

# Nicholas Boutakoff and Australia's North West Shelf

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## Slide 1. INTRO

The man who led Woodside to Australia's North West Shelf was born Nikolas Alexandrovich Butakov in Washington DC in November 1903, the son of Alexander Butakov, the Russian Naval Attaché to the United States. The Butakovs were Russian aristocracy, of high military rank stretching back centuries. His Godmother was Olga Constantinova, the Queen of Greece.

His vision of a giant petroleum province on the North West Shelf began in 1954 when he visited the Rough Range oil discovery. He imagined then and there the vast hydrocarbon province the NWS would prove to be, a dreaming that would bring him great success and bitter disappointment.

With my co-authors, historian Yolande Collins, Boutakoff's goddaughter, and Mike Butcher, I would like to thank the many people who have assisted our research, especially the staff in the Manuscripts Section at the State Library of Victoria.

## Slide 2. Early Years and DSc

Little is known of Boutakoff's early life. The family moved to Switzerland in 1914 but his father, by then an Admiral, remained in Russia, and was executed by the Bolsheviks in March 1917. The family then moved to Cannes, which had become a gathering place for the exiled Russian aristocracy. One of themes of Boutakoff's life was a sense of stolen entitlement, and I think it began there amid the community's tears of exile and longing.

Nicholas graduated with Honours in Geology from the University of Louvain in Belgium, and earned a DSc in 1929 for work on the French Alps. During those years he met and fell in love with fellow student and refugee Irene Sergueief. His DSc thesis reveals his skill at geological mapping and his flair for illustrating complex geological structures. It also shows him to be firmly on the side of the 'fixists' in the newly-raging debate over Alfred Wegener's concept of continental drift.

## Slide 3 Kivu 1

In 1932 Boutakoff joined a geological expedition to the Belgian Congo, to map the area west of lakes Tanganyika and Kivu. His letters home to his mother provide vivid descriptions of his adventures and emotions, and his dreams of geological fame.

His first reaction to Africa was typical in its European romanticism. 'This is not a voyage but a fairytale', he wrote. Bakavu on Lake Tanganyika was like the Riviera, 'except that the ugly European stupid life is absent'. His base camp was 'heaven on earth'.

## Slide 4. Kivu 2

Barely 26 years old, often alone in the mountains for weeks at a time, Boutakoff mapped the geology of about 30,000 km<sup>2</sup> on the western side of the Kivu Rift. He discovered vast new exposures of Karoo glacials, including fossiliferous beds, which established the local stratigraphy and the correlation with the South African Karoo. His excited letters speak, only half in jest, of the 'early and well deserved worldwide fame' he expected.

## Slide 5 Marriage and return to Africa Europe

Nicholas returned to Europe in 1932, and he and Irene were married in Cannes later that year. He taught at Louvain and began to compile the expedition reports. It did not go smoothly or quickly. Boutakoff wanted his work acknowledged as the most important and the

bulk of the credit to be his. Publication was delayed for years; quite inexplicably, given the acclaim he expected. He and Irene went back to Kivu in 1935, on assignment for the Belgian Congo Museum.

#### **Slide 6.**

It seems to have been an idyllic time for them, young and in love, exploring Africa together. Boutakoff made detailed studies of the Karoo glacials he had discovered, and Irene studied Paleolithic sites they had found along the Ruzizi River.

#### **Slide 7 Trinidad**

In 1937 Boutakoff went to Trinidad with Kern Trinidad Oilfields Ltd. He spent the early years field mapping and his reports show an ongoing acute sensitivity about recognition of the importance of his work, and his ownership of it. He stayed in Trinidad 12 years, becoming Chief Geologist in 1944, supervising drilling operations and working closely with the pioneering seismic surveying teams.

#### **Slide 8 Divorce**

In 1943, to his deep regret, Irene walked out of his life. She had fallen in love with another man, Leonard Charles van Dongen, a Dutch engineer working in Trinidad. They were divorced in 1944.

#### **Slide 9. GCSP**

Around this time Boutakoff resumed work on his global tectonic concepts, using new bathymetric maps to plot the major Earth lineaments. His 'eureka' moment came in 1947 when he realized that these lineaments were curved in a way suggestive of great circle arcs.

#### **Slide 10**

He confirmed this by painstakingly plotting the lineaments on a gnomonic projection, where great circles appear as straight lines. His tectonic ideas had actually begun to develop in Kivu. He felt that alternating tensional and compressional forces had to be involved in the formation of major fractures like the African rift. The recurring tectonic activity along these lines of weakness suggested they were as ancient as the Earth itself, and originating deep within it.

#### **Slide 11. 1948**

His theory, which he presented to the International Geological Congress in London in 1948, was that the tensional and compressional events were caused by periodic pulsations of the Earth, contracting and expanding, in response to changes in the Earth's rotational speed.

Inherent to this, was a rejection of continental drift. To Boutakoff, the similar shapes on facing coastlines were simply the expression of the great circle geometry. He viewed with derision any interpretation in terms of plate movement.

Also in 1948, he became a British citizen and moved to Australia to join the Victorian Geological Survey. Unfortunately, he was almost immediately discontent there. It isn't surprising. The working conditions were atrocious and the salary was meager, to say the best. No doubt he felt it beneath him. What is surprising is that he did not find any lasting friendships within the Melbourne geological fraternity. He was initially friendly with several but the relationships soured after only a few years. His relationship with Survey Director David Thomas seems to have been poor from day one.

#### **Slide 12 Married again.**

His personal life was far happier. The Russian émigré community had welcomed him eagerly, especially the ladies, who were captivated by his aristocratic appearance and

manner. Much matchmaking ensued and in 1950 he married Irena Feodorovna Tilts. Irene was a strong, patient and good-natured woman, and the marriage brought him great joy.

### **Slide 13. GCSP revised with models**

During 1950-2, he rewrote his major treatise, now called *The Pattern of Earth Failure*, and conducted experiments deforming model spheres, both solid and with plastic cores. He believed the fracture patterns that formed on the spheres resembled those on Earth. Similar patterns on the Moon and Mars suggested universal implications. He was convinced he had discovered the general law of Earth and planetary tectonics. He submitted his manuscript to Geological Society of America, and was not happy with their suggested changes. Curiously, that anger soon faded to disinterest and the rewrite was never finished.

At the Survey, he worked on geological mapping of the Portland district, a sedimentary basin south of Melbourne. His other task was assessing the petroleum potential of Victoria, and he published several important papers. His obsession with acknowledgement and credit for his work remained as consuming as ever.

### **Slide 14 Rough Range**

The discovery of oil at Rough Range in Western Australia in 1953 changed Boutakoff's life. He'd been sent there to see what lessons might apply for Victorian exploration. His guide, a young (and later famous) Australian geologist called Murray Johnstone, took him to the top of the Cape Range anticline, a peninsula jutting 80 km into the Indian Ocean, and explained that Barrow Island, beyond the horizon, was another major anticline. As they stood there looking north, Boutakoff saw the possibility that similar structures, potentially oil-bearing, could extend all the way to Timor, and be revealed on the ocean floor by topographic highs

The official lesson was simple, he reported: the success by WAPET - a joint venture of Chevron, Texaco, Shell and Ampolex – was the result of the methodical and informed exploration. Victorian explorers had to follow that example. The personal lesson was even clearer: the offshore North West Shelf would likely prove a vast oil province, and he wanted a share of it.

### **Slide 15. Admiralty Chart**

Back in Melbourne, he purchased copies of 1950 Admiralty Chart No. 475, the *North West Coast of Australia* and began contouring the fathometer values.

### **Slide 16. Admiralty Chart annotated**

What emerged was a series of mostly submerged ridges and troughs, trending NE/SW along the edge of the Australian continental margin. The main ridge system could be traced from Cape Range, where he had stood, to Barrow Island and Rowley Shoals. Scott Reef, Ashmore Reef and Sahul Bank. Further seaward were two other less-defined ridges. Boutakoff interpreted the ridges as large geanticlinal folds and proposed that their location between the complexly structured Timor, where oil seeps were known, and the gently folded sediments onshore Australia, where oil was now proven, made them, as he put it, ideally 'suitable for considerable accumulation of petroleum'.

### **Slide 17. Northern Holdings application**

In March 1955, in partnership with Thomas Ward, a successful oilman and close friend from Trinidad days, Boutakoff formed a company called Northern Holdings Ltd to acquire exploration leases over the North West Shelf. To hide his involvement, because he was still employed by the Victorian Government, the company was set up through a Melbourne accounting firm. Ward's task was to sell the project to Gulf Oil, as he had done previously with leases in Kuwait.

The applications to the Western Australia and Northern Territory authorities were presented in May 1955. The West Australians immediately asked for clarification of the 'internal set-up, particularly the American side, and the capital' of the company. And that was the end of that. To reveal the set-up would expose Boutakoff's involvement. To reveal their finances could only show they had none – since Gulf had declined the deal. The application was abandoned and the company wound up.

#### **Slide 18. Woodside lease**

In July 1962 Boutakoff resigned from the Geological Survey and became Chief Geologist at Woodside. His job was to study potential offshore areas and select the most promising. Shortly afterwards, he confided in General Manager Rees Withers about his past work on the North West Shelf. He believed they made between them a gentleman's agreement that, in exchange for his ideas and maps, Woodside would give him a million shares, provided they got the lease and farmed it out. Two months later, Woodside filed an application over the vast offshore area (367,000 km<sup>2</sup>) now known as the Northern Carnarvon and Browse basins. It was for the same area Boutakoff had applied for in 1955, and used the same Northern Holdings map.

#### **Slide 19. The Woodside trio**

Boutakoff's presentation to the 1963 APEA conference put the North West Shelf on the oilman's map. In the audience were representatives of Burmah Oil and Shell, both of whom expressed interest. He and Withers went to Europe and met with Burmah and Shell management and, by October 1963, both companies had signed. Burmah became the new operator.

For Boutakoff, the euphoria was short-lived. His request for his share bonus was flatly rejected. Withers denied any deal. Geoff Donaldson, Woodside's Chairman, insisted that Boutakoff had been instructed to study the area, did so as an employee, and was not entitled to anything. That was to remain the official Woodside position. Privately, Donaldson later told me, the Board saw it as a 'shake-down' for a payment akin to the Lewis Weeks royalty over the Gippsland Basin.

#### **Slide 20 Timor**

Boutakoff severed his connection with Woodside and spent several years consulting for Timor Oil. He was bitter about Woodside but seemed happy enough otherwise.

#### **Slide 21. A man in two mirrors**

Speaking to those who knew him through those years, one sees two very different reflections in different cultural mirrors. Colleagues at work describe him as 'haughty' and 'aloof'; 'aristocratic' is the most common word. And Anglo-Celtic Australians, then as now, do not use the term favorably. To his Eastern European migrant friends, he was the soul of warmth and consideration, generous of spirit, and a witty conversationalist. For them, that same aristocratic manner, in a man of Boutakoff's background and learning, was his entitlement.

#### **Slide 22. Woodside**

It was only in 1972, after Woodside's major gas discoveries, and the high share price that would have made him a rich man, that his sense of betrayal by Woodside, particularly Withers, became all-consuming. He prepared a detailed dossier outlining his claim and submitted it to the Burmah and Shell. To no avail. His compromise proposal for an ex gratia payment of \$200,000 was also rejected.

The pursuit of his stolen entitlement, as he saw it, became quite obsessive. Everyone he knew connected with the project was drawn into his quest. But they could only confirm his involvement, not his entitlement to the reward. As former Shell Manager Jacques Dozy told

him: 'A written statement is lacking. No amount of tears from well-wishing people like myself can remedy that'.

Ultimately, the obsession saw Boutakoff become increasingly troubled. Long-standing fears of Russian agents deepened into paranoia. He had been a life-long devout member of the Russian Orthodox Church and he devoted much of his final years to a study of the Shroud of Turin.

His wife died suddenly in 1976, aged 54. The loss was devastating for Nicholas, who died a year later, and was buried beside her in Templestowe Cemetery, in Melbourne.

Of course, he was wrong about great circle lineaments and continental drift. He was wrong about the North West Shelf structure. There wasn't a series of compressional folds. They were horst blocks along the rifted continental margin. But what's that to do with finding oil? He was right about the petroleum potential. Today, the North West Shelf has reserves of over 230 Tcf of gas and 7 Bbbl of oil and condensate.

Nicholas Boutakoff was a complex man and these few minutes slide across most of the detail and the complexity. Nonetheless, we hope this short work will contribute to a wider appreciation of his life and pioneering role on Australia's North West Shelf, now one of the world's main hydrocarbon producing regions.

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