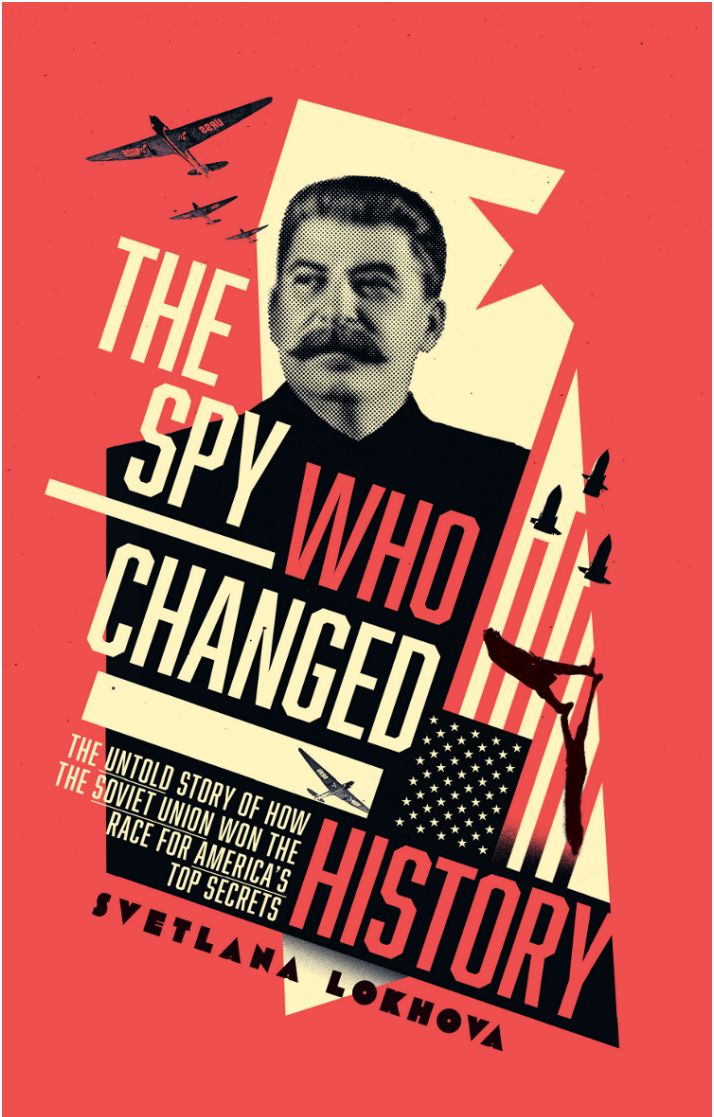
THE SPY WHO CHANGED HISTORY
THE UNTOLD STORY OF HOW THE SOVIET UNION WON THE RACE FOR AMERICA'S TOP SECRETS
SVETLANA LOKHOVA

Svetlana Lokhova

The Spy Who Changed History: The Untold Story of How the Soviet Union Won the Race for America's Top Secrets

Аннотация

'A superbly researched and groundbreaking account of Soviet espionage in the Thirties … remarkable' 5* review, TelegraphOn the trail of Soviet infiltrator Agent Blériot, in this bestseller, Svetlana Lokhova takes the reader on a thrilling journey through Stalin's most audacious intelligence operation.On a sunny September day in 1931, a Soviet spy walked down the gangplank of the luxury transatlantic liner SS Europa and into New York. Attracting no attention, Stanislav Shumovsky had completed his journey from Moscow to enrol at a top American university. He was concealed in a group of 65 Soviet students heading to prestigious academic institutions. But he was after far more than an excellent education.Recognising Russia was 100 years behind the encircling capitalist powers, Soviet leader Joseph Stalin had sent Shumovsky on a mission to acquire America's vital secrets to help close the USSR's yawning technology gap. The road to victory began in the classrooms and laboratories of MIT –

Shumovsky's destination soon became the unwitting finishing school for elite Russian spies. The USSR first transformed itself into a military powerhouse able to confront and defeat Nazi Germany. Then in an extraordinary feat that astonished the West, in 1947 American ingenuity and innovation exfiltrated by Shumovsky made it possible to build and unveil the most advanced strategic bomber in the world.Following his lead, other MIT-trained Soviet spies helped acquire the secrets of the Manhattan Project. By 1949, Stalin's fleet of TU-4s, now equipped with atomic bombs could devastate the US on his command. Appropriately codenamed BLÉRIOT, Shumovsky was an aviation spy. Shumovsky's espionage was so successful that the USSR acquired every US aviation secret from his network of agents in factories and at top secret military research institutes.In this thrilling history, Svetlana Lokhova takes the reader on a journey through Stalin's most audacious intelligence operation. She pieces together every aspect of Shumovsky's life and character using information derived from American and Russian archives, exposing how even Shirley Temple and Franklin D. Roosevelt unwittingly advanced his schemes.

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THE
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Dedication

To my father for his unending love, help and support.

Epigraph

Train up a child in the way he should go: and when he is old, he will not depart from it.

Proverbs 22:6

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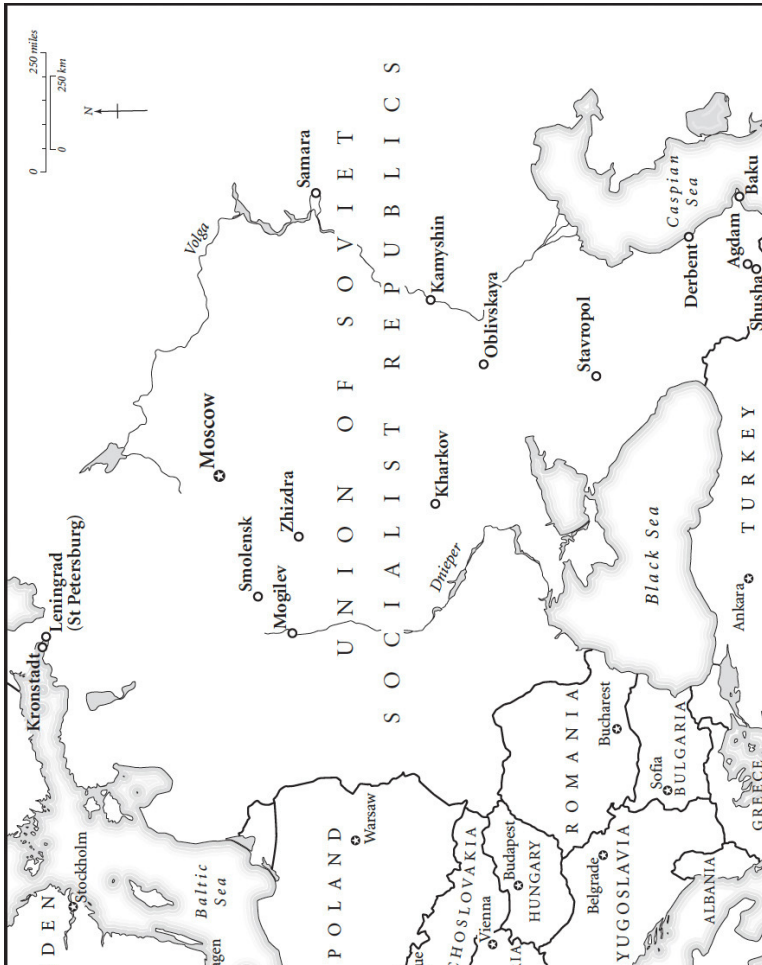
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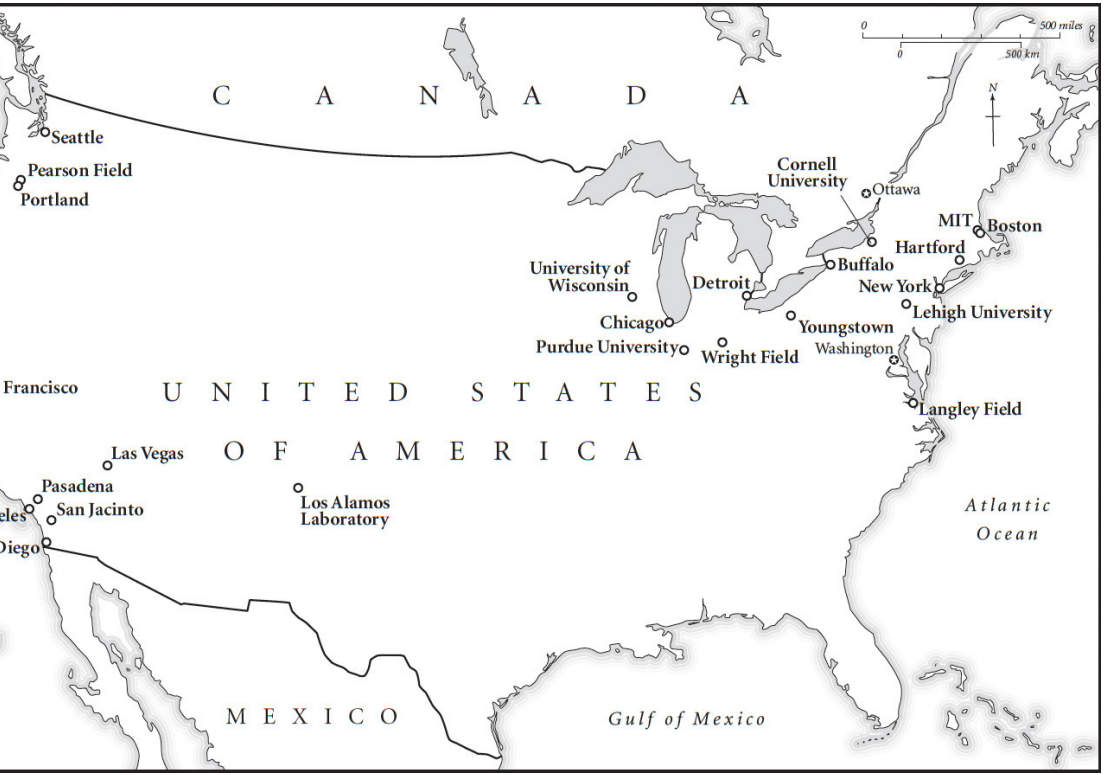
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PREFACE

In 1931, Joseph Stalin announced, 'We are fifty or a hundred years behind the advanced countries. We must catch up in ten years. Either we do it, or they will crush us'.[1] These words began a race to close the yawning technology gap between the Soviet Union and the leading capitalist countries. The prize at stake was nothing less than the survival of the USSR. Believing that fleets of enemy bombers spraying poison gas would soon appear in the undefended skies over Russia's cities, and amid predictions that millions would die from inhaling the deadly toxins, Stalin sent two intelligence officers – an aviation expert and a chemical weapons specialist – on a mission to the Massachusetts Institute of Technology. He ordered them to gather the secrets of this centre of aeronautics and chemical weapon research and bring them back to the Soviet Union, along with the means to defend his population against the new terror weapons of modern warfare.

The results of this mission would change the tide of history and lead the KGB to acknowledge that after this first operation 'the West was a constant and irreplaceable source of acquiring new technologies' for the USSR.[2] After 1931, the Soviets would use scientific and technological intelligence, particularly in the field of aviation, to protect itself against its enemies, culminating in the defeat of Nazi Germany and, thanks to later

espionage, helping tilt the global balance of power into an uneasy equilibrium. While both sides possessed weapons of equally massive destructive power, the Cold War did not become a hot war.

Ironically, America was the source of both sides' nuclear armouries. US agencies later termed the haemorrhage of sophisticated technology to the USSR as 'piracy' and tried unsuccessfully to staunch the flow of secrets. In the Soviet Union, the savings resulting from this technical espionage would eventually total hundreds of millions of dollars and be included in official state defence and economic planning.

The experts in the 1930s were half right in their predictions about the future of warfare. By 1945 a nation's power was determined by the strength of its strategic bombing capability. But the invulnerable high-altitude aircraft were not armed with poison gas. They carried a weapon of far greater destructive power: the atomic bomb. Undreamed of in 1931, this terrifying new device would prove devastatingly more potent a killer than poison gas. In 1945 a single bomb dropped from one plane killed over a hundred thousand people, and one country held a monopoly on this power: the United States.

Yet within four years the Soviets had built their own bomb, joining the US as one of the world's two superpowers. This pre-eminence would have been unimaginable a quarter of a century previously, when Stalin and Felix Dzerzhinsky sat down to plan the reconstruction of a fragile, illiterate nation reeling from war

and successive revolutions. It would be achieved through the sacrifice of millions of lives, lost during the terrible famines that attended collectivisation and on the blood-soaked battlefields of the Eastern Front.

In 1931 a small number of Soviet secret agents infiltrated America to live their lives in the shadows. This is the story of how that long mission first began and how the prestigious Massachusetts Institute of Technology became the greatest, if unwitting, finishing school for Soviet spies – the alma mater of intelligence officers more talented and remarkable than the Cambridge Five traitors Philby, Burgess, Maclean et al. Without the fruits of the spies' work – the astounding number of technological and scientific secrets they smuggled out – it is hard to believe that the USSR would have prevailed against Nazi Germany or taken its place at the world's top table.

The stream of intelligence helped prepare the Soviet Union's armed forces and ready its industrial base for the trials of the Second World War and the Cold War. Across the battlefields of the Eastern Front and in its factories far behind the front lines, the USSR was able to grind Hitler's previously invincible legions into dust. Defying all expectations, the 'backward' Soviet Union mass-produced more planes, tanks and guns than the invading Germans. The secret to crushing the Nazis was stolen American know-how.

By 1942, Stalin was looking beyond the defeat of Hitler and planning for the future defence of the Soviet Union. He

sought to overtake his erstwhile Western allies on their home ground, technology. Spreading his net across both sides of the Atlantic in the first coordinated intercontinental espionage gathering operation in history, Stalin's spies would break the US's monopoly on the atomic bomb and the high-altitude bomber. These two astonishing technical achievements were completed in four years, less than half the time expected by the Americans.

The US's global supremacy stemmed from its leadership in science and innovation. Its education system was the brain factory, at the centre of which lay its technical universities. Its economic success was founded on unrivalled techniques of quality mass production, the speed at which it transferred innovation from research centres to factory floors and on mass consumerism. In the 1940s, America's factories outproduced the world both in terms of quality and quantity. Yet US defence policy relied on the technological sophistication and superiority of the weapons in its armoury, not the number of boots the army could deploy on the ground. In the late 1930s that superior weapon was believed to be the unerringly accurate Norden bomb sight. By the mid 1940s it would be the A-bomb.

The start of the Soviets' long science and technology (S&T) mission to the US has remained unknown for over eighty years owing to the desire of Russian and US security services to keep their secrets. My sources include previously undiscovered Soviet-era documents that tell the story of the greatest triumph of Stalin's secret services. As well as how they did it, this book

reveals that Soviet intelligence began penetrating the United States 'to catch up and overtake America' not to undermine its system of government. The Soviets sought to learn from scientists and entrepreneurs how to industrialise the American way. To surpass the US, they needed to 'combine American business quality with German attention to detail all on a Russian scale'.[3]

Over the next five decades the Soviet S&T mission would evolve in its goals, intensity, scale and success, but the main task would be the US, 'the most advanced country in S&T',[4] and the initial scientist-spies of the first operation would form the model. The mission's high points were the penetration of the Manhattan Project and the building of the Tu-4 bomber. The first spies would be followed in the 1980s by trained 'agents [who] were: Doctors of Science, qualified engineers specialising in atomic energy, radio electronics, aviation, chemistry, radars [focusing on] "brain centres": scientific research institutes, universities, scientific societies'.[5] These were the same targets that had been identified by the very first spy, Stanislav Shumovsky, in 1931. The skills that came naturally to him and those he learned on the job would form the basis of an entire KGB programme to train its brightest scientists for missions in the US.

This is the life story of the remarkable Stanislav Shumovsky, a man who changed history. As a young man, he served as a soldier. Against the odds he helped fight off the world's great

powers who sought to strangle Communism in the cradle. When unfit to fight, he used science and technology to transform the Soviet Union from a land with a few imported aircraft to an aviation superpower and an unlikely victor in the Second World War.

Shumovsky was probably the most successful and audacious aviation spy in Soviet history. Appropriately codenamed BLÉRIOT after the legendary French aviator, he provided the USSR with the means to build a modern strategic bomber, which was commissioned to carry the atomic bomb. Among his other notable successes while operating in America during the 1930s, Shumovsky escorted one of the world's greatest aircraft designers, Andrey Tupolev, around dozens of key US aviation plants, research centres and universities. Along the way Shumovsky recruited as agents a generation of Americans working in the aviation industry (some from his own class at MIT) and filmed inside top-secret US defence plants. A master of public relations, he gave newspaper interviews and posed for photographs, hiding his activities in plain sight for years.

His model for the Soviet scientist-spy formed the key innovation in S&T espionage. Shumovsky would always consider himself an engineer capable of discussing aviation as an equal with the world's leading experts of the time. He persuaded the NKVD to finance the education of several American recruits by paying their fees at a top university. This is the first evidence of Soviet intelligence investing in young individuals who would

prove useful sources in later life. Shumovsky also vouched for and mentored four NKVD officers who enrolled at MIT to learn the skills necessary to continue acquiring technological secrets. The training enabled his protégés to secure the greatest prize of all, the atomic bomb. By 1944, the best Soviet assets of Operation ENORMOZ (their penetration of the Manhattan Project) on both sides of the Atlantic had all been recruited or were run by Shumovsky's MIT alumni. Of the eighteen Soviet intelligence officers who worked on obtaining the secrets of the atomic bomb, the most senior were graduates of US universities.

Today, Shumovsky's photograph deservedly hangs in the SVR (Russian Foreign Intelligence Service) Hall of Fame. In Washington and Moscow, the details of his career are still officially classified. Another photograph, taken in 1982 (see here), shows Professor Shumovsky in old age at home. Behind him, on a shelf in a glass cabinet filled with books, is a second photo, evidently a precious memento. It is the picture of a younger Stanislav in his MIT graduation gown, taken in the summer of 1934 on the lawns outside the Institute's Building 10. The older, relaxed Professor Shumovsky can for the first time perhaps afford a broad smile in a photograph. He stares proudly at the camera, no doubt recalling how he achieved what Stalin had ordered of him all those years before: to provide the crucial information needed for his country's survival.

To catch up and overtake America is no longer a Russian goal. Others now follow the trail trodden by the Soviets in the

1930s. Today, selling American education abroad is big business. Over a million foreign students are currently enrolled at US universities, around 5 per cent of the total. Disproportionately around a third of those take courses in science, computer technology, engineering and mathematics (STEM). A third of foreign students are Chinese who, according to a 2017 report in the *New York Times*, contribute an estimated $11.4 billion to the US economy. The advantage to America is that foreign students generally pay full price for their education, subsidising domestic students. Graduates from STEM fields are projected to play a key role in future US economic growth. There is a concern that with so many places taken up by foreign students there may not be enough domestic STEM graduates to meet future job demand. Another is that Chinese and Indian graduates will use their new skills to erode America's treasured technological superiority. On 14 February 2018, Christopher Wray, head of the FBI, told Congress that 'Chinese intelligence operatives are littered across US universities, possibly to obtain information in fields like technology. Schools have little understanding of this major predicament.' Wray warned 'the level of naivety on the part of the academic sector about this creates its own issues … They're exploiting the very open research and development environment that we have, which we all revere. But they're taking advantage of it.' America remains trapped in a dilemma of fear and greed.

Books that focus on the history of Soviet espionage in the

United States and its English-speaking allies often share a troubling Anglo-centric tradition characterised by a reluctance to embrace new non-English sources, in particular those that challenge established narratives. A dearth of Russian-speaking historians is only partly to blame for this continuing problem. The study of Soviet intelligence has been shaped predominantly by the reliance on a few Western primary sources or accounts by journalists and Soviet defectors. Little regard has been given to the inherent bias in this material. For example, the first-hand accounts from former Soviet collaborators-turned-informers such as Harry Gold, Elizabeth Bentley and Boris Morros were unreliable, self-serving and hence problematic. The National Security Agency's Venona Project that decoded intercepts of Soviet telegrams was considered unreliable as a sole source of identification as long ago as May 1950. The FBI itself recognised how hard it is to identify agents categorically. Even when Soviet sources became widely available after the collapse of the USSR the new material was used only to support established narratives, and documents that did not fit have been largely ignored.

How I found the new material is a story in itself. From the first clue in a declassified NKVD interrogation protocol of 1935, I followed a trail of evidence. That document suggested that in 1931 Soviet Military Intelligence was sending agents on espionage missions to MIT. By verifying this nugget of information through university records and public documents, I

was able to uncover the whole story. This book first and foremost lets the new documents speak, and approaches the subject from the perspective of Soviet intelligence officers. This is not the traditional witch hunt to find long-dead traitors who betrayed their country for ideology or money in the 1930s or 1940s. On the contrary, this book looks at a few individuals whose lives were dedicated to the belief that they were making society better. History may have shown their vision of the world to be idealistic but nonetheless they strove hard to ensure that the Soviet Union and its hundreds of millions of people were at least somewhat prepared to fight off the scourge of the Nazis. For that, we should be grateful.

Among the many surprises and revelations in this book are the identification of a number of new Soviet spies on previously unknown operations. The findings establish that significant penetration of the US started a decade earlier than many previously believed. In addition, the involvement of major US figures in Soviet espionage began far sooner than has been made public before, with for example Earl Browder and Nathan Silvermaster active many years earlier than previously thought.

Women play a strong and full role in these early intelligence operations out in the field. In a profession dominated by men these women are not playing the traditional support roles of honey traps, such as Mata Hari. Ray (Raisa) Bennett and Gertrude Klivans are refreshingly modern young women who from an early age knew their own minds. We are privileged

to hear their voices through their own words. Both were no shrinking violets but followed their own independent paths in life. Raisa Bennett had to juggle the responsibilities of being a Soviet Military Intelligence officer on a dangerous mission abroad while also mother to a young child. Gertrude Klivans had plenty of opinions and plenty of men, all the while training the future top spies how to be American.

Of historical significance is the story of Military Intelligence officer Mikhail Cherniavsky. At the time, his assassination plot attracted the close attention of the intelligence services and political elite. Only two pieces of intelligence were ever underlined by the NKVD and one was the revelation from a source in Boston of a growing Trotskyist opposition in Moscow linked to an international revolutionary movement. Cherniavsky was the ringleader of a plot to kill Stalin and replace him with Trotsky. It was Cherniavsky's bullets that Stalin referred to in his speech to the Graduates of the Red Army Academies delivered in the Kremlin on 4 May 1935:

But these comrades did not always confine themselves to criticism and passive resistance. They threatened to raise a revolt in the Party against the Central Committee. More, they threatened some of us with bullets. Evidently, they reckoned on frightening us and compelling us to turn from the Leninist road.

Finally, through my research for this book I was delighted to lay to rest one ghost. I uncovered the life and intelligence career of Ray Bennett, the first American to serve as a Soviet

Military Intelligence officer in the United States. Eighty years ago, Ray vanished from her young daughter's life. Joy Bennett ran into Ray's bedroom, as she did every morning, to discover her mother had disappeared. In 2017 I was able to explain to Joy her mother's career and the reason behind her arrest and eventual disappearance. Joy kindly described my work as 'sacred'.

During the period of history that this book covers the Russian secret services organisations changed their names many times, and for the sake of simplicity (and despite this being historically inaccurate), I have called them the NKVD or Military Intelligence throughout the book. To avoid confusing the reader further, Russian names are spelled using 'y' for 'i', so for example 'Andrey' not 'Andrei', and I have used 'Y' at the start of certain names, such as 'Yershov' not 'Ershov'.

INTRODUCTION

On the hot summer's day of Sunday, 3 August 1947, a large crowd of Muscovites gathered at Tushino airfield for Aviation Day.[1] From early morning they had made their way in their thousands to secure a grassy bank as a vantage point from which to watch the aerobatics and parachute jumps. They waited expectantly to cheer and applaud the heroic pilots, set to perform dizzying barrel rolls and stomach-turning loops.

The stars of the show were a new generation of military aircraft. The message that Soviet leader Joseph Stalin sent to his people and the watching world that day was clear: the Cold War had begun in earnest and his air force was equipped to respond to any threat. In the words of the rousing 'March of the Soviet Aviators',[2] which was constantly played:

Our keen sight is piercing every atom,
Our every nerve in determination dressed
And trust us, to all enemy ultimatums
Our Air Fleet will give a quick response.[fn1]

On the VIP balcony, to the left of the grey-haired Stalin in his generalissimo's uniform, stood a galaxy of Soviet aircraft designers – Alexander Yakovlev, Semyon Lavochkin, Sergey Ilyushin, Pavel Sukhoy, Artem Mikoyan, Mikhail Gurevich,[fn2] and the greatest of them all, Andrey Tupolev – who had given

their names to a series of iconic military planes. As befitted a day dedicated to celebrating the country's air force, each man was resplendent in uniforms decorated by rows of gleaming medals.

Standing alongside the diminutive aircraft designer Tupolev was the far taller figure of Colonel Stanislav Shumovsky, a graduate of the Massachusetts Institute of Technology (MIT). The affable, bespectacled Shumovsky was Tupolev's friend and long-term collaborator; perhaps more significantly, he was also the most successful aviation spy in history. His latest intelligence coup, which he was still celebrating, had been to bring all of defeated Nazi Germany's advanced jet and rocket technology back to the Soviet Union.[3] But he had enjoyed his most significant successes in the USA, where he had operated with impunity since his arrival at college in 1931.

Шумовский Станислав Антонович

Colonel Shumovsky in air force uniform

Shumovsky pointed out to the stocky Tupolev the faces of the foreign military attachés, who were standing in a separate enclosure. The observers expected to see a parade of prototype jet fighters scream across the sky. The Russians' plan was to enjoy watching the faces of the American military observers behind their gleaming sunglasses.[4] Little did the foreigners know that Tupolev had one major surprise up his sleeve. For the last two years, at the behest of Stalin, he had worked day and night on the Leader's pet secret project. Uncle Joe, with his flair for combining politics with a flamboyant brand of showmanship, wanted to send a clear message that would have military men in Washington, London, Paris and beyond choking on their tea, and reaching in panic for something far stronger. Thanks to Tupolev's unceasing, bone-shattering effort, that message was about to be delivered.

After the national anthem and a massive artillery salute, the crowd stood to watch the planes, shielding their eyes with their hands or using binoculars. From the distance, they could hear a faint hum that grew ever louder. Three dots emerged from the patchy clouds, becoming recognisable as giant planes. These were something new from Tupolev, his gift for the Red air force: a four-engined strategic bomber, the Tu-4. Despite the bright red stars on the planes' tails, the foreign military attachés thought at first this was a simple publicity stunt. Surely the three Tu-4s

were just recycled US B-29 Superfortresses? In 1945, three B-29s had made emergency landings in the Soviet Far East while conducting bombing missions against imperial Japan. Perhaps the Soviets, who the military attachés assembled here knew were incapable of producing a high-altitude strategic bomber, had just patched up some American planes with a slick paint job?

Then another dot appeared. It was the Tu-70, a Tupolev-designed passenger version of the Tu-4, and its presence demonstrated that the Soviets were now somehow able to mass-produce their own strategic bomber fleet. Tupolev and Shumovsky glanced over at the American observers, who now looked aghast, deafened by the roar of the colossal aircraft flying above. For them, and indeed for every other Westerner present, it was manifestly clear that the global balance of power had shifted irrevocably to the Reds. Every inch of their territory – the capital cities and industrial heartlands which had long been considered safe from Soviet counter-attack – was now within reach of its modern heavy bomber fleet. This was a crisis. Now all the Soviets needed was the atomic bomb.

• • •

Two years later, on 29 August 1949, at Semipalatinsk in the Kazakh Soviet Republic, Russian scientists detonated 'First Lightning',[fn3] their atomic bomb. The FBI started a massive, frantic investigation to find how out the 'backward' Soviet Union could possibly have accomplished this scientific feat.[5]

One line of enquiry led the Bureau to search for a shadowy

figure they codenamed FRED, a Soviet espionage controller with links to the heart of the atomic programme. For a while, the FBI suspected that FRED was Stanislav Shumovsky.[6] Based on information from an informant named Harry Gold, they made the correct assumption that the linchpin in the atomic plot was an alumnus of one of the United States' finest universities, the Massachusetts Institute of Technology. But FRED was not Shumovsky. Stanislav had left the United States long before his aviation espionage exploits were exposed to the FBI. Despite turning over every stone, the Bureau never understood that Shumovsky was just one of many top Soviet spies, all alumni of MIT, and part of an operation that had been up and running for nearly two decades. This is Shumovsky's story, which the FBI, with all their resources, failed to uncover.

• • •

The first leaders of the Soviet Union Vladimir Lenin and his successor Stalin had always felt threatened by the stronger and technologically superior forces that surrounded their new state. For its security, the Soviet government knew it needed to close the technology gap with those powers it considered potentially hostile, which was virtually everyone. Luckily for the Soviet Union, the nations they perceived as enemies had a flaw. Western countries never understood the value to the USSR of the knowledge and technology they were prepared to trade, teach or simply give away. In particular, Stalin took the decision as early as 1928 to rely on American manufacturers as the Soviet Union's

main supplier of aviation technology.[7]

On Stalin's orders, seventy-five Soviet students, including Shumovsky (NKVD codename BLÉRIOT)[8] slipped almost unnoticed into the United States during the hot summer of 1931.[9] They did not tell the Americans welcoming them to their country that several of the students were also intelligence officers. Stanislav Shumovsky, the first super-spy, was in the vanguard of a mission that by its conclusion had achieved the systematic theft of a large quantity of the US's scientific and technological secrets – including its most prized of all, the Manhattan Project. But until now, the audacity of the scheme has not been understood or appreciated by the American public, the universities or even the FBI. The mission was distinguished by its daring – Shumovsky would openly film inside America's most secret sites while wearing his full Red Army uniform;[10] its scale – the volume of secrets plundered dwarfs the impact of Cambridge University's 'Magnificent Five' traitors;[fn4] and its success – with the fruits of the operation, Stalin was able to bridge the technological gap between the USSR and the USA, equip his air force with a strategic bomber capable of reaching Chicago or Los Angeles, and arm his country with its own nuclear weapons.

'Stan',[11] as Shumovsky styled himself during his years in the United States, never shot a man in cold blood, never jumped from a burning building (although he was not immune to moments

of James Bond-like indiscretion with women).[12] Instead, the charismatic, charming and fearsomely clever Soviet intelligence officer cultivated an extrovert image that helped him obscure the cloak-and-dagger work he was conducting. The scheme was simplicity itself. While on campus, Stan's role was to spot American scientists working in areas of interest to the Soviet Union, approach them on a personal level for cooperation, and subsequently collect information from them. Shumovsky would eventually acquire US secrets on everything from strategic bombers to night fighters, radar guidance to jet engines.[13] Each acquisition saved decades' worth of research and millions of dollars of investment – he secured them for his country at almost no cost.

During his mission, Shumovsky would build a network of contacts and agents in factories and research institutes across the USA. Undiscovered for fifteen years,[fn5] he masterminded the systematic acquisition of every aviation secret US industry had to offer. Uniquely, he worked hand in hand with top aircraft designers and test pilots. Designer Andrey Tupolev, one of the world's greatest experts in 'reverse-engineering' (the dismantling and duplication of technology), would present Shumovsky with a 'shopping list' of information he needed to solve specific technical issues. What sets Shumovsky's career apart from those of other intelligence operatives is that he went further than merely gathering information. As talented a scientist as he was a

spy, on his return to Russia he established a research institute to analyse and exploit the secrets his network gathered in America and elsewhere.[14]

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If the trail-blazer Shumovsky had not discovered the usefulness of an MIT education, there would have been no Ethel and Julius Rosenberg, no Klaus Fuchs;[fn6] the world we know today would be a very different place. To an extent that has never been acknowledged before, the Soviet Union's survival during the Second World War was underpinned by the technological and manufacturing secrets, plundered from US universities and factories, that enabled the development and mass manufacture of the aircraft and tanks needed to defeat the Third Reich.

Yet Shumovsky is virtually unknown outside Russian intelligence circles. His service records remain classified. Paradoxically, it is his very obscurity that demonstrates most comprehensively his success: we inevitably know most about the spies who were caught or turned traitor. In 2002, on the centenary of his birth, Shumovsky's biography was published in Russia by MFTI (the Moscow Institute of Physics and Technology), the university that he helped found in 1946. It celebrated his life and achievements as a scientist and educator.[15] But there was a thorny problem to skate around: how to explain in an article that the founder of this prestigious place of learning was one of Russia's greatest spies. The Institute admitted they had few

biographical details of Shumovsky's earlier career to rely on as he had worked there later in his life. Yet the *Journal of Applied Mathematics and Technical Physics* was able to publish a very warm but anonymously authored biographical sketch of him. Out of respect, and from a desire for completeness, the Institute turned to an unusual source for more information. As the *Journal* stated euphemistically, 'for reasons which, on the basis of the text, we can only guess at, the authors have concealed their names under the collective pseudonym "Colleagues and numerous scientific school pupils of S. A. Shumovsky".'[16] The contributors were in fact his friends and colleagues from the intelligence service, who had access to Shumovsky's still-classified personnel file. To remove all doubt as to their identity, the anonymous contributors added a footnote to the article that says: 'It is no coincidence that the portrait of Stanislav Antonovich Shumovsky was placed in the "Hall of Fame" Memorial Museum of the SVR [Foreign Intelligence Service] at Yasenevo.'[17]

Only the employees of the Russian secret service are allowed inside the Hall of Fame. This is as close as Shumovsky has ever come to an official recognition by Moscow of his achievements as a spy.[fn7]

Stanislav Shumovsky is known rightly as one of the fathers of Russian aviation. This is the first full account of the unusual and surprising methods that he used to achieve his personal dreams and the goals of the Soviet Union.

1
‘SON OF THE WORKING PEOPLE’

Joining[fn1] an exhilarated crowd heading back to Moscow from Tushino airfield and thrilled by the successful parade of new Soviet air power, Stanislav Shumovsky reflected on his extraordinary life. His mind drifted to the very first time he had seen a man fly, in his home city of Kharkov where he had stood as an eight-year-old in another large crowd, gripping his father’s hand tightly with excitement. It was the summer of 1910 and, just like the rest of the vast Russian Empire, the young Shumovsky had caught aviation fever.

A year before, Shumovsky had clipped from the newspaper a picture of his lifetime hero, the French aviator Louis Blériot, taken after his epic flight across the English Channel.[fn2] The news announced an era of daring long-distance flight. For the sprawling Romanov domain, now covering over a sixth of the world’s land surface from the frontiers of Europe to the Far East, powered flight opened a world of new possibilities. Shumovsky also saved a newspaper clipping from the same year of the now-forgotten Dutchman who had been the first to pilot a flimsy plane from Russian soil. Unfortunately, he managed just a few hundred yards, but even this meagre feat enraptured the nation. The next summer, Shumovsky’s clippings book bulged

with articles showing, to the delight of vast crowds, intrepid Russians[fn3] climbing aboard imported aircraft to ascend a short, noisy distance into the sky. Everyone, but especially Shumovsky, wanted to see with their own eyes these miraculous machines and the heroes who flew them. Now, finally, it was Kharkov's turn. Determined not to miss the event, Shumovsky had made his father promise weeks before that they would go together.

The day was set to become a landmark event in his life. For the last week, the local newspapers had been posting on the boards outside their offices stories designed to whip up excitement to see the new triumph of science. A French-designed, but Russian-built Farman IV had finally come to town. The early plane with its many wings looked to the sceptical eyes of the crowd more like an oversized kite, yet somehow the wheezy engine of this ungainly, flimsy jumble of pine, fabric and wire was capable of propelling the pilot and his nervous passenger into the sky. The crowd held its breath and after an uneven and uncomfortable take-off, the plane lifted from the ground, then turned slowly to the left to circle the field before attempting an even bumpier landing. Shumovsky pulled at his father's hand to be allowed to join those chasing after the landing aircraft, eager to congratulate the pilot and his passenger, and to see up close this conqueror of gravity. The flight had lasted only a few minutes but its impact on Shumovsky was to last a lifetime. It fired a passion for aviation: he wanted to become a pilot.

Stanislav Shumovsky was born on 9 May 1902,[1] the

eldest of four sons of Adam Vikentevich Shumovsky and his wife, Amalia Fominichna (*née* Kaminskaya). His parents were not ethnic Russians but Poles. The family treasured their traditions, practising Catholicism and speaking Polish at home.[2] Shumovsky belonged to an old noble family dedicated to public service. According to family legend, the Shumovskys had moved to Poland from Lithuania about six hundred years before with the conquering King Jagiello.[3] The Polish government commissioned a statue of this long-forgotten king for their display at the 1939 New York World's Fair.[fn4] (The prize-winning Soviet stand, adorned with statues of Lenin and Stalin, in contrast boasted a full-scale model of a Moscow metro station.)[4] Since the family move, successive generations of Shumovskys had valiantly served first the Commonwealth of Poland and Lithuania and now the twin-headed Russian eagle.[5]

Shumovsky's father was an accountant and bank official working for the Tsar's State Treasury in the thriving commercial city of Kharkov. His mother Amalia was born a noble. Her own father was the manager of the large estates of the noted Polish Prince Roman Damian Sanguszko in nearby Volyn province. Amalia was a talented pianist[6] and ensured her boys spoke French and German.[7] As was expected among the tiny professional class of the time, family life revolved around musical and literary evenings where their mother would showcase her talent. The youngest of the Shumovsky boys, Theodore, recalled

a vivid memory of their genteel, comfortable life. He described in his autobiography (appropriately, as events turned out, entitled *The Light from the East*) 'a large room with two windows; in the space between the windows stood a piano, that my mother plays. Her face, framed by her wavy black hair and her eyes focused far away, as always happens, when one surrenders to music.'[8] Theodore grew up to become a dissident academic and today is celebrated in Russia while his elder brother Stanislav, who devoted his entire life to building the Soviet Union, is almost forgotten.[fn5]

As a member of the gentry, Shumovsky's father Adam was entitled to patronage. For his four sons that privilege meant they could attend the *Gymnasium* in Kharkov.[9] Its curriculum encompassed a view of the world that included modern science, Shumovsky's passion. Less fortunate children growing up in the city at the same time managed, like the overwhelming majority of the Emperor's 125 million subjects, perhaps three brief years in a church charity school[10] where the priests reinforced the principles of autocracy, unquestioning loyalty to God and His representative on earth, the Tsar. At Shumovsky's school, the teachers explaining the miracle of powered flight only increased his desire to see the sight for himself.

The annual International Trade Fair was the one time of year when the inventions and curiosities of the world were brought to the excited citizens of Kharkov. Like the country, the city

was in the midst of massive social transformation. Kharkov was proud of its place at the forefront of developments and firmly part of a new Russia. Like its rival, the then capital city of St Petersburg, it was a window through which Russia looked to the West, to Europe. In contrast with provincial Moscow and Kiev, which were far more traditional, religious and backward, Kharkov embraced progressive thought and modern inventions. Blessed with a wealth of natural resources such as coal, iron ore and grain, the city was newly affluent. Sitting in the centre of the rich black soil of the Ukrainian plains and with an enormous new railway station, Kharkov was the leading transport hub and undisputed commercial centre of southern Russia. Shumovsky's father's job was to help regulate the numerous private sector banks that financed the ever-growing agricultural and mining enterprises. The city was a hive of steel-making and coal-mining, the epicentre of Russia's Industrial Revolution. Almost 300 automobiles jostled to drive along the few paved roads, past the horse-drawn taxis and slow-moving peasant carts.[11]

It should have been a wealthy and happy place. It wasn't; indeed, it was impossible to live in the sprawling city and remain unmoved by the inequality and social division which were the result of its rapid economic expansion. Shumovsky saw the evidence each day on his way to school as he passed the dispossessed peasants sleeping rough on the street. While Kharkov's grain found its way to the hungry cities of Western Europe, few enjoyed the profits that trickled back. The arrival

of modern factories, steelworks and locomotive manufacturers had brought home to the city the issues and problems associated with Russia's rapid industrialisation. Government policy had been to finance this enormous investment through heavy taxes on peasants, forcing millions to work unwillingly in towns. Armed police, Cossacks and the army ruthlessly suppressed the many protests. Each spring thousands wandered hungrily into the city, vainly searching for a way to improve their lot and the lives of their families back in their home villages. These new peasant workers trailed miserably into the foreign-owned factories, exchanging one form of slavery for another. As Shumovsky would later remember, 'Most industrial enterprises, in fact, were under foreign control. In my home city, for example, the gas business was run by a Belgian company, the tramways by a French company, a big plant for producing agricultural machinery by a German company, and so on.'[12]

Russian industrial workers were not only the lowest paid in Europe but struggled under a burden of often unfair and inhumane practices. On his way to school, Shumovsky would pass children his own age heading to a long day at work.[fn6] Workers only had to be paid in cash once a month; the rest of their wages were returned to the factory owners' pockets by a voucher system, requiring the employees to pay their rent and buy overpriced goods in the company stores. Russian industrial labourers worked eleven-hour days, although shifts often exceeded this, in conditions that were unsafe and

unhygienic. Kharkov's population had increased and housing conditions were awful – it was no surprise that the city would soon become a hotbed of radicalism and politically motivated strikes. The official reaction to even mild protest was confrontational and violent.

Kharkov bore the vivid scars of the 1905 Revolution and the Tsar's broken promises. The large locomotive works where Ivan Trashutin (one of the students who would travel with Shumovsky to the US) was later employed had been extensively damaged by fierce artillery shelling at the climax of official efforts to dislodge its striking unarmed workers.[13] The revolution began after the army and police shot dead 4,000 peaceful protesters in St Petersburg who were taking a simple petition to the Russian Emperor asking for improved working conditions and universal suffrage.[14] The peaceful demonstration was organised and led by an agent of the Tsar's secret police, the feared Okhranka, in one of the *agent provocateur* missions for which it was renowned.[fn7]

In revulsion, the whole country rose in revolt at the lack of any reaction to or remorse for this bloodshed on the part of Tsar Nicholas II. Joseph Stalin's close friend Artyom (Stalin later adopted his son) set Kharkov alight with months of army mutinies and strikes. Barricades were set up on the main street, and there was armed insurrection. Large-scale street fighting broke out between the citizens demanding a voice and the paramilitary Cossacks. Across Russia's cities an alliance of radical students,

workers and the peasants brought the autocracy almost to its knees. Shumovsky learned that secondary school children played their part by cooking up sulphur dioxide bombs in the chemistry laboratory. The schools and the universities were proud to be the headquarters of revolutionaries. Tsar Nicholas eventually caved in to the people, offering great concessions and even promising a Duma, a parliament, but as soon as the strikes ended, he went back on his word. The people felt betrayed by their Tsar. Each year as Shumovsky was growing up, there were demonstrations in Kharkov under the slogan 'We no longer have a Tsar', commemorating the deaths of the 15,000 hanged for their part in the countrywide protests.

The Russian middle class, including the Shumovskys, became alienated from their government. They witnessed the shocking, violent crackdowns on peaceful protesters and the lamentable official failure to promote better social conditions. There was now a Duma for which men of property like Adam Shumovsky could vote, but in practice the Tsar was as autocratic as ever. The electoral laws were changed to exclude those considered to have been misled to vote for critical, radical parties and to promote and support conservatives, and the parliament was contemptuously referred to as a 'Duma of Lackeys'.[15] Although officially banned, discussions raged on in drawing rooms across the country about the latest scandals of the court faith healer Rasputin and the not-so-clandestine involvement of the Okhranka in terrorist activities, including assassinations and

bombings.[16]

As Tsar Nicholas implacably set his face against change, opposition politics and debate moved ever further leftwards in search of radical alternatives. The certainty of change promised by the Marxist dialectic appealed to the methodical minds of Kharkov's citizens. In the face of an official policy of Russification, meanwhile, each of the empire's nationalities increasingly aspired to independence. Russian Jews were subject to harsher discrimination. Official quotas to limit the number of Jewish students were re-imposed at schools and universities, and violent anti-Semites formed savage gangs known as the 'Black Hundreds'.

Despite the holiday atmosphere of the International Trade Fair of 1910, new waves of strikes had begun. Kharkov contained a dangerously rich cocktail of workers seething with resentment at the failure of the 1905 Revolution, a free-thinking professional class reading socialist literature smuggled in from abroad and a rebellious, radical student body. All that was lacking was the spark. The province remained restive and occasionally erupted into violence. Peasants who stayed in their villages felt excluded from the economy. Their fathers had been virtual slaves; now their sons had no future on the land. Gangs of dispossessed peasants roamed the countryside, burning manor houses and murdering landowners. The army tried to keep order by shooting bands of miscreants. Meanwhile, the urban radicals had learned their lesson after the recent betrayals; there would be no half-

measures next time. The revolutionaries were more determined than before. During Shumovsky's childhood, he would learn not just about flying, but of the tragic events in his country's recent history such as the 1905 Bloody Sunday killings of unarmed demonstrators marching to the Winter Palace to present their petition to the Tsar and the 1912 Lena Goldfields Massacre, when Tsarist troops shot dead dozens of striking workers protesting about high prices in the company shops.[17] Graphic postcards of dead bodies from the Lena massacre circulated, inflaming anti-government attitudes. In short, Russia was a country teetering on the brink of war with itself.

In a country devoid of hope, many gave up their dreams of change and chose to emigrate in order to try their luck abroad, most often in America. The first wave of Russian emigration saw two and a half million former subjects of the Tsar settling in the United States between 1891 and 1914.[18] Many were economic migrants; others escaped anti-Semitic measures inflicted on them by the government; others still were frustrated firebrand revolutionaries. New York and other cities quickly developed large and thriving socialist undergrounds, eventually providing a refuge in the Bronx for Leon Trotsky before the 1917 Revolutions. Trotsky wrote for the radical Socialist Party's Yiddish newspaper *Forverts* (*Forward*), which had a daily circulation of 275,000. Russian emigrants came to dominate areas such as Brighton Beach, Brooklyn and Bergen County, New Jersey, keeping many of their 'old country' traditions alive.

It was in these exile communities dotted around the US that many future spies found homes or were born. Arthur Adams[fn8] escaped Tsarist torture to become a founder member of the North American Communist Party and later a successful Soviet Military Intelligence spy.[19] Like Gertrude Klivans[20] and Raisa Bennett,[21] Georgi Koval's[22] parents emigrated to the US to escape anti-Jewish measures. The families of Harry Gold,[23] Ben Smilg[24] and Ted Hall boarded boats to a new life.[fn9] Later Shumovsky would find a warm welcome in the Boston émigré circle.[25] Many maintained in secret their radical beliefs and links to international socialist organisations despite their outward embrace of all things American.

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Tsar Nicholas II, Emperor of All Russia, was, like the young Shumovsky, a flying fanatic. For a man who devoted his life to resisting change, unusually Nicholas committed close to one million roubles of his money to the construction of an Imperial Russian Air Force.[26] The popular enthusiasm for aviation allowed the government to launch a successful voluntary subscription campaign, to which the Shumovskys contributed, for the design and purchase of new aircraft and the training of pilots. In 1914, to his delight, Russia arrived on the world stage as a leading aviation power. Its first major aviation pioneer, Igor Sikorsky, later famous for his helicopters, constructed a long-distance four-engined passenger plane, the

Ilya Muromets.[27] The revolutionary aircraft featured innovations such as internal heating, electric lights, and even a bathroom; its floor, disconcertingly, was glazed to allow the twelve passengers to leave their wicker chairs to gaze at the world passing beneath their feet. As a sign of his confidence, Sikorsky flew members of his immediate family on long trips to demonstrate his invention. Until the First World War intervened, the first planned route for the airliner was from Moscow to Kharkov; sadly the monster *Ilya Muromets* was destined to be remembered not as the world's first passenger airliner but, with a few modifications, as the world's first heavy bomber. (In 1947 Tupolev would reverse the trick, turning a warplane into the first pressurised passenger aircraft.)

Russia created strategic bombing on 12 February 1915. Unchallenged, ten of Sikorsky's lumbering giants slowly took to the air, each powered by four engines. Turning to the west, the aircraft, laden with almost a half-ton of destruction apiece, headed for the German lines. The *Ilya Muromets* were truly fortresses of the sky. The aircrew even wore metal armour for personal protection. Despite the planes' low speed, with their large number of strategically placed machine guns no fighter of the age dared tackle even one of them, let alone a squadron. Today the *Ilya Muromets* remains the only bomber to have shot down more fighters than the casualties it suffered. It was only on 12 September 1916, after a full eighteen months of operations, that the Russians lost their first *Ilya Muromets* in a fierce dogfight with four German Albatros fighters, and even then it managed

to shoot down three of its assailants. The wreck was taken to Germany and copied.[28]

Named after the only epic hero canonised by the Russian Orthodox Church, the aircraft became the stuff of legend. The medieval hero had been a giant blessed with outstanding physical and spiritual power. Like its namesake, *Ilya Muromets* protected the homeland and its people. Newspaper stories trumpeted the plane's achievements to flying fanatics and ordinary readers alike. Its propaganda value was inspirational to Russians, including the teenage Shumovsky, used now to a series of morale-sapping defeats inflicted by the Kaiser's armies.

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The Tsar's decision in 1914 to mobilise against both Austria-Hungary and Germany had triggered world war, setting his country on the road to revolution. In August 1914, Russia initially appeared to unite behind his decision to fight. There were no more industrial strikes and for a short while the pressure for change subsided. A few months later, however, Shumovsky could feel the mood change in his city as, day by day, Russia's war stumbled from disaster to disaster and the human and financial cost mounted. Shumovsky distributed anti-war leaflets that proclaimed the real enemy to be capitalists, not fellow workers in uniform. Student discussion groups exchanged banned socialist literature and copies of the many underground newspapers. Students of the time treasured the writings of utopians, many moving rapidly from religious texts to find heroes among the

French Revolutionaries. School reading clubs were the breeding ground for the future leaders of the revolution.

The Shumovsky family's comfortable lifestyle was steadily undermined by rampant inflation. Prices for increasingly scarce staples rocketed, and Shumovsky's father's state pay was no longer sufficient for his family's needs. They invested their savings in government war bonds that fell in value as the guns grew closer. His father complained bitterly at home about the irrational decision to secretly devalue the rouble by issuing worthless, limitless amounts of paper money. Savvy, distrustful citizens hoarded the real gold, silver, and the lowest denomination copper coins; the resulting shortage of small change compelled the government to print paper coupons as surrogates. Even the least financially aware, let alone a smart accountant, knew that the once strong rouble was fast becoming worthless. At the start of a financially ruinous war, the Tsar had done something remarkable, renouncing the principal source of his country's revenue. Having convinced himself that drunkenness was the reason for the disastrous defeat in the Russo-Japanese War and the 1905 Revolution that followed, he banned the sale of vodka for the duration of the war.[29]

While failing to curtail Russians' drinking, he thus created a major fiscal problem for the Treasury. Before the war, the Tsar's vodka monopoly had been the largest single source of government revenue, contributing 28 per cent of the entire state budget. It was the middle class that was hardest hit by

the increased tax burden. Their resentment focused on the widespread corruption and prominent war profiteers, viewed as the Tsar's cronies. There were plentiful signs that Kharkov's workers were growing restive. The sharply rising food prices caused strikes, and these led to riots. The protesters first blamed their ills on greedy peasants who hoarded food and avaricious shopkeepers, but transferred their anger to treacherous ethnic Germans, Jews, police officers, bureaucrats, and ultimately to the monarch. Catastrophic defeats and vast retreats left Kharkov a critical staging post uncomfortably close to the front line. Day and night, trains pulled into the station with cargoes of fresh troops and munitions for the front. On their return, the same wagons carried away a tide of misery; the broken and dispirited remains of a defeated army. Kharkov became a city of despair, frustration and anger.

In 1915 Shumovsky's father moved the family 1,400 miles to the south-east corner of the empire, away from the war. He decided to settle in the seemingly idyllic 'little Paris of the Caucasus', Shusha.[30] It was an easy choice to make, despite the distance. The town was far away from the fighting, the cost of living low, there was ample food, and as a servant of the crown he held a position of respect. The Shumovskys packed up their possessions and made the arduous journey by rail and on foot to this remote region of Transcaucasia. Shusha resembled a picture-perfect Swiss mountain town with a few modern multi-storey European-style buildings nestled in

wide boulevards. Justly famous for its intricate formal flower garden, as well as for its ice and roller-skating rinks, the town also boasted an Armenian theatre and two competing movie houses, The American and The Bioscope. Movies were shown inside in the winter, out of the cold, and outdoors in the hot summers. Shusha was the educational and cultural capital of the region, boasting excellent schools and assembly rooms that hosted cultural evenings of dances and concerts.[31]

The Caucasus had recently become part of the Russian Empire at the point of the bayonet. Oil had made the region one of the richest on the planet. The small Russian population of several hundred held all the top jobs, shoring up their position by favouring the Christian Armenians over the Muslim Azeris. Even at the best of times the Tsarist government had only just kept a lid on the simmering ethnic tension, but in November 1914 Russia went to war with the neighbouring Muslim Ottoman Empire, ratcheting up the tension several notches. Adam Shumovsky soon came to regret the decision to move to Shusha.

In September 1915, despite lacking the relevant military experience, Tsar Nicholas felt compelled to take personal charge of – and hence full responsibility for – the conduct of the war. He was blamed for the countless deaths of soldiers sent unarmed to the front lines and the decision to face sustained poison gas attacks without masks. Fifty times the number of Russian soldiers died from the effects of poison gas as American servicemen.[32] There was little food for the army, a catastrophic

lack of artillery shells and, consequently, disastrous morale. The future White General Denikin wrote that the 'regiments, although completely exhausted, were beating off one attack after another by bayonet … Blood flowed unendingly, the ranks became thinner and thinner and thinner. The number of graves multiplied.'[33]

Until 1916 the Kaiser was more interested in fighting the British and French in the West. But as Russians died in their hundreds of thousands, their Western allies appeared to profit. The allies provided loans and paid extravagant bribes to keep Russia in the fight. There was nothing France, Britain and later America would not do to keep the war in the East going. If the Eastern Front collapsed, then German troops would be freed to move west to crush the remaining Entente powers.

Finally, in February 1917 the whole situation became too much. Paying for the government's mistakes had destroyed the very glue that had held the Russian Empire together for centuries. Inflation was making life in the cities miserable; peasants enjoyed good harvests but declined to sell their grain surpluses at the artificially low price fixed by the state. Food trickled into the markets, but at exorbitant prices which workers could not afford. The cities were starving. Autocracy had relied on the loyalty of its paramilitary gendarmes and the military to suppress the inevitable protests, but the defeated army now sided with the people. They would no longer obey orders to fire on the crowds of starving women.

By taking personal charge of the war Tsar Nicholas had gambled the future of the ancient system of autocracy, and lost. The Tsar had always been seen as appointed by God and omniscient. Faced with open mutinies, his own court now persuaded Nicholas to abdicate – a disastrous step. The linchpin that for so long had kept the Russian Empire going was gone. Just a few weeks after Lenin proclaimed that he would not see a revolution in his lifetime, the first uprising of 1917 toppled Tsar Nicholas and ended the Romanov dynasty. The nobles had sacrificed their monarchy to satisfy their greed; they wanted the allies' bribes, designed to keep the war going, so that they could have a share of war profits. They particularly wanted an end to the income tax that eroded the value of their landed estates. Their selfish agenda set Russia back a century. The common people wanted peace, bread and land, and only the Communists promised these. In the words of the great Soviet aviator Sigismund Levanevsky, 'I felt that the Communists would bring good. That's why I was for them.'[34] A second revolution in October 1917 (according to the old style calendar)[fn10] brought the Communists to power.

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Russian society was shattered by the twin revolutions of 1917, and the effects of the cataclysm were felt most dramatically in the country's far-flung corners. In Shusha, government authority vanished overnight in February 1917 and with the October Revolution any semblance of law and order disappeared. In

nearby Baku, the future capital of independent Azerbaijan, Communist oil workers and the Armenian minority joined forces to seize control, creating a short-lived commune and proclaiming Soviet power. Already a committed Communist, Shumovsky was keen to join the Soviet troops in Baku but was prevented from doing so by his parents. On 28 May 1918, Muslim Azerbaijan declared itself an independent state including, controversially, Shumovsky's home province of Karabakh. The Christian Armenian population there categorically refused to recognise the authority of the Muslim Azeris, and so on 22 July 1918, in his hometown of Shusha, the local Armenians proclaimed the independence of Nagorno-Karabakh and established their own people's government.

The new Armenian-dominated government restored order in the city by shooting 'robbers and spies'. There was a massacre. Murders were accompanied by looting, the theft of property and the burning of houses and mosques. In response, the Azerbaijanis subdued Nagorno-Karabakh with the overwhelming help of Turkish troops and headed on to Baku, now controlled by the British. For a while, Shusha was occupied by Azerbaijani and Turkish forces. They disarmed the Armenians and carried out mass arrests among the local intelligentsia.

Later, in November 1918, the tide would change after the capitulation of Turkey to the Entente. Turkish troops retreated from Karabakh, and British forces arrived. In the void, Karabakh returned to Armenian control. But the perfidious British,

Armenia's ally, prevaricated on the controversial question of who should rule the territory until the wider Paris Peace Conference took place. The British supported those whom they considered the most likely to grant them oil concessions. However, they did approve a governor-general of Karabakh appointed by the government of Azerbaijan. The Armenians were shocked not only at the open support shown by their fellow Christian British for Muslim Azerbaijan but by the selection of the governor-general; he was one Khosrov Bey Sultanov, known for his Pan-Turkic views and his active participation in the bloody massacres of Armenians in Baku in September 1918.

Sultanov arrived in Shusha on 10 February 1919, but the Armenians refused to submit to him. On 23 April, in Shusha, the fifth Congress of the Armenians of Karabakh declared 'inadmissible any administrative program having at least some relationship with Azerbaijan'.[35] In response, with the full connivance of the British and American officials now present in the region, Sultanov embargoed any trade with Nagorno-Karabakh, causing a famine. At the same time, irregular Kurdish-Tatar cavalry troops under the leadership of his brothers killed Armenian villagers at will. On 4 June 1919, the Azerbaijani army tried to occupy the positions of the Armenian militia and the Armenian sector of the city by force. After some fighting, the attackers were repulsed, until, under promises of British protection, the Azerbaijani army was allowed to garrison the city. According to the National Council

of the Armenians of Karabakh, Sultanov gave direct orders for massacres and pogroms in the Armenian neighbourhoods, saying: 'you can do everything, but do not set fire to houses. Houses we need.'[36]

The foreigner's decisive intervention in local affairs added a new level of confusion to an already complicated situation. The local oil industry was too valuable a prize for anyone to ignore. The area around Baku was strategically precious. Since 1898, the Russian oil industry, with foreign investment, had been producing more oil than the entire United States: some 160,000 barrels of oil per day. By 1901, Baku alone produced more than half of the world's oil.[37] There were already millions of dollars of foreign capital sunk into the derricks, pipelines and oil refineries, and now it was all up for grabs. Every city, indeed seemingly the whole country, was the pawn of foreign powers. Shumovsky had seen the British arrive first, to be kicked out by the Turks, only to return later, while each time their local proxy allies set about massacring the innocent inhabitants who were unlucky enough to be born on the wrong side. He perceived this not just as a civil war of Reds versus Whites, but also as an embodiment of the worst excesses of imperialism and deep-seated ethnic hatred – precisely the cataclysm described in the leaflets he had distributed in Kharkov. Only the unity of the working people could fight off the massed forces of imperialism descending on Russia.

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Within the wider tragedy was a family one. Despite the danger and vast distance involved, Shumovsky's mother Amalia overcame her fear of war each summer after the family's dramatic flight and went back to Volyn (today in the far west of Ukraine) to visit her father. He was still serving as an estate manager. In 1918 disaster struck when she failed to return to the family home by the expected date. Shumovsky's father sent a letter, care of his father-in-law, asking for information about the whereabouts of his wife. The letter came back, and written on the envelope were the stark words: 'not delivered owing to the death of the recipient'.[38]

By the summer of 1918, Shumovsky woke each day to see parts of his city burning and fresh bodies lying in the streets. Fear was in the air. Mobs attacked churches and mosques in turn, and random ethnic murders were commonplace as the city's population was divided down the middle. When Shumovsky arrived in the Caucasus, the army presence had kept an uneasy peace for the past fifty years. Now army deserters returned from the collapsed Turkish front, armed to the teeth, so the ethnic violence became organised and prolific. Shumovsky had played a role in the underground revolutionary movement in Kharkov with his classmates. Aged just sixteen, he decided to move on from distributing leaflets and reading underground newspapers quoting Lenin to fighting for his vision of a better future.

Shumovsky had completed his five years of secondary education. By his own account, he was already a gifted linguist,

speaking Russian, Polish and Ukrainian as well as French and German, although not English. The anarchy now gripping Shusha led to the eventual closure of his prestigious technical school. Although the landmark building survived the violence, it was left abandoned, a shadow of its former glory, after the factional fighting subsided. One of the few non-Armenian pupils, Shumovsky had been a star student, studying mathematics and the sciences. Now he made his first life-changing decision, to join the Red Army to fight in the Civil War. He was one of a very small number of Communists, who were a tiny minority in the country at large. Shumovsky was turning his back decisively on his Polish and aristocratic roots, a fact clearly indicated when he changed his patronymic from the Polish-sounding Adam to the Russian Anton.[39] On volunteering for the Red Army, indeed, Shumovsky concealed much about his privileged upbringing, telling the recruiters he was the son of a Ukrainian peasant worker who somehow spoke French and German.[40]

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The destruction and loss of life during the Russian Civil War was among the greatest catastrophes that Europe had seen. The conflict would rage with enormous bloodshed from November 1917 until October 1922. As many as 12 million died, mostly civilians who succumbed to disease and famine.[41] It was a time of anarchy. The armed factions lived off the land, extracting supplies and recruiting 'volunteers' at gunpoint while fighting to

determine Russia's political future. The two largest combatant groups were the Red Army, fighting for the Bolshevik form of socialism, and the loosely allied forces known as the White Army. The divided White factions favoured a variety of causes, including a return to monarchism, capitalism and alternative forms of socialism. At the same time rival militant socialists, anarchists, nationalists, and even peasant armies fought against both the Communists and the Whites.

Shumovsky and his unit were stationed in southern Russia, at the centre of the bloodiest fighting. In all the carnage and suffering he was one of many teenagers given positions of responsibility in the army. There was nothing in his genteel background to prepare Shumovsky for the terrors he faced on the battlefield. In August 1918, he made a long, daunting and arduous journey of several hundred miles on foot to join a determined band of Communist partisans under their charismatic leader Pyotr Ipatov, based far behind the main battle lines.[42] On his arrival Shumovsky was given a red armband, a rifle and a cartridge belt. He was in action within two days. Ipatov's band supported the village militia units raised by local councils to fend off marauding armed bands of foragers from the White 'Volunteer' armies sent out by Generals Kornilov, Alekseyev and Denikin.[43] The White leader, General Kornilov, ruled by fear. His slogan was 'the greater the terror, the greater our victories'. In the face of the peasant resistance he was sticking to his vow to 'set fire to half the country and shed the blood

of three-quarters of all Russians'.[44] In small towns and villages across the province Kornilov's death squads put up gallows in the square, hanged a few likely suspects and reinstalled the hated landlords by force. Rather than quell the unrest, such punitive action encouraged the Red partisan movement. Shumovsky's unit had grown strong enough to take the fight to the enemy, carrying out successful raids on White outposts to capture arms and ammunition. The fighters enjoyed the active support of Joseph Stalin and Kliment Voroshilov, who were leading the defence of the nearby city of Tsaritsyn.[45]

Shumovsky's band of partisans, 1918

By the time young Shumovsky joined the fight, the Whites' patience with the guerrilla attacks had reached breaking point. They decided to crush the partisan movement for good with an

overwhelming force. Ahead of the harvest, the Whites unleashed a punitive expedition consisting of four elite regiments of troops supported by Czech mercenaries. When the partisans received the news of the approach of this powerful force, they prepared a last-ditch ambush at the village of Ternovsky. Shumovsky helped to dig deep defensive trenches around the village. Eager to fight, two thousand volunteers streamed into the village responding to the desperate call for help. Ipatov's force had rifles, some machine guns and a captured field gun. The balance of defenders were enthusiastic but untrained farmers, armed only with homemade weapons.

The enemy approached in strength at dawn, expecting little resistance from the village militia. To the defenders' surprise, the Whites attacked head-on in a column, not even deploying properly for an attack. Maintaining uncharacteristic discipline, the partisans opened fire on the advancing enemy when they were just 150 yards away. The first volley stunned the Whites, who struggled to respond, not even returning fire. The partisan force, having quickly run out of ammunition, charged out of their trenches in pursuit of their broken enemy, waving pitchforks, shovels, axes, iron crowbars and homemade spears. No prisoners were taken. Shumovsky's first taste of action had been brief, bloody and chaotic. The defenders celebrated their decisive victory and the booty of arms and ammunition that had fallen into their laps.[46]

The disparate village guerrilla groups combined in September

1918 to form the 2nd Worker-Peasant Stavropol Division.[47] Despite the grand-sounding name, the Division could only stage raids at night due to an acute shortage of weapons and ammunition, their weakness concealed by the cover of darkness. Ipatov, a former gunsmith, built a mobile cartridge factory manufacturing 7,000 rounds per day. Even so, by the end of the month the guerrillas, cut off from any outside supplies, were almost out of ammunition. Often, the guerrillas went into battle with only three or four rounds each. Outnumbered and outgunned, under constant pressure from the advancing White Guard, the partisan units had to retreat into the interior of the province and then beyond. They were proud to record that even in this difficult period, the division was able to organise a massive transport of grain to Stalin, besieged in the nearby city of Tsaritsyn. In return, Stalin, commanding the desperate defence of the city that would later bear his name – Stalingrad – gave the partisans much-needed weapons and ammunition.[48]

In late November 1918, the band suffered its first defeat and serious casualties in a failed attack on a White base. They lost hundreds of men. Exhausted by four months of continual fighting and retreats, the survivors were forced further and further to the north-east, away from their homes and support. From December 1918, the partisans started fighting against a new and formidable enemy, the well-armed Cossacks. Their new opponent was highly mobile and well versed in guerrilla war techniques. It was bitter, unrelenting winter warfare, pushing Shumovsky's hungry unit

onto the desolate Kalmyk steppe, a region known by Russians as 'the end of the world'. In the freezing winter conditions, Shumovsky's fighters suffered extreme hardship. For the hungry, poorly clothed and exhausted men, barely surviving on the bleak steppe, the final straw was a typhus epidemic. The disease was soon rampant not only in the army but in the rare settlements. By February, the steppe front was one large typhoid camp. It became necessary for the healthy to abandon the thousands of sick men, leaving them without protection from the advancing enemy. In early March, the 10th Red Army absorbed the remains of the partisans, and the survivors became the 32nd Infantry Division.[49] Now a member of the Red Army, Shumovsky swore the solemn oath he would keep for his whole life, that 'I, a son of the working people, citizen of the Soviet Republic, Stanislav Shumovsky swear to spare no effort nor my very life in the battle for the Russian Soviet Republic.'

The Red Army was an army in name only. After a succession of defeats, it was on the point of collapse when Shumovsky joined. Only a quarter of the former Russian Empire remained under Communist control and the Reds were in full undisciplined retreat. The leadership had eschewed the services of professional military officers and logistics, a sure recipe for disaster. Their defeats were down to cowardice, treachery and panic. Even the senior commanders ran away at the sound of the first shot. It was not the use of superior tactics but a lack of ammunition that, often as not, determined the

outcome of battles. In the circumstances, promotion through the ranks was rapid for a dedicated young Communist such as Shumovsky. He was made first a squad leader then a machine-gun commander, and eventually a commissar. In the Civil War, fanatical teenagers, skinny boys in oversized uniforms, were regularly given command of large units made up of unreliable conscripts and recaptured deserters. The daily struggle for food took priority over military duties as the army lived off the land. Uniforms, including boots, were unavailable. The army provided its troops with no basic training, nor did it even teach its leaders rudimentary military tactics. With their inability to confront the Whites in a set-piece battle, the Red Army's military strategy depended on encouraging the feverish formation of local militia units to stand against Denikin's advancing volunteer army and supporting guerrilla attacks on the Whites' weak civil administration. In practice, none of the individual Red guerrilla units were sufficiently organised to be effective. However, there were so many groups that they became a veritable plague on the Whites.

After their run of bitter defeats, the Red Army finally introduced military discipline. The Soviet government established a Revolutionary Military Council of the Republic with a single commander-in-chief for all fronts. Unity of command would save the Red Army in the large-scale battles of 1919. The army developed the ability to transfer troops between fronts at times of pressing need. The establishment of an overall

operational command and an insistence on the strict execution of combat orders led to an improvement in fighting ability over the lacklustre performance of the independent amateur partisan units. The reintroduction of the basic principles of a regular professional army – namely complete submission to orders, a strict hierarchy and rigid discipline – helped strengthen the combat capability of the Red Army to first confront, then overpower the Whites. The Red Army officers were now appointed according to military ability, not elected by the popular acclaim of their troops. Orders and plans were no longer put forward to the troops for debate. In extremis, Leon Trotsky introduced the infamous 'blocking troops'. He ordered the positioning of machine-gunners behind Red Army attacks to shoot waverers, deserters and shirkers.

The most important reform, however, was the introduction of a system of dual command. Professional military officers were paired with committed commissars, such as Shumovsky, to jointly command units. Commissars monitored not only the activities of military experts, but carried out the Communist Party's policy in the armed forces to 'provide class rallying, enlighten and educate personnel in the spirit of Communism'. This was a euphemism for removing the criminal elements in uniform that preyed on the civilian population.

The large-scale battles of 1919, stretched over southern and central Russia, involved hundreds of thousands of combatants on each side, and would determine the outcome of the Civil

War. In the south of Russia, the Red Army faced its largest and most determined opponent, the well-equipped army of the fierce General Denikin. He was heavily supported both financially and militarily by the British and the Americans, while the Western powers turned a blind eye to the mounting evidence of an unpalatable genocide – known as the 'White Terror' – behind Denikin's front lines. There were large-scale massacres of suspected Communists and Jews, who were often seen as one and the same, in the territory that fell under Denikin's control. In their vast summer offensive, the Whites were able to deploy tanks, armoured cars and significant quantities of artillery, and advanced with the support of mercenary British pilots who bombed the retreating Reds. Denikin's goal was to deliver a coordinated knockout blow on Moscow. He believed its capture would ensure the complete destruction of Communism.

Denikin's army came close to achieving its goal, driving the enthusiastic but largely inept Red opponents before them. However, his army overran its supply lines and, lacking reserves, allowed the hard-pressed Red Army to bring up reinforcements first to halt the advance and then launch a large-scale counter-attack. In the midst of the renewed savage fighting in November 1919 for the critical Stavropol region, Shumovsky was wounded in the head by shrapnel near Kamyshin.[50]

By the end of the seesaw campaigning season of 1919, it was clear that the Communists would not only survive but were in the ascendancy. Winston Churchill, Britain's Minister

of War and the architect of foreign intervention, was forced to bow to his public's war-weariness and pull his troops out of Russia, having failed to strangle Communism in the cradle as he had pledged.[51] Without British finance, arms, advisors and strong diplomatic hands to guide them, the White opposition movement squabbled among themselves and teetered on the brink of complete collapse. Their armies retreated on all fronts, a mere shadow of their former military power. By January 1920 the reformed Red Army had advanced to knock on the door of the Caucasus. Shumovsky was wounded for a second time, this time in the leg, during the rapid advance on the strategic town of Rostov-on-Don.[52] The defeated White General Denikin lost half his army in a disastrous retreat to Novorossiysk and was replaced as overall White commander by the more capable General Baron Wrangel, who is immortalised in the popular marching song of the Red Army:

The White Army and the Black Baron
Are preparing to restore to us the Tsar's throne,
But from the taiga[fn11] to the British seas
The Red Army is the strongest of all!

But the feared Baron Wrangel could only hole up with what remained of his beaten forces in Crimea to await his inevitable exile. Lenin decided the time was now right to seize Baku's oil wealth. The 11th Army – into which Shumovsky had been transferred – was given the task of supporting a planned workers'

uprising. The tide of war had turned, bringing him home.

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Following the Turkish withdrawal, the British had returned in force, determined to stay in the region. They found Baku, a once beautiful town which had fallen into decay, much to their liking. When oil was discovered at the end of the nineteenth century, the city had become almost overnight one of the wealthiest on earth, with every famous European luxury store opening a branch on Baku's elegant tree-lined avenues. British naval officers requisitioned the oil barons' magnificent palaces and villas as they set about building a strong naval force to control the Caspian Sea. The ruthless British tactics involved first disarming their allies before moving out to attack the weak Red Navy. The Communist flotilla in the Caspian Sea was no match for the better-equipped British-backed forces. The British complained to London that the Reds refused to come out of port to fight them. But by March 1920, on Winston Churchill's orders, the British were long gone, and the region was a ripe plum ready to fall into Communist laps. The opposition, such as it remained, was deeply divided. The Whites refused to countenance any rapprochement with the Nationalists. Independent Armenia, Georgia and Azerbaijan dissipated their energies fighting territorial disputes between themselves. Each was in a state of financial and economic collapse. Epidemics of typhus raged unchecked, brought in by the hordes of refugees from the fighting. Just days after the campaign started, and

without firing a shot, Shumovsky and the victorious 11th Army were marching down the streets of Baku. Soon Lenin was preparing a grander plan to establish Soviet power over the whole Caucasus region.

On his eighteenth birthday, 9 May 1920, his very first opportunity to do so, Stanislav Shumovsky became a full member of the Soviet Communist Party. He was to remain an active Party member for the rest of his life, earning the right to one of the first fifty-year anniversary membership medals awarded.[fn12 53]

Although the government in Baku had no stomach for a fight with the Reds, many in Azerbaijan were not so eager to abandon their religion and embrace the ideals of Communism. Civilian revolts and mutinies centred on the old capital of Ganja. Shumovsky's army was tasked with suppressing the revolts in Azerbaijan and Dagestan, dangerous counter-guerrilla operations. On the hot summer's day of 3 July 1920, as he was slogging up the mountain roads at Agdam at the head of his unit, advancing towards his hometown of Shusha, Shumovsky suffered his third and most severe wound when he was shot through the neck.[54] During his recuperation, the 11th Army mopped up all remaining opposition to Communist rule in the Caucasus in Georgia, Armenia and Azerbaijan. The agonies of the Civil War were over.

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As an able, committed soldier, Shumovsky would serve in

the Red Army for a further six years,[55] taking on increasingly important administrative roles in major cities across the Soviet Union. He married Vera, and in 1922 they had a daughter, Maya.[56] In December 1924, he transferred to Smolensk to fulfil his childhood dream – for in the spring of 1925, Shumovsky climbed into the front pilot's seat of a two-man Polikarpov R-1 at an airfield of the newly formed Red air force at Smolensk.[57] The mechanic spun the propeller and the engine coughed into life. Turning the aircraft into the wind, Shumovsky pointed its nose down the long grass runway, revving the motor. Opening the throttle close to maximum, he waited for sufficient speed to finally pull back on the stick to adjust the flaps, giving the plane enough lift to gently rise off the ground. With a broad grin spread across his face, Shumovsky had joined his boyhood band of heroes as a pilot. His observer reached forward to pat him on the head, congratulating him on his first successful take-off.

For nine months, Shumovsky would learn first to be the observer and then the pilot in the 2nd Independent Reconnaissance Squadron. He flew in the R-1, the first new aircraft built in the Soviet Union after the Revolution and the first Soviet plane ever sold for export.[58] The R-1 set the tone for future Soviet aircraft development. It was a copy of a captured de Havilland DH-9, but with substantial improvements on the original British plane. The Soviets lacked a design for a powerful aircraft engine and the ability to make them in large numbers.

They had no access to the advanced aluminium moulding necessary to build powerful but lightweight engines. Old motors were bought abroad for the first aircraft and eventually copied in large numbers. The fuselage design was adapted to Russian conditions and materials, mahogany being replaced with local wood. The Russian plane was more robust and less powerful than its Western brother, but over 2,400 were built cheaply in a decade.[59]

Shumovsky clocked up many happy hours as a pilot in the skies over Smolensk and many more over a nine-month period as the rear-seat observer. But a crash brought an abrupt end to his flying career. He walked away, but the impact had damaged his left arm so seriously he was unfit to be a pilot. In the mid-1920s he sent his family a photograph of himself in uniform. His brother Theodore noticed 'the three rhombuses on the lapel collar'.[60] Aged just twenty-five, Stanislav was already an army commander. He had reached a rank equivalent to what we would understand today as a full general.[fn13] His final military posting was to the prestigious Kronstadt naval base at the electro-mining school of the Baltic fleet, alma mater of fellow spy Arthur Adams.[61] After the Kronstadt assignment, Shumovsky transferred into the military reserves and became the Ministry of Finance's head investigator for military affairs.[62]

Shumovsky's letter was not the only surprising communication sent to the Caucasus. In 1926, eight years after her apparent death

a letter arrived from his mother saying that she was still alive in Warsaw and earning a livelihood giving music lessons in private homes. One of a vast number of refugees displaced by war and trapped outside the Soviet Union, she was unable to return home, as tension between the USSR and Poland was at an acute level. When the demand for music lessons dried up, Amalia moved to Łódz′, where she had to work as a weaver. It was only in 1932 that she was able to return to the Soviet Union and finally live close to her family in Moscow. Broken by her experiences, she died soon afterwards; her only consolation was knowing that, in a time of blood, chaos and disaster, her eldest son had followed his beliefs and achieved great success.[63]

2
‘WE CATCH UP OR THEY WILL CRUSH US’

The Communist victors of the Russian Civil War inherited a ruined and backward land surrounded by enemies. By 1921, the level of the country’s economic activity had plunged to less than a quarter of that in 1913. Agricultural production had tumbled to a point where it was insufficient for the country to feed itself. The Communists were big dreamers, but their initial grandiose projects to modernise the transport network at a stroke by buying thousands of railway locomotives abroad and carrying out a national electrification scheme were soon scaled back when no foreign nation would advance them credit. In frustration, the leadership turned once more to their political vanguard and gave them a new task. The country had to be rebuilt and modernised and the Party’s elite was to bring to the factory floor the energy, drive and commitment responsible for the successes on the battlefield. Men like Shumovsky left the Red Army to lead the drive for industrialisation. The zealots were assigned to central roles in industry to replace the old, tired management teams.

In 1925, Shumovsky transferred to the military reserves and was assigned the pivotal role as head investigator of the

armaments industry on behalf of the People's Commissariat (Ministry) of Finance.[1] War with the capitalists was expected to break out at any time and the armaments industry needed to be ready. Shumovsky brought his military experience and Party loyalty to the role. On his factory visits, he saw the dire state of Soviet industry, which after decades of neglect was suffering from an absence of training, underinvestment, and a lack of leadership. The plants he toured struggled under the burden of pre-war machinery that was worn out and outmoded. As a result, the end product was of poor quality and frequently obsolete. Across the armaments industry, productivity was unacceptably low, and this was not merely because of the quality of the machinery. Labour relations in the workers' state were a complicated and delicate issue. Factory directors, former Tsarist middle managers of questionable loyalty and motivation, lacked authority on the factory floor as workers did not respect their orders. Foreign consultant engineers brought in to advise on improvements despaired at Russian working practices. They noticed large numbers of Soviet workers disappearing on endless smoking breaks. Female workers often carried out heavy manual work in factories, while the men sat idly watching.

Early, piecemeal efforts to improve matters had failed. With their scant foreign exchange reserves, the Soviets had bought small amounts of expensive new manufacturing machinery abroad, which the unskilled Russian workers promptly ruined. Shumovsky noted that most of the new machinery sat unused in

the factories, either uninstalled or broken. Spare parts were never on hand, nor were there engineers trained to conduct the regular maintenance required to service the machines. Faulty installation of new equipment was often to blame for the poor quality of the final output. In their current state, Soviet arms factories were incapable of making precisely engineered products even in small numbers. Above all, a chronic shortage of young engineers versed in the latest techniques and methods held the country back. Owing to a decade of war and strife, none had been trained. The armaments industry was in no state to support even a small-scale conflict. Shumovsky's reports to the Finance Commissariat detailed his dire conclusions. The reports matched similar ones written by the other inspectors, visiting factories across the whole of Soviet industry. The flow of bad news exacerbated a building sense of crisis.

The leadership was aware of the desperate issues and, under an ailing Lenin, a gradualist approach had been adopted. Lenin was a deep admirer of US invention, if not of its capitalist system. He spent considerable time in his office in Moscow's Kremlin flicking through his subscription copy of the magazine *Scientific American, the Advocate of Industry and Enterprise*. The US monthly showcased all the latest technological inventions and innovations. Lenin wanted to secure the technology to help build Communism. On the day before his death, 20 January 1924, the leader of the world's first proletarian state passed the day watching a film about the workings of a tractor assembly line

in a Ford factory.[2] While Lenin believed that in the American factory, owners used machinery as a means of oppressing the working class, in the USSR the same US-made technology and modern production methods would help build Communism. Introducing modern machines together with efficiency measures in Soviet factories would eventually allow workers greater free time and higher living standards.

Lenin hoped that greedy American businessmen would sell his government everything it wanted, even if the Soviets' ultimate goal was the destruction of capitalism. He was said to have joked that if he announced the execution of all capitalists, one would sell him the rope to hang the others. As he predicted, the US was intent on selling its technology and had the best on sale, but only for hard cash. Lenin's plans were expansive, but in the absence of credit he could buy only a limited number of US-built tractors, other advanced farm machinery and some factory equipment. In his business dealings, Lenin favoured market leaders, the likes of International Harvester and Ford, as his trusted partners. When the money ran out, which it soon did, he sold the nation's treasures. The Kremlin's famous bells had to be saved by the curator of its museum from being auctioned off abroad.[3] It was not only the crown jewels that were given away; in a sign of the Russians' commercial naivety, Trotsky negotiated to exchange the rights to exploit all Siberia's vast mineral resources for the next seventy years to one American company for a pittance.[4]

The Communists had returned to the Tsar's method of offering long-term concessions to foreign investors. In desperation, the Soviets even resorted to barter; to its complete bemusement, the Douglas Aircraft Company was offered payment for an aircraft in oriental rugs and antiques. For US entrepreneurs venturing into the USSR, the experience of doing business under Lenin's New Economic Policy (NEP) was disappointing. Once profits began to flow from their Soviet concessions, the intrepid US investors complained that they were subject to unexpected taxes or the sequestration of assets. For the Russians, the results of the programme were all too slow and involved tolerating a wild free market, risking social chaos at the hands of a class of newly rich 'NEP men', Russian capitalists who thrived by exploiting others.

The exchange of American ideas for Soviet cash or concessions should have been mutually beneficial. But ideological issues sharply divided the two societies. There were those in the US who flatly opposed doing any business with the Russians. They believed that under direct orders from Moscow, the US Communist Party members were secretly working to destroy the whole American way of life. They argued that if Communism were to spread to the US, it would mean taking away religious freedom, private property and access to justice. To the Communist way of thinking, America was a society built entirely on unfairness and the institutionalised mass exploitation of the working class for the benefit and enrichment of a few. The greatest success of the US had been to mobilise mass

consumer demand. The American working class was not political and aspired to a life of consumption that the Soviets viewed as a shallow, material existence. Every Soviet visitor to America would comment on the extraordinary proliferation of advertising hoardings cajoling consumers to purchase the latest model of automobile, Coca-Cola or cigarettes.

The key barrier to greater trade was the US government's implacable opposition to lending the Communists any money while Russia owed vast sums to US investors. Assets granted to American businessmen by the Tsar had after the revolution been expropriated by the Communists, who refused to pay any compensation. With the debt issue unresolved, the Soviets could not legitimately buy technology in the quantities they required. So they adopted a roundabout approach, which US manufacturers learned about the hard way: the unlicensed reproduction of foreign technology. Foreign cars, tractors, and other machinery exhibited at Soviet trade fairs were examined and copied. Henry Ford's deputy, Charles Sorensen, on a visit spotted near-perfect copies of Fordson tractors manufactured under the name Red Putilovets.[5] The Soviet design originated from technical drawings based on a dismantled American vehicle. Following the re-establishment of diplomatic relations, the first American ambassador to Moscow, William Bullitt, would be plagued by constant complaints from US firms about infringement of their patents.

It was not just mechanised harvesters and cotton pickers

that Lenin imported to transform backward Russia, he adopted advanced US management techniques. The Soviet Union introduced the Taylor system of time and motion study – a technique to improve productivity – to encourage the scientific efficiency of labour in its factories. To much puzzlement, an army of officials armed with clipboards, stopwatches and tape measures appeared on factory floors. Russian workers were unimpressed and did not want to be timed, measured and subjected to flip charts. New technology from abroad, augmented with Gantt organisation charts – which broke down processes into their component stages – was supposed to lead to a rapid reduction in working hours and improvement in the quality of workers' lives. It didn't.

In a more successful step, the Soviets translated Henry Ford's works into Russian as essential reading for factory managers. There was an official government campaign to 'Do It the Ford Way'.[6] By such innovative manufacturing techniques of mass production, the United States had overtaken the British Empire as the world's number-one economy, helped in part by the Great War. Imported to the Soviet Union, these same techniques were expected to bring about the inevitable triumph of socialism. Capitalism was a smart, inventive beast. American business, as well as Marx, had much to teach those embarking on the sure road to socialism. The US had met and defeated the same challenges that confronted the newly formed Soviet Union, including how to industrialise with only untrained, unskilled

workers and few managers. The US was the teacher, the model of mass production, an urbanised country boasting the highest living standards in the world. Copying US techniques and methods would turn Russia's army of uneducated, conservatively minded peasants, tied to their traditions and land, into a progressive communist urban proletariat.

From the 1920s, hundreds of Soviet engineers were sent abroad annually on short foreign trips for hands-on training with new technology. They were instructed to gather as much helpful information as they could on their visits. It was not a difficult task in the US. One engineer described his surprise at the openness of the Americans he met. While visiting a factory, he and his comrades would be given unhindered access to a broad range of technical data. They could make sketches and take copies back to the USSR free of charge. Their host company did not disclose its patented secrets, but everything else was considered advertising for the firm. From such early trips, the Soviet leaders gained the idea that America, more than any other country, was wide open to industrial espionage.

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In October 1922, just a few weeks after the Reds' victory in the Russian Civil War, an ex-Russian Orthodox seminary student and his close friend, a former Jesuit student, set in motion a more radical long-term reconstruction of Russia. In their frequent correspondence, they planned a transformation of their backward land, now shattered and starved by three wars

and revolutions in short order.[7] The lapsed Catholic, 'Iron Felix' Dzerzhinsky (his nickname arose on account of his ruthlessness and devotion to the Communist cause), was the founder of the Soviet security services. The former seminary pupil, Joseph Stalin, General Secretary of the Party, was on his path to become Lenin's heir. In 1925, Dzerzhinsky became the first and only known intelligence chief to be given simultaneously a major economic post as Chairman of the Supreme Economic Council. The two friends could discuss almost anything.

In their shared desire for rapid change, Dzerzhinsky and Stalin emphasised the use of intelligence as one tool to tackle the economic crisis. Both men had a fine appreciation of the value of espionage: Dzerzhinsky was a spymaster, and his friend the most spied-upon man in history. Dzerzhinsky had a pivotal role in identifying the potential contribution of both Western technology and scientific and technological (S&T) espionage to the modernisation of the Soviet economy. He identified America, the world's number-one technical innovator and leading industrial power, as a role model and target. Dzerzhinsky studied and grew to admire American industrial methods – most surprisingly those of the world's first billionaire, Henry Ford, the pioneer of the industrial practices from which Dzerzhinsky believed the backward Soviet economy needed to learn. Dzerzhinsky wrote in 1925: 'It is essential to engage in the study of Ford's methods and their adoption in practice … Perhaps it would be worth recruiting from

abroad practitioners and organisers of Fordism.'[8] Dzerzhinsky's ideas and recommendations were incorporated into the Five-Year Plans – Stalin's centrepiece programmes to industrialise the Soviet Union at breakneck pace. Ford's top architect, Albert Kahn, was recruited to design and build Stalin's giant dual military/civilian-use factories along Ford lines, and was responsible for establishing automotive, tractor and tank facilities in the Soviet Union.

On assuming control after the death of Lenin, the new leadership decided enough was enough and immediately galvanised the entire efforts of the state to build up heavy industry. Amid enormous publicity, Stalin announced the first Five-Year Plan in 1928. The first and second Five-Year Plans proposed the creation of new capital-intensive aviation, automobile, tractor and chemical industries. Stalin's plans were on a truly grand scale and required building over 1,500 modern factories between 1928 and 1933; yet he understood that the Soviet Union's early attempts at going it alone to develop industry without adequate foreign help had failed. The most notable example was the first project at the vast Magnitogorsk metallurgical plant. The inexperienced Soviets had tried to build the plant at breakneck speed, cutting corners; as a consequence, urgent and extensive repairs to the twin blast furnaces were needed just days after first starting them. The production of steel was pushed back years. The lesson of such failures was that the design and building of large, technically complex industrial

facilities was beyond Soviet capabilities without significant long-term foreign expertise. The help of the West was required and was sought once more – this time in the new form of fee-based technical assistance programmes, not long-term concessions. Stalin's proposed commercial terms were attractive to foreign companies, as they were for a limited period and so did not require risky long-term investment. During the Great Depression of the 1930s Western companies desperately needed large orders, allowing the Soviet Union the opportunity to acquire advanced technology and technical skills quickly and cheaply.

Under the standard terms of the contract, a foreign firm would provide the Russians with a complete description of a project including specifications of equipment, machines and mechanisms. They transferred all the technological secrets, including patents, and sent representatives to the USSR to supervise the construction and start-up of the facility. The Russians had to compensate the foreign company for the cost of manufacturing drawings, business trips and the work of its employees in the USSR and provide the necessary living conditions. The international company would receive a fixed profit as a percentage of the estimated cost of the work. The contribution of US companies and engineers to the success of the first Five-Year Plan was enormous, yet it is generally forgotten, especially in America. Around 1,700 US engineers entered Russia in 1929 to work on major industrial projects.

The plan to work closely with the US had its genesis in

September 1927, when Stalin set up a permanent commission of the Politburo of the Communist Party of the Soviet Union to manage technical and scientific relations with the United States. He stated: 'It is clear to me that the USA has more grounds for extensive business relations with the Soviet Union than any other country.'[9]

The vast new industrial capacity developed under supervision of US engineers boosted the economy. But most of them left in 1932–3 when hard currency ran out, sent home unless they would accept payment in roubles. From 1931 the USSR could only afford to import essential US technology. To survive on Stalin's route to the future, there was a need for elite engineers able to invent local solutions. The Soviet government had sought from its international partner an efficient balance of trade and a long-term supply of credit, but the US refused. On 25 August 1931, Stalin declared:

Because of the foreign exchange difficulties and unacceptable conditions for loans in America, I demand an end to all business contracts with the United States. Instead we must seek every opportunity to break existing agreements. In the future all orders will be placed with European or Soviet factories, making no exceptions, even for the most important construction projects.[10]

The world's first Communist state had spent so heavily in the first stage of the investment plan that it had run out of money and credit. Turning the Soviet Union from a country of peasants with wooden ploughs into a modern industrial society was proving

prohibitively expensive. Despite Stalin's exploitation to the full of American commercial terms, he now needed to rely on industrial espionage. The Soviets pressed on with their plans, but with no cash to pay engineers from abroad, they were required to use their own experts, helped by the information provided by their intelligence gathering abroad.

Until the money ran out, every large Soviet enterprise built in this period received most of its equipment from American or European engineering companies. As diplomatic relations between the US and the USSR improved, the floodgates had opened to facilitate the transfer of skills and technology to Russia. All Soviet commercial activities in the United States were overseen by its single agency, the American Trading Corporation or AMTORG, established in 1924 with offices on New York's Fifth Avenue, in Moscow and eventually in several other cities in the USSR and the USA. Although nominally independent of the state, which was a requirement if it were to obtain legal status to trade in the United States, it was the sole Soviet reseller as well as being tasked with providing information on all aspects of US business. All commercial deals and contracts with American firms, experts, and payment for their services went via AMTORG. It would develop a well-deserved reputation as a veritable nest of spies, its employees under constant US counter-intelligence surveillance.

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The Five-Year Plans had three interrelated goals: to build

an industrialised society, to create an educated population, and to ensure that the Soviet Union had the means to defend itself in the event of an attack. Stalin spoke of the imperative to modernise the Soviet economy as fast as possible to meet the imminent imperialist threat. A substantial challenge for Stalin's Russia was how to protect its vast land borders and natural resources. After invasions from the Polish King Stephen Báthory,[fn1] the Swedish King Gustav Adolphus,[fn2] the French Emperor Napoleon[fn3] and the German Kaiser, followed by the Allied intervention, the lesson of history was that the Soviet army must be equipped with the most up-to-date weapons to deter further invaders. Dzerzhinsky had analysed the Tsar's defeat. Iron Felix's assessment of Russia's performance in the Great War was strikingly similar to that of the current Russian foreign intelligence service, the SVR (Sluzhba Vneshney Razvedki), whose official history mocks the naivety of the Tsarist government in embarking on a modern war without the technical resources to equip its armed forces.[11] Dzerzhinsky's studies for the Supreme Economic Council in 1924–5 emphasised that the reason for defeat lay in the dependence of the Tsarist war effort on imports of arms and munitions from its Western allies. In 1914, Russia could not even manufacture sufficient rifles for its army. It was not until 1916, thanks largely to British finance and US industrial expertise, that Russia developed a somewhat more adequate munitions industry. The Western allies had rescued the

wartime Tsarist arms industry for their own war aims but were unlikely to help Communist Russia. Like defeated Germany, the Soviet Union was treated as a pariah state.

The British Empire was seen as the likely enemy. Stalin was privately convinced, as Dzerzhinsky had been, that the modernisation of the Soviet defence industry also required S&T from the West – first and foremost from the United States. And, since Stalin believed that war with the imperialist powers was inevitable, S&T was therefore a top priority. As he was to declare in February 1931 in a speech to industrial managers: 'We are fifty or a hundred years behind the advanced countries. We must catch up in ten years. Either we do it, or they will crush us.'[12] Though he did not realise at the time who the most dangerous potential enemy would be, the forecast was to prove prophetic.

Given the urgency, Stalin turned to his intelligence service. His library gives an extraordinary glimpse into his thinking as he marked up the passages of his reading that he found most insightful. Stalin's deep interest in developing S&T operations in the United States grew from a fascination with US and British writing on espionage. Dzerzhinsky's death in 1926 seems to have slowed the development of S&T, but only for a short while. In 1929, the autodidactic Stalin devoured the informative book *Spy and Counterspy: The Development of Modern Espionage* by the US writer Richard Wilmer Rowan.[13] Stalin's copy survives in his archive, with notes scrawled in the margin. It was from this US book that he learned how to direct and organise intelligence-

gathering operations. He was attracted to the idea of using spies, not least because, as Rowan argued, they were inexpensive and efficient. In Rowan he had found the solution to his problem of how to acquire the best technology without paying for it. But he needed extraordinary men and women to become his spies.

1

~~ДЛЯ СЛУЖЕБНОГО ПОЛЬЗОВАНИЯ~~

Р. РОУАН

РАЗВЕДКА
и
КОНТРРАЗВЕДКА x)

Разрешено перевод с английского

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РАЗВЕДЫВАТЕЛЬНОЕ УПРАВЛЕНИЕ РККА
МОСКВА — 1937

x) О

Stalin's copy of the Russian translation of Rowan's Spy and Counterspy – special edition for Soviet Military Intelligence. Stalin's note says, 'Abridged translation from English'

Shumovsky's reports had highlighted the extensive problems of the armaments industry. Given the perceived threat, the country had to develop its industrial capability to sustain a prolonged fight. Without modern factories to manufacture arms, Russia remained vulnerable to a foreign invasion. Some modernisation of the armed forces was achieved thanks to secret Soviet-German military cooperation[fn4] during the 1920s, but not enough. Both Germany and Russia believed, correctly, that the other was spying on them. Their shared distrust of the well-armed buffer state of Poland did not provide enough common ground to make them real allies. Moreover, the Germans were concerned that the Moscow-based Comintern (Communist International) interfered, sometimes violently, in their domestic politics. The Soviets, on the other hand, were convinced by the evidence that they were only gaining access to obsolete German military equipment, not the latest and best.[14] The issues were greatest in aviation. Dzerzhinsky highlighted to Stalin a joint venture to design and build aircraft with the German manufacturers Junkers in Moscow as a particular failure. The Soviet Union urgently needed a modern air force and Germany could not provide one. The United States, not Germany, Dzerzhinsky convinced Stalin, held the key to the future of the Soviet aircraft industry. But they also knew that only

some American industrial expertise could be openly obtained through commercial contracts. In 1925, the Foreign Department (INO) of the NKVD adopted S&T operations as one of its objectives for the first time.[15] The US aviation industry was one of the key targets. Shumovsky and his cohort were the men that Stalin would come to rely on to help fulfil his dreams to industrialise and defend his country.

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Stalin's Russia was the first country in the world to try to identify each year its ablest, most loyal workers to train as scientists and engineers. Some of these elite scientists and engineers would later become spies. As part of the Five-Year Plan launched in 1928, a thousand of the best and brightest young Communist Party members (the *parttysiachniki*) were selected to receive the finest higher education on offer in Moscow and Leningrad. The Party had identified Shumovsky during his three years' work at the Ministry of Finance as a potential future leader, a Party cadre. Already a qualified pilot, he was one of a very few selected to study aeronautics at the elite Bauman Institute, where his Professor of Aerodynamics was none other than Andrey Tupolev, Russia's most famous aircraft designer. Teacher and pupil became fast friends. Towards the end of his course at the Bauman, Shumovsky was invited by the local Committee of the Communist Party to a meeting at the Lubyanka, the headquarters of the NKVD, that would once again change the course of his life. At this meeting, he met Stanislav

Messing, the head of INO, and the legendary Artur Artuzov, then the deputy head.

As the foreign intelligence arm of the NKVD, INO was in 1930 tiny and poorly funded by the modern standards of espionage agencies. It deployed only ninety-four agents abroad to cover vast areas of responsibility and geography. The proposed addition of seventy-five new intelligence assets in the United States, working for up to three years, was a massive coup.[16] It was the largest and most expensive operation ever attempted by INO and required close cooperation with Military Intelligence, called at the time the Fourth Department of the Red Army. The members of the NKVD's American desk in Moscow Centre – the name given to the headquarters of the Foreign Intelligence department – that directed the highly successful campaign in the USA all sat in a small room and were perhaps at most five strong.[17] It was a small team to take on the FBI. Artuzov, by 1931 the head of INO, was the architect of some of the greatest Soviet intelligence coups. He was responsible for the capture and execution of 'Ace of Spies' Sidney Reilly in the elaborate 'Trust' sting,[fn5] one of the greatest counter-intelligence operations of all time, earning a deservedly prominent place in espionage history. Artuzov was also responsible for setting in train the recruitment as agents of Communist students at universities across Europe who later in their careers might hold significant positions of influence in their governments. The programme's best-known

products were the Cambridge Five.

It was the prickly aircraft designer Andrey Tupolev who insisted on the recruitment of Shumovsky for intelligence work. Since 1925 INO had been tasked with gathering S&T on top of political intelligence. There was a significant overlap with the work of Military Intelligence. Under the Five-Year Plan, the demand for S&T ramped up, creating the need for a fresh approach. A new type of intelligence officer with a unique set of skills was required. Besides the ability to speak languages and operate in a foreign country, this new breed of spies had to be at the top of their field in their chosen technical specialisation. Tupolev needed an aeronautics specialist on the ground in the US to bring TsAGI – the Moscow-based Central Aero and Hydrodynamics Institute, the country's leading centre of aircraft design – answers to thorny questions, not just blueprints. Above all, the agents needed to be unquestionably loyal.

Shumovsky's interview at the NKVD was a mixture of background checks and ideological questioning. Given his record as a Russian Civil War hero, endorsements from the local Committee of the Communist Party and Tupolev, he passed. Accepting the job without a moment's hesitation, for he was a Party loyalist prepared to do anything for his proletarian motherland, he began a year of intense training, starting in Leningrad. Artuzov was responsible for developing the Soviet spy training programme using veteran practitioners as teachers. Later he industrialised spy training by building a dedicated

school in the woods outside Moscow. Some previous operations had proceeded with no training at all, even in basic foreign languages; intelligence operatives used the cover of being a foreigner to explain away their accents and lack of language proficiency. One Soviet agent deployed to England had to get blind drunk to avoid exposure when he discovered the ambassador of Hungary, the country he claimed to be from, while speaking not a word of the language, was arriving to join the house party. Luckily, his English aristocratic hosts were used to such eccentric behaviour.[18]

Later, KGB defector General Oleg Kalugin would describe attending large classes in the 1950s that trained hundreds of newly minted agents to operate both domestically and abroad.[19] An heir of Shumovsky, Kalugin was to attend Columbia University to complete his assimilation into American life. By then, espionage training was conducted with military-style discipline, befitting those entrusted with protecting the Revolution. Shumovsky had no such formal training, but he received instruction from experienced officers in the skills of intelligence gathering, agent recruitment and how to avoid being followed. He also learned radio operations, working with codes and had a refresher on shooting a pistol. He was taught how to microfilm documents for ease of storage, concealment and transport.

Shumovsky was to operate as an intelligence officer without the benefit of diplomatic cover. As the USA was always his

intended destination, he undertook a six-month intensive course in the English language, American customs and way of life. Intelligence officers, even novices, were well paid and, more important in a land of shortages, fed three hot meals a day. For recruits joining the NKVD, the experience was life-changing. One of them, Alexander Feklisov, described sleeping in a real bed for the first time in his life at the training school. The intelligence code included a vow of silence, which included never admitting to working for the organisation, even to one's parents. A new recruit would need to develop a good cover story, for his friends and family.[20]

Shumovsky's mission to enrol at MIT as a science student evolved into the perfect cover for a Soviet intelligence officer on a long-term S&T assignment in the USA. The plan was that he would enter the US concealed among a large party of students, thus attracting little attention. In 1930, the best of the 'Party Thousand', the *crème de la crème*, were chosen to study abroad. The Soviets used scarce foreign currency and gold reserves to give their elite the best education money could buy. With his exemplary academic record and political background, Shumovsky made the list with the help of the secret service. He resembled his fellow travellers in every respect. His background was identical to that of his companions, as he was a recent graduate of Moscow's premier technical university. Crucially, as a student studying at a leading academic institution Shumovsky was granted a long-term visa by the US government without

being asked probing questions, unlike an AMTORG employee.

As part of the plan, the Party Central Committee appointed a 'plenipotentiary' official to monitor the progress of the students abroad and send six-monthly reports back to Moscow.[21] This official had the power to order back to the Soviet Union any student making unsatisfactory progress or proving to be politically unreliable. However, their main job was to coordinate the information gathering. Raisa (Ray) Bennett, a Military Intelligence officer, was appointed to this important role.

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Stalin's final priority within the Five-Year Plans was improving worker education. Among the greatest achievements of the Revolution had been universal literacy and access to education. The Tsarist government had feared education; successive rulers took active measures to limit literacy levels in their subjects by taxing village schools. They came to believe that if they allowed their people to read, they would become revolutionaries. The prohibitive measures ensured precisely the outcome the government feared.

Ministers shook at the thought of what might happen if the fate of the reforming Tsar Alexander II, who had promised a modicum of universal education, was repeated. Alexander's short-lived experiment with liberalisation had resulted in his assassination by anarchists. Lenin's beloved older brother was hanged for his part in the plot. After that unhappy episode, the autocracy did everything it could to stifle education for the

untrusted masses, from whom they demanded devotion. It was no surprise that adult literacy rates in Tsarist Russia were less than 30 per cent, while literacy among males was roughly double that of females. My own great-grandfather, a leading Communist in the Crimea, was unable to sign his name until he learned to read after the Revolution. (Today's Russia has 99.7 per cent literacy.) As Professor Shumovsky, as he became, later told UNESCO, in 1917 only 9,656,000 students were in school out of a total population of around 175 million.[22]

The unenlightened policy held back the economic development of the country, as there was only a shallow pool of educated workers. Hundreds of thousands of Russia's most literate individuals emigrated, primarily to the United States, taking their talent with them in a dramatic brain drain. With less than half the Tsar's army able to read and write, the country was vulnerable to military attack. After the October Revolution, the idealist journalist John Reed (the only American to be interred after his death in the Kremlin Wall) wrote:

All Russia was learning to read, and reading – politics, economics, history because the people wanted to know … In every city, in most towns, along with the Front, each political faction had its newspaper – sometimes several. Hundreds of thousands of pamphlets were distributed by thousands of organizations and poured into the armies, the villages, the factories, the streets. The thirst for education, so long thwarted, burst with the Revolution into a frenzy of expression. From

Smolny Institute alone, the first six months, went out every day tons, car-loads, train-loads of literature, saturating the land. Russia absorbed reading matter like hot sand drinks water, insatiable. And it was not fables, falsified history, diluted religion, and the cheap fiction that corrupts – but social and economic theories, philosophy, the works of Tolstoy, Gogol and Gorky.[23]

In the immediate aftermath of the October Revolution, education policy was overhauled with a tenfold increase in the expenditure on mass education. Lenin argued: 'As long as there is such a thing in the country as illiteracy it is hard to talk about political education.' Despite the utterly grim conditions, he launched national literacy campaigns. Victor Serge, a first-hand witness of the Communist Revolution, saw the tremendous odds facing educators and the miserable conditions that existed in the wake of the Russian Civil War. A typical school would have classes of hungry children in rags huddled in winter around a small stove planted in the middle of the classroom. The pupils shared one pencil between four of them, and their schoolmistress was hungry. In spite of this grotesque misery, such a thirst for knowledge sprang up all over the country that new schools, adult courses, universities and Workers' Faculties were formed everywhere.[24] In its first year of existence, the Communist literacy campaign reached an incredible five million people, of whom about half learned to read and write. In the Red Army, where literacy and education were deemed crucial, illiteracy was

eradicated within seven years.

The Five-Year Plans and the Stalinist project to transform the Soviet economy were born of idealism as well as insecurity. The prospect of a great leap forward into a fully socialist economy kindled among a new generation of Party militants much the same messianic fervour as had inspired Lenin's followers in the heady aftermath of the October Revolution and victory in the Civil War.

The young Communist idealists of the early 1930s, among them Soviet intelligence officers and other Russian students at MIT, believed in Stalin as well as in the coming 'Triumph of Socialism'. Hailing from a generation who believed that the end justified the means, they would certainly not have recognised the prevailing view of Stalin among contemporary historians. The first group of elite Soviet students under the Politburo order was to be sent abroad in 1931. Individual Soviet specialists were already at many foreign universities, including a few in the US. The renowned Soviet atomic scientist Pyotr Kapitsa was number two in Ernest Rutherford's team at the Cavendish Laboratory at Cambridge University,[fn6] while Dr Yakov Fishman learned about the chemistry of poison gases at the Italian university at Naples.

As Shumovsky and his party prepared to depart for the United States, US legal firm Simpson Thacher began the process of arranging the visas.[25] (According to the 1948 FBI investigation,[fn7] Shumovsky was a late addition to the roster. It is

unclear if that was a decision taken in Moscow or one determined by the availability of places on courses.) Like Shumovsky, the students in his party were not fresh-faced teenagers just out of high school, but married ex-military men who had not been able to begin formal education until the end of the Russian Civil War in 1922 and had since been fast-tracked towards greatness. Many were from humble backgrounds and acutely aware that, but for the Communist Revolution, they would never have had any prospect of an education. Central to their motivation was the desire to enable Soviet industry and military technology to catch up with the West. The offices of the Rockefeller and Carnegie Foundations facilitated finding places at appropriate universities to help foster better international relations.[26] Back in Moscow, the finance was organised. As with every decision in the Soviet system, the budget was decided centrally at a Politburo meeting in 1930. Several thousand gold roubles was allocated for the trip, amounting to a total fund of $1 million. Each student was assigned from a key industry and that industry's management had the responsibility of paying.

The one tricky condition imposed by the American universities was that the students must demonstrate a high competence in English. Typically, the exam followed a two-year course, but this talented group was given just six months to reach the required standard.[27] There was a desperate need for teachers to give the Soviet students English lessons in Moscow before they went off to study at MIT and other US universities. Among

those selected for the task was Military Intelligence officer, American Ray Bennett. Another was Gertrude Klivans, a young Radcliffe College-educated teacher from a family of Russian-Jewish jewellers in Ohio.

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Klivans had become bored with life as a high school teacher in the Midwest and started travelling adventurously around the world. She was first talent-spotted by General Vitaly Markovich Primakov while both were journeying from Japan to Vladivostok aboard a cargo vessel, described by Klivans as 'an ancient hulk', which forced its small group of passengers to cling together 'as we pitched and tossed'.[28] Klivans's letters to her family reveal that during the voyage she became quite friendly with Primakov.[29] They clearly began an affair on board. Primakov, Klivans gushed to her family, was 'the youngest full general in the Red Army', a man whose travels (in fact they were spying missions) had taken him as far afield as Afghanistan, China and Japan: he 'fought throughout the Revolution and on every battlefront during the Civil War – wears three medals, is always armed to the teeth – an expert swordsman and a cavalryman from a Cossack family that have been horsemen for generations, and withal, his head is shaven. But his eyes, the real gray blue, Russian eyes and fair skin make you forget that military custom.'

Gertrude Klivans, Radcliffe College, Harvard – yearbook. The picture is captioned: 'Her eyes were stars of twilight fair/ Like twilight, too, her dusky hair'

Klivans reported to her family that, during the long trans-Siberian train journey from Vladivostok to Moscow, 'I spent most of every day in Primakov's compartment, so I enjoyed all the privileges of first class, even accepting the offer of taking a bath.' She fell deeply in love. Although the train arrived a day late, 'I didn't care – I didn't want it ever to end.' She had intended to return to New York, but Primakov promised to help her find a teaching job in Moscow. Remarkably, she admitted to her family that he had suggested she work for Soviet intelligence: 'Imagine – I was offered a job in the [O.] G. P. U.[fn8] as soon as I learned the [Russian] language.'

Primakov had enjoyed a glittering career in the Red Army and the intelligence service. He cut his teeth leading a squadron of troops in the attack on the Petrograd Winter Palace in 1917. The highlight of his espionage career came in 1929 when, disguised as a Turkish officer named Ragib-bey, he led a special operation of Soviet troops to try to reinstate Amanullah Khan as ruler of Afghanistan. He was arrested in 1936 and executed in the following year's Great Purge.[30]

Although in letters to her family Klivans complained that living conditions in Moscow had left her with 'a few bedbug bites', she declared herself 'very happy with my work'. She

worked diligently to teach her charges all about America:

You can't imagine how well I know these boys, all of whom are at least five years older [than me] … They will do anything for me and believe me I do plenty for them, besides keeping them in cigarettes and informing them of certain Americanisms. I mean as far as deportment is concerned, I try to make each of them letter perfect in the President's English and if you think it isn't hard work you are mistaken. But there are always three at least who are making love to me outside of school hours so that I can never keep a straight face for at least five minutes going in class. If you would see them, all in their fur hats, high felt boots, and a week's beard for nobody shaves more than once in five days you would laugh. But they are fun, and I certainly will always have 15 fast friends in Russia. Probably someday one of them will be another Stalin – they are all party men, active and so understanding of my distorted view of life as they can understand the limitations of my bourgeois environment, the only thing they can't understand is why I haven't already embraced Communism without any reservations.[31]

To celebrate the end of the examinations after her language course, Klivans threw a party for the students on 15 April 1931, for which she prepared the closest approximation she could manage to American sandwiches and salads. The only woman at the party, she wore a 'Chinese suit' acquired on her travels. It was an emotional occasion with many hours of dancing and singing. Klivans travelled to the United States ahead of her Russian

students, describing them in her letter home:

Let me tell you who the boys are. They are all 27 or 28. One [Alexander Gramp] is half Georgian and half Armenian – speaks both of these languages and knows every place on the map of Russia with his eyes shut – has a disposition that even Russian conditions cannot spoil. Another is a White Russian [MIT-bound Eugene Bukley] – as clever as any three people I've met and had a sense of humor that works equally well in any language – the third [Peter Ivanov, a future student at Harvard] is a serious electrical engineer who served as a sort of lever in our hilarious spirits. Of the first two, one is a railway engineer, in fact, that got us tickets everywhere – something almost unheard of in Russia today. The other one is also an electrical engineer.[32]

Alexander Gramp's graduation, Purdue University,1933

Klivans's closest relationship was with the railway engineer, Gramp, one of the five students with a place at Purdue University. He married her after his graduation, returning with her to Moscow following his appointment as Dean of the College of Railway Engineering.

Eager to ensure that her students made a good impression on their arrival at MIT and other US universities, Klivans pressed successfully for scarce foreign currency reserves. When they landed in New York, she wanted to buy them smart, well-cut suits.

3
'WHAT THE COUNTRY NEEDS IS A REAL BIG LAUGH'

To the disappointment and astonishment of Communists, the American working people did not rise up en masse during the Great Depression to demand even the overhaul – much less the overthrow – of their system of democratic capitalism, despite the failure to relieve their sufferings for more than a decade. Arriving at the height of the economic misery, a confident Gertrude Klivans held court in her stateroom on SS *Bremen* at the New York docks. She was back at long last in the United States, a returning political pilgrim and a secret convert to Communism. While she was already an agent of INO, Klivans did not consider herself a traitor to the US, but rather a contributor to helping the peoples of the Soviet Union.

Her courtiers were a small crowd of journalists, fans of the small-town socialite-turned-adventurer. She was a Youngstown, Ohio celebrity. Local magazines had serialised parts of the letters she had written to her family from the mysterious, godless USSR describing most of her adventures. Exposure to the socialist experiment had transformed her in just a year from a frustrated English Literature teacher at the local high school into a confident woman, delighted to be sought out for her views

on the world. She was secretly engaged, if not already married, to her fellow agent Alexander Gramp. She adroitly ducked answering questions from the wire services on international politics, but was more than happy to announce that the first Soviet Five-Year Plan was a resounding success. Joseph Stalin must have been pleased. The journalists asked her if it was possible to teach the Soviet leaders anything. She replied, 'Indeed yes, in fact, they are the most teachable people to be found.'[1]

Amid America's worst ever socio-economic crisis, Klivans delivered the message that a socialist future was the answer to her society's ills. Before October 1929 the United States had believed that it would enjoy an uninterrupted period of increasing prosperity. This mirage was not an invention of the people but was what they had been told by their leaders. In his last State of the Union address in 1928, President Calvin Coolidge had said: 'No Congress of the United States ever assembled, on surveying the state of the Union, has met with a more pleasing prospect than that which appears at the present time.'[2] He had overseen an expanding economy based on easy access to consumer loans for housing, its citizens buying vast numbers of new automobiles on credit instalment plans. The vehicles, once a luxury, were now commonplace and seemingly affordable; there was even a fear that the car would create an amoral society as young couples were now out of sight of their parents. That great barometer of America's health, the stock market indices, were not merely soaring on the back of the credit bubble; they went

through the roof. The Dow Jones Industrial Average quadrupled between 1924 and 1929. America appeared to be on the brink of economic greatness.

Led by New York, the modern cities of the USA were a bustling hive of theatre, movies, arts, food and sober fun. Based on its global leadership in technological innovation, mass production and consumerism, America had overtaken the British Empire as the pre-eminent economic power in the world. When Herbert Hoover campaigned for the presidency in 1928, he assured the country it could expect ever greater economic prosperity. In a campaign speech, he said: 'We in America today are nearer to the final triumph over poverty than ever before in the history of any land. We shall soon, with the help of God, be in sight of the day when poverty will be banished from this nation.'[3]

Hoover would later quip that he was the first man in history to have a depression named after him. For all these dreams came crashing down in just a few days in 1929, and for the next decade, even the Big Apple became a sombre city of hopeless, desperate people. The stock market crash began on 24 October and ended on the 29th. In a matter of four days, America saw $30 billion of its wealth wiped out for ever. Within months New Yorkers were starving to death. Large crowds of bewildered investors, bank workers and concerned citizens wandered around Wall Street in a daze during the crash. In an attempt to exercise some control the police began making arrests. After the initial panic, worse was to follow.

The administration estimated that any recession resulting from the crash would be shallow, like the one the United States had experienced after the Great War. Despite the high drama, the conservative President Hoover believed that 'anything can make or break a market … from the failure of a bank to the rumor that your second cousin's grandmother has a cold'.[4] He and his laissez-faire economist advisors thought it was just a small setback and the market would soon bounce back. It didn't. Publicly, Hoover continually downplayed the nation's agony, retreating into his dogmatic shell and refusing to act. At this most difficult time, he offered his wounded people no leadership. In the face of the suffering and bewilderment, the White House appeared distant and unmoving.

Throughout the crisis, Hoover would display terrible judgement. One of his most passionate causes was to deny combat veterans an increase in their benefits. When it came to providing depression relief, he insisted that private charity, not state aid, funnelled through the Red Cross was sufficient. He went further, expressing the belief that charity was the sole answer to the enormous and growing needs of America's army of unemployed and starving. He kept up this line even when nature added to the misery, a severe drought creating a dust bowl in the Great Plains region. In a White House press interview Hoover displayed shocking callousness towards his fellow citizens. 'Nobody is starving,' the President blithely asserted. 'The hoboes are better fed than they ever were before.'[5]

New York City alone reported ninety-five cases of death by starvation that year.

Describing the start of the Great Depression as merely public hysteria, Hoover declared that 'what the country needs is a real big laugh. If someone could get off a good joke every ten days, I think our troubles would be over in two months.'[6] Far from being gripped by laughter, waves of bank runs began in New York City and spread panic around the country. In fear customers flooded into their banks to take out their savings. The banks didn't have any cash; no one did. By 1931 it became evident that many banks were going out of business. In December, the Bank of the United States in New York collapsed, having at one stage held more than $210 million in customer deposits. It was a tipping point, and within the next month 300 other banks failed. By April 1932, more than 750,000 people in New York alone were on some form of welfare and a further 160,000 were on the waiting list. In desperation, crowds of unemployed men took to wandering the streets wearing signs showcasing their skills in an attempt to find work.

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Klivans gave a series of detailed, teasing interviews to the newspapers about some of her experiences during her ten months teaching English in Russia. Amid the chaos, she sat on an upholstered chair in her parents' elegant drawing room wearing an evening gown for the first time since she had left Youngstown society life to venture into the heart of the Soviet Union. One

journalist asked the burning question:

it's raining outside; you are alone in the house, lonely. At the door stand two young men, one Russian, a senior of Moscow University; the other is a Harvard senior. Which would you prefer as company for the evening?' Klivans replied, 'I'd prefer the Russian because he is more mature, more intelligent, not so flippant and doesn't neck. Necking is not a national pastime in Russia. Sex is delegated to secondary importance. Work comes first, then sex. What is immoral in America is moral in Russia.'[7]

A mildly irritated Klivans knew the exact lines to prick the journalist's interest: 'Russians can't understand America's exploitation of sex.' While in Moscow she had shared with her class pictures from American periodicals of bathing beauties in toothpaste and mouthwash adverts. The reaction was merely raised Russian eyebrows and quizzical smiles. She announced that Soviet society had developed very progressive answers to America's fixations with sex, drinking, divorce and religion. None of the curses of American life existed in the Soviet Union, she believed, and unlike America, there was practically no graft in government. She had found there to be few courts to speak of, no instalment credit plans and few automobiles. Divorce rates had soared in the US during the economic crisis as the strain of unemployment took a vicious toll on relationships, and the busy divorce lawyers were reviled; in the Soviet Union, she believed, divorce and other lawyers were unknown. Klivans spoke of the very different ideas towards love and marriage found in the Soviet

Union, where it was now the case that 'whether registered or not the marriage is legal, and the parties can separate permanently without any more ado about it. No five day waiting is required when a Russian wants to get married. He just goes ahead and gets married. If he likes, he can register the marriage, and this means that if he leaves her their property will be equally distributed.'[8]

Some American scaremongers peddled the myth that Communism was synonymous with an amoral society. In Klivans's view, it was American society, whose members had sex in cars, which was promiscuous, and not the atheist Russians. Cars in Russia were few in number and used exclusively for work. It was freedom-loving Americans, she continued, who had to be deprived of alcohol by their own government's prohibition laws. America's deprived drinkers would be jealous of the Russians, who took their daily drinking quite seriously. And yet, despite the ready availability of alcohol, there were in her experience few real drunkards in evidence on the streets of Moscow or Leningrad. Wine and beer were the favoured tipples. Seemingly Russians could be trusted to behave themselves responsibly with alcohol, whereas Americans could not. Moreover, she believed that religion was not prohibited in Russia, although as a result of pressure brought to bear on those who attended worship most Russians did not attend church. Overall she challenged the alarmist conservative view that a lack of religious training in Russia had lowered the moral standard of the country.

Painting a picture of a society with difficult economic

problems but one that had embarked on an exciting journey to a much better future, she confirmed to readers that despite the advantages of some aspects of the Communist system, there were extreme shortages of the basics in the Soviet Union. 'One cannot buy the most trivial thing in Russia such as knives, scissors, screwdrivers, thumb tacks and the thousand and one other things that are so common in our five and ten cent store. An American five and ten cent store transplanted to Russia would probably give the Russians the impression that the millennium had arrived.'[9] But Klivans was a convert, as she had found living in Russia had given her a tremendous feeling of stimulation at being part of an energetic society where everyone worked for a definite purpose. She would get her wish to go back to what she described as 'the most exciting place on the globe'. She was not alone. Many fellow left-leaning US thinkers had already made similar pilgrimages to Moscow.

A highly perceptive observer, Klivans could have been an excellent US intelligence asset. She certainly was an important Soviet one, through her work passing on to her charges her observations on American life. She had learned during her stay exactly what was going on in the USSR. Her close friendships with her students had given her invaluable information. Her sources were impeccable, as her engineering students were at the heart of every aspect of the first Five-Year Plan. And her analysis of the state of Soviet economic development was correct. She told America the unvarnished truth that in the mind of the

Russians Henry Ford was the greatest American and that they were trying to model Soviet industry on his methods. It was her view, however, that using the Ford method without Ford himself to direct them might not lead to success. She explained the importance of the mission in America her charges were about to be sent on:

The development in Russia has been so rapid that usually even after new industries have been established the training of the Russian labour has been so inadequate that they cannot run them. A tractor factory that was supposed to have turned out 100,000 tractors per year has turned out not over 2,000 in six months, and none of these would run more than 4 or 5 days without falling apart, solely because of the lack of training on the part of the workers.[10]

Earnestly Klivans explained that the Soviet Union was still very much a work in progress, not the finished article. Her students were now on the way to America in order to learn the skills to train Russian workers to drive the industrialisation programme. In Russia, she exclaimed, engineers were rated highest among the professional men, the value placed on them three times greater than that of a doctor. She adroitly turned the reporters' dumbest questions to her advantage to explain the sacrifices required from the Russian people today for a brighter tomorrow: 'There are no sleepless nights for Russian families, for no coffee is served. Food of the type familiar to us is impossible to obtain. Most of it is shipped to foreign countries,

and the proceeds go towards purchasing machinery for the Soviet factories. Wheat, fish and the like are extensively imported, however, as are fine wines.'[11] And the Russians, Miss Klivans declared, actually liked work. But few in the US cared to listen.

The readers of the newspapers were evidently hungry for news about the mysterious Soviet Union, a society with an answer to the world's problems. No doubt they were confused by the conflicting accounts trickling out of Moscow. Jack Hayward, another correspondent, reported, perhaps untruthfully, in the same edition of the newspaper that when a Russian went shopping in Moscow, he was likely to find that his cheese purchase was made of wood; delicious. Klivans confirmed to readers that despite the ongoing effects of the Great Depression, standards of living were still higher for the majority in the United States than in Russia. But the gap was closing. The Ulanovskys, two 'illegal' Military Intelligence agents already embedded in New York at the time, agreed. They had witnessed first hand the conditions of the unemployed, homeless families in the shanty towns known as 'Hoovervilles' set up on the Great Lawn at Central Park and Riverside Park at 72nd Street in New York City. These Russian patriots arrived knowing that America was the classic country of capitalism,

the most disgusting in the world, and we sought to see all the evils of capitalism first hand quickly, and we found a lot of it unattractive … We saw the unemployed in line for soup, which was distributed by the Salvation Army. But the unemployed in

the queue in 1931, during the Depression, were dressed better than my Moscow friends. We went looking in vain for a slum.[12]

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But why was there such an intense American interest in news from the first Communist state? The answer lay in the grim, fatalistic mood of the US at the time. Trapped in the midst of the Great Depression, perhaps they were witnessing the death of the American dream itself. Like many of her generation, Gertrude Klivans had, through her travels, come to question the very future and purpose of liberal democracy and capitalism. She had discovered a 'Soviet atmosphere, an atmosphere strangely free from the tradition of that brand of democracy to be found in the West'.[13]

The Communist state's giant socialist experiment polarised US public opinion. Most US visitors to the Soviet Union returned home with their views reinforced. Those who had come seeking alternatives to the raging social crisis in depression-hit America found hope in the socialist experiment; others who sought it found deprivation, oppression and a rising red menace. Enthusiasm in liberal and left-leaning circles for Communism tracked the ups and downs of the US economic cycle. Initially, the Russian Revolution had been greeted with wild enthusiasm, although US banks lost billions on the default of Tsarist debt. 'I have seen the future, and it works,'[14] proclaimed American journalist Lincoln Steffens, who was targeted by Soviet Military

Intelligence in 1931 for possible recruitment as an 'agent of influence'. The Soviets approached many leading left-leaning cultural figures in this period to play an active role as advocates for socialism. Most rebuffed the approaches. Some did not. Steffens refused to join up, but as an ideologically sympathetic fellow traveller, he promised to help the Soviet Union when the interests of the US and the USSR coincided.

In the 1920s, as the US economy prospered in the post-war recovery, the Soviet Union had been roundly criticised by visiting international socialists for its failings. Despite thousands of invitations to sympathetic left-leaning artists, writers and politicians to visit, the Russians could garner few friends. Some criticised the Soviets for insufficient radicalism, as they wanted a world revolution. Many found issue with the Communists' belief that 'the end justifies the means'. The Communists in power were too brutal for their taste. Lincoln Steffens on the other hand found convenient excuses for the bloody excesses of the 'Red Terror'. He concluded that the Soviets were not evil per se but that dire circumstances had forced evil on them. 'Soviet Russia was a revolutionary government with an evolutionary plan enduring a temporary condition of evil, which is made tolerable by hope and a plan.'[15]

In bohemian circles, there was still much praise for Moscow's artistic freedom, avant-garde theatre, movies and poetry. As the US economy boomed in the 1920s, intellectual socialists were out of touch with the day-to-day issues of the working class. It

was only during the crisis of the 1930s that the Soviet Union and Communism started to enjoy broader US support and clandestine help. The crisis of capitalism and the rise of fascism (seen by the left as capitalism with murder) proved to be the catalyst for the growth of the US radical left. Marx's theory of historical determinism was in vogue.

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The closing of all American banks on 4 March 1933 marked the nadir for capitalism as the entire nation went into a state of traumatic shock. The illusion of permanent prosperity that had captivated and motivated everyone during the boom evaporated. The deepening economic crisis caught intellectuals such as novelist Theodore Dreiser and socialist writer Upton Sinclair unawares, but they soon recovered to take the lead in asserting that American capitalism was undeserving of support or survival. From 1930 onwards there had begun a quest that took many on a journey leading far from their social, political and philosophical starting points. Along the way some fell into the waiting arms of Soviet intelligence. This was the era when Communists joined the US government, not just to gather useful information for their Soviet controllers but also to influence government policy for Communist ends. Dozens of agents such as Nathan Silvermaster, Lachlan Currie and Harry Dexter White found careers in government service, in particular in the Treasury and the Labor Department.

The battering of the Great Depression dispelled political

apathy. No one could remain indifferent to the capitalist system that was creating havoc and misery. Liberalism was the first political casualty of this political awakening. Its spokesmen had failed to foresee the catastrophe and, the radicals believed, were unable to explain its causes, cope effectively with its consequences or offer answers. In their search for a solution many turned their eyes abroad. If the Russians were achieving full employment and economic growth with their backward technology, surely the Americans could do far better with their advanced facilities? In the US, the factories were built but now lay idle, so the priority was a plan for the economy to put America back to work. The leftward move, coupled with the feebleness of right-wing opinion at the time, made the Communist movement the unchallenged attraction. The starry-eyed saw a promised paradise in the land of the Five-Year Plans, while the more grounded were impressed by the achievements of a planned economy operated on the foundation of nationalised property. A Soviet-style economic policy might provide the means of propelling the US economy forward, eliminating the scourge of mass unemployment.

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Blamed for causing the Depression, Hoover won only 39.7 per cent of the popular vote in the 1932 presidential election, a dismal result, and in 1933 Franklin Delano Roosevelt replaced him as President. Roosevelt's reforms derailed the leftward political momentum in the US. A stream of radicals were

hired into the federal government to enact depression relief measures adopted from their leftist agenda. Faith in the vitality of American capitalism revived with the economic upturn. Roosevelt's New Deal aimed to provide support for the millions of unemployed, to grow the economy and to enact reform to prevent a repeat of the financial crisis. It was attractive for some Communists who, as members of the Democratic administration, could be anti-fascist fighters, defend the cause of labour and promote the aims of the Communist Party and the Soviet Union while pursuing a government career with a good salary. It was no wonder at the time that Soviet spy rings flourished unhindered at the heart of the American government. But New Deal reform did not extend much beyond the end of the recession in 1937, when urgent plans for war displaced domestic concerns. And as the vision of an imminent proletarian revolution was eclipsed by the war shadows, the slow journey back to a belief in democracy quickened into a stampede. Patriotic fervour swamped the radicalism of the thirties. Conservatives still depict the Red Decade as an ugly spectacle of rampant subversion in America.

One clear demonstration of the broad appeal of the radical message at the time, but not of the socialist name, was given by the writer and politician Upton Sinclair. Having founded EPIC (End Poverty In California) to pursue a solution more radical than Roosevelt's New Deal, Sinclair came close to becoming Governor of California in 1934. He wrote after his defeat that

‘the American People will take Socialism, but they won’t take the label. I certainly proved it in the case of EPIC. Running on the Socialist ticket, I got 60,000 votes and running on the slogan to “End Poverty in California” I got 879,000. I think we simply have to recognize the fact that our enemies have succeeded in spreading the Big Lie. There is no use attacking it by a frontal attack; it is much better to out-flank them.’[16]

Sinclair was a lifelong Socialist who had become frustrated with the New Deal’s inability to end the Depression at a stroke. Rather than putting the unemployed on relief, Sinclair proposed, via EPIC, to put them to work within a state-organised ‘production-for-use’ economy distinct from the capitalist marketplace. Under his scheme, the state would take over idle farms and factories, allowing the jobless to grow their own food or produce clothing and other goods. Any surplus could be traded, through a system of barter, only for other goods produced within the system. Considered the front-runner in the election, Sinclair was subjected to intense attacks from both Republicans and Democrats as ‘a communistic wolf in the dried skin of the Democratic donkey’.[17]

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The Soviet students tripping down the gangplank in the summer of 1931 arrived with fixed expectations and preconceived ideas about America. The views of Shumovsky and his fellow Soviet students were based on their own political ideology, reinforced by selective imported left-wing reading and

popular culture including movies. Long before the Revolution, the idea of America had exercised a profound fascination for Russians, and not just for its technological successes. There was a hungry market in Russia for American movies and cheap novels about cowboys and gangsters.[18] An unusual import was the staging of selected American dramas. Several American plays were produced in Moscow, notably *The Front Page* – famously adapted in 1940 for the screen as *His Girl Friday* starring Cary Grant and Rosalind Russell – which was rechristened *Sensations* for a Communist audience. Giving theatre-going Muscovites a further taste of the life and times of the windy city was a staging of *Chicago*, a 'tale of America's foremost big gun and bullet city' depicting the life of Roxie Hart and today more renowned as a musical. Hollywood movie styles inspired domestically produced Soviet films, which often emulated the style and stunts of Harold Lloyd, Buster Keaton and the Keystone Kops in delivering their ideological message. In one popular movie, *The Extraordinary Adventures of Mr. West in the Land of the Bolsheviks*,[19] an American philanthropist, fearful for his own safety having heard lurid tales of bloodthirsty Communists, brings a cowboy to Moscow as a personal bodyguard. The cowboy, played by a Moscow circus clown, is a carbon copy of Keaton, while Moscow's finest do a passable impression of the Keystone Kops. The philanthropist falls victim to conniving White Guards spinning impossible tales such as that the iconic Bolshoi Theatre was dynamited by the Communists. Mr West

returns to the US, and the arms of his relieved wife, knowing that tales of bloodthirsty philistines destroying Moscow are untrue. As the students arrived in America, like Klivans they felt the need to tackle prejudices about the new Russia similar to those held by Mr West and many Americans.

Two Russian satirists, Ilf and Petrov, summed up Russian expectations of arriving in depression-hit New York:

the word 'America' has well-developed grandiose associations for a Soviet person, for whom it refers to a country of skyscrapers, where day and night one hears the unceasing thunder of surface and underground trains, the hellish roar of automobile horns, and the continuous despairing screams of stockbrokers rushing through the skyscrapers waving their ever-falling shares.[20]

They believed they would find a culture of exploitation in America and that 'the rich people not only had all the money' but 'the poor man was down, and he had to stay down'.[21] They had devoured in Moscow the available books on America, mostly those of socialist writers Sinclair and Dreiser about the current state of the US. Without another source of knowledge, they believed them to be the gospel truth. The students expected to find 'a population, low-class and mostly foreign, hanging always on the verge of starvation and dependent for its opportunities of life upon the whim of men every bit as brutal and unscrupulous as the old-time slave drivers; under such circumstances, immorality is exactly as inevitable, and as prevalent, as it is under the system

of chattel slavery'.[22]

As devout Communists, they did not expect a warm welcome on American soil but to be confronted with cold shoulders and suspicion. And they soon learned that outside the narrow circles of intellectuals and émigrés they needed to be careful when discussing Communism. On their travels, they discovered that the deeply conservative soul of America was rooted in traditional churchgoing communities that were suspicious of new-fangled foreign ideas.

Officially, a man will never be forced out of his job for his beliefs. He is free to hold any views, any convictions. He's a free citizen. But let him try to praise communism – and something like this happens, he will just not find work in a small or big town. He will not even notice it happening. People who do it, do not believe in God but go to church because it is indecent not go to church. As for Communism, that is for Mexicans, Slavs, and black people. It is not an American thing.[23]

Russians were not yet an urbanised people, and they knew that the real America was to be discovered in its myriad small towns and villages, not its cities. Soviet visitors loved taking road trips, driving across America's incredible highway system in the freedom of a car. On their journey they discovered in equal measure much to admire and amuse:

Americans don't like to waste time on stupid things, for example, on the torturous process of coming up with names for their towns. And indeed, why strain yourself when so many

beautiful names already exist in the world? That's right, an authentic Moscow, just in the state of Ohio, not in the USSR in Moscow province. There's another Moscow in some other state, and yet another Moscow in a third state. On the whole, every state has the absolute right to have its very own Moscow.[24]

Soviet visitors discovered in America a confusing, happy melting pot of nationalities. One remarked that 'a Spaniard and a Pole worked in the barbershop where we got our hair cut. An Italian shined our shoes. A Croat washed our car.' However, they encountered racism and discrimination of a type that their revolution had eliminated:

To a Soviet person, used to the nationality policy of the USSR, all the mistakes of the American government's Indian policy are evident from the first glance. The errors are, of course, intentional. The fact of the matter is that in Indian schools, the class is conducted exclusively in English. There is no written form of any Indian language at all. It's true that every Indian tribe has its own language, but this doesn't change anything. If there were any desire to do so, the many American specialists who have fallen in love with Indian culture could create Indian written languages in a short time. But imperialism remains imperialism.[25]

Russian visitors to the US often found American society shallow: 'If you should attempt to maintain that film is an art in conversation with a cultured, intelligent American, he'll just plain

stop talking to you.'[26] American workers were too materialistic, seemingly happy with the system of exploitation, easily bought off rather than striking and heading to the barricades. Americans appeared obsessed with their material conditions to the exclusion of culture and the spiritual. The observation of Gertrude Klivans was that to meet demand the Soviets published more books in a year, she estimated, than any other country. However, many of the avid readers had probably had only one square meal in three years. In addition, 'Art rates [are] very high in Moscow and throughout the Soviet states Opera is highly popular, as are the theater and literature. Among the classic authors, Tolstoy reigns supreme. Gorky is the idol of the modernists. But art, in Russian fashion, must interpret the struggle for expression of the masses, the keynote of present day civilization in that country.'[27]

MIT welcomed the arrival of the Russians. The Institute had embarked on an ambitious investment plan at the very moment the Great Depression hit, leading to a dramatic fall in US student numbers. In 1932 and 1933, across the nation some eighty thousand youths who in more prosperous times would have attended college were unable to enrol. Universities were thus desperate for the income that the arrival of the Russian students provided and were correspondingly uninterested in asking any awkward questions. America's finest universities were about to start teaching the cream of Russia's leadership how to build an even stronger socialist society. And one university was to show inadvertently how to spy on America and create a chain leading

to the greatest espionage achievement of all time: the theft of the secret of the Manhattan Project – how to build an atomic bomb.

4
'AGENT 001'

Throughout the hot summer of 1931, after more than a year of careful planning, seventy-five determined Russians arrived in the US to enrol as students at its elite universities.[1] Disembarking at the Port of New York, shaky after a week at sea, the first of the generation of Soviet 'super spies' set foot in America when Stanislav Shumovsky, one of the final fifty-four, landed in late September. He travelled on the SS *Europa*, arriving just in time for the start of the new academic term. The group included architects, town planners, mining experts, transport gurus, metallurgists, ship designers, aeronautics experts, chemists, electrical and mechanical engineers. A few were professional intelligence officers, the rest willing helpers. They had all been sent by Stalin to find out first hand how America had met and surmounted the engineering challenges of industrialisation.

It would be wrong to say Soviet intelligence invented industrial espionage. As early as June 1810, Francis Cabot Lowell, a Boston businessman and Harvard alumnus, had embarked on an industrial espionage mission for the US. He set off on a two-year visit with his family to Scotland and England as war clouds darkened in North America, using as his cover story 'poor health'. The mill towns of the north of England were not known for their

curative delights and Lowell's interests lay in stealing the secrets of Britain's Industrial Revolution. The textile industry based in the growing towns of Lancashire and Scotland was at the heart of that revolution, one fuelled by new water-or steam-powered spinning and weaving machines. The flint-hearted capitalists of Britain were never going to allow anyone – and certainly not an American – to buy drawings or a model of a powered loom. So Lowell secretly studied the machines on his visits to the mills, although their desperate working conditions must surely have played havoc with his failing health. In a quite prodigious feat, Lowell memorised the workings of the British power looms without committing anything to paper.

By the time he departed Britain's shores in 1812, the country was at war with the United States, and Lowell was carefully searched on his departure. Back in Boston, he built his textile factories, funding his enterprises with a pioneering public stock offering, and was awarded the patent for the powered loom, a stolen copy of the British version, in 1815. There was no end to Lowell's claims; he even suggested that the technology was all his original work adapted to local conditions rather than the fruits of industrial espionage. In recognition of his imaginative schemes, he was inducted into the US Business Hall of Fame in 2013.[2]

In 1931 the intelligence mastermind Artur Artuzov, Shumovsky's recruiter, had unleashed a new type of Soviet intelligence operation, one which would do to the Americans what they had done to the British. It was the start of a process of

stealing industrial secrets that was to last for almost eighty years. From late 1931 until 2010[fn1] a trail of agents would penetrate the US by enrolling as students in elite universities following the textbook rules written by Shumovsky.

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Some of Shumovsky's travelling companions were enrolled in undergraduate programmes; others, already qualified engineers, were on shorter specialist courses perhaps lasting a year or more to gain valuable experience. Soviet intelligence targeted American universities for two main reasons. First, America's position as the most competitive modern industrialised society was based on its ability to produce from its universities a steady stream of fresh graduate engineers and scientists who could transfer ideas from university-based research centres to America's factory floors and production lines. Such constant innovation maintained the position of the US as the world's leading economy.

Stalin wanted to emulate and surpass the US economy, but he first needed to learn and then adapt this education system to the peculiarities of Soviet conditions. Engineers were to be his new society's leaders. He termed them 'cadres who decide everything'.[3] But such individuals simply did not exist in the numbers or quality required; hence they needed to be mass produced – and in a hurry. Unlike those in Russia, US universities had a significant number of highly qualified and experienced professors. Stalin planned that on their return to the Soviet

Union the newly trained engineers, including Shumovsky, were to become professors themselves. They were to spend their lives transferring to the many the benefits of what they had learned in their time in the US.

Stalin's second reason for choosing this route is that a university is an unprotected repository of engineering and scientific knowledge. Elsewhere, the same information was either closely guarded in military bases or scattered among dozens of individual factories, and to gather that intelligence the Soviets would have had to deploy hundreds of agents on risky missions. In contrast, the universities happily transmitted that same knowledge by means of their lecture halls, laboratories and libraries – and, in the case of MIT, by factory placements. Each Soviet student, while educating himself to the highest level, would at the same time identify and arrange to have copied every technological treasure he could find. Books, articles, equipment and other material could wend their way back to the Soviet Union as a resource for Stalin's ambitious industrialisation programme.

The Soviet Union had assembled a remarkable group for the task, its brightest and best talent. They appeared, on the face of it, the ideal team to perform the mission assigned to them: Communist Party loyalists, motivated, intelligent and focused, many went on to be leaders in their chosen fields. Some however disgraced themselves. One was to put the entire mission at risk.

The students, including Shumovsky, travelled to America under their real names,[4] but covers were routinely used by Soviet

intelligence when the stakes were high. Two years before, Pyotr Baranov, head of the Red air force, the VVS, had travelled incognito to the US with aircraft designer Andrey Tupolev to visit American factories and trade fairs.[5] His cover was blown when his photograph appeared in a book published while he was in America naming him as a leading figure of the Communist Revolution. At the time Russians travelled abroad in fear of attacks both by exiled White Guard organisations and those they saw as heretical Communists; intercepted telegram traffic shows that the NKVD believed the White Guards could replicate the Soviets' own fearsome counter-intelligence capability.[fn2]

After their defeat in the Civil War the White exiles had managed a campaign of assassinations and bombings against Soviet targets, but now generally they were men of intemperate words after dinner rather than of deeds. Everyone in the party heading to America was nevertheless warned about avoiding interactions with the White Guards, as well as with 'Trotskyists', now a catch-all description for heretical Communists.

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A strong sense of camaraderie had developed on the long journey from Moscow and Leningrad and the shared months of intensive language training. Shumovsky was an excellent field agent. Now they were approaching New York the time had come for the party to go their separate ways

Some universities had chosen to welcome just one student, or a few at most, but MIT embraced the programme

wholeheartedly. In their trawl for America's secrets, the Soviets had spread their net far and wide: six went to Harvard, ten to Cornell in Ithaca, New York; five to the University of Wisconsin in Madison; five to Purdue University, West Lafayette, Indiana; three to the Colorado School of Mines in Golden, Colorado; one to the Carnegie Institute of Technology in Pittsburgh, Pennsylvania; and one to Lehigh University in Bethlehem, Pennsylvania.[fn3 6] The remaining twenty-five headed for MIT, in Cambridge, Massachusetts. At some universities the new arrivals went unnoticed. At MIT, there would be a fanfare welcome, and this was replicated at some colleges with articles in newspapers welcoming their foreign visitors,

MIT were ecstatic to receive the twenty-five Russian students. The Institute was not at the time financially well endowed. The fees were most welcome for the struggling university, arriving mid-Great Depression and during a time of collapsing student enrolments. Catering as it did, unlike Ivy League schools, largely to middle-class families, MIT's vulnerability to the Depression was due to its dependence for funding on tuition fees rather than endowments or grants. The Russian fees were therefore gratefully received as MIT was drawing down on its savings. So welcoming indeed was the Institute that it would become the Soviet intelligence services' favourite US university.

The manifest of SS *Europa* shows that Alexander (Sasha) Gramp was the first student of that final party to disembark.[7] Throughout the long voyage from Bremen, he had been mad

keen to get onto American soil, to be reunited with his bride Gertrude Klivans and meet the in-laws. For the next few years, the Klivans' house in Youngstown would become a magnet for visiting students. Having cleared US customs, compulsory medical quarantine and immigration, the arrivals were met at the dock by a welcoming party of officials from their sponsors, AMTORG. They were then driven by bus a short distance across Manhattan to Fifth Avenue, where AMTORG was based.

To the Soviet students, their first view of the modern American city of New York was a vivid demonstration of the yawning gap between the capitalist and socialist worlds. It was the city that some of the Russians would be trained in the US to emulate on their return home. Moscow planned in time to build its own skyscrapers, as befitted the capital of the Communist world. Eventually, sweeping boulevards would be created by dynamiting old buildings and whole districts, but the capital of the worker state in 1931 had nothing but dreams to compete with the reality of the Big Apple.

The students' accommodation for their one day of acclimatisation to onshore life and an initial briefing was in the recently opened Lincoln Hotel on Eighth Avenue, a few blocks from AMTORG's office at 261 Fifth Avenue. It would become the favourite hotel of visiting Soviet parties. Tupolev had stayed there on his first trip in December 1929, spending his time trying to figure out the technical marvel of the heating system.[8] The hotel was a modern wonder. It boasted an incredible 1,300

luxury rooms spread over 27 floors, occupying an entire city block between 44th and 45th Streets. Just like the luxury ocean liner from which the students had disembarked, the hotel was a showcase of the comforts on offer in a capitalist society, shocking to those used to the overcrowded and squalid conditions of the USSR's developing cities.

The arriving students had been briefed to act as ambassadors for their new society. By and large, they behaved as such. They were examples of what socialism had achieved so far and would achieve in the future. They believed passionately in fairness and equality for all workers and peasants and had dedicated their lives to building that dream. Many were military veterans who had experienced brutality and loss on the battlefield in the fight for their beliefs. Perplexed by the rigid class system in evidence on the boat, they had found themselves more at home in third class. They were attracted to the fun and informality as opposed to the regimented stiffness of the first -and second-class decks. America's relaxed social attitudes suited the students. The Soviet government insisted on premium-class tickets as such passengers were treated differently by customs and immigration. Experience had shown that first-and second-class ticket holders would escape hours of questioning on arrival, or worse, internment at Ellis Island.

The party had arrived in the belly of the great capitalist beast. They had been taught that their class enemy, the American elite, feared the inevitable triumph of Communism and was

scheming to destroy the Soviet Union, but that ordinary exploited American workers were their brothers, although politically asleep, bought off by consumerist dreams and neglectful of their political destiny. Lacking such a purpose, they were told, American life was empty or shallow. In a future Communist society, each member would contribute according to their ability and receive according to their need.

The students were instructed to describe the Soviet grand project as work in progress, with many problems, challenges and difficult choices. To succeed in their goal entailed making enormous sacrifices for the certainty of a better tomorrow. Having such beliefs separated the Soviets from most Americans, whose lives and aspirations they found materialistic and selfish. It is notable that none of the students decided to defect after their taste of America. Despite Russia's many privations, Soviet society was on the road to an improvement in living standards for the masses over the squalor and hopelessness of Tsarist autocracy. The students knew that there was still a long way to go, but significantly they had fought hard to come a fair distance already. All of them had benefited from the educational opportunities offered them. Denied formal education under Tsarism, under Communism they were now on their way to study at the most elite universities in the world. Their education would be used not to obtain for themselves a bigger salary but for the greater good of all. Despite the current conditions, the ration cards, public canteens and cramped accommodation, their

system was moving forward, offering a brighter future, while capitalism was in retreat and could not even provide jobs for a high proportion of its population. They also expected to meet the cowboys and gangsters they had seen in the movies.

At their first hotel, the Soviets found evidence of the very class oppression they had been warned to avoid. To real Communists, tipping porters for carrying their bags or paying for a shoe shine were open symbols of class exploitation. Communists could never adjust to paying others to perform simple everyday tasks that they were accustomed to do themselves. They would carry their own bags. They had already seen the evidence on the city streets, and would later read in newspapers lurid accounts of the awful privations of the Great Depression that affected the many, while themselves tasting the surreal world of luxury liners and hotels enjoyed by the few.

New York was in crisis. There was unprecedented mass unemployment. A plethora of apple sellers could be found on each city street, the unemployed struggling to earn money in order simply to eat. Others wandered the sidewalks wearing placards advertising their skills. All Soviet visitors at the time were consistently surprised at the diversity of immigrants that made up the population, remarking on the large number of countries represented. At this time, close to 7 million lived in the city, with a population density of over 23,000 people per square mile. Moscow was growing fast but still only had a population of 2.8 million.

Even in the midst of depression, however, New York was the definitive twentieth-century city; its wide streets and boulevards made a deep impression on foreign visitors, not least via the symbol of the modern age, the car and heavy traffic. The New York skyline had only recently taken on its impressive modern form, dominated by the three tallest buildings in the world. The arriving Russians were awed by the three buildings, visible from anywhere in Manhattan.

The Empire State Building at 102 storeys had won the friendly competition with the builders of 40 Wall Street and the Chrysler Building to be the world's tallest. Construction had begun on 17 March 1930, and the skyscraper was officially opened a few months before the students arrived, on 1 May 1931. The total cost of the building, including the land, was $40,948,900. An MIT alumnus, Pierre S. du Pont, had partly financed the project. Construction required the use of up to 3,400 workers working 7 million working hours over a period of just one year and forty-five days including Sundays and holidays, a feat worthy of a Soviet Five-Year Plan. The art deco building, wrapped in Indiana limestone and granite, aluminium and chrome nickel steel, was the wonder of the modern age – even if in 1931 it was virtually empty, the victim of an unfashionable location and the Depression. The three skyscrapers had been built in a race to the sky as symbols of America's business confidence that was now shattered.

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On the face of it, the students' host, AMTORG, was a legitimate trading company with a valuable monopoly on Soviet trade with the United States. American conservatives suspected AMTORG was the hub of major Soviet espionage activities designed to undermine the government of the United States; in fact it was neither capable nor sufficiently resourced to be anything of the sort. Soviet intelligence in the US at the time of Shumovsky's arrival was in its infancy, small in scale and disorganised. Only in 1933, with the establishment of official diplomatic relations, would the Soviet Consulate take over the leadership role in intelligence from AMTORG and build up resources. The AMTORG office was not the centre of a grand conspiracy to topple capitalism. Soviet espionage sought to strengthen the position of the USSR not to destroy the US system of government. Marxists believed that the collapse of capitalism was inevitable. In 1925 Stalin had adopted a policy of 'Socialism in One Country', abandoning the cause of world revolution, and would finally close down Comintern (The Communist International) in 1943.

Until Shumovsky's mission, spy work had consisted almost exclusively of the gathering and collation of what would be described today as open-source information, supplemented by an occasional one-off operation. Open-source intelligence is information in the public domain in a particular country that has a value for a foreign power. Intelligence is further subdivided between political and science and technology;

activity in the latter field was performed by a small team of technicians at AMTORG who would comb through newspapers and periodicals, mainly technical and scientific journals, for information that might be of use to the industrialising Soviet Union. As the technological gap between the countries was so wide, there was a vast amount of useful information available in US publications.

Valuable intelligence was often received on an unsolicited basis.US firms would sometimes include commercially sensitive information in the marketing material they sent to AMTORG, which would forward anything useful on to Moscow; some of it would end up on Stalin's desk. One explosives manufacturer, the Trojan Powder Company of Allentown, Pennsylvania, disclosed the chemical formulae for its solid explosives hoping for a lucrative deal. Stalin personally annotated the document.[9] The company even offered to provide the Soviet Union with an unlimited quantity of poison gas munitions. Soviet experts were unimpressed with the Trojan Company's proposal.

Accurate political intelligence proved harder to acquire than S&T. Without reliable sources, information was either biased or in some cases downright false. An early large-scale NKVD operation in the 1930s, based in New York and Washington, turned out after many years and a detailed investigation to have relied on a completely fake source. An enterprising *New York Post* journalist, Ludwig Lore, had created a family industry producing political information for the NKVD and employing his

son and wife in the enterprise. The NKVD were entirely taken in.

Lore claimed that his intelligence reports came directly from a network of well-placed agents in the State Department in Washington, even insisting that the State Department's Head of Research, David A. Salmon, was his principal agent. In reality, none of Lore's agents existed. He had plucked names from the internal phone directory of the State Department. Lore was nevertheless able to charge the NKVD exorbitantly for several years for the information he provided, which consisted either of old news stories reheated or pure invention.[10] Without checking, the NKVD had already put some of the fake material on Stalin's desk, describing it as 'must read'.[11] Stalin believed he was reading the very words of America's ambassador to Tokyo, Joseph Grew, in private meetings with the Emperor's top officials. It was nothing of the sort; Lore had made up the entire conversation. Shumovsky's operation at a stroke transformed the quality of Soviet intelligence gathering.

America was conflicted in its dealings with Stalin; on the one hand, they wanted his business, but on the other, they feared Communism. Despite the countries' polar opposite ideologies, however, AMTORG officials briefed the student party that the Soviet Union had become the USA's primary export market, uniquely expanding its economy as the rest of the world contracted.

AMTORG's role was to coordinate all commercial visits by Russian experts to the US, and vice versa. It gave each

group of students a list of approved contacts in their university city, and letters of introduction.[12] AMTORG maintained an extensive library of information on the major US manufacturing companies and their suppliers that the students would visit or be assigned work at during their stay. Besides his course at MIT, Shumovsky would be working for AMTORG's aviation department, producing reports and articles on the dynamic US aircraft industry. In 1933, he was to write an article published in *American Engineering and Technology* – an AMTORG magazine filled with US advertising sent to 1,700 key Soviet officials – describing the features of a special plane the Americans had built to fly in the harsh conditions of Antarctica.[13]

AMTORG also controlled immigration to the USSR from the USA. With 25 per cent unemployment, the US was suffering a net outflow of migrants. For several years, more people left the country than arrived. In 1931 AMTORG was receiving 12,500 applications per month from Americans to migrate to the land of Lenin.[14] No wonder to the Soviets capitalism appeared to be teetering on the brink.

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In trading with the US, the Soviets were very careful with their money, committing only to buying the very best products on the most advantageous terms. Experts such as Shumovsky would prove to be invaluable in ensuring that those conditions included the transfer to the USSR of all technical knowledge. And, as a

planned economy, they had clear goals with their purchases.

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