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J. Ray NEWS

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Special Focus

Reaching higher

Competitive spirit, commitment and constant strides for improvement drive athletic feats of excellence

Volga

Heart and soul of Russia

Expansive river of history, culture and commerce, Volga is one of Russia's most enduring and endearing symbols



A large, light purple decorative floral graphic with intricate scrollwork and leaf patterns, centered behind the title text.

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Superlatives and terms of endearment flow freely when it comes to Russia's Volga River – "largest river in Europe;" "magnificent," "majestic," "unique natural resource," "matchless wild beauty" and "most beautiful of all earthly gifts." While all suggest its famed and treasured status, none is more profound or poignant as "Mother Volga."

Fundamentally the river of life, "The Volga is like the sky and air. We breathe the Volga, we are enrapt with her," wrote Konstantin Fedin, Russian author.

Since Russia was originally founded – or born – on the river, its life-giving and -enriching properties have become inexorably intertwined with the lives – and hearts – of Russia's people. The Volga provides transportation, work, food, energy and beauty; and deep feeling for it is immortalized in songs, poems and



other literature. Visitors are captivated, too. "Every country has its national river, and Russia has the Volga ... Queen of rivers, and I was one of the many who went to bow to her Majesty River Volga," wrote Alexandre Dumas, French author, in the 19th century.

Historical lifeline

Widely considered a cradle of Proto-Indo-European civilization, the downstream of the Volga was settled by Huns, Maris and other Turkic and Finnic peoples in the first century. In the second century the river was mentioned as "Rha" by Greek philosopher Ptolemy, although his reference has been proven to be of its lower region.

Little is known about the river until the early Middle Ages when it served as an important trade route connecting Asia with Europe. In the 9th century, Slavic and Finnic tribes settled along its upper course, Bulgars along the middle and Khazars, a Turkic tribe, in the lower.

There are as many interpretations of the name "Volga" as there were early inhabitants. Mari people used "Volgydo," which means "bright." Other theories see it as a Finnic word

"valka," translated as "water," or a proto-Baltic name meaning "long river." Russians explain it from the Slavic word for "wetness," "humidity."

In the 12th century, the Russians advanced down the Volga, founding Novgorod (now Nizhny Novgorod) in the middle region. These efforts were stalled in the 13th century by the Mongols' invasion of the entire Volga River. Known as the Golden Horde, this stronghold made its capital in Saray Berke, in lower Volga, near present day Volgograd.

Two centuries later, Russia's Ivan the Terrible conquered the Golden Horde in 1552, claiming Middle and Lower Volga for Muscovy (modern-day Moscow), the capital of the new Russian state.

During the next two centuries, the Russians secured free passage to the Black Sea and became masters of the Sea of Azov and the Crimea via the Volga. As a rich source of income for Muscovy, river trade also supported gainful bandit and smuggling ventures. Hostile steppe tribes continued to harass Russian traders and settlers, and the region remained an untamed frontier for many years.

In response, the Russian tsar ordered construction of fortified outposts at strategic

Majestic course | Bisecting Russia in a 2,300-mile long arc, Volga is the longest river in Europe. With 300 tributaries its area totals 560,000 square miles – more than 40 percent of Europe's land mass and its largest watershed. The main stream ranges from 1,560 feet to almost 2 miles in width and more than 80 feet in depth.

A small stream at its start in the Valdai Hills (742-foot elevation), it soon grows into a "real" river, doubles in size near Nizhny Novgorod and becomes a "mighty river" below Samara. Turning at Volgograd, it flows through Astrakhan's vast delta before emptying into the Caspian Sea, 92 feet below sea level, Europe's lowest elevation.



Mighty stream so deep and wide Volga, Volga our pride.

- Volga Boatmen's Song, Igor Stravinsky, 1917

points, which attracted semi-autonomous Cossack communities that conducted large-scale peasant uprisings from the late 1600s to late 1700s. One, in 1773, was forever romanticized by Alexander Pushkin's novel *The Captain's Daughter*.

Concerned about the scale and frequency of the fighting, Catherine the Great issued an invitation in 1763 to people around the world to move to the area. Germans in particular responded, and by the end of the 19th century, more than 1.5 million Germans lived along the Volga, most along the lower regions.

From the 1930s to 1960s, Soviet Russia harnessed the Volga for its ambitious development plans, constructing eight complexes of dams, reservoirs and hydroelectric stations. Factories, plants, collective farms and secret military complexes sprang up along the Volga's shores. Provincial trading towns grew into urban industrial centers and were closed to outsiders.

Vital artery

Today the Volga continues as the lifeblood of Russia and its people, and increasingly to outsiders as well.

Navigable for nearly its entire 2,300-mile length – its infrastructure connecting Moscow to the White Sea, Baltic Sea, Caspian Sea, Sea of Azov and Black Sea and equipped with double locks to accommodate large vessels – and ice-free for more than half of the year, the Volga is “Russia’s Main Street” and one of Europe’s busiest commercial waterways.

More than 40 percent of Russia’s population and 11 of its 20 largest cities, including its capital Moscow, are situated in the Volga’s basin.

More than 900 ports and 550 industrial docks lining its banks have attracted half of Russia’s industry and more than two-thirds of the overland cargo freight to the Volga.

The fertile river valley provides large quantities of wheat, and also has many mineral riches. A substantial petroleum industry centers on the Volga valley. Other minerals include natural gas, salt and potash.

And it’s not just an economical treasure. Lush, tranquil environs – from dense, marshy forests; forest and grassland; grasslands; semi-desert lowlands; and thousands of miles of largely uninterrupted sandy beach along the shores – attract boaters, swimmers, hikers, birdwatchers, fishermen and nature lovers.


Each of its three segments holds its own charm: upper Volga, from its source to below Nizhimi Novgorod; middle Volga, extending from there to below Saratov; and lower Volga, its final stretch. Richest in natural resources and for its direct link with the Caspian Sea, this lower region can be viewed as the heart of Mother Volga. Its largest and most important cities are Volgograd and Astrakhan.

Hero City

Situated at the Volga’s most strategic point, its big bend at the lower segment, is the city of Volgograd. Reputed to be the longest and thinnest city in the world, it stretches more than 62 miles along the right bank and its

The Volga’s infrastructure was designed with huge dams equipped with double ship locks so that vessels of considerable size can travel practically its entire length.





*The Volga is Russia herself –
her people, her history,
her nature.*

- Markov Yevgenly, 20th century Russian writer

width averages only 5 miles – at some points, no more than 3 miles wide.

The city was founded in 1589 as a fortress and was called Tsaritsyn. Its purpose was to defend the southern boundaries of the Russian Empire.

In the 19th century, industry began developing widely during what is referred to as the “golden period.” Volgograd became a trans-shipment point with the building of a railway that connected the city with central districts of Russia.

In 1925 the city was renamed Stalingrad. During this time it became a trade and industrial center. Main events were the 1928 building of the first Russian tractor plant and a large shipyard in the southern outskirts of the city that produced about 90 river barges a year

During World War II, the city witnessed the Battle of Stalingrad, in which Soviet Union and German forces were deadlocked in a four-month stalemate for access to the river. One of the bloodiest battles in human history, hundreds of thousands were killed and the city was destroyed. This epic battle also represented a turning point in the war.

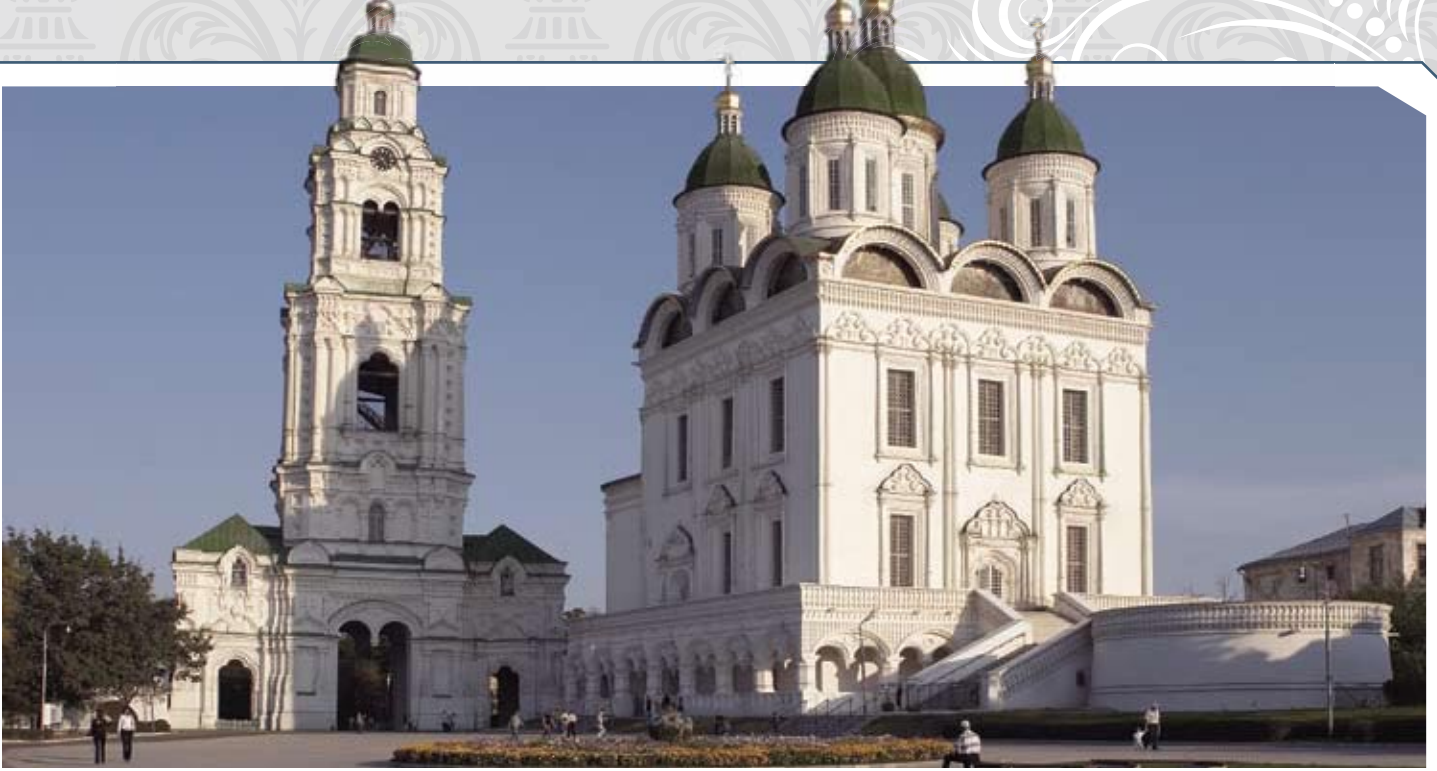
The city had to be rebuilt from scratch, as reflected in the classical Soviet baroque style of public buildings and broad avenues.

Renamed Volgograd in 1961, the city’s population today is about 500,000. It is a large-scale industrial center supporting steel and aluminum, oil, timber goods, building materials, machinery and food processing businesses. Slightly north of the city the largest hydroelectric station in Europe was built in 1958. With a capacity of 2.5million kW, it provides a great part of the country with electric power.

By far the most famous site of the city is the Avenue of Heros, a memorial complex built between 1959 and 1967 on Mamayev Kurgan, known as Hill 102 during the Battle of Stalingrad. Its centerpiece is a massive 236-foot statue – the largest free-standing sculpture in the world at the time. Dominating the skyline not only in terms of size, its hill-top location makes it visible from all points in the city.

As if guarding the peace, a woman wields a giant sword from atop the hill. Known as “Motherland Calls,” the statue commemorates the fallen and personifies the bravery and unity of the Russian force. The 200 steps up the hill to its base represent the 200 days of the battle from July 17, 1942 to February 2, 1943.

Also within the complex are numerous other statues, memorials and museums. The Pantheon houses the eternal flame and is inscribed with the names of 7,200 soldiers, representing the estimated one million who were killed. The extensive Museum of the Defence of



Stalingrad has dozens of exhibits including a model of the city post battle, which serves as a moving display of the human capacity for rebuilding. Upstairs, an impressive 360-degree panoramic painting illustrates the battlefield as it might have been seen from the top of Mamayev Kurgan.

Not just “Hero City,” Volgograd is an important cultural center. In the far corner of the city is the first lock of the Volga-Don canal, a 1952 feat of Soviet engineering. Nearby, carefully restored buildings of the original German district are reminders of centuries of cultural exchange between great European powers.

The city also hosts 26 colleges, technical and specialized schools; 10 libraries; and seven theatres.

Jewel of Russia’s south

About 250 miles south of Volgograd, the city of Astrakhan marks the end of the river’s run. Located on both sides of the Volga on several islands in the river’s delta, it is one of the oldest Russian towns and the oldest city in lower Volga.

It was the capital of a Tatar khanate that became independent of the Golden Horde in the 13th century, and its location on caravan and water routes made it a trading center. Ivan the Terrible conquered Astrakhan in 1556, giving Russia control of the Volga. The city was built in 1558.

During the 17th century, the city was a destination on the famous Silk Road, a network of routes connecting the West (mainly Rome) to the East (especially China) for transporting

and exchanging all kinds of goods. It was even more significant for its intercultural importance. Not only goods were exchanged, but ideas, opinions, attitudes, traditions, philosophies and knowledge, making tolerance absolutely necessary and one of its most attractive aspects.

Today, the city retains its historical and cultural significance. More than 150 nationalities and ethnic groups live here and it serves as an important hub, linking Russia to Central Asia and Europe.

This sense of East-meets-West is echoed in a blend of different architectural types and various epochs, multinational environment and cultural traditions.

Astrakhan’s Kremlin was built from the 1580s to the 1620s using bricks from the ruins of the Golden Horde’s capital Saray Batu. Its two impressive cathedrals represent a mixture of traditional Russian church architecture inside, and baroque on the exterior.

Another unique feature is most of the territory lies below the Volga’s spring flood levels. The many dams and more than 50 bridges built in the city have led to the nickname “Venice of Russia.”

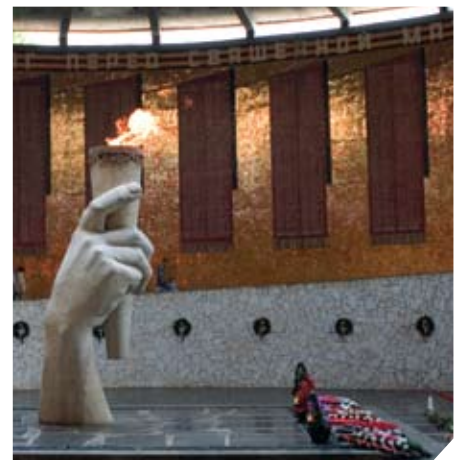
Astrakhan is a cultural center, too. The city’s education and arts are known for a conservatory of music, a teachers’ college, a medical college, and a national technical university. There are more than 30 secondary vocational schools, more than 30 technical schools, and the Caspian Fishery and Sea Research Institute. Five theatres, several museums and a number of famous writers and artists who

claim Astrakhan as their birthplace, enrich the cultural landscape.

The city’s economic life is closely connected with the river and sea through its shipbuilding and repairing industry. It is also the center of fishing on the Volga and Caspian Sea, with more than 20 species of fish. Its sturgeon resources account for three-fifths of Russia’s total and Astrakhan’s fame as capital of the caviar industry, with about 90 percent of the world’s production.

Due to vast plantations of melons, gourds, tomatoes, and other fruits and vegetables, another Astrakhan nickname is “Garden of Russia.” Abundant natural resources also include huge salt fields and other minerals.

With recent discoveries, Astrakhan is becoming famous as the onshore support base for Russia’s growing offshore oil and gas industry in the Caspian Sea.





Leading industry

With about five percent of global reserves, the Caspian basin is one of the biggest oil regions in the world. Assumptions that all these resources are concentrated in the Caspian sectors belonging to Azerbaijan, Kazakhstan and Turkmenistan were recently proved wrong by Russia's second-largest oil producer OAO LUKOIL Oil Company (LUKOIL). Its efforts between 1995 and 2004 yielded six major oil fields in the northern Caspian, establishing the Russian sector as rich in oil resources as other areas.

The first of these to be prepared by LUKOIL for bringing commercially on-stream is Yuri Korachagin field. Its development required a number of major offshore facilities including an ice-resistant fixed processing platform (LSP-1) and adjacent living quarters (LSP-2) joined together by a 243-foot bridge.

Oil from LSP-1 will be delivered to the marine transportation complex, consisting of a Floating Storage Offloading system (FSO) and Single Point Mooring (SPM) via a 36-mile, 12-inch oil pipeline.

Installation and other work on these facilities was completed by J. Ray's Caspian operating entity through its long-standing fabrication base in Baku, Azerbaijan. Within the contractual scope of work, J. Ray performed transportation and installation of 14

foundation piles for LSP-1; the 1,005-ton, five-pile SPM substructure and 271-ton SPM deck; and their hook-up.

Additional J. Ray work included engineering, procurement, fabrication, transportation and installation of tie-in spools connecting LSP-1 and the SPM to the 36-mile subsea pipeline, as well as hydrostatic leak testing and flushing of the entire pipeline system. The pipeline was laid by J. Ray under a separate contract with LUKOIL in 2008. J. Ray also transported and installed the FSO, connected it to the SPM system and did testing.

"We are very pleased to continue to provide services to LUKOIL for this development, strengthening our cooperation as well as our presence within the promising and dynamically growing Russian offshore market," said Dan Houser, J. Ray's Vice President and General Manager, Europe and Central Asia.

In executing such projects, J. Ray and LUKOIL also cooperate in protecting the fragile environment, ecosystem and marine bioresources of the Volga Delta region against possible impact of hydrocarbon production operations. Supporting LUKOIL's responsible and extensive efforts is J. Ray's own comprehensive, integrated Environmental Management System (EMS).

"It helps ensure we comply with local law, minimize any negative impacts on the

environment and continuously improve so things are preserved for future generations," said Houser about EMS.

Also for the benefit of generations to come, Moscow-based LUKOIL is socially responsible in other ways. One example involves contributing over US\$1 million to rescue the city of Volgograd's plan to build a new church on top of the beloved Mamayev Kurgan in 2003. Soon after, LUKOIL allocated another US\$683,000 for reconstruction of the complex's Military Memorial Cemetery, which was in disrepair.

The company is also thoughtful and generous with emotional support, such as the new tradition it established in 2003. Oil industry representatives, relatives and friends now ascend the hill along Mother Volga as a group during annual celebrations of the victory in the 1943 battle, heeding Motherland's calls to honor unity and bravery.



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Nurturing

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NATURE



Near the end of the Volga's run, Europe's largest river system splinters into an intricate maze of some 500 channels and streams before draining into the Caspian Sea. Starting about 40 miles above Astrakhan, Europe's largest inland river delta stretches almost 100 miles in length and more than 10,500 square miles in total area. Unique natural landscapes and vast resources make it one of the most interesting and picturesque places in Russia.

Mostly below sea level, 92 feet at its lowest point, Volga Delta's terrain includes meadow, riverside forests, reed beds, islands, river branches and sand dunes from strong winds that often sweep across the delta. Its relief constantly changes, with the sea and silt-carrying flow of the Volga River continuously creating new islands and canals.

Thick vegetation, ranging from shoreline to desert plants, nourishes some of the most exotic flora and fauna in the world. More

than 30 mammal species roam the land and marshes, which provide refuge to beavers and otters. Millions of birds from hundreds of species frequent the delta, including pelicans and flamingoes that are found nowhere else in Russia. Volga Delta is also the only



Russian home of the lotus, or "Caspian rose," seen as huge carpets of blue-green lily pads and extraordinary size, intensity and aroma of pink flowers spread across the waters from July to September. Considered a symbol of purity and nobility, the lotus has been known in the delta for more than 200 years.

Abundant and diverse fish – more than 70 species – feed Russia's people and attract anglers for sporting events. Another sport in early spring is fossil hunting for prehistoric ammonites that are prevalent here and on the Volga River banks.

To protect and preserve the unique natural complexes of the Volga delta two *Zapovedniks*, the highest category of nature conservation in the world, have been established.

Astrakhan State Nature Biosphere

Astrakhan State Nature Biosphere, or Astrakhansky Zapovednik, is one of the first Russian nature reserves, founded in 1919. Located at the southern edge of the Volga delta, about 70 percent of it is covered by water; 90 percent during spring floods.

Referred to as "birds' hotel," more than 250 avian species live here, including 27 endangered species such as the white-tailed eagle, osprey and Saker falcon. Mute swans, once nearly extinct in the region; Dalmatian pelicans; black stork and flamingo are indigenous to this delta region. Another unusual phenomenon is the sharing of nesting sites by white herons, egrets, night herons, spoonbills, ibises, pond herons and other water birds. Away from the water, forest birds include wood pigeons, golden orioles, tree sparrows, reed buntings, Savi's warbler and cuckoos.

On the islands, mammals range from wild boars, the reserve's largest animal, to the tiny harvest mouse, as well as foxes, raccoon dogs, weasels, mink, beavers and muskrats. The reserve is also home to frogs, pond turtles, rat snakes, two species of grass snakes and sand lizards.

More than 60 different river and lake species of fish populate the reserve, many in the carp family. As with birds, the reserve plays an important role in migration, as fish travel between the Caspian Sea and spawning grounds along the Volga River.

Many of the 44 species of submerged aquatic plants are rare. Drifting on the surface of the water are yellow floating heart, yellow water lily and frog-bit. The most spectacular sights are lotus blossoming on huge fields of lily pads in the summer.

Since its formation, the reserve has tripled in size and has become a wetland area of international significance. This distinction earned it status as a United Nations Educational, Scientific and Cultural Organization "Biosphere Reserve" in 1984.





Bogdinsko-Baskunchaksky Reserve

In contrast to one of the oldest, Bogdinsko-Baskunchaksky Zapovednik is one of Russia's newest reserves. Established in 1997, it covers 73 square miles of plains east of the Volga River in the Astrakhan region, and has its own distinguishing natural features.

Mountain Bogdo, a salt dome, is the highest point in Astrakhan, rising more than 600 feet above the surrounding grassland. Created by karst processes, a web of basins, ravines, sink holes, rock pillars and grottos remains. Beneath the surface, about 30 caves have been discovered and many more are expected to be found.

In some cases, caves don't even exist yet. As water slowly carves through underground rock, caves are constantly being formed. A fault line running directly through the reserve also makes the geology dynamic, gradually pushing the mountain upward about one millimeter per year.

In the shadow of the mountain is 47-square-mile Lake Baskunchak. This largest salt lake in Russia has more than 25 streams flowing into it. Many minerals and salts appear to tint the water, ranging from pink in the south to light blue in the north. Also due to the fault line, the lake falls at the same rate the mountain "grows."

Along with three freshwater lakes in the reserve, Baskunchak is an important habitat for many wildlife species, both migratory and resident. Hamsters, gerbils, ground squirrels and other small rodents thrive in this arid habitat and attract a wide range of species that prey on them – foxes, jackals, polecats, wildcats and numerous birds of prey.

Each year thousands of saiga antelope travel through the region, as do many avian species, in their seasonal migration. Pairs of demoiselle cranes, endangered

worldwide, enter the reserve each spring to begin courtship rituals. Mating for life, these crane families return to build their nests in the same sites year after year.

The surrounding plains are also of interest. Many "microlandscapes" around the lake – steppes, desert, caves and salt marsh – offer diverse features. Three to four inches of light brown loamy soil cover the ground; and mineral-rich clays paint a palette of yellows, reds, grays, blues, greens and browns.

These varied environments support diverse plant communities on the reserve's dry, alkaline plains – various grasses; herbs such as sage and thyme; and orchards of elms, maples, oaks and fruit-bearing plants. Ten rare or endangered plants grow in the reserve, including several varieties of tulip, short-leaved asparagus and the carnivorous Venus Flytrap or "catchfly."

Both reserves reflect the Russian people's awe, adoration and appreciation for Mother Volga and her many gifts.

