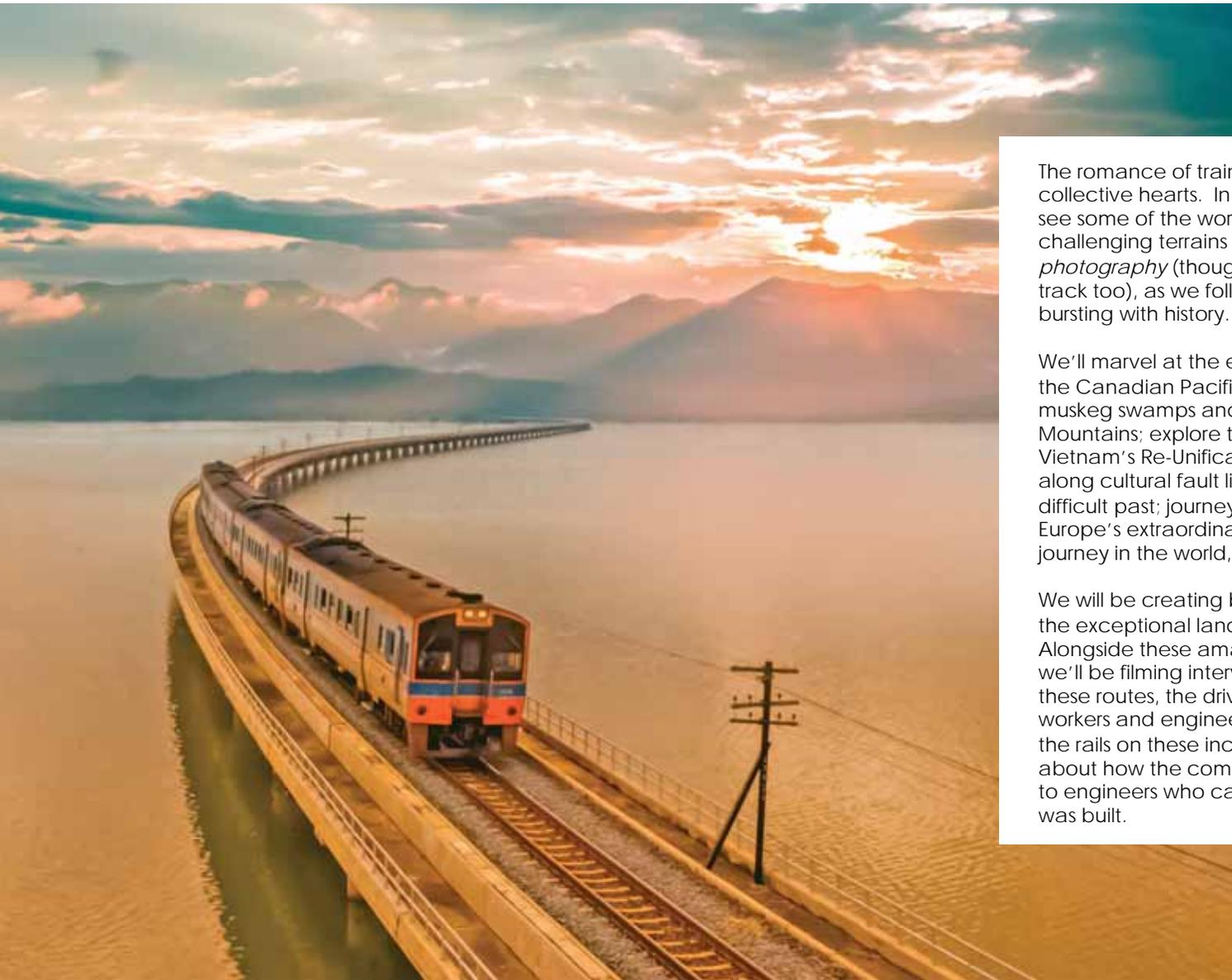


An aerial photograph of a train traveling through a dense, snow-covered forest. The train consists of a red locomotive and a yellow freight car. The tracks curve through the landscape, and the surrounding trees are heavily laden with snow, creating a monochromatic blue and white scene.

WORLD'S GREATEST TRAIN JOURNEYS FROM ABOVE

 **PBS Renegade**
8 x 60'



The romance of train journeys holds a strong place in our collective hearts. In each episode of this new series, we'll see some of the world's most spectacular scenery and challenging terrains primarily through the lens of *aerial photography* (though we'll be in the train and on the track too), as we follow extraordinary train journeys bursting with history.

We'll marvel at the exceptional feats of engineering as the Canadian Pacific Railway carves its way across muskeg swamps and through the forbidding Rocky Mountains; explore the bloody history along the route of Vietnam's Re-Unification Express whose tracks were built along cultural fault lines ripped open during the country's difficult past; journey in absolute luxury through Eastern Europe's extraordinary landscape on the longest train journey in the world, the Trans-Siberian Express.

We will be creating bespoke drone footage to capture the exceptional landscapes the trains glide through. Alongside these amazing aerial and archive footage, we'll be filming interviews with the people who work on these routes, the drivers, conductors, maintenance workers and engineers. We'll also film with people riding the rails on these incredible routes – and talk to historians about how the coming of the train changed society and to engineers who can explain how on earth the railroad was built.

WORLD'S GREATEST TRAIN JOURNEYS
FROM ABOVE

THE CANADIAN PACIFIC

Each episode will follow the tracks of a very different, yet equally breath-taking train journey. Possible routes for Series 1 include:

The building of the [Canadian Pacific Railway](#) was at the heart of the founding of modern Canada, changing a colony into a country. The economic and historical importance of this great railway is equalled only by the wonder of the construction itself. We'll be above trains on a route carved through the wilderness from Montreal to Vancouver, covering 2,898 miles. Planning started in 1871 and a self-imposed deadline of 10 years was ambitious considering there were no existing maps of the interior.

Our drone mounted cameras will film the forests of Ontario, the shores of Lake Superior, the buffalo-tracked prairies, and five hundred miles of mountains. All these had to be charted as a possible railway route before they even broke ground. Built largely by immigrant labour from Europe, the most dangerous jobs, for example using explosives to clear tunnels, were done by Chinese 'coolies', some as young as 12 years old, doing back-breaking work for an absolute pittance. We'll meet the engineers who keep this trainline alive, transporting essential goods to some of the remotest communities on the planet.



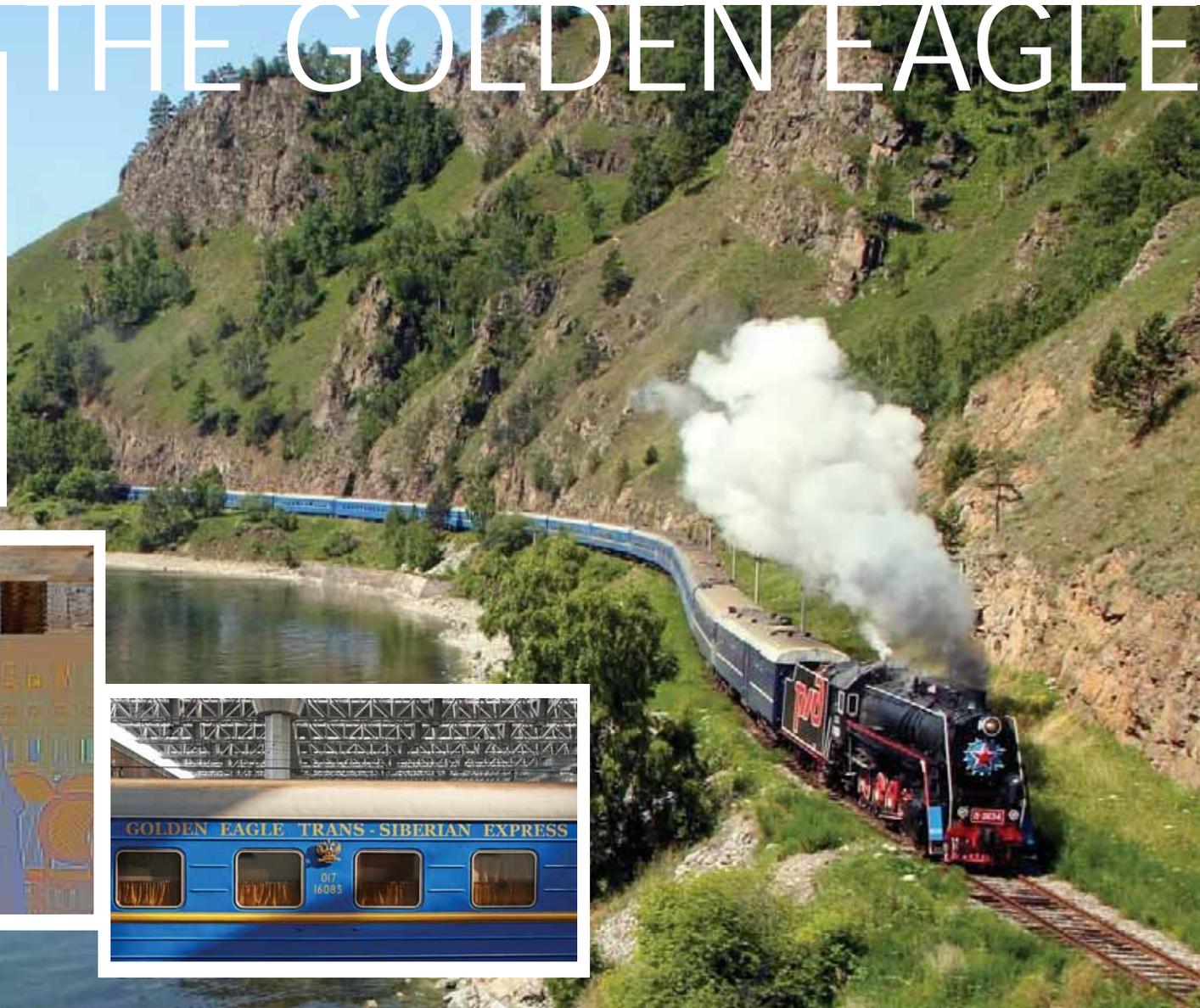


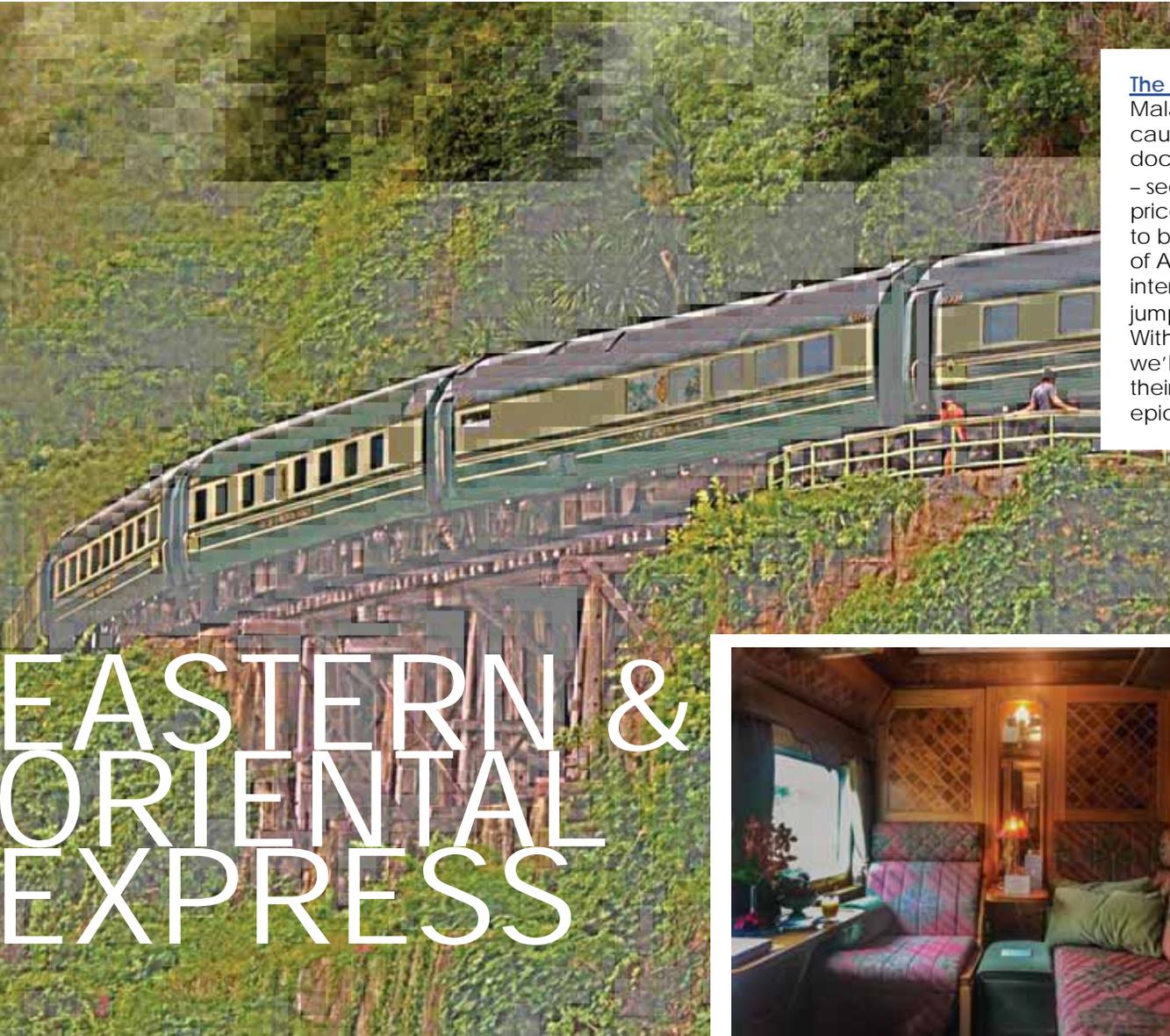
The [Re-unification Express](#) heads south from Hanoi to Ho Chi Minh City – this rusted railroad covers 1,726 km and rumbles through rice paddies, and dense jungles, past water buffalo, fishing villages, and even right through crowded neighbourhoods inches from people's homes. From the air, it's spectacular. Trains linked Hanoi to what was Saigon until 1954, when Vietnam was divided into north and south and the railway was cut...trains finally resumed on 31 December 1976, unifying the country once more. The line now crosses more than a thousand bridges, goes through dozens of tunnels and has more than 150 train stations, all repaired since the war – we'll meet the people who worked tirelessly to re-build the railroad, bringing this trainline and their country back together.

RE-UNIFICATION EXPRESS

THE GOLDEN EAGLE

Russia's Golden Eagle, Trans-Siberian Express vies with the Hogwarts Express for the title of world's most famous railway. Slicing through the vast continent, our cameras will fly above the trains starting at Moscow and ending on the Eastern coast at Vladivostok, covering 5,722 miles across seven time zones. We'll meet passengers who happily pay an eye-watering £27,000 per person to stay in the Imperial Suite - the epitome of luxury. The 20-car train is pulled by a steam engine, heightening the romance of a route that travels over the Urals, the magnificent steppes and along the shore of the world's largest freshwater lake. Completed in 1916, after 25 years of innovative engineering and back-breaking labour, this is one of the longest and busiest railways in the world.





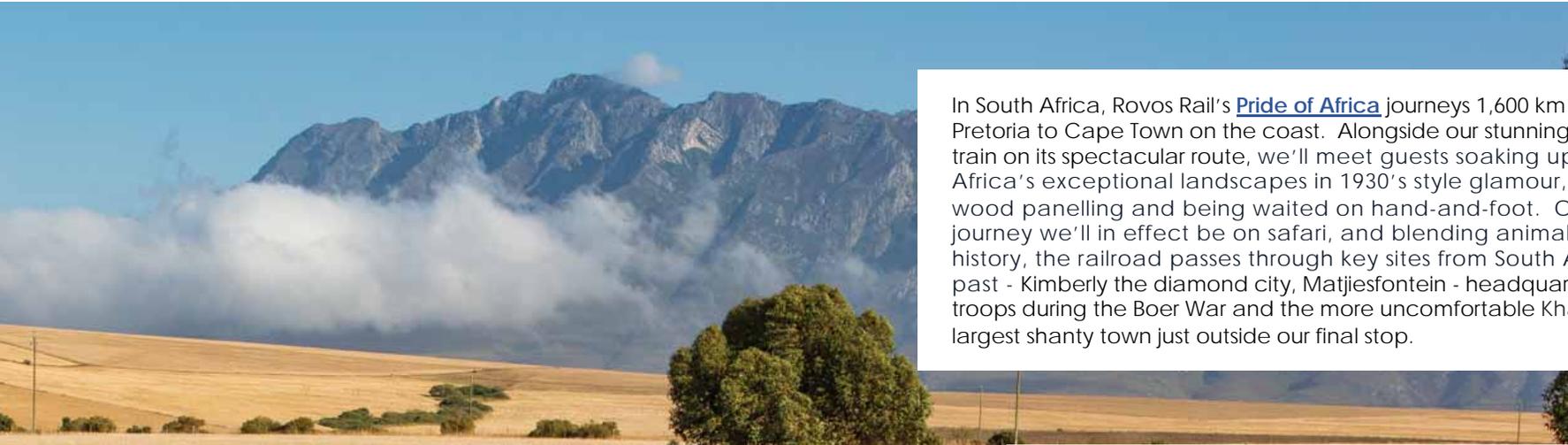
[The 5* Eastern & Oriental Express](#) traverses Thailand and Malaysia and rolls into Singapore across its famous causeway. We'll be following the train from the air, documenting the wonderful landscape around the railroad - seeing the huge challenges and hearing about the terrible price paid for its building. The absolute luxury and glamour to be found on board is in stark contrast to the experiences of Allied POW's who built the Burma or 'Death Railway' that intersects this route at Kanchanaburi, where passengers jump off the train to visit the 'Bridge over the River Kwai'. With most of that original line now reclaimed by the jungle, we'll explore the engineering feats of these prisoners and their pitiless treatment - famously depicted in David Lean's epic film.



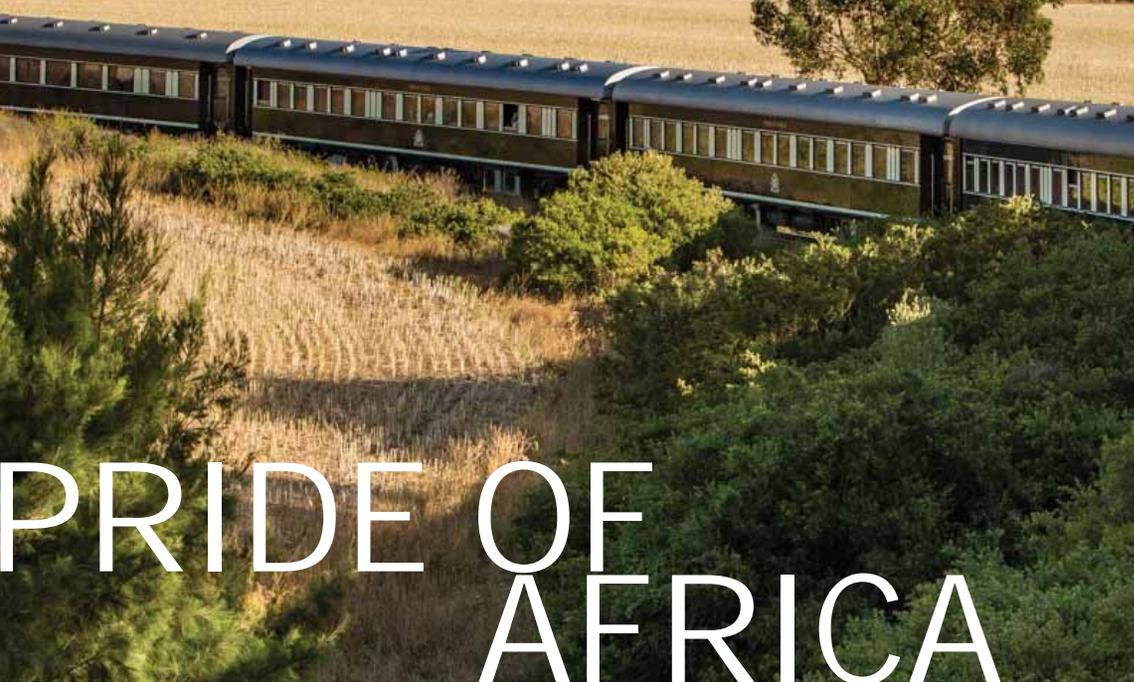
THE GHAN

The Ghan is one of the greatest train marathons in the world - 2,979 km right across Australia. Starting in Darwin in the north, we'll be flying above trains travelling through the blistering desert around Alice Springs and down to temperate Adelaide. These are trains that travel through some of the most unforgiving land in the world. A testament to the harsh conditions of Australia's red centre, this line took 125 years to complete; it was started in 1879 and finished only in 2004. Its name honours the Afghan camel drivers who arrived in Australia in the late 19th century with animals imported from India; before the train, this was the only way goods and people could get to the interior. We'll meet the hardy engineers who finally delivered a century old promise to more easily link this vast country, the engineers who today maintain the railroad, the train drivers, and the people who use these tracks for their train 'walkabouts'.





In South Africa, Rovos Rail's [Pride of Africa](#) journeys 1,600 km from Capital Park Pretoria to Cape Town on the coast. Alongside our stunning aerials of the train on its spectacular route, we'll meet guests soaking up Southern Africa's exceptional landscapes in 1930's style glamour, surrounded by wood panelling and being waited on hand-and-foot. On sections of the journey we'll in effect be on safari, and blending animal spotting with history, the railroad passes through key sites from South Africa's turbulent past - Kimberly the diamond city, Matjiesfontein - headquarters for British troops during the Boer War and the more uncomfortable Khayelitsha, Africa's largest shanty town just outside our final stop.



PRIDE OF AFRICA

The [Paris-Moscow Express](#) (aka the Trans-European Express) is a fabulous once-a week sleeper train covering 3,483 km and travelling via major European cities. It's perfect as an episode for a series shot largely from above. But as well as the extraordinary and varied landscapes, and the engineering marvels en route, we'll be able to see World War 2 from above too as we pass sites of huge historical significance, for example the Warsaw ghetto. On the Poland/Belarus border we'll meet the drivers whose job it is to 'jack up' the train and change its wheelsets from European standard to Russian track gauge; here a Russian dining-car is added, so the passengers can enjoy local specialities like goulash without even stepping off the train.



EPISODE BREAKDOWN

THE NORTHERN EXPLORER

[The Northern Explorer](#) will transport our audience from Auckland to Wellington through the extremes of *New Zealand's* breath-taking scenery. Following from above the train, the route takes us from the fertile farmlands of Waikato to the volcanic peaks and lava fields of the central plateau and through thick New Zealand bush to black sand beaches. We'll learn how inventive engineers built the world-famous 'Raurimu Spiral' – climbing 221 meters over less than 6 kms, around a couple of major hairpin bends, via loops and through two tunnels - all through thick rainforest. Over another short 10 km stretch, the line passes several deep gorges with 5 viaducts and travels past the site of the country's worst ever rail disaster, that killed 151 people back in 1953.

We kick off with amazing aerials of the train as it departs Auckland, showcasing the stunning volcanic landscape that surrounds the city, and then meet the driver whose job it is to take his train through some of the most beautiful scenery in the world.

Back in the air, we're there as the train travels through the mighty Waikato plains. Its forests were cleared by European settlers in the mid 19th Century; the railway was key to moving this lumber around the country, fuelling the birth of cities and growth of the country.

We'll meet a couple of passengers who have swapped road for rail to enjoy the rolling hills of King Country's exceptional scenery from the comfort of a window seat.

Work on the railroad started in 1872 and when finished it cut the journey from Wellington to Auckland from about a week to a matter of hours. Our drone shots show the train crossing the first of the 10 giant viaducts en route. We begin to appreciate that building this railroad was a serious undertaking; it took 23 years to lay down its 423 miles of track, build 352 bridges, and the 10 viaducts.

In the early afternoon, the Northern Explorer begins its ascent onto the southern tip of the Central Plateau, where the often snow-capped volcano Ruapehu dominates the skyline. To reach this elevation, the train squeals around the tight curves of the historic Raurimu Spiral, designed in 1898 to make the 139-metre ascent onto the plateau possible without a lengthy diversion.

This engineering masterpiece, even more impressive when viewed from above, consists of a huge horseshoe curve, two tunnels and a complete loop. Despite this, when it was completed, they still needed two steam engines to take the trains from the valley floor to the volcanic plateau above.

We'll join an engineering maintenance team on one of their specially constructed vans that can drive on roads as well as on rails and learn how this feat of engineering genius was actually built. The horseshoe section alone took 10 years to construct with most of it dug out with dynamite and then finished by hand. To this day, the Raurimu Spiral is still considered one of the world's greatest railway engineering achievements.





The arrival of Europeans and their railways brought dramatic changes to the indigenous Maori people. With their lands seized by the British Crown over 150 years ago, they continue to fight for their return. Our drone flies alongside the train, as it travels around Mount Taopiri, the most sacred burial sites for Maori Kings – an opportunity to learn more about the fascinating Maori culture.

Skirting the beautiful Tongariro National Park, the eastern skyline will feature the distinctive volcanic cone of Ngauruhoe, which starred as Mount Doom in the Lord of the Rings movie. Further south, the massive peak of Ruapehu will loom on the horizon.

This is the Land of Volcanoes, 800 metres above the sea level where 2 tectonic plates meet. We'll learn about the geology that makes New Zealand such a unique place. Viewed from above this exceptional lunar landscape provides a perilous glimpse at the country's most active volcanic zone with its smoking mountain-tops and deep green volcanic lakes. We'll detour off the railroad to take in Tongariro Crossing, reputedly the best walk in the whole of New Zealand.



Deep ravines were carved by rivers flowing off the volcanoes, so engineers constructed more giant, complex viaducts here. The tallest is Makatote - 79 metres high and 262 metres long. The longest at 485 metres is the Hapua Fenua Viaduct; built in the 1980's it has an unusual curved concrete structure. It will be dramatic to capture the train crossing these extraordinary structures from the air.

Next stop is Tangiwa where on Christmas Eve in 1953, the inhabitants' fears about living in an active volcanic area were fully realised. An eruption caused the walls of Mount Ruapehu's crater lake to break, and a fast-flowing mud river or Laha, cascaded down the mountainside flattening everything in its wake, including the viaduct just outside town. A train carrying passengers home for Christmas was carried away by the Laha; 151 people were killed, 20 bodies were never found. We'll learn about this horrific night from a survivor of this, New Zealand's worst train accident.

We'll be above the train and with passengers inside as it travels over the South Rangatiki viaduct. Standing at an impressive 78 metres this is the most spectacular, tallest and longest bridge in the whole of New Zealand; it can even sway with the earth's movement. It's the first of its kind in the world; we'll meet the men who maintain this incredible feat of engineering and learn how its ingenious seismic damper system helps it withstand earthquakes. This stretch of track alone had 65 earthquakes last year.



Hitting the dramatic coastline, we'll meet the people of Kapatī, a tiny island initially inhabited by European whalers in the early 1800's, and then by Maori traders. Together they were so successful that they nearly wiped out the entire whale population. Today the government has turned the 6-mile long island into a nature sanctuary, the sole home to over 60 bird species, many of them flightless.



The line continues, squeezed between the beautiful Tasman sea and the dramatic steep mountains that run straight up to the coast. Faced with this geology, 19th century engineers carved tunnels through the mountains. But to make things even more difficult, the incline was incredibly steep. In the age of steam, more than one engine was needed to get the trains to the top but for heavy freight this was almost impossible. So, in 1928, work began on a massive deviation right through the mountains. It took 5 years to complete.

After 11 hours and 423 impressive and scenic miles, we finally arrive at Wellington. The station, which is earthquake proof, is the gateway to New Zealand's tiny but beautifully formed capital city, snuggled between the dramatic coast and the lush mountains to the north, through which we've just seen the train travelling.



POTENTIAL SERIES INTERVIEWEES



CLAIRE BARRATT ENGINEER

An English presenter, she trained as a Civil Engineer is also a Steam Engineer and is interested in Mechanical Engineering. She's appeared in *Salvage Squad*, *The Biggest Little Railway in the World* and is in the current series of *Abandoned Engineering* and *Secrets of the Railways*.
<https://uktvplay.uktv.co.uk/shows/secrets-of-the-railways/watch-online/6057216653001>

TIM DUNN RAILWAY HISTORIAN

Presenter on *Trainspotting Live* and now fronts the *Architecture of the Railways* on Yesterday/UKTV. He's also series contributor on *Impossible Railways* and *Secrets of the Railway*. He's young (early 30's), tweed-funky and British.
<https://uktvplay.uktv.co.uk/shows/the-architecture-the-railways-built/watch-online/6150952065001>



STEVE HITES AUTHOR AND SCENIC RAILWAY OWNER

This American, former railroad employee is also an author and scenic railway owner. He has appeared as a series contributor in *Secrets of the Railways*.
<https://uktvplay.uktv.co.uk/shows/secrets-of-the-railways/watch-online/6062269983001>



ERIC LIMA MECHANICAL ENGINEER

An American, he's a professor of Mechanical Engineering at Cooper Union, a college started by 19th century philanthropist, Peter Cooper who designed and built America's first railroad engine. He's a series interviewee on *Impossible Engineering* and *Impossible Railways*.
<https://uktvplay.uktv.co.uk/shows/impossible-railways/watch-online/5817124320001>