The Shipping Container - Sources

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This companion lists every source used in the book, what it supports, and how fully it was read. Read levels are stated honestly: FULL (read end to end), EXCERPT (substantial portions read), ABSTRACT (abstract/summary level), SEARCH (search-indexed text and extracts, verified by cross-checking but not read in full at the page). Where two sources conflict, the conflict is noted in the entry and, where it matters, in the book's text.

A. Foundational works and scholarship

C1. Marc Levinson, "The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger" (Princeton, 2nd ed.), Chapter 1 PDF and published excerpts. EXCERPT. Supports: the breakbulk world (SS Warrior, costs), McLean's early decisions, the standards wars (MH-5 votes, ISO rounds, Series 2 compromise, corner-fitting fight). Limitations: single-author synthesis; used here as the spine of the historical narrative, cross-checked against primary and official records throughout. http://assets.press.princeton.edu/chapters/s10724.pdf

C2. Brian Cudahy, "The Containership Revolution", TR News 246 (Transportation Research Board, 2006). EXCERPT. Supports: Ideal X configuration and voyage, Gateway City conversion (226 containers, 4 Oct 1957), Pan-Atlantic/Waterman lineage, deckhouse-aft design, the "1,000 feet vs thousands of miles" steamship-executive observation. Limitations: says the Houston transit took six days (see C4 conflict). https://onlinepubs.trb.org/onlinepubs/trnews/trnews246containerrevolution.pdf

C3. Marc Levinson interview, "The Box That Shrank the World", Works That Work. FULL (feature-length interview). Supports: SS Warrior details (194,582 items; 3 months; one-third of voyage cost), $5.83 vs 15.8 cents loading costs, aluminium first boxes, Brown Trailer and Tantlinger hiring, roof anecdote. Limitations: popular presentation; figures attributed to Levinson. https://worksthatwork.com/2/intermodal-container/share/ed0737fd77a709d94d8bbaf1d5617bb3

C4. Levinson essay, Financial Times, 26 April 2006 (author's site PDF). EXCERPT. Supports: 58 aluminium containers; five-day transit (conflicts with C2's six days - the book writes "about a week"); economic-geography thesis. https://marclevinson.net/FT\%20Article\%20042606.pdf

C5. "The Voyage to Containerization", Region Focus, Federal Reserve Bank of Richmond (2012). EXCERPT. Supports: McLean biography (filling station, 30 trucks by 1940, ICC cigarette rate case, third in trucking profits 1954, veterans as owner-operators), modelling-clay cell test, freight as 12%/10% of export/import value in 1961, ICC ruling and sale of McLean Trucking, fixed-price offer to the military, 1,200 containers/month at Vietnam peak, Seatrain and TMT background. Limitations: secondary; some details

from oral histories. https://www.richmondfed.org/-/media/richmondfedorg/publications/research/econ_focus/2012/q2-3/pdf/economic_history.pdf

C6. Arthur Donovan, “Regulatory Regimes, Technological Innovation, and the Origins of Containerization” (TSE conference paper, 2004). SEARCH. Supports: caution that the 1937 Hoboken cotton-bale origin story may be embellished. Limitations: not read in full; used only for the embellishment caution. https://www.tse-fr.eu/sites/default/files/medias/doc/conf/rai/papers_2004/donovan.pdf

C7. Arthur Donovan & Joseph Bonney, “The Box That Changed the World” (Fordham University Press; introduction and excerpts). EXCERPT. Supports: Ideal X built as Potrero Hills at Sausalito; comparison to Fulton’s North River Steamboat. https://doi.org/10.1515/9780823291090-002

C8. Bruno Marnot, “Containers: A European Invention, Rediscovered”, Encyclopédie d’histoire numérique de l’Europe. SEARCH. Supports: pre-history - European “frames”/freight containers in cross-Channel traffic; container principles between the wars. Limitations: used for pre-history claims only. https://ehne.fr/en/node/21702/printable/pdf

C9. “Benjamin Franklin Fitch, the Forgotten Developer of the Container System in US of America” (Academia.edu paper). SEARCH. Supports: pre-McLean American container systems (Cincinnati & Lake Erie 1929-30; Pennsylvania Railroad 1931). https://www.academia.edu/18493961/

C10. David Bernhofen, Zouheir El-Sahli, Richard Kneller, “Estimating the effects of the container revolution on world trade”, Journal of International Economics 98 (2016), and GEP working-paper version. ABSTRACT. Supports: 700% cumulative effect on North-North trade over 20 years, larger than GATT liberalisation. Limitations: estimates vary by version (700%/790%/320% figures all circulate); the book quotes the published abstract figure with attribution. https://doi.org/10.1016/j.jinteco.2015.09.001 ; https://www.nottingham.ac.uk/gep/documents/papers/2013/2013-02.pdf

C11. A. Cosar & B. Demir, “Shipping inside the box: Containerization and trade”, CEPR DP11750. ABSTRACT. Supports: box cuts variable shipping costs 16-22% at median distance; cost saving concentrated at interfaces, not distance. https://cepr.org/publications/dp11750

C12. Akerlof, “Sizing the Box” (2020). SEARCH. Supports: standards battle detail; ISO adoption 1964. https://akerlof.co.uk/wp-content/uploads/2023/01/Akerlof-sizing-the-box-2020.pdf

C13. Foster L. Weldon, “Cargo Containerization in the West Coast-Hawaiian Trade”, Operations Research 6:5 (1958). ABSTRACT. Supports: Matson’s systems-study approach to containerisation. https://doi.org/10.1287/opre.6.5.649

C14. Foster thesis (apparentwind.com) on West Coast containerisation. EXCERPT. Supports: Matson’s cost testimony (handling 48% of Hawaii’s seaborne commerce cost; labour 56%; costs +167% 1946-61; Jensen boxes; Marad 1956 survey of nine firms). Limitations: unpublished thesis quoting Worden (1981); attributed in text. https://www.apparentwind.com/mbr/maritime-writings/thesis.pdf

C15. UNCTAD, Review of Maritime Transport 2010, ch.1. EXCERPT. Supports: 2009 as the first absolute contraction of container trade (-9.0% to 124m TEU; 10% average growth over prior two decades). https://unctad.org/system/files/official-document/rmt2010ch1_en.pdf

C16. UNCTAD, Review of Maritime Transport 2024 and “Navigating troubled waters” (2024). EXCERPT. Supports: 12.3bn tons seaborne trade 2023; Asia 63% of container port calls; Suez container tonnage -82% by Feb 2024; 621 ships rerouted via Cape; both canals’ transits down >40% from peaks; 22% of seaborne container trade via Suez. https://unctad.org/publication/review-maritime-transport-2024 ; https://unctad.org/system/files/official-document/osginf2024d2_en.pdf

C17. World Bank, technical paper on refrigerated container transport of perishables (c.1986). EXCERPT (multiple sections incl. annexes). Supports: reefer history (Frigorifique 1877, Paraguay, Strathleven 1880), respiration/ventilation engineering, integral vs porthole units, microprocessor controls, fleet +42% Jan 1983-Jan 1986, UNCTAD 1980 banana study quotes, Seychelles/Pacific juice examples. Limitations: period document; its “current” figures are mid-1980s and are framed as such in the book. https://documents1.worldbank.org/curated/en/618601468739777372/pdf/multi-page.pdf

C18. US Army, “Service Support in Vietnam: Transportation and Maintenance” (Center of Military History, ch. VI). EXCERPT. Supports: CONEX inventory (100,000 by 1965; >150,000 in theatre), 1st Cavalry 2,500 containers, Cam Ranh push package (21 May 1966; 53,000 line items; 13,538 release orders; <0.2% denials), Sea-Land introduction to Vietnam 1967, ammunition container test Dec 1969-Jan 1970. https://webdoc.sub.gwdg.de/ebook/p/2005/CMH_2/www.army.mil/cmh-pg/books/vietnam/logistic/chapter6.htm

C19. “A Chain of Ships” (pictorial), USNI Proceedings, November 1969. EXCERPT. Supports: SS Bienville at Da Nang July

1967 (226 vans, 7,221 measurement tons, 15 hours vs 5 days), eight-ship Vietnam shuttle composition, DeLong pier crane, 24-hour turnaround. Limitations: period institutional account. https://www.usni.org/magazines/proceedings/1969/november/pictorial-chain-ships

C20. US Army logistic-support monograph 7, “Containerization” (DTIC AD0877965). EXCERPT. Supports: prebinned CONEX programme (6,000 containers Aug 1965-Aug 1968), mount-out boxes, Project YZJ background. https://apps.dtic.mil/sti/tr/pdf/AD0877965.pdf

B. Standards, engineering and industry structure

C21. ISO, “Boxing clever - How standardization built a global economy” (iso.org ref2215) and ISO/TC 104 committee page. FULL (short articles). Supports: ISO/TC 104 created 1961; scope (terminology, classification, dimensions, handling, testing); McLean patents made available free; ISO 668 as first standard. https://www.iso.org/news/ref2215.html ; https://www.iso.org/committee/51156.html

C22. “Container System Design Developments Over Two Decades” (engineering paper, USPTO petition archive). EXCERPT. Supports: MH-5 procedural detail (Sept 1959 task force, ballots, 14 April 1961 ASA approval), 1965 ASA standard and The Hague corner-fitting submission, air-mode compatibility decision. Limitations: hosted in a patent-petition archive; content is a technical retrospective by a standards participant. https://ptacts.uspto.gov/ptacts/public-informations/petitions/1554411/download-documents

C23. Keith Tantlinger obituaries: New York Times (7 Sep 2011) FULL; NPR (with Levinson) SEARCH; Telegraph SEARCH. Support: corner fitting and twistlock design, patents relinquished early 1960s, Fruehauf/Rohr career, Gibbs Brothers Medal 2009, death 27 Aug 2011; Levinson quotes on scale and garments. https://www.nytimes.com/2011/09/07/business/keith-tantlinger-builder-of-cargo-container-dies-at-92.html ; https://www.npr.org/2011/09/07/140256967/

C24. Google Patents: US3027025A (corner fitting, filed 8 Apr 1958, granted 27 Mar 1962) and US3085707A (stacking). SEARCH. Supports: patent dates and assignment to Sea-Land. https://patents.google.com/patent/US3027025A/en

C25. Commercial Motor archive, “Containerization: the unfinished battle for agreed standards” (1 Mar 1968) and 13 May 1966 report. SEARCH. Supports: subsidy leverage tied to standard sizes; 64 containers exchanged at Grangemouth in under six hours on the Fairland call. https://archive.commercialmotor.com/article/1st-march-1968/97/

C26. ASME landmark page, PACECO container crane. EXCERPT. Supports: first high-speed dockside container crane, Encinal Terminals Alameda, in service 7 Jan 1959, Matson specifications, turnaround “three weeks to eighteen hours”. https://www.asme.org/about-asme/engineering-history/landmarks/85-paceco-container-crane

C27. FHWA, RMG crane history (contract document). EXCERPT. Supports: PACECO’s dominance (200+ ports by 1980); ZPMC as today’s leading crane supplier; list of current crane makers. Limitations: procurement document, secondary. https://www.fhwa.dot.gov/construction/contracts/150.pdf

C28. USC Sea Grant, “Container Cranes: Linking Ship to Shore” (2021). FULL (short feature). Supports: $5.83/15.8c figures attributed to Levinson; Skagit Steel 90-day gantry prototype; Tantlinger hiring from Brown. https://dornsife.usc.edu/uscseagrant/2021/07/30/14-container-cranes-linking-ship-to-shore/

C29. CIMC annual report (Shenzhen filing, English). EXCERPT. Supports: CIMC’s No.1 rankings in dry/reefer/special container production per Drewry 2025/26 survey; tank-container production No.1 per ITCO 2024. Limitations: company document citing industry surveys; rankings attributed as such. https://static.cninfo.com.cn/finalpage/enpage/000039_2.pdf

C30. FreightWaves, “How three Chinese companies cornered global container production”. SEARCH. Supports: >96% of dry containers and 100% of reefers built in China (Drewry data); migration from Korea in the 1990s. https://www.freightwaves.com/news/how-three-chinese-companies-cornered-global-container-production

C31. The Loadstar, “China hit new record in container production last year”. SEARCH. Supports: CCIA figures - record 8.1m TEU produced 2024 vs 2.2m TEU 2023; dry 91.3% / reefer 4% of output; Red Sea demand driver. https://theloadstar.com/china-hit-new-record-in-container-production-last-year/

C32. FreightWaves, “Keep your eye on containers in global circulation”. SEARCH. Supports: world fleet 41.7m TEU end-2021; lessor shares (Triton 28%, Florens 17%, Textainer 16%, Seaco 11%, CAI 7% of the leased fleet). https://www.freightwaves.com/news/keep-your-eye-on-containers-in-global-circulation

C33. Drewry fleet data via PrefixCheck synthesis and The Loadstar. SEARCH. Supports: world fleet 51m TEU end-2023; carriers lease half the boxes they use. Limitations: secondary synthesis of Drewry figures; used for dated fleet magnitudes only. https://pr

efixcheck.com/guide/container-fleet-census/ ; https://theloadstar.com/rising-demand-and-slow-steaming-a-win-win-for-container-lessors/

C34. WorldCargo News, “Lessor confidence and resilience” (2023). SEARCH. Supports: Brookfield’s $13.3bn acquisition of Triton (2023). https://www.worldcargonews.com/container-industry/2023/04/lessor-confidence-and-resilience/

C. Ports and places

C35. Port Authority of NY & NJ, “Port Newark: How Malcom McLean Changed the World” (2016). FULL (short feature). Supports: Ideal X loading rate (one box/7 minutes; under 8 hours); Gateway City two cranes 15 boxes/hour; Port Authority context. https://portfolio.panynj.gov/2016/04/27/port-newarkmalcom-mcleans-box-changes-the-world/

C36. Port of Oakland history via Waterfront Action. FULL (short page). Supports: Watts/Nutter 1960 exchange; Oakland 1962 figures (787,603 revenue tons, <7% containerised); container tonnage surpassing breakbulk 1968; second port nationally by 1972. Limitations: port-authored retrospective. http://www.waterfrontaction.org/history/large/68_containers.htm

C37. “Magic Box”, Monument to Extraction (West Oakland history project). EXCERPT. Supports: Sea-Land’s 1962 choice of Oakland; Matson’s move; Trailmobile/Kaiser container manufacture in Berkeley. https://monumenttoextraction.org/stories/container-shipping/

C38. Port of London Authority, “Our history”; Barking & Dagenham Docklands history (archived): “The end of the upstream docks”. FULL (the Docklands page). Support: PLA’s Tilbury decision; closure sequence (India & Millwall 1979; Royals 1981); registered workforce 24,000 to 8,000 in ten years (PLA 1978 paper); Jack Dash and John Pudney quotations. https://pla.co.uk/our-history ; https://web.archive.org/web/20080917134945/http://www.bardaglea.org.uk/docklands/9-the-end.html

C39. AEA conference paper on UK containerisation and dock labour (Bernhofen/El-Sahli/Kneller, 2016), with Hansard (23 Feb 1982, Waddington written answer). FULL (both). Supports: 80% of containerisable UK trade in containers within 10 years; 150,000 jobs lost in London’s port districts 1966-76; NDLS 1947 framework; Tilbury container ban Jan 1968-Apr 1970; voluntary severance terms and the 1972 no-compulsory-redundancy agreement; NDLS abolished 1989. Hansard: national voluntary severance scheme from 1969; by end-Dec 1981, 15,348 registered dockers had taken severance in London incl. Tilbury, 957 in Southampton, 7,879 in Liverpool; a further 1,539 left London in 1968 under private schemes. https://www.aeaweb.org/conference/2016/retrieve.php?pdfid=10431&tk=2tezz9YF ; https://hansard.parliament.uk/Commons/1982-02-23/debates/0db06f5d-9f3a-4640-8636-9a245dc4be2e/Ports(Redundancies)

C40. Port of Felixstowe history page. SEARCH. Supports: Landguard Container Terminal opened 1 July 1967, first purpose-built container terminal in the UK. https://www.portoffelixstowe.co.uk/about/history/

C41. Port of Rotterdam, “Brief history of container transport” (container50.org.uk PDF). EXCERPT. Supports: Fairland arrival 3 May 1966 (226 35-ft boxes; US Lines’ American Racer April 1966; ECT founding and Atlantic Span 31 Aug 1967). https://container50.org.uk/RotterdamHistory.pdf

C42. PM Lee Hsien Loong, Tuas Port opening speech (PMO Singapore); MPA 50-years exhibition notes. SEARCH. Supports: Singapore’s 1966 decision to build Southeast Asia’s first container terminal; Tanjong Pagar first berth Nov 1971; first ship MV Nihon 23 Jun 1972 (300 boxes from Rotterdam); Tuas consolidation. https://www.pmo.gov.sg/newsroom/pm-lee-hsien-loong-at-the-official-opening-of-tuas-port/ ; https://www.mpa.gov.sg/media-centre/details/exhibition-for-youths-to-commemorate-50-years-of-singapore-s-container-shipping-journey

C43. Fremantle Ports, “Encounter Bay - 12 Berth Container Terminal, 28 March 1969”. FULL (short history page). Supports: OCL formation 1966 (four British owners); Encounter Bay arrival 28 Mar 1969; 1,300 TEU class; Vickers Hoskin twin-lift portainer; Kooringa context. https://www.fremantleports.com.au/the-port/history-and-heritage/container-trade/14---encounter-bay---12-berth-container-terminal-28-march-1969

C44. NYK Maritime Museum history and NYK news (2021). SEARCH. Supports: Matson-NYK-Showa transpacific cooperation; Hakone Maru II completed Aug 1968 (MHI Kobe; 752 TEU); round trip cut 80 days to 30. https://museum.nyk.com/kouseki/200910/index.html ; https://www.nyk.com/english/news/2021/20210712_01.html

C45. List of world’s busiest container ports (Wikipedia, compiling Lloyds List Top 100 and WSC figures). FULL (table). Supports: 2023 throughput table (Shanghai 49.0m TEU; Singapore 39.0m; Ningbo-Zhoushan 35.3m; NY/NJ 7.81m; Rotterdam 13.4m). Limitations: secondary compilation; used with dated figures and cross-checked against ecns (Shanghai 49.158m, 14th consecutive year) and UNCTAD. https://en.wikipedia.org/wiki/List_of_world\%27s_busiest_container_ports ; http://www.ecns.cn/news/cns-wire/2024-03-28/detail-ihcyyfhe2568582.shtml

D. Companies and the modern industry

C46. Matson corporate history; Smithsonian “Transforming the Waterfront”; CalMatters/OAC finding aid. SEARCH/EXCERPT. Support: Hawaiian Merchant 31 Aug 1958 (20 x 24-ft boxes); Hawaiian Citizen April 1960 (436 boxes; first all-container ship in the Pacific; first large reefer capacity); Matson research department 1956; 1970 purpose-built ships. https://www.matson.com/corporate/about_us/history.html ; https://americanhistory.si.edu/explore/exhibitions/america-on-the-move/online/transforming-waterfront ; https://oac.cdlib.org/findaid/ark:/13030/c8wm1frd

C47. CMA CGM Group, “Our history” and 40th-anniversary note; Les Echos (1999); WorldCargo News (2018). SEARCH. Supports: CMA founded 13 Sept 1978 (one ship, four employees, Marseille-Beirut); CGM acquired 1996 (predecessors 1851/1855); legal merger 27 Sept 1999; third-largest line by 2006; Jacques Saadé died 24 June 2018. https://www.cmacgm-group.com/en/group-and-vision/our-history ; https://www.worldcargonews.com/shipping-logistics/2018/06/cma-cgm-founder-jacques-saade-remembered/

C48. Evergreen Group corporate pages. SEARCH. Supports: Evergreen Marine founded 1 Sept 1968 by Chang Yung-fa with the 15-year-old Central Trust; company claim to have been the largest operator by 1985 (flagged as a company claim; not used in the manuscript). https://www.evergreen-marine.com/emc/aboutevergreen/jsp/EMC_CorporateProfile.jsp?lang=en

C49. SASAC (PRC) COSCO history; COSCO SHIPPING corporate history; People’s Daily (2016); Reuters (2016); TradeWinds (2018). SEARCH. Supports: COSCO established 27 April 1961 (Guanghua’s first voyage the next day); COSCO+China Shipping merger approved 4 Jan 2016, established Shanghai 18 Feb 2016; OOCL majority acquisition completed 27 July 2018. http://en.sasac.gov.cn/2020/04/27/c_1409.htm ; https://en.coscoshipping.com/col/col6922/index.html ; https://www.tradewindsnews.com/boxships/cosmo-takes-the-helm-at-ooil/2-1-386448

C50. Maersk press and Maersk Post (Sept 1999); EC merger decision M.1651; Horizon Lines SEC filing; UPI (1984). SEARCH. Supports: Maersk’s 22 July 1999 agreement to acquire Sea-Land’s international business from CSX; CSX’s 1986 acquisition of Sea-Land; RJR spin-off 1984. Limitations: price figures circulating ($800m) not confirmed from primary text read; not used. https://ec.europa.eu/competition/mergers/cases/decisions/m1651_en.pdf ; https://www.upi.com/Archives/1984/02/17/Reynolds-to-spin-off-Sea-Land/9973445842000/

C51. NYT obituary of Malcom McLean (29 May 2001); NC History Project; HBS Working Knowledge. SEARCH. Supports: born Malcolm (later “Malcom”) Purcell McLean, 14 Nov 1913, Maxton NC; died 25 May 2001; sold 75% of McLean Trucking for $25m; US Lines purchase 1978 and 1986 Chapter 11 (with JOC and NYT 1986). Note: one HBS source gives 1914 as birth year; the 1913 sources are preferred and used. https://www.nytimes.com/2001/05/29/nyregion/m-p-mclean-87-container-shipping-pioneer.html ; https://northcarolinahistory.org/encyclopedia/malcom-p-mclean-1913-2001/

C52. JOC (Nov 1986) and NYT (25 Nov 1986). SEARCH. Supports: McLean Industries/United States Lines Chapter 11 (24 Nov 1986; worldwide and transatlantic services suspended; 1,200 layoffs). https://www.joc.com/article/mclean-asks-protection-under-chapter-eleven-usl-to-drop-world-atlantic-services-lay-off-1200-5637934

C53. S&P Global Commodity Insights and Container News (Jan 2022). SEARCH. Supports: MSC overtaking Maersk on 5 Jan 2022 (MSC 4,284,728 TEU vs Maersk 4,282,840; both 17% share); Maersk’s >25-year run at the top. https://www.spglobal.com/commodity-insights/en/news-research/latest-news/shipping/010522-msc-tops-maersk-to-become-worlds-largest-container-shipping-line-alphaliner

C54. Maersk results announcement (8 Feb 2023). SEARCH. Supports: FY2022 revenue $81.5bn, EBITDA $36.8bn - the record year. https://www.maersk.com/news/articles/2023/02/08/apmm-reports-strong-results-for-2022

C55. Lloyd’s List (2024-25), Maritime Executive, Hapag-Lloyd. SEARCH. Supports: Feb 2025 alliance reshuffle - 2M dissolved; Gemini Cooperation (Maersk+Hapag-Lloyd) from 1 Feb 2025; Premier Alliance (HMM, ONE, Yang Ming) from 9 Feb 2025; MSC solo east-west; Gemini’s >90% reliability target and reported 92% (Hapag-Lloyd’s own figure, attributed as such). https://www.lloydslist.com/LL1150551/ ; https://www.hapag-lloyd.com/en/services-information/gemini-cooperation.html

E. Ships, rates and crises

C56. List of largest container ships (Wikipedia) with TradeWinds, OOCL press release, Guinness World Records. SEARCH. Supports: MSC Irina class 24,346 TEU (record as of early 2024; delivered 2023); OOCL Spain 24,188 (Feb 2023); Evergreen A-class 24,004 TEU (Guinness, 27 June 2022); dimensions. Limitations: rankings dated; the manuscript uses “as of early 2024”. https://en.wikipedia.org/wiki/List_of_largest_container_ships ; https://www.tradewindsnews.com/containerships/world-s-biggest-container-ship-msc-irina-enters-service/2-1-1420394

C57. Emma Maersk capacity coverage: WorldCargo News (2006) and Alphaliner data sheet via cargo-vessels-international. SEARCH. Supports: declared 11,000 TEU vs Alphaliner estimate 15,550; Ebba Maersk record 15,011 TEU loaded (Tanger-Med, May 2010); the manuscript's caution on "whose TEU figure". https://www.worldcargonews.com/cargo-handling-equipment/2006/08/maersk-newbuilds-22-wide/

C58. Panama Canal Authority and NBC News (2016). SEARCH. Supports: expanded canal inaugurated 26 June 2016; COSCO Shipping Panama (9,400 TEU) first transit; $5.25bn cost; 2 years late. https://pancanal.com/en/inaugural-transit-of-the-expanded-panama-canal-begins/

C59. Drewry briefings and Container News/FBJNA (2021-22); Wolf Street (28 Aug 2021). EXCERPT (Wolf Street FULL, short). Support: WCI peak $10,377/40ft (23 Sep 2021); pre-pandemic 5-yr average $2,362; Shanghai-LA $11,362 and Shanghai-NY $14,136 (week of 26 Aug 2021); 57% decline to $4,472 by Sept 2022; LA/LB anchorage records Aug 2021. https://wolfstreet.com/2021/08/28/port-congestion-spiking-container-rates-backlogs-chaos-the-peak-shipping-season-from-hell-is-here/ ; https://container-news.com/world-container-index-sinks-to-january-2021-levels-at-21-month-low/

C60. FreightWaves (Jan 2022); WSJ (11 Jan 2022); KDL industry update. SEARCH. Supports: record 105 container ships waiting off LA/LB on 7 Jan 2022; 800 dockworkers out with Omicron; anchor waits 3 days (2019) to 7 days (2021). Limitations: WSJ paywalled; figures taken from indexed text and KDL report. https://www.freightwaves.com/news/new-year-brings-new-all-time-high-for-shippings-epic-traffic-jam ; https://kdlog.com/app/uploads/2022/02/2022_02_KDLIndustryUpdate.pdf

C61. Reuters and Guardian on Hanjin (Aug-Sep 2016). SEARCH. Supports: receivership filed 31 Aug 2016; 5.6tn won debt; seventh-largest carrier; $14bn cargo and 400,000 containers stranded; 8,300 cargo owners affected. https://www.reuters.com/article/us-hanjin-shipping-debt-idUSKCN11603N/ ; https://www.theguardian.com/world/2016/sep/22/hanjin-shipping-korea-creditor-shareholder-pay-unloaded

C62. BBC (March 2021) on Ever Given; Lloyd's List daily-value estimate via BBC. FULL (both BBC articles). Supports: grounded 23 March 2021, refloated 29 March (13:05 GMT); 369 ships in the tailback as of 28 March; Lloyd's List estimate $9.6bn of goods held per day ($400m/hour, $6.7m/minute); 12% of total global trade through the canal; 18,300 containers aboard. Limitations: other outlets' lower daily-value figures exist; the book cites the Lloyd's List estimate with attribution. https://www.bbc.com/news/business-56533250 ; https://www.bbc.com/news/business-56559073

C63. ITF/OECD, "The Red Sea Crisis: Impacts on global shipping" (2024 background paper); Reuters (5 Jan 2024). FULL (both). Supports: attacks intensified from mid-November 2023; 14% of global maritime trade and 30% of containerised trade transits the Red Sea; Maersk diverting all container vessels around the Cape of Good Hope "for the foreseeable future" from 5 Jan 2024; diversion adds 8,500 nautical miles to the Far East-Europe round trip and 10 days to the voyage; war-risk premiums rose from a nominal 0.05-0.1% to 0.3-0.35% in early January 2024 and 1% by mid-January; Bab-el-Mandeb transits down 55% Nov 2023-Feb 2024 (container shipping -75%). https://www.itf-oecd.org/sites/default/files/repositories/red-sea-crisis-impacts-global-shipping.pdf ; https://www.reuters.com/world/middle-east/maersk-diverts-vessels-away-red-sea-for-foreseeable-future-2024-01-05/

C64. World Shipping Council, "Containers Lost at Sea" (2023, 2025 and 2026 updates). SEARCH. Supports: 221 lost 2023 (record low); 576 in 2024; 1,478 in 2025 (2026 update, published 25 June 2026; one incident = 640 boxes); ten-year average 1,274 (2025 update); 280m containers transported/year. Limitations: industry association self-report; each figure is cited in the book with its survey year. https://www.worldshipping.org/containers-lost-at-sea ; https://www.worldshipping.org/regulatory-filings/estimate-of-containers-lost-at-sea-2026-update

C65. US CBP, Container Security Initiative history; 6 USC 945; Bonner Senate testimony (2005). SEARCH. Supports: CSI announced Jan 2002; 47 foreign CSI ports by Sept 2006; statutory basis; the $1tn port-closure scenario estimate (attributed to the Commissioner's testimony). https://www.cbp.gov/about/history/cbp-20-20-establishment/container-security-initiative-launched-protect-global-trade-enhance-border-security ; https://www.hsgac.senate.gov/wp-content/uploads/imo/media/doc/STMTBONNERCBP.pdf

C66. IMO: Resolution MEPC.377(80) (7 July 2023) and press briefings; MEPC 83 (April 2025), MEPC/ES.2 (Oct 2025) and MEPC 84 outcome (2026) briefings; Fourth IMO GHG Study 2020 (via MEPC 80 report). EXCERPT (resolution and study via report; the three press briefings FULL). Supports: 2023 GHG strategy (2008 baseline; carbon intensity -40% by 2030; net-zero "by or around, i.e. close to, 2050"; indicative checkpoints -20/-30% by 2030 and -70/-80% by 2040; 5-10% zero/near-zero fuel uptake by 2030); shipping = 2.89% of global anthropogenic GHG (2018); Net-Zero Framework approved in draft April 2025, adoption deferred Oct 2025; the adjourned Second Extraordinary Session is scheduled to resume on 4 December 2026, subject to confirmation by MEPC 85 (30 November-3 December 2026). Limitations: fast-moving; status is stated as of 1 November 2026. https://www.imo.org/en/mediacentre/pressbriefings/pages/revised-ghg-reduction-strategy-for-global-shipping-adopted-.aspx ; http

s://www.imo.org/en/mediacentre/pressbriefings/pages/imo-net-zero-shipping-talks-to-resume-in-2026.aspx ; https://www.imo.org/en/mediacentre/pressbriefings/pages/imo-progresses-work-on-ship-emissions-pollution-and-ocean-protection.aspx

C67. Maersk, “EU Commission President names landmark methanol vessel as Laura Maersk” (14 Sep 2023). SEARCH. Supports: Laura Maersk, first methanol-enabled container vessel, named in Copenhagen. https://www.maersk.com/news/articles/2023/09/14/eu-commission-president-names-landmark-methanol-vessel-as-laura-maersk

C68. PortEconomics (Port Economics, Management and Policy) slow-steaming chapter; NYT (17 Feb 2010). EXCERPT/SEARCH. Supports: speeds cut from 22-23 to 18 knots from 2007; IFO380 Rotterdam $220/t (Jan 2007) to >$700/t (Jul 2008) to <$200/t (Dec 2008); Maersk fuel/emissions cuts up to 30% by halving top speed. https://porteconomicsmanagement.org/pemp/contents/part6/ports-and-container-shipping/slow-steaming-container-shipping/

C69. BLET and JOC on double-stack; Wikipedia (lead). SEARCH. Supports: APL stacktrain 1984; Southern Pacific’s 1974 platform; the set-dinner-table demonstration; double-stack 70% of US intermodal. https://blet.org/news/stacktrain-proves-naysayers-wrong/

F. Labour

C70. ILWU Dispatcher archive (21 Oct 1960 issue); ILWU Harry Bridges oral history. FULL (the Dispatcher issue’s agreement coverage and the oral-history page). Supports: M&M Agreement reached 18 Oct 1960 between ILWU and PMA; employer fund of $5m/year running to 1 July 1966 ($29m total); no layoffs, guaranteed minimum weekly earnings, early-retirement benefits; referendum ratification; Bridges’ 1957 Portland caucus reasoning - cooperate with the machine and share its benefits rather than fight it. https://archive.ilwu.org/wp-content/uploads/2015/03/19601021.pdf ; https://www.ilwu.org/oral-history-of-harry-bridges/

C71. NYT (8 Oct 1977), “Issue Behind Dock Strike: Ocean Shipping Revolution”. FULL. Supports: ILA membership in the NY-NJ port dwindled from more than 40,000 in the mid-1950s to 19,962 in 1970 and 11,800 in 1977; NY-NJ 70% of tonnage handled by North Atlantic ports; two container lines in 1956, 200 by 1970, 700 serving the US by 1977. https://www.nytimes.com/1977/10/08/archives/issue-behind-dock-strike-ocean-shipping-revolution.html

C72. “Inside the Box: Containerization and the Limits of Trade Unionism in the ILA, 1945-1977” (U. Kentucky dissertation). SEARCH. Supports: ILA’s jurisdictional fights and container royalties. Limitations: used for background only; specific royalty terms not quoted in the manuscript. https://uknowledge.uky.edu/cgi/viewcontent.cgi?article=1132&context=geography_etds

C73. AEA paper “Rise of the Machines: Evidence from the Container” (2017). FULL (abstract and findings sections). Supports: academic balance - containerisation reduced the longshore employment share, more so in bigger ports, but container ports also saw larger declines in unemployment; no link found to manufacturing/services employment shares. Limitations: working paper; the manuscript states the finding cautiously. https://www.aeaweb.org/conference/2017/preliminary/paper/rDza275Q

G. Statutes and treaties (regulatory chapter)

C74. Shipping Act of 1984, Pub. L. 98-237 (Congress.gov statute PDF); FMC history. SEARCH. Supports: signed 20 Mar 1984, effective 18 Jun 1984; section 7 antitrust exemption for filed agreements. https://www.congress.gov/98/statute/STATUTE-98/STATUTE-98-Pg67.pdf ; https://www.fmc.gov/about/fmc-history/

C75. Ocean Shipping Reform Act of 1998, Pub. L. 105-258. SEARCH. Supports: signed 14 Oct 1998, effective 1 May 1999; confidential service contracts. https://www.congress.gov/105/plaws/publ258/PLAW-105publ258.pdf

C76. Council Regulation (EEC) 4056/86 and Regulation (EC) 1419/2006 (EUR-Lex and reproductions); UK SI 2008/163. SEARCH. Supports: EU block exemption 1986; repeal 2006; conferences unlawful on EU trades from Oct 2008; UK Liner Conferences Act 1982 repealed 2008. https://www.eurlexa.com/act/en/32006R1419/present/text ; https://www.legislation.gov.uk/uksi/2008/163/pdfs/uksiem_20080163_en.pdf

C77. UN Convention on a Code of Conduct for Liner Conferences (Geneva, 6 April 1974; in force 6 Oct 1983). SEARCH. Supports: the 40-40-20 cargo-sharing formula and dates. Limitations: treaty status page read at summary level. https://treaties.un.org/pages/ViewDetails.aspx?chapter=12&clang=_en&mtdsg_no=XII-6&src=TREATY

H. Corrections and conflicts log (summary)

I. Sources added in the 1 November 2026 revision

C78. ISO 6346 (freight containers - coding, identification and marking) and IMO, International Convention for Safe Containers (CSC), 1972, in force 1977 (official pages). SEARCH. Supports: the eleven-character box identity (three-letter owner code, equipment-category letter, six-digit serial, check digit) and the CSC safety-approval plate with periodic examinations. https://www.iso.org/standard/83558.html ; https://www.imo.org/en/about/conventions/pages/international-convention-for-safe-containers-\%28csc\%29.aspx

C79. MSC corporate pages: “MSC Group” history and Captain Gianluigi Aponte profile (msc.com). SEARCH. Supports: MSC’s founding in 1970 by Gianluigi Aponte, the first vessel Patricia, and the early Italy-East Africa services. https://www.msc.com/en/about-us/msc-group ; https://www.msc.com/en/about-us/management/captain-gianluigi-aponte

C80. Kuehne+Nagel myKN, “MSC extends unmatched market share lead in global container capacity” (12 June 2026), reporting Alphaliner data. FULL (short article). Supports: MSC’s operated fleet at 7.329m TEU and a record 21.5% share of global container capacity in May-June 2026, surpassing Maersk’s 19.3% benchmark of 2018. https://mykn.kuehne-nagel.com/news/article/msc-extends-unmatched-market-share-lead-in

C81. ACL official history (myacl.aclcargo.com) and Wikipedia, “Atlantic Container Line”. SEARCH. Supports: ACL’s consortium composition - formed 1965 around Wallenius with Swedish and Dutch partners, joined by Cunard (British) and CGT (French) in 1967. https://myacl.aclcargo.com/history.php ; https://en.wikipedia.org/wiki/Atlantic_Container_Line

J. Revision notes (1 November 2026)

Targeted corrections made in the revised manuscript; all other text, structure, chapter order, imprint and styling unchanged.

1. Gateway City: “could empty and reload the ship in eight hours” corrected to “could unload her in under eight hours” - the sourced rate (two cranes at 15 boxes per hour; C35) covers a one-way discharge of 226 boxes in about seven and a half hours.

2. The Ship: the crew comparison “one two-hundredth of the cargo” was not supportable from any source; replaced with “a small fraction of the cargo”.

3. Going Global: ACL’s consortium now reads “Swedish, Dutch, British and French” (was “Swedish, Dutch and British”) - Cunard and CGT joined in 1967, before the Atlantic Span entered service (C81).

4. The Lines: MSC’s standing updated from “two years later it remained ahead” to mid-2026 Alphaliner figures (7.3m TEU; record 21.5% share) (C80).

5. The Box Itself: ISO 6346 identity corrected to a three-letter owner code plus equipment-category letter; CSC dating made precise (concluded 1972, in force 1977) (C78).

6. The Trucker’s Idea: the 1937 Hoboken cotton-bale scene now carries the historiographical caution of C6 (McLean’s own telling, possibly polished in the retelling).

7. Copy fixes: “a employment scheme” to “an employment scheme”; “Skeptics” to “Sceptics” (house spelling).

8. Apparatus: 189 inline source tags [Cn] added across all chapters, each resolving to an entry in this companion, and a companion-pointer line added to the title page. Tags were placed on factual claims only, after re-checking each claim against the cited entry; rhetorical and analytical passages were left untagged.