

## A RUSSIAN ADVENTURE

By Member John Dike

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Early in 1998 I was just settling into relaxed retirement mode when I was suddenly taken out of my comfort zone and dropped into the “wild west” of post-Cold War Russia and the Ukraine. I had been doing some research with an innovative company in Belfast, (name withheld owing to current political situation) into a method of locking a free-running mobile generator to the grid by a radio signal so that it never lost synchronism. In the course of this work I suggested that it would be of great benefit to mains engineers, who have to insert large fuses into fuseboards live, that a switch be



incorporated into a special fuseholder which could be safely closed from a distance after the fuseholder was fully inserted. This would prove if the circuit was still faulty in a safe way. To my surprise they said that they could progress and develop the fuse idea as they were working with a company in Russia, Tavrida, with factories in Moscow and Sevastopol that had the technology to make a small vacuum switch that would fit in the fuse carrier.

Over the last 15 years 6000 Fusemates have been sold and I am very happy about this contribution to operator safety.

Tavrida employed some scientists and staff that were previously involved in the reduced Russian Navy. They were also trying to develop replacement 11,000 volt vacuum switch trucks to replace the oil switch trucks on a range of UK switchgear, a new design of 11kV indoor switch, and pole-mounted auto-reclosers.

I was blissfully unaware that Russia and the Ukraine were in deep depression with a large proportion of the population desperate for a living and apparently engaged in organised crime that majored on the drug business, selling body parts to the rich Middle East, and even more worrying – selling arms to dodgy countries like Iraq. Nevertheless I soon found myself standing at the passport control of Moscow airport, with my Irish colleague, carrying a Brush VBA 3-phase bushing that stuck out of the bag like a triple-barrelled machine gun. The Russian heavy, in the trilby hat and gabardine mac, kept sweeping by in an attempt to listen to our conversation.



“KGB!” I said to my friend and stupidly attempted to prove it. As he swept by on the next reconnaissance I said loudly “I bet he’s got a tape recorder in that hat!” The KGB man stopped dead and turned towards me, laughed, and said “You English – you’re standing in the wrong queue anyway!”

We were driven to the factory through Moscow amidst the worst snow that they had experienced in years. Farmers had been brought in from the countryside with shovels fitted to their tractors to help clear the roads. There were broken down trucks and cars everywhere, even left in the fast lane of the five-lane motorways with wheels removed and mounted on blocks. Poor Russians stood at the side of the road selling cans of oil or antifreeze whilst oil barons swept by in black Mercedes.

At the factory we handed over the VBA bushing so they could use it to model the replacement vacuum truck that would fit that type of switchgear. The factory was full of a range of older UK 11,000 volt switchgear that they were studying. I was very pleased that they had rejected a conversion to Brush VSI (ref Newton Abbot fatal accident to poor Mike Jones) as they considered it unsafe due to poor truck locating facilities. Pity we hadn't spotted that earlier.

Later that day we were taken out to dinner by Alexei Chaly, the double-doctorate whiz kid behind the Russian and Crimean Businesses. He is ex Navy, extremely bright and grandson of the Admiral of the Black Sea Fleet. Dinner was held in a restaurant that was hosting a wedding party in full regalia. We were the only other people there and they put our table very close to the end of the "top table". It was the quietest most sombre wedding party I had ever seen but it soon livened up when I did some party



tricks like the levitating bread roll! I thought that they were short of alcohol which is unusual over there. However, fitting in with the mood, Alexei and I were soon discussing the merits of the electro-magnetic anti-tank gun. Apparently the Russians had given up on it because the mega electric flash gave the tank away.

Alexei's father, Michael, had started Tavrida, a company specialising in vacuum switchgear. Alexei is centre back in the photograph which shows his team of scientists and engineers..

Next day we driven north through deep snow and forest, past the Astronaut Training Area, to the factory that made their vacuum switches. This was deep in the forest at a place Chernogolovka, which means "black hat". It was a run-building with a high tech core. Apparently this ploy was disguise the activity from illegal operatives. The end caps vacuum switches were brazed in position inside a large which had been evacuated to a very low pressure. The quality of the materials was checked with a mass spectrometer.



were called down to the tank

We returned to Moscow and boarded an Aeroflot Tupolev TU-134 twin-engine jet for Simferopol in the Crimean Ukraine. Around the runway were lots of similar aircraft in various states of disassembly but at least they had found sufficient bits to get ours flying – hopefully. It was worrying that the aircraft had a glazed bomber type nose and I understand that they were dual-role. It took a long time to de-ice our aircraft as they appeared to be using hand held garden sprays filled with de-icer. After take-off it became obvious that we not flying first-class or business class, or even economy and that "steerage" was more applicable! The stink from dirty seats was appalling! There were no oxygen masks (which we could usefully have worn!) and the seats seemed to be loose.

My Irish colleague had been on Aeroflot before and he decided to sleep and asked me to wake him if “anything interesting” happened. That was not long in coming. Just after take-off we banked sharply to port and another airliner whizzed by my window! As a distraction I spent the rest of the flight pushing the gasket back into my window which kept wriggling out with the air pressure inside the glazing. Even the hard landing at Simferopol was a relief but the crashing noise of the empty seats in front of us as they fell flat and dominoed towards the front was heart-stopping! One interesting point was that during the approach to Simferopol. I clearly saw a large bird, probably a crane, circling around level with the aircraft. We were probably at 10,000 feet. Apparently cranes can fly as high as 30,000 feet (query oxygen?). A large flock could do a lot of damage to an airliner!

On arrival we were driven the 50k down to Sevastopol in the Crimea and settled into a grim hotel called The Yard which was run by suspicious men in shiny grey suits that were probably local Mafia. There we were introduced to the owner of the Belfast company who entertained us royally on champagne and red and black caviar. During dinner we noticed the presence of local housewives who had got “dressed-up” to entertain us – to no avail! Surrounding the hotel, in an area that had been flattened by the British during the Crimean War and then again by the Germans in WW2 there were many apartment buildings in course of construction. Apparently, due to lack of cash, a barter system operated and some of the unfinished flats were already owned by the electricity utility, the concrete works, the builder’s merchants, the planning officer etc!



Alexei’s factory in Sevastopol was an old rocket factory near the harbour which was busy with Russian cruisers and submarines. Again the building was semi-derelict and unlit and, after our passports were taken of us by a large lady in paramilitary uniform, we were escorted through corridors by torchlight to a large iron door. Russian naval officers in peaked caps were moving about in the gloom. On opening the door a modern well lit suite of offices was revealed with computers loaded with the latest American CAD software bought in St

Petersburg market. As we sat in Alexei’s office we were again reminded of the barter system when Alexei sold some equipment to someone for a lorry load of salt, but only if the lorry was included. Later his phone rang again and we were ushered out of the office. When we went back in Alexei was well pleased that he had sold switchgear in exchange for a number of army tanks!

Using the CAD software we worked on the design for the switchable fuse carrier (which I was later asked to name - Fusemate). One of the staff was a redundant captain of a Russian nuclear submarine who was very glad of the work. Many of the staff were of naval background and they had great respect for Alexei’s public spirited approach to creating employment in Sevastopol and also for his efforts to build a school and encourage the rebuilding of the city. The Fusemate design was set up on CAD to fit all the common UK fuseboards, underground link boxes, and pole-mounted fuses.

We had a day-off and visited the Crimean historical sites. Balaklava harbour, where the allied troops arrived during the Crimean War, seemed virtually unchanged, except for the nuclear bomb-proof submarine pens that were burrowed into the sides of the cliffs.



At the right of the picture, beyond the end of the harbour, is the open plain between Balaklava and Sevastopol that saw the ill-fated “Charge of the Light Brigade” as well as other actions of the Crimean War. During the Crimean war the harbour was the main starting point for the attack on Sevastopol.



The sinister Cold War submarine pens are currently now open as a tourist attraction. At the small museum in the harbour the lady curator had amassed many pot lids, originally containing meat paste, that had been excavated from the old British encampments and she asked me to identify the various English landscapes painted on the lids. Many of the battlefield areas were dangerous to approach because of the number of unexploded shells from WW2.

Above the city of Sevastopol is a hill that saw the fiercest fighting of the Crimean War. Inside circular earthen forts called the Redan and the Malakoff were the stubborn Russian defenders and attacking them up the slopes were the allied troops of Britain, France and Turkey.

Above Sevastopol, at this very location, is a wonderful Panorama contained inside a large circular building. Near the centre, where you stand, the exhibits are life sized and the perspective then reduces to an amazing panorama painting around the walls. It depicts the attack on the Redan. Note the wickerwork around the cannon barrels to absorb rifle bullets and the dead Russian by the shrine.

Real smoke drifts up from camp fires.



Back at the factory I was asked to comment on a new 11kV indoor vacuum switch that Tavrida had developed and were hoping to sell worldwide. Unfortunately it soon became obvious that their designers had not fully understood the requirements laid down in the European switchgear specifications and had made a major blunder. There was no earthed metal



segregation between the internal compartments of the busbar chamber, current transformer chamber, and the cable box. This would have required the shutdown of an entire substation switchboard just to work on an individual item. Some Dutch switchgear had been built in this way but all the live components were shrouded with massive layers of insulation. I felt that they were not too happy with me for imparting this bad news! When I returned to the

UK, I was asked to produce copies of the specs that confirmed what I had said.

You will all be aware of current situation in the Ukraine and the annexation of the Crimea into Russia. I was not surprised to find out that Alexei Chaly was a major player in this. After the fall of the Ukraine Government he was rapidly given the job of Mayor of Sevastopol by the pro-Russian majority, who appreciated all his efforts to bring employment to the area, and was soon embraced by President Putin as his man in the Crimea. It is typical of the confidence of the man that he went to the signing ceremony in Moscow wearing a “woolly pully”!

However Alexei had set up fifty companies worldwide and only time will tell what effect possible sanctions will have on them.

This had been a very interesting trip and I had met some very talented people. I hope that the situation in the Ukraine stays peaceful. We all have our views on what has happened there. Many millions of Ukrainians were starved to death by Stalin in the 1930’s and many millions more exterminated by Hitler in World War Two. It’s time they were left in peace.

