Fair Stood the Wind for France? The Royal Air Force's experience in 1940 as a case study of the relationship between policy, strategy and doctrine

By Group Captain Alistair Byford

The Royal Air Force's experience in 1940 illustrates a number of enduring lessons about strategy, and its relationship to policy and doctrine. First, strategy matters: it was the RAF's strategy to configure itself for independent action that largely explains why it was comprehensively defeated in France, yet within a matter of weeks was victorious in the Battle of Britain. Second, the construction of strategy is easily misinterpreted. In the historiography, air strategy is erroneously regarded as a product of doctrine; but in reality, policy was the more important imperative. Consequently, the RAF's strategy is best understood as an entirely rational attempt to translate the interwar policy of 'limited liability' into military practice. Finally, strategy is a process, not an event. The Air Staff's failure to recognise this principle, and to continually adapt its strategy to reflect the changing policy context, is indicative of a culture that rejected critical reflexivity and did not promote intellectual agility. These institutional shortcomings are pervasive and, arguably, still resonate today as impediments to effective strategy-making.

Introduction

Britain's ability to make strategy effectively has increasingly been called into question. The Public Administration Select Committee recently identified 'a strategic deficit across government',[1] while the last Chief of Defence Staff was explicit about the failure of the military to grow a cadre of senior leaders with an adequate understanding of how strategy is constituted and is shaped by – and shapes - the context within which it is developed.[2] However, the problematic nature of strategy-making is hardly novel; consequently, historical examples may yield valuable and enduring lessons, and this paper will suggest that an analysis of the RAF's experiences in 1940, where a catastrophic defeat in France was immediately followed by a decisive victory in the Battle of Britain, provides a particularly instructive illustration of the results of the interplay between policy, strategy and doctrine.

The dichotomy in outcomes in 1940 was primarily a result of the RAF's strategy to configure itself as a 'strategic' air force. This meant that it was optimised for independent, single-role air campaigns, intended to be conducted from a well-established structure of secure bases in the metropolitan homeland; conversely, it had very little capacity to provide multi-role, tactical support for joint forces deployed on expeditionary operations. In the historiography, this strategic choice is invariably attributed to what is portrayed as the Air Staff's irrational and doctrinaire predilection for long-range bombing, which, it is argued, led it to neglect other and more fruitful air power roles, a perspective usefully summarised by John Terraine: 'It may be said, without straining verity, that bombing was what the RAF was all about. It was chiefly for that reason…that co-operating with the army and the navy went right out of fashion between the wars.'[3] This account is ripe for revision, because it represents a fundamental misunderstanding of how strategy is constructed. It interprets its formulation wholly as a consequence of military doctrine and preference, thus disregarding the much greater influence of policy, which was the key driver in determining the allocation of priorities and apportionment of resources that led directly to both the successes and failures of British air power in 1940.

This paper consists of four sections. First, the development of air strategy is described within the framework set by policy, and shaped by single-service doctrine. Second, the RAF's failure to adapt its strategy to reflect the dynamic policy environment is analysed. Third, the consequences are assessed, as an essentially unmodified strategy was implemented in operational practice during the *blitzkrieg* in France. Finally, the RAF's institutional culture and behaviours will be considered as a context for strategy-making, highlighting lessons that may still be of contemporary relevance.

The Nexus of Policy, Strategy and Doctrine

The Policy Framework: Limited Liability

Policy is fundamentally a political activity: the executive direction given to the pursuit of national interests, which strategy is then designed to achieve.[4] This paper argues that throughout the interwar period, it was policy that dictated air strategy rather than the RAF's own conceptual prejudices, although serendipitously enough for the Air Staff, political direction and the popular mood both tended to reinforce its own doctrinal preferences.

In 1923, the Salisbury Committee was established to coordinate national defence. It was constrained by the two political imperatives that would increasingly dominate interwar defence policy: first, the overriding requirement to avoid any repetition of the horror of the trenches and the mass casualties that appeared to be an inevitable consequence of modern land warfare; and second, a developing (if at this stage largely irrational) popular fear of aerial attack, with the apparent potential for a 'knock-out blow' to be delivered against centres of population and industry.[5] The 'never again' and 'bomber will always get through' schools of thought were powerful organising ideas that pointed to investment in the RAF at the expense of the other services, so that future wars could be fought from the air without the necessity to fund large field armies and as a deterrent against any prospective aerial attack on Great Britain. Consequently, the committee recommended the creation of a fifty-two squadron metropolitan air force 'to protect against air attack by the strongest Air Force within striking distance of this country'.[6] However, the means were not made available to translate this policy into an actionable strategy. In the generally benign geopolitical environment of the Locarno era, economic risks were more tangible than the potential threat of an attack by another state – France was the only credible opponent – so the 'ten-year rule' (mandating there would be no European war for at least a decade) was adopted to justify swingeing cuts in defence expenditure.

Having effectively opted out of national security based on sovereign capabilities, Britain put her faith in collective security provided by the League of Nations. However, this approach became increasingly untenable as autarky and militarism erupted in the wake of the global economic crisis of 1929. In 1933, Germany withdrew from both the Geneva Disarmament Conference and the League of Nations, and this prompted Britain to establish a Defence Requirements Committee to reconsider her military needs. The committee was dominated by the Permanent Under-Secretaries for the Foreign Office and the Treasury, while ironically, it was the service chiefs who initially hampered their efforts to establish realistic requirements, despite being encouraged to state what they needed and leave it to the committee to determine priorities. As Michael Howard comments, 'starved of resources for years, uncertain of their ability to recruit the necessary manpower and conscious of the lack of any armaments-base to make major expansion possible, [their] timidity, pathetic as it now appears, is understandable.'[7] The Chief of the Air Staff, Sir Edward Ellington, asked for just the fifty-two squadrons originally recommended by the Salisbury Committee, although this assumed an attack by France. Another twenty-five squadrons would be necessary to defend against an attack from Germany and 'he had no idea what that would cost.'[8]

Rearmament on a significant scale would require the ten-year rule to be rescinded, but Britain had recently been forced off the gold standard and the national debt was enormous, leaving the government with an extremely difficult choice between national security and a healthy economy. This dilemma is enduring; while most administrations have accepted Adam Smith's dictum that their 'first duty is to protect society from the violence and invasion of other independent societies',[9] Britain's current coalition government has explicitly rejected this proposition, stating instead that 'its first priority is to reduce the deficit and restore economic growth'.[10] This is understandable, as despite a plethora of potential security risks, there is no objective, existential threat to the United Kingdom, while the national debt stands at over £900 billion with interest payments exceeding the annual defence budget. In 1934, the choice was more finely balanced, because although the financial situation was equally malignant, it was accompanied by a patent, external threat that could not be ignored.

Consequently, the government compromised. The ten-year rule was abandoned, but defence spending was capped, so although expenditure was increased by £5 million to £107 million in 1933, this only restored the budget to the 1931 level. Even as rearmament accelerated later in the thirties, fiscal constraints remained in place, prompting John Slessor (then Group Captain (Plans) in the Air Staff) to complain that 'the government seemed less interested in setting defences in order than having enough money to pay an indemnity to a victorious enemy when the war was lost'.[11] In fact the Chancellor, Neville Chamberlain, did acknowledge the need for rearmament - but not at any cost. He believed that Germany's experience of economic blockade in the Great War meant she would be extremely reluctant to contemplate another long war; accordingly, a sound economy as 'the fourth arm of defence' [12] would demonstrate Britain's capacity to stay the course in a protracted conflict, and Chamberlain hoped that this would act as a powerful deterrent to German aggression without the expense of expanding the Army, particularly if coupled to the creation of a long-range bomber force 'calculated to inspire respect in the mind of a possible enemy'.[13]

Chamberlain therefore recast the Defence Requirements Committee's proposals to give priority to the RAF, 'based on the belief that the next war would be an air war: a war that would be won or lost in the air.'[14] This formalised a policy that aimed to limit Britain's liability in a future war by avoiding any commitment of land forces to the continent, a decision that was not only based on economic considerations, but was also overtly political, because of the premise that a renewed continental commitment would be unacceptable to popular opinion because of the baleful legacy of the Great War. The results were profound: the RAF was to be expanded to eighty, rather than fifty-two, squadrons, while its budget jumped from £16 million in 1932 to £450 million in 1939, offset by a reduction in spending on the Army from £40 million to £19 million.[15] Unsurprisingly, this did not meet with the universal approval of the service chiefs, including even the Chief of the Air Staff, who was concerned that a hasty expansion would result in an unsustainable, 'shop window' air force without proper reserves. However, the cabinet unanimously endorsed the chancellor's proposals, Stanley Baldwin, the prime minister, noting that politically 'it was necessary to do something to satisfy the semi-panic conditions which now existed about the air'.[16] Limited liability was to remain an article of political faith for Chamberlain until 1939, initially as chancellor, and then as prime minister.

The policy framework that would shape the development of military strategy for the rest of the thirties had now been set in place. In a political atmosphere where 'almost no price was too high to pay to avoid another war',[17] it was fervently hoped that German militancy could be deterred by a two-pronged approach based on a prudent economic policy, demonstrating Britain's ability to fight a long war, and the threat posed by a capable metropolitan air force. Should deterrence fail, Britain would limit its liability through the implementation of an adapted air-maritime strategy where - in accordance with the 'British way of warfare' described by the influential Basil Liddel-Hart[18] - Britain's geographical isolation would be used as a platform for the support of her continental allies through a combination of air attack and naval blockade. This was pithily summarised by the Chief of the Imperial General Staff: 'Never again shall we even contemplate a Force for a foreign country. Our contribution is to be the Navy and the RAF'.[19]

Air Strategy: Optimized for Independent Action

A coherent strategy now had to be developed to put limited liability into practice. The Air Staff decided to meet the policy goal by building a strategic force organised and equipped to fight an independent air war against Germany from a secure base infrastructure in Great Britain, with a target date for readiness of spring 1939. The means to resource this strategy would be provided by Chamberlain's amendment of the Defence Requirements Committee's recommendations, which formed the basis for 'Expansion Scheme A'.[20] This was the first of seven lettered expansion schemes designed to reconcile political and military priorities as war approached, thus representing tangible manifestations of strategy in action. Because of the urgency of the requirement – Germany had been ceded a five-year head-start in rearmament by the time the expansion programme began to take effect - and the continuing fiscal constraints, sufficient means could not be generated in the time available to address all potential air roles, so it was determined that strategic air power would be resourced at the expense of more tactical capabilities, which were, in any case, not required within the policy framework set by limited liability. Consequently, the expansion schemes concentrated on long-range bombers, as a deterrent, and short-range interceptor fighters, for home defence, rather than dive-bombers, army cooperation and other tactical support aircraft.

Once this strategy was implemented, structural realities - it took two years to train a pilot, three years to train a technician and nearly five years to build a flying station – severely limited the extent to which it could be amended to reflect subsequent changes in policy, although political interventions could still alter the emphasis if not the overall thrust of air strategy. This was most apparent in the politico-military debate about the correct balance between offensive and defensive capabilities that ensued as a result of the sudden acceleration in aviation technology (from the mid-thirties onwards) which meant that aircraft were obsolescent almost as soon as they entered service. For example, the RAF's *Battle* and *Blenheim* bombers looked like world-beaters in 1937, as they were patently superior to the wood and fabric biplanes they were superseding, but they were completely outdated by 1940 and proved frighteningly vulnerable in combat.[21] Planners were now faced with the dilemma of too much too soon, or too little too late; once a design was put into production, an air force was committed to a force structure that would be obsolete within a few years, yet any delay in re-equipment might prove fatal if war broke out earlier than anticipated.[22] This was critical, because in the air, even small technical advantages may be leveraged into an overwhelming superiority, as the *Luftwaffe* proved when it literally decimated the Soviet Air Force in 1941. France and the Soviet Union fell into the trap of modernising too early, while Britain left rearmament too late. As the aggressor, Germany held the advantage, because she could choose the moment to provoke a crisis.

New technology also led to the advent of the high-performance monoplane fighter just as the expansion programme was getting into its stride.[23] This suddenly put Baldwin's proposition that 'the bomber will always get through' into doubt, especially as the concurrent development of radio direction-finding provided early warning of attack and the basis for an economical method of command and control.[24] These innovations offered a realistic prospect that a knock-out blow – which remained an issue of enormous popular concern – could now be defeated. By itself, this would almost certainly have prompted a reappraisal of the balance of priorities in air strategy, but the imperative for change was reinforced by the difficulties that were being experienced in establishing a credible bomber arm. The delayed start to rearmament meant that during the Munich crisis the RAF's entire strategic potential was represented by a few squadrons of hopelessly obsolete *Virginia* and *Heyford* biplanes, demonstrably lacking both the range and bomb-load to threaten Germany.[25] Although development of the heavy bombers that would ultimately underwrite a genuine strategic capability had already been set in train, the practicalities of design, development and production meant that more interim types (notably *Battles* and *Blenheims*) would be necessary to bridge the gap, despite their impending obsolescence. Technique was deficient as well as equipment; whereas the Germans had developed the *Knickebein* blind-bombing device, R.V.Jones 'was astonished by the complacency that existed regarding our ability to navigate at night'.[26] In short, the RAF possessed little genuine strategic capability, bearing out Slessor's remark that 'our belief in the bomber, in fact, was intuitive – a matter of faith';[27] there was certainly no indication that the nascent British bomber force was constraining German foreign policy in any material sense.

The increasing concern about the impotency of the bomber force coupled with the development of the new technologies that were empowering air defences prompted Sir Thomas Inskip, the Minister for Defence Coordination, to conduct a formal review of air strategy. As a result, capabilities were reprioritised on the basis that the RAF's most important function was now air defence, not bombing.[28] This intervention was undoubtedly motivated as much by politics as by a real concern about the proper balance between offence and defence, as fighters were cheaper and quicker to build than bombers; an important consideration when there was mounting political pressure to attain numerical parity with Germany as quickly as possible. Nevertheless, Inskip's initiative capped the immediate expansion of the bomber force, effectively marking the end of the strategy to deter German militancy through the threat of air attack, while the commensurate increase in fighter numbers laid the foundations for the tiny margin of strength that ultimately helped to secure victory in the Battle of Britain.[29]

The mood in air rearmament now changed abruptly, as production planning was put on a wartime footing and the constraints imposed by the doctrine of economic stability were gradually relaxed.[30] The different design, development and production branches of the Air Ministry were amalgamated to plan and build an air force with a genuine war-fighting capability, and the RAF's share of the combined services' budget rose to forty percent from an interwar average of seventeen percent.[31] The extent of Britain's commitment to air power is indicated by annual aircraft production, which rose from 893 in 1935 to over 20,000 in 1941.[32]

Meanwhile, the RAF restructured itself into a configuration intended as a more appropriate way of implementing the strategic air force strategy. In 1936, the Air Defence of Great Britain organisation was replaced by four new, mono-functional, commands: Fighter, Bomber, Coastal and Training. The sharp distinction between roles was the antithesis of the *Luftwaffe's* structure, which consisted of geographically-based, self-contained, multi-function air forces or *Luftflotten*, reflecting the entirely different purpose and strategy of Germany's air arm. The RAF's system of functional commands eased the administration of the expansion programme and was to prove its worth as a way of commanding and controlling air power in independent, single-role campaigns conducted from the home base, such as the Battle of Britain and Bomber Command's offensive against mainland Europe. But it also had significant drawbacks, particularly through the loss of the training opportunities and shared experiences that would have been enjoyed in a unified command structure, and this was mainly to the detriment of Bomber Command. Whereas Fighter Command enjoyed the freedom to develop the sophisticated techniques and technologies of air defence, Bomber Command learned little about the vulnerability of its bombers to a radar-controlled, modern fighter force, and had few opportunities to practise the coordination of fighter escorts.[33]

The functional commands therefore translated the policy of limited liability into military strategy, and also reflected the tension between the two; whereas Bomber Command represented the Air Staff's strategic theories and aspirations, it had been initially resourced by government purely as part of the policy of deterrence, while Fighter Command was created almost entirely as a result of public pressure for the sole purpose of defending Great Britain.[34] A clear omission from the RAF's organisational structure was a command able to sustain itself on mobile, expeditionary operations, configured to gain and maintain air superiority overseas, and with the capability to provide reconnaissance and bomber support to an army in the field; so 'while the *Luftwaffe* was trained and equipped for mobile operations from improvised airstrips, the RAF had become deeply wedded to the concept of controlled operations from secure bases'.[35]

Air Doctrine: Strategic versus Tactical Employment?

The proposition that air strategy was driven by policy rather than the Air Staff's own conceptual preferences is supported by an analysis of its formal doctrine; indeed, the RAF's genesis as an air support element of the Army in 1918 – a powerful and relatively recent formative experience shared by all of its strategic decision-makers – would make it strange if it was not predisposed to play a full part in air-land warfare. However, the development of air strategy has been clouded by the RAF's rhetorical emphasis on strategic bombing, which has fostered the impression that it was conceptually opposed to tactical air power in principle.[36] This was not the case, despite the RAF's well-documented espousal of strategic or 'morale' bombing, which it had adopted as the most likely guarantor of its continuing independence in the financial austerity of the post-war era. But this was 'sowing the seeds of later troubles',[37] as the Commandant of the RAF Staff College acknowledged when he observed that the other services were growing impatient that the air force would not focus on 'the common aim of attacking the enemy's armed forces', but was instead 'advocating a form of military action [morale bombing] that no government will put into effect'.[38]

However, in reality the RAF was not entirely focused on strategic air power; for example, while the most authoritative statement of doctrine, *AP1300*, devoted thirty-eight pages to bombing, it allocated fifty-five pages to army support.[39] Serious efforts were made to explore how air power could best be employed in modern land warfare, including the creation of a School of Army Air Cooperation with a particular aim of investigating tank-aircraft cooperation.[40] However, the dissolution of the Army's Experimental Mechanised Force in 1929 caused momentum to be lost, and the RAF turned to its practical successes in colonial air policing (in Somalia, Palestine and Iraq) as more powerful and current examples of air support than theoretical exercises conducted against a putative European enemy on Salisbury Plain. *AP1300* accepted that lessons drawn about the use of air power against such 'uncivilized opponents' would not be directly applicable in modern warfare, although its prediction that 'liberties could be taken'[41] if complete air superiority was achieved against an ill-organised opponent without an anti-aircraft capability was, ironically, exactly the situation that the *Luftwaffe* was able to exploit in 1940. This illustrates the essential soundness of the RAF's doctrinal thinking, if not its success in providing the wherewithal to implement it: 'Organisation and doctrine are useless without aircraft and aircrews, and in France in 1940 the Royal Air Force, relative to the Germans, had too few of either.'[42]

The RAF's formal doctrine – as opposed to its rhetorical position – therefore demonstrates its willingness to consider both tactical and strategic air power roles, indicating that it was a lack of resources rather than dogmatic prejudices that led it to prioritise independent air capabilities in its strategy - although this undoubtedly corresponded with the Air Staff's beliefs about how future wars ought to be fought. However, while this was a rational component of a coherent strategy, unfortunately the RAF failed to explain its thinking to the General Staff, so the Army saw the relative neglect of tactical air support as a cultural preference rather than a sensible apportionment of scarce resources. Consequently, the Chief of the Imperial General Staff professed himself to be 'disgusted with the way in which the RAF treat cooperation',[43] although this observation is hardly fair given the Army's equal lack of preparedness for air-land operations. The General Staff had not been a conspicuous advocate of air cooperation in the era before a continental commitment was envisaged and indicatively, its *Notes on Lessons of the Great War* (which were not published until 1934) contained only one sentence on air support, commenting unenthusiastically that 'low flying assault fighters as maintained by some foreign countries may be worth consideration.' The Army, like the RAF, had taken the direction provided by limited liability as the basis for its own resource prioritisation, and this naturally led it away from serious preparations for modern air-land warfare, most clearly symbolised by the disbandment of the Experimental Mechanised Force.

The Failure of Adaption

Ends: the Continental Commitment

In March 1939, Germany annexed the rump of Czechoslovakia. This abruptly ended limited liability, as the government was forced to acknowledge that German revisionism could not be deterred or appeased, and reluctantly accepted the necessity of raising a substantial British Expeditionary Force (BEF) to support France. This *volte face* removed the central assumption of air strategy and had two major implications: first, already limited air resources would have to be stretched over a much wider commitment, as the RAF was faced with reconciling the competing demands of providing tactical air support for an Army in France - a task never previously envisaged - with the maintenance of a viable bomber force, to hold Germany at risk, and enough fighters to defend Britain, should deterrence fail; and second, a way would now have to be found to organise the squadrons that could be made available for the continent, given the RAF's configuration in functional commands that were 'exceedingly mobile and flexible in the air while [being] absolutely immobile and inflexible on the ground'.[45] The change in policy had changed the ends of air strategy; this naturally dictated that means would have to be rebalanced and new ways found to employ air power effectively. However, the Air Staff was to find it difficult to develop a coherent strategy capable of achieving this.

Means: Competing Requirements

The RAF was thus caught on the horns of a dilemma as it sought to meet its obligations to its French ally and the BEF without substantially weakening the air defence of Great Britain; Terraine notes that this put it 'in the uncomfortable posture of a man looking over both shoulders at once.'[46] The most contentious debate polarised around the allocation of fighter aircraft, as these were the guarantors of air superiority, the most critical factor in modern warfare. In the literature, Sir Hugh Dowding, the Commander-in-Chief of Fighter Command, is generally lauded as the only RAF leader to understand fully the strategic implications involved, and his famous letter and personal intervention on 14 May 1940 is invariably credited with prompting the cabinet's decision not to send additional fighters to France.[47] However, this is something of a myth. As the officer primarily responsible for the air defence of Great Britain, Dowding began to make the case against any reduction in his command's strength as soon as the scale of the continental commitment became clear in March 1939,[48] while Sir Cyril Newall, the Chief of the Air Staff, was equally aware of the potential drain on Fighter Command's resources. Newall also realised that Dowding's fighters would be far more effective in Britain (where they would benefit from a well-found infrastructure and a proper system of air defence) than they would be in France,[49] but he understood that politically, the imperative to support the BEF and the French was not discretionary, while militarily, the problems of defending Great Britain would be compounded enormously if France fell. The secret was to achieve an appropriate balance of resources.

Consequently, he promised just four squadrons of fighters for France initially, but accepted that up to fourteen might be necessary eventually.[50] In the meantime, most of Fighter Command would be retained at home to hedge against failure in France, although this was clearly something of a self-fulfilling prophecy, as it naturally increased the chances of defeat on the continent. Nevertheless, as Sebastian Cox notes, the Chief of the Air Staff's strategic judgment was generally sound: 'Newall has received insufficient recognition from many historians over the correctness of his strategy. Rather, there has been a tendency to portray the reversal of policy [not to send additional fighters to France] as simply a result of the stoic and principled resistance of Lord Dowding to wrong-headedness in Whitehall'.[51] Dowding reportedly thanked God when he heard that France had asked for an armistice, because this would end any more external calls on his command's resources;[52] but believing that Britain would somehow benefit from the loss of her major continental ally, with the strategic vulnerability this entailed, demonstrates a narrowness of vision and, perhaps, a certain naivety.

In contrast, the Air Staff sought to reconcile the need to provide fighter support in France with an effective defence of Great Britain through a proposal for a common Anglo-French air defence structure running from Scapa Flow to the Mediterranean.[53] Slessor explained the rationale: 'Unless we can make some arrangements for operating fighters from French Bases, we might be faced with the spectacle of five or six hundred good short-range fighters sitting in England, unable to contribute at all to the issue of the struggle in the Low Countries – a struggle on which the fate of England might ultimately depend'. He went on to explain the strategic dilemma faced by the RAF: 'It was unfortunate that our proper obsession with a "knock-out blow" against England has forced us to concentrate on a type of fighter and static fighter organisation that make it very difficult to assist resistance against a different knock-out blow against France, which, if successful, would be the first stage of a knock-out blow against England'.[54]

Inevitably and understandably, Newall made the maintenance of an adequate fighter force in Britain - to defeat such a knock-out blow - his absolute priority. Given the existential stakes involved, it is difficult to argue that this was not the right strategic choice. However, rather than setting clear priorities and constraints, means were apportioned through an incremental series of *ad hoc* decisions, and the lack of definition meant that there was little consensus within the RAF's high command about the real extent of the commitment to the campaign in France. Slessor's proposal, for example, demonstrates the Air Staff's willingness to consider extending Fighter Command's liability, but only if its fighter could be employed within a proper system of command and control.[55] This proved to be impossible, as the RAF was not able to adapt its strategy, and find an effective way of deploying air power to the continent.

Ways: Organising Air Power

In the absence of an established tactical command, the RAF's deployment to France had to be extemporised. Initially, there were two elements, the Air Component of the BEF and the Advanced Air Striking Force (AASF). The Air Component was intended to provide dedicated support to the BEF, and consisted of fighter, army cooperation and reconnaissance squadrons. The AASF was essentially No.1 Group of Bomber Command, comprising ten squadrons of *Battle* light bombers. It was not intended to provide tactical support for the Allied armies, but was deployed as an outpost of Bomber Command, so that its short-range *Battles* could reach industrial targets in the Ruhr. However, this aspiration quickly fell by the wayside, as the *Battles* proved to be far too vulnerable to penetrate into Germany while the weakness of the French bomber arm (which only possessed twenty-five modern aircraft) meant that the AASF would be called on to conduct nearly all of the close air support tasks when the German offensive began.[56]

A British Air Forces France (BAFF) Headquarters was eventually formed to coordinate the two elements. Commanded by Arthur 'Ugly' Barratt, it demonstrated all of the weaknesses of *ad hoc* organisation. While the AASF came under BAFF's control, the Air Component answered directly to the BEF; furthermore, BAFF could only request, not order, support from the home-based elements of Bomber Command. Neither of the two RAF elements was a properly balanced, composite force, which meant the Air Component had to rely on the AASF for bombing support while the AASF had to request fighter escort from the French, when it could have been provided by the Air Component if the two elements had been integrated as a unified command. Events were to prove that these support arrangements were far too fragile to work reliably in practice. Moreover, the only working air-land interface was in Whitehall rather than in theatre, so Army officers had to telephone London with requests for air support, compromising timeliness and assurance, the twin pillars of effective air-land integration.[57]

The rest of Bomber Command was theoretically available to support the Allied armies, but there was still political concern that London was vulnerable to a massed air attack, especially if there was a protracted period of stalemate following a German occupation of the Low Countries. Consequently, there was pressure to preserve the sixteen squadrons of heavy bombers 'in being' as a deterrent force, particularly as there were grave doubts about their effectiveness in supporting a land battle. The commander-in-chief, Ludlow-Hewitt, pointed out that none of his squadrons were up to strength and all would require fighter escort. It was not clear how this could be provided, or how command and control would be exercised. His crews lacked any useable maps of the likely areas of operation and were not trained or equipped to engage targets of opportunity, such as armoured columns. Instead, he argued that they should be used to attack static targets in the rear, such as vehicle parks, marshalling yards and depots, where the prospects for success were greater.[58]

By the eve of the German attack, Bomber Command's resistance to being used in a tactical role was hardening. Sir Charles Portal was now in command. He wrote to the Chief of the Air Staff on 8 May 1940 in the strongest possible terms, protesting that the planned use of his aircraft against German columns was fundamentally unsound, 'as the area will be literally swarming with enemy fighters, and we shall be lucky if we see again as many as half the aircraft we send out each time'; in these circumstances, there were serious doubts about 'whether the attacks of fifty *Blenheims* based on information necessarily some hours out of date are likely to make as much difference to the ultimate course of the war as to justify the losses that I expect them to sustain'.[59] The operational instructions jointly issued by BAFF and Bomber Command were sadly prescient, stating that 'Bomber aircraft have proved extremely useful in support of an advancing army, especially against weak anti-aircraft resistance, but it is not clear that a bomber force used against an advancing army, well supported by all forms of anti-aircraft defence and a large force of fighter aircraft, will be economically effective.'[60] This demonstrates that even before the battle, the RAF's leaders understood the likely outcome. In the absence of a coherent strategy providing overall direction, Bomber Command - *pace* Fighter Command - sought to limit its own liability, and fought with one eye on its future commitments, particularly in striving to conserve its heavy bomber force.

One factor, however, trumped any other considerations about the RAF's deployment, and this was the reality of what was logistically possible. Trenchard's vision for an independent air force had identified the flying squadron as its fundamental building block, and every possible effort was therefore made to maintain the integrity of squadrons as self-supporting units. But in the event of expeditionary operations, squadron establishments would have to be minimised to maintain mobility, so in 1927 it was determined that squadrons in the field would be relieved of all repair work and their supply holdings limited to three days. The necessary deep support would be provided by non-mobile air stores parks and depots in the rear, with advanced repair detachments closer to the frontline. Based on the successful system employed on the Western Front in 1918, this was sound practice; but because it would weaken the self-sufficiency of squadrons and mobility was, in any case, thought to be unnecessary in the era of limited liability, the RAF reverted back to a squadron-based logistics system deemed more appropriate for the static posture adopted under the functional command arrangement introduced in 1936.[61]

Consequently, the squadrons deploying to France were desperately short of vehicles, spares and repair and salvage capabilities, and only the four Air Component fighter squadrons were equipped to operate from austere airfields on a mobile basis. These deficiencies were belatedly recognised and steps were taken in late 1939 to provide dedicated forward repair and salvage units with extra mobile servicing wings, much as originally proposed. However, these could be neither manned nor equipped in the time available, and the lack of specialist vehicles meant they were quickly rendered immobile and ineffective. Less than a dozen aircraft were repaired in France and no engine repairs were completed at all because of a shortage of tools.[62] Similarly, although two extra mobile servicing wings were created (and an additional three planned), only one was functioning by May. This in itself would have limited the number of additional squadrons that could have been deployed, and in this sense the debate about fighter reinforcements must be set in context, because there were no means to support them had they been dispatched.

The logistics problem was exacerbated by a grave shortage of even the most rudimentary airfields. This precluded the planned deployment of the *Blenheim* bombers of No.2 Group, although these could still operate over France from airfields in Britain. In contrast, the short-range *Battles* of the AASF had to be deployed forward, but the ten bases earmarked for them were still largely under the plough.[63] Fifty-nine new airfields were planned in a major Anglo-French construction programme, but the project was hampered by delays, not least because suitable grass was (apparently) only available from New Zealand. This meant there were few available alternatives when bases were bombed, or when Barratt had to move his squadrons to avoid being overrun, and the French could do little to help as they were also critically short of bases. Even when new operating strips could be found, the weakness of the RAF's logistics concept exacerbated the problem; the Air Component was mobile, but its ancillary units were not and the AASF had no mobile capability at all. It was easy enough to fly aircraft to a new base, but relocating ground-crews, fuel, armaments, spares and repair machinery proved impossible without adequate transport. Barratt had recognised the problem during the Phoney War, but the Air Ministry Establishment Committee refused his request to rectify the deficiency, stating with an impressive lack of foresight that 'owing to the position of the AASF behind a strong fortified line, the degree of mobility required for the unit is small.'[64] Barratt was not convinced, because his handwritten notation survives: 'East, yes, North???'[65] BAFF was still 600 vehicles short in May, a deficiency of twenty-five percent, and only a generous loan of 279 vehicles from the French Army was to provide any sort of mobility.

The squadron-based logistics system had been designed to enable a static air force strategy; it proved to be manifestly inadequate for fast-moving, mobile operations and was simply overwhelmed in practice. Of 452 *Hurricanes* originally sent to France, just sixty-six (fifteen percent) ultimately returned to Britain; only seventeen percent were lost in air combat, while an astonishing 178 aircraft (thirty-nine percent) were abandoned through lack of repair facilities.[66] Because the RAF was not an expeditionary force, its deployment and organisation in the field was makeshift, and it paid a correspondingly heavy price for its lack of logistical resilience.

Strategy in action: May-June 1940

The consequences of the failure to adapt air strategy became clear when the German *blitzkrieg* began on 10 May. Although Germany held a numerical advantage, with roughly 3,700 aircraft to oppose 2,600 British and French aircraft,[67] the key to success was the *Luftwaffe's* ability to gain and maintain control of the air by concentrating force where it was most needed in time and space. In the absence of an effective system of command and control, the Allies' response was piecemeal, reactive and rarely timely. The *Luftwaffe* seized the initiative at the outset by attacking nine of the AASF's ten airfields in the opening minutes of the campaign,[68] and it maintained a ruthless tempo that kept the Allies off-balance and disorientated subsequently. Although BAFF covered the initial movement of the BEF into Belgium, its *Battle* squadrons were eviscerated in the process, losing sixty-three of their original complement of 135 aircraft within the first two days. This prompted Newall to instruct Barratt to husband his resources, but this was impossible as the climax of the battle was already approaching.[69]

In every campaign, there is a tipping point when irrevocably, one side begins to gain the advantage while their opponent starts to lose the physical capability and will to resist.[70] In 1940, the decisive act took place at Sedan, when Guderian's *panzerkorps* pierced France's 'continuous front' by forcing a crossing of the River Meuse.[71] The danger was clear and the RAF responded by mounting a maximum effort against the bridgehead. The result was what Alistair Horne memorably describes as a 'Valley of Death'.[72] Forty-four aircraft were lost from seventy-two bombers dispatched, the sixty-two percent casualty-rate representing the highest losses ever suffered by the RAF in an operation of comparable size; the uncoordinated and unescorted bombers were simply overwhelmed by 814 *Luftwaffe* fighter missions.[73]

After this catastrophe, six composite squadrons were formed from the remnants of the AASF, but few sorties could be flown as they were forced to withdraw to stay ahead of the German advance. The few survivors were eventually switched to night operations to reduce the prohibitive casualty-rate, although the effects achieved were negligible; the last aircraft were finally withdrawn on 15 June.[74] The Air Component's fate was similar. Following the Meuse crossing, the squadrons had to keep moving and were finally evacuated on 19 May after just nine days of combat. By this stage, the RAF had already lost 195 *Hurricanes*, or about a quarter of its total front-line fighter force.[75]

If Sedan was the RAF's Charge of the Light Brigade, *Operation Dynamo*, the Dunkirk evacuation, was arguably its Thin Red Line, although this would have been disputed by many of the soldiers and sailors involved; Admiral Ramsey, in overall command, expressed his disappointment at the 'puny efforts made to provide air protection during the height of this operation.'[76] However, this is not a fair assessment of the value of the 651 bomber and 2739 fighter sorties flown by the RAF over Dunkirk, and more objective analysis suggests a degree of effectiveness that provides a useful point of comparison with the earlier failures elsewhere.[77] This was acknowledged by the prime minister, when Churchill famously stated: 'There was a victory inside this deliverance. It was gained by the Royal Air Force.'[78]

The RAF was now operating from its permanent infrastructure in much the way envisaged by its original strategy, permitting sortie generation rates to be increased and, for the first time, combat power to be massed at a point of decision. Fighter Command was able to sustain over three hundred sorties a day over Dunkirk, and there was also a qualitative improvement as the more capable *Spitfire* squadrons of No.11 Group were committed to combat for the first time, providing an infusion of fresh blood at a time when the *Luftwaffe's* fighter units were suffering from the fatigue and attrition of three weeks of intense fighting and constant movement.[79] The net result was that *Operation Dynamo* marked the *Luftwaffe's* first significant reverse of the war.[80] The RAF was successful in contesting control of the air, with attacks on Allied shipping being only significantly effective on two days - 27 May and 1 June - and even then, the *Luftwaffe* units involved suffered grievously. The more permissive air environment also allowed No.2 Group's *Blenheims* to operate more effectively and at greatly reduced cost.[81] The limited size of the bridgehead reduced their exposure in hostile airspace, while finding appropriate targets was easier, as operations around Dunkirk were essentially static, so the intricate coordination necessary to identify and strike fast-moving targets elsewhere was not required.

However, the organisation of air power was still inadequate. RAF bombing support was highly effective when available, but - as reported by the East Surrey Regiment - its arrival was considered 'miraculous'.[82] On one occasion, the Secretary for Air, Sir Harold Balfour, took a call in person in the Air Ministry from a corporal on the beach who was requesting urgent air support to destroy an artillery-spotting balloon. The soldier used a field-telephone which was routed through a naval telephone exchange to the Admiralty in Whitehall, then to Fighter Command at Uxbridge, and finally to Adastral House.[83] Balfour ordered Dowding to send some fighters to shoot down the balloon, but this was hardly an endorsement of the way that air strategy was being implemented in tactical practice. The next section will consider why the RAF found it so difficult to adapt its strategy to reflect changing circumstances.

Institutional Culture

This paper has suggested that the strategy that contributed to the RAF's defeat in France originated in an entirely rational response to the ends dictated by the policy of limited liability; and that throughout the thirties, the Air Staff's management of ways and means was generally sound, as it sought to reconcile competing demands through the sensible apportionment of inevitably limited resources and the development of an organisational structure appropriate for a home-based force intended for independent action. However, strategy is an inherently dynamic and iterative process, and it must be subject to continual review if it is to retain its relevance;[84] the RAF's sclerotic response to the changing policy context indicates that this was not well understood. The Air Staff failed singularly to take advantage of the fourteen months that were available between the end of limited liability, in March 1939, and the beginning of the *blitzkrieg*, in May 1940, to adapt its strategy to new circumstances. Although there were obstacles to change, notably the structural constraints on the expansion programme providing the means of air strategy, scant attention was paid to determining the most appropriate way of employing expeditionary air power; instead, the system of mono-functional commands was retained, indicating a lack of imagination or at least a degree of intellectual inflexibility.

One of the key requirements for effective strategy-making is a culture of 'collective reflexivity', institutionalising a discipline of rigorous analysis to provide an evidential basis for sound decision-making.[85] The military in general, and the RAF in particular, had no such tradition. It was not particularly disposed to introspection; culturally, as a highly technical service, it was more comfortable with an instinctive approach based on pragmatism and empiricism, and was deeply suspicious of what could be regarded as undue intellectualism.[86] This tendency is most apparent in the haphazard approach that was adopted to post-battle analysis and the lack of rigour in learning and applying lessons. These weaknesses have proved to be enduring, indicating the strength and pervasive nature of powerful institutional cultures; the current Chief of the Air Staff, for example, has expressed his frustration at the RAF's failure to capture single-service, operational-level lessons from the campaigns in Afghanistan and Iraq in anything like a systematic manner.[87]

In 1940, the RAF's lacklustre attitude towards analysis may have reflected its institutional mind-set, but is perhaps more understandable given the context. After Dunkirk, the Army had the luxury of a period of respite and reflection while the RAF continued to be committed to intense combat operations, not least in the Battle of Britain. However, as the Army was convening a committee to report on the campaign, Balfour felt that politically, the RAF must also be seen to be capturing lessons.[88] Accordingly, he ordered a special committee to be established, an approach so alien to the RAF that the Chief of the Air Staff felt it necessary to reassure his senior commanders that 'it is not the intention to assemble a Soviet, but to make full use of those who have had recent experience for the benefit of all concerned as quickly as possible'.[89] Air Marshal Brooke-Popham chaired the committee, interviewing fifty-two RAF personnel of all ranks, including non-commissioned officers and airmen. This was in striking contrast to the Army's committee, where only ten of thirty-seven witnesses were below general officer rank. This indicates that despite the stated aim of informing future policy, the RAF felt that it had little to learn at the strategic level and was content to confine its analysis to tactical practice. As would be expected, given the rank range of interviewees, the resulting recommendations covered everything from fighting tactics and operational organisation down to minutiae such as 'the bad type of sock issued to airmen', the number of gum-boots held by squadrons and the correct size of mudguards for bomb trailers.[90] One aspect that did stand out, however, was the singular failure of the logistics arrangements.

While Balfour felt the report was useful, he had second thoughts about its potential consequences. He pencilled in the margin that 'in my view we should say that it is confidential to our own service' as although the report was intended to be constructive as well as critical, 'it must present an appearance to any Army officer or Civilian reading it, of being an indictment of ourselves by ourselves.' A signal sent by the Air Ministry to the Air Headquarters indicates the sensitivity that the RAF felt about any process of critical analysis, stating that the report 'contains valuable lessons to be circulated at senior level...it should not repeat not be distributed to Military or Naval Officers or to civilians'.[91] This unease was reflected in the Air Council, which acknowledged the report's utility, but felt 'the exercise should not be repeated except in exceptional circumstances'[92] - although it is hard to imagine what could be considered more exceptional than the loss of the nation's most significant ally and the concomitant unravelling of twenty years of strategic assumptions.

The Army's report was produced by General Bartholomew, a retired officer 'notorious for his undisguised animosity to the RAF'.[93] It concluded that the Army's organisation and doctrine had been sound, and it was a mixture of new German tactics, the role of air power and the failure of the RAF that had been decisive. This somewhat myopic analysis illustrates the degree of institutional distrust between the services that set the tone for joint operations in 1940.[94] Bartholomew's central recommendation was that air support should be provided by a tactical air force subordinate to army command, sub-allocated to divisional and corps commanders. Although intended to emulate the *Luftwaffe* model, it represents a fundamental misunderstanding of German technique, where air power was never controlled directly by the *Wehrmacht* but was always retained under centralised control and only allocated for specific missions as part of an integrated air-land battle plan. Unsurprisingly, the Air Staff considered that the Army had failed to recognise an approach to war where dislocation was more important than wholesale physical destruction, and indirect support (attacks on depots, headquarters and choke-points) had been more effective than direct support (dive-bombing deployed units in the field) in influencing ground operations. It believed that air superiority was the most important prerequisite for cooperation, arguing that if this could be achieved, then the whole of available air power could then be used to meet Army needs, negating the requirement for specialist cooperation aircraft and dive-bombers.

All of these conclusions were to be vindicated by subsequent experience later in the war, but the RAF's performance in its next overseas campaigns, in Greece and then Malaya, demonstrate the limitations in its own strategic thinking; it is clear that the real reasons for the successes and failures of 1940 had not been identified, and it was assumed that the victory of the Battle of Britain could be replicated abroad in the absence of many of the factors that had led to success. In particular, sufficient control of the air could not be achieved, because inadequate numbers of less-capable fighters (*Hurricanes*, *Buffaloes* or biplane *Gladiators*) were deployed rather than the more formidable *Spitfires*, and without either an effective system of radar-based air command and control, or the support of a functioning mobile logistics organisation and infrastructure.[95]

Following the Bartholomew Report, the War Office proposed the creation of an Army Cooperation Command to facilitate air support. The Air Staff was concerned that this might be a first step towards the creation of an organic Army air force, and considered its response in a secret memorandum. It reiterated its belief that the proper purpose of an air force was to gain air superiority first, and only then to apply its resources in support of land operations; but it was conscious that this view was not shared by the Army.[96] Therefore, although it did not support the concept, the Air Staff reluctantly concluded that an Army Cooperation Command - with a degree of separation from both the War Office and the Air Ministry - might be a way of demonstrating the goodwill necessary to head off any further calls for a separate Army air arm. It directed that this compromise be adopted 'with the best possible grace' and decreed that the command must be given sufficient resources to avoid the impression of the RAF 'appearing to want sincerity.'[97]

Despite acknowledging the political necessity for Army Cooperation Command, the RAF's practical support was to prove lukewarm. By the time the command was established in December 1940, air support was no longer a critical task, because the danger of invasion had receded and there was no immediate prospect of the Army engaging the enemy by land in Europe. In effect, the strategic situation envisaged under limited liability had come to pass, and in determining the allocation of resources, the Air Staff made exactly the same choices, for much the same reasons, as it had done before 1939. As it had insufficient assets to cover all potential eventualities, it prioritised the most important; and from 1941 to 1944, provisioning the real air war that was actually being fought by the frontline commands was a more pressing requirement than building up Army Cooperation Command for a putative continental campaign.

Meanwhile, some progress had been made in resolving the practicalities of tactical air support through joint trials leading to the 'Wann-Woodall Report'. This developed mobile communication links and the concept of a joint RAF/Army control centre for unified planning. However, the RAF's institutional distrust of theoretical models meant that these recommendations were never codified as doctrine, so a method of air support had to be developed from first principles when the RAF was next required to support the Army, in the North African campaign. Here, the air commander, Sir Arthur Tedder, created a functioning system of air support through trial and error, eventually establishing the Western Desert Air Force as the RAF's first genuinely multi-role formation.[98] Its success validated the 'whole air force' approach to the provision of tactical air power, and contrasted favourably with the limitations of the single-role command model for this purpose. Accordingly, when a return to air-land operations in Europe was imminent, Army Cooperation Command was unceremoniously disbanded and replaced by 2nd Tactical Air Force - a multi-role, deployable formation - as the primary mechanism for air support.

The lack of intellectual rigour applied to learning lessons was symptomatic of a wider malaise; James Corum contends that the RAF was 'the air force that was least capable of learning and adapting…an intellectually shallow service – a sort of gentlemen pilots club',[99] citing its lack of curiosity about the Spanish Civil War - one of the most significant air power events of the interwar period – as evidence. Recent scholarship suggests that rather than 'blithely ignoring the lessons of Spain',[100] the RAF studied the conflict in detail, but was simply unable to draw the correct conclusions.[101] Although it was difficult to distinguish universal principles from lessons that were likely to be specific,[102] the Air Staff was undoubtedly guilty of perseveration, and used evidence selectively to reinforce its existing preconceptions. The devastation of Guernica, for example, was seen as validating the concept of morale bombing, but as Terraine points out, 'this lesson was so much taken to heart that equally important ones were discarded.'[103] Thus the effectiveness of German air-land technique was attributed to the lack of training of Republican forces rather than any superiority of doctrine, training or equipment employed by the *Condor Legion*, and the RAF discounted further lessons on the basis that 'Experiences in Spain cannot be taken as conditions which would obtain in modern warfare between two highly organised, fully equipped armies and air forces.'[104]

Its more vociferous critics argue that the RAF's conceptual response to the Spanish Civil War demonstrates 'a cultural tradition of anti-intellectualism that was so entrenched that it had become institutionalised'.[105] This may be an overstatement, but nevertheless, it is indicative. As a highly technical service, the RAF was impressively alert and receptive to scientific innovation and new technology, but set little store by a corresponding degree of intellectual agility in its thinking about the employment of air power. This prevailing mindset perhaps helps to explain the Air Staff's failure to review and adapt its proven strategy when the context changed abruptly with the end of limited liability. Arguably, the tradition of subordinating the conceptual to the technical still endures today, and 'a fascination with technology at the expense of thinking'[106] remains a pervasive feature of the RAF's current culture and – to some extent - an impediment to effective strategy-making.

Conclusion

The RAF's experience in France and Flanders reveals lessons of enduring relevance about strategy, and its relationship to policy and doctrine, in three broad areas. First and foremost, it demonstrates that strategy matters. It was strategy that primarily accounts for the dichotomy in outcomes in 1940, and explains how an air force that had suffered a catastrophic defeat in France was able to secure victory in the Battle of Britain within weeks, despite fighting the same opponent with essentially the same equipment.

Second, the development of air strategy throughout the interwar period supports the proposition that strategy is subordinate to policy; however, it also demonstrates that this relationship is symbiotic, not linear. While it was the policy of limited liability - rather than military doctrine - that was the fundamental driver of air strategy, strategy in turn informed and shaped the choices and possibilities of policy. For example, the political decision to abandon deterrence was only taken when it became clear that the necessary means could not be found within existing strategy to resource a credible bomber arm adequately, while technological and doctrinal innovations were making an improved system of air defence both possible and politically desirable. These two factors resulted in the new policy direction to rebalance air strategy in favour of strategic defence. The co-dependence of policy and strategy is, therefore, complex and easily misinterpreted, particularly if the constitution of strategy is not well understood. This is evident in the historiography, where air strategy is invariably – and erroneously – simply regarded as a consequence of the RAF's own doctrinal preferences, rather than being more correctly perceived as a rational response to national policy.

Finally, effective strategy-making is not just about the balancing of ends, ways and means at a single point in time; the Air Staff demonstrated that it could perform this relatively simple evolution sensibly and rationally in the era of limited liability. Rather, strategy is a process, not an event, and it must be continuously reviewed and adapted if it is to retain its relevance. This demands a degree of intellectual rigour and a level of understanding and agility that is unlikely to be achieved in an institutional culture that fails to promote reflexivity or encourage strategic thinking. There are good reasons why the RAF was unable to adapt its strategy effectively following Britain's acceptance of a continental commitment in March 1939, including the structural impediments inherent in the expansion programme and the reality of what was possible logistically; but its failure to contemplate substantial change seriously tends to reinforce the views of those who regard the RAF's approach to analysis – and learning and education more broadly – as indications of a culture that was deeply sceptical of disciplined intellectual activity. Such institutional cultures may be pervasive and enduring;[107] furthermore, recent evidence indicates that these shortcomings may not be confined to the defence sector, if the Public Administration Select Committee's assertion that 'the United Kingdom has all but lost the ability to think strategically' is accepted.[108]

The last word may be left to Churchill, who unconsciously illustrated the complexity of strategic appreciation, and the co-dependence of strategy and policy, when he declared:

> *As between the different Services, while avoiding invidious comparisons I should certainly say that the outlook of the Royal Air Force upon this war was more closely attuned to the circumstances and conditions as they emerged by painful experience than those of either of the other two Services.'*[109]

This may have been true of the independent air war that was being waged in isolation by the frontline commands as Churchill was speaking in Parliament in 1943, matching almost exactly the assumptions underpinning the strategic air force strategy designed to implement the policy of limited liability; but it completely overlooks the disastrous results that had ensued when a lack of intellectual agility meant that essentially the same strategy had been applied to the very different, and far less appropriate circumstances, of the initial, expeditionary campaigns to Norway and France.

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