MI6

Fifty Years of Special Operations

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MI6 is dedicated to 'The Rodent Catcher'

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CHAPTER 10

ROCKETS, BOMBS AND DECEPTION

At the end of the war, MI6 was tasked by the Joint Intelligence Committee (JIC) with gathering intelligence on the Soviet production of weapons of mass destruction, and specifically nuclear weapons development. The Service's internal reorganisation in the autumn of 1945, therefore, laid a particular emphasis on gathering scientific intelligence. Against such a closed and security-conscious country as the Soviet Union, however, this was to prove immensely difficult, and was to present MI6 with a major headache as for many years the Service's obsessive secrecy hindered any assessment of its true capabilities in this area.

During the war years of close co-operation with the United States on the manufacture of the atom bomb, atomic intelligence had been part of scientific intelligence, but with the end of hostilities it was decided to treat it as a separate department in a direct arrangement between the Foreign Office and the Atomic Energy Directorate in the Ministry of Supply, codenamed 'Tube Alloys'. MI6's former scientific officer attached to the Air Ministry, Dr R. V. Jones, recalled that 'it was also argued that atomic matters were too secret to be entrusted to the normal scientific intelligence organisation, and that the Americans would only share their information with us if specially secret arrangements were made'. Jones thought 'that argument was already hollow' as the McMahon Atomic Energy Act 'had all but severed exchanges with Britain in atomic matters'.[1]

Dr Jones knew that the true explanation for hiving off atomic intelligence

was 'more likely to be found in the personal motives and ambitions of those who had jumped on the atomic bandwagon and who wanted to keep everybody else off. Maybe they thought that they alone were fit enough to be entrusted with the awesome responsibility of atomic developments or maybe they had less worthy motives.' His sarcasm was specifically aimed at Eric Welsh, with whom he had fought bitterly for control of postwar atomic intelligence – a battle that Jones lost.[2]

Born in 1897, Lieutenant-Commander Eric Welsh served during the First World War in Naval Intelligence, where he was provided with a cover story or 'legend'. In 1919 Welsh was placed with the Norwegian paint company, International Paints and Compositions. Recruited to MI6 for his knowledge of Norwegian, Welsh helped establish at the beginning of the Second World War a joint Anglo-Norwegian Intelligence Service whose primary objective was to monitor the movements of the German battle fleet around the Norwegian coast. Continuing his links with Norway – his wife was a niece of the composer Grieg – he was involved with the Commando raid on the heavy-water plant in Norway, but had no specialist knowledge of nuclear matters. In fact, Welsh had once remarked to MI6's Dr Jones: 'Who ever heard of heavy water?' He boasted of 'being the only regular SIS officer with a scientific degree', though in fact he had no scientific training. Despite this handicap, Menzies made Welsh responsible, in May 1942, for atomic energy and all aspects of scientific and technological intelligence. He handled the liaison with Tube Alloys, thus relegating Jones to a support role.[3]

A short, rotund ladies' man, who drank and smoked to excess, Welsh was said to be 'an excellent operational organiser' and a 'master of dirty tricks'. While he supported the efforts of Dr Jones, he revealed little about his covert work and sources, and managed to manoeuvre out of the office Jones's assistant, Charles Frank, who had quickly rumbled Welsh. In retrospect, Jones suspected that Welsh 'was beginning to use me, as he ultimately used others in more eminent positions, as a puppet'.[4]

Welsh's efforts were not entirely negative. MI6 was able to keep abreast of the progress of Anglo-American atomic relations and latest developments, 'since he had persuaded our own authorities to send their signals to America over our office link, which was especially secure'. Even so, Welsh did this by bypassing the MI6 office in Washington, the British Security Co-ordination (BSC), and relying instead on his own representative, (Sir) James Chadwick, a Nobel physicist from Cambridge who directed the British team working on the bomb in America. An influential voice on policy-making in the atomic field, Chadwick kept 'his eye open for British interests in the American Atomic project'.[5]

When the Anglo-American Intelligence Committee was formed in November 1943 to deal with atomic matters, Welsh ensured that all copies of documents went to his representative at Tube Alloys, Michael Perrin, but not to

Jones. A former ICI employee, Perrin regarded the committee as a 'trivial exercise'. In turn, Welsh, who was generous with the view that no serious German bomb programme was under way, refused to share any details with an increasingly frustrated Office of Strategic Services (OSS), which supplied technical and scientific intelligence to the 'Manhattan Engineer District' – the London-based body that co-ordinated information on atomic energy. This was probably 'nothing more complicated than the bred-in-the-bone jealousy of intelligence organisations for sources'; but, henceforth, Welsh 'held the whip hand in all nuclear intelligence matters', which, Jones concluded, was 'disastrous to Scientific Intelligence generally'.[6]

The end of the war was followed by 'a year of madness' as Scientific Intelligence was reorganised. After lobbying from the Naval Intelligence Division (NID), the JIC created a special committee chaired by Professor Patrick Blackett, which included Dr Jones, the Scientific Adviser to the War Office, Charles Ellis, and the NID's Edward Gollin. 'Many in senior posts were exhausted by the strains of war', and Dr Jones found that they were 'not interested in undertaking a fundamental appraisal of Intelligence for the post-war world'. His wartime experiences had shown 'the desirability of keeping the collecting and collating sides of the work as intimately together as possible, and it was this aspect that had given me such an advantage over all other branches of intelligence, where they had been separate'. On the basis that MI6 retained control of human (HUMINT) and signals (SIGINT) intelligence-gathering, Blackett rejected Jones's argument and recommended that the three service ministries retain their own separate Scientific and Technical Intelligence Sections, with an additional Section (R9) inside MI6. Given that there was to be no overall co-ordinating head, Dr Jones realised it would inevitably lead to confusion and duplication.[7]

Blackett's recommendations were approved by the JIC, which accepted Jones's argument that the new sections should be, at least, housed in one building. Even this, though, proved to be unsatisfactory, as the near-derelict leased premises in Bryanston Mews were distant from the services and MI6 headquarters. In one bizarre episode, when the landlord showed some prospective buyers around, 'they turned out to be members of the Russian trade delegation and they had quickly to scramble to pull down the MI6 charts on the walls'.[8]

MI6 liaison was maintained via the Joint Scientific and Technical Intelligence Committee (JSTIC), made up of thirteen representatives. Menzies disliked Blackett's unwieldy proposals and tried to persuade Dr Jones to stay, but he had had enough: 'To add to the craziness of the scheme, Blackett overlooked the fact that Atomic Intelligence was not part of it. This was going to be done by Welsh and Perrin entirely independently of the main Scientific Intelligence organisation.' The JIC had also acquiesced in 'an irregular arrangement' made with the Americans by Sir John Anderson, who super-

vised the Tube Alloys Directorate, whereby another authority, 'the Anglo-American Combined Tube Alloys Intelligence Organisation', would operate in parallel with the JSTIC with Welsh's representative as its head. Disliking the new arrangements, and openly unsympathetic to the new socialist government, Jones returned to Aberdeen in the autumn of 1946 to take up the post of chair of natural philosophy.

During the summer of 1945 the chiefs of staff completed a detailed report on Soviet capabilities which 'emphasised the radical scientific and technical developments that had recently taken place in the field of "weapons of mass destruction" and in associated methods of strategic delivery, particularly the guided rocket'. In comparison with Soviet strategic offensive and defensive capabilities, everything else was considered of lesser importance. The chiefs and the JIC made acquisition of technical intelligence from Germany on these areas a top priority.[9]

The chiefs had wanted and assumed continued close co-operation with the United States in the scientific field. It was a naïve belief which displayed a lack of foresight about the real power of the United States and the shape of the postwar world, where Britain would be very much the junior partner or even rival in intelligence affairs. It was true that Air Marshal Sir John Slessor had advocated on 16 June that if co-operation 'proves impractical – and for commercial reasons the Americans make it so, though I believe we have both of us more to gain commercially from co-operation than from competition – then our secret scientific intelligence organisation should be extended to cover the United States'. He was, however, embarrassingly wide of the mark when he added that the 'Americans are insecure people and I do not believe we should have any serious difficulty in finding out all they are doing if we are prepared to spend the money to do so. Conversely their secret intelligence is amateur to a degree and I do not think we should have much to fear from them.'[10]

The first evidence that American capabilities had been underestimated came with the collapse of the Third Reich, when British Military Intelligence engaged in a systematic operation to locate scientists and related personnel who had used their skills for the Nazi cause. In a forerunner of similar programmes to recruit Nazi intelligence officers and other collaborators, a specialised team concentrated on the capture of German laboratories, industrial patents and similar useful hardware. Britain and the United States jointly created a Combined Intelligence Priorities [later Objectives] Sub-Committee (CIOS) to co-ordinate efforts to seize particularly valuable targets. Delegated to co-ordinate the operation, the JIC chair, Victor Cavendish-Bentinck, did not, however, 'possess the experience to understand or assemble technical details of weapons design and manufacture', being more used to supervising the gathering of pure intelligence.[11]

Raids on behalf of CIOS were carried out by subordinate teams such as the 'Sugar Force' in Italy and the T-Force in France, Holland and Germany. These units had only minimal armed strength, but they travelled with accomplished linguists, Western scientists and police specialists, which permitted them rapidly to identify and capture knowledgeable experts and technologically useful materials. Initially, the Americans were outclassed by the professionalism of their British counterparts, but this was, as Tom Bower points out, 'deceptive'. The British had no executive powers and saw themselves as largely providers of information to the Supreme Headquarters Allied Europe Forces (SHAEF). Britain's attempts at plunder were, in fact, either too gentlemanly or else totally undisciplined. The personal assistant to Rear Admiral John Godfrey, Director of Naval Intelligence in Room 39 at the Admiralty, Ian Fleming, had created a naval team, the 30 Assault Unit, with the express purpose of locating technical intelligence, such as details of the latest submarines and torpedoes, but the unit ended up employed as 'armed and expert looters'. The T-Forces were no more effective, and British efforts were soon overwhelmed by the resources available to the much more aggressive Americans.[12]

Out of military liaison units which, with the Americans and Russians, were entitled to venture into each other's zone of occupation, grew the Field Information Agency (Technical) (FIAT) groups. One of the British subgroups, the Enemy Personnel Exploitation Section, specialised in targeting German scientists with particular reference to Nazi Germany's rocket programme.

In the three-way battle with the United States and the Soviet Union to secure German rocket secrets, Britain – against whom over a thousand rockets had been fired – had a distinct advantage in that 'British Intelligence knew more about the V-2 and the men who had developed the world's first and only long-range rocket than either the Americans or the Soviets'. As undersecretary in the Ministry of Supply and chair of the Flying Bomb Counter-Measures 'Crossbow' Committee, Duncan Sandys – Winston Churchill's son-in-law and commanding officer of the Royal Artillery's first Z anti-rocket battery – had overseen the collation of all intelligence gathered by MI6 on Germany's rocket operations. Although this was a military failure, in that it appeared far too late to affect the outcome of the war, technical experts knew that the V-2 was a weapon of the future and urged the intelligence agencies to make the tracking down of Germany's rocket specialists and their technical documents a priority.[13]

Almost inevitably, Britain came second to the Americans in the race – known as Operation OVERCAST – to garner the rocket secrets. This was primarily because British rocket experts simply handed over to US intelligence officers nearly 90 per cent of their target intelligence and received little in return. This included all the information they had gathered on the manufacture and launch site at Peenemunde during the secret weapon investigation, a remarkably detailed Target Information Sheet, complete with aerial

photographs pinpointing the last V-2 site at Nordhausen, as well as the names of key personnel. Also handed over was MI6's major coup – the Osenberg List. Detailing the names and responsibilities of senior German rocket personnel, which analysts had cross-referenced against captured SS files, the list had been discovered stuffed down a toilet at Bonn University.[14]

Armed with this priceless intelligence haul, American troops and technical specialists reached Nordhausen first and, in late May, despite an agreement that ensured that all captured war material was to be equally shared, transported fourteen tons of documents into the American Zone in order to deprive the British of the booty. The haul was then sent to Camp Ritchie, Maryland. In addition, in early June, one hundred V-2s were covertly transported to the Antwerp docks, where British Intelligence officers could only stand by and watch as they were shipped off to the United States.[15]

On 13 October 1945, 21 Army Group's Field Marshal Montgomery sent a top-secret message to the secretary of the Advisory Committee on Atomic Energy, revealing that in the course of the Allied advance into Germany a special mission known as ALOS was 'sent to carry out an investigation into the progress made by the Germans into the development of nuclear energy'. General Groves's ALOS mission included an MI6 field team headed by Eric Welsh, who was determined to retain as much as possible when it came to sharing the prospective nuclear information from Germany.[16]

Leading the MI6 mission to obtain German nuclear intelligence was Sir Charles Hambro. 'Enormously tall and athletic, with broad shoulders, broad eye, and a broad smile', and from a distinguished line of Norwegian bankers from Denmark, Hambro was 'one of the most respected men in the City'. In the same house at Eton with Gladwyn Jebb, of the Foreign Office's Russia Committee and former adviser to SOE, and Stewart Menzies, Hambro knew his way around the secret world. Besides being head of SOE, he had also been in charge of its Scandinavian section, where he worked in collaboration with Welsh. When Hambro left SOE in 1944, he went to Washington as head of mission of the innocuous-sounding Combined Raw Materials Board, which had a secret role in allocating scarce and vital uranium ores. He also sat on the Combined Development Trust – aka the 'Insecticide Committee' – which had been set up in June by Britain and the United States in order to control world supplies of weapons-grade uranium. Code-named the 'Murray Hill Project', it aimed to prevent the Soviet Union from acquiring ore for its own project.[17]

In April 1945, Hambro and his assistant David Gattiker were hot on the trail of the uranium ore that the Germans had seized from Union Minière in Belgium at the beginning of the war. It had been tracked by the Americans to a German firm, near Stassfurt, deep inside the Russian Zone. In a clandestine operation, over a thousand tons of ore – the bulk of all the available uranium supplies in Europe – was eventually recovered and shipped to Britain. In addition, Britain and representatives of the Czech government-in-exile had

held talks on plans to mine ore in Czechoslovakia. Unfortunately, the Czech chief of intelligence, Colonel F. Muravitz, had passed on to Soviet agents the minutes of these talks, which concluded with British interest in shipping processed ore from the Sudeten Mountains. It was the Soviet Union, therefore, which signed a secret agreement with the Czech President, Edvard Benes, to exploit the uranium mines at Jachymov, which had been the world's main source of the ore in the early part of the century.[18]

On 22 April 1945, along with an *ad hoc* American T-Force, Hambro, Perrin, Welsh, Dr Jones and the GC&CS (Government Code and Cipher School) Ultra specialist Frederick Norman descended on Horb, where Germany's principal nuclear scientists, research laboratories and their only nuclear pile were located. Dr Jones saw this as a 'heaven sent opportunity for Britain to get back into the atomic intelligence game'. Simultaneously, German's remaining stock of heavy water was recovered. Six days later, in Rheims, Hambro negotiated a deal with the Americans, who had no legal jurisdiction over the matter, for the captured leading German atomic scientists to be detained for up to six months 'at His Majesty's pleasure'.[19]

Hambro and Welsh selected the top German experts for debriefing either at a special centre at Göttingen or at RAF Tempsford, a former SOE launching site for resistance teams destined for France. As part of the operation, ten physicist members of the German 'Uranium Club' were brought back to Britain for interrogation. They were remanded into the custody of Welsh at Farm Hall, a Georgian country house near Cambridge, which had been SOE Special Training School Number 61. Not only had it been a staging post for agents going out, it had also served as an interrogation centre for returning agents and their captives. Dr Jones had subsequently persuaded Menzies to turn it over to MI6. In an operation code-named EPSILON, Welsh had the place completely wired with microphones in the bedrooms, dining room and library, which monitored the conversations of the scientists. Weekly résumés of the transcripts were circulated to Perrin, Dr Jones and his assistant, Charles Frank, offering an unparalleled source of information about Germany's nuclear effort. During 1945, dozens of German scientists, including a number who had initially been handed over by the Soviets, arrived at Tempsford in total secrecy for 'indefinite interrogation' to determine whether they should undergo further unspecified 'special treatment'.[20]

The British were also looking to acquire technical information and documents, and an overt British Enemy Publications Committee was set up in 1945 expressly to import the huge cache of German classified scientific information. It failed to function, however, because it had still not managed to set an appropriate exchange rate for the trade in journals. In an attempt to fill the vacuum, MI6 set up its own networks and fronts to develop British scientific publishing.

The first meeting in the Cabinet Office of the Scientific Advisory Board took place on 25 November 1946, chaired by Sir John Anderson, supervisor of the Tube Alloys Directorate and chair of the newly created United Kingdom Atomic Energy Committee. The secretary was Professor Robert Hutton, an authority on specialised metals, while other distinguished scientific advisers on the board included Sir Wallace Akers, Sir Charles Darwin, Sir Alfred Egerton, Sir Richard Gregory, Sir Edward Salisbury and later Sir Alexander Fleming and Sir Edward Appleton. These were largely established figureheads for what was, in fact, an MI6 front, as evidenced by the attendance of Charles Hambro, who acted as Eric Welsh's representative. One outcome of the meeting was the forging of a relationship with the old publishing firm Butterworth.[21]

The emissary from the board to Butterworth was Count Vanden Heuvel, a shadowy MI6 officer who had been chief of station in Berne during the war. Dutch by birth, 'the epitome of a diplomat with his imperial whiskers and black homburg' and known to many as 'Fanny the fixer', his prime postwar role was in the recruitment of 'Z' agents – journalists, publishers and businessmen. One was Butterworth's joint managing director, Major John Whitlock, a former SOE officer and 'intelligence veteran' with 'a reputation as a freemason and likeable rogue'. He had been at the board meeting with fellow-director and SOE officer Hugh Quennell, who enjoyed some prestige at Butterworth, though others saw him as 'an insufferably arrogant and xenophobic Englishman'. A solicitor in the City, Quennell had acted for Hambros when the bank purchased a quarter of a million Butterworth shares during the war.[22]

The idea was to develop scientific publishing through a new company – Butterworth Scientific Publications – using the expertise of a talented German exile who had also been at the initial board meeting, Dr Paul Rosebaud. He was to edit a proposed journal using German scientific papers and the reports of 'correspondents' placed abroad. An Austrian scientist, Dr Rosebaud had been at the outbreak of war an editor at Springer Verlag, the leading publisher of scientific books and journals in Europe. He knew many top-level scientists working in the nuclear field throughout Europe and became a particularly important catch for Eric Welsh, for whom he obtained 'certain technical intelligence', which he passed on at great personal risk. Rosebaud was subsequently invited to Britain to work and, in November 1945, was smuggled out of Berlin in military uniform by Welsh. With MI6 support from Welsh, Hambro and Vanden Heuvel, Rosebaud helped to establish a Springer affiliate in London with an initial stock of a hoard of books that had been hidden in the Herberstein castle and retrieved by the British. Both 'novices in the world of science', Quennell and Whitlock leaned on 'the cloak and dagger man', Vanden Heuvel, for advice. It was through the MI6 man that they received the reports from Rosebaud. Though Vanden Heuvel had a 'meagre knowledge of

science', it 'nevertheless elevated him to the status of expert compared to that possessed by the other laymen present' at the publishers. No doubt it was Welsh who was really behind the operation.[23]

An important player in this MI6 network was Captain Robert Maxwell, MC, later publisher of Mirror Newspapers and plunderer of the company pension fund. In November 1945, Maxwell, a Czechoslovakian émigré who spoke eight languages, including Russian – a rare skill in the British Army – was employed in the British Zone in Germany as an interrogation officer at the Intelligence Corps HQ at Bad Salzuflen, near Iserlohn. He was involved in interrogating German scientists, but whether he knew Welsh is not known. Maxwell certainly met Hugh Quennell, an officer in the Control Commission, when he moved to the Press and Publicity Branch of the British Information Service in Berlin. During 1946, he also came into contact with 'the Kaiser', Dr Ferdinand Springer, the owner of Springer Verlag, whose fortunes were then at a low ebb. While still working at the Control Commission, Maxwell became a director of a firm that later offered to distribute Springer's journals.[24]

Butterworth Scientific Publications failed to prosper and in 1948 a joint company was created with their German partners Springer Verlag – Butterworth-Springer. It was incorporated in April 1949 with Butterworth's Quennell and Whitlock as directors, while Maxwell was appointed managing director, with Dr Paul Rosebaud, on attachment to MI6 and working freelance for Butterworth, editor of its scientific journals. Rosebaud's reports on visits to Springer 'tended to reach Quennell via Vanden Heuvel, who got to know Robert Maxwell through Whitlock'. Unfortunately, the new company was not a great success and Butterworth, which felt that Springer enjoyed the most advantages from the deal, decided to withdraw. There followed protracted negotiations organised by Vanden Heuvel and, in May 1951, Butterworth agreed to sell its interest to Maxwell for £13,000. Agreeing also to a change of name to Pergamon Press, Butterworth set aside a considerable debt of £10,000.[25]

As his official biographer, Joe Haines, acknowledged, this was 'more money than Maxwell possessed at that moment, so he borrowed. He first went to Sir Charles Hambro.' Who introduced Maxwell to Hambro varies with the different accounts. Haines says it was via the Board of Trade (BoT); Maxwell said it was Whitlock; Betty Maxwell claims it was Vanden Heuvel, Hambro's business 'fixer'. Whoever it was, the meeting gave rise to a City legend that Hambro had been so impressed by the forward-looking Maxwell and sufficiently persuaded of his business acumen that he ordered the chief cashier to give Maxwell a cheque book with authority to draw cheques up to a total of £25,000. In fact, the 'legend' was no more than a cover story. The meeting certainly took place, but the matter of money had already been fixed by MI6.[26]

An *ad hoc* meeting of MI6 officers to discuss scientific publishing took

place at Broadway with Desmond Bristow, recently returned from Spain, an R5 officer, Tim Milne, a wartime member of the Inshore Patrol Flotilla and Control Commission officer in Germany, Stephen Moir MacKenzie, Gerald Cruickshank and Vanden Heuvel. Along with a plan to set up Marshalls Travel Agency to organise the Service's travel arrangements, the committee also agreed to advance £25,000 to Maxwell in order to buy the shares for the new company that was to become Pergamon Press. Maxwell was at the time being run as an 'agent' by George Young, who appears to have used him during his time in Vienna for his Czech contacts. Eventually, moving into the publication of Soviet scientific journals, Pergamon quickly became the world's leading authority on Soviet bloc publishing. Some of the money invested certainly came from the 'progressive banker' Charles Hambro, who was then providing the BoT with financial advice and acting as a benefactor to MI6 good causes.[27]

The intelligence agencies in Germany required firm policy guidelines on future acquisition and recruitment operations. In December 1945, the JIC Secretary, Colonel Haddon, was informed of concerns that the 'few hundred individuals' who were to be employed in the UK and then returned would have 'an inside knowledge of our latest service secrets and the lines on which we are now working'. In considering the security aspects, the JIC concurred that the Germans would quickly discover Britain's latest scientific and technical secrets and recommended that they be employed for a maximum of one year, to 'suck them dry'. Even this proved too much for the conservative Home Office and MI5, which feared a 'Trojan horse' was being created. The intelligence agencies asked whether 'in the event of another emergency' they ought to be 'prevented from returning to Germany?'[28]

Similarly, the JIC was particularly agitated by information that the Russians were attempting to recruit large numbers of scientists and technicians. Paul Rosebaud informed MI6 that a number of the leading scientists had decided 'to collaborate as closely as possible with Russia ... especially those who have some knowledge in secret weapons'.[29]

By the summer of 1946, MI6 estimated that there were 12,000 skilled scientists and technicians available in the western zones of which 2,800 were regarded as 'eminent'. With reliable reports that newly opened Soviet research institutes were recruiting Germans, MI6 warned that 'the result of this intake of Germans will be very greatly to speed up Russia's industrialisation plans, and to contribute substantially to Russian war potential'. MI6's proposed solution was drastic. One thousand scientists in the British Zone should be 'quarantined' for up to two years and 'rehabilitated' by compulsory training for other occupations. Turning this down as unworkable, intelligence officers in the Control Commission suggested that four hundred should be 'removed as soon as possible from Germany, whether they are willing to go or not'.[30]

Alarmed by the MI6 reports, the deputy chiefs of staff were also concerned that Britain was suffering 'an acute shortage of scientists and technicians in all fields'. They recommended that more German scientists be brought into Britain in a more efficient manner. In an effort to deny their talents to the Soviets, a list of targeted scientists employed in aviation and missile design – most of whom had already been working for more than a year for the British in Germany – was compiled by British Intelligence. The chiefs were also worried by reports from Sweden of Soviet rocket tests in the Baltic. In response, MI6 teams of exile agents were sent into the Soviet orbit tasked to look for evidence of Russian atomic energy and rocket developments. The rocket reports, however, turned out to be false, and Dr R. V. Jones was able to show that the alleged tests were, in fact, meteorites.[31]

MI6 officers in Germany were also tasked with recruiting scientists from the Russian Zone. They were convinced that 'there is an opportunity now to obtain high-grade intelligence from these men which will enable us to build up an almost complete picture of Russian scientific and technical activities in Germany and make it possible to forecast more accurately than we can at present the progress of Russian development of weapons during future years'. It was a naïve conviction, but during December 1946, as part of the effort to deny the Russians certain scientists who were listed 'on account of their scientific or technical eminence in certain warlike subjects', British Intelligence launched the highly secret Operation MATCHBOX, which planned the escape of German scientists from the Soviet Zone. The Enemy Personnel Exploitation Section of FIAT was responsible for targeting men who had worked on engines for submarines – a subject that particularly interested the British – and research chemists for IG Farben.[32]

Although the War Office's MI10 had made assessments that Germany – reliant on First World War formulae – had produced no new gases, chemical warfare investigators, headed by Commander A. K. Mills of the Ministry of Aircraft Production, discovered at the I. G. Farben complex the development of lethal new strains of nerve gases. A key figure was the company's chief chemist, Walter Reppe, who was subsequently found guilty at Nuremberg. US Army officers were able to arrange his temporary release to work on reports for the Army Chemical Corps, but American plans to send him to the United States fell through when the British stepped in and transported him to England. The British also captured General Walter Hirsch, head of Wa Pruf 9, the Wehrmacht's main chemical warfare section, and Rudolph Ulm at a chemical warfare experimental station at Spandau.

Besides using German research to further British efforts, the investigators were also looking for clues to Soviet capabilities in the chemical and biological warfare field. Sources about Soviet developments were limited to speculation based on the evidence of refugees and captured German and Japanese intelligence assessments which suggested that the Soviets had begun research in

the early thirties. The interrogation of German chemist Professor Richard Kuhn revealed that all documents relating to a new nerve gas, Soman, had been buried in a disused mine shaft, but Kuhn understood that the documents had been retrieved by the Soviets and taken to the Karpov Institute in Moscow. By 1946 MI6 believed that the Russians had an entire reassembled factory on the banks of the Volga devoted to new agents. Intelligence was, however, inadequate in all areas, and MI6 and other agencies were unable to check out the reports from German files. In the end, much of the speculation was based on clues picked up from reading Soviet scientific literature, and this lack of intelligence led to alarmist reports about Soviet capabilities and willingness to use biological and gas warfare in any future conflict.[33]

The Matchbox 'evacuations' were run by 'one of the various intelligence agencies in Berlin' which operated an 'underground railway' to a secret address in the British Zone 'to which a candidate should proceed under his own arrangements'. The agency also sought to gain 'intelligence coverage of Russian sponsored research and developments in the Soviet zone and, if possible, in Russia itself'. Messages were sent by agents of exile groups to target groups deep inside the Soviet Zone. 'Candidates' then made their way to a 'transit hotel' at Bad Hermannsborn where 'special arrangements' were made for denazification.[34]

'Intelligence exploitation' of those that managed to escape was carried out by 'intelligence agencies in Berlin' or following 'evacuation to the UK' where, by mid-January 1947, forty Germans were 'in residence' for interrogation. In March, British Intelligence began dumping German scientists on Commonwealth countries, including Canada and Australia. Twenty scientists were sent to Canada, including four wartime I. G. Farben chemists. A top-secret message in early April from Brigadier 'Tubby' Lethbridge, head of the Control Commission Intelligence Division, to the commander-in-chief noted that forty-eight of the scientists on the British lists of likely 'evacuees' were working on V-2 rockets, jet engines and radar. He added that their disappearance would thus 'have a serious effect on Russian research'.[35]

Western intelligence agencies continued to systematically monitor and assess the worth of individual scientists in Germany with the most important secretly registered on an 'Objectives List' by the Anglo-American Combined Allocations Board. At the same time, British Intelligence not only monitored their movements but also scrutinised all applications for foreign travel. A 'watch list' was compiled of those employed in the Soviet Zone, noting the names of those who might be attracted by a western offer. Seeking any route to deny their services to the Russians, the British offered the Germans attractive terms of employment in Commonwealth countries. On British advice, as part of Operation PAPERCLIP, Washington reversed its previous policy and began encouraging emigration to South America and to the Commonwealth as an effective means of denying scientific expertise to the

communists. More German scientists were secretly resettled in North America, but Canadian officials and Royal Canadian Mounted Police security officers 'thoroughly distrusted background checks conducted by the CIA and British Intelligence' as a number of these men could be classed as Nazi war criminals.[36]

BACKFIRE was the code-name for a British project for the complete technical analysis of those V-2s that remained in British hands. At a former German Navy artillery range near Cuxhaven, British rocket experts interrogated key Peenemunde personnel who helped in the test launch of V-2s into the North Sea. British Intelligence made an intensive effort to persuade the German V-2 experts not to sign with the Americans and instead accept employment in Britain. In the end, however, none accepted the offer, but a few were brought to London for further interrogation, including the main target, Werner von Braun. He 'thought the British might be unfriendly to me, but I found I was wrong'. There followed a 'friendly shop talk' with Sir Alwyn Crow, the man in charge of developing Britain's top-secret missile programme at the Rocket Propulsion Research Establishment at Westcott, near Aylesbury.[37]

'The entire discussions', recalled Major Robert Staver, who ran the London end of the US scientific intelligence team, 'centred on how the British might form a research group of the German scientists; would not these men who were planning to leave for the United States reconsider as the British might have more to offer them; if not, who would be left behind who would be important for such research; and would it not be possible to have the group work in a joint British-American project possibly in Canada?' The senior scientists would not be moved: 'We despise the French, we are mortally afraid of the Soviets, we do not believe that the British can afford us, so that leaves the Americans.' The discussions went on at length but, typically, there were no technical interrogations. The British were able, however, 'partly by chicanery, and partly through clever staff work ... to gain possession of many of the most important German engineers who they used on Backfire'.[38]

The retention of the engineers turned out to be a secondary success; the best rocket scientists went to Russia and America. Nevertheless, the British did manage to gather together nearly a thousand Germans at the isolated area off the Dutch coast where hundreds of Wehrmacht PoWs were employed as construction crews. Units of officers had spent months scouring France and Germany for 'enough V-2 parts to reassemble rockets' but they were discovered to be 'barely operational'. Inevitably, Backfire was something of a damp squib and, by September, 'only three rockets had been launched'. Britain had effectively lost the missile race to the Americans and to the Soviets.[39]

In an attempt to regain the initiative, in early 1948 Stewart Menzies appointed a three-man 'Defectors Committee' to collate quarterly reports on attempts

to recruit Russians. Chaired by Assistant Chief Jack Easton, the other two were Robin Brook, a former senior SOE officer who had been personal assistant to Gladwyn Jebb and in charge of the organisation of resistance in France, and an officer formally attached to the War Office, James Fulton, a wartime intelligence officer attached to 21 Army Group and subsequently seconded to the Political Division of the Control Commission in Germany. Easton told Tom Bower that the results 'were not impressive'.[40]

MI6's first defector was the head of the Soviet Reparations Mission in Bremen, Colonel J. D. Tasoev, who fled to the West in early May 1948. Much to MI6's enduring embarrassment, Tasoev changed his mind almost as soon as he landed in London. While he was kept in detention in Hammersmith police station, senior MI6 officers pondered what to do next. Legend has it that Harold Perkins suggested drugging and dumping the Soviet into the North Sea from an aeroplane. Wisely, Menzies vetoed Perkins's solution and Tasoev was accompanied back safely to the Soviets in Berlin, but not before sparking off a minor diplomatic incident and a few awkward questions in Parliament.[41]

The Service had much greater success with its second major catch, Colonel Grigori Tokaty-Tokaev, chair of the Soviet State Commission on missile development, where he had had unique access to information on Soviet policy discussions in an area about which the western intelligence agencies were particularly lacking. He told MI6 about the initiation of a major programme in April 1947, backed up by a substantial cadre of Soviet scientists with lengthy experience in missile research.[42]

Tokaty-Tokaev had also been a lecturer in jet engine technology and rocket propulsion at the Zhukovsky Air Force Academy in Moscow, and had enjoyed a long career at the élite Institute of Engineers and Geodesics. At the end of the war, he had been transferred on the orders of Stalin to Berlin with instructions to help in the kidnapping of German scientists who might assist the Soviet missile research programme. As the senior scientific adviser to the Russian commandant in Berlin, General Ivan Serov, Tokaty-Tokaev was ordered to contact Professor Kurt Tank, Focke-Wulf's chief aircraft designer, and Dr Eugen Sanger, a jet propulsion expert, who, if they refused to go voluntarily to the East, were to be kidnapped. 'Nobody will interfere with you,' Serov told him. 'But remember, Comrade Stalin relies on you to produce results.' Tokaty-Tokaev, however, was unable to recruit either specialist, which displeased the Soviet dictator, who declared that the number of captured German specialists of the highest calibre was 'a very poor sum total . . . The British got Busemann, and perhaps Tank, and now the French have got Dr Sanger.'[43]

Professor Tank, who had been displeased at his reception by the British in London, had been warned off by British Intelligence after he made preparations in November 1946 with twenty other aircraft designers to contact

the Russians. Instead Tank, 'with microfilm of his fighter-plane designs hidden safely in his trousers', and carrying false documents, used a ratline through Denmark for Argentina. The British did manage to recruit before the Russians another Focke-Wulf jet-fighter designer, Hans Multhopp, a former Nazi Party member who worked until 1950 with other German aviation experts at Farnborough. They could not prevent, however, another Nazi Party member, supersonics engineer Otto Golling, who had been working in London, from venturing in 1947 into the Soviet Zone in Austria, where he sought residence.[44]

When Serov ordered further kidnap operations, Tokaty-Tokaev 'underwent a crisis of conscience'. During October 1946, Soviet arrest squads had systematically searched for and arrested numerous scientists and technicians during Operation OSVAKIN. Trains had taken the unwilling to Moscow, but a similar operation in the following January 'fizzled out' as many of those on the wanted list had already fled to the West. Tokaty-Tokaev was opposed to the kidnap operations and had considered defecting to the Americans, but his plans went awry when he became the target of émigrés, probably from the anti-Soviet National Labour Council (NTS), who were kidnapping Soviets on behalf of US Intelligence: 'I was hunted by émigré organisations dating from the revolution; they asked me to put them in touch with underground movements in the USSR; they also tried to persuade me to desert to the West.' Tokaty-Tokeav had joined various underground dissident nationalist groups in the thirties, in reaction against Stalin's policies, and had maintained contacts with opposition figures from his native Ossetian people in the Caucasus.[45]

The émigrés did attempt a kidnap but Tokaty-Tokeav managed to escape. Fearful, though, that the Soviet Ministry of State Security (MGB) would arrest him for contacts with the organisation, he decided, in the late summer of 1948, to defect to the British. 'He was received in Berlin by the local SIS station and flown straight to London, where he was debriefed at the Special Liaison Centre, at Section V's old offices in Ryder Street', headed by Commander Wilfred Dunderdale. One function of this 'highly-secret' suboffice, which was staffed mainly by elderly émigrés, was to process defectors. A major catch for MI6, Tokaty-Tokaev was also 'a godsend' and a test case for the handling of defectors by the Foreign Office's newly created propaganda organisation, the Information Research Department (IRD). He was that rare figure – 'a genuine ideological defector'.[46]

After a long debriefing on the state of Soviet missile development, Tokaty-Tokaev was passed on to the IRD, which had been instructed by Foreign Secretary Ernest Bevin to arrange the publication of a pamphlet based on his 'Notes on Bolshevism – Communism'. It proved, however, to be 'a less than happy experience'. The author caused considerable confusion by disclosing his existence before the pamphlet was ready. In September, the IRD circulated

Digest #5, detailing the circumstances of his break with the Soviet regime. He described how the Soviet Union, which he said was preparing for a third world war, had degenerated into a Nazi-style dictatorship, run by slave labour. This hard-hitting counter-attack was provided to information officers in British embassies, the BBC and selected journalists. On 7 September, a London press conference to announce Tokaty-Tokaev's defection undid much of the preparation when it turned into a near-brawl between British officials and Russian journalists.[47]

Although the IRD was supposed to rein in Tokaty-Tokaev, in January 1949 a series of articles by the defector appeared in the *Sunday Express* 'which were so virulently anti-Communist that their effect was questionable'. Jebb of the Russia Committee was not impressed, and Christopher Mayhew thought them 'too highly contrived or unoriginal to carry conviction'. This did not, however, prevent the IRD from publishing later in the year his views on 'Soviet warmongering' in a pamphlet entitled 'Inside the Kremlin'.

Tokaty-Tokaev went on to collaborate with one of his debriefers to write three books, *Stalin Means War* (1951), *Betrayal of an Ideal* (1954) and *Comrade X* (1956), but it was his information on missile development which proved to be the most useful. Quite what Tokaty-Tokaev told MI6 remains a matter of conjecture. He later told Nicholas Daniloff that he 'did not pass on what were regarded by the Soviets as secrets. General discussions, yes, but not details.' In the sixties, he was appointed head of the Department of Aeronautics and Space Technology at the City University, London.[48]

Tokaty-Tokaev proved to be the last major defector for many years. By 1950 the flow to the British had dribbled to only cooks, mechanics and low-ranking soldiers whose sole value was as 'talent spotters' – 'identifying those Russians and others whose defection would be valuable'. There was little further success in this area. While eighty-three Russians had come into the hands of British Intelligence during 1948, the following year the figure had dropped to twenty-eight, and by 1950 was down to a miserly seventeen. An analysis of the files on the defectors undertaken in the spring of 1951, by an officer 'who had been employed for the last five years on the interrogation of Soviet defectors', made depressing reading and called into question the extent of the 'valuable intelligence' gathered. The majority had belonged to lowly ranks in the Red Army and had fled to the West 'because of their association with German women'. Ideological defectors accounted for only 3 per cent of the total. For young, ambitious MI6 officers serving in Germany, such as John Taylor, 'the failure to attract defectors was heartbreaking'.[49]

While the flow of defectors had virtually dried up, a steady stream of German PoWs released by the Soviets made the long journey home. During the spring of 1949, the Joint Intelligence Bureau (JIB) employed eight German linguists at Bad Driburg, a small Westphalian spa town, and later at Herford, in a special unit interrogating the 'Dragon Returnees'. Fed and comfortably

lodged, they were questioned on what they might have learned of intelligence value to the Allies during their captivity. The range of JIB interests was wide, covering economic, industrial and technical intelligence. One of the interrogators, Denis Hills, was 'asked to concentrate on the work of German engineers who had been involved in Soviet rocket development, based on the V-2, notably in Krassnogorsk'. A team of German specialists and draughtsmen worked with the interrogators – 'without them, the quality and detail of our reports would have been immeasurably poorer'. Working under the JIB supervisor, Dr Stern, Hills's own German assistant was Dr Plessner, an expert on jet propulsion from Peenemunde.[50]

A year later, even the Dragon Returnees as a source of intelligence had become a mere trickle. More alarmingly, the exercise turned out to have been a complete waste of time and effort. When, in the mid-fifties, MI5's Peter Wright reviewed the files at the Defence Scientific Intelligence Unit in Northumberland Avenue, he discovered that no one at MI6 had bothered to process the material, which was 'stacked up in dozens and dozens of dusty volumes'.

Based on the limited intelligence at their disposal, the Allies assessed Soviet capabilities in the rocket field as being poor, but Werner von Braun warned that with the facilities available, the Russians would be able to construct a good team of experts. While the cream of the German rocket team had been recruited by the United States, and a number of key personnel had been denied to the Russians, the Soviet Union did have possession of the wartime production plant at Nordhausen which was still in reasonable condition. They had also managed to entrap into their employ a 'brilliant engineer', Helmut Grottrup, who headed the Soviet Institut Rabe – the cover name for the resumption of the Rocket Enterprise.[51]

The fact was that the prediction of capabilities and intentions in the Soviet rocket programme was full of uncertainty and continued to be so into the late fifties, when spy aircraft and later satellites made a massive advance in surveillance capabilities. MI6 'had little raw data to go on and based assumptions on the rate and state of Britain's own missile development', and the intelligence which Col. Tokaty-Tokaev had been able to supply. A good deal of the economic intelligence on which the development of weapons was based came from overt sources, while much was still provided 'by what the Germans had accumulated in terms of maps, aerial photographs and PoW interrogations'. The detailed reports on destination, equipment and inventories removed from locations such as Peenemunde at the end of the war were added to the reports of interviews with 'repatriated Germans who had worked on the Soviet missile programme'. One difficulty with these sources, Peter Hofmann found, was that 'their reports were often disparate and they were usually repatriated before production of any missiles began'. The large number of such reports did, however, provide 'a foundation for other sources to build on, including information on various rocket production and develop-

ment installations and the test stand at Kaputsin Yar', on the east bank of the Volga.[52]

The limited state of intelligence-gathering remained the same when, in September 1952, MI6 and the CIA held a major joint conference on 'Soviet Guided Missile Intelligence'. What was available was acknowledged as being 'based on the intelligence of early Soviet exploitation in Germany', most of which had come from Tokaty-Tokaev. The colonel informed the conference that: 'The immediate aim of the Soviets is to get a selection of reasonably effective guided missiles into service as soon as possible. They are prepared to accept relatively unsatisfactory weapons available today rather than wait several years for greatly improved designs. They will go for modifications which show some improvements and can be achieved quickly.' Hofmann notes that during the joint conference, as had been the case over the previous seven years, 'certain performance characteristics are assumed; given these characteristics, projections of various stages in the programme are made given whatever other intelligence information is available'.[53]

Throughout 1947, the JIC had repeatedly made the assertion that 'our intelligence about Soviet development of atomic weapons is very scanty'. An April 1948 JIC report, 'Sigint Intelligence Requirements', while obviously directed towards signals intelligence-gathering, had a wider focus which was also applicable to MI6. The JIC's 'Priority 1' targets, whose requirements reflected the JIC's 'future hopes rather than current capabilities', were:

1 Development in the Soviet Union of atomic, biological and chemical methods of warfare (together with associated raw materials).
2 Development in the Soviet Union of scientific principles and inventions leading to new weapons, equipment or methods of warfare.
3 Strategic and tactical doctrines, state of training, armament and aircraft of:–
   a) Soviet long-range bomber force.
   b) Soviet metropolitan fighter defence force.
4 Development in the Soviet Union of guided weapons.[54]

In the July 1948 report, 'Soviet Intentions, Interests and Capabilities', concerning atomic weapons, the JIC argued that: 'Existing estimates of the date when the Russians began their programme and their ability to overcome the technological difficulties involved suggest that they may possibly produce their first atomic bomb by January 1951 and that their stockpile of bombs in January 1953 may be of the order of 6 to 22.' This was a worst-case scenario and constituted 'the maximum possible based on the assumption that the Russian effort will progress as rapidly as the American and British projects had done'. The JIC officials did not believe that it would be capable of doing so. The Soviet Union, however, would take the same length of time as the

United States to build the atomic bomb; four years since the go-ahead was given for the all-out project in August 1945. This was a major intelligence failure and reflected MI6's inability to penetrate the Soviet government and administration at any level. In contrast, by the beginning of 1945, Soviet Intelligence 'had a clear general picture of the Manhattan project'. Klaus Fuchs had handed over all the reports prepared in the New York office of the British Diffusion Mission, while Alan Nunn May had even presented the Soviet embassy in Ottawa with microscopic amounts of uranium-235. The British never achieved such levels of success, and the JIC had to rely for its assessments on meagre scraps of intelligence.[55]

The JIC report acknowledged that

> the manufacture of atomic weapons demands not only a high standard of scientific knowledge and the application on a very large scale of difficult industrial techniques, but also the use of large quantities of Uranium. The most reliable present estimate that can be made of Russian progress indicates that the limiting factor is their supplies of Uranium. At the present time it is considered to be most misleading to attempt to forecast how much Uranium will be available to any Russian project beyond January 1952 since this depends on two unpredictable factors:
> a) the discovery within Russian-controlled territory of new high-grade deposits, which is believed to be unlikely, and
> b) the success the Russians will have in developing a practicable process for large-scale extraction of the small percentages of Uranium present in oil-shales, large deposits of which are available to them.

Earlier in 1948, the JIC received MI6 intelligence, apparently based on reports from their agents in the exile groups, that an enormous labour force was mining uranium ore at Aue in the Soviet Zone in Germany, near the Czech border. The Anglo-American 'Insecticide Committee' had been unable to stop the deal between the Czechs and the Soviets on the supply of uranium ore. The Americans, and almost certainly the British as well, sent agents recruited from the exiled Yugoslav National Committee, headed by Radovan Popvic, into Czechoslovakia to obtain information on the mines. Similarly, reports were received that in Bulgaria high-grade uranium deposits had been discovered by the Soviets using captured German documents. British and American Intelligence subsequently recruited agents from the Turkish minority in Bulgaria to penetrate the mining complex at Bukovo, in the Rodopi Mountains.[56]

Aware of the intelligence interest, the Soviet MGB used the opportunity to launch a deception operation, designed to conceal the existence of huge, newly discovered uranium deposits in the Urals. According to one of the

agents involved, Pavel Sudoplatov: 'A game developed in which some of these Turkish agents were fed with carefully inflated figures of the mines production.' Based on the Bukovo figure, the intelligence assessment was that the Soviet Union would not be able to obtain enough uranium to sustain any atomic project, or at least not until the fifties. In the end, the Soviet Union was to gain most of its uranium ores from the mines in the Urals and East Germany, which were to prove more productive than those in Czechoslovakia and Bulgaria.[57]

Whether these penetration operations were co-ordinated with the Americans is not clear because nuclear matters were one area of Britain's 'special relationship' with the United States where a full and frank intelligence exchange did not exist. During February 1946, the United States had been rocked by public revelations from the Igor Gouzenko affair in Canada about the extent of Soviet espionage within the wartime atomic programme. The result was that Congress passed the McMahon Act, which imposed drastic restrictions upon the exchange of atomic intelligence, making it an offence to divulge any information to foreign states, including Britain. As Alec Danchev notes in his study of the 'Very Special Relationship': 'The British badly underestimated the McMahon Bill which was very much a pattern in British atomic diplomacy.' The man chosen to try to break this impasse was Dr Wilfred Mann, who, in October 1948, was invited by 'the Admiral', Eric Welsh, to take over as the MI6 Washington representative of the Directorate of Atomic Energy, liaising with the CIA. Responsibility for collecting intelligence on atomic energy had been transferred in February 1947 from the 'Manhattan Engineer District' to the Central Intelligence Group, as the Nuclear Energy group within the Scientific Branch of the Office of Reports and Estimates, and then to the newly created CIA.[58]

In the late thirties, Mann had worked with Niels Bohr in Copenhagen. During the war, he was employed by the Ministry of Supply in the Directorate of Tube Alloys, but did not take part in any nuclear work, being involved, instead, in the general area of Scientific Research and Development. From the end of 1941, he liaised with the Russian trade delegation and from the spring of 1943 served as a physicist with the British Central Scientific Office (BCSO), exchanging information with the Americans in Washington, where Eric Welsh's representative, the leading British scientist James Chadwick, also had an office. For his contribution to the war effort, Mann received the Medal of Freedom. After hostilities ceased, the BCSO became the British Commonwealth Scientific Office, where Mann dealt with classified matters covering a wide range of scientific issues but, again, not nuclear physics. During the autumn of 1945, he returned to teaching at Imperial College in London, and during the following April was offered the post of Principal Scientific Officer in the new Directorate of Atomic Energy, a branch of the Ministry of Supply that had taken over the responsibilities of Tube Alloys.

In July 1946, Mann was posted to the National Research Council (NRC) of the Canadian Atomic Energy Project laboratories, at Chalk River, and, within a month, became UK representative on the United Nations' Atomic Energy Commission Scientific and Technical Committee, which considered the control of atomic energy.[59]

Before taking up the liaison post, Mann consulted in London with the highly secretive 'special group' responsible for atomic intelligence within the Directorate of Atomic Energy. It was headed by Welsh, who retained his reputation for deviousness to the extent that he even excluded the Chief Scientific Adviser in the MoD, Henry Tizard, from his deliberations. In Washington, Welsh introduced Mann to the local MI6 representative, Peter Dwyer, 'a witty and congenial colleague with a good sense of humour'. An Oxford graduate from an artistic family, Dwyer had worked for Fox Films and Movietone News in the thirties before being recruited by MI6, in 1939, to work in Paris. Then, after the fall of France and a period as head of station in Panama, he was posted to Washington as a South American expert for the British Security Co-ordination (BSC), where he was regarded as 'one of its better people'. Kim Philby, who took over from Dwyer, soon discovered that he had 'a great deal more to him than just wit'. A skilled counter-espionage officer, Dwyer was responsible in 'a brilliant piece of analysis' for identifying atomic bomb spy Klaus Fuchs, after narrowing the investigation down to two scientists, Dr Rudolf Peierls and Fuchs.[60]

Dwyer warned Mann that his posting would be difficult as the previous incumbent, Gordon Baines, had been turfed out of his office in the CIA headquarters, telling colleagues that such liaison was no longer worthwhile. The special nuclear energy group in the CIA continued to be completely fettered by the restrictions of the McMahon Act and members, who took precautions not to be seen talking to him in public, warned Mann that the relationship was now cold. Although personal relations remained cordial and friendly, there was no co-operation on the American side in transferring information for fear that their own group might be disbanded. He was, however, able to broker a small intelligence exchange.

In possession of a small number of deciphered Soviet intercepts relating to their atomic bomb experiments, Mann, who was known within the British embassy as 'the atomic bomb', was able to give the 'voraciously eager' Americans raw and processed intelligence reports. In return, he received from the Atomic Energy Commission – the body responsible for all nuclear developments in the US, both military and civil – non-restricted technical information, which Mann thought 'only just made the task tenable'. The lack of real co-operation created substantial difficulties in trying to predict the timescale for the production of a Soviet bomb, which was MI6's prime concern.[61]

On 29 August 1949, to the shock of British Intelligence, the Russians exploded their atomic bomb. An American WB-29 of the long-range detection

project, 'Snifden', had returned from a 'weather' flight near Kamachatka, in the Soviet far east, to its Pacific Ocean base with evidence of the bomb's detonation. As a member of a small, secret team, Mann attended the White House 'war room' where, in a hurried briefing, 'I learned that a radioactive cloud had been detected and then followed by the US Air Force from the Pacific, across America and to the eastern shores of the Atlantic'. There had been, it would appear, considerable deliberation about informing Britain because of the provisions of the McMahon Act. Although a 'Modus Vivendi' had been drafted in January 1948 whereby the Americans made concessions on the release of atomic energy information in return for Britain releasing more of its uranium stockpile and rescinding its wartime veto on use of the bomb, leading US officials in the atomic energy field ensured that information remained restricted.[62]

On 5 September, Dick White, the deputy director and head of counter-espionage at MI5, called Michael Perrin (deputy controller-general of Atomic Energy, Technical Policy, at the Ministry of Supply) to his office. Perrin, whose colleagues at Tube Alloys had thought little of his scientific ability and advice on nuclear policy, was well known in Whitehall and 'moved with perfect ease in the committee rooms and club dining rooms where so much of the business of government was done'. He had a reputation for 'efficiency and discretion, if not great flair', and if someone needed to be consulted about a delicate matter relating to atomic energy, Perrin was the natural choice. White handed Perrin a transcript and a FBI report that showed that a British scientist had leaked information to the Soviet consulate in New York about the Manhattan Project. Perrin instantly realised that the culprit was Klaus Fuchs.[63]

Such news might have stopped all Anglo-American co-operation, but five days later there was a cross-Atlantic top-secret teletype discussion with Perrin and Welsh in the American embassy in London about the 'radioactive cloud' which was now drifting towards Europe. Menzies and MI6 agreed to co-operate and quickly dispatched to Washington radioactive fall-out samples which a RAF Halifax from Aldergrove airbase, near Belfast, had managed to gather over the Atlantic.[64]

On 18 September, Menzies took Perrin to see the Prime Minister at Chequers to brief him on the latest developments. Using Peter Dwyer's secure channel to Menzies, President Truman cabled the news that they had 'ninety-five per cent proof' that the Soviets had detonated a nuclear device. On the 23rd, Truman, who remained sceptical to the last that the Soviets had the enormous capability required to construct a bomb, publicly announced there was 'evidence that within recent weeks an atomic explosion occurred in the USSR'.[65]

The former wartime liaison officer between the American agencies and the BSC, Ernest Cuneo, left a sensational claim among his personal papers.

He asserted that the former head of the BSC, Sir William Stephenson, informed him that the Soviet Union would explode its first atomic bomb 'on or about 27 September 1949'. 'When Sir William gave me this staggering information on 18 February 1948 – a year and a half in advance of the event – I asked him how good the source was. He answered: "Triple A, Triple 1". I asked the question which never should be asked: Exactly how do you know? "We have a little window," Sir William said. Moles were then called "little windows".' Cuneo claims that he transmitted the information to 'US authorities'. It seems extremely unlikely – no other such evidence has come to light – and the fact remains that MI6's inability to predict accurately the Soviet Union's possession of the bomb constituted a major intelligence failure.[66]

Hitherto, the chiefs of staff had accepted the advice of the JIC that the Soviets might achieve an atomic capability by the early fifties, probably in 1952. Overnight all the intelligence and military and political assessments by the military and politicians became redundant. Fears were exacerbated by the Klaus Fuchs atom bomb spy trial in January 1950, after which the chiefs concluded that Soviet atomic development was now 'much more advanced than it was thought to have been'. It had been assumed until that point that Russia's vast superiority in conventional forces – itself a gross overestimate and another major intelligence failure – was no longer balanced by America's sole possession of the nuclear threat. The chiefs 'reflected with discomfort upon Britain's position now that a nuclear armed adversary might quickly reach the Atlantic seaboard in a future war'.[67]

The failure led to a greater degree of co-operation between Britain and the United States on atomic intelligence and the restrictions of the McMahon Act were tentatively loosened during 1951, but fuller disclosures had to await a revision of atomic agreements in 1958. Mann, though, was involved with a series of discussions in London on joint efforts to assess Soviet nuclear production capabilities which led, at the beginning of the year, to MI6 and the CIA correlating their estimates. Nevertheless he felt that his efforts had been thwarted by the arrival in Washington, in October 1949, of the new MI6–CIA liaison officer, Kim Philby: 'My immediate reaction when I learned later of his defection was to feel that all the work I did during the eighteen months that we were together had been an almost complete waste of time.'[68]

Mann left Washington in April 1951 and returned to Shell Max House where he represented the Directorate of Atomic Energy at the fortnightly meetings of the Cabinet Advisory Committee on Atomic Energy, chaired by Sir Roger Makins. Finding the post of a temporary civil servant 'unfulfilling', he resigned to take a position with the National Bureau of Standards in Washington. Perrin also left in the summer, depleting MI6's limited expertise in the field of atomic intelligence. In Washington, Mann was replaced as attaché by Dr Robert Press, who had joined the Directorate of Atomic Energy in 1948.[69]

Until his death in 1954, MI6's atomic intelligence-gathering remained in the hands of Welsh, who, senior MI6 officers eventually concluded, was 'a complete charlatan'. For a decade he had been able to hoodwink the different departments and the Americans over the nature of his 'hush-hush' work. George Young, who undertook a review of Welsh's work, discovered that 'he did his best to impress the US Atomic Energy Authority (AEA) that his work for "C" was too delicate to be revealed, while his MI6 colleagues were told that this applied to his AEA liaison: if need be his confidential exchanges with the Americans were invoked as a further excuse . . . In fact, MI6 intelligence on Soviet nuclear development was practically nil.'[70]

CODA: DECEPTION

In parallel to the quest for scientific intelligence were operations based on 'scientific deception'. The vehicle for these activities was the London Controlling Section (LCS), a highly secret department in the offices of the War Cabinet involved in deception planning. Working in wartime on strategic matters as part of the Joint Planning Staff (JPS), its aim had been to divert enemy resources away from planned Allied operations and to direct them against imaginary operations devised by LCS officials. This had involved such famous operations as 'The Man Who Never Was' and 'Monty's Double'.

The C-in-C Middle East, Field Marshal Sir Archibald Wavell, had outlined the LCS modus operandi in a memorandum – 'Aids to surprise with particular Reference to Deceiving, Mystifying and Confusing the Enemy on the battlefield'. The ruses included 'false information or disguise', 'feigned retreat', 'encouragement of treachery' and 'weakening of the enemy's morale'. He foresaw the importance of 'signals deception' and the need for intelligence on the enemy's thinking. Essential to successful deception was secrecy, which required that participants were not always aware of the motives behind an operation. This was a 'separate war' of political and psychological warfare for 'professionals', which meant MI6.[71]

When, in September 1945, LCS controlling officer Col. John Bevan left, it seemed that the deception agencies had been disbanded. The chiefs of staff, however, decided to allow the LCS to continue in peacetime on 'a care maintenance basis', with the 'objective of maintaining a reservoir of the specialist skills and knowledge learned during the war'. Bevan's successor, Col. Ronald Wingate, a former member of SOE and JPS, kept it alive by holding dinner parties at his club for former members. He ensured that the mysteries of deception remained secret by getting LCS members 'to swear never to discuss publicly what it was they had done', since 'we might have to take on the Russian General Staff'.[72]

Situated in Churchill's former war rooms, the postwar LCS worked closely with the chiefs of staff, MI6, MI5 and a number of scientific advisers. In 1947,

John Harvey-Jones of Naval Intelligence, who had qualified as a Russian interpreter from the special course at Downing College, Cambridge, joined the LCS. He found it 'a pale shadow of past glories', consisting of just 'three of us', the victim of the 'decentralisation of British deception capabilities'. Resources were 'parcelled out' to other departments, such as MI6, 'as the need or opportunity arose'. It was not an entirely happy experience as Harvey-Jones discovered that there was no overall or central direction, but this did not 'preclude endless and bitter inter-service warfare, which seemed to take precedence over the common goal of resisting the onward march of Russian influence'. Despite this, he believed that 'the work I was doing was worthwhile'.[73]

In mid-1950, another chiefs of staff review of the LCS recommended that 'the technique of deception, suitably modified to present conditions, could play a useful role in our defence preparations'. It was put on an operational basis in a Cold War context and renamed the Directorate of Forward Plans (DFP). A centre for the study of operational physical, radio and intelligence deception techniques, the Visual Inter-Service Training and Research Establishment (in 1951 it changed its name to the Joint Concealment Centre), was set up to work under the overall direction of the DFP. Responsible for strategic deception, the DFP operated on a worldwide basis and had eight officers – five in London, one in the Middle East and two in Singapore.[74]

Key staff included John Drew, who during the war was employed by the deception 20 Committee and after in the Cabinet Office. In 1951, he took charge of intelligence issues and cover plans in the MoD, and had direct access to MI6 headquarters. Noel Wild had run black propaganda operations for the Political Warfare Executive and later headed SHAEF's own inter-Allied deception staff. Engaged postwar in 'unspecified intelligence duties', he was posted to Greece with the British Military Mission and then to the War Office, before being seconded to MI6. From 1950, Wild advised the chiefs of staff on subversion and counter-insurgency. He believed that 'Soviet activities and finance were behind many of the troubles at home and abroad' and that 'many contemporary troubles were the work of communist agitators'. Brig. Dudley Clarke was 'an expert in unorthodox warfare and clandestinity', who had founded the Middle East A-Force. An operational 'genius', he had taken charge of Gen. Eisenhower's deception section at SHAEF for the invasion of France. In the postwar years, Clarke remained 'as mysterious and impenetrable as ever, and was rarely heard or seen outside his small circle'. Head of public opinion research at Conservative Central Office, in 1952 he joined the DFP to work with MI6's own deception unit and helped advise the Australian Secret Intelligence Service on deception techniques.[75]

Harvey-Jones did not share his colleagues' views on the machinations of the Soviets. He recalled that time after time, 'we would ascribe to the Russians degrees of premeditation and intricate organisation of interrelated but dispar-

ate events, in widely disparate parts of the world, that we, with all our sophistication, would have been hard put to pull off'. No account was taken of 'the deeply ingrained patterns of behaviour and the all-embracing bureaucratic nature of the Soviet regime which made such intricacies nearly impossible'. He thought that 'their aim was to start to rebuild their homeland, ravished and devastated as it was. Given the poverty of their resources, the ineffectiveness of their organisation and the size of their task, it was obvious that they had more than enough to do for many years to come.'[76]

But what did the peacetime DFP actually do? At a low level, we know that the services were involved in the radar camouflage of equipment and the use of decoy lighting, but at a strategic level little is known. We can only speculate at what 'resisting the onward march of Russian influence' actually meant in practice. Churchill expected the DFP to 'confuse and mislead' the KGB and 'to put ourselves in a position to do this if war comes'. Wild and Harvey-Jones give the impression that the DFP used its expertise to monitor and unravel alleged Soviet deception operations. In 1945, a leading wartime operator, author Denis Wheatley, suggested that 'in peacetime, after the great reduction of our forces, military deception would be almost valueless in persuading our potential enemies that Britain was to be feared'. But it could be done, he argued, by 'scientific deception'.[77]

Wheatley envisaged creating a dummy secret base which would be visible to reconnaissance aircraft. It would subsequently be leaked that the base 'possessed a new scientific weapon of great power – perhaps one which would enable us to bombard Moscow with atom bombs – then not considered possible – or something of that kind'. The chair of the chiefs of staff committee, Dickie Dickson, thought the idea 'sound', and it may be that something similar was put into practice. When recalling MI5's use of émigrés during the fifties for deception purposes, Peter Wright revealed that 'an entire department of the Foreign Office' provided MI5 with 'chicken feed' to be given to double agents to pass on to the Russians. According to Wright, it consisted of 'wholly unbelievable faked secret documents about weapons we did not have, and policies we had no intention of pursuing'.[78]

The obvious area for using scientific deception was, as Wheatley envisaged, nuclear weapons. As Brian Cathcart, author of a history of *Britain's Struggle for the Atom Bomb*, has written, 'somebody was duped' about the true state of British weapons development. And, on Cathcart's evidence, it was the British public first, and then perhaps the Russians. It is entirely possible that deception was aimed at three particular areas – one, to hide the fact that Britain was building the atomic and then the hydrogen bomb; two, to suggest that Britain had more bombs than it actually had; and three, that its nuclear arsenal was an 'independent deterrent'.[79]

The decision to go ahead with Britain's atomic bomb was taken at the Cabinet Committee Gen 75 on 25 October 1946, when Attlee and Bevin deter-

mined that the country should have an 'independent nuclear deterrent'. The Foreign Secretary exclaimed: 'We've got to have a bloody Union Jack flying on top of it.' The determination to embark on this 'grandiose folly', which cost £100 million, was, Anthony Verrier believes, 'governed by a belief in national prestige and international status, coupled with a marked, if veiled, distrust of the United States. Britain's atom bombs were not built primarily to deter the Soviet Union, but to reinsure against an American failure to do so.'[80]

It is now known that the number of nuclear bombs that Britain possessed in the fifties was much lower than the figures bandied around. A chiefs of staff sub-committee undertook a consideration of the requirements to counter a Soviet nuclear threat which was expected to emerge by 1957. It estimated that this would require two hundred nuclear warheads, but this was never achieved. There was only enough plutonium to produce fifteen to eighteen bombs annually from 1951 onwards and, as Peter Malone discovered, this proved to be an overestimate. This makes a mockery of a 1956 estimate in the *Guardian* – which, of course, may have been the result of a deception – which suggested that Britain's stockpile was 'at least a thousand'. Similarly, the United States had very few bombs – perhaps 'five or six' – in the immediate postwar period, though a production drive may have pushed the figure up to fifty by the end of 1948, when B29s arrived in East Anglia, providing a near-permanent nuclear presence on British soil. Details of the US store were probably passed on to Moscow by Donald Maclean, who was in a perfect position to help his Soviet controllers with the tonnage of uranium bought by the Americans. In turn, the Soviet Union probably had a stockpile smaller than fifty up to mid-1953, when the first series-production bombs entered the nuclear arsenal.[81]

The Macmillan government, in particular, is revealed to have been 'extremely economical with the truth in its statements about nuclear matters'. Declassified US files from the early sixties show that the British government's claim that its nuclear deterrent was 'independent' had little basis in fact. In the immediate aftermath of the 1958 US–UK agreement on the exchange of nuclear information, British scientists at Aldermaston were handed a carbon copy of the design for the US warhead for the Polaris missile. Historians' accounts have always stressed that the Polaris warhead was British-designed, one of the key factors that made the missile 'independent'. As Mark Urban has revealed, 'few secrets of the Anglo-American special relationship were more sensitive than Britain's dependence on American help in building its atomic bombs. Washington and Whitehall conspired to keep the secret from a British public which might have questioned the "independent" status of the bomb.'[82]

We now know that the British 'H-bomb' exploded in the South Pacific in 1957 was not, in fact, a genuine hydrogen bomb but a very big A-bomb

supplemented with hydrogen fuel. The first hydrogen bombs had failed to meet expectations and the tests left the scientists deeply disappointed. The government, though, had boldly declared them a great success and, in order to retrieve the situation, the so-called H-bomb test was organised as a deception. The Americans were not deceived by Macmillan's sleight of hand, suggests Professor John Bayliss, but the Russians probably were. He adds: 'If deterrence was a psychological game, Britain had its part to play in emphasising, perhaps even exaggerating, the disastrous consequences of aggression.' Which is precisely how Denis Wheatley had envisaged the role of the LCS in peacetime.[83]

In July 1951 the Cabinet Secretary, Sir Norman Brook, warned Prime Minister Clement Attlee of intelligence fears that Russian agents could arrive in London with suitcases full of kits to make an atomic bomb, which could be put together in a garage. Based on meagre intelligence, a great deal of speculation and amid fears of what the Soviets might be capable of, it was a perfect example of the problems faced by, and failures of, scientific intelligence-gathering and analysis in the late forties and early fifties. Failure was masked by disinformation and deception.

A Tube Alloys analysis stated that

> an atomic bomb might be broken down into a number of parts and introduced into this country in about 50 small packages of moderate weight. None of these packages could be detected by instruments as containing anything dangerous or explosive, and even visual inspection of the contents would not make identification certain. The bomb could subsequently be assembled in any premises with the sort of equipment usual in small garages provided that a small team of skilled fitters was available.

Quite rightly, Attlee appears not to have been unduly concerned. This same scenario was publicised by the intelligence services in the seventies, when stories suddenly appeared in the press about Soviet special forces, Spetznaz, and when world terrorism was at its peak. The scenario resurfaced again in the mid-nineties following stories, which proved to be untrue, about the alleged sale of weapons-grade plutonium from the states of the disintegrating former Soviet empire.[84]

Masters, p. 26. Returning to Zurich as vice-consul in 1950, Edge Leslie later served undercover as a visa officer in Vienna in the mid-fifties.
17 & 18. Palumbo, pp. 30–1 & 102; Herzstein, pp. 169 & 173.
19 & 20. I, 2.11.89 & 14.3.94; Jack Saltman, *Kurt Waldheim: A Case to Answer?*, Channel Four/Robson, 1988, pp. 18–21 & 129; Herzstein, pp. 282–3.
21–23. MoD review of results of investigation and involvement of Lieutenant Waldheim, HMSO, October 1989; I, 2.11.94. The British refused access to the report which was found in the CIA archives. T, 24.5.88; Herzstein, pp. 156 & 189–93; Palumbo, pp. 52 & 99.
24. Palumbo, pp. 108 & 134; Aarons/Loftus, p. 266.
25 & 26. *Lobster*, No. 19.
27. Robert Knight, *British Policy toward Occupied Austria, 1945–50*, PhD thesis, London University, 1986; Herzstein, p. 193; WP, 30.10.86; Palumbo, pp. 52, 83 & 103–7.
28. Shepherd, pp. 269–70.
29. WP, 30.10.86; *Searchlight*, No. 140, February 1987.
30. Christopher Simpson, *The Splendid Blonde Beast: Money, Law and Genocide in the Twentieth Century*, Grove Press, NY, 1993, pp. 256 & 274–7.
31. T, 31.3.88; I, 2.11.89.
32. Blake, p. 7; Nicholas Elliott, *With My Little Eye: Observations on the Way*, Michael Russell, Norwich, 1993, p. 41.
33 & 34. Blake, p. 9; Bower, *Spy*, p. 180; Peter Wright, *Spycatcher*, Heinemann, Australia, 1987, p. 156; statement by Peter Stanswood, RMP, given to John MacLaren, 23.6.88; David C. Martin, *Wilderness of Mirrors*, Ballantine (pbk), NY, 1981, p. 75.
35 & 36. Bower, *Spy*, p. 178; Blake, p. 14; T, 24.11.95.
37. The official CIA history of the project contained within 'Berlin Tunnel' was declassified in 1977. The claim that Nelson failed to inform the British of a major technical advance which enabled messages to be monitored not only in their encoded form but as a 'clear' text is untrue. Bower, *Spy*, p. 180; Blake, p. 6; Martin, pp. 74–6; Grose, pp. 396–7; M. Smith, p. 116.
38. Vienna was a choice posting during the fifties. Experienced staff stationed there included Maurice Firth (1955–6), who headed R6 and was a close friend of the CIA's James Angleton, his deputy, Geoffrey MacBride, from the Control Commission in Germany, and third secretary Hamilton 'Ham' White. Regarded as 'too unconventional for his own good', Whyte lived 'dangerously', believing that 'calculated indiscretion is the indispensable secret of success in the information field'. Rejoining the Foreign Office, he had a successful career in the Information Services (obits: I, 23 & 27.7.90). Nicholas Elliott took over the station in late 1957 with Cyril Rolo as deputy and Donald Prater as head of the visa section. Elliott relied on his friend Edge Leslie, who had returned to the City as Second Secretary, for advice on the Austrians, as he found 'it difficult, most especially during negotiations or discussions with the Viennese, to get down to practicalities. There were delays everywhere and the bureaucratic machinery as a whole was frustrating at all levels.' Alston was listed in 1958 as 'Civil Assistant at the War Office', i.e. MI5. Virginia Cowles, *The Phantom Major: The Story of David Stirling and the SAS Regiment*, Fontana (pbk), 1960, pp. 114–15 & 309; Anthony Cavendish, *Inside Intelligence*, Palau Publishing (priv. pub.), 1987, pp. 64–71; West, *Faber Book of Espionage*, pp. 547–8; G, 23.2.81; Elliott, *Umbrella*, p. 161.
39. Blake, p. 13.

CHAPTER TEN: ROCKETS, BOMBS AND DECEPTION

1 & 2. R.V. Jones, *Reflections on Intelligence*, 1990, p. 17; Alec Danchev, *Very Special Relationship*, 1986, pp. 99–108; Danchev in Aldrich, p. 235; Arnold Kramish, *The Griffin*, Macmillan, 1986, p. 251.
3–8. Kramish, pp. 91–2, 103 & 182; West, *Friends*, p. 23; R.V. Jones, *Most Secret War: British Scientific Intelligence 1939–1945*, Coronet (pbk), 1979, pp. 269, 394, 595, 603, 621–5 & 648; Thomas Powers, *Heisenberg's War: The Secret History of the German Bomb*, Cape, 1993, pp. 283, 364, 524 & 543.
9. Richard Aldrich and Michael Coleman, 'The Cold War, JIC and British Signals Intelligence, 1948', INS, Vol. 4, No. 3, July 1989.
10. PRO AIR 2/12027, 16.6.45.
11 & 12. The British Intelligence Objectives Sub-Committee replaced CIOS in the British Zone in Germany when SHAEF was disbanded, but it 'was little more than a

token gesture'. Chronically underfunded, it remained controlled by the War Office and JIC with the result that its industrial reports were bizarrely classed as official secrets. The CIOS representative on the American Field Information Agency (Technical) (FIAT) was Brig. Raymond Maunsell, former MI5 officer and head of Security Intelligence Middle East (SIME) before moving in 1944 to counter-intelligence duties at SHAEF. Maunsell put obstacles in the way of British industrialists who wanted to study German technology. Even though the head of the Federation of British Industries was Sir George Nelson, a former MI6 member of the Z-Network and director of SOE, obstacles remained, and industrialists failed to take seriously German advances in so many fields. After Germany, Maunsell directed Unilever's Information Division (1948–63). Bower, *Paperclip*, pp. 76, 86–8 & 214–17; Cesarani, p. 149; Simpson, *Blowback*, pp. 25–6.

13–15. James McGovern, *Crossbow and Overcast*, William Morrow (pbk), US, 1964, pp. 13, 100–1 & 152–4.

16. PRO FO 1032/565.

17. Kramish, p. 166; West, *Friends*, p. 23; Leslie Groves, *Now It Can Be Told: The Story of the Manhattan Project*, Da Capo, NY, 1983, pp. 170–1.

18. Powers, pp. 416–17; David Holloway, *Stalin and the Bomb: The Soviet Union and Atomic Energy 1939–1945*, Yale University Press, 1994, pp. 108–11 & 174.

19 & 20. Powers, pp. 419–20, 428 & 435; Jones, *War*, pp. 600–1; Glees; Kramish, p. 168; Bower, *Paperclip*, pp. 148–9. For the transcripts see *Operation Epsilon: The Farm House Transcripts*, University of California Press, 1993.

21–26. H. Kay Jones, *Butterworth: History of a Publishing House*, Butterworth, 1980, pp. 84, 119–22 & 130–2; Tom Bower, *Maxwell: The Outsider*, Aurum, 1988, pp. 41–2; ST, 5.10.69; *Izvestiya*, 22.12.68; Betty Maxwell, *A Mind of My Own: My Life with Robert Maxwell*, Pan (pbk), 1995, pp. 319 & 343; Joe Haines, *Maxwell*, Futura (pbk), 1988, pp. 134–8; Kramish, p. 250; Peter Thompson and Anthony Delano, *Maxwell: A Portrait of Power*, Bantam, 1988.

27. Kay Jones, p. 133; information from Desmond Bristow; Tom Bower, *Maxwell: The Final Verdict*, HarperCollins, 1996, pp. 170–4. Until the mid-fifties, Rosebaud and Maxwell remained close. Rosebaud died in January 1963; the Dutchman van den Heuvel died in April 1963, aged seventy-eight. It seems that as he lay dying in August 1963, Hambro ordered his secretary to burn all his secret papers.

Sir Charles Hambro was joint head with the former chiefs of the BSC, Sir William Stephenson, and the OSS, 'Bill' Donovan, of the World Commerce Corp (WCC). Set up in 1946, the Panama-based WCC was intended as a 'bridge over the breakdown in foreign exchange and to provide the tools, machinery, and "know how" to develop untapped resources in different parts of the world', particularly re-equipping German industrial plant. A director claimed that 'if there were several WCCs, there would be no need for a Marshall Plan'. There was also an intelligence role. Stephenson's BSC deputy, John Pepper, succeeded him as Chair, while on the board were OSS officers Richard Sicre and William Horrigan. Sister corporations included the Transamerica Corp. under James F. Cavagnaro and the British-American-Canadian Corp., chaired by Hambro with former MI6 officer Sir Rex Benson and former US Secretary of State Edward Stettinus. Under its vice-president, Satiris 'Sonny' Fasboulis, who was linked to a number of Mafia-related scandals, Commerce International (China) sponsored military assistance to Taiwan.

28. Glees.

29 & 30. Bower, *Paperclip*, pp. 151, 179 & 192; Holloway, pp. 110–11.

31. The illusory rockets may indicate the beginnings of UFO stories. In the late forties, US Project MOGUL used high-altitude balloons to monitor possible fall-out from Soviet atomic explosions. Debris from one crashed balloon was said to be the basis for the infamous 'Roswell incident' in July 1947, which led to allegations of a cover-up. Interestingly, the US Air Force admitted that it had made up stories as part of deception operations to hide the fact that their secret spy planes had been spotted. T, 29.7.95; I, 4.8.97; Bower, *Paperclip*, pp. 113 & 194; PRO BoT 211/60 (DCOS 46) 27, 11.9.46.

32. M. Smith, p. 111; PRO CAB 81/93, 81/134, FO 1032/1271A & 1032/1231B.

33. After the war the Committee on Chemical Warfare focused on nerve agents as future weapons. There was no mass production, but 71,000 captured German bombs containing the agent Tabun were

brought to Britain for experimentation and used as weapons. In 1951 approval was given for the production of 10,000 devices and the Nancekuke facility at Portreath opened for pilot production of nerve agents, though stocks for offensive use were destroyed by 1957. British 'Declaration of Past Activities Relating to Its Former Offensive Chemical Weapons Programme' for the Organisation for the Prohibition of Chemical Weapons (OPCW), May 1997; Linda Hunt, *Secret Agenda: The United States Government, Nazi Scientists and Project Paperclip, 1945–1990*, St Martin's Press, NY, 1991, pp. 13, 163 & 177; Robert Harris and Jeremy Paxman, *A Higher Former of Killing: The Secret Story of Gas and Germ Warfare*, Triad/Paladin (pbk), 1983, pp. 139–44.

34–36. Glees; Hunt, pp. 35 & 127; Bower, *Paperclip*, pp. 341–2.

37 & 38. McGovern, pp. 187–9 & 201; West, *Friends*, p. 24.

39. Hunt, pp. 28–9.

40 & 41. Bower, *Spy*, pp. 210–11; West, *Friends*, p. 25.

42. Lawrence Freedman, *US Intelligence and the Soviet Strategic Threat*, Macmillan (pbk, 2nd ed.), 1988, p. 68.

43. G.A. Tokaty-Tokaev, *Stalin Means War*, Harvill, 1951, p. 149; Bower, *Paperclip*, pp. 149 & 171–2; Nicholas Daniloff, *The Kremlin and the Cosmos*, Knopf, NY, 1972, p. 50.

44. Heinz Conradis, *Design for Flight: The Kurt Tank Story*, Macdonald, 1960; Hunt, pp. 14, 149, 156 & 178.

45. Bower, *Paperclip*, pp. 269–71; G.A. Tokaty-Tokaev, *Comrade X*, 1956, p. 357.

46. West, *Friends*, p. 25; Wesley K. Wark, 'Coming in from the Cold: British Propaganda and the Red Army Defectors, 1945–1952', *The International History Review*, IX, 1, Feb. 1987.

47. 'IRD: Origins and Establishment of the Foreign Office's Information Research Department, 1946–48', p. 10; PRO FO 371/71713; IRD Digest #5, 4.9.48.

48. W. Scott Lucas and C.J. Morris, 'A very British crusade: the Information Research Department and the beginning of the Cold War', in Aldrich; PRO FO 371/77609 N135/1024/38 & N553/1024/38; SE, 2, 9 & 16.1.49. Daniloff, pp. 52 & 228, has an interview with Tokaty-Tokaev.

49. Wark; PRO WO 216/731; BAOR, 8.5.51; Bower, *Spy*, p. 211.

50. Denis Hills, *Tyrants and Mountains: A Reckless Life*, John Murray, 1992, pp. 146–7; Wright, pp. 115–16.

51. McGovern, pp. 101–2.

52 & 53. Peter A. Hofmann, 'Making National Estimates During the "Missile Gap"', INS, Vol. 1, No. 3, Sept. 1986, citing CIA document, 'A Summary of Soviet Guided Missile Intelligence', US/UK GM4–52, 20.7.53 (DDRS (75)5–I).

54. Aldrich/Coleman.

55. JIC (48) 9 (0), 'Russian Interests, Intentions and Capabilities', 23.7.48, L/WS/1/1173, India Office Library and Records; Holloway, pp. 104–5. Fuchs's self-same notes which he handed over to his Soviet controller were also presented to his colleagues in his adopted country, Britain, to provide vital early assistance to the British atomic bomb programme.

56. Jiri Kasparek, 'Soviet Russia and Czechoslovakia's Uranium', *The Russian Review*, No. 2, 1952; Linklater *et al.*, p. 211; Aarons, p. 145; Holloway, p. 111.

57. Pavel Sudoplotov, *Special Tasks*, 1994, pp. 198–9.

58. Arthur B. Darling, *The Central Intelligence Agency*, 1990, pp. 161–5.

59 & 60. Dwyer retired to Ottawa, where he became head of reporting of the secret Canadian Communications Branch, which as an undercover arm of the National Research Council was responsible for signals intelligence, in particular monitoring Soviet signals. In 1952 he was made Chair of the Security Panel Sub-Committee of the Privy Council, which looked at security cases in the civil service. He retired in 1958. John Sawatsky, *Men in the Shadows: The RCMP Security Service*, Totem (pbk), Toronto, 1983, pp. 120–1; David Stafford, *Camp X*, Mead, Dodd, NY, 1987, pp. 261–2; Wilfred Basil Mann, *Was There a Fifth Man?: Quintessential Recollections*, Pergamon Press, 1982, pp. 60–3.

61. Baines emigrated to Canada, where he took up an administrative post with the NRC at Chalk Farm. Mann, pp. 63–4; Brown, *Treason*, p. 399.

62 & 63. Mann, p. 67; Aldrich/Coleman; Brian Cathcart, *Test of Greatness: Britain's Struggle for the Atom Bomb*, John Murray, 1994, pp. 98–9 & 109; Paul Lashmar, *Spy Flights of the Cold War*, Sutton, Stroud, 1996, p. 38.

64. H. Montgomery Hyde, *The Atom Spies*, Sphere (pbk), 1982, pp. 143–4; Mann, p. 68.

From the end of the war until the Soviets exploded their first atomic bomb, British RAF reconnaissance pilots 'had been flying missions along the borders of all the Eastern bloc countries, systematically violating their airspace with a fast-dash foray whenever they thought they could get away'. During 1947–8 the RAF's 192 Squadron flew a series of experimental SIGINT missions over the Middle East, the Baltic and East Germany. In September 1948 Lancaster and Lincolns flew from Hibbaniya, in Iraq, along the Soviet border. Anthony Verrier claims that while stationed in Turkey, 'Philby served his Russian masters with his usual obtrusive skill', with the RAF losing 'at least one aircraft on the Turkish–Russian border in consequence'.

65. Holloway, p. 265.

66. Thomas Earl Mahl, '48 Land', PhD thesis, Kent State University, Aug. 1994.

67. Bower, *Spy*, p. 105. Aldrich/Zametica, pp. 362–3.

68 & 69. During the sixties, Dr Robert Press was appointed Assistant Chief Scientific Adviser to the MoD on nuclear matters. Mann, pp. 70, 74, 87.

70. *Lobster*, No. 19.

71. Anthony Cave Brown, *Bodyguard of Lies*, Star (pbk), 1977, pp. 46–7, 344 & 804–7; CoS (45)564(0), 220th Mtg (6) & 233rd Mtg (7); Julian Lewis, *Changing Directions*, 1988, pp. 238–9.

Brown writes that 'the spirit and methodology of the LCS would live on ... and return to haunt the western Allies. The British had been extremely careful to reveal to the Russians only as much of the deception machinery as was necessary.' In July 1944, the LCS representative in Moscow told John Bevan that the Russians 'distrusted and hated the whole thing ... We know from their treatment of [D-Day deception] that they have no special organisation comparable with yours.' He added that 'their machinery for the execution of global deceptions was slow and cumbersome' and was unlikely 'to divert brain-power to this specialised form of warfare' (Overlord file of the US Military Mission to Moscow, Bolton to Bevan, 19.7.44, MMR, NR). Brown claims, however, that the Russians 'soon established a massive deception organisation of their own'. Defector Anatoli Golitsyn did make such claims in the early sixties with regard to the Sino-Soviet split, but his testimony has largely been discredited. Soviet security agencies, basing their techniques on the success of the twenties 'Trust' and using exile groups, did develop masterly localised deceptions operations in the Baltic, the Ukraine and Poland against western intelligence agencies. Collectively, however, 'they can be viewed as survival exercises – operations to pre-empt possible threats to the young Bolshevik state'. That remained the case after the war and there is little evidence that they engaged in LCS-type strategic operations. David A. Charters and Maurice A.J. Tugwell, *Deception Operations*, 1990, p. 16.

72. Richard Aldrich (ed.), *Espionage, Security and Intelligence in Britain 1945–1970*, Manchester University Press, 1998, p. 226.

73 & 78. John Harvey-Jones, *Getting It Together*, Mandarin (pbk), 1992, pp. 146, 149 & 155–6; Richard J. Aldrich, 'Recent Western Studies of Soviet Intelligence', INS, Vol. 11, No. 3, July 1996; Anthony Courtney, *Sailor in a Russian Frame*, Johnson, 1968, p. 52; Charters/Tugwell, p. 268.

74. PRO Minutes of 'Inter-Service Meeting on the Future of VISTRE', 79/Mob/9914 (SWVI), 24.8.51, AIR 20/11420; PREM 11/257, Churchill to Minister of Defence, M457/52, 26.8.52, and reply, 2.9.52.

75. Chapman Pincher, *Inside Story: A Documentary of the Pursuit of Power*, NEL (pbk), 1979, p. 288; Brown, *Treason*, pp. 434–5; Wild obit., DT, 14.6.95; Denis Wheatley, *The Deception Planner: My Secret War*, Hutchinson, 1980, p. 220; Brown, *Bodyguard*, pp. 49, 116 & 806; David Mure, *Practise to Deceive*, Kimber, 1977, pp. 27 & 251; B. Toohey and B. Pinwill, *Oyster: The Story of the Australian Intelligence Service*, Heinemann, Sydney, 1989, p. 44.

76–77. Charters/Tugwell, p. 273; Wheatley, pp. 227–8; Wright, pp. 120–1.

79. See Cathcart.

80. Peter Hennessy, *Never Again*, 1993, pp. 268–9; Anthony Verrier, *The Road to Zimbabwe 1890–1980*, Cape, 1986, p. 8.

81. Peter Malone, *The British Nuclear Deterrent*, Croom Helm, 1984, pp. 4–12; Holloway, pp. 153 & 322.

82. I, 12.9.94; IoS, 11.3.90; G, 5.8.95; 'Moscow Criterion: The Secret History of British Nuclear Weapons', BBC2, 6.8.95.

83. John Baylis, Professor of International Politics at the University of Wales, in *Contemporary Record*, Aug. 1994.

84. I, 14.2.95.