Air Marshal Sir John Slessor: The Unsung British Cold War Strategist

By Mr Bill Pyke

Biography: Mr Bill Pyke recently completed an MA in Air Power Studies at the University of Birmingham, under the guidance of Air Commodore (Retd) Peter Gray. Bill previously had a 42-year career in the oil industry. He has always maintained an active interest in air power. His article, based on his dissertation, focuses on Air Marshal Sir John Slessor, and his role and influence in developing Britain's strategic nuclear deterrent.

Abstract: Air Marshal Sir John Slessor was Chief of the Air Staff between January 1950 and December 1952 at a time of heightened Cold War confrontation. Cold War historians have focused primarily on the key politicians, international crises and the threat of nuclear weapons. However, little attention has been paid to the influence of senior military leaders, of whom Slessor was a notable example. Slessor is an unsung Cold War strategist who played the pivotal role in making British nuclear deterrence a physical reality. His involvement ensured the implementation and build-up of the RAF's complement of strategic jet bombers (the V-force) designed to deliver Britain's nuclear weapons. That policy of defence through nuclear deterrence established the bedrock of British strategic defence thinking that continues to the present day.

Sir John Slessor…one of the very few who had thought through the significance of nuclear weapons, and if he had not invented had certainly popularised the concept of 'nuclear deterrence', which he introduced into British defence policy in 1951, some three years before it was accepted by the US Joint Chiefs of Staff.

Sir Michael Howard, 2006[1]

Introduction

Air Marshal Sir John Slessor (1897-1979) stands out as the most effective Chief of the Air Staff (CAS) of the early Cold War period. But, what justification is there for this claim? What made Slessor unique? This article will answer these questions by focusing primarily on Slessor's time as CAS between January 1950 and December 1952, and examines his key achievements in that period. In summary, Slessor changed the thinking about Britain's defence policy through nuclear deterrence and how that later influenced American thinking. He dealt effectively with the political and military challenges of a fraught Anglo-American relationship, particularly during the Korean War. Through his persistent drive, he started the build-up of the British V-force against a background of national austerity. Finally, Slessor was directly involved in initiating the early Anglo-American reconnaissance flights over the Soviet Union. Through his achievements as CAS, Slessor left a legacy that ultimately led to the era of British strategic nuclear deterrence through air power, during the twelve years between mid-1957 and mid-1969[2].

Slessor's background and experience sheds light on why he was so well suited to his role as CAS in those critical years of the early Cold War. His air force career of 37 years spanned the period that included the inception of military air power during the First World War through to the atomic air power era of the late-1940s and 1950s.

John Slessor joined the Royal Flying Corp (RFC) in 1915, and qualified in that same year as a pilot-officer[3]. He subsequently saw action on the Western Front, Egypt, and the Sudan, for which he was awarded the Military Cross[4]. After the end of the First World War, the fledgling RAF's high command recognised Slessor's qualities of original and flexible thinking. He was one of Trenchard's protégés.

Slessor was an original thinker on air power issues and its evolution. Throughout the 1920s and 1930s he held various staff positions that covered policy, strategic and tactical planning. In 1936, his first book, *Air Power and Armies*, highlighted the importance of air supremacy and the value of air interdiction that 'may stop men or their supplies arriving at the battlefield at all'[5]. This prediction became reality in Northern Europe before, during and after the OVERLORD campaign in 1944. Phillip Meilinger credited Slessor as the most prescient thinker in the RAF during the interwar years 'regarding the form future war would take'[6].

Slessor had strong interpersonal, diplomatic and communication skills which were a great asset during his full and frank discussions with the American Joint Chiefs of Staff (JCS) during

his time as CAS. He had honed those skills during the Second World War. Slessor was popular with his American opposite numbers. He was a key RAF representative during the early-1941 ABC staff conversations in Washington with American senior military commanders, and prior to America's entry into the Second World War[7]. There was close agreement between the RAF and the United States Army Air Force (USAAF) on the need for a substantial build-up of bomber forces[8]. Slessor's notable negotiating success during the ABC meetings was embodied in the so-called 'Slessor Agreement': a plan to allocate to the British a fifty per cent share of America's new aircraft production, until such time as America came into the war[9]. As a further example of his diplomatic skills, he was instrumental in re-drafting the final and acceptable form of the Casablanca Directive in January 1943, following the earlier sharp differences between British and American high commands relating to priorities and strategies[10].

Slessor was an advocate of strategic bombing that had reflected Trenchard's thinking, that evolved during, and since, the First World War. This idea had continued to shape his belief in his role in the immediate pre-war period as Director of Plans at the Air Ministry and later AOC of 5 Group, Bomber Command in 1941-42. It is notable that, in his role as an operational commander, Slessor continued to be consulted on policy by the Air Ministry. He relayed important policy issues to Trenchard who used the information in the House of Lords[11].

Slessor was familiar with the challenges and benefits of Anglo-American coalition warfare. He had experienced a difficult relationship with Admiral Ernest King during the Battle of the Atlantic in 1943 when he was CinC, Coastal Command. Slessor recognised that obstinacy could jeopardise success. He recognised that inter-Service rivalries - army or navy versus air force - could often be more challenging than national differences. Conversely, Slessor saw the benefits of close and successful air coalition during his time as deputy to the American Lieutenant General Ira Eaker, CinC, Mediterranean Allied Air Forces. This experience was to shape his view and enthusiasm for a post-war Anglo-American air power alliance to counter the emergent Soviet threat[12].

The historiography of how leading historians assessed Slessor's role as CAS reveals a significant contrast of views. Many of the historians, political scientists, nuclear deterrent theorists, journalists and other commentators have simply underestimated or ignored Slessor's important contributions. The notable exceptions include the British historians Sir Michael Howard, Anthony Seldon, Henry Probert and the American historians Phillip Meilinger and Andrew Pierre. Howard commented in a lecture that he delivered in 1998 that 'Slessor had thought through, and persuaded his service colleagues and political masters to accept a doctrine of nuclear deterrence that was to provide the basis of all of thinking until the end of the Cold War'. Meilinger wrote that Slessor was a 'prescient thinker' who was 'one of the great stars in the Royal Air Force firmament' and extolled his talents as a 'flexible and resourceful leader during the particularly difficult and dangerous years of the early Cold War'[13]. Not everyone agreed. The journalist and military author, Sir Max Hastings underrated Slessor. In a two-page biography, he wrote: 'Slessor stood foremost amongst the second rank of airmen of the Second

World War behind Portal, Tedder and Harris'. Hastings added only two lines on Slessor's advocacy of atomic air power as a deterrent against war[14]. After Slessor's death in 1979 *The Times* obituarist wrote that 'he was not a commander who caught the attention of the man in the street'. This article will demonstrate why this unsung Cold War strategist deserves more attention.

Setting the Context: Early Post-War Britain, 1945-1949

To understand how and why Slessor was an effective Cold War strategist, it is important to assess Britain's political, economic, and military position in the late 1940s, immediately prior to his appointment as CAS. Britain had fought through the nearly six years of the Second World War at the cost of near bankruptcy. Furthermore, the Truman administration abruptly terminated the wartime 'Lend-Lease' arrangement in August 1945. The incoming Labour government soon realised that the 'special relationship' was neither close nor special[15]. Many American politicians adopted an isolationist policy, while insisting on maintaining its global nuclear monopoly. In this febrile atmosphere, Congress passed legislation in mid-1946 in the form of the Atomic Energy Act. It was better known as 'The McMahon Act' and named after Senator Brien McMahon, the sponsor of the legislation. The Act prevented the passing of nuclear information to any foreign country or foreign individual, thereby retaining an American monopoly on nuclear energy and atomic weapons. The British Prime Minister, Clement Attlee, felt the United States were guilty of a breach of faith[16]. At wartime meetings between Churchill and Roosevelt in 1943 and 1944, agreements had been finalised to continue with collaboration and exchange of information on nuclear research and development after the War[17].

In the context of Britain being frozen out of any future collaboration on nuclear energy and weapons development, Margaret Gowing, the official historian of British nuclear energy in the post-war period, wrote: 'If Britain wanted to be sure of being covered by an atomic deterrent, she had no option but to make it herself'[18]. In January 1947, at a special meeting of the Cabinet's GEN 163 Committee, the decision was taken to develop the British atomic bomb. At that meeting Ernest Bevin, the Foreign Secretary, stated that 'we could not afford to acquiesce to an American monopoly of this new development'[19]. Atomic research and development of Britain's atomic weapon was given 'super-priority' despite national austerity. Development continued in secret throughout the late 1940s. The top-secret Tizard Committee Report had been circulated to senior military commanders a month before the first detonation of the atomic bomb in New Mexico in late July 1945. It concluded that 'the only answer we can see to the atomic bomb is to be prepared to use it ourselves in retaliation. The knowledge that we were prepared to do this might well deter an aggressive nation'. This early pronouncement of nuclear deterrence theory was subsequently taken up by politicians in post-war Britain. Clement Attlee was the first British leader to consider a policy of nuclear deterrence. At a Cabinet meeting in August 1945 he stated: 'the answer to an atomic bomb on London is an atomic bomb on another great city'[20]. Lord Tedder, Slessor's predecessor as CAS, argued for a policy of nuclear deterrence throughout the late 1940s.[21]

The Air Staff issued design specification B.35/46 for an aircraft capable of delivering the atomic weapon. The specification required that the aircraft would be capable of flying at 500 knots; reach altitudes of 50,000 feet; have a range of 1,500 miles from base to deliver a 10,000lb bomb[22]. However, from late 1946 onwards, defence expenditures were subject to a 'Ten-Year Rule' that stated that no major war was anticipated before 1957[23]. 'Super-priority' status was not given to the urgent development of a high-altitude jet bomber capable of delivering the atomic weapon.

The Anglo-American relationship improved in late 1947. The dawning realisation that the Soviet Union threatened peace and stability to the Western democratic nations led to a closer association. Moreover, Britain had assets that would bolster American security. Notably, these included Britain's location as the 'unsinkable aircraft carrier' which put Soviet targets within range of the B-29 bomber; a reallocation of Britain's reserves of high-grade uranium ore necessary for expansion of America's atomic weapon inventory; and access to British military and political intelligence[24].

In the period between early 1945 and late 1949, Slessor's position in the RAF's hierarchy appeared to have been marginalised. He was appointed Air Member for Personnel (AMP) at the Air Ministry until December 1947. Thereafter, he was appointed as Commandant of the Imperial Defence College in January 1948. Many observers may have thought that this appointment was a sideways move, prior to retirement. The perception would have been wrong. Slessor clearly had support in high places to replace Lord Tedder as CAS. The air historian Henry Probert commented that this time 'gave him the opportunity to think deeply about strategic problems of the post-war world and the roles of air power in the nuclear age'[25]. In 1948, Slessor conducted a lengthy lecture tour of United States military staff colleges and participated in talks with senior Pentagon officials[26]. Two lectures that he gave during that tour were published subsequently in his book, *The Great Deterrent*. Both lectures gave an insight into Slessor's thinking and evolving strategy to confront the Soviet threat. During this tour, Slessor also realised that the US defence community was riven by fierce debates over the role of atomic weapons and the question of which Service was going to be responsible for their delivery. In addition, he noted the poor relationships between each individual Service and the Department of Defense[27].

During the late 1940s, attitudes amongst the Western governments were changing rapidly as the international situation deteriorated. The Berlin Blockade (1948-49) led to the formation of NATO in April 1949. The alliance initially comprised the United States, Canada and ten Western European countries. Later that year, The Soviet Union tested its first atomic bomb, known in the West as 'Joe-1'. Between 1945 and early 1949, British defence policy had centred on the expansion of fighter squadrons to be used in the role of UK air defence. The advent of the Soviet atomic bomb and the eventual appearance of numerous long-range, high-altitude bombers rendered that policy obsolete[28]. On becoming CAS in January 1950, Slessor was to have a significant influence on Britain's defence policy.

Moving from Theory to Practice: Slessor as Architect of the Airborne Nuclear Deterrent

One of Slessor's greatest challenges during his three years as CAS was the continual pressure that he needed to exert on politicians to continue with the build-up of the revolutionary four-engine jet bombers, specified in B.35/46, against the background of post-war austerity. Defence took the largest slice of public expenditure during the period from 1950-52: averaging 30%, nearly 10% of GNP[29].

On his first day as CAS, he sent a position note to Arthur Henderson, the Secretary of State for Air, on the poor state of Bomber Command:

> The provision for the Royal Air Force over the period 1950-1953 leaves the service in no position to meet its commitments in the event of war…the conception of the "visible deterrent" - a powerful first-line to discourage aggression is no longer tenable, if ever it was. It is a policy adopted in the last cold war from 1937 to 1939 when it was completely ineffective[30].

The RAF's front-line force had declined from a peak of 55,000 aircraft in 1945 to little more than 1,000 in 1947[31]. By 1949, Bomber Command had only twenty squadrons of obsolescent Lincolns and Lancasters with a front-line strength of no more than 140 aircraft[32]. In the era of fast jet fighters, the RAF's piston-engine bombers were incapable of presenting a credible threat to Russia. Furthermore, the bombers did not have the range to hit Soviet targets. Slessor was committed to building up the new generation of four-engine jet bombers that could reach targets in Western Russia and the East European satellite states.

Peter Hudson, who worked in the secretariat at the Air Ministry, commented that during 1950 Slessor developed an ambitious plan for the role, deployment, and build-up of up to 240 strategic jet bombers[33]. However, defence budget restrictions during the final two years of Attlee's Labour government frustrated his efforts. Ironically, it was the shock of the Korean War that fundamentally changed thinking on previously restricted defence expenditures. Attlee's government approved a comprehensive rearmament programme that started in late 1950. Parliament voted an additional £100 million immediately for defence and for a three-year build-up that would ultimately cost £5.2 billion[34]. The defence build-up included an order for twenty-five B. 9/48 jet bombers [later to be named the Valiant] in early 1951[35]. Though the Valiant had not yet made its first flight, the Labour government recognised the urgent need for its early production and entry into Bomber Command. However, it would be nearly four years before the first Valiants entered squadron service in February 1955.

Budget restrictions in a period of austerity continued to be a challenge, even after Churchill's Conservative government won the general election in October 1951. Slessor expressed real concern about reduction, or even cancellation, of the V-force build-up. To alleviate budget

problems at a time of austerity, there was a persistent idea held by some Conservative ministers that strategic [nuclear] bombers should be left to the Americans. At times, even Churchill and Lord Alexander, the Defence Minister, questioned the wisdom of continuing with the strategic jet bomber programme.

On 11 January 1952, the first Valiant prototype crashed after a flight trial for an engine shutdown and re-light[36]. Churchill wrote a minute to Norman Brook, Secretary of State for Air, stating:

> Thank you for your explanation issued to the Press about the crash of the prototype "Valiant". I am glad the crew escaped. I suppose we have lost quarter of a million pounds. This is a heavy blow to all that line of Air thought who argue that Britain should plunge heavily on the largest class of Air bombers. The Americans will do this, and also have the things to carry. We should concentrate **not entirely** but far more on the fighter aircraft to protect ourselves from destruction. I am not at all comforted by the assertion that you are going to make a lot more "Valiants" even though you may avoid repetition of this initial disaster[37].

Despite the obvious pessimism, the unfortunate crash did not seriously slow down the production schedule. The design faults were rectified. The second Valiant prototype became available for testing in April[38]. By June, Churchill and the rest of the Cabinet approved the recommendations of the 1952 Defence and Global Strategy Paper, largely authored by Slessor, and the decision was taken to obtain Valiant jet bombers in quantity and officially give 'super-priority' for their production[39]. Slessor now had a mandate to proceed with the build-up of the British strategic nuclear bomber force. He had suggested the name 'V-force' for the new bombers during an Air Council meeting in 1952. The name was based on the wing shape of the three variants. Slessor stated that his own preference was 'to establish, so to speak, a "V" class of jet bombers'[40]. The three models of the bomber that evolved from the original B. 35/46 design specification became better known as the Vickers Valiant, the Avro Vulcan and the Handley Page Victor. Slessor made the decision to approve the three types of V-bomber stating: 'He would have been a very bold man who could have selected the best of the three V-bombers until we tried out all three we couldn't say which was the best'[41]. He was repeating the tried and tested experience of the 1930s when the RAF was evaluating the pre-war long-range bombers: the Manchester, Stirling and Halifax[42]. Duncan Sandys of the Ministry of Supply agreed, asserting that : '…in equipping an air force, as in racing, it is risky to put all your money on one horse, or to try to guess the winner too long before the race'[43]. Slessor's decision to proceed with all three different models was vindicated during the 1960s. The Valiant was found to have metal fatigue problems. The tactics for a nuclear attack on Soviet and Eastern European targets changed from high altitude to a low altitude approach to avoid a new generation of Soviet surface-to-air 'Guideline' SA-2 missiles. The Valiant was withdrawn from the strategic V-force operations when its airframe was found to be unsuitable to deal with low altitude turbulence[44].

Slessor had to continue to fight for continuation of the V-force build-up. Both Churchill and Lord Alexander continued to express doubts, and to perhaps slow down or even cancel the V-force, and consider 'leaving strategic bombing to the Americans'. Slessor felt compelled to write to Alexander stating:

> In connection with our bomber programme, the Prime Minister has more than once referred to the same thing [leaving it to the Americans]. The influence of Atomic Air Power is a fundamental factor in the Chiefs of Staff Global Strategy policy. The provision for a Medium Bomber Force in the R.A.F. share of the new rearmament programme is far from excessive. I am convinced that it would be absolutely fatal for us to adopt the line that we can leave all long-range Bomber operations to the Americans[45].

Slessor subsequently met his old mentor, Lord Trenchard, and shared his concern that 'he didn't trust our [political] masters about the bomber force'. Slessor feared that the V-force build-up might have been cancelled as an act of political expediency at a time of national austerity. Shortly after writing to Alexander, he sent a personal letter to Trenchard on 3rd October:

> I'm still afraid that if the Treasury push really hard, the eyes of the Cabinet will turn, not to teeth and spectacles, and housing and welfare generally, but to the bomber force as a means of saving money[46].

On that same day, Britain detonated its first atomic bomb in the Monte Bello islands off north-west Australia in the culmination of Operation HURRICANE. Britain now joined America and the Soviet Union as an atomic power. With national prestige restored, Churchill would certainly have seen the advantage of the nuclear weapons programme together with the development of the V-force. However, Slessor remained suspicious of political motives.

On his last day as CAS, Slessor wrote to Churchill:

> Tomorrow I am leaving the employed list of the R.A.F. after nearly 38 years in the Air Service and shall have no more share in the responsibility for shaping our military programmes. Whilst it is clear that the Chiefs of Staff themselves understood the importance of the bomber in British policy. I have sometimes felt that it is not universally recognised as the vital thing it is… Are we to leave all this to our American Allies? We can never aspire to match them in numbers. But we have an unparalleled contribution to make in quality and fighting value, in battle experience, in technique, design and invention. The British four-jet bombers now flying are the best in the world[47].

Despite Slessor's concerns, his persistence had finally paid off. In December 1952, the government had finally committed to production, giving super-priority, of all three V-bomber variants. The estimated cost of the proposed production run of 220 V-bombers was £275 million (£7.4 billion in 2017 terms)[48].

Slessor's Influence on Politics and Strategy: The Interrelated Issues of Strategic Air Command (SAC) bombers based in England and The Korean Crisis, October 1950-January 1951

In Slessor's first two years as CAS, Britain was highly vulnerable to the Soviet threat. It had not yet developed its own atomic weapon nor a bomber to deliver it. Britain depended on American nuclear cover without having any influence over how, and when, it might be used. As early as June 1946, an informal agreement between Lord Tedder and Carl Spaatz, then commanding general of the United States Army Air Force (USAAF), planned to make available four to five RAF air bases to the USAAF at times of acute international crises, on a temporary basis[49].
The Berlin Blockade between June 1948 and May 1949 set the precedent. That precedent led to permanent basing arrangements that continue to the present day. Following the 1948/1949 Berlin Crisis, the SAC's bombers remained at their bases in Eastern England. Ernest Bevin, the Foreign Secretary, had initially welcomed the USAF presence, but with no comprehensive written agreement in place[50]. However, the basing of the SAC's atomic-capable B-29 'Silverplate' bombers would subsequently lead to acute concerns for Britain's exposure to Soviet nuclear attack during Slessor's time as CAS. The Russian leadership would have considered the American nuclear armed bombers based in Britain as a distinct threat to its homeland.
The Russian Tu-4s, a reverse-engineered copy of the American B-29, had started to enter service with the Russian Long-Range Air Force in 1949. Known in the West with the NATO codename "Bull", the Tu-4 had the operational capability to attack British targets, possibly with atomic bombs, as early as 1950[51]. Fear of a nuclear attack started to enter the national consciousness. In March 1950 and again in February 1951, Churchill, then Leader of the Opposition, saw Britain as a prime target for a Russian atomic attack. In Parliament, he stated that:

> We must not forget that by creating the [American] atomic base in East Anglia we have made ourselves the target, and perhaps the bullseye of a Soviet attack…if Russia had 50 [atomic bombs] and we got those 50, fearful experiences, far beyond anything we have endured, would be our lot[52].

Slessor was concerned that there was still no comprehensive and clearly written joint agreement that covered the use of SAC bombers from airbases in Britain. The Americans refused to share their strategic air plans with their British allies: a notable contrast to the close, open and cooperative relationships during the Combined Bomber Offensive during the Second World War. The issue centred on sovereignty: the Americans wanting unrestricted freedom of action to use their nuclear weapons where, and when, they wished; the British were concerned about their vulnerability: that actions elsewhere in the world might put Britain at risk of a Soviet atomic attack.

This drew Slessor to articulate his concern regarding Britain's vulnerability at a time of acute international crisis. With his typical foresight and strategic vision, Slessor had already considered the possibility that an American overreaction to a crisis elsewhere in the world might draw Britain into a major conflict[53].

From mid-1950 onwards, this scenario became a distinct possibility. General MacArthur's stunning invasion success at Inchon, the coastal port near Seoul, in mid-September emboldened him to recommend pushing on into North Korea. Slessor predicted correctly that MacArthur's recommendation to advance north of the 38th Parallel would lead to escalation by drawing the Communist Chinese, and possibly the Russians, into a wider and deeper conflict. In early September 1950, he wrote presciently:

> if we are not careful, a victory in South Korea, instead of enabling us to reduce our commitments there and concentrate our resources on the really important things - particularly securing the European front - may let us in for extended and indefinite commitments and even in the worst case, involve serious risks of a clash with Russia and Communist China[54].

Slessor warned both Attlee and Bevin of the dangers of Britain supporting MacArthur's proposal. However, despite Slessor's warnings, Bevin agreed initially to MacArthur's plan. He was keen to maintain good relationships with Washington[55].

Slessor's prediction became a reality in late October 1950 when an initial force of 120,000 Chinese Communist troops massed across the Yalu River and pushed the UN forces into retreat[56]. By mid-November that number had doubled to 250,000[57]. This crisis also alerted the British government to the possibility of global war, and of SAC bombers in Britain being used to attack targets in Russia. In late November, Truman held a press conference in which he did not rule out the use of atomic weapons to regain the initiative[58]. In an atmosphere of rising international tension, the JCS alerted Curtis LeMay, the SAC's commanding general, that 'the current situation in Korea has greatly increased the possibility of general war'[59].

With the real possibility of the crisis escalating into global war, Attlee requested an urgent meeting with Truman in Washington in early December. Truman agreed to the meeting. Attlee was concerned about the direct threat all this posed to Britain. Slessor travelled to Washington in January 1951. He attended meetings at the Pentagon where he had the opportunity to discuss the twin issues of the Korean crisis and the war plans for SAC bombers based in England. Slessor was forthright with his comments on Korea, stating:

> There was in England and the Commonwealth a very real concern about the possibility that present tension might lead to general war before we were ready… There was finally among Ministers, the Chiefs of Staff, in the Press and in all sections of the public a general feeling of puzzlement about the conduct of the campaign in Korea and concern about where it was leading us to. The Chiefs of Staff were frequently asked for their appreciation of the situation and found it very difficult to give a sound reply in view of the somewhat scanty and often conflicting information we received. There was also a feeling in England that General MacArthur, whom we all recognised as being a great soldier, was nevertheless inclined to be too political and too independent of Washington control[60].

It is rare for Chiefs of Staff to be praised and acknowledged by senior politicians for their wise and valuable advice in the matter of international relations and global strategy. At a Cabinet meeting in January 1951 Ernest Bevin, Foreign Secretary, praised both Slessor and William Slim, then head of the Army, for providing clear advice that was incorporated in the high-level discussions with the Americans at the time of the Korean crisis[61].

The British historian Peter Lowe wrote of the Korean crisis that:

> Slessor intellectually was the ablest of the chiefs of staff and he revealed courage and shrewd judgement in his appraisals of Korea. Undoubtedly, he provided the leadership which soon carried the defence chiefs into increasingly urgent warnings of escalation within Korea'[62].

By mid-February, the Korean crisis had passed. The UN forces, led by American forces, fought back effectively, and stabilised their position. In April 1951, General MacArthur was replaced, but his actions had led to a military stalemate on the borders of North and South Korea that was to last for a further 30 months.

Attlee received no clear information or plan from Truman on the potential use of the SAC bombers based in Britain. Truman gave Attlee only a 'verbal assurance that the U.S. government would not consider using the atomic bomb without consulting the United Kingdom'[63]. However, the subsequent communiqué issued by the American side after their meeting contained only vague platitudes, and made no mention of "consultation"[64]. On Attlee's return to London, Slessor and the other Chiefs of Staff were 'left in the dark… and had little grasp of the outcome of the Truman-Attlee talks'[65].

The vexed issue surrounding the SAC bombers in England continued to be an unresolved issue for the remainder of Slessor's time as CAS. In late December 1950, Slessor with the other Chiefs of Staff had requested Lord Tedder, then head of the British Joint Service Mission (BJSM) in Washington, to approach the American Joint Chiefs of Staff (JCS) to gain a clear understanding of America's plans to use its British-based bombers in the case of war[66]. Tedder failed to get any further information from the American JCS. Subsequently, Air Marshal Elliot, Tedder's replacement at the BJSM, also failed to make any progress on this issue. In desperation, Slessor produced a paper for the COS committee which addressed his so-called 'stop lines': the scenarios under which nuclear war might be initiated in response to Soviet aggression in Europe[67]. The paper was sent to Elliot to discuss with the American JCS. Slessor was attempting to flush out the American position[68]. The American JCS did not change their position. They would not disclose their war plans to the British.

However, the American JCS position should be considered in the context of the McMahon Act. The Act prohibited American citizens, military or civilian, from having any discussion with foreign representatives that were related to nuclear issues. Any violation could lead to prosecution that

could lead to a sentence of 'life imprisonment or death'[69]. Moreover, the revelation that Alan Nunn May and Klaus Fuchs, both British atomic physicists, had passed secrets to the Russians only served to reinforce an American perception of the fragility of British atomic security[70].

Elliot met the American JCS in September 1951. During those discussions, Nathan Twining, the deputy Chief of Staff of the USAF, commented 'our people are so het up over the Soviets that we must use the [atomic] bomb'[71]. Slessor always saw the atomic bomb primarily as a political weapon, he was concerned with American ideas of using nuclear weapons for a future war fighting strategy. In his 1948 lecture, "The Chance of War" to the Air War College, Slessor cautioned his audience about talk of a so-called 'preventive war' against Russia while America still had the advantage of a nuclear monopoly[72]. USAF senior commanders: LeMay, Vandenberg, Power, Kenney, and Twining had all privately supported the pre-emption concept[73]. Apart from political and moral considerations, Slessor considered this kind of thinking was wrong and would only increase the chance of war occurring. In a letter to his American friend, George Fielding Eliot, Slessor wrote: 'we are in the atomic front line and you are still the hell of a long way from it, and the experience of the Korea panic last winter does make us wonder a bit what you are liable to do in another really critical situation'[74]. No amount of dialogue from Slessor, Elliot or Oliver Franks, the British ambassador in Washington, moved the American JCS from their intransigent position. More out of frustration, Slessor and the other Chiefs of Staff sent a message to Elliot to pass on to the American JCS which read:

> The United Kingdom is not an American aircraft carrier conveniently anchored off the coast of Europe. We are their only really solid ally - in the long run as indispensable to them as they are to us - and we intend to be treated as such. And in this matter, more perhaps than in any other strategic matter, we insist on having an agreed policy thought out in advance[75].

The rejection of requests, undue delays and obfuscation on the American side dogged the relationship between the British Chiefs of Staff and the American JCS until the end of Attlee's government in October 1951. American politicians and senior military commanders were always suspicious of Attlee's post-war Labour government. Professor Ken Young, a British political historian who studied Anglo-American Cold War issues, wrote 'U.S. officials worried that some Labour ministers were unduly sympathetic to Soviet interests'[76].

The 1952 Global Strategy Paper: Slessor: *Primus Inter Pares* of the Chiefs of Staff

The return of a Conservative government in October 1951, with Churchill as Prime Minister, was welcomed by many in the Armed Forces. In addition, the Truman administration and many Americans were pleased to see Churchill returned. Churchill visited Truman in Washington in January 1952. In the atmosphere of a much-improved relationship, the American JCS gave Churchill a comprehensive briefing on America's advances in nuclear weapon technology, the build-up of their nuclear arsenal and of America's war plans[77]. On his return Churchill considered

that a fundamental reappraisal of Britain's defence policy was long overdue. He instructed the Chiefs of Staff to develop a paper, outlining their ideas, to address the issues. Slessor was a strong-minded character, and a natural committee chairman. In April 1952, as *primus inter pares* of the Chiefs of Staff Slessor proposed that they needed uninterrupted time away from their normal duties to meet, discuss and agree defence policy and strategy. Slessor chose the Royal Naval College at Greenwich. There, they could take the time to summarise their ideas and, over five days, they produced a preliminary draft of what was presented to the Cabinet in June and circulated as the paper on Defence and Global Strategy in July[78]. It later became more widely known as the 1952 Global Strategy Paper (GSP). Slessor took a dominant role in writing the key sections of the paper, and it contained many of the ideas that he had developed since 1945. In summary, the GSP made three important points. It placed nuclear deterrence at the centre of British defence policy. It talked of the need to prepare for a long Cold War. Finally, it considered the planned build-up of large conventional forces in Europe was both unrealistic and economically unacceptable.

Two years earlier in April 1950, the United States National Security Council had circulated a policy document entitled NSC-68[79]. The document called for a substantial rearmament programme to meet the perceived Soviet threat. In respect to the defence of Europe, the Medium-Term Defence Plan (MTDP) reflected NSC-68 policy and formed the basis of the NATO 'force goals'. In summary, the MTDP established a clear 'division of labour' that allowed the United States to develop its nuclear war plans without Allied interference. Meanwhile, the [European] Allies were encouraged 'to develop ground forces for the defence of Europe'[80]. It called for NATO members to build up a conventional force of 9,000 aircraft and 96 army divisions by 1954 to meet the perceived Soviet threat from Eastern and Central Europe. Slessor recognised that the impossibly large expenditures on conventional defence would have a detrimental impact on the general economies of Western Europe. The Western European NATO members were still in a fragile economic state after the war and, furthermore, had suffered a further recession between 1950 and 1952. In November 1951, Slessor wrote:

> Over-expenditure on rearmament, leading to the ruin of the economy of Western Europe, would be to play the Communist game and to present Russia with a bloodless victory gained at the sole cost of playing upon the nerves of the Free World[81].

It is important to note that the GSP was written as much for American politicians as it was to reappraise Britain's defence policy[82]. To emphasise this point, Churchill sent Slessor to Washington in July 1952 with the intention of getting the American JCS to agree to an Anglo-American nuclear deterrence policy. Slessor presented the GSP to the American JCS in July 1952. The defence policy and strategy expressed in the GSP was at variance with the American plan. The JCS saw the policy change as an indication that the British were reneging on their NATO [conventional] force goal commitments previously agreed by the North Atlantic Council (NAC) in Lisbon earlier that year[83]. The JCS took a dim view of the planned reduction of British troops in Western Europe, while at the same time planning to build up the RAF's V-force and expanding

their atomic weapons production[84]. Slessor was forthright with his response to the JCS, arguing that there was a need for a fundamental change of NATO strategy. He stated that the Lisbon 'force goals' were an 'economic impossibility, a logistic nightmare and strategic nonsense'[85]. None of NATO's Western European members could realistically achieve the goals at a time of recession and continuing austerity. Inter-Service rivalry within the American JCS structure continued to affect the ways in which it functioned. The joint view of the Chiefs did not necessarily reflect individual views. The USAF thinking was far closer to Slessor's position. Nathan Twining, Deputy Chief of USAF's Air Staff, told Slessor privately that 'they shared the British view'[86]. All the Western democracies, including America, were keen to ensure that their electorates would start to see the benefits of non-military public expenditure. Air Vice-Marshal Tony Mason wrote in 1994 that 'the force goals were never attained and deferred indefinitely in April 1953'[87].

Thinking about nuclear deterrence was also changing in America. In early 1953, Charles Murphy, an influential New York columnist who was also a USAF reservist and air power apologist, wrote succinctly that the British initiative gave 'substance to the abstractions and theories on air power…an actuality, feared by Soviet Russia, and therefore a potent instrument for military and diplomatic action'[88]. By late 1954, Eisenhower's 'New Look' programme mirrored GSP thinking on the employment of nuclear weapons for deterrence[89]. However, an historiographic debate surrounds the influence of the 1952 GSP on Eisenhower's 'New Look' 1954 policy. Both Slessor and Alastair Buchan, a leading writer on defence studies in the post-war period, maintained that the 'New Look' was 'a function of the ideas planted by the GSP in 1952'[90]. The respected American military historian, Steven Rearden, recognised and credited linkage between the two policies when, in 2012, he wrote:

> The first to acknowledge the opportunities were the British Chiefs of Staff, whose 1952 "white paper" (sic) on global strategy offered an alternative course linked directly to the utility of a growing arsenal of nuclear weapons in lieu of conventional capabilities. As British defense planners described it, the aim would be "to increase the effectiveness of existing [NATO] forces rather than to raise additional forces… Unable to elicit unanimous advice from the Joint Chiefs, President Eisenhower gave Secretary of State Dulles a free hand to come up with a plan of action. Moving quickly to avoid being pre-empted by the British, Dulles achieved high level interagency agreement by late September 1953 on a "new concept" to expand NATO's application of tactical nuclear weapons[91].

Conversely, the Canadian Cold War historian, Andrew Johnston, argued that 'many of the principles of what would be known as the "New Look" were in evidence by the time Slessor visited Washington'[92]. Johnston wrote that throughout the period between the 1960s and the 1990s leading American historians had found no evidence to connect the GSP with the 'New Look' and, in any event, 'refused to credit the British with originality on such important strategic matters'[93]. Irrespective of the differing viewpoints, both Baylis and Freedman considered that the fact still remains that both policies 'grew from the same reasoning'[94].

Cold War historians have acknowledged that the GSP represented a turning point in the way that nuclear deterrence was now placed at the centre of British defence policy. In writing about the GSP, the American historian Andrew Pierre wrote Britain 'was the first nation to base its security planning almost entirely upon a declaratory policy of nuclear deterrence' and that it should rank 'a classic amongst military documents', giving credit to Slessor for its authorship[95]. Baylis and Macmillan contended that the GSP 'remains perhaps the best known, the most often discussed and the most highly regarded defence document of the post-war period'[96].

Slessor's involvement in the early Anglo-American overflights of the Soviet Union

In late 1944, the British Chiefs of Staff requested the government's technical warfare committee to produce a report that would provide them with a forecast of anticipated military developments for up to 20 years into the future. The report entitled "Future Development in Weapons of War" was produced by a team of eminent scientists headed by Sir Henry Tizard[97].

On publication, the secret Tizard Report was circulated in June 1945 by S.6 section of the Air Ministry secretariat to all the senior RAF commanders, including Slessor, requesting their comments. In realising the need for information on a future adversary's key strategic sites, Slessor responded on several key points, including air reconnaissance. He wrote of the need for 'an efficient secret service' and for the development of 'a long-range, stratospheric Photo Recce. (sic) aircraft'[98]. The inability to obtain information in the late 1940s presented a major challenge to the gathering of air intelligence. Rigid control of the Iron Curtain borders together with Russia's vast landmass posed a major challenge to intelligence gathering. In the quest to develop an effective deterrence policy, Slessor recognised the urgent need for targeting information of Russia's key strategic sites. In his time as CAS, Slessor played an active role in expanding air reconnaissance operations that ranged from IMINT, ELINT and SIGINT to the high-altitude sampling of radioactive fallout debris of Soviet atomic tests[99].

Reconnaissance aircraft capable of overflying key sites in Russia and its satellite states were in short supply or still in the development stage. Until late 1952, the RAF's complement of photo-reconnaissance assets comprised aircraft, the Mosquito, Spitfire and Lincoln, that were unsuitable for gathering data over the Russian landmass. These obsolescent aircraft were limited by their speed, range and altitude[100]. The American jet-powered strategic reconnaissance aircraft, the RB-45C 'Tornado', entered service with the SAC in 1948[101]. In their December 1950 meeting in Washington, Attlee and Truman had concluded an agreement 'to undertake periodic overflights of the Soviet Union to locate its airbases and of its long-range bomber forces that could conduct atomic surprise attacks on the West'[102].

However, despite that agreement, Truman did not want to commit either American aircraft or flight crew to any overflights of the Western Soviet Union. Gathering air intelligence over an adversary's territory was, and still is, always considered a highly provocative act, with serious political repercussions. The shooting down of a U.S. Navy Privateer, a naval intelligence version

of the B-24 Liberator, off the Latvian coast in April 1950 led to strong Soviet protests at a time of international tension. Truman forbade further overflights[103].

To circumvent Truman's restriction on overflights, Hoyt Vandenberg, Chief of Staff of the USAF, contacted Elliot at the BJSM to see if RAF aircrew would fly Tornados on reconnaissance operations[104]. A squadron of these aircraft had already been deployed from January 1950 at RAF Sculthorpe in Norfolk[105]. Slessor agreed. He saw this as an opportunity for gathering much-needed target intelligence. Target sets included airfields, submarine pens, nuclear facilities, rocket sites, command and control centres, aircraft factories and key transportation hubs. This was classic Trenchard doctrine: identifying the enemy's key military air assets, and being prepared to destroy them.

In August 1951, six RAF flight crew led by Squadron Leader John Crampton were sent to America for training and familiarisation with the Tornado[106]. The plan for operation JU JITSU would involve simultaneous overflight of the Soviet Union by three aircraft to gather SIGINT and IMINT on airbases located in Western Russia and the Ukraine. Slessor was directly involved in the operation. He prepared a highly restricted, top secret briefing note to Churchill, Lord Alexander and Lord Cherwell in early February 1952. In the note, he explained the importance of having target intelligence prior to the outbreak of war for any counterforce operations. He wrote:

> If Russia wished to disable this country, her best chance would be to strike a crippling blow with atom bombs… the Air Defence Committee have concluded that if 50 atom bombs could be allocated for a counter-offensive against Russian airfields, the weight of the attack could be halved. This counter-offensive, if it is to be effective, must take place immediately on the outbreak of war… accurate results can only be achieved if radar photographs are available to ensure the identification of the target[107].

Despite his initial reservations, Churchill approved the JU JITSU 'special duty' operation on the 24th February. This was a high-risk operation. The international political consequences of the shooting down of a Tornado would have been disastrous. Such an incident might well have also led to demands for the resignations of both Churchill and Slessor. Churchill's agreement, however reluctant, is the clearest evidence of his trust and respect for Slessor's judgement and influence. The Tornados were repainted with RAF markings in readiness for the overflights, planned for April. The overflights were a success. A report written nearly two years after the overflights stated: 'During the moonless night of 17th/18th April 1952, three aircraft flew over Russian territory simultaneously and valuable results were obtained on 20 out of 35 long range airfields'[108]. A further overflight operation, JU JITSU II, was flown in late April 1954.

The JU JITSU 'special duty' overflights also had the benefit of improving the RAF/USAF relationship. Curtis LeMay, the SAC commander, was keen to get target intelligence for his

expanding force of bombers. Those early overflights of the Soviet Union, initiated in Slessor's time as CAS, continued intermittently throughout the 1950s.

Enduring Influence: 1953-1958

Slessor had started his time as CAS with the quest to develop Britain's independent airborne nuclear deterrent. The limited period of three years in post would never enable him to meet all his goals. In early 1953, no V-force bombers had entered squadron service; forging an Anglo-American nuclear air power relationship was still a challenge; and Britain had still to get a satisfactory agreement on consulting and consent on the use of SAC bombers, based in England. However, Slessor had already changed the mindset of the British political and military leadership in respect of the role of nuclear deterrence and of Britain's standing in the world order.

During 1952, his last year as CAS, Slessor had ensured the V-force programme would continue. Between May 1951 and December 1952, all three prototypes of Britain's new V-force bombers - the Valiant, Victor and Vulcan - had made their first flights. Furthermore, after five years of nuclear research and development, Operation HURRICANE had delivered Britain's first test of an atomic weapon in October of that year. Slessor had left a significant legacy for his CAS successors: Sir William Dickson (January 1953-December 1955) and Sir Dermot Boyle (January 1956-December 1959).

The political historian Anthony Seldon wrote:

> It is ironical that it was only after Slessor's departure in December 1952 that his thoughts were crystallised into policy statements, the more so as none of the three Chiefs of Staff who served during 1953-4 possessed the creative minds of Slessor's calibre… it is of note that Ministers as a whole did not play a significant role in the evolution of this [nuclear deterrence] strategy. The important work and thought was put in by senior officers of the Services, notably Slessor and the supporting scientists[109].

American attitudes only started to change after the British proved that they were serious about building up the strategic nuclear V-bomber force. Slessor had started that process. However, it would take a further five years after he left his position as CAS.

In 1951, the American JCS considered that the British nuclear deterrent force was a strategic irrelevance[110]. By 1956, both Valiant and Vulcan bombers were operational in Bomber Command. As the reality of Britain's nuclear deterrent drew closer, the USAF was becoming ever more interested in involvements through a joint nuclear strike force[111]. In August, senior RAF and USAF officers agreed the terms of reference for a joint strike force at the ENCIRCLE conference in London[112]. In September, Slessor wrote in The Times aviation supplement:

> Now that the Anglo-American alliance is so close, and surely permanent, it only makes sense that we pool our resources…In the military sphere the present role of air

> power is to gain time for the forces of sanity to assert themselves in the political and economic spheres'[113].

By 1957, Britain reached the point when she could justifiably claim to have created a credible airborne nuclear deterrent[114]. All three versions of the V-force: the Valiant, Vulcan and Victor were operational. In addition, the GRAPPLE programme delivered Britain's first test of a hydrogen bomb, dropped by a Valiant, in May 1957[115]. The Anglo-American relationship improved significantly after Harold Macmillan replaced Anthony Eden as Prime Minister after the debacle of the Suez Crisis. Eisenhower and Macmillan met for high-level talks in Bermuda. Correspondence between Macmillan and Eisenhower reveal the approval of the supply of [American] nuclear bombs and release gear to the RAF under the designated Project 'E'[116]. Agreements were also reached for the resumption of U-2 AQUATONE reconnaissance flights from Britain which had been previously stopped by Eden in May 1956[117].

Russia's launch of its *Sputnik 1* satellite in October 1957 was a positive game changer for the Anglo-American relationship. Baylis wrote: 'Ironically, it was the 'Sputnik' satellite which created the circumstances that finally transformed rhetoric [of closer Anglo-American cooperation] into reality'[118]. That event alerted the Americans that the Russians were ahead in Intercontinental Ballistic Missile (ICBM) development. They now felt vulnerable to a Russian thermonuclear missile attack. The news sent shockwaves through the American government, the military and the general public. At a meeting in late October Eisenhower informed Macmillan that the McMahon Act would be repealed, thereby opening the door for joint nuclear collaboration.

In June 1958, during a visit to Washington, Macmillan also managed to persuade Eisenhower to sign a new agreement on the employment of nuclear weapons in Britain to come under joint control[119]. Finally, a bilateral agreement entitled 'Cooperation on the Uses of Atomic Energy for Mutual Defence Purposes' was signed in July 1958. It enabled the finalisation of arrangements for the joint nuclear strike force. By November 1958, the V-force consisted of a front-line complement of 144 aircraft, of which 104 were Mark 2 Victors and Vulcans[120]. It would eventually build to a peak 180 aircraft, with a front-line operational strength of 156 aircraft in June 1964[121]. These numbers were small compared to America's global SAC complement of nearly 1,700 bombers[122]. Despite this disproportionate ratio, the USAF senior air historian Alfred Goldberg wrote: 'The V-bombers added a new dimension to British military power. Comparable to the best American bombers, the B-52 and B-58, except in range, and superior in some respects, the V-bombers were eventually moulded into a small but élite strategic bombing force'[123].

Freedman commented that by the late 1950s 'the [British atomic and later hydrogen] bomb had come along, the V-bombers had come along, and we had influence on the Americans'[124]. Young wrote: 'This larger political agenda had been laid out by Macmillan in July 1957'[125]. At a defence committee meeting Macmillan stressed the need for Britain to:

> Retain our special relationship with the United States and, through it, our influence in world affairs, and, especially, our right to have a voice in the final issue of peace or war [and] to enable us, by threatening to use our independent power, to secure United States cooperation in a situation in which their interests were less immediately threatened than our own[126].

All Slessor's original goals were finally achieved by late October 1958. By that time Britain had a fully operating, nuclear capable V-force which was integrated into the Anglo-American operational plan, agreement had been reached on a future joint control of nuclear weapons based in Britain, and the McMahon Act had been repealed. On hearing of the repeal of the McMahon Act Harold Macmillan wrote in his autobiography, *Riding the Storm*, that the 'great prize' had been achieved[127]. In truth the 'great prize' was not just the repeal of the McMahon Act. It was the possession of the independent nuclear deterrent; the re-establishment of the Anglo-American 'special relationship' with the joint nuclear strike force; and, influence in global affairs. Slessor could justifiably have a claim on that 'great prize'.

Slessor's Legacy

Deterrence has been at the heart of military affairs for centuries: credible force can often deter a potential adversary. However, a deterrent force must be perceived to be credible. The adversary must also be convinced that deterrent force would be used, if it initiated aggression. Throughout the late 1940s, British politicians, scientists and military commanders continued to espouse a policy of nuclear deterrence, but without any clear plan and programme in place. Slessor's unique contribution to Britain's defence policy during the early Cold War years can be summed up in his ability to have moved the concept of nuclear deterrence from a theoretical aspiration to a defence policy that was based on credible and workable airborne nuclear deterrence. Would any alternative candidate for CAS in 1950 have achieved as much as Slessor? Such a candidate would need Slessor's special qualities of leadership, intellect, strategic vision, courage, and dogged persistence.

The facts discussed in this article reveal that senior politicians continued to doubt the wisdom of Slessor's plan to build up the V-force during his time as CAS. There was always a temptation for politicians of that time to cancel or delay the introduction of the revolutionary British strategic jet bombers during the continuing era post-war austerity. Slessor prevailed. Despite those challenges, the V-force build-up continued throughout the 1950s.

During 1952, Slessor succeeded in changing the British political and military mindset on strategic defence. The proposed build-up of large conventional forces in Europe to counter the Soviet threat was unrealistic and economically unachievable. Slessor's dominant role in the writing the Global Strategy Paper demonstrated his intellectual capabilities. He also showed character in articulating those new ideas to the American JCS, against their highly critical response. Inevitably, both the American political leadership and the JCS came to realise the cost-effective advantages of nuclear deterrence. They put in place a similar policy two years later with their 'New Look' programme.

Slessor had the vital quality of understanding the wider strategic context. On numerous occasions throughout his life, he continued to have the capacity to predict political and military outcomes. His prediction and warnings of the dangers of UN troops advancing into North Korea was only one example.

Slessor had a deep appreciation of the value of intelligence from all sources and the need for reliable coordinated intelligence. He had seen the positive results of reliable intelligence during later stages of the Second World War, notably during Operation STRANGLE in central Italy during early 1944 and later in Northwest Europe during the Transportation and Oil Plans of late 1944 and 1945[128]. During his time as CAS he saw the urgent need for updated and reliable intelligence on key targets in the Western Soviet Union, particularly those that were a threat to Britain. His active involvement in the JU JITSU operation of April 1952 provided radar imagery of key Soviet long range air force bases. The operation also helped to strengthen the relationship between the RAF and USAF.

Despite the problems with the Anglo-American relationship at the political and diplomatic level, personal relationships between the RAF and the USAF senior commanders continued to be close and cordial. Those relationships improved considerably towards the end of 1952. In November, Slessor met Hoyt Vandenberg, his opposite number in the USAF. They both agreed on the importance of meeting and consulting on a more regular basis[129]. The RAF/USAF relationship continued to improve after Slessor's time as CAS, culminating in the formation of joint Anglo-American nuclear strike force following the 1958 Mutual Defence Agreement[130]. It is difficult to envision how, and if, Anglo-American nuclear cooperation might have evolved had the V-force not come into existence. Would the British have had access to America's submarine missile technology? After the cancellation of the ill-fated Skybolt project in 1962, President Kennedy offered Macmillan the alternative of participating in the Polaris missile programme[131]. This offer was taken up, and subsequently led to the current Trident programme. Slessor's legacy has extended over 60 years to the present day.

Notes

The article has been adapted from a dissertation undertaken as partial fulfilment for a Master's degree in Air Power: History, Theory, and Practice under the supervision of Air Commodore (Retd) Peter Gray, and completed in September 2016. The article focuses primarily on the influence and achievements of Sir John Slessor when he was CAS between January 1950 and December 1952. Sources marked TNA are from the National Archives, Kew.

[1] Sir Michael Howard, *Captain Professor* (London: Continuum, 2006), p.161.
[2] Air Chief Marshal Sir Michael Armitage, *The Royal Air Force* (2nd Edition), (London: Cassell), p.206.
[3] Sir John Slessor, T*he Central Blue* (London: Cassell, 1956), p.6.
[4] Philip Meilinger, *Air War Theory and Practice* (London: Cass 2005), p.65.
[5] John Slessor, *Air Power and Armies* (Oxford: Oxford University Press), p.200.

[6] Meilinger, *Airwar*, 73.
[7] Slessor, *Central Blue*, pp.339-365. American-British secret staff conversations held in Washington between January and March 1941.
[8] Ibid., 357. USAAF planned operating strength of 1,520 heavy and 1,059 medium bombers.
[9] Ibid., 327 and 358.
[10] Slessor, *Central Blue*, p.446. The key differences at the Casablanca Conference related to the previously agreed 'Germany First' policy that was concluded at the December 1941 Arcadia conference. General Marshall and Admiral King were now looking for 'vigorous action in the Pacific', and would not tolerate American forces being inactive in Britain in anticipation of a delayed OVERLORD operation. Marshall considered a direct assault on France was preferable to the 'interminable operations in the Mediterranean'.
[11] Slessor family papers, Cheltenham, 2017, accessed by Air Vice-Marshal Tony Mason.
[12] Sir John Slessor, *The Great Deterrent*, (London: Cassell, 1957), p.78. From the 1948 lecture that gave an insight into Slessor's Anglo-American thinking 'it does not make sense to discuss British strategy except as part of a combined Anglo-American strategy'.
[13] Sir Michael Howard 'Sir John Slessor and the Prevention of War' *Royal Air Force Historical Society*. Journal 19,(1999) p.131. Phillip Meilinger in *Paths of Heaven*, 71; *Air War Theory and Practice*, 73; and his foreword in Vincent Orange's *Slessor: Bomber Champion*, (London: Grub Street) p.10. Henry Probert *High Commanders of the Royal Air Force* (London: HMSO, 1991 p.45. Phillip Meilinger, *Paths of Heaven*, (Maxwell AFB, Alabama: Air University Press, 2001), p.71; 'The Historiography of Air Power: Theory and Doctrine' *Journal of Military History* Vol. 64, No. 2 (Apr. 2000), pp.467-501.
[14] Sir Max Hastings in *The Dictionary of National Biography, 1971-1980* Lord Blake and C.S Nicholls (eds.) (Oxford: Oxford University Press, 1986) pp.782-784.
[15] David Reynolds, 'A 'Special Relationship'? America, Britain and the International Order since the Second World War' *International Affairs*, Vol. 62, No. 1 (Winter, 1985-1986), p.1 Churchill popularised and perhaps coined the term 'special relationship' it in the winter of 1945-46.
[16] Alfred Goldberg, 'The Atomic Origins of the British Nuclear Deterrent' *International Affairs* Vol. 40, No. 3 (Jul., 1964), p.413.
[17] John Baylis, *Anglo-American Defence Relations, 1939-1980* (London: Macmillan, 1981) Appendix 1 and 3 respectively: The Quebec "Tube Alloys" Agreement, 19 August 1943 and Aide Mémoire of conversation between President and Prime Minister at Hyde Park, New York State, 19 September 1944.
[18] Margaret Gowing, *Independence and Deterrence Britain and Atomic Energy, 1939-1952 Volume 1* (London: Macmillan, 1974), p.185.
[19] TNA CAB 130/16 GEN 163 1st Meeting, 8 January 1947.
[20] TNA CAB 130/3 GEN 75/1 meeting, 28 August 1945.
[21] TNA DEFE Tedder to COS Committee, 11 December 1947 and Gowing 'Independence and Deterrence' 160-240.
[22] TNA AVIA 54/94 Design Branch Specification' B35/46 Medium Range Bomber', January 1947.
[23] Andrew Pierre, *Nuclear Politics: the British Experience with an Independent Strategic Force, 1939-1970* (London: Oxford University Press), p.71. This was a re-introduction of the Ten-year

rule that was used in 1919, immediately after the First World War.
[24] TNA DEFE 20/1, TNA Chiefs of Staff to Elliot, 24 August 1951; Gowing, *Independence and Deterrence* Appendix 10: ' "Declaration of Trust", 13 June 1944', pp.393-401 and Appendix 9: 'The Anglo-American '*Modus Vivendi*' 7 January 1948, pp.266-272. The Combined Development Trust: an Anglo-American agreement signed on 13 June 1944 to secure global supplies of uranium ore. Michael Warner, *The Collapse of Intelligence Support for Air Power, 1944-52: Two Steps Backward* (Washington D.C.: CIA, 2007), 3. Accessed 9 December 2015, https://www.cia.gov/library/center-for-the-study-of-intelligence/csi.
[25] Henry Probert, *High Commanders of the Royal Air Force* (London: HMSO, 1991), p.44.
[26] Major Corvin J Connolly, USAF, 'Marshal of the Royal Air Force Sir John Cotesworth Slessor and the Anglo-American Air Power Alliance, 1940-1945' Ph.D. Thesis (Texas A&M University, 2001) p.272. Accessed 12 May 2016 www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA399435; Sir John Slessor, *The Great Deterrent* (London : Cassell, 1957) pp.76 and 85.
[27] Slessor family papers, Cheltenham, 2017, via Air Vice-Marshal Tony Mason.
[28] TNA PREM 8/1383 COS(W)920 Slessor minute to COS 'The Possible Implications of the U.S. Atomic Air Plan' Paragraph 9, 27 January 1951.
The Russian Tu-4s, a reverse-engineered copy of the American B-29, had entered service with the Russian Long-Range Air Force in 1949. Known in the West with the NATO codename "Bull", the Tu-4 had the operational capability to attack British targets, possibly with atomic bombs, as early as 1950.
[29] Annual abstract of Statistics No. 93, HMSO,1957 and Antony Seldon *Churchill's Indian Summer: The Conservative Government, 1951-1955* (London: Hodder and Stoughton, 1981), p.332.
[30] TNA AIR 75/23 Slessor to Secretary of State for Air, 1 January 1950. Paragraphs 1 and 3.
[31] Paul Graham, 'RAF Nuclear Deterrence in the Cold War' *Royal Air Force Air Power Review*, Vol. 10 No. 1 (Spring 2007) pp.50-75.
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[33] Peter Hudson (Air Council 1948-1951) in a lecture held at RAF Hendon, 11 April 2001 "The RAF and Nuclear Weapons, 1960-1998" published in the *Royal Air Force Historical Society Journal* 26 (2001) p.16.
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[36] Robert Jackson *Men of Power* (Barnsley: Pen & Sword, 2006), p.155.
[37] AIR 8/1998 Churchill to Norman Brook, Secretary of State for Air, 17 January 1952.
[38] Jackson, *Men of Power*, p.156.
[39] Pierre, *Nuclear Politics*, p.89.
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Preparation, p.75.
[43] Graham 'Deterrence', 53.
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[45] TNA AIR 75/117 Slessor to Alexander, Secretary of State for Defence, 3 October 1952.
[46] TNA AIR 75/58 Slessor to Trenchard, 3 October 1952.
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[48] Armitage, *The Royal Air Force*, 209.
[49] Ken Young, 'No Blank Cheque: Anglo-American (Mis)Understandings and the Use of the English Airbases' *The Journal of Military History*, Vol. 71, No. 4 (Oct, 2007), p.1139. Note: All assets and personnel of the USAAF were transferred to the newly instituted independent air force: The United States Air Force (the USAF) on 17 September 1947.
[50] Young, 'No Blank Cheque', p.1133.
[51] TNA PREM 8/1383 COS(W)920 Slessor minute to COS 'The Possible Implications of the U.S. Atomic Air Plan' Paragraph 9, 27 January 1951.
[52] *Hansard* HC Deb 28 March 1950 Vol. 473 cc 189-133, and HC Deb 15 February 1951 Vol. 484 cc 623-70.
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[58] Truman Papers, White House Press Conference, 30 November 1950. Accessed 30 July 2016 http://trumanlibrary.org/publicpapers/viewpapers.php?pid=985.
[59] Cargill Hall, *Early Cold War Overflights*, p.1. and Young 'No Blank Cheque', p.1156- The term 'general war' was often used by American officers and officials to avoid using the words 'atomic war' because of the legal restrictions imposed by the McMahon Act.
[60] TNA DEFE 5/27 COS (51) 34, minutes of Slessor's meetings at the Pentagon, 15 January 1951.
[61] TNA CAB 128/19, CM4 (5), Ernest Bevin to Cabinet, 18 January 1951.
[62] Lowe, 'An Ally and a Recalcitrant General', p.632.
[63] TNA DEFE 20/1 'The U.S. Strategic Air Plan and Use of the Atomic Bomb' Paragraph 3, September 1951 and Young, 'No Blank Cheque' p.1148.
[64] Ibid., 1145.
[65] TNA AIR 75/117 minute Elliot to Attlee (undated) and Young, 'No Blank Cheque', p.1149.
[66] TNA AIR 75/117 Chiefs of Staff to Tedder [BJSM], 11 December 1950, also PREM 8/1383 Telegram, Tedder to MOD, 19 December 1950, and Telegram, MOD for Tedder, 22 December 1950.
[67] TNA DEFE 32/2 COS (51)106 'The U.S. Strategic Air Plan and Use of the Atomic Bomb'

September 1951.
[68] Young, 'No Blank Cheque' p.1151.
[69] John Baylis, 'The 1958 Anglo-American Mutual Defence Agreement: The Search for Nuclear Interdependence', *Journal of Strategic Studies*, 31:3, (2008), p.427.
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[73] Jeffrey Record, 'Nuclear Deterrence, Preventive War, and Counter Proliferation' *Policy Analysis* No.519, (July 2004), p.14, accessed 26 July 2016 http://www.cato.org/publications/policy-analysis/nuclear-deterrencepreventive-war-counterproliferation.
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[75] TNA DEFE 20/1, TNA Chiefs of Staff to Elliot, 24 August 1951.
[76] Ken Young, 'A Most Special Relationship: The Origins of Anglo-American Nuclear Strike Planning', *Journal of Cold War Studies* Vol. 9, No. 2, Spring 2007, pp.5–31.
[77] TNA DEFE 32/2 COS (51)741, p.14. and Sir Lawrence Freedman T*he Evolution of Nuclear Strategy* (London: MacMillan, 1981) p.79.
[78] TNA AIR 75/120, 'Defence Policy and Global Strategy', report by the Chiefs of Staff, paragraphs 7,10,20, 21, 56, 92 and 139 (conclusions), 17 June 1952.
[79] Truman Papers "A Report to the National Security Council - NSC 68", April 1950 https://www.trumanlibrary.org/whistlestop/study_collections/coldwar/documents/pdf/10-1.pdf accessed on 1 February 2017 and Richard L. Kubler *Laying the Foundations: The Evolution of NATO in the 1950s* (Santa Monica CA:RAND, June 1990), pp 50-55. Accessed *30 July 2016 https://www.rand.org/content/dam/rand/pubs/notes/2009/N3105*.
[80] Andrew Johnston, 'Mr Slessor goes to Washington: The Influence of the British Global Strategy Paper in the Eisenhower "New Look"' *Diplomatic History* Vol. 22, No. 3 (Summer 1998), p.364.
[81] TNA AIR 75/94, JS 11, 24 November 1951.
[82] TNA 75/120 Handwritten note by Slessor (undated) 'I was sent to sell it [the GSP] to the US JCS'.
[83] Lawrence Freedman, *The Evolution of Nuclear Strategy* (London: MacMillan, 1981), p.80.
[84] Johnston, 'Mr Slessor goes to Washington', p.379.
[85] TNA AIR 75/120 Slessor's presentation of the Global Strategy Paper to the Joint Chiefs of Staff, 29 July 1952.
[86] Johnston, 'Mr Slessor goes to Washington' p.379.
[87] Air Vice-Marshal Tony Mason, *Air Power: A Centennial Appraisal* (London: Brasseys, 1994), p.91.
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[90] Johnston, 'Mr Slessor goes to Washington', p.366.
[91] Steven L. Rearden, Council of War: A History of the Joint Chiefs of Staff, 1942-1991 (Washington DC: Joint History Office, 2012), pp.153-154.

[92] Ibid., p.398.
[93] Ibid., p.366.
[94] Johnston, 'Mr Slessor goes to Washington' 366, also Baylis and Macmillan, 'British Global Strategy Paper' 221, and Slessor, *Great Deterrent*, p.145.
[95] Pierre, *Nuclear Politics*, p.87 and 308.
[96] John Baylis and Alan Macmillan, 'The British Global Strategy Paper of 1952' *Journal of Strategic Studies* Vol. 16 Issue 2 (1993) p.200.
[97] TNA AIR 2/21027 Tizard Committee to COS (45) 402(0), 16 June 1945.
[98] TNA AIR 2/12027, Slessor to VCAS, AMSO, AMT, 15 July 1945. Para. 5.
[99] AIR 75/92 Sir Frederick Morgan (Controller of Atomic Energy) to Slessor, 9 October 1951.
IMINT Image intelligence. Comprises visible spectrum photo-images [PHOTINT] but also imagery from other parts of the electromagnetic spectrum: radar and infra-red.
ELINT Non-communicative electronic intelligence: emissions such as radar or radio telemetry from the adversary's electronic devices.
SIGINT Signals intelligence: information comprising the adversary's communications.
[100] TNA AIR 14/3879 'RAF Benson Strategic Photographic Reconnaissance Conference', 4 October 1950. Only the PR 31/46, photoreconnaissance variant of the Canberra, could meet the criteria. It was still in the development phase, and, as discussed earlier, did not enter service with 540 Squadron until late 1952.
[101] Peter B Gunn, *Sculthorpe: Secrecy and Stealth: A Norfolk Airfield in the Cold War* (Stroud: The History Press), p.64.
[102] Cargill Hall, *Early Cold War Overflights*, p.3.
[103] Paul Lashmar, *Spy Flights of the Cold War* (Stroud: Sutton Publishing, 1996), p.42.
[104] Ibid., p.65.
[105] Gunn, *Sculthorpe: Secrecy and Stealth*, p.64.
[106] John Crampton, 'RB-45C Overflight Operations in the Royal Air Force' in Cargill Hall *Early Cold War Overflights*, p.153-163.
[107] TNA AIR 19/1126 Slessor sent the briefing note only to Churchill, Cherwell (Paymaster General) and Alexander (Minister of Defence) 'The Counter-Offensive against the Soviet Long-Range Bomber Force', 6 February 1952.
[108] Ibid., note on Ju Jitsu I, 22 February 1954.
[109] Seldon, *Churchill's Indian Summer*, p.334.
[110] Stephen Ball, 'Military Nuclear Relations between the United States and Great Britain under the Terms of the McMahon Act, 1946-1958' *The Historical Journal*, Vol. 38, No. 2 (Jun., 1995), p.449.
[111] TNA AIR 20/11388 AVM Selway (BJSM) to AVM Earle, ACAS (Policy), 18 February 1956.
[112] TNA AIR 2/18093 'Encircle Conference', 8 August 1956, and Ken Young 'A Most Special Relationship: the Origins of Anglo-American Strike Planning' *Journal of Cold War Studies* 9 (2) (Spring 2007), p.14.
[113] Slessor, The Great Deterrent, pp.259-260.
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[115] TNA AIR 20/10811 ' "Grapple": Value for future operations', undated.
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[118] Baylis, 'Anglo-American Mutual Defence Agreement', p.433.
[119] Ibid., 444.
[120] TNA AIR 2/18093 'V-force Operational Front Line Strength' 18 November 1958.
[121] Graham, 'RAF Nuclear Deterrence in the Cold War'p.67, Pierre, *Nuclear Politics*, p.156, and Brookes, *V-Force*, p.128.
[122] Ken Young, 'A Most Special Relationship: the Origins of Anglo-American Strike Planning' *Journal of Cold War Studies* 9 (2) (Spring 2007) p.30.
[123] Alfred Goldberg, 'Military Origins of the British Nuclear Deterrent', p.617.
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[125] Young, 'A Most Special Relationship' p.29.
[126] Ibid., p.29.
[127] Harold Macmillan, *Riding the Storm*, (London: Macmillan, 1971), p.323.
[128] TNA AIR 75/88 'Influence of Air Power on Strategy, Old Sarum, August 1946, page 8, paragraph 3.
[129] AIR 75/72. Slessor's meeting with Vandenberg, 24 November 1952.
[130] Baylis, 'Anglo-American Mutual Defence Agreement', p.446.
[131] *Hansard* Prime Minister Harold Macmillan *HC Deb 30 January 1963 vol 670 cc 955-1074*.