced the likelihood of damage to vehicles hardly designed to be tossed about in ocean swells.³⁷ Thus trucks reaching their destinations did not just drive down ramps. Instead, getting US6s into Russian hands was a multiphase process – packing crates, hauling them to embarkation ports, loading vessels, traversing the Atlantic or Pacific to receiving sites, disgorging thousands of crates (keeping sets together, of course), then further transit to factories for unpacking, assembly, testing and delivery.³⁸ For 160,000 US6s, 240,000 crates had to complete this sequence.

Procurement of spare parts proceeded in tandem. Accompanying each vehicle the Army acquired were sets of parts to meet expected maintenance needs for the first year's use ("concurrent parts"). Within six months, manufacturers agreed to supply another, usually smaller

³⁶ Doyle, *Studebaker US6*, 37-38. It should be noted that Reo Motors filled an overflow contract for 20,000 US6s in 1944, using Studebaker/GMC designs. (Ibid., Ch. 11.) To conserve steel, cargo bodies for Chevrolet and GMC trucks were constructed from wood, as of 1 September 1942 (*Army Motors* 3(1942): 162-63).

³⁷ Ibid., 63, 243-45, 249, 252. Packing photos from Reo document the complexity of arranging and securing hundreds of parts in each container, as they could not be allowed to rattle around during shipment.

³⁸T. H. Vail Motter, *The Persian Corridor and Aid to Russia*, Washington, D.C.: Center of Military History, 1951, 277.

set tailored to likely failures during a second year. For models long in fleet operations, a plausible list could be compiled from motor pool and depot records, but what to do with novel jeeps or “deuce-and-a-halves” that lacked such histories? Selecting types and quantities of parts could only be managed through estimates, conjectures, analogies, and projections – what engineers called “educated guesswork.” Mismatches between estimates and performance were inevitable. As well, Army testing and feedback from use triggered design changes, even as vehicles were being produced and prepped for deployment. Hence, completing a definitive parts list proved elusive and frustrating. All too often, a redesigned part was not a workable replacement for an earlier version, necessitating remachining at mobile field stations. General Campbell wrote Major General Everett Hughes (13 December 1943), concerning a heavy tractor being introduced: “It is a new design and, like all designs, when it reaches production and use in the field the bugs will begin to appear. Then we will make a series of changes to correct the bugs; and in the meantime our spare parts will not be applicable to the latest tractor, and then our troubles, as usual, will start.”³⁹

To save space, Ordnance assembled concurrent and second-year sets for export in “100-unit packs, that is, packs with enough parts in each to maintain one hundred vehicles for a year of wartime service.” These supplies added thousands of crates to cargoes, though not necessarily on the same vessels that carried US6s, Jimmies and jeeps. Despite soaring shipping volumes, in 1943 parts problems became acute, both at the front and in supply bases. Writing to his Ordnance superiors, Col. Ward Becker summarized frustrations many shared:

Our chief headache continues to be shortage of fast moving maintenance parts, especially those for wheeled vehicles... We have rear axles for GMC trucks “running out of our

³⁹ *Ordnance: Procurement and Supply*, 310, 464.

ears,” but zero stocks of point sets, main bearing kits, spark plugs, oil filters, etc... In many units from 50-75% of the vehicles require repairs which cannot be made due to lack of spare parts. Please pardon my lengthy cry on your shoulder. If you could see our pathetic array of deadlined trucks... you would feel my official tears are justified.⁴⁰

Submarine attacks also threatened parts supply, a point brought home on September 21, 1943 when a U-boat torpedoed the SS *William W. Gherard* during the invasion of southern Italy.

Beached and burning, it had carried 220 tons of replacement parts, including:

16 vans and other vehicles loaded with weapons and spare parts. Also aboard were the supplies of three other companies—all the organic equipment of the 529th Heavy Maintenance Company (Tank), as well as 30 days' supply of replacement vehicles and spare parts;... and 183 boxes of bulk-stored spare parts destined for the 46th Medium Maintenance Company.

Field officers promptly ordered a full complement of replacements, but ten weeks would elapse before they could reach US forces.⁴¹

Seagoing vessels supplying the Soviets across the Atlantic experienced greater terrors. One sailor was lost in the *Gherard* sinking, but whole crews died trying to make the Arctic run, a 4500 mile journey from New York (by way of Iceland or Britain) around Nazi-occupied Norway to the principal Russian landing sites, Murmansk and Archangel. German submarines and aircraft assaulted convoys, at times with staggering effect, in the worst case sinking 24 of 33 ships. In April-June 1942, “of 522,000 tons [of cargo] which left US ports, only 300,000 tons got through to Murmansk.” German forces destroyed one-fifth of all materiel 41 Arctic convoys carried (1941-45).⁴²

⁴⁰ Ibid., 315. Becker’s letter was dated 1 August 1943.

⁴¹ Ibid., 308;; Lida Mayo, *The Ordnance Department: On Beachhead and Battlefield*, Washington, D.C.: Center of Military History, 1968, 181-82.

⁴² Motter, *Persian Corridor*, 177; <https://www.veterans.gc.ca/eng/remembrance/classroom/fact-sheets/murmansk>; <https://warfarehistorynetwork.com/article/the-murmansk-run-running-the-gauntlet-of-wwiis-arctic-convoys/> (accessed 13 October 2023).

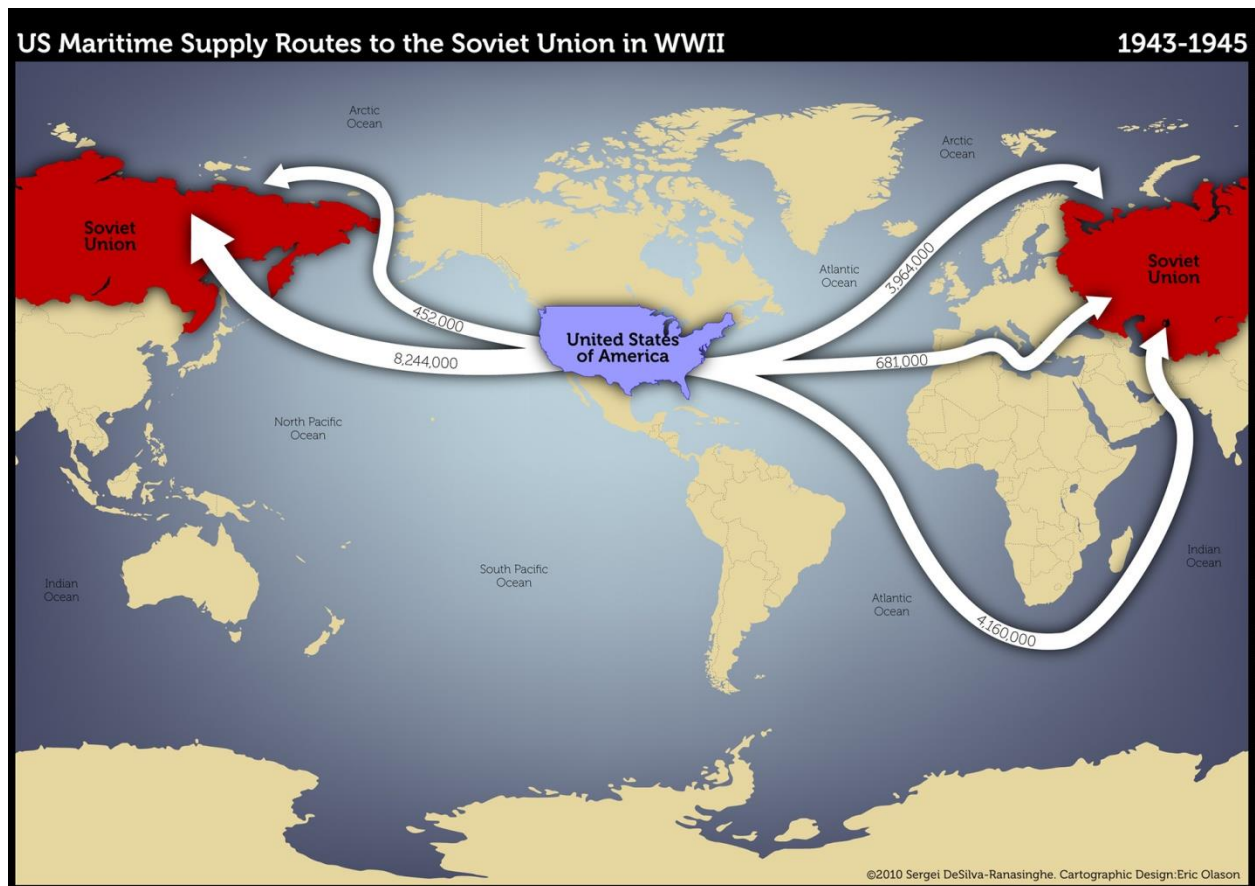


Figure 4: Maritime Supply Routes to the Soviet Union, with tonnages, 1943-45. The Lower Pacific Route includes shipments landed in Basra as well as those directly reaching Vladivostok. (<https://ericolason.myportfolio.com/wwii-supply-routes-to-ussr>, accessed 1 November 2023.)

Alternative routes had to be devised and were. By war's end, two principal substitutes, the Pacific and the Trans-Iranian, transported over 70 percent of all goods for the USSR, cutting Murmansk's 1941 share (40 percent) in half. The Pacific trek departed from the US west coast and traced a 4500 nautical mile arc northwest toward Vladivostock, passing through straits controlled by Japan's navy. Interference was only occasional, for the Soviets were not (yet) at war with the Imperial regime and evidently had pledged to accept inspections to assure that no

military hardware was on board.⁴³ Cargoes on the Trans-Iranian track departed from US east or west coasts on their way to Basra, Iraq, then under British control – a much safer route though far longer, 12,000 nm from New York, 11,250 nm from San Francisco, and slower, ten weeks including refueling stops. Materiel had then to move northward “across the mountains and deserts of Iran,” entering the USSR above Tabriz. Well over four million metric tons of cargo, about one-quarter of the Soviet lend-lease total, flowed through this “Persian Corridor,” a volume “sufficient, by US Army standards, to maintain sixty combat divisions in the line.” Among the Corridor deliveries were ca. 185,000 trucks, 45 percent of all received by the Red Army.⁴⁴

“Studer” crates that made it to Murmansk or traveled west on the Trans-Siberian railroad found their way to Soviet assembly plants in Moscow, Gorki, and Minsk, the last using a Daimler-Benz plant rebuilt once the Soviets recaptured the city.⁴⁵ Minsk’s first 50 US6s reported for duty in November 1944. Studebaker work at Gorki reportedly began in November 1941 and progressed despite air raids. “Even when [the] GAZ [factory] was heavily bombed in the summer of 1943, work continued right under the open sky.”⁴⁶ However, the Persian lands held no auto plants before the war, nor was truck assembly on the agendas of either the British or the regional

⁴³ <https://ik-ptz.ru/en/exam-tests---2014-for-physics/obem-postavok-po-lend-lizu-lend-liz-istoriya-amerikanskoi-voennoi.html> (accessed 2 October 2023).

⁴⁴ Motter, *Persian Corridor*, 4-6, 139. For full details on the route across Siberia, see A. J. Grajdanzev, “The Trans-Siberian Railway and the Problem of Soviet Supply,” *Pacific Affairs* 14(1941): 388-415.

⁴⁵ V. F. Vorsin, “Motor Vehicle Transport Deliveries Through ‘Lend-Lease,’” *Journal of Slavic Military Studies* 10(1997): 153-175. For a comprehensive view of Lend-Lease, see Denis Havlat, “Western Air for the Soviet Union during World War II,” Parts I and II, *Ibid.*, 30(2017): -320 and 560-601.

⁴⁶ CIA Information Report, “Auto Works in Minsk,” 17 December 1954, 1 (CIA –RDP80-00810A006400570002-0); <https://ik-ptz.ru/en/exam-tests---2014-for-physics/obem-postavok-po-lend-lizu-lend-liz-istoriya-amerikanskoi-voennoi.html> (accessed 2 October 2023).

population. Enter General Motors, or more specifically GM's Overseas Division. In a moment of corporate prescience, by 1938 GMOD "had foreseen the need for locating emergency vehicle assembly plants at strategic sites" in time of war. Planners identified British-controlled Iran as a target, anticipating that the Mediterranean would be closed to shipping. In 1939, GM "designed an... assembly unit with a bolted structural framework on a poured concrete floor, to be housed under canvas... US and UK authorities arranged for four of these to be created and shipped, initially to assemble US trucks for the British." With GM's engineering guidance, the UK erected the first pair in 1941, at Bushire and Rafadiyah; the US soon constructed two larger facilities, at Andimeshk and Khorramshahr, which eventually accounted for 88 percent of vehicle output.⁴⁷

In 1942, the initial 2500 crated Studebakers arrived at Basra before the Andimeshk plant became operational, so the Army contracted to have them assembled at Bushire, yielding a double embarrassment. For the first 1250 units, the British charged a scandalous \$218 per truck for fabrication and delivery, a sum (\$272,000) that represented the pre-war QMC's entire annual budget for vehicles. Later the US plants recorded far smaller costs. Second, though the Soviets assigned military drivers to pick up new US6s for the trip north, UK officials refused this "undesirable infiltration of the British zone." Instead, they required that Iranians handle the 1179 mile journey from Bushire to the border near Tabriz, the handover point. The US Army's comment: "To the damage inflicted by execrable driving... would be added the toll taken by the terrain and losses from pilferage." Trucks departed for the USSR fully loaded, and it was not unknown for local drivers to arrange a convenient pause for looting by kinsmen. As well the Soviets were initially unreliable in providing Red Army men for US6s emerging from the

⁴⁷ Motter, *Persian Corridor*, 139-41.

American factories. “For a period in June 1942, 1000 trucks stood at Andimeshk awaiting drivers,” though “as many as 150 soldier-drivers sometimes arrived at once.”⁴⁸

Management of the two US plants shifted from GM to the Army in July 1943, perhaps partly in response to “a rising tide of complaints by the Soviets call[ing] attention to persistent breakdowns of Studebakers, Fords and Chevrolets, breakdowns not attributable to the rough journey.” During their final weeks in charge, GM supervisors neglected to open truck crates, drawing down warehoused components. Thus, “when the Army assumed responsibility on 1 July, it found 280 freight cars of cased trucks standing unloaded in the yards,” as well as “a drastic shortage of nuts, bolts, and spare parts.” After overcoming this ragged transition, the military proved fully able to meet further challenges. For example, having discovered that locally-hired assemblers had installed damaged parts, resulting “in poor performance of assembled trucks,” officers traced the problem to “rough unloading at the ports.” They assigned troops to monitor ship-to-land transfers and uncrating, thereby shrinking the incidence of injured or “missing” parts. Ordnance also managed railway/road construction/maintenance, while revising procedures for hauling goods to the border that halved delivery times while doubling and redoubling tonnages.⁴⁹

Supplying the Soviet Union by road through the Corridor had two dimensions: one-way trips to provide new US6s, hopefully with reasonably intact cargoes, and two-way ventures transporting goods and returning south to reload. [A third option involved using the UK-run Iranian State Railway, whose capacities US Army officials urgently augmented once they

⁴⁸ Ibid., 143-45, 152. Organized gangs also swept down on un- or poorly-guarded trucks at rest, repair or refueling stops. Vehicles broken down along the road were especially targeted.

⁴⁹ Ibid., 246-49, 274-83, 317-20. The Russians feared sabotage in US factories, but an FBI inquiry found none.

assumed control (with Churchill's acquiescence).] For direct transfers, Soviet drivers handled the trek north. Problems did arise though, when "Russian convoys disregard[ed] one-way traffic control, going through to the confusion of others" or when "Russian vehicles parked in the middle of the road for repairs or rest." Accidents also proliferated, in part because "many of the Soviets [were] soldiers recuperating from battle wounds, assigned to the Persian Corridor for a kind of holiday and making the trip for the first and only time on unfamiliar terrain." Yet when US6s reached USSR railheads in less-than-excellent condition, Soviet inspectors held American assemblers responsible, demanding "that the manufacturers make good all damages, defects, or shortages" evident "after a 740 mile trip under load with Russian drivers."⁵⁰ This was not appreciated, nor was their penchant for what seemed like excessive secrecy.

One-way trucks could not provide adequate shipment of lend-lease supplies. American officials suggested that transfer vehicles should make one supply round trip before final delivery, but that proposal went nowhere with the Soviets. Instead, by implementing the Motor Transport Service's SOS Plan, the Army gradually extracted about 6,000 Studebakers from production lines to initiate a long-distance trucking operation, staffed by 10,000 soldiers and civilians, half driving and the rest doing "road and vehicle maintenance." MTS opened a Teheran school early in 1943 "to train native [sic] drivers" but low pay and rapid turnover limited its effectiveness. It also consented to the assignment of several thousand African-American drivers and mechanics who would "establish and man relay, service and repair stations along the route." Initial delivery results were troubling; as "normal military convoys... which entailed taking trucks through to destination with one driver, left trucks standing idle [overnight] while drivers were resting." As well, climatic differences along the way meant that drivers dressed for desert conditions froze in

⁵⁰ Ibid., 152, 177, 190, 321-22.

the mountains. Returning empty trucks reversed the sequence, slowing everything down a bit more. Then,

on 28 March [1943] Colonel Don Shingler introduced the block system. The route was divided into four blocks with an MTS camp at the end of each – at Andimeshk, Khurramabad, Hamadan, and Kazvin – the four blocks requiring respectively 8, 12, 12, and 8 hours' running time... Drivers operated out of home stations, taking their trucks to the next station where they handed them over to the next driver... After a rest period of a day or overnight, the[y] drove empty southbound trucks back to their home stations. Vehicles could thus be operated night and day, with time out only for servicing.⁵¹



Figure 5: A Studebaker US6 convoy in the Persian Corridor. Snow-covered trucks starting for the Iran mountain passes, 1943. (Library of Congress digital ID fsa.8d29573)

⁵¹ Ibid., 187, 310-12, 320. Ordnance promoted Col. Shingler to Brigadier General before the war ended.

In addition to the relay stations, where repairs could be undertaken, a US6 mobile repair workshop trailed each convoy to address en-route breakdowns whenever possible.⁵² As expected, “maintenance of vehicles was a never ceasing problem.” From mid-‘42 through late ’43, “parts and servicing apparatus were in drastically short supply,” while the lack of buildings and electric lighting “aggravated” mechanics’ difficulties. In July ’44, about “10 percent of the fleet was deadlined – over 600 trucks... despite every effort to improvise, repair, manufacture and reuse



⁵² *Transportation SOPs, etc., SOS, ETO*, 1942, 5 (CARL Digital Library, Ft. Leavenworth, KS, N-6115).

Figure 6: Cpl. Carroll B. Johnson, Port Arthur, Texas, and Pfc. Carroll Davis, Philadelphia, Pa., at work in their Mobile Machine Shop, England, 1943, US Signal Corps Photo: ETO-HQ-43-1632.

parts.” Then the gloom lifted; replacement supplies blossomed and 500 idle trucks returned to service by October, illustrating “the uncertainties and vagaries of truck operations in the Corridor.”⁵³ In the interim, expansion of ISR hauling capacities had been finalized, soon to displace trucking. September 1944’s trains moved 170,000 metric tons of supplies from the docks to the Russian border, nearly five times the MTS’s peak volume (36,000 tons, July 1944). When long-distance hauling ended in November, MTS had carried 400,000 metric tons, to which might be added another 300,000 tons loaded onto the one-way Studebakers. Truck assembly ended in April 1945; during 3+ years, the four “emergency” factories fabricated 191,000 vehicles, over 90 percent for the Red Army. In a final lend-lease gesture, Ordnance dismantled the two US-operated, GM-designed plants in 1945, loaded their components onto 261 rail cars and shipped them to the USSR for reassembly and reuse. Another 114 cars accompanied them, carrying “cased vehicles and salvage.”⁵⁴

Once “Studebakers” reached the Red Army, Soviet units enthusiastically welcomed them. They “became legendary vehicle[s]... called the ‘Kings of the Road’ by soldiers due to their reliability and dependability.” Artilleryman Ilya Maraysin even argued that “the Studebaker deserves a monument like those everywhere to the famous T-34 tank.” On decent roads, US6s could travel at 70km/h (44 mph), covering 400 km (250 miles) on one tank of gas.

The main workhorses of the Red Army, the ZIS-5 and GAZ-AA, could not compete with their foreign counterparts. “The Studebaker was better, of course,” recalled Lt. Pavel Gurevich of the 6th Separate Guards Mortar Battalion: “The ZIS was two-axle [drive] and stalled if the road was bad. But the Studebaker was an all-terrain vehicle, both front and

⁵³ Motter, *Persian Corridor*, 326.

⁵⁴ *Ibid.*, 281-82, 326-29, 489-93.

rear wheel drive. Plus it was more maneuverable. In the swamps of Karelia, the Studebakers arrived not a moment too soon.

Signalman Smeyon Brevo added:

Plenty of trucks got stuck on the roads and had to be pulled out of the mud literally by hand... The US Studebaker trucks were a lifesaver. They came with a steel-cable winch above the front bumper... The truck could pull itself out as long as there was something to attach the end of the cable to, and it could drag out other trucks too. Having one or two Studebakers in the column was the difference between success and failure.⁵⁵

Organizationally, H. G. W. Davie documented the Second Tank Army's authorization to possess, in its fleet of over 4,000 vehicles, "30 Studebaker lorries." Yet by spring 1944, it actually ran 565 Studebakers, alongside 345 Fords, 175 Chevrolets, 76 Dodges, 11 Internationals and four GMC Jimmies. Moreover, 96 percent of the Studebakers were operable vs. just 45 percent of the Chevrolets, which "clearly... were failing to cope with the muddy conditions." Repairs were then underway on 97 Chevies, only 79 of which were available for use.⁵⁶ "Studers" were particularly favored for towing artillery pieces, mortars, or antitank guns and as platforms for rockets, mobile cranes and repair shops. "Toward the end of World War II, the GAZ and ZIS trucks, used as prime movers for Soviet artillery, were discarded and replaced by powerful Studebaker trucks. Soviet veterans say that the GAZ and ZIS trucks, compared with Studebakers, are just 'junk'."⁵⁷

Not only American-built trucks supplied the Red Army's transport needs; vehicles captured from the Germans or Italians ("trophies") served as well, given opportunistic

⁵⁵ Boris Egorov, "How the US Studebaker became the Soviet 'Victory' truck," 17 December 2020, <https://www.rbth.com/history/333156-how-us-studebaker-became-soviet> (accessed 18 October 2023). Karelia is one of the "most waterlogged regions of Russia." [https://www.airpano.com/360article/karelia_swaps/] (accessed 18 October 2023)]

⁵⁶H. G. W. Davie, "Logistics of the Tank Army – The Uman-Botosani Operation, 1944," *Journal of Slavic Military Studies* 33(2020): 420-441, quote from 427-28.

⁵⁷ CIA Information Report, "Attitude of Population towards the West," 11 February 1942, 2 (CIA- RDP80-00809A000600010204-0).

appropriation. Detailing the 839th Separate Auto Transport Battalion's activity, a CIA informant explained that his unit "made frequent runs to supply front line units of the 3rd Ukrainian."

During World War II, trucks moved day and night... Drivers used chains on their vehicles in winter [while] cleaning units kept the road in passable condition and wreckers were available to pull disabled trucks in case of an emergency... In 1943, the 839th turned in their GAZ trucks and utilized the following types of trucks captured from defeated Italian units: Bianca Diesel three-ton; Fiat three- six- and eight-ton trucks, almost new; OM Diesel three-ton; German Man Diesel five-ton; [and] Mercedes Diesel six-ton. Twenty five of these trucks... replaced all the GAZ-2 trucks... 10 of the remaining trucks were kept in reserve for cannibalization.⁵⁸

Early in the war, the variety of vehicles the Allies sent the USSR caused parts problems analogous to those that led to reserving "trophy" trucks for stripping. With "28 vehicle-makes" having arrived, 1941-43, no agency could secure (or track) parts for all of them. Hence, Soviet procurement authorities reduced the range "to four in 1944-45: Studebaker, Ford, Dodge and Will[y]s." Such simplification helped on the materiel side, but operational challenges remained.

All this introduced additional difficulties into the problem of manning administrative units, providing spare parts and materials, and training cadres. In 1943, therefore, with the arrival of imported vehicles into the forces, a special decision was adopted to train specialists... who were subsequently sent to the front to resolve, for example, problems with vehicle repair. In addition, one or two units specializing solely in repairing imported motor vehicle equipment and two or three repair units for both domestic and imported vehicles were allotted to each *front*.

At the same time, the Army's Motor Vehicle Directorate worked to develop the "necessary technical documentation," which then "was sent to mobile repair units dealing with imported vehicles." Composing truck units of a single model carrying a specific cargo improved both

⁵⁸CIA Information Report, "T/O&E of Soviet Automotive Units," 24 August 1953, 2 (CIA-RDP82-00046R000200040016-8). Vorsin reported that by January 1945, the Red Army operated 35,000 captured vehicles, six percent of its fleet, a total that rose to 61,000 by May (9%). (Vorsin, "Motor Vehicle Transport," 169.)

performance and maintenance. “For example, a battalion with ZIS-5s was allotted to transport ammunition; a battalion with Ford-6s transported food and forage, etc.”⁵⁹

The American press praised the Soviet supply networks, noting that “the Russians [employ] standard trucks for most purposes. These haul supplies up to the lines and take anything back, including wounded, on return trips. As for maintenance systems, a salient deficiency remained in the “organization of supplying spare parts.”

However, the Russian drivers are most ingenious in keeping their trucks rolling. One can sometimes see them making major repairs on a highway. They save fuel by linking truck trains in which one vehicle pulls three or four others along good highways until the train breaks up, when the trucks go on[to] various side roads.⁶⁰

Overall, as David Glantz summarized forty years later, “at every level in the force structure, the Soviets created logistical units to ensure an adequate flow of supplies... [They] also made great efforts to beef up maintenance units, especially those in their mobile forces.”⁶¹

As the war ground to its brutal finish, tributes to the Studebakers began appearing. In January 1945 “Lt. Gen. L. G. Rudenko sent a photo album on behalf of the Soviet Union to the Studebaker Corporation as a ‘token of appreciation of the excellent quality of your military-type truck.’” Stalin reportedly recognized their importance, forwarding “a personal letter of

⁵⁹ Vorsin, “Motor Vehicle Transport,” 167-68. In the USSR, a “front” was a large military group, often including three Armies; it was not a territorial area. In 1943, the Red Army had 17 individual fronts. Repeated reorganizations extended the list of fronts to 39, 1941-45. [[https://en.wikipedia.org/wiki/Front_\(military_formation\)](https://en.wikipedia.org/wiki/Front_(military_formation))], accessed 19 October 2023.] It should also be noted that the USSR produced 265,000 non-combat vehicles after the German invasion, just about replacing the estimated 271,000 lost in the war’s opening months. See Boris Sokolov, “The Role of Lend-Lease in Soviet Military Efforts,” *Journal of Slavic Military Studies* 7(1994): 567-586.

⁶⁰ C.L. Sulzberger, “Russian Supplies Moving Smoothly,” *New York Times*, 20 June 1943, 23.

⁶¹ Glantz, “Conclusions,” *Art of War Symposium*, 559. For an overview of repair work, including bonus programs for timely completion of major overhauls, see “Financing Repairs of Armament and Combat Materiel,” Chapter 5 in Maj. Gnl. M. V. Terpilovskiy (ed.), *Finance Service of the Soviet Armed Forces during the War: Part One*, Voenizdat: Moscow, 1967, 98-110, Joint Publications Research Service Report 62294-1, 21 June 1974.

appreciation to Studebaker, in which he thanked it for the superb quality of the US6.” The legendary Marshal G. K. Zhukov was more precise: “One cannot deny that the Americans gave us so much materiel, without which we could not have formed our reserves and could not have continued the war... Without American ‘Studebakers,’ we could have moved our artillery nowhere. Yes, in general, to a considerable degree they provided our *front* transport.” The background for those remarks is striking. As J. R. Potts explained, anticipating the decisive Kursk confrontation,

the major problem for Zhukov... would be supply lines, as tanks and support vehicles moved ahead across the battlefield. Additionally, there would be difficulties in quickly moving infantry and field guns to advantageous positions along a changing front. The answer [was] thousands of “Studer” trucks to resupply vehicles, move artillery and crews and haul infantry. After the decisive victory, it became clear... that the US6, as a reliable heavy-duty battlefield truck, had played a critical role in advancing Soviet forces.

Last, perhaps the US6s’ most durable legacy was that the Soviets employed them as templates for “prototypes of the GAZ-51 truck, which went into production in 1944” and for “the postwar ZIS-151, which then evolved into the ZIL-157,” whose production continued to 1994.⁶² We will shortly revisit the Soviet Bloc to review peacetime utilization of “Studers”; but first we must turn to the US military’s war surplus dilemmas in transitioning from all-out combat to demobilization. What to do with two million trucks, for example?

An Empire of Surplus and Waste

On November 25, 1945, Crawford Sloan, an engineer seconded from the Reconstruction Finance Corporation to the Interior Department, testified before the Mead Committee in

⁶² https://en.wikipedia.org/wiki/Studebaker_US6_2%C2%BD-ton_6%C3%976_truck (accessed 19 October 2023); Ben Wilson, “Engines of War: The Studebaker Corporation and World War II,” Honors Thesis, Ball State University, December 2019, 12-13; Sokolov, “Role of Lend-Lease,” 568; J. R. Potts, “Studebaker US6,” at https://militaryfactory.com/armor/detail.php?armor_id=704 (accessed 19 October 2023).

Washington, D.C. Investigating the National Defense Program, the senators wished to hear from Mr. Sloan because in July he had toured Hawai'i's bases and depots to assess the state and volume of military "surplus property." During his ten day stay,

rumors were coming in, not only rumors but knowledge of the Army and Navy destroying property of all kinds – automotive equipment, construction equipment, supplies and other commodities. Not a day went by that I didn't receive telephone calls from Army men, as well as civilians about... destroying property. In fact colonels, lieutenant commanders and commanders... would drop in, but naturally they were afraid to make written statements or even afraid for me to use their names. But they would tell me where it was and where to go to see it.

Completing his rounds on an August/September return trip, Sloan estimated that "excess" material worth \$1 billion could be made available for public sale. However, a sizable segment of the surplus was disappearing, or more accurately, made to vanish.

One day two Army technicians told me about all the cars being stored up in a certain place, and a lot of them being destroyed and cut up and burned up... So on September 27, 1945... we all went out to Schofield Barracks and there, [they] showed us, in a very large area... approximately nine thousand [vehicles,] both used and new, that were stored there in the open. Q. What kind of cars? A. Command cars, jeeps, all sizes of trucks, trailers and everything in automotive equipment... we actually saw trucks and jeeps being destroyed by high temperature burning torches, being cut up into five-foot sections by torch, burning them.

The salvage teams did strip "removable parts" and cut out engines for possible repair or rebuilding. However, unlike the five-foot sections, which were scrapped, these components were not declared surplus. "They claimed they used [them] for spare parts. I don't know how... They had warehouses loaded with spare parts out there."⁶³

A *Honolulu Advertiser* reporter joined Sloan to visit the salvage site and drafted an article, but the paper's president spiked it as "too hot," then contacted Lt. General Robert

⁶³ Special Committee Investigating the National Defense Program, *Surplus Property*, Washington, D.C., 29 November 1945, 14-15, 18-21-22, 36 (unpublished transcript, Proquest Congressional, HRG-1945-ndp-0142). The spatial irony of concurrent parts famines in Europe and warehouses full of parts in the Pacific is worth noting.

Richardson, Hawai'i's military governor, with the story. Richardson claimed it was "not true... a misstatement of fact," but vowed that he would "go out there myself." He waited for four days, Sloan noted, and "by that time there wasn't a thing to see... The site had all been cleared off." Doggedly, Sloan shared the story with a *Honolulu Star-Bulletin* newsman; his paper published it the next day, forcing the General to begin an inquiry. Sloan also drove the *Advertiser* president to several disposal sites, at one of which building and roofing materials were being buried, triggering a second article. The General called the paper to complain, but the president replied: "Well, General, I wrote that article and I actually saw that with my own eyes." The next day, 19 October, Richardson issued a directive that "Under no circumstances will any echelon of this command destroy, dump into the sea, bury or otherwise dispose of any Army property unless specifically authorized by this Headquarters."⁶⁴ Nonetheless, salvage and wrecking continued at least until Sloan left for the mainland at the end of the month. What on earth was going on?

Technically, the difference between "salvage" and "surplus" was substantial. Unit leaders could identify materiel beyond use due to wear or damage, classify it as salvage, and if needed, request its replacement without complications. However, securing a surplus designation was much more trouble; the items had to be announced to other units as "excess," available for adoption during a set period, steps involving paperwork, registration of ID numbers, and communication up and down the hierarchy. If other units rejected the items, then a second battery of forms could establish them as surplus to be turned over to the War Assets Administration or, for US territories, the Department of the Interior's Surplus Property Office.⁶⁵

⁶⁴ Ibid., 24-29, 56. The navy was reported to be running "Deep Six" operations, loading barges with damaged or unneeded equipment for disposal in the Pacific.

⁶⁵ Gwen Sinclair, "Jeeps, Communists and Quonset Huts: World War II Surplus Disposal in the Territory of Hawai'i," *Hawaiian Journal of History* 50(2016): 121-40.

Only then could they be advertised for sale to individuals or organizations.⁶⁶ Holding thousands of vehicles in various stages of decay, and with the war over, Army maintenance units understandably chose the simpler path – mass scrapping. It caused a kerfuffle in Congressional circles, however, setting off a world tour by animated inquisitors who discovered what they judged incompetence and waste everywhere they looked. Yet what actually was happening was the military’s business-like assessment of condition, value, cost, and possible profit or loss for an estimated 300,000 vehicles (in the Pacific Theater alone), often leading to systematic destruction.

The scale of American war production remains a marvel, but often a rather vague marvel. How huge was it? From 1940 to 1945, the government bought nearly 300,000 aircraft, built 1300 production plants and launched 5400 cargo ships, while having over two million trucks assembled. “To buy supplies and equipment, the United States spent three times more than the entire gross national product of 1940... By rough estimate, when Japan gave up on August 14, 1945, there was more war stuff in stockpile than four years of combat had consumed.”⁶⁷ Much of it was new, but obsolete; Sherman tanks that had repeatedly exhibited their shortcomings would not be required in future armor campaigns. More of it was used and of negligible value: worn-out aircraft that “cost \$5 to \$8 a pound to buy [are] worth 3 cents to 5 cents a pound to scrap. [Hence,] millions of dollars of airplanes haven’t any real value.”⁶⁸ Even more materiel was decrepit but could be rehabilitated: thousands of trucks and jeeps evaluated as to whether they were “economically repairable or not.” In Congressional testimony, General W. W. Rogers explained: “The standards are normally the amount of money you could get for the materiel,

⁶⁶ See U. S. Senate, Hearings, *Investigation of the National Defense Program*, Part 36, Washington, D.C.: GPO, 1947, 19462, 19465-66.

⁶⁷ James R. Chiles, “How the great war on war surplus got won – or lost,” *Smithsonian Magazine*, December 1995, 52-63.

⁶⁸ Commodore J. B. Ricketts, Commander, Air Forces Pacific, in Senate Hearings, *Investigation*, Part 36, 19631.

compared against what it would cost and the upkeep. Say you had some material and could sell it for \$2 million. If it would cost you more than \$2 million to repair it and get it ready for sale, it wouldn't be profitable." The top hats never suggested that taking a paper loss to restore thousands of vehicles' utility could yield longer-term economic benefits. War Department leaders also were constrained by the Surplus Property Act (1944) which prohibited returning most military property to the US for sale, so that postwar markets would not be flooded with war-era goods crowding out new production (perhaps a moment to savor the contrast between American assessments based on exchange value vs. Soviet policies anchored in prioritizing use value).⁶⁹

Colonel J. H. Hinrichs confirmed the Hawai'i vehicle torching tale as "perfectly true" and the wrecking as appropriate: "After a vehicle has been in service for about 3 to 5 years, which most of these vehicles had been, the bolts were rusted, nuts rusted tight, and had we used wrenches, we probably would have destroyed the nut and bolt anyway." Torches separated engines for rebuilding from chassis, which were not recyclable. "The frames are not usable, most of them anyway... They had been in wrecks and there was no value" in them. In the Pacific "a truck with 2200 or 2300 miles on it, and in a very few months, may have corroded until its life is practically gone."⁷⁰ Not economically repairable, such trucks were cut to pieces.

Other trucks returned to Oahu passed the cost/benefit test and had been thoroughly rehabilitated. Colonel Willard Mason sketched the process:

⁶⁹ The Commerce Department's Business Advisory Board was key in shaping the Act and planning for reconversion, in part to protect small business. See Louis Cain and George Newman, "Planning for Peace: The Surplus Property Act of 1944," *Journal of Economic History* 41(1981): 129-35.

⁷⁰ Senate Hearings, *Investigation*, Part 36, 19635, 19655, 19665,

We get back wrecks and junk from forward areas such as Canton, Christmas [Island], Palmyra, and those places where the coral dust and the rust has eaten the vehicles. These were brought back and culled. An officer makes an inspection and [files] form 461, which is a diagnosis of what is wrong with the vehicle and whether it is to be repaired or replaced. Then [a repairable] goes through the assembly line... The process includes complete reconditioning of the body, engine, wheels, and the myriad things that are necessary to put it back in shape again.

During the war, he had a crew staffing an elementary “production line” for painting and rustproofing the reconditioned trucks. “We could paint 10 a day, but this was not big enough for task forces. We finally whipped it up to 220 vehicles a day.” Scavenging parts from wrecked trucks helped compensate for shortages: “every part that could possibly be saved... that had a future use, was saved.” Mason did admit that claims that the Army was destroying new trucks were indeed accurate; but they dated back to emergency conditions during the Okinawa invasion.

We needed axles for GMC trucks and we took them from new vehicles. There were none in Detroit and on the mainland. Later we still could not get these parts for the trucks and, as we needed other parts from these vehicles, we took them [too]. At that time General Richardson... said, ‘You can take parts from my car if necessary to supply the combat units.’ Whenever we could not get parts out here, we had to scrape them from wherever we could.⁷¹

Of course, these were the very GMC axles Colonel Becker had “running out of his ears” in Europe, no longer being manufactured due to procurement cutbacks. It’s notable that during the war, costs were secondary to meeting urgent demands, but that economic considerations reasserted their primacy almost immediately thereafter.

Recent rulings from a short-lived and long-forgotten War Department unit further encouraged mass scrapping. Assigned to guide postwar handling of surpluses, the Board on Reserves of Supplies and Equipment, chaired by four-star General Courtney Hodges, sped Army “declarations” that liberated \$400 million in goods for civilian use (1945-46), “a good deal of

⁷¹ Ibid., 19687.

[which] was of vital interest to the building construction trade.” Pacific theater depots held roughly 60 million board feet of lumber, for example.⁷² The Hodges Board made other decisions, applying worldwide. Jeeps deemed unrepairable could not be handed over to non-military agents for rework and sale. The Board urged depots and bases to “only return new and crated vehicles.” As General T. M. Osborne summarized: “We are not going to bring trucks back, which is the recommendation of the Hodges Board, and we will not bring back civilian-type items that are unserviceable but repairable.” This made sense locally as well. With demobilization, overseas mechanics who had maintained vehicles were already going home, whereas shipping space to save potentially useful trucks was unavailable. Scrapping them was everywhere a correct step.⁷³ Well, almost everywhere.

In Europe, a major outlet for military truck disposal proved to be UNRRA, the United Nations Relief and Rehabilitation Administration, founded in 1943 to assist “victims of war... through the provision of food, fuel, clothing, shelter and other basic necessities.” Its funding, which came from many of the 44 UN members, totaled \$3.7 billion, 1944-1948; appropriately, as the wealthiest ally, the US provided \$2.7 billion, 72 percent. The program had a major presence in Czechoslovakia, Greece, Italy, Yugoslavia, Poland, the Ukraine and China, which together accounted for nearly \$3 billion in spending, most indeed for “necessities.” Yet getting the goods to the people was no simple task; transport systems were in shambles. Hence UNRRA rapidly allocated a critical \$100 million for purchase of US trucks, locomotives, freight cars and

⁷² Builders would not have been so eager had they appreciated the low quality of the lumber. “It is used for packing and crating. You could not build with it [though] it looked very desirable on the manifest... We have never received but very little good grain lumber here. It is all green or may be cut up. The reason for that is during the war we had to take what is known as run-of-the-mill. We had to purchase a large stock, which the mills did not have the people to separate. [It] was so green and so full of knots [that] most of it would not be suitable for peacetime construction.” Ibid., 19653.

⁷³ Ibid., 19649, 19956-57; Senate, *Investigation*, Part 33, GPO: Washington, D.C., 1946, 16520.

“watercraft.” Industrial Division Director Norman Gold was “very anxious to secure surplus equipment in the field in Europe” to reduce transit distances and hasten distribution. Helpfully, the US government was eager to transfer “as much surplus material as possible.” A fall 1945 House Appropriations Committee report noted: “Most of these supplies would otherwise represent a considerable loss to the United States and could have a depressing effect on the domestic market.” Moving fast was essential, as was cutting red tape, to meet urgent needs and to absorb “surpluses which otherwise might have little marketability”⁷⁴ – such as Army trucks.

UNRRA aimed to “secure some 40,000 trucks and 3100 trailers (valued at about \$50 million) from the United States Army.” Its officials “accepted a general [payment] formula amounting to the Army catalog price, less depreciation for condition.” In this fashion, a portion of America’s contributions would return home by selling wartime vehicles stranded in Europe. Unfortunately the agency’s Paris field office “did not have the technical personnel and the operating staff to inspect and arrange for the onforwarding of trucks.” Nor did it exercise effective control over convoys, the first of which departed Marseilles in December 1945 for Czechoslovakia, 1000 trucks “loaded with spare parts and medical supplies. Losses en route were considerable, amounting to about seven percent of the value, the spare parts being irreplaceable.” Paris soon discovered that the US Army drivers lacked experience “and that most of them had court-martial records.” (Czech drivers guided the second convoy.) This fiasco was a harbinger of troubles ahead. For example, an UNRRA official in the UK had “selected 14,000

⁷⁴ https://en.wikipedia.org/wiki/United_Nations_Relief_and_Rehabilitation_Administration (accessed 24 October 2023); James L. Colbert, “The Industrial Rehabilitation Program of UNRRA,” unpublished Ph.D. dissertation, Columbia University, 1950, 147, 253-57. Chiles estimated that “24 million tons of supplies” rested in Europe on VE-Day. “Great War on War Surplus.” 53.

US trucks in good condition” for delivery to Poland. But the first few hundred arriving on the Continent were in terrible shape. What had gone wrong? After the selection,

the depot had to replace large numbers of vehicles in US Army operational units in Europe and had drawn on UNRRA-earmarked trucks... UNRRA sought to have the Army agree that it would repair [the rest of] the vehicles before delivery [but] the Army declared that this was impossible owing to the shortage of staff... Not wishing to dispatch the trucks in poor condition to Poland where the prospects of timely repair were slight, UNRRA had no alternative but to set up a workshop repair installation [in Britain]. The Army assisted [by] cannibalizing 400 trucks to make the rest operable.⁷⁵

Ultimately, the feared breakdown of road transport in winter 1945-46 was averted; over 30,000 trucks entered service across central and southern Europe, easing the flows of relief supplies.



⁷⁵ Ibid., 261-66. For background see Leonard Marsh, “Relief and Rehabilitation: The Role of UNRRA,” *Public Affairs* 18:3 (1946): 150-55.

Figure 7: A German prisoner of war unpacking crated parts of one of the two hundred Studebaker 2 1/2 ton stake body trucks brought to Greece by UNRRA. Given the poor condition of used Army vehicles, receiving nations preferred cased trucks for assembly, though these were not as readily available and assembly was chiefly handwork. (Reference Code, S-0800-0008-0004-00009, UNRRA / 122, United Nations Photo Archives, undated, ca. 1946)

Not long after, UNRRA discovered that US intermediaries in the Foreign Liquidation Commission had been grossly overrating and overpricing trucks and parts. After reviewing some \$74 million of surplus deals, UNRRA accountants called for \$26 million in refunds, \$24 million for vehicles and parts. For the latter, the US “charged... the rate of 65 cents a pound. The average similar charge in the United States and elsewhere was found to be 35 cents.” A further study “showed that the trucks bought were not suitable for ordinary civilian use, but were military types with front wheel drive [6x6s] and heavy gasoline consumption, and with a short future life because the manufacture of replacement parts had been stopped.” Worse,

Of all the trucks received by UNRRA countries, approximately 50 percent were off the road within four months, principally because of broken parts, usually springs or axles. In many cases, virtually every detachable item, whether spare wheels or tools, was missing when the trucks were received. [As well] the classification of trucks... as ‘good,’ ‘fair,’ or ‘poor’ was one grade too high... The condition coding seems to have been determined by the truck’s external appearance rather than by its performance.

When buying some 350 Army trucks in Iran, UNRRA inspectors marked each one they chose, but on delivery, officials found that “in many cases virtually worthless, non-running vehicles had been substituted.” The FLC refused to provide any refunds, denying all claims.⁷⁶

UNRRA had bought another 40,000 cargo vehicles from the Canadian government, transferred in sound condition and with all available spare parts. Paris managers had “hoped that... the US Army would assume responsibility for transferring the necessary supplies of spares from its stocks,” but one-year parcels of concurrent parts were not forthcoming. Instead

⁷⁶ Colbert, “Industrial,” 285-90. The Iranian purchase most likely drew on residuals from the MTS delivery fleet discussed above.

the Americans offered everything left in their European depots at the 65 cents/lb. rate – take it or leave it. The inventories provided were “completely unreliable” as well. When a proper survey was completed, “it was found that a very bad assortment was being bought,” so purchases ceased. Thus in spring 1946 Mr. Gold shifted his target; the search for spares shifted to the United States, at least 1000 each of the 20 types most often needing replacement. Unfortunately, he directly contacted Ordnance officials in Detroit, rather than starting at Washington agencies. Infuriated at this breach of protocol, “the War Assets Administration... issued an instruction to the Detroit parts office to cease all activities for UNRRA.” No contract was concluded, no shipments were made. Next Paris staffers tried to “interest General Motors” in manufacturing “fast-moving parts” for GMC Jimmies that had operated reliably during the war. After hemming and hawing, GM

agreed to undertake the contract, partly on the argument that it would be bad advertising in the European countries if it were known that the company which had supplied trucks now in need of repair would take no responsibility for providing spares so they could be kept running. No pressure was exerted by the US government to have the company enter the contract; in fact the whole deal fell through when the UNRRA was unable to convince US agencies, and particularly the Federal Bureau of Supply [which] would not authorize the funds.⁷⁷

Nothing worked well, neither the trucks nor UNRRA initiatives. The spare parts mess resulted from “haste, bad planning and indecision,” not to speak of resistance and deceit by US agencies. From the outset, responsible parties “should have foreseen that the handing over ‘as-is’, after rough Army use of US manufactured vehicles that were driven long distances to recipient countries, and then pressed into overload and overtime service, would require a large and prompt provision of spare parts.” Widespread breakdowns convinced receiving nations that

⁷⁷ Ibid., 291-99. Gold finally located some parts and a willing vendor in the British Ministry of Supply, which had warehoused components for US vehicles that UK forces had received. Not until May 1947 could these resources be accessed, however. Too little, too late, as the agency’s authority ended in December 1948.

“the trucks were indiscriminately dumped in their countries.” They were not far wrong. American authorities had behaved like vultures, giving the least value for the most revenue. “The surplus disposal agency operated... in the matter of prices and price formulas, on the basis of charging what the traffic would bear. The underlying theory in the field... was to get the highest price the market offered, taking into account the supply and demand situation.”⁷⁸ Exactly, and wholly unremarkable, given the penetration of business principles into state practices.

This long journey began at Sixth Avenue and 33rd Street in Manhattan and returns there as it nears its terminus. The surplus truck saga will close with fleshing out the course and fate of the 600 Studebakers Gimbel Brothers advertised in spring 1946. Then two Codas will follow: one summarizing the Soviet Bloc’s postwar conservation of “Studers” and the other detailing the reanimation of abandoned Pacific Theater vehicles during materiel and logistical crises early in the Korean War.

Gimbels’ trucks “were part of a lot of 728 located at Terre Haute, IN, and declared surplus by the Army to the Cincinnati office of the War Assets Administration... The trucks came to us disassembled, and packed for overseas shipment,” General E. B. Gregory explained to senators probing the “disposal of surplus property.” After extensive advertising (4900 catalogs), only 29 found buyers at the set price, \$1954. Fortunately, eight Cleveland area truck dealerships stepped up and contracted for 600 of them; actually one dealer, US Truck Sales, had recruited the other seven because WAA permitted no enterprise to acquire more than 75. US Truck’s Harvey Brenner, who had invested over a million in this deal, soon found a client to move them to market, an Argentinian partnership headed by Jose Mayorga. After a February

⁷⁸ Ibid., 301-02, 322. One US official remarked: “We could get very little indeed for those surpluses if we could not sell them to UNRRA... If there is any difference one way or another, it is on the side of UNRRA paying too much.” (323) The contrast with Canada’s fair-mindedness in the whole affair is sharp and not to America’s credit.

1946 conference “at the offices of Goldman, Sachs & Co. in New York,” Mayorga provided a \$150,000 deposit and hired veteran merchant Arthur Price to explore both domestic and export markets. Mayorga was to pay \$2053 each for the cased 6x6s, a rapid return for Brenner of nearly \$60,000 (\$99/unit). Price advertised the cased trucks in the New York Times “without a price,” receiving only a few inquiries, not a surprise given that they were “disassembled.” In late March, Mayorga “very strenuously attempted to get back his \$150,000” but relented when Price assured him he would assume full responsibility for all sales. Price added:

My first plan was to assemble them and sell them here in this country, where transport is so badly needed... We set up an assembly plant near Terre Haute that was a miniature automobile factory... We had to remove these heavy crates from the depot – each pair of trucks in the three crates weighing over 10 tons – to our assembly plant miles away... Our next plan was to sell through regular truck and automobile dealers [but] Studebaker refused to permit any of their dealers to cooperate.⁷⁹

TRUCKS FOR SALE!

**New 1943 Studebaker 2½
ton Trucks, Model U. S. 6.
Six by six chassis and en-
closed cab, without winch.
162 inch wheelbase. 3 axles.
Hydraulic brakes. 10 tires,
8 ply, 7.50 by 20. Dis-
assembled, twin unit packed
for export.**

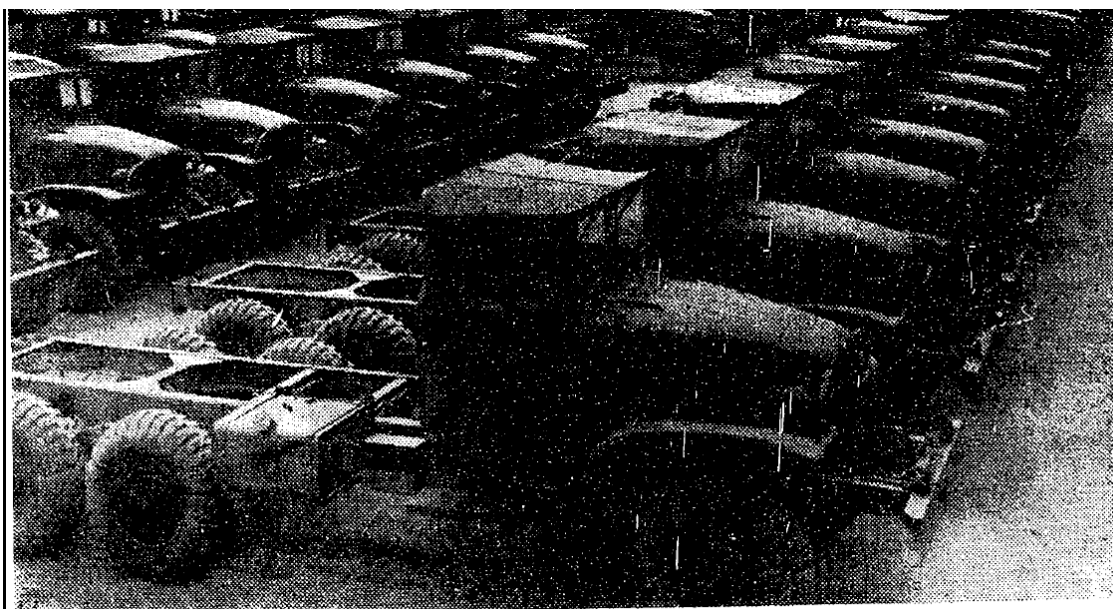
Y 6528 Times

Figure 8: Price’s display ad in the March 6, 1946 Times. (Proquest Historical Newspapers)

The obstacle was a familiar one: no spare parts could be found in the US6 cases; they had been packed, shipped and stored separately. “Repeated attempts to locate the parts for these

⁷⁹ Senate Hearings, *Investigation*, Part 33, 17132, 17146, 17169.

pecially built war trucks were fruitless.” This is where the transfer to Gimbels made sense. No truck dealer would handle a vehicle without a parts stock to support repairs, but a department store... Only a delusional buyer would imagine that Gimbel Brothers could fix a truck: *caveat emptor*. So Price paid ca. \$300 for assembly, \$263 to Gimbels, and smaller sums for insurance, storage et. al, allowing for about \$200 in profit from the \$2900 price. Then “on the very first day of our sale.. the War Assets Administration itself gave us our worst beating.” That day almost “a million dollars of business had been done,” with 340 sales recorded. “Representatives of body-building concerns were at the store taking orders” to install cargo, stake or dumper tops for the “construction and haulage firms [who] bought fleets of trucks.” Then WAA announced that very soon GMCs would become available for veterans in the New York area at “\$1478 for a six-wheel truck with spare.” Within a week it offered 500 of them at a Carteret, NJ Army depot. Cancellations rolled in; the Gimbels promotion flopped. Just 215 US6s were “sold and paid for”; the rest were going to have to be exported somewhere. In early May, WAA delivered the *coup de grace*, releasing news that its Detroit inventory of \$174 million in surplus vehicle parts had been



Some of the 500 new trucks offered by the War Assets Administration to former service men lined up at the Army depot in Carteret, N. J.
The New York Times (War Assets Administration)

Figure 9: WAA GMC 6x6s, undercutting Gimbel Brothers (NYTimes, 20April 1946, 14).

completed. “For the first time it will now be possible for a dealer to order and get his parts within thirty days – says the announcement. The list included all spare parts for the Studebaker 2-1/2 ton trucks.” Price moaned:

This failure to coordinate release of trucks with release of spare parts not only made it impossible to sell our Studebakers through regular dealers; it also accounts largely for the reason why veterans and farmers who are sincerely in need of these trucks have held off buying until they could be assured that in case of a broken or worn part they would not have a useless orphan on their hands.

This was disingenuous, at least in part. Construction and heavy trucking firms could well use all-wheel-drive vehicles and could afford to buy extras for cannibalization, but as the UNRRA found and as Harvey Brenner testified, the Studers were not well suited for farming or everyday

hauling tasks. Complicated, tough-to-repair gas-guzzlers, Studebaker US6s truly were warhorses, of marginal value in peacetime America.⁸⁰

First Coda: Studers' Afterlives in the Bloc

An April 1955 CIA Information Report documented that manufacturing Studebaker parts in East Berlin continued as usual. In addition to overhauling 350 various engines that month, the Oberschoeneweide plant delivered 1000 Studebaker “floating axles,” 500 seats, 500 drive shafts, and 1000 pistons for surviving US6s. A few weeks earlier, another observer noted that “a convoy of 40 x 3-axled Studebaker-type trucks arrived on Gross Doelin airfield,” north of Berlin, transporting 400+ “Soviet air force personnel.” Thirty-two remained configured for carrying cargo or people, “two of the Studebaker trucks [being] fully loaded with... barrack equipment.” The other eight had been “fitted out as special purpose vehicles, i.e., workshops, generator and box-bodied types.” Another repurposing surfaced in June, when an informant reported six Studebakers at the Merseburg Airfield (near Leipzig) serving as platforms for aeries, both stationary and mobile. Ugly uses also had been documented. Just after the war, the MVD (successor to the NKVD) had acquired Studebakers to facilitate punitive relocations of suspect persons from territories the Nazis once occupied⁸¹ For years after the war, thousands of US6s remained active assets in Soviet Bloc military planning and operations.

⁸⁰ Ibid., 17146-47, 17150-52, 17173, 17188 (for Brenner); 17201; *New York Times*, 2 April 1946, 14; Ibid., 19 April 1946, 31; Ibid., 20 April 1946, 14. For an assessment of the WAA's clumsy operations, see James Allen Cook, *The Marketing of Surplus War Property*, Washington, D.C.: Public Affairs Press, 1948, and a savage review by Jacob Kaufmann, a former WAA official, who stressed the pervasive incompetence that undercut achieving its goals (*American Economic Review* 39(1949): 814-16).

⁸¹ CIA Information Report, “Soviet Motor Vehicle Repair,” 25 April 1955 (CIA-RDP80-00810A006800670007-0); Idem., “Preparations for the Occupation of Gross Doelin Airfield,” 31 May 1955, 1 (CIA RDP80-0081A006800490008-9); Idem., “Merseburg Airfield,” 17 June 1955, 3 (CIA-RDP8-00418R-000400040004-5); Curtis Richardson, “Stalinist Terror and the Kalmyks' National Revival,” *Journal of Genocide Research* 4(2002): 441-51. The Berlin plant no longer made parts for Dodges and Fords, over half of its output was for ZIS trucks.

Parts production was a DDR specialty: “All spare parts and assemblies, both for lend-lease and Soviet vehicles were manufactured in Germany.” In addition to the big Berlin factory (still employing over 2000 in the early Fifties), an electrical instrument complex in Chemnitz produced Studebaker gasoline gauges (500 in September 1953), while a Leipzig metalworking plant fabricated radiators and gas tanks for US6s (1000 radiators and 200 tanks), plus converting 250 Studebakers to tank trucks. These firms supplied a sizable, if inefficient repair shop at Zeesen, an hour south of Berlin, which in fall 1951 anticipated the “arrival of 800 Studebaker, 200 Ford and 200 Chevrolet trucks” for overhaul. Shopmen could also pick up American-made components, conserved after 1945, at the “Wildau depot [five miles away], where approximately 3000 complete sets of truck spare parts were stored.” The Red Army redistributed its World War Two Katyusha rocket platforms across the satellite countries, 2000 of them to Romania by 1951, for example. Studebakers also migrated to Poland, but were often sidelined because the DDR sent the lion’s share of parts to the USSR.⁸²

Mechanics and drivers regarded the postwar ZIS US6-descendants as “poor imitation[s] of the old Studebaker model.” Their engine blocks were “constructed very crudely,” and their electrical systems were prone to rapid decay. Thus the Soviets did their best to conserve the capitalist world’s wartime donations. Change proved gradual. A 1952 report, which claimed that all Soviet forces in the Bloc nations were “motorized,” admitted that inside the USSR “about

⁸² War-damaged American trucks for rebuilding or cannibalization seem no longer to have arrived at Zeesen after 1948. CIA Information Report, “Soviet Vehicles,” 11 October 1953 (CIA-RDP82-000200250018-3); Idem., “Plants in the GDR Operated by the Red Army,” 1953 (CIA-RDP80-00809A-000700170313-4); Idem., “Meeting of the Directors of Nationalized Concerns Engaged in the Manufacture of Electrical and Radio Equipment,” 26 February 1952, 2 (CIA-RDP82-00457R-010700060002-9); Idem., “Vehicle and Parts Production of the IFA Plants,” 7 December 1953, 3,5,6 (CIA-RDP81-01030R000100360004-7); Idem., “Central Motor Vehicle Repair Shop in Zeesen,” 29 October 1951 (CIA-RDP82-00457R009400460004-8); Idem., “Concentration of Soviet Trucks with Rocket Launchers,” 5 January 1951 (CIA-RDP80-00457R006700220006-2); Idem., “Automotive Repair Facilities (Poland),” 17 November 1954 2 (CIA-RDP82-00046R000400240003-8).

20% of the entire army still relies on horse-drawn transportation.” Soviet vehicle production lagged military requirements, Thus,

many Soviet units still rely on foreign-made transport. For example one regiment contained 87 trucks and only three were of Soviet manufacture. Many other foreign vehicles are kept in preservation by the Soviets (i.e., tires are removed and trucks... stored on blocks, receive constant lubrication and mechanical checks). I estimate that 50% of all motor transport within the USSR is of American manufacture.

In the DDR that year, a CIA informant suggested:

It is of interest to note that at the present time the Soviet occupation army... has on its wartime Table of Equipment as artillery prime movers almost exclusively American Studebakers. They are kept in garages in perfect mechanical condition, cleaned, greased and oiled, ready for any emergency and are not used even for training purposes.

A 1953 dispatch confirmed that “American Studebakers, Dodges and Willys were kept... as prime movers; they were in good mechanical condition.”⁸³ Whereas American forces had no concern about dumping or scrapping acres of vehicles and planes, preparing for the next technological generation, the USSR, secretly rebuilding from massive destruction, kept its aging truck fleet going, scrupulously and systematically. Was there a plausible alternative?

Second Coda: Recovering Abandoned Vehicles for the Korean War

As is widely appreciated, in June 1950 US forces in South Korea were dreadfully unprepared for an invasion. The early months of the war belonged to the People’s Republic of

⁸³ CIA Information Report, “Soviet Army Transportation System,” 15 February 1952 1 (CIA-RDP82-00047R000100220004-1); Idem., “Attitude of Population,” 2; Idem., “Miscellaneous Information,” 12 July 1954, 2 (CIA-RDP80-00810A00401100012-1); Idem., “Soviet Vehicles,” 1.

Korea, which decimated both Republic of Korea and American formations, nearly driving them into the sea.⁸⁴ As is barely remembered, Operation Rollup, a postwar plan to recover vehicles and ordnance abandoned on Pacific islands, initially to support the Eighth Army in Japan, turned out to play a crucial role in averting defeat. Early in 1946 Undersecretary of War Kenneth Royale acknowledged before a Senate committee that Pacific Theater forces were daily shrinking, that that no military property could be just given to foreign states or individuals, that at least 1.6 million tons of “civilian-type items” should be repatriated for sale, and that few cargo ships to handle their return could be located. How much military hardware was scattered across island bases was unknown. Cost-consciousness again prevailed: “We have been averaging in this country about \$200 a ton for the sale of civilian items. That is a very rough figure. If it costs more than \$200 a ton to bring this stuff back... we could lose money.”⁸⁵ The transportation problem was axial, as moving people had priority over cargo. Not only were US forces departing for home, the Theater’s Liberty ships spent most of 1946 returning five million Japanese from once-occupied regions and sending a million conscripted war workers from the Home Islands to China and Korea. In consequence, masses of war materiel would have to be abandoned, much of it “left in the open in hot, humid tropical conditions.”⁸⁶

The Eighth Army was not sailing east, however; its assignment was to occupy Japan.⁸⁷

Within months of setting up shop, the Eighth’s war-worn vehicles and “major items of

⁸⁴ I.F. Stone, *The Hidden History of the Korean War, 1950-51*, New York: Monthly Review Press, 1952; David Halberstam, *The Coldest Winter: America and the Korean War*, New York: Hachette, 2008..

⁸⁵ Special Committee Investigating the National Defense Program, “Nature of Surpluses from the Pacific Theater,” 18 February 1946, unpublished transcript, 14-34 (Proquest Congressional HRG-1946-ndp-0021).

⁸⁶ Peter Kindsvatter, “Operation Rollup: The U.S. Army’s Rebuild Program During the Korean War,” *Transactions of the American Philosophical Society* 97(2007): 187-200.

⁸⁷ John Dower, *Embracing Defeat: Japan in the Wake of World War II*, New York, Norton, 1999.

equipment” began failing; undertaking full overhauls (“fifth-echelon maintenance”) meant returning them to the US. In 1947 Ordnance General Urban Niblo revived Operation Rollup, a canceled earlier plan for recovering Pacific materiel, which now would be sent to Japan, not San Francisco. In tandem, the Army would erect a comprehensive facility for heavy repairs (e.g., rebuilding engines and transmissions), “using Japanese workers and industrial infrastructure, much of which had been idle since war’s end.” Cost was a key consideration; rescuing and rebuilding stranded vehicles (and soon, tanks and artillery) was far less expensive than producing new replacement vehicles, “or shipping the Eighth Army’s 50,000 vehicles to the United States for rebuild and return.” Recovering abandoned vehicles and supplies commenced in 1948, though constrained by personnel and cargo space shortages. Some trucks were in good shape, having been stored under cover; others still rested in packing crates, having never been assembled. Most, however, had been left where they were parked on VJ Day. Exposed to the elements, their condition was poor. “Metal had rusted, canvas and wood had rotted, and rubber had deteriorated.”⁸⁸

Over the next two years, despite typhoons and careless packing/handling by inexperienced local workers, over two million tons of military property reached Japan, including “between 55,000 and 63,000 vehicles.” (Recordkeeping was uneven.) The US Far East Command assigned rebuilding major assemblies to the Tokyo Engineering Works, formerly a Mitsubishi-owned maker of “Japanese medium tanks.” Recruiting experienced war-era factory workers was not difficult, but retraining was essential. They “were not used to working with the close tolerances and allowances required in parts and equipment to permit the degree of

⁸⁸ Kindsvatter, “Operation Rollup,” 190-91; General Gerson Heiss, “‘Operation Roll-Up’ How Japan Became an Ordnance Arsenal for Korea,” *Ordnance* 36(1951): 242-45; Idem., “New Trucks for Old,” *Ibid.*, 485-89; Idem., “Army Ordnance in Japan,” *Ibid.*, 666-68.

interchangeability necessary.” The same went for supervisors, given the Americans’ emphasis on repeated inspection and testing of work in process. Bilingual “checklists, forms and instructions had to be devised as well. By late 1948, the military employed over 5000 Japanese in four shops; several more opened the following year, each designated to tear down and rebuild a specific vehicle type: 2-1/2 ton Jimmies went to Oppama, “while the Nagoya shop rebuilt ¾ ton trucks.” Often in pitiful condition, the vehicles initially underwent inspections for “missing parts and components,” before being “torn down to the frame.”

Boxed parts from “Operation Roll-Up” were assembled in Yokohama, Japan, almost as far as the eye could see (Army photo).



Figure 10 – Yokohama Parts Depot, 1951. (Gen. Gerson Heiss, “Operation Roll-Up,” *Ordnance* 36(1951): 243.)

All major assemblies such as engines, transmissions, transfer cases, and axle assemblies went to separate shops for rebuild. Engines, for example, were steam-cleaned, had their cylinders rebored and worn parts replaced. Engine accessories such as carburetors, distributors, fuel pumps, water pumps and generators were removed and rebuilt. Engines were then reassembled and run on a dynamometer... valves and timing were set and

carburetors and governors adjusted... Because labor was inexpensive, parts that were not normally salvageable were rebuilt, including bearings, brake cylinders and springs.

For a “deuce and a half” the entire process absorbed 438 man hours of labor (318 for a Jeep). On average, 100 recovered vehicles yielded 80 rehabilitated trucks. Progress was slow, however; in the two years before the Korean invasion, this system yielded just 3000 rebuilds.⁸⁹

Combat and retreat rapidly shifted priorities and resources. In the four months after June 1950, well-funded Rollup plants supplied 15,000 trucks to Eighth Army troops, along with 1400 artillery pieces and 740 tanks and armored vehicles. Employment steadily rose to over 30,000, with dozens of derelict metalworking plants reopened to feed thirteen Ordnance depots. By the armistice (27 June 1953), their output had reached 148,000 vehicles reconstructed and overhauled, among them thousands sent back repeatedly from the front for repair, as well as other “unserviceable vehicles shipped to Japan from the US for rebuild en route to Korea.” Estimates suggest the program saved the Army several hundred million dollars. Reanimating each Jeep cost \$780 vs. \$2400 for a new one; for a Jimmy 2-1/2, \$1500 vs. \$6300; and for a tank, \$6000 vs. \$244,000. More important, the vehicles reached combat zones months before any of them could be newly-made in the US and shipped across the Pacific. As perhaps the most massive recycling program in the 20th century, Rollup also pumped funds into the Japanese economy, providing work to entire industrial communities.⁹⁰

Regrettably, once the rescued trucks reached Korea, they fared no better than those Bill Mauldin memorialized in 1944 Italy. One mechanic reported that “many truck companies and

⁸⁹ Ibid., 191-93; Len Westrate, “How the Army Reclaims its Wrecks,” *Motor Age* 71 (June 1952): 42-43, 120-26.

⁹⁰ Murray Schumach, “Arms from Salvage,” *New York Times*, 10 August 1952, SM35; Westrate, “Army Reclaims”; Kindsvatter, “Operation Rollup,” 195-97. Westrate claimed that \$2 billion worth of equipment had been salvaged, saving the US \$700-800 million once shipping and rebuilding expenses were accounted for. (43, 120)

battalions... did not establish adequate preventive maintenance programs. The result...was frequent truck failures, expensive repairs and threatened failure of their transportation mission.” Cargo and troops had to be moved through mountainous terrain, in every kind of nasty weather; keeping trucks going was more important than keeping them fit. Transportation officers ordered unnecessary major parts while overlooking basics like filters, lubrication and engine timing. Ordnance officers investigating one motor pool found no stock records; spare parts rested in a large box, all jumbled together. Elsewhere,

[a motorized] battalion had to have sixty engines replaced in one week! Inspection of the original engines showed that the failures were caused by lack of preventive maintenance and improper operation. On a second occasion this battalion brought forty-eight vehicles into an Ordnance company on one day for field maintenance. [Meanwhile] battalion personnel complained to the army transportation officer that they could not operate efficiently because so many of their vehicles were deadlined.⁹¹

Coordination between supply and use was rarely simple in World War II; little had changed five years later.

Conclusion

What might we learn from these parallel (and interacting) accounts of providing and managing military trucks in wartime? What implications for a fuller understanding of American war capitalism and Soviet war communism might be suggested? Where are the resonances and the tensions between the two?

Let’s start with the materiel, the trucks and their parts. Sharply different from automobiles, military trucks in the 1940s were tough, ugly, specialized and flexible technologies put to work in dangerous circumstances. They were fungible, consisting of a standard platform (engine, power train, chassis, cab) and a variety of bodies – cargo box (metal or wooden), open

⁹¹ “Operation Failure,” in *Combat Support in Korea* (John Westcott, ed.), Washington, D.C.: GPO, 1955, 135-37.

or covered stake, tanker, maintenance unit, machine shop, medical station, communications unit, rocket launcher, crane, towing apparatus and more. During the war, US trucks were mass produced for the first time, using standard designs that simplified assembly, parts provision, and repair/overhaul. And while functionally differentiated, they all needed what we might call “mass servicing,” whose routinized steps had to be activated under conditions ranging from below zero freezes to melt-your-brain heat to unrelenting tropical humidity. Indeed they served as resources and assets; but they were facilitators of strategy as well – as actors providing both mobility and supplies and as cultural objects, beloved by the Red Army and admired, if badly treated, by American GIs. The counterfactual is magnetic: echoing Zhukov, without Studers, no Soviet warfare of perpetual movement and deception. Equally without Jimmies, no Red Ball Express fueling Patton’s wild drive to the Rhine. Likewise, without parts, rows of deadlined vehicles would multiply, useless for advancing war plans.

Parts were the war’s elusive actors. They got rusty or lost, went to the wrong destinations or were sunk *en route*. They exercised enormous leverage over trucks, which only they could reanimate, yet were precarious in their precision – each of them designed for one purpose only. Parts had names and identities (nomenclature) and an individuality derived from non-substitutability – though field mechanics could improvise, fiddling with their configurations to make them do work they weren’t supposed to, which only made them more individualized. Parts even had nationalities, for example, re tolerances where US and German parts were more finely machined than their Soviet or Japanese cousins, as evident in the Operation Rollup imperative to retrain Japanese factory workers for precision metalworking.

Organizationally, these warhorses inserted themselves into militaries that were morphing in response to feedback from operations. Initial retreats so mauled the Soviet rail network that a

multi-pronged road-building enterprise had to be fabricated so as to exploit the alternative transport that trucks represented. Given the Quartermaster Corps' ineptitude with trucks, Ordnance assumed responsibility for combat and non-combat vehicles, entailing a fast learning curve for its personnel, an awkward integration of human and mechanical transfers, and parts identification and supply problems never wholly resolved. The contrasts between the two force structures and their environments became especially robust at and after the war's end. When exiting, the Soviets looked to harbor resources (like the GM truck factories) and conserve assets (Studebakers and Jeeps) that would help sustain and expand socialism amid the ruins of Central Europe and the western USSR. They created parts-making capacities to extend American vehicles' useful lives, while revisiting their designs for postwar production (hampered by the uneven quality of Russian alloy steels). When exiting, the Americans hastened to get on to the next big thing, commercial trucks and cars for civilian life and newly-designed and -powered military apparatus (i.e., jet aircraft). Extracting maximum dollars from surpluses was a goal, to be sure; but getting rid of materiel that might clog peacetime markets may have been more important. The Korean War offered a twist to the tale – the recovery of resources wasted or abandoned. Of course, it helped that the US had ample capital to reactivate Japanese factories, an army with both logistical and bureaucratic skills, and masses of engineers and technicians to put the machinery in motion.

As signaled in this essay's epigraphs, what may be notable in the two regimes' after-war operations is the Soviets' reassertion of planning and intense organization after the war's chaos vs. the Americans' lurch into market disorder and confusion when recoiling from wartime central planning and control. In each situation, there was no restoration of prewar conditions, policies, or expectations. Something had to be done to acknowledge the Soviet people's sacrifices, though

it took over a decade to augment food and consumer goods supplies. In the US, nothing could restore American indifference and isolation from global responsibilities, assure return to its once-sleepy military posture (and establishment), or shrink the scale and power of the federal government. Planning could not propel Soviet growth, just as markets could not discipline the American state or its military. As well, neither under capitalism nor state socialism would the political and technical complexities of the spare parts problem diminish for decades, despite diverse projects to address them in each domain.