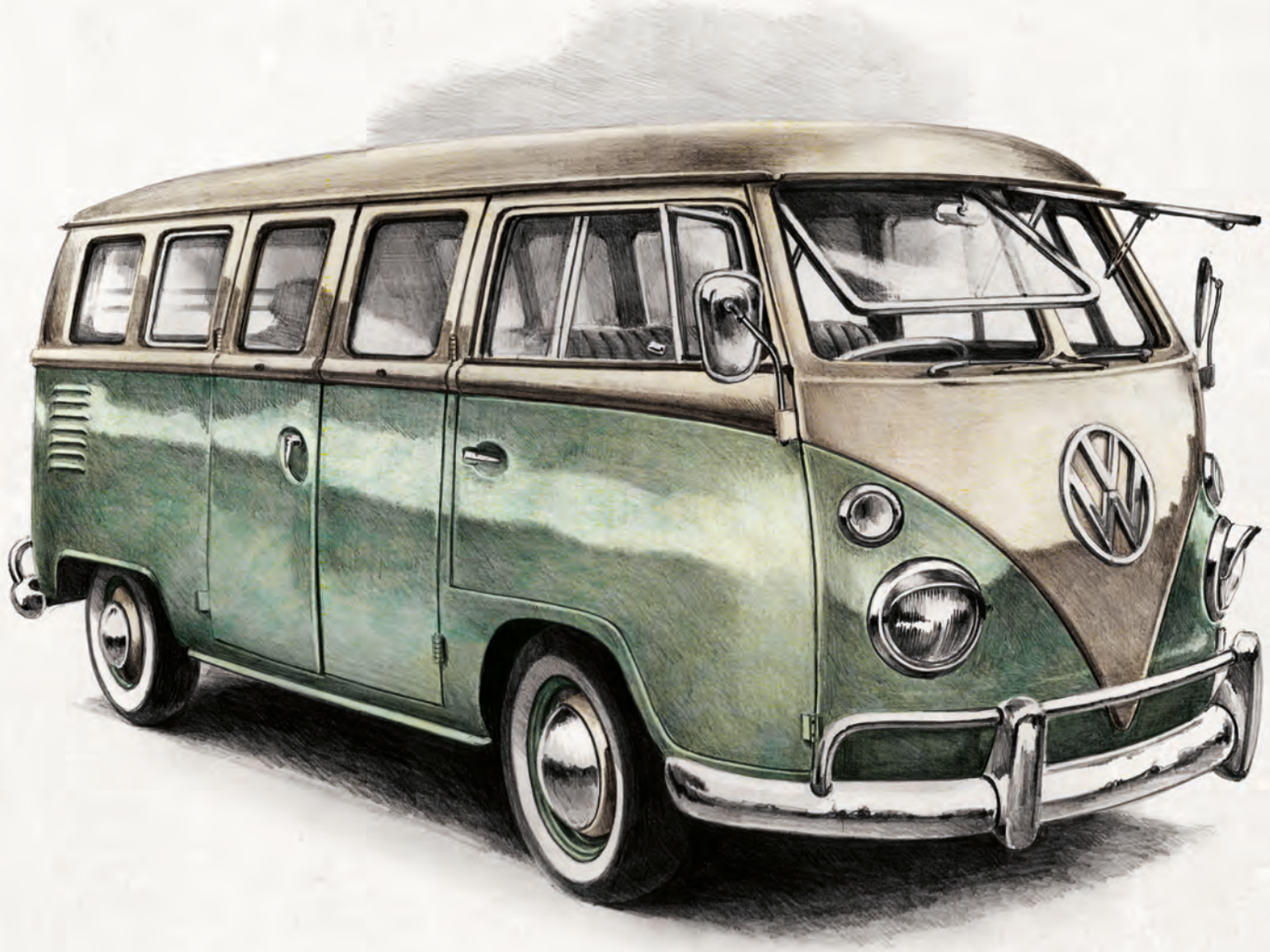
MEANS OF TRANSPORT THAT CHANGED THE WORLD ◆ Illustrated by Martin Sodomka

MEANS OF TRANSPORT THAT CHANGED THE WORLD

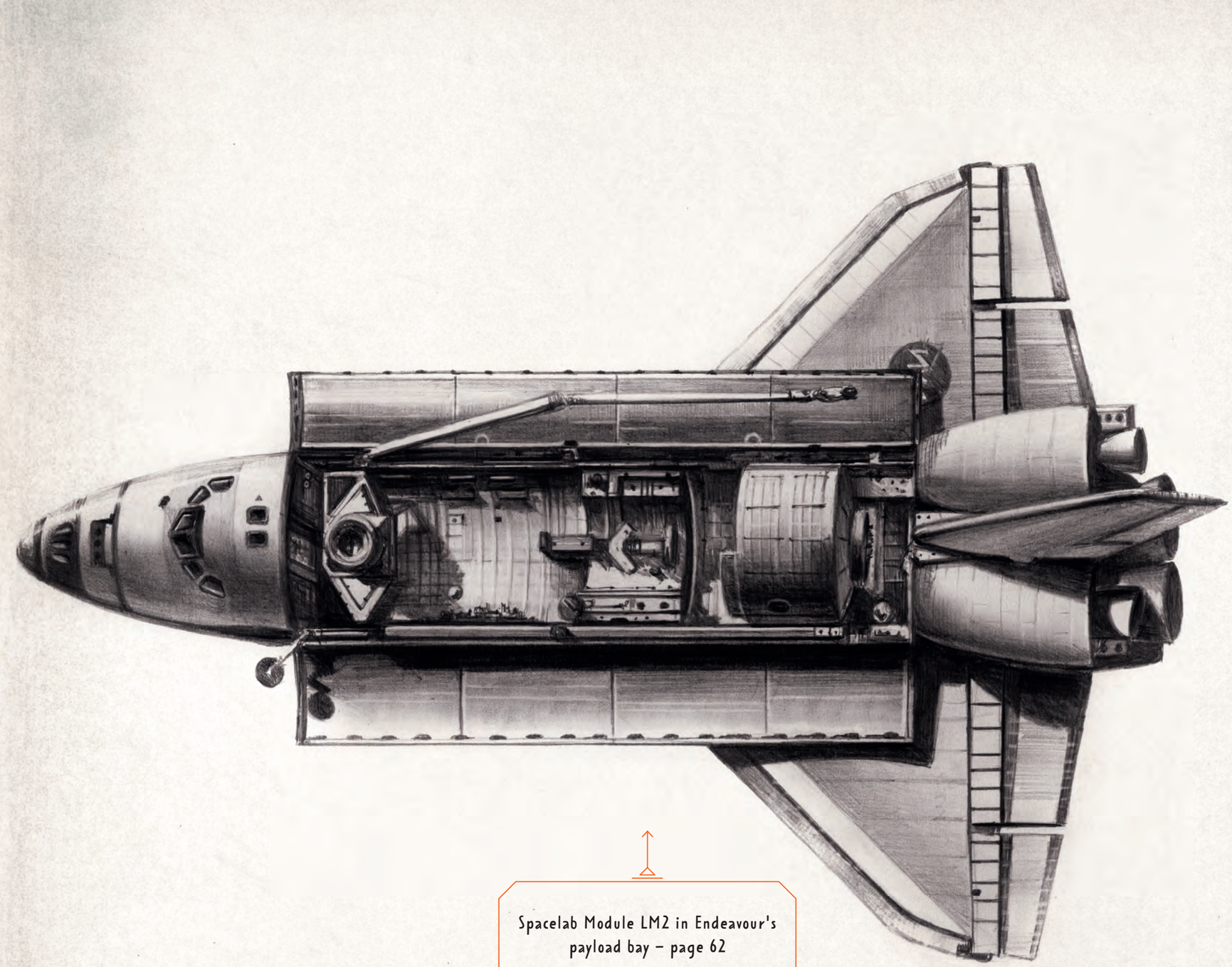


Illustrated by Martin Sodomka

B4U Publishing

INTRODUCTION

We all travel sometimes—to school, to see a friend in another town, perhaps even to a foreign country on holiday. Have you ever wondered how people travelled centuries ago, and what earlier generations had to do to get from place to place? Today we take cars for granted, but in earlier times a car was a dream, at best an idea. But all grand schemes begin with an idea. Once upon a time someone had the idea of crossing the open sea in search of a new world, using nothing but the wind, paddles and a few tons of wood. Today, the ships that battled the ocean waves are in a museum or at the bottom of the sea. Modern vessels of today are at peace with the sea: they are far larger than their predecessors and can move without the wind's help, something the first seafarers would have found fantastical. What if our ancestors had learned that birds were not the only creatures that could fly, because we terrestrial bipeds can transport thousands of people from one end of the planet to another? And that we can even fly beyond our own world, into space? Maybe one of our young readers will be inspired by these pages to come up with an idea so grand that people of the future will write about it. Who knows?

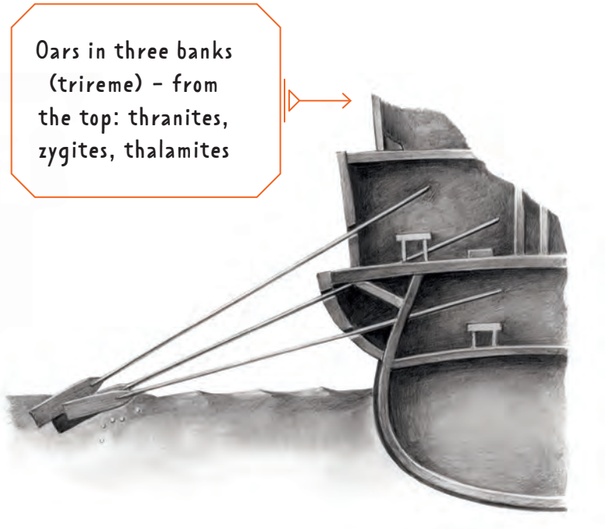


Spacelab Module LM2 in Endeavour's payload bay – page 62

3rd century BCE

TESSARA-KONTERES

The galley Tessarakonteres is without doubt the largest non-motorized ship the world has ever seen. Although commissioned by the pharaoh Ptolemy IV, who ruled Egypt from 221 to 204 BCE, this enormous ship – she was 128 metres long – was not built in Egypt. At Ptolemy's request, she was constructed and named in ancient Greece. The name is loosely translated as *with forty oars* or *forty-rowed*. "Forty oars?" you say. "That's not so many." How wrong you are! The oars of this huge ship were no ordinary light or midweight paddles; they were great logs of wood, each of which needed eight strong men to work it! As there were eighty oars in total – forty on each side – the ship had to be powered by 640 oarsmen, most of whom were prisoners. For a single voyage, 640 oarsmen were too few, however. So that they could eat, sleep, rest and recover their strength, they had to take the rowing in turns. Multiply 640 by six and you get to 4000 – and that was the number of oarsmen on board. Then add to this 400 crew and a further 2850 – the number of soldiers the galley Tessarakonteres was able to transport. Indeed, she was built to take soldiers from place to place. As you see, then, this rowing boat was pretty massive. How fine it would be to see her, and to walk across her deck! You could believe yourself to be in a floating city. What a pity we will never have the opportunity! Tessarakonteres, this showcase of Ptolemy's power, is with us no longer. Indeed, we can't be sure that she ever truly existed …



Oars in three banks (trireme) – from the top: thranites, zygites, thalamites

The ship may have looked like this. Due to a lack of historical evidence, we can only speculate about its appearance.

1829

DOUBLE-DECKER BUSES

What do you think of when you hear the word *London*? Sherlock Holmes? Red telephone boxes, or two level buses? This means of transport is as much a part of England as football and fish and chips. In the 19th century, London became the first true metropolis. Crowds would walk the winding streets every day. So that the people could manage to get where they needed to be, in 1829 the omnibuses came into use. Pulled by horses, they carried up to 22 people on the Paddington—Bank line. Early in the 20th century, horse-drawn buses were replaced by motorized buses produced by the London General Omnibus Company, the largest player in the industry. To differentiate its buses from the competition, the LGOC painted each of its vehicles red. Later, to enable the bus to take as many passengers as possible, an upper deck was added. The legendary double-decker was born. Double-deckers run to this day, operated by the same company as runs the London Underground. Each of today's London buses is equipped with satellite navigation, and some run on eco-friendly fuel. One multi-decker is associated with a strange legend. It is said that at night Londoners occasionally see a mysterious black bus, which has no scheduled point of departure or destination. Remind you of anything? You may have seen just such a bus in a film. It is the bus that saves a certain young wizard, and it has three decks! The bus from the film is the only drivable triple-decker bus in the world. And the young wizard's name? Harry Potter, of course! Everyone knows Harry Potter—he is as much a part of London as its red buses.

New diesel-electric hybrid Routemaster bus

You can see the historical Brixton-to-Clapham horse-drawn bus for yourself at the London Bus Museum.

The noun OMNIBUS, referring to a long, horse-drawn vehicle, was first used in French.

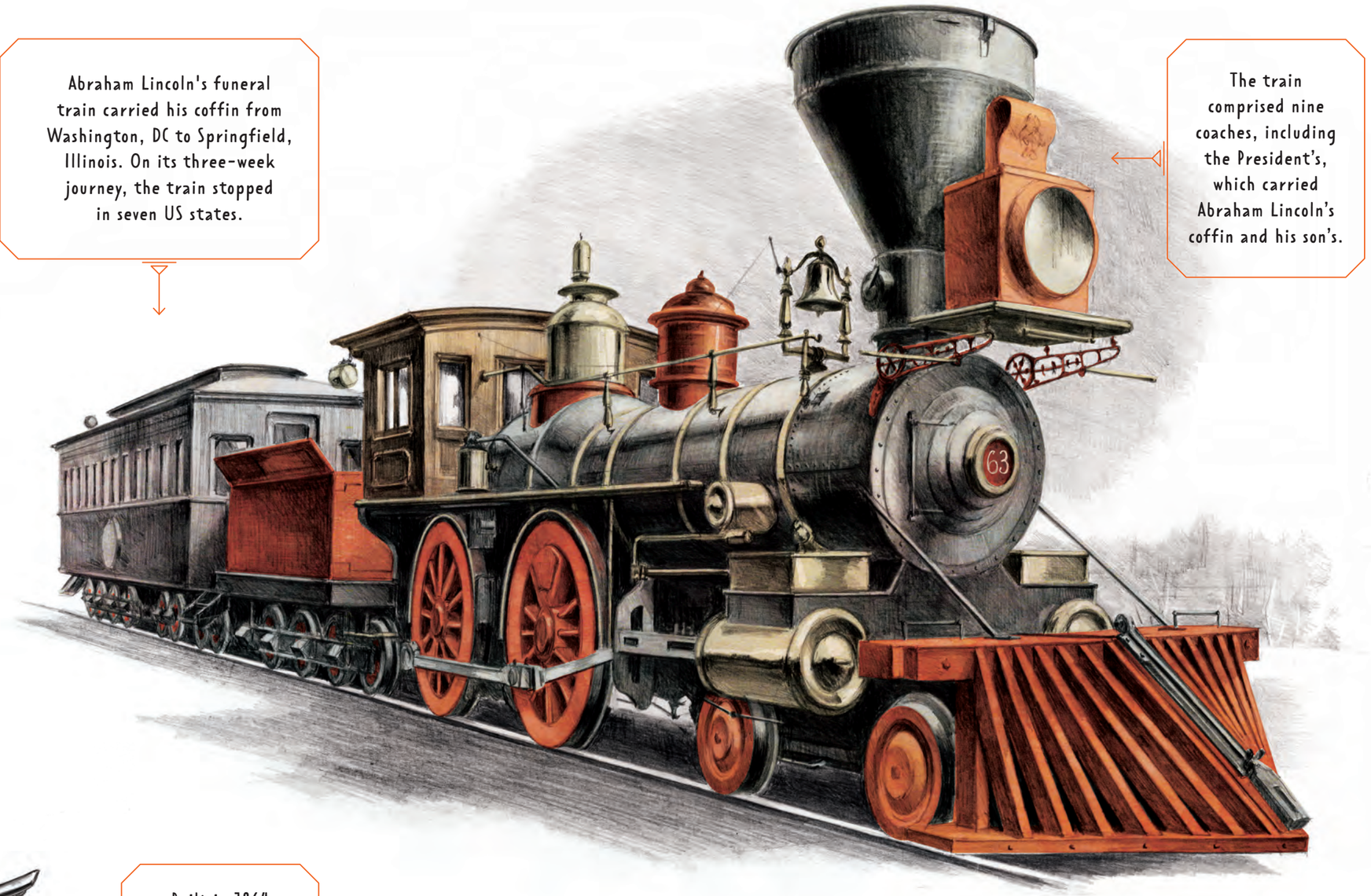
LINCOLN'S VEHICLES

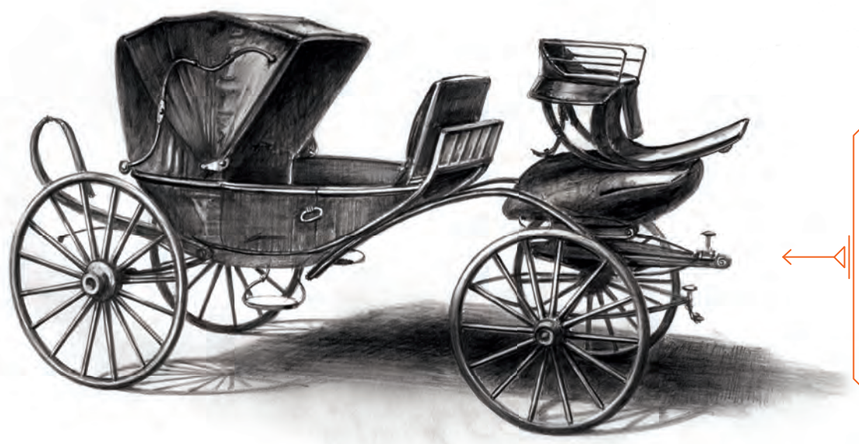
Some may think that it is great to be a head of state. All you have to do is make speeches, go to parties and attend celebrations, while everyone listens to what you say. The truth is, however, there is not much fun and a great deal of hard work involved. Now imagine being head of several states at the same time. As the 16th President of the United States of America, Abraham Lincoln knew a thing or two about it. He had many troubles to contend with, not least raging civil war. Another of his problems was that he couldn't find a horse big enough to seat himself on. For the age in which he lived, the president was uncommonly tall. To add insult to injury, he wore an enormous top hat. When he rode onto the battlefield in support of his army, more than once he saw a soldier or two suppressing their laughter. On one occasion he was seated on such a small horse that his heels touched the ground. Such a state of affairs ill befits a president.

Now you know why Abraham Lincoln preferred to travel to important meetings by carriage. A carriage provided space in which he could stretch his long legs, relax after the demands of the day, consider his new speech, and mourn the death of his eleven-year-old son. After three years of grief, he knew joy again with the end of the war. One evening in 1865, President Lincoln was at last ready for some entertainment, so he set out for Ford's Theater. As he was travelling there by carriage, little did he know that the black vehicle would enter the history books as the last he would ever ride in. At the theatre, the assassin John Wilkes Booth was waiting. A single shot from Booth's gun did for Mr Lincoln. As to carriage rides, the 16th President did, in fact, take one more. The last vehicle in question was the funeral train which took presidentals remains to Springfield Illinois, where is president burried.

Abraham Lincoln's funeral train carried his coffin from Washington, DC to Springfield, Illinois. On its three-week journey, the train stopped in seven US states.

The train comprised nine coaches, including the President's, which carried Abraham Lincoln's coffin and his son's.





Built in 1864 by the Wood brothers, this carriage was a gift to Abraham Lincoln before his second inauguration.

BELL 47

Maybe your parents remember the famous American TV series M.A.S.H. If they do, they will also remember its theme tune and the helicopter that flew wounded soldiers to the 4077th Mobile Army Surgical Hospital. Shaped like a dragonfly, the latter entered the history books as the first helicopter for civilian use. Its charm was in the simplicity of its construction—a characteristic bubble-shaped cabin welded to a tail beam. In the first model, the cabin as well as the beam was uncovered, but with the passing years various modifications and changes were made to the Bell. Although it had only a simple six-cylinder piston engine, it proved its great usefulness in many different fields—from the Apollo space programme, where it served as a trainer for a moon landing, to agriculture, where it was involved in the development of aerial crop-dusting. How delighted designer Arthur M. Young must have been that his creation was employed in so many places! And just imagine the proud reaction of artist and inventor Leonardo da Vinci, who designed a prototype helicopter in the 15th century!

Prototype aircraft for Moon-landing training, with Bell 47 cabin

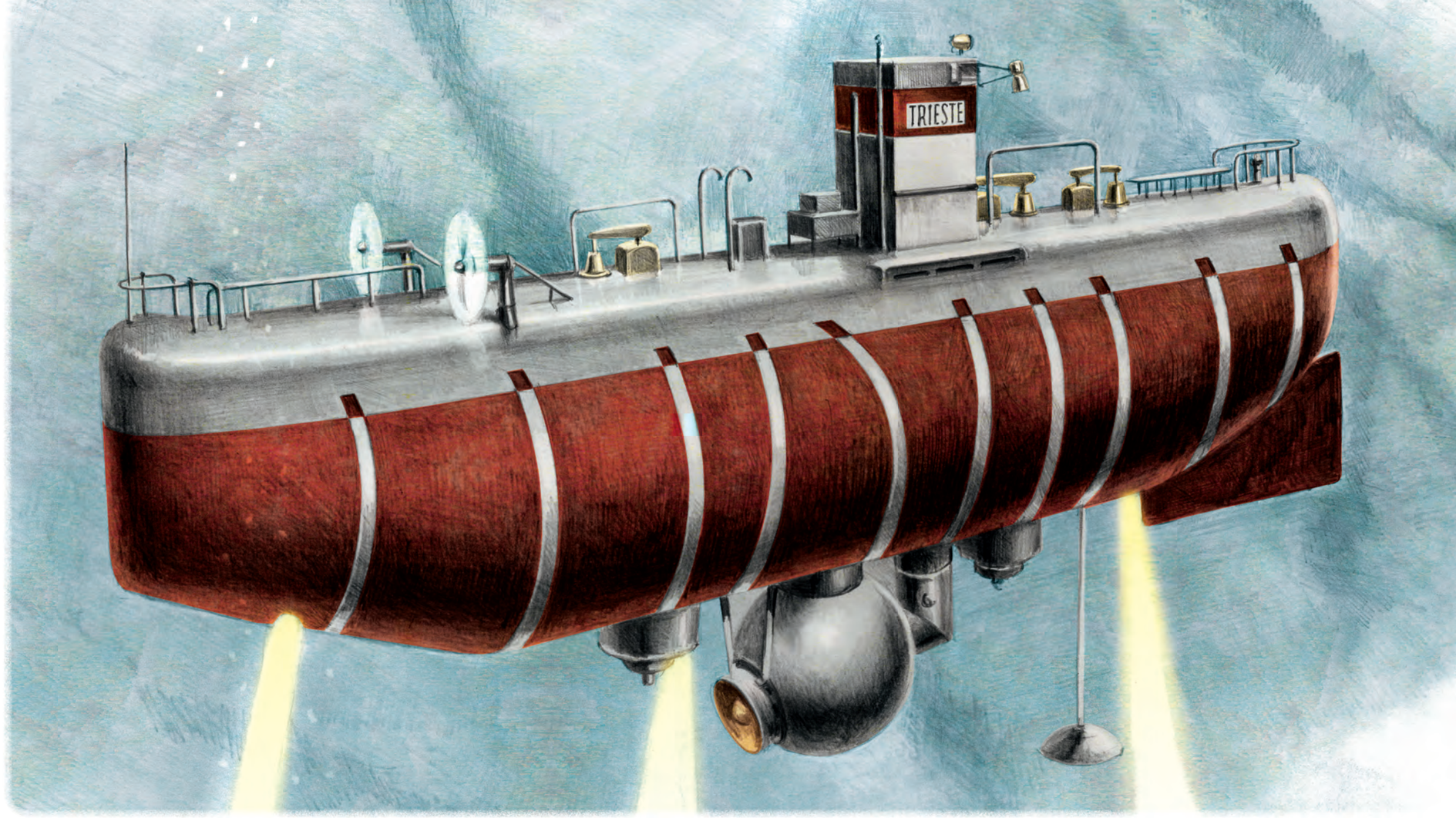
The military version of the helicopter had space in the side cabins for stretchers to carry wounded soldiers.

Typical bubble-shaped cabin with cockpit for two passengers

1953

TRIESTE (BATHYSCAPHE)

Just imagine, we actually saw fish down there! – claimed oceanographer Jacques Piccard and US sailor Don Walsh, the first men to travel to the very bottom of the Mariana Trench in the Pacific Ocean, in the Challenger Deep on 23 January 1960. It took them four long hours to reach the impressive depth of 10,911 metres. Piccard and Walsh were mistaken in thinking they saw fish, of course. What they saw were sea cucumbers: fish cannot survive at depths greater than 8,000 metres. Perhaps the judgment of the two men was affected by euphoria – theirs was a remarkable first-time achievement. The intrepid explorers reached the bottom of the world's deepest sea trench in Trieste, a special submarine capable of travelling to great depths known as a bathyscaphe. She was designed by the Swiss Auguste Piccard, who happened to be Jacques's uncle. The explorers spent a full twenty minutes on the bed of the Mariana Trench. It then took them three hours and fifteen minutes to return to the surface.



A bathyscaphe is a vessel designed to reach very great depths. The first bathyscaphe was designed and built by Auguste Piccard, in 1953. Our two intrepid explorers would not have reached the bottom of the Mariana Trench in that first vessel, however, for its maximum depth was only 6,000 metres. Auguste Piccard continued to make improvements to his bathyscaphe. The shape of Trieste was based on that of an earlier vessel, the FNRS-2. Entered from the deck via a vertical shaft, the round nacelle attached to the bathyscaphe served as an observation cabin for the two crew, who watched what was going on around them through thick Perspex. Bulbs of quartz glass illuminated the dark, deep ocean. At that time, Perspex and quartz glass were the only such materials strong enough to withstand the pressure. The bathyscaphe's fuel tank contained an unbelievable 85,000 litres of petrol. When the vessel reached the undersea layer known as the thermocline, she came to a halt. The remainder of her descent was managed by the buoyant force of the ever-heavier water. This descent could only be achieved once the crew opened a valve in the petrol tank to replace some of the petrol with water. But for the Perspex developing a crack, one might say that the descent went off without a hitch. The happy pioneers of the deep communicated with the crew of the auxiliary boat by transmitting sonar signals and using a hydrophone to receive sound waves underwater. Oxygen was provided by pressure cylinders, while carbon dioxide was removed by being passed through canisters of soda lime. The oceanographer Jacques Piccard was so keen on deep-sea exploration that those twenty minutes were not enough for him. He went on to make a career of it. As for Trieste, the first vessel to travel to so great a depth, this one expedition would prove to be the only such excursion she would ever undertake.

1981

SPACE SHUTTLE COLUMBIA

In 1969, American astronauts became the first people to walk on the Moon, so bringing the space race to a climax. Some say the race ended in 1972, when Soviet cosmonauts and US astronauts came together in orbit as part of the Apollo-Soyuz space mission, following a cooperation agreement by the governments of the two countries.

So that the bold travellers could get into orbit in the first place, a means of transport was needed not only to get them out there but also to make a successful landing, unlike the first space rockets. In this regard, the United States remains the world leader: it has built five such space shuttles, also known as orbiters. The Soviet space shuttle Buran, too, made it into space, but with no crew on board. Space shuttles serve to convey materials and/or crews into orbit. They are launched into space on a rocket and slide back down to Earth when the mission ends.

The first of the five US space shuttles to make it into space was Columbia. She was named after the ship Columbia Redidiva, the first American vessel to circumnavigate the globe, and also after the command module that landed on the Moon. She was the first ship with an international crew and also the first with a woman commander. Sadly, Columbia is often remembered for the tragic accident that ended her career—a devastating explosion on re-entry to Earth atmosphere. After the accident, which resulted from a simple hole in a wing, space shuttle flights were suspended for two years. They resumed in 2005 with the space shuttle Discovery, which travelled successfully and accident-free until 2011, when the project was stopped altogether. This doesn't mean, however, that space exploration has come to an end. In future, rather than working in nation-state teams, countries will cooperate as we strive to reach places no one has reached before.

MEANS OF TRANSPORT THAT CHANGED THE WORLD

Written by Štěpánka Sekaninová & Tom Velčovský

Illustrated by Martin Sodomka

The book Means of Transport that Changed the World is based around a list of important milestones in the development of travel and transport. From little-noticed ideas that launched a technological revolution, through successes that reached for the stars, to tragedies that ended vast projects once and for all. As an exploration of this book will show, every ending stands at the beginning of something new. Take a ride with us on the fastest, greatest, most awesome, most controversial machines, of which it can be truly said that they moved humanity forward.

b4u publishing
www.albatrosmedia.eu

ISBN + EAN