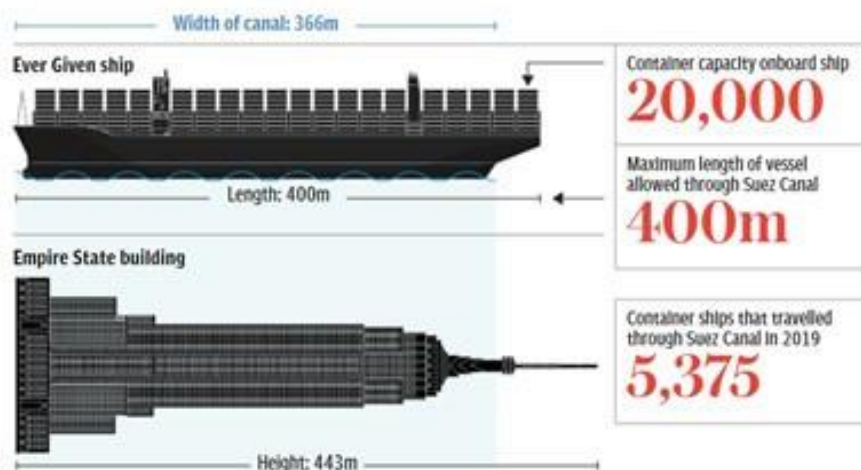


For the Love of Canals.....

Dr. Steven McCabe, Associate Professor, Institute of Design and Economic Acceleration (IDEA) and Senior Fellow, Centre for Brexit Studies, Birmingham City University

In a news agenda dominated by Covid-19 it's almost refreshing to report on a crisis that's taken place in one of the world's major shipping lanes, the blockage of the Suez Canal by *Ever Given*, a Japanese-owned container ship. At 1,300 feet long and capable of carrying 20,000 containers, usually 40 foot long, it's a huge vessel.

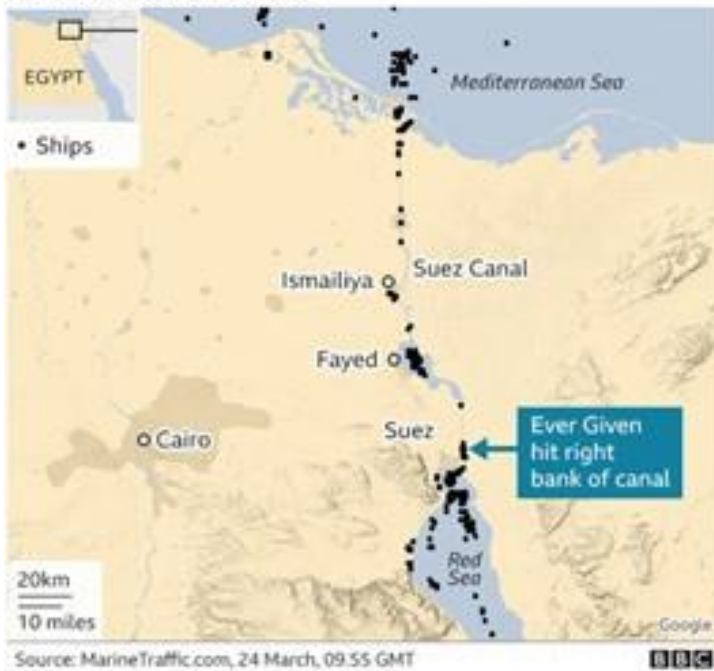
How big is the container ship?



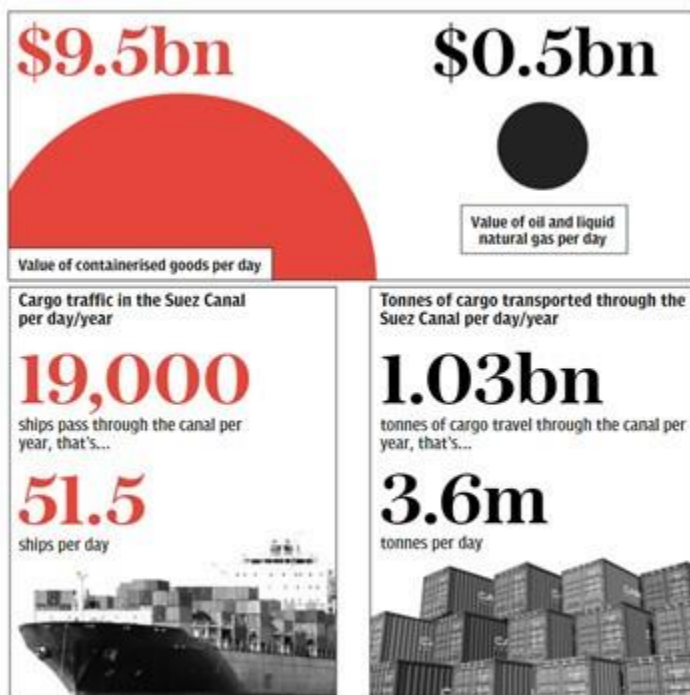
SOURCE: SUEZ CANAL AUTHORITY

Source: *The Telegraph*

Suez canal blocked



The fact that the [ship](#) causing the blockage was re-floated on Monday afternoon will have come as a profound relief to, most particularly, shipping companies and the 400 plus ships affected. Loss of trade will have a [‘ripple effect’](#) and, following the impact of lockdowns caused by coronavirus, will mean higher costs which will mean everyone will pay more for goods.



Source: *The Telegraph*

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Significantly, as was being reported this time last year at the beginning of lockdown, there's what seems the almost inevitable concern about toilet rolls being in short supply. What the latest '[Suez Crisis](#)' clearly demonstrates is the fragility of supply-chains for goods we take for granted.

Though we're aware of the existence of ships allowing regular transit of goods from the Far East, few of us will ever see the behemoths critical to world trade. In the last five years we've heard much about the importance of trade with the EU. However, a great deal of what we standardly purchase is imported from outside this block and, as should recognise, dependent on unfettered routes for the ships carrying them.

Anything impeding shipping flowing through the Suez Canal is potentially problematical.

The Suez Canal has long been the most crucial part of the route from the Far East to Europe. Though built with French finance, in 1875, the British government, having taken a 44% share in the operating company, advocated a permanent armed force to ensure free passage of shipping.

As we discovered to our cost in 1956 when the Suez Canal was nationalised by President Nasser, and military force unsuccessfully used by this country and France, the ability to use it cannot be guaranteed. Its closure in 1967 following the 'Six Day War' between Egypt and Israel, only reopening in 1975, is a reason why a ship as large as the *Ever Green* was travelling along the Suez Canal.

Chastened by closure of this [vital route](#) and combined with a vastly increased cost for oil, ships were built much larger to gain as much efficiency by carrying as many of containers as possible. This trend continued throughout subsequent decades as major shipping lines achieved ever greater saving in cost by economies of scale. As the [Financial Times](#) article, 'New Suez crisis: a global economy creaking under the strain' demonstrates so starkly, there's intrinsic fragility in supply-chain routes we're utterly dependent on.

At 120.1 miles (193.3 km), the [Suez Canal](#) carries 10-12% of all annual oil and goods transported by sea in the world. As the map below shows, it provides a considerably shorter route than existed its construction over ten years and opened on 17th November 1869:

Alternative route for shipping while Suez Canal blocked

 Using Suez Canal	 Around Cape of Good Hope
10,000 nautical miles (18,520km)	13,500 nautical miles (25,002km)
25.5 days*	34 days*

*Based on ship's average speed of 16.43 knots



That the Suez is critical to world trade is beyond doubt. Speed of transit of goods, always a commercial imperative, was precisely the reason the Suez Canal Company, formed in 1858 by former French diplomat Ferdinand de Lesseps, who'd obtained a concession to connect the Mediterranean Sea to the Red Sea, built it. Building canals was a technique successfully employed thousands of years previously by pharaohs such as Khakheperre Senusret II who ruled from 1897 BCE to 1878 BCE, Sesostri who ruled from 1878 BC to 1839 BCE, and Darius the Great who ruled from 522 BCE to 486 BCE.

Building the Suez Canal was, understandably, a phenomenal undertaking which commenced on 25th April 1859. Precise details on the cost and labour used is not available making analysis difficult. Nonetheless, it's estimated that at any time between 30,000 and 50,000 men were employed, many of whom were believed to be forced labour.

Though actually planned to be complete by 1865, as Lesseps' company discovered, using men wielding picks and shovels was considerably slower than dredgers and steam shovels then available in Europe. Sadly, because of accidents, which were common, and an outbreak of cholera among workers living close to the construction in unsanitary conditions without access to clean water, left 1,000 dead.

In a list of the great canals of the world still in use, the Suez though the oldest, is not the longest. That honour belongs to the Russian White Sea–Baltic Canal, completed in 1933, linking Lake Onega to the Baltic Sea in Saint Petersburg which is 141 miles long (227 km). Significantly, the only British entry on this list is the Manchester Ship Canal completed in 1894 and providing a 36-mile-long (58 km) 'inland waterway' link between the Irish Sea close to Liverpool and 'Cottonopolis', Manchester.

The list includes another which is as famous as Suez but, unfortunately, is because of the number who died during construction as well as the loss of investment by 800,000 people due to bankruptcy of the first company to achieve the objective of linking the Caribbean Sea with the Pacific Ocean. This is the 48-mile (77 km) long Panama Canal.

Following his success on the Suez Canal, Ferdinand de Lesseps attempted, but failed, to complete construction between 1881 and 1894. As Yale University's Caroline Lieffers describes in [The Conversation](#), accidents and "ferocious disease" this attempt resulted in the loss of over 20,000 lives. It was eventually completed in 1914 by the United States government which, in 1904, took control of the remaining assets. Even then, completion came at a huge human cost. Lieffers states that though the official death toll is 5,609 "many historians" believe the actual figure to be several times higher with many thousands dreadfully injured.

Canals in this country, which almost literally every person will have at least seen and, of course, a good many travelled on for pleasure of one form or another, means we're well acquainted with this form of transport. However, their original purpose, to enable the transit of goods has long passed by, initially, railways then road hauliers. The severe winter of 1962-63, when canals froze for months, effectively ended any remaining legacy as a transport route for goods.

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Importantly, though, in their day, 'inland waterways' were collectively as critical to our prosperity and supply of everyday goods as the Suez Canal and other major waterways are now.

As explained, above, though canal-building has an extremely long and well-established historical tradition, the notion of building a network linking all cities and major towns in any country was pioneered in Britain. The catalyst was the need for supply of fuel for factories opening during the industrial revolution.

Efficient machines powered by reliable fuel was fundamental to what's known as the industrial revolution, an expression coined by economic historian Arnold Toynbee (1852–83). Toynbee describe Britain's economic development from 1760 to 1840, as being a shift from agrarian and handicraft pursuits to one in which Britain's reputation and prowess increasingly relied on manufacturing.

Coal, formed millions of years ago by dead plant decaying into peat and, due to heat and pressure, forming a solid substance, and burning at high temperature was this fuel. Britain's was blessed by vast deposits of what was regarded by Roman conquerors as the 'best stone in Britain' (see Freese in her book, *Coal a Human History*, published by Arrow Books in 2006). Invention of the atmospheric engine in 1712 by Thomas Newcomen, subsequently developed by James Watt in Glasgow in 1759, using steam, meant an exponential increase in demand for coal to provide power for machinery in factories.

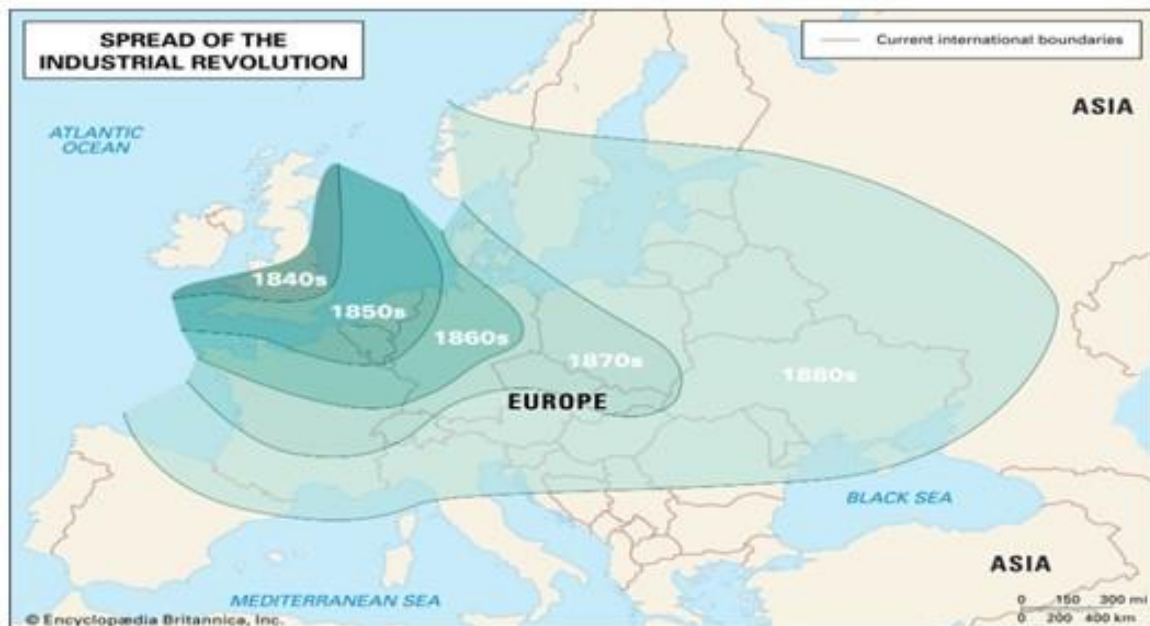
The problem was that, for a variety of reasons, large towns and cities were built away from where coal was found by digging at the surface and, in the case of deeper seams, mining. A reliable method of transporting it was essential. This was the reason for canals.

Though initially drawn by horses – you can still see ephemera left on many canal paths – a barge carrying coal could carry at least ten times the amount in a cart on roads (some estimates are many times this), which, prior to the development of tarmacadam in the early 1800s by Scottish engineer John Loudon McAdam, were largely rutted making transportation of goods (and people) extremely unpleasant, slow and unreliable.

The first constructed inland waterway to be built, the 15-mile (24 km) long Sankey Canal opened in 1757, but closed in 1963, connected St Helens with Spike Island in Widnes. Though important as providing an exemplar of what was possible, the next to be completed in 1761 was the ‘gamechanger’.

The 41-mile (65.98 km) Bridgewater Canal, named after the 3rd Duke of Bridgewater, who funded it, allowed coal to be transported from mines he owned to Manchester, quickly developing as a major centre of industry, particularly for cotton. Bridgewater’s canal reduced the costs of coal by nearly two-thirds within a year and made him Bridgewater a fortune provided the stimulus for subsequent ‘canal mania’.

During the sixty years between the 1770s and 1830s almost 4,000 miles (6,400 km) of canals were constructed in the British Isles, many still in use today. By providing coal for factories, and allowing transport of goods to ports for export, immense wealth and technological progress was achieved. What Britain had demonstrated was possible through the steady supply of coal was emulated across Europe.



Investment of finance, the application of organisation by contractors and vast numbers of men (tens of thousands) created the canals we still see today. Without the efforts of men whose digging and shifting of millions of tons of earth and rock, as well as ensuring canals were watertight by application of clay, known by civil engineers as ‘puddling’, combined with construction of tunnels, aqueducts and, essentially, the system of locks to traverse undulating land, canals would not have been possible.

We owe these men an immense debt.

Though eventually machines would be invented to assist in the effort of canal building, as expert Anthony Burton in his masterful books, particularly his *The Canal Builders* (first published in 1972 by Eyre Methuen but still available), makes clear, the endeavour was effectively one achieved by men using hand tools.

Unsurprisingly, deaths and injuries were common. Though records are notoriously unreliable, it’s estimated many hundreds died and thousands were injured. Ultan Cowley’s *The Men Who Built Britain: A History of the Irish Navy* (published in 2001 by Merlin), is as wonderfully evocative as it’s informative in telling of the horrors confronting those working on canals during the industrial revolution.

As [The Daily Mail](#) reported in 2019, the construction of the Manchester Ship Canal, colloquially known as the ‘Big Ditch’, was a

“one of the most gruelling tasks a Victorian labourer could have the misfortune of working on” and resulted in the deaths of 130 men with many thousands who were left with lifelong disfigurements and disabilities.

Water has always provided much needed substance of life and the ability to transport humans and goods; a point emphasised by PIANC, The Worldwide Association of Waterborne Transport Infrastructure make in their 2016 Report (Number 139), *Values of Inland Waterways*. Canals are now considered to be an essential resource for leisure and tourism.

Next time you stroll along a canal which, during the pandemic, has been a lifeline for many of us, spare a thought for the ingenuity that created them as well for the suffering of the men who built them two hundred years ago. Just think, you really are following the footsteps of those whose efforts originally made Britain global.

Dr. Steven McCabe is co-editor of *Brexit and Northern Ireland, Bordering on Confusion* (published by Bite-Sized Books, ISBN-13:978-1694447807) and *English Regions After Brexit: Examining Potential Change through Devolved Power* (published by Bite-Sized Books, ISBN-13: 979-8666953099). He has contributed chapters to a number of texts in the last year (in 2020 unless otherwise stated): *Brexit Negotiations after Article 50: Assessing Process, Progress and Impact* (published in 2019 by Emerald Publishing, ISBN: 978-1787697683); *The Wolves in the Forest: Tackling Inequality in the 21st Century* edited by Hindley and Hishman (published in 2019 by Social Liberal Forum); *Boris, Brexit and the Media* edited by Mair, Clark, Fowler, Snoddy and Tait (published by Abramis Academic Publishing, ISBN-13: 978-1845497644); *The Virus and the Media: How British Journalists Covered the Pandemic*, edited by Mair (published by Bite-Sized Books, ISBN-13: 979-8643725824); *The Pandemic, Where Did We Go Wrong?* edited by Mair (published by Bite-Sized Books, ISBN-13: 979-8665858326); *BBC, A Winter of Discontent?* edited by Mair (published by Bite-Sized Books ISBN-13: 979-8694863117) and *The Pandemic, Where are We Still Going Wrong?* edited by Mair, (published by Bite-Sized Books ISBN-13: 979-8563726338). His latest chapter, ‘Does Vaccination offer Johnson a Way out of the Pandemic?’ is published in *Pandemic, A Year of Mistakes?*

Edited by Mair to be published by Bite-Sized Books (ISBN-13: 979-8702357799).

His latest co-edited book, *Exploring the Green Economy, Issues, Challenges and Benefits*, will be published in early summer. Additionally, 'I Promised You a Miracle – Life Under 'Greased Piglet' Johnson', will be included as a chapter in a forthcoming book, *Populism and the Media*, to be published by Abramis Academic Publishing in June.